

Connecticut Green Bank

Notes to Financial Statements
As of and for the Year Ended June 30, 2022

F. Restricted net position

Restricted net position at June 30, 2022 and 2021 consisted of the following:

	<u>2022</u>	<u>2021</u>
<u>Primary government</u>		
Energy programs:		
<u>Connecticut Green Bank:</u>		
Assets restricted for maintaining loan loss and interest rate buydown reserves	\$2,783,551	\$3,918,297
Assets restricted by contractual obligations under Clean Renewable Energy Bonds	2,361,863	2,180,737
Assets restricted by contractual obligations for maintaining pledge accounts for loan guarantees	1,199,469	1,211,738
Assets restricted by contractual obligations for health and safety revolving loan fund	-	20,000
Assets restricted by contractual obligations under Green Liberty Bonds	7,106,868	5,215,629
<u>SHREC ABS 1 LLC:</u>		
Assets restricted by contractual obligations for maintaining liquidity and trustee reserves	1,079,262	1,136,357
<u>SHREC Warehouse 1 LLC:</u>		
Assets restricted by contractual obligations for maintaining loan loss reserve	1,889,479	2,771,359
<u>CT Solar Loan I LLC:</u>		
Assets restricted by contractual obligations for maintaining loan loss reserve	301,834	301,819
<u>CEFIA Holdings LLC:</u>		
Assets restricted by contractual obligations for maintaining debt service reserve	<u>25,673</u>	<u>8,170</u>
Total primary government	<u>16,747,999</u>	<u>16,764,106</u>

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F. Restricted net position (continued)

	<u>2022</u>	<u>2021</u>
<u>Discretely presented component units</u>		
<u>CT Solar Lease 2 LLC:</u>		
Nonexpendable:		
Developer equity interest	\$ 5,600,528	\$ 13,567,350
Developer invested in capital assets net of related debt	35,199,073	30,979,027
Developer assets restricted for maintaining loan loss reserve	2,397,348	2,396,257
Developer assets restricted for operating and maintenance reserve	<u>990,000</u>	<u>990,000</u>
Total nonexpendable	<u>44,186,949</u>	<u>47,932,634</u>
Energy programs:		
Assets restricted for maintaining loan loss reserve	24,216	24,205
Assets restricted for operating and maintenance reserve	<u>10,000</u>	<u>10,000</u>
Total energy programs	<u>34,216</u>	<u>34,205</u>
<u>CEFIA Solar Services:</u>		
Energy programs:		
Assets restricted for maintaining loan loss reserve	<u>83,000</u>	<u>83,000</u>
<u>CT Solar Lease 3 LLC:</u>		
Nonexpendable:		
Developer equity interest	3,756,753	4,568,841
Developer invested in capital assets net of related debt	<u>9,785,955</u>	<u>10,172,272</u>
Total nonexpendable	<u>13,542,708</u>	<u>14,741,113</u>
Total restricted net position	<u>\$ 74,594,872</u>	<u>\$ 79,555,058</u>
Nonexpendable	\$ 57,729,657	\$ 62,673,747
Energy programs	<u>16,865,215</u>	<u>16,881,311</u>
Total	<u>\$ 74,594,872</u>	<u>\$ 79,555,058</u>

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G. Renewable energy credits

Green Bank owns Class 1 Renewable Energy Credits (RECs) that are generated by certain commercial renewable energy facilities for which Green Bank provided the initial funding. Green Bank also owns residential RECs through its Residential Solar Investment Program (RSIP) which was created by the Connecticut state legislature in July 2011 to deploy solar PV systems that in the aggregate generate 350 megawatts of electricity. Through the RSIP, Green Bank owns the rights to RECs generated by facilities installed on residential properties placed in service prior to January 1, 2015. Additionally, Green Bank owns rights to RECs generated by facilities installed after the completion of the RSIP. The Board of Directors has approved 32 megawatts for this post-RSIP deployment.

Green Bank has entered into contracts with various third parties to sell RECs generated through vintage year 2024. For the years ended June 30, 2022 and 2021 Green Bank generated and sold its contractual obligations of 40,000 RECs for vintage year 2021 and 41,000 RECs for vintage year 2020, respectively. Revenues generated from REC sales for the years ending June 30, 2022 and 2021 were \$1,032,310 and \$917,850, respectively.

As of June 30, 2022, Green Bank has contractual obligations to sell RECs by vintage year as follows:

<u>Vintage</u>	<u>Quantity</u>
2022	49,000
2023	51,000
2024	<u>51,000</u>
Total	<u>151,000</u>

Based on historical performance, management believes that the RECs it will receive from these commercial and residential facilities will exceed its contractual obligations.

RECs trade on the New England Power Pool (NEPOOL) market. The market price of Connecticut Class 1 RECs as of June 30, 2022 ranged from \$37.50 to \$38.00. Green Bank's inventory of RECs generated by commercial facilities as of June 30, 2022 and 2021, was \$29,140 and \$30,435, respectively. Green Bank recorded its inventory as of June 30, 2022 at cost, which is below market price.

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G. Renewable energy credits (continued)**Solar home energy credits**

Public Act No.15-194 (the Act) enacted on October 1, 2015 and as amended by Public Act 16-212 created a Solar Home Renewable Energy Credit (SHREC) associated with energy generated from qualifying residential solar PV systems that have received incentives under Green Bank's RSIP. Each SHREC represents 1 megawatt hour of electrical generation. Under the Act, Green Bank owns the SHRECs. The Act requires SHRECs to be purchased by the State's two investor owned public utilities through a Master Purchase Agreement (MPA) which was executed on February 7, 2017. The MPA commences on January 1, 2015 and terminates the earlier of the year ending December 31, 2022 or with the deployment of solar PV systems that in the aggregate generate 350 megawatts of electricity. During each year of the MPA's term, solar PV facilities that commence operation will be aggregated into a tranche agreement between Green Bank and the utility companies which will be approved by the State's Public Utility Regulatory Authority (PURA) prior to its execution. Each tranche will state the price set by Green Bank for the purchase of a SHREC generated by the PV systems within that tranche for a period of 15 years.

As of June 30, 2022, the following tranche agreements have been entered into with the public utilities:

<u>Tranche</u>	<u>Date</u>	<u>REC Price</u>	<u>Megawatts</u>
1	07/01/2017	\$ 50	47.176
2	07/15/2018	49	59.836
3	06/28/2019	48	39.275
4	07/15/2020	47	59.400
5	07/15/2021	35	61.906
6	06/01/2022	34	31.625
Total			<u>299.218</u>

SHRECs are created and certificated in the New England Power Pool Generation System (NEPOOL GIS). SHRECs are certificated by NEPOOL GIS during the fifth month subsequent to the end of the quarter in which the electricity was generated. Once certificated ownership of the SHRECs is transferred to each public utility, payment is received by Green Bank 30 days later. Green Bank recognizes income upon the delivery of the SHRECs to each public utility. Green Bank is not committed to deliver a specific amount of SHRECs to each utility during the term of the MPA.

The SHRECs for tranches 1 and 2 are assigned to SHREC ABS 1 LLC and provide the revenue stream for the SHREC ABS 1 LLC collateralized note payments. The SHREC revenues for tranche 3 are assigned to Green Bank and provide the revenue stream for the Green Liberty Bond – Series 2020 bond payments. Before securitization, the tranche 3 revenues were assigned to SHREC Warehouse 1 LLC as collateral for the SHREC Warehouse LOC and were held in a restricted cash account. The SHREC revenues for tranche 4 are assigned to Green Bank and provide the revenue stream for the Green Liberty Bond – Series 2021 bond payments. Before securitization, the tranche 4 revenues were assigned to SHREC Warehouse 1 LLC as collateral for the SHREC Warehouse LOC and were held in a restricted cash account. The SHRECs for tranche 5 and tranche 6 are assigned to SHREC Warehouse 1 LLC as collateral for the SHREC Warehouse LOC and are held in a restricted cash account. Tranche 6 revenues will begin being recognized in fiscal year 2023.

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G. Renewable energy credits (continued)

For the years ending June 30, 2022 and 2021 the following SHREC sales were recognized:

Fiscal Year Ended June 30, 2022

<u>Tranche</u>	<u>CT Green Bank</u>	<u>SHREC ABS 1 LLC</u>	<u>SHREC Warehouse 1 LLC</u>	<u>Total</u>
1	\$ -	\$ 1,968,750	\$ -	\$ 1,968,750
2	-	2,390,808	-	2,390,808
3	1,710,720	-	-	1,710,720
4	2,483,621	-	-	2,483,621
5	-	-	1,980,055	1,980,055
Totals	<u>\$ 4,194,341</u>	<u>\$ 4,359,558</u>	<u>\$ 1,980,055</u>	<u>\$10,533,954</u>

Fiscal Year Ended June 30, 2021

<u>Tranche</u>	<u>CT Green Bank</u>	<u>SHREC ABS 1 LLC</u>	<u>SHREC Warehouse 1 LLC</u>	<u>Total</u>
1	\$ -	\$ 2,237,250	\$ -	\$ 2,237,250
2	-	2,787,757	-	2,787,757
3	1,862,928	-	-	1,862,928
4	-	-	2,672,984	2,672,984
5	-	-	-	-
Totals	<u>\$ 1,862,928</u>	<u>\$ 5,025,007</u>	<u>\$ 2,672,984</u>	<u>\$ 9,560,919</u>

Low and zero emissions renewable energy credits

Green Bank and its discretely presented component units receive LREC/ZREC revenue, under CT PURA's Low and Zero Emissions Renewable Energy Credit program from the State's two investor-owned public utilities. These RECs are secured when a solar project is registered and energized with a public utility and revenue is earned quarterly based on generation of the project. LREC/ZREC revenue totaled \$1,499,613 and \$1,711,148 for the years ended June 30, 2022 and 2021, respectively.

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III. Other information**A. Risk management**

Green Bank is subject to normal risks associated with its operations including property damage, personal injury and employee dishonesty. All risks are managed through the purchase of commercial insurance. There have been no losses exceeding insurance coverage, and there have been no decreases in insurance coverage over the last three years.

B. Commitments and loan guarantees**Commitments**

As of June 30, 2022 and 2021, the Board of Directors designated a portion of Green Bank's unrestricted net position to fund financial incentives for specific commercial and residential projects in the following areas:

	<u>Type</u>	<u>2022</u>	<u>2021</u>
Primary Government			
Connecticut Green Bank			
Solar PV	Incentive	\$ 27,812,307	\$ 40,644,385
Multifamily/LMI Solar PV and Energy Efficiency	Loan	16,087,404	3,509,732
Fuel Cells	Loan	5,000,000	5,000,000
CSPACE	Loan	1,782,650	687,434
Hydropower	Loan	329,843	329,843
Anaerobic Digester	Loan	169,730	169,730
Total Connecticut Green Bank		<u>51,181,934</u>	<u>50,341,124</u>
CEFIA Holdings LLC			
Solar Power Purchase Agreement	Loan	12,988,534	12,441,940
Small Business Energy Advantage	Loan	17,480,043	4,071,060
Total CEFIA Holdings LLC		<u>30,468,577</u>	<u>16,513,000</u>
Total Commitments		81,650,511	66,854,124
Solar PV commitments payable to CT Solar Lease 2 LLC		<u>(120,000)</u>	<u>(279,000)</u>
Total		<u>\$ 81,530,511</u>	<u>\$ 66,575,124</u>

These commitments are expected to be funded over the next one to six fiscal years and are contingent upon the completion of performance milestones by the recipient. All commitments are those of the primary government.

Connecticut Green Bank

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B. Commitments and loan guarantees (continued)**Loan guarantees**

As of June 30, 2022 and 2021, the following financial guarantees, approved by the Board of Directors, were outstanding. As of June 30, 2022, Green Bank has not recognized a liability or made any payments pursuant to these guarantees. Should payments be made in the future, Green Bank will utilize standard collection efforts to recover payments made on behalf of issuers to those entitled to receive payments pursuant to the obligation guaranteed. All guarantees are those of the primary government.

Guarantor	Issuer	Beneficiary	Relationship of guarantor to issuer	Type of obligation guaranteed	Maximum amount of guaranty	Obligations guaranteed as of 6/30/2022	Obligations guaranteed as of 6/30/2021
CT Green Bank	Owners of multifamily dwellings in Connecticut	Housing Development Fund	Issuers participate in program administered by CGB and the Housing Development Fund to install energy upgrades in multifamily dwellings	Commercial and consumer loan products with various terms	\$ 5,000,000	\$ 3,448,384	\$ 3,709,185
CT Green Bank	New England Hydropower Company	Webster Bank	Issuer is the developer of hydropower project in Connecticut approved by the CGB Board of Directors.	Line of Credit	300,000	300,000	300,000
CEFIA Holdings LLC	CEFIA Solar Services Inc.	CHFA	Holdings is the sole shareholder of Services and an affiliate of CGB	Promissory Note for funds received from CHFA upon their issuance of Qualified Energy Conservation Bonds (QECCBs) for State Sponsored Housing Projects (SSHP)	1,895,807	1,366,560	1,461,350
CT Green Bank	Canton Hydro, LLC	Provident Bank	Issuer is the developer of hydropower project in Connecticut approved by the CGB Board of Directors.	Unfunded guaranty not to exceed \$500,000	500,000	500,000	500,000
CT Solar Lease 1 LLC / CT Solar Loan 1 LLC	CT Green Bank	Amalgamated Bank	Issuer is holder of Solar Lease notes and Loans used as collateral and a wholly owed subsidiary of CGB.	Guarantee payment of a \$3,500,000 revolving line of credit with Amalgamated Bank.	3,500,000	-	100,000
Totals					\$ 11,195,807	\$ 5,614,944	\$ 6,070,535

C. Contingencies

Green Bank is a defendant in various lawsuits and the outcome of these lawsuits is not presently determinable. The resolution of these matters is not expected to have a material adverse effect on the financial condition of Green Bank.

Connecticut Green Bank**Notes to Financial Statements
As of and for the Year Ended June 30, 2022****D. Related party transactions****Due to outside agency**

Green Bank utilizes the services of Connecticut Innovations (CI) when needed for certain operating expenses. CI provides these services at cost and Green Bank reimburses CI. Payments to CI include reimbursements for state sponsored training and the employee assistance program benefit costs. Expenses billed to Green Bank by CI totaled \$0 and \$2,643 for the years ended June 30, 2022 and 2021, respectively. As of June 30, 2022 and 2021, no amounts were due to CI.

Priority return

The investor member is the tax-equity investor and is entitled to substantially all of the tax benefits of both CT Solar Lease 2 LLC and CT Solar Lease 3, LLC until January 1 of the year which is five years after the date the last project is installed, which is anticipated to be January 1, 2023 for CT Solar Lease 2 LLC and September 30, 2023 for CT Solar Lease 3, LLC, the flip date.

The investor member of CT Solar Lease 2 LLC shall be due a cumulative, quarterly distribution, payable by CT Solar Lease 2 LLC, equal to 0.50% of its paid-in capital contributions in respect of projects beginning at the end of the first quarter after the first project acquisition capital contribution is made and continuing until the flip date. To the extent the priority return is not paid in a quarter until the flip date, unpaid amounts will accrue interest at the lower of 24.00% per annum or the highest rate permitted by law.

In accordance with the operating agreement, all amounts and accrued interest due on the priority return are to be paid from net cash flow prior to certain required payments due under the credit agreement. The investor member was paid priority returns of \$510,142 and \$436,293 for the years ended June 30, 2022 and 2021, respectively.

The investor member of CT Solar Lease 3 LLC shall be due a cumulative, quarterly distribution, payable by CEFIA Solar Services, Inc, its managing member, equal to 0.50% of its paid-in capital contributions in respect of projects beginning at the end of the first quarter after the first project acquisition capital contribution is made and continuing until the flip date. To the extent the priority return is not paid in a quarter until the flip date, unpaid amounts will accrue interest at the lower of 24.00% per annum or the highest rate permitted by law.

In accordance with the operating agreement, all amounts and accrued interest due on the priority return are to be paid from net cash flow prior to certain required payments due under the credit agreement. The investor member was paid priority returns of \$90,462 for the years ended June 30, 2022 and 2021.

Administrative services fee

The managing member of CT Solar Lease 2 LLC, CEFIA Solar Services, Inc., provides administrative and management services and earns a quarterly fee initially equal to \$30,000 per quarter beginning July 1, 2013. The amount of the fee increases 2.5% each July 1st beginning July 1, 2014. The administrative services fee totaled \$146,208 and \$142,642 for the years ended June 30, 2022 and 2021, respectively, and has been eliminated from reporting entity totals.

Connecticut Green Bank

Notes to Financial Statements
As of and for the Year Ended June 30, 2022**D. Related party transactions (continued)****Payroll taxes and fringe benefit charges**

Pursuant to state statute, Green Bank is subject to fringe benefit charges for pension plan and medical plan contributions which are paid at the state level. Green Bank's employer payroll taxes are also paid at the state level. Green Bank reimburses the state for these payments. The reimbursement for 2022 and 2021 was \$4,276,820 and \$3,830,087, respectively, comprising 86.02% and 85.57% respectively, of gross salaries.

Component units

Resources flow between Green Bank and the component units. The activity is recorded as inter-entity transactions and are eliminated for financial reporting purposes.

IV. Pensions and other post-employment benefit ("OPEB") plans**A. State employees retirement system**

All employees of Green Bank participate in the State Employees' Retirement System (SERS), which is administered by the State Employees' Retirement Commission. The latest actuarial study was performed on the plan as a whole, as of June 30, 2021, and does not separate information for employees of Green Bank. Therefore, certain pension disclosures pertinent to Green Bank otherwise required pursuant to accounting principles generally accepted in the United States of America are omitted. Information on the total plan funding status and progress, contribution required and trend information can be found in the State of Connecticut's Annual Comprehensive Financial Report available from the Office of the State Comptroller.

Plan description

SERS is a single-employer defined benefit public employee retirement system (PERS) established in 1939 and governed by Sections 5-152 and 5-192 of the Connecticut General Statutes. Employees are covered under one of five tiers, Tier I, Tier II, Tier IIA, Tier III and Tier IV all of which are contributory plans.

Members who joined the retirement system prior to July 1, 1984 are enrolled in Tier I. Tier I employees who retire at or after age 65 with 10 years of credited service, at or after age 55 with 25 years of service, or at age 55 with 10 years of credited service with reduced benefits are entitled to an annual retirement benefit payable monthly for life, in an amount of 2.00% of the annual average earnings (which are based on the three highest earning years of service) over \$4,800 plus 1 percent of \$4,800 for each year of credited service. Tier I requires employee contributions of 2.00% or 5.00% percent of salary, depending on the plan.

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Employees hired on and after July 1, 1984 are covered under the Tier II plan. Tier II requires employee contributions of 1.50% of salary. Tier II employees who retire at or after age 60 with 25 years of service, or at age 62 with 10 years of service, or at age 65 with 5 years of service, are entitled to 1-1/3% of the average annual earnings plus 0.50% of the average annual earnings in excess of the salary breakpoint in the year of retirement for each year of credited service. Tier II employees between the ages of 55 and 62 with 10 years but less than 25 years of service may retire with reduced benefits. In addition, Tier II and Tier IIA members with at least 5 but less than 10 years of actual state service who terminate their state employment July 2, 1997 or later and prior to attaining age 62 will be in deferred vested status and may commence receipt of normal retirement benefits on the first of the month on or following their 65 birthday.

Employees hired on and after July 1, 1997 are covered under the Tier IIA plan. Tier IIA plan is essentially the existing Tier II plan with the exception that employee contributions of 3.50% of salary are required. Tier I members are vested after 10 years of service, while Tier II and Tier IIA members may be vested after 5 years of service under certain conditions, and all three plans provide for death and disability benefits.

Employees hired on or after July 1, 2011 are covered under the Tier III plan. Tier III requires employee contributions of 2.00% of salary up to a \$285,000 limit after which no additional contributions will be taken on earnings above this limit. The normal retirement date will be the first of any month on or after age 63 if the employee has at least 25 years of vested service or age 65 if the employee has at least 10 but less than 25 years of vested service. Tier III members who have at least 10 years of vested service can receive early reduced retirement benefits if they retire on the first of any month on or following their 58th birthday. Tier III normal retirement benefits include annual retirement benefits for life, in the amount of 1-1/3% of the 5-year average annual earnings plus 0.50% of the 5-year average annual earnings in excess of the salary breakpoint in the year of retirement for each year of credited service plus 1-5/8 of the 5-year annual average salary times years of credited service over 35 years.

Employees hired on or after July 1, 2017 are covered under the Tier IV plan. Tier IV employees are eligible for a Hybrid Plan structure that includes a combination of a defined benefit and defined contribution plan. Tier IV requires employee contributions to the defined benefit portion of the Hybrid Plan of 5.00% of salary up to \$285,000 limit after which no additional contributions will be taken on earnings above this limit. Tier IV also requires employee contributions of 1.00% of salary up to \$285,000 to the defined contribution portion of the Hybrid Plan. The normal retirement date will be the first of any month on or after age 63 if the employee has at least 25 years of vested service or age 65 if the employee has at least 10 but less than 25 years of vested service. Tier IV members who have at least 10 years of vested service can receive early reduced retirement benefits if they retire on the first of any month on or following their 58th birthday. Tier IV normal retirement benefits include annual retirement benefits for life, in the amount of 1-1/3% of the 5-year average annual earnings times years of credited service with no breakpoint.

The total payroll for employees of Green Bank covered by SERS for the years ended June 30, 2022 and 2021, was \$4,818,596 and \$4,303,205, respectively.

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A. State employees retirement system (continued)**Contributions made**

Green Bank's contribution is determined by applying a State mandated percentage to eligible salaries and wages as follows for the years ended June 30:

<u>Contributions:</u>	<u>2022</u>	<u>2021</u>
Employees:	\$ 223,919	\$ 191,720
Percent of current year covered payroll	4.65%	4.46%
Percent of required contributions	100.00%	100.00%
Employer:	\$ 2,184,680	\$ 1,787,707
Percent of current year covered payroll	45.34%	41.54%
Percent of required contributions	100.00%	100.00%

Green Bank recognizes a net pension liability for the difference between the present value of the projected benefits for the past service known as the Total Pension Liability (TPL) and the restricted resources held in trust for the payment of pension benefits, known as the Fiduciary Net Position (FNP). For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the FNP of SERS and additions to/deductions from SERS FNP have been determined on the same basis as they are reported by SERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit term. Investments are recorded at fair value.

At June 30, 2022 and 2021, Green Bank reported a liability of \$21,273,373 and \$20,268,725, respectively, for its proportionate share of the net pension liability. The net pension liability as of June 30, 2022 was measured as of June 30, 2021, and the total pension liability used to calculate the net pension liability was determined by the actuarial valuation as of that date based on actuarial experience studies for the period July 1, 2015 – June 30, 2020. Green Bank's allocation of the net pension liability was based on the 2021 covered payroll multiplied by the SERS 2021 contribution rate of 69.07%. As of June 30, 2022 and 2021, Green Bank's proportion was 0.100045% and 0.085440%, respectively.

For the years ended June 30, 2022 and 2021, Green Bank recognized pension expense of \$1,653,994 and \$2,288,205, respectively. Pension expense is reported in Green Bank's financial statements as part of general and administration expense. At June 30, 2022 and 2021, Green Bank reported deferred outflows of resources and deferred inflows of resources related to pension from the following sources:

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A. State employees retirement system (continued)

<u>2022</u>	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>	<u>Net Deferred Outflows</u>
Difference between expected and actual experience	\$ 1,471,866	\$ -	\$ 1,471,866
Net difference between projected and actual earnings on pension plan investments	-	1,500,029	(1,500,029)
Change of assumptions	-	39,208	(39,208)
Change in proportion and differences between employer contributions and proportionate share of contributions	2,782,932	3,885,654	(1,102,722)
Green Bank contributions subsequent to the measurement date	<u>2,184,680</u>	<u>-</u>	<u>2,184,680</u>
Total	<u>\$ 6,439,478</u>	<u>\$5,424,891</u>	1,014,587
Contributions subsequent to the measurement date to be recognized as a reduction of the net pension liability in the subsequent year			<u>(2,184,680)</u>
Net amortized amount of deferred inflows and outflows			<u><u>\$ (1,170,093)</u></u>

The contributions subsequent to the measurement date of the net pension liability but before the end of the reporting period will be recognized as a reduction of the net pension liability in the subsequent fiscal period. The amount recognized as deferred inflows and outflows of resources, representing the net differences between expected and actual experience and changes in assumptions or other inputs, is amortized over a five-year closed period beginning in the year in which the difference occurs and will be recognized in expense as follows:

Year 1 (2023)	\$ (255,005)
Year 2 (2024)	(435,400)
Year 3 (2025)	(533,174)
Year 4 (2026)	(185,274)
Year 5 (2027)	<u>238,760</u>
Total	<u><u>\$ (1,170,093)</u></u>

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A. State employees retirement system (continued)

2021	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows
Difference between expected and actual experience	\$ 1,093,940	\$ -	\$ 1,093,940
Net difference between projected and actual earnings on pension plan investments	341,638	-	341,638
Change of assumptions	539,891	-	539,891
Change in proportion and differences between employer contributions and proportionate share of contributions	787,703	5,071,624	(4,283,921)
Green Bank contributions subsequent to the measurement date	<u>1,787,707</u>	<u>-</u>	<u>1,787,707</u>
Total	<u>\$ 4,550,879</u>	<u>\$5,071,624</u>	(520,745)
Contributions subsequent to the measurement date to be recognized as a reduction of the net pension liability in the subsequent year			<u>1,787,707</u>
Net amortized amount of deferred inflows and outflows			<u>\$ 1,266,962</u>

Actuarial methods and assumption

The net pension liability was determined based upon the following actuarial assumptions and inputs, applied to all periods included in the measurement, unless otherwise specified:

Actuarial valuation date	June 30, 2021
Investment rate of return	6.90%
Inflation	2.50%
Salary increases	3.50-11.50%, including inflation
Cost of living adjustment	1.95%-3.25% based upon tiers
Mortality rates	Mortality rates were based on the Pub-2010 Table, projected generationally with MP-2020

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- The wage inflation assumed rate was adjusted to 3.00% from 3.50%.
- The mortality assumption was updated to Pub-2010 Mortality Tables projected generationally with scale MP-2020 from RP-2014 White Collar Mortality Table projected to 2020 by Scale BB.

Discount rate

The discount rate used to measure the total pension liability at June 30, 2021 was the long term expected rate of return, 6.90%. The projection of cash flows used to determine the discount rate assumed that employee contributions will be made at the current contribution rates and that employer contributions will be made equal to the difference between the projected actuarially determined contribution and member contributions. Projected future benefit payments for all current plan members were projected through the year 2124.

Expected rate of return on investments

The long term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighing the expected future real rate of return by the target asset allocation percentage and by adding expected inflation.

The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

Connecticut Green Bank

Notes to Financial Statements
As of and for the Year Ended June 30, 2022

A. State employees retirement system (continued)

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-term Expected Real Rate of Return</u>
Domestic Equity Fund	20.0%	5.4%
Developed Market International Stock Fund	11.0%	6.4%
Emerging Markets International Stock Fund	9.0%	8.6%
Core Fixed Income	13.0%	0.8%
Emerging Market Debt Fund	5.0%	3.8%
High Yield Bond Fund	3.0%	3.4%
Real Estate Fund	19.0%	5.2%
Private Equity	10.0%	9.4%
Private Credit	5.0%	6.5%
Alternative Investments	3.0%	3.1%
Liquidity Fund	2.0%	-0.4%
Total	<u>100.0%</u>	

Sensitivity of Green Bank proportionate share of the net pension liability to changes in the discount rates

The following presents Green Bank's proportionate share of the net pension liability calculated using the discount rate of 6.90%, as well as the proportionate share of the net pension liability using a 1.00% increase or decrease from the current discount rate.

	<u>1% Decrease</u>	<u>Discount Rate</u>	<u>1% Increase</u>
Green Bank's proportionate share of the net pension liability	<u>\$ 25,852,957</u>	<u>\$ 21,273,373</u>	<u>\$ 17,454,588</u>

B. Other post-employment benefit ("OPEB") plan

In addition to the pension benefits described in Note IV.A, the State single-employer plan provides post-employment health care and life insurance benefits in accordance with State statutes, Sections 5-257(d) and 5-259(a), to all eligible employees who retire from the State, including employees of Connecticut Green Bank. Information on the total plan funding status and progress, contribution required and trend information can be found in the State of Connecticut's Annual Comprehensive Financial Report available from the Office of the State Comptroller.

Connecticut Green Bank

Notes to Financial Statements
As of and for the Year Ended June 30, 2022

B. Other post-employment benefit (“OPEB”) plan (continued)**Plan description**

Currently, four employees meet those eligibility requirements. When employees retire, the State pays up to 100% of their health care insurance premium cost (including dependent's coverage) depending upon the plan. The State currently pays up to 20% of the cost for retiree dental insurance (including dependent's coverage) depending upon the plan. In addition, the State pays 100% of the premium cost for a portion of the employees' life insurance continued after retirement. The amount of life insurance, continued at no cost to the retiree, is determined based on the number of years of service that the retiree had with the State at time of retirement as follows: (a) if the retiree had 25 years or more of service, the amount of insurance will be one-half of the amount of insurance for which the retiree was insured immediately prior to retirement, but the reduced amount cannot be less than \$10,000; (b) if the retiree had less than 25 years of service, the amount of insurance will be the proportionate amount that such years of service is to 25, rounded to the nearest \$100. The state finances the cost of post-employment health care and life insurance benefits on a pay-as-you-go basis through an appropriation in the General Fund.

In accordance with the Revised State Employees Bargaining Agent Coalition (SEBAC) 2011 Agreement between the State of Connecticut and the SEBAC, all employees shall pay the 3% retiree health care insurance contribution for a period of 10 years or retirement, whichever is sooner. In addition, participants of Tier III shall be required to have 15 years of actual State service to be eligible for retirement health insurance. Deferred vested retirees who are eligible for retiree health insurance shall be required to meet the rule of 75, which is the combination of age and actual State service equaling 75 in order to begin receiving retiree health insurance based on applicable SEBAC agreement.

Contributions made

Green Bank's contribution is determined by applying a State mandated percentage to eligible salaries and wages as follows for the years ended June 30:

<u>Contributions:</u>	<u>2022</u>	<u>2021</u>
Employees:	\$ 63,187	\$ 98,503
Percent of current year covered payroll	1.31%	2.29%
Percent of required contributions	100.00%	100.00%
Employer:	\$ 1,067,139	\$ 1,023,772
Percent of current year covered payroll	22.15%	23.79%
Percent of required contributions	100.00%	100.00%

OPEB liabilities, OPEB expense, deferred outflows of resources, and deferred inflows of resources

Green Bank recognizes a net OPEB liability for the difference between the present value of the projected benefits for the past service known as the Total OPEB Liability (TOL) and the restricted resources held in trust for the payment of OPEB benefits, known as the Fiduciary Net Position (FNP).

Connecticut Green Bank

Notes to Financial Statements
As of and for the Year Ended June 30, 2022

B. Other post-employment benefit (“OPEB”) plan (continued)

For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense, information about the FNP and additions to/deductions from FNP have been determined on the same basis as they are reported by SERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit term.

At June 30, 2022 and 2021, Green Bank reported a liability of \$20,516,564 and \$23,688,515, respectively, for its proportionate share of the net OPEB liability. The net OPEB liability as of June 30, 2022 was measured as of June 30, 2021, and the total OPEB liability used to calculate the net OPEB liability was determined by the actuarial valuation as of that date based on actuarial experience studies for the period July 1, 2015 – June 30, 2020. Green Bank’s allocation of the net OPEB liability was based on the 2021 covered payroll multiplied by the OPEB 2021 contribution rate of 29.93%. As of June 30, 2022 and 2021, Green Bank’s proportion was 0.105065% and 0.100627%, respectively.

For the years ended June 30, 2022 and June 30, 2021, Green Bank recognized OPEB expense of \$315,664 and \$960,044, respectively. OPEB expense is reported in Green Bank’s financial statements as part of salaries and benefits. At June 30, 2022 and June 30, 2021, Green Bank reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

2022	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows and Inflows
Net difference between projected and actual earnings on OPEB plan investments	\$ -	\$ 191,097	\$ (191,097)
Change of assumptions	2,969,614	4,421,997	(1,452,383)
Change in proportion and differences between employer contributions and proportionate share of contributions	806,390	4,676,359	(3,869,969)
Difference between expected and actual experience in the total OPEB liability	329,728	404,828	(75,100)
Green Bank contributions subsequent to the measurement date	<u>1,067,139</u>	<u>-</u>	<u>1,067,139</u>
Total	<u>\$ 5,172,871</u>	<u>\$ 9,694,281</u>	<u>(4,521,410)</u>
Contributions subsequent to the measurement date to be recognized as a reduction of the net OPEB liability in the subsequent year			<u>(1,067,139)</u>
Net amortized amount of deferred inflows and outflows			<u>\$ (5,588,549)</u>

Connecticut Green Bank

Notes to Financial Statements
As of and for the Year Ended June 30, 2022

B. Other post-employment benefit (“OPEB”) plan (continued)

The contributions subsequent to the measurement date of the net OPEB liability but before the end of the reporting period will be recognized as a reduction of the net OPEB liability in the subsequent fiscal period. The amount recognized as deferred outflows of resources, representing change in proportion and differences between employer contributions and proportionate share of contributions, deferred inflows of resources, representing the net difference between projected and actual earnings, and changes in plan assumptions, is amortized over a five-year closed period beginning in the year in which the difference occurs and will be recognized in expense as follows:

Year 1 (2023)	\$ (1,478,701)
Year 2 (2024)	(1,346,432)
Year 3 (2025)	(1,628,741)
Year 4 (2026)	(1,014,880)
Year 5 (2027)	<u>(119,795)</u>
Total	<u>\$ (5,588,549)</u>

2021	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows and Inflows
Net difference between projected and actual earnings on OPEB plan investments	\$ 46,711	\$ -	\$ 46,711
Change of assumptions	3,932,054	460,012	3,472,042
Change in proportion and differences between employer contributions and proportionate share of contributions	235,806	6,220,743	(5,984,937)
Change in proportion and differences between employer contributions and proportionate share of contributions	-	546,789	(546,789)
Green Bank contributions subsequent to the measurement date	<u>1,023,772</u>	<u>-</u>	<u>1,023,772</u>
Total	<u>\$ 5,238,343</u>	<u>\$ 7,227,544</u>	(1,989,201)
Contributions subsequent to the measurement date to be recognized as a reduction of the net OPEB liability in the subsequent year			<u>(1,023,772)</u>
Net amortized amount of deferred inflows and outflows			<u>\$ (3,012,973)</u>

Connecticut Green Bank

Notes to Financial Statements
As of and for the Year Ended June 30, 2022

B. Other post-employment benefit (“OPEB”) plan (continued)**Actuarial methods and assumption**

The net OPEB liability was determined based upon the following actuarial assumptions and inputs, applied to all periods included in the measurement, unless otherwise specified:

Actuarial valuation date	June 30, 2021
Investment rate of return	2.31% for June 30, 2021 and 2.38 as of June 30, 2020
Inflation	2.50%
Salary increases	3.50-11.50%, including inflation
Health care cost trend rates:	5.125% decreasing to 4.50% by 2023
Medical	6.00% decreasing to 4.50% over 6 years
Dental	3.00%
Part B	4.50%
Administrative	3.00%

Mortality rates for pre-retirement participants were based on the Pub-2010 General, Above-Median, Employee Headcount-weighted Mortality Table projected generationally using Sale MP-2020. Mortality rates for healthy annuitants were based on the Pub-2010 General, Above-Median, Healthy Retiree Headcount-weighted Mortality Table projected generationally using Scale MP-2020. Mortality rates for disabled annuitants were based on the Pub-2010 General, Disabled retiree Headcount-weighted Mortality Table projected generationally using Scale MP-2020. Mortality rates for contingent annuitants were based on the Pub-2010 General, Above-Median, Contingent Annuitant Headcount-weighted Mortality Table projected generationally using Scale MP-2020.

Discount rate

The discount rate is a blend of the long-term expected rate of return on OPEB Trust assets (6.9% as of June 30, 2021 and 2020) and a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rate of AA/Aa or higher (2.16% as of June 30, 2021 and 2.21% as of June 30, 2020). The final discount rate used to measure to total OPEB liability was 2.31% as of June 30, 2021 and 2.38% as of June 30, 2020. The blending is based on the sufficiency of projected assets to make projected benefit payments.

Expected rate of return on investments

The long-term expected rate of return on OPEB plan investments of 6.90% was determined using a log-normal distribution analysis in which best estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rate of return by the target asset allocation percentage and by adding expected inflation.

Connecticut Green Bank

Notes to Financial Statements
As of and for the Year Ended June 30, 2022

B. Other post-employment benefit (“OPEB”) plan (continued)

The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-term Expected Real Rate of Return</u>
Domestic Equity Fund	20.0%	5.4%
Developed Market International Stock Fund	11.0%	6.4%
Emerging Markets International Stock Fund	9.0%	8.6%
Core Fixed Income	13.0%	0.8%
Emerging Market Debt Fund	5.0%	3.8%
High Yield Bond Fund	3.0%	3.4%
Real Estate Fund	19.0%	5.2%
Private Equity	10.0%	9.4%
Private Credit	5.0%	6.5%
Alternative Investments	3.0%	3.1%
Liquidity Fund	<u>2.0%</u>	-0.4%
Total	<u>100.0%</u>	

Sensitivity of Green Bank proportionate share of the net OPEB liability to changes in the discount rates

The following presents Green Bank’s proportionate share of the net OPEB liability calculated using the discount rate of 2.31%, as well as the proportionate share of the net OPEB liability using a 1.00% increase or decrease from the current discount rate.

	<u>1% Decrease</u>	<u>Discount Rate</u>	<u>1% Increase</u>
Green Bank’s proportionate share of the net OPEB Liability	<u>\$ 24,352,534</u>	<u>\$ 20,516,564</u>	<u>\$ 17,470,336</u>

Connecticut Green Bank

Notes to Financial Statements
As of and for the Year Ended June 30, 2022

B. Other post-employment benefit (“OPEB”) plan (continued)**Sensitivity of Green Bank’s proportionate share of the net OPEB liability to changes in the healthcare cost trend rates**

The following presents Green Bank’s proportionate share of the net OPEB liability, as well as what Green Bank’s share of the net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1 percentage point lower or 1 percentage point higher than the current healthcare cost trend rates:

	1% Decrease	Heath Care Cost Trend Rates	1% Increase
Green Bank’s proportionate share of the net OPEB Liability	\$ 17,245,871	\$ 20,516,564	\$ 24,750,092

V. Prior period adjustments

As a result of the implementation of GASB No. 87 a lease receivable and deferred inflows of resources and a right-to-use leased assets and lease liability were recorded. There was no adjustment to net position at July 1, 2020 as a result of implementation. The implementation entry in CT Solar Lease 2 LLC as of July 1, 2020 was as follows:

Leases receivable	\$ 18,997,249
Deferred inflows of resources - lease related	(19,719,812)
Unearned revenue	722,563

The adjustment to fiscal year ended June 30, 2021 total reporting entity on the Statement of Net Position and Statement of Revenues, Expenses and Changes in Net Position as a result of the implementation of GASB No. 87 was as follows:

	June 30, 2021 As Previously Reported	Fiscal Year Ended June 30, 2021 Adjustment	As Restated June 30, 2021
<u>Statement of Net Position</u>			
Current portion of leases receivable	\$ -	\$ 1,058,634	\$ 1,058,634
Leases receivable	-	17,049,036	17,049,036
Capital assets, net	77,148,329	2,546,069	79,694,398
Accrued expenses	6,685,585	(57,826)	6,627,759
Unearned revenue	721,301	(669,887)	51,414
Long-term debt - current portion	6,264,686	152,035	6,416,721
Long-term debt - long-term portion	100,023,753	2,527,386	102,551,139
Deferred inflows of resources - lease related	-	18,372,780	18,372,780
<u>Total net position - July 1, 2021, as restated</u>			
Primary government	79,577,941	(75,526)	79,502,415
CT Solar Lease 2 LLC	28,104,739	404,777	28,509,516
Total reporting entity	89,165,994	329,251	89,495,245

Connecticut Green Bank

Notes to Financial Statements
As of and for the Year Ended June 30, 2022

V. Prior period adjustments (continued)

<u>Restated Accounts</u>	<u>June 30, 2021 As Previously Reported</u>	<u>Fiscal Year Ended June 30, 2021 Adjustment</u>	<u>As Restated June 30, 2021</u>
<u>Statement of Revenues, Expenses and Changes in Net Position</u>			
Leases revenues	\$ -	\$ 1,916,347	\$ 1,916,347
Other revenues	4,124,886	(1,511,570)	2,613,316
Program administration expense	17,522,836	46,463	17,569,299
General and administrative expense	4,003,987	(50,506)	3,953,481
Interest expense	(3,269,115)	(79,569)	(3,348,684)
Change in net position	12,424,290	329,251	12,753,541

Required Supplementary Information

Type	Description
<u>Pension Plan</u> State Employees' Retirement System	Schedule of Proportionate Share of the Net Pension Liability and Schedule of Contributions
	Notes to Required Supplementary Information
<u>Other Post-Employment Benefits Plan</u> State Employees' Other Post-Employment Benefit (OPEB) Plan	Schedule of Proportionate Share of the Net OPEB Liability and Schedule of Contributions
	Notes to Required Supplementary Information

Connecticut Green Bank
Notes to Required Supplementary Information

State Employees' Retirement System
Schedule of Contributions
Last Eight Years (1)

	2022	2021	2020	2019	2018	2017	2016	2015
Changes of benefit terms	None	None	None	None	Increased all non-Tier IV members' contribution rates by 1.50% effective July 1, 2017 and an additional 0.50% effective July 1, 2019	None	None	For those retiring on or after July 1, 2013, the benefit multiplier for the portion of benefit below the breakpoint was changed to 1.40% For members not eligible to retire by July 1, 2022, allowed election to increase contribution rates by 0.72% in order to maintain the same normal retirement eligibility as members eligible to retire before that date
The actuarially determined contribution rates are calculated as of	June 30, 2020	June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013
Actuarial methods and assumptions used to determine contribution rates:								
Actuarial cost method	Entry age normal	Entry age normal	Entry age normal	Entry age normal	Projected unit credit	Projected unit credit	Projected unit credit	Projected unit credit
Amortization method	Level percent of pay, closed 5-year phase into level dollar	Level percent of pay, closed 5-year phase into level dollar	Level percent of pay, closed 5-year phase into level dollar	Level percent of pay, closed 5-year phase into level dollar	Level percent of pay, closed	Level percent of pay, closed	Level percent of pay, closed	Level percent of pay, closed
Remaining amortization period	26.8 years	27.9 years	25.1 years	25.1 years	17 years	17 years	18 years	19 years
Asset valuation method	5-year smoothing	5-year smoothing	5-year smoothing	5-year smoothing	5-year smoothing	5-year smoothing	5-year smoothing	5-year smoothing
Inflation	2.50%	2.50%	2.50%	2.50%	3.75%	3.75%	2.75%	2.75%
Salary increase	3.50%-19.50%, including inflation	3.50%-19.50%, including inflation	3.50%-19.50%, including inflation	3.50%-19.50%, including inflation	4.00%-20.00%, including inflation	4.00%-20.00%, including inflation	4.00%-20.00%, including inflation	4.00%-20.00%, including inflation
Cost-of-living adjustments	0.00%-7.5%, depending on retirement date and increase in CPI	0.00%-7.5%, depending on retirement date and increase in CPI	0.00%-7.5%, depending on retirement date and increase in CPI	0.00%-7.5%, depending on retirement date and increase in CPI	0.00%-7.5%, depending on retirement date and increase in CPI	0.00%-7.5%, depending on retirement date and increase in CPI	0.00%-7.5%, depending on retirement date and increase in CPI	0.00%-7.5%, depending on retirement date and increase in CPI
Investment rate of return (net)	6.90%, net of investment related expense	6.90%, net of investment related expense	6.90%, net of investment related expense	6.90%, net of investment related expense	8.00%, net of investment related expense	8.00%, net of investment related expense	8.00%, net of investment related expense	8.00%, net of investment related expense
Mortality	Pub-2010 Mortality Tables projected generationally with scale MP-2020	RP-2014 White Collar Mortality Table projected to 2020 by Scale BB	RP-2014 White Collar Mortality Table projected to 2020 by Scale BB	RP-2014 White Collar Mortality Table projected to 2020 by Scale BB	RP-2014 White Collar Mortality Table projected to 2020 by Scale BB	RP-2014 White Collar Mortality Table projected to 2020 by Scale BB	RP-2000 Mortality Table projected with Scale AA 15 years for men (set back 2 years) and 25 years for women (set back 1 year)	RP-2000 Mortality Table projected with Scale AA 15 years for men (set back 2 years) and 25 years for women (set back 1 year)

(1) This schedule is intended to present information for 10 years. Additional years will be presented as the information becomes available.

Connecticut Green Bank

Required Supplementary Information

State Employees' Other Post-Employment Benefit (OPEB) Plan
Last Six Years (1)

	2022	2021	2020	2019	2018	2017
Schedule of Proportionate Share of the Net OPEB Liability						
Green Bank's proportion of the net OPEB liability	0.105065%	0.100627%	0.13773%	0.13902%	0.14327%	0.13805%
Green Bank's proportionate share of the net OPEB liability	\$ 20,516,564	\$ 23,688,515	\$ 28,484,971	\$ 24,000,448	\$ 24,875,889	\$ 23,803,688
Covered payroll	\$ 4,303,205	\$ 3,849,111	\$ 4,819,830	\$ 5,036,904	\$ 4,960,932	\$ 4,695,647
Green Bank's proportionate share of the net OPEB liability as a percentage of its covered payroll	476.77%	615.43%	591.00%	476.49%	501.44%	506.93%
Plan fiduciary net position as a percentage of the total OPEB liability	10.12%	6.13%	5.47%	4.69%	3.03%	1.94%

Schedule of Contributions

Contractually required contribution	\$ 1,023,772	\$ 982,304	\$ 1,164,217	\$ 1,264,900	\$ 956,207	\$ 840,178
Contributions in relation to the contractually required contribution	1,023,772	982,304	1,164,217	1,264,900	956,207	840,178
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 4,303,205	\$ 3,849,111	\$ 4,819,830	\$ 5,036,904	\$ 4,960,932	\$ 4,695,647
Contributions as a percentage of covered payroll	23.79%	25.52%	24.15%	25.11%	19.27%	17.89%

Notes:

- (1) These schedules are intended to present information for 10 years. Additional years will be presented as the information becomes available.
- (2) The covered payroll and contributions presented for each fiscal year are the covered payroll and contributions as of the measurement date, which was the year ended June 30, 2021 for the June 30, 2022 reporting date.

See Notes to Required Supplementary Information.

Connecticut Green Bank

Notes to Required Supplementary Information

State Employees' Other Post-Employment Benefit (OPEB) Plan
Schedule of Contributions
Last Six Years (1)

2022 2021 2020 2019 2018 2017

Changes of Benefit Terms	None	None	None	None	None
The actuarially determined contribution rates are calculated as of	June 30, 2019	June 30, 2019	June 30, 2017	June 30, 2017	June 30, 2015

Actuarial methods and assumptions used to determine contribution rates:

Actuarial Cost Method	Entry age normal	Entry age normal	Entry age normal	Entry age normal	Projected unit credit
Amortization Method	Level percent of growing payroll, closed	Level percent of growing payroll, closed	Level percent of growing payroll, closed	Level percent of growing payroll, closed	Level percent of growing payroll, closed
Remaining Amortization Period	18 years	18 years	20 years	20 years	22 years
Asset Valuation Method	Fair value	Fair value	Fair value	Fair value	Fair value
Inflation	2.50%	2.50%	2.50%	2.50%	3.75%
Salary Increases	3.50%-11.50%	3.50%-11.50%	3.25%-19.50%	3.25%-19.50%	3.25%-19.50%
Healthcare Inflation Rate	6.00% graded to 4.50% over 6 years	6.00% graded to 4.50% over 6 years	6.00% graded to 4.50% over 6 years	6.50% graded to 4.50% over 6 years	6.50% graded to 4.50% over 4 years
Investment Rate of Return (Net)	6.90%	6.90%	6.90%	6.90%	5.70%

Mortality	RP-2014 White Collar Mortality Table projected to 2020 with Scale BB	RP-2014 White Collar Mortality Table projected to 2020 with Scale BB	RP-2014 White Collar Mortality Table projected to 2020 with Scale BB	RP-2014 White Collar Mortality Table projected to 2020 with Scale BB	RP-2000 Combined Mortality Table with male rates projected 15 years (set back 2 years) and female rates projected 25 years (set back 1 year) using scale AA
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(1) This schedule is intended to present information for 10 years. Additional years will be presented as the information becomes available.

Connecticut Green Bank

Net Position by Component
Last Ten Years
(Unaudited)

June 30

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Primary government:										
Net investment in capital assets	\$ 3,534,455	\$ 3,612,561	\$ 2,893,556	\$ 2,511,829	\$ 963,469	\$ 198,486	\$ 248,752	\$ 263,839	\$ 289,932	\$ 362,505
Restricted net position:										
Nonexpendable	-	-	-	-	95,745	91,121	79,179	41,845	8,379	1,000
Restricted - energy programs	16,747,999	16,764,107	10,482,456	11,407,587	19,205,056	16,798,606	5,249,983	4,299,005	4,595,715	5,036,656
Unrestricted net position	81,065,946	59,125,747	53,287,502	51,057,268	59,206,810	79,830,841	116,273,628	104,840,938	97,747,386	93,717,230
Total primary government	101,348,400	79,502,415	66,643,514	64,976,684	79,471,080	96,919,054	121,851,542	109,445,627	102,641,412	99,117,391
CT Solar Lease 2 LLC:										
Net investment in capital assets	1,478,978	1,270,510	1,175,198	1,330,432	1,347,368	1,356,697	485,108	278,307	35,390	-
Restricted net position:										
Nonexpendable	44,186,949	47,932,633	49,439,082	60,294,483	62,208,324	64,596,932	66,364,332	36,508,164	7,617,084	4,691,594
Restricted - energy programs	34,216	34,205	39,697	46,598	45,113	45,028	45,000	45,000	45,000	45,000
Unrestricted net position	(17,582,341)	(20,727,832)	(21,704,523)	(22,648,568)	(22,247,455)	(25,125,419)	(32,934,704)	(21,703,932)	(4,105,401)	(1,853,380)
Total CT Solar Lease 2 LLC	28,117,802	28,509,516	28,949,454	39,022,945	41,353,350	40,873,238	33,959,736	15,127,539	3,592,073	2,883,214
CEFIA Solar Services, Inc:										
Net investment in capital assets	403,648	341,366	353,521	-	-	-	-	-	-	-
Restricted net position:										
Restricted - energy programs	83,000	83,000	83,000	83,000	-	-	-	-	-	-
Unrestricted net position	111,995	149,467	20,918	432,139	559,958	486,565	346,379	224,754	109,223	100
Total CEFIA Solar Services, Inc.	598,643	573,833	457,439	515,139	559,958	486,565	346,379	224,754	109,223	100
CT Solar Lease 3 LLC:										
Net investment in capital assets	98,848	102,750	106,652	121,106	111,852	-	-	-	-	-
Restricted net position:										
Nonexpendable	13,542,708	14,741,113	14,949,003	15,757,514	13,369,938	-	-	-	-	-
Unrestricted net position	(1,303,733)	(2,669,983)	(3,099,959)	(3,527,528)	(4,076,898)	-	-	-	-	-
Total CT Solar Lease 3 LLC	12,337,823	12,173,880	11,955,696	12,351,092	9,404,892	-	-	-	-	-
Eliminations	(31,264,399)	(31,264,399)	(31,264,399)	(40,583,744)	(39,454,629)	(31,562,901)	(28,795,323)	(15,630,676)	(5,549,471)	(3,500,100)
Total net position:										
Net investment in capital assets	5,515,929	5,327,187	4,528,927	3,963,367	2,422,689	1,555,183	733,860	542,146	325,322	362,505
Restricted net position:										
Nonexpendable	57,729,657	62,673,746	64,388,085	76,051,997	75,674,007	64,688,053	66,443,511	36,550,009	7,625,463	4,692,594
Restricted - energy programs	16,865,215	16,881,312	10,585,153	11,537,185	19,250,169	16,843,634	5,294,983	4,344,005	4,640,715	5,081,656
Unrestricted net position	31,027,468	4,613,000	(2,760,461)	(15,270,433)	(6,012,214)	23,629,086	54,889,980	67,731,084	88,201,737	88,363,850
Total net position	\$ 111,138,269	\$ 89,495,245	\$ 76,741,704	\$ 76,282,116	\$ 91,334,651	\$ 106,715,956	\$ 127,362,334	\$ 109,167,244	\$ 100,793,237	\$ 98,500,605

Source: Current and prior year financial statements.

Connecticut Green Bank
Changes in Net Position
Last Ten Years
(Unaudited)

	For the Year Ended June 30									
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Primary government:										
Operating revenues	\$ 56,249,619	\$ 51,253,329	\$ 49,575,685	\$ 43,837,016	\$ 47,772,908	\$ 46,961,726	\$ 72,146,387	\$ 74,663,780	\$ 53,336,236	\$ 43,926,668
Operating expenses:										
Cost of goods sold - energy systems	451,092	746,515	4,371,059	4,601,431	12,979,629	11,333,034	28,826,974	22,526,874	2,794,270	-
Provision for loan losses	(3,560,588)	238,942	4,962,343	2,908,974	361,711	956,489	1,021,826	563,825	1,310,933	-
Grants and incentive programs	16,488,395	16,787,858	17,313,711	15,598,111	18,932,920	18,128,022	11,539,070	10,686,366	13,798,012	17,767,885
Program administration	15,578,628	13,399,419	12,333,764	13,586,373	12,878,508	13,228,749	13,964,097	10,833,325	9,150,664	5,866,580
General and administrative	3,005,772	3,752,502	6,701,666	5,484,608	5,759,801	5,228,711	4,445,648	2,984,178	2,408,715	1,811,227
Total operating expenses	31,963,299	34,925,236	45,682,543	42,179,497	50,912,569	48,875,005	59,797,615	47,594,568	29,462,594	25,445,692
Operating income (loss)	24,286,320	16,328,093	3,893,142	1,657,519	(3,139,661)	(1,913,279)	12,348,772	27,069,212	23,873,642	18,480,976
Nonoperating revenues (expenses):										
Interest income - short-term cash deposits	138,506	16,041	160,505	400,407	311,730	189,237	92,536	83,761	98,383	103,928
Interest income - component units	69,475	67,792	(2,327,387)	(772,224)	(172,817)	(228,502)	(61,796)	(26,985)	-	-
Interest expense	(2,739,598)	(2,401,598)	66,327	64,544	62,981	61,455	60,127	58,511	57,407	-
Interest expense - component units	-	-	(429)	(429)	-	-	-	-	-	-
Debt issuance costs	(13,500)	(1,001,139)	(18,800)	(1,738,743)	(510,207)	(93,974)	(33,723)	(1,180,285)	(350,000)	(1,034,605)
Net change in fair value of investments	104,782	(74,762)	(106,957)	(104,466)	(510,207)	(999,998)	-	-	349,999	378,059
Unrealized gain (loss) on interest rate swap	-	-	-	-	-	-	-	-	-	-
Net nonoperating revenues (expenses)	(2,440,335)	(3,393,666)	(2,226,312)	(2,150,911)	(308,313)	(1,071,782)	57,144	(1,064,998)	155,789	(552,618)
Income (loss) before transfers, capital contributions and member (distributions)	21,845,985	12,934,427	1,666,830	(493,392)	(3,447,974)	(2,985,061)	12,405,916	26,004,214	24,029,431	17,928,358
Capital contributions	-	-	-	-	-	-	-	-	-	1,000
Distributions to members	-	-	-	(1,000)	-	-	-	-	-	-
Distributions to State of Connecticut	-	-	-	(14,000,000)	(14,000,000)	-	-	(19,200,000)	(6,200,000)	-
Total primary government changes in net position	\$ 21,845,985	\$ 12,934,427	\$ 1,666,830	\$ (14,494,392)	\$ (17,447,974)	\$ (2,985,061)	\$ 12,405,916	\$ 6,804,214	\$ 17,829,431	\$ 17,929,358
CT Solar Lease 2 LLC:										
Operating revenues	\$ 3,863,773	\$ 4,073,912	\$ 4,040,994	\$ 3,942,151	\$ 3,837,865	\$ 3,659,883	\$ 2,416,597	\$ 210,869	\$ 1,770	\$ -
Operating expenses:										
Program administration expenses	3,191,357	3,385,864	3,599,905	3,526,293	4,083,177	3,884,129	3,078,633	1,201,123	600,186	-
General and administrative expenses	329,080	302,205	253,880	274,833	288,724	620,912	305,217	124,748	127,511	853,480
Total operating expenses	3,514,437	3,688,069	3,853,785	3,801,126	4,371,901	4,505,041	3,363,850	1,325,871	727,697	853,480
Nonoperating revenues (expenses):										
Interest income - short-term cash deposits	1,112	1,195	4,454	15,005	21,904	17,615	27,777	9,207	8,642	-
Interest expense	(750,898)	(829,897)	(1,027,865)	(1,168,918)	(1,171,323)	(961,956)	(669,043)	(92,360)	-	-
Interest expense - component units	(121,308)	(118,359)	(115,796)	(112,673)	(109,939)	(92,892)	(60,127)	(58,511)	(67,407)	-
Net change in fair value of investments	(151,944)	(312,537)	(13,156)	-	-	-	-	-	-	-
Unrealized gain (loss) on interest rate swap	792,130	465,334	(641,133)	(694,702)	712,355	1,086,987	(967,791)	(660,073)	-	-
Net nonoperating revenues (expenses)	(230,908)	(794,264)	(1,793,496)	(1,961,288)	(547,003)	49,754	(1,669,184)	(801,737)	(48,765)	-

(Continued)

Connecticut Green Bank

Changes in Net Position
Last Ten Years
(Unaudited)

	For the Year Ended June 30									
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
CT Solar Lease 2 LLC (continued):										
Income (loss) before transfers, capital contributions and member (distributions)	\$ 118,428	\$ (408,421)	\$ (1,606,287)	\$ (1,820,263)	\$ (1,081,039)	\$ (795,404)	\$ (2,636,437)	\$ (1,916,739)	\$ (774,692)	\$ (853,480)
Capital contributions	-	-	-	-	114,755	8,145,358	21,770,182	13,556,793	1,496,135	3,736,694
Distributions to members	(510,142)	(436,293)	(510,910)	(510,142)	(509,564)	(436,452)	(301,548)	(104,579)	(12,584)	-
Total CT Solar Lease 2 LLC changes in net position	\$ (391,714)	\$ (844,714)	\$ (2,117,197)	\$ (2,330,405)	\$ (1,475,848)	\$ 6,913,502	\$ 18,832,197	\$ 11,535,485	\$ 708,859	\$ 2,863,214
CEFIA Solar Services, Inc.:										
Operating revenues	\$ 435,436	\$ 340,147	\$ 258,245	\$ 176,938	\$ 132,458	\$ 129,227	\$ 126,075	\$ 123,000	\$ 120,000	\$ -
Operating expenses:										
Program administration	422,207	227,844	321,005	223,512	61,520	-	-	-	-	-
General and administrative	5,003	8,858	4,552	4,600	4,601	4,998	4,750	8,450	10,877	-
Total operating expenses	427,210	236,702	325,557	228,112	66,121	4,998	4,750	8,450	10,877	-
Nonoperating revenues (expenses):										
Interest income - short-term cash deposits	1	2	133	585	4,827	16,446	300	981	-	-
Interest income - component units	51,833	50,567	(39,990)	(42,359)	(44,729)	(31,326)	-	-	-	-
Interest expense	(35,250)	(37,620)	49,469	48,129	46,958	31,437	-	-	-	-
Net nonoperating revenues (expenses)	16,584	12,949	9,612	6,355	7,056	15,957	300	981	-	-
Income (loss) before transfers, capital contributions and member (distributions)	24,810	116,394	(57,700)	(44,819)	73,393	140,186	121,625	115,531	109,123	-
Capital contributions	-	-	-	-	-	-	-	-	-	100
Total CEFIA Solar Services, Inc. changes in net position	\$ 24,810	\$ 116,394	\$ (57,700)	\$ (44,819)	\$ 73,393	\$ 140,186	\$ 121,625	\$ 115,531	\$ 109,123	\$ 100
CT Solar Lease 3 LLC:										
Operating revenues	\$ 804,131	\$ 899,794	\$ 924,753	\$ 776,695	\$ 343,814	\$ -	\$ -	\$ -	\$ -	\$ -
Operating expenses:										
Program administration	525,282	509,709	551,135	513,289	354,566	-	-	-	-	-
General and administrative	26,775	83,064	115,190	94,125	37,332	-	-	-	-	-
Total operating expenses	552,057	592,773	666,325	607,414	391,898	-	-	-	-	-
Nonoperating revenues (expenses):										
Interest income - short-term cash deposits	2,331	1,623	478	261	15	-	-	-	-	-
Income (loss) before transfers, capital contributions and member (distributions)	254,405	308,644	258,906	169,542	(48,069)	-	-	-	-	-
Capital contributions	(90,462)	(90,461)	452,554	2,855,179	9,483,568	-	-	-	-	-
Distribution to member	-	-	(86,494)	(78,521)	(30,607)	-	-	-	-	-
Total CT Solar Lease 3 LLC changes in net position	\$ 163,943	\$ 218,183	\$ 624,966	\$ 2,946,200	\$ 9,404,892	\$ -	\$ -	\$ -	\$ -	\$ -

Source: Current and prior year financial statements.

(Concluded)

Table 3
(1 of 2)

Connecticut Green Bank

Operating Revenue by Source
Last Ten Years
(Unaudited)

Fiscal Year Ended June 30,	Total Operating Revenues	Utility Remittances		Interest Income Promissory Notes		RGGI Auction Proceeds		Grant Revenue		Energy System Equipment Sales		Renewable Energy Credits/ Certificates Sales		Other Revenues	
		Revenue	% of Total	Revenue	% of Total	Revenue	% of Total	Revenue	% of Total	Revenue	% of Total	Revenue	% of Total	Revenue	% of Total
Primary government:															
2022	\$ 56,249,619	\$ 25,279,305	44.9%	\$ 6,142,849	10.9%	\$ 11,568,905	20.6%	\$ -	0.0%	\$ 451,092	0.8%	\$ 12,013,272	11.4%	\$ 794,196	1.4%
2021	51,253,328	25,144,416	49.1%	6,844,740	13.4%	6,452,886	12.6%	13,288	0.0%	746,515	1.5%	10,844,449	21.2%	1,207,034	2.4%
2020	49,575,683	24,854,150	50.1%	6,105,290	12.3%	4,581,628	9.2%	76,402	0.2%	4,373,423	8.8%	8,361,721	16.9%	1,223,069	2.5%
2019	43,837,016	26,094,682	59.5%	3,907,760	8.9%	2,130,255	4.9%	200,779	0.5%	4,833,647	11.0%	5,348,537	12.2%	1,321,357	3.0%
2018	47,772,908	25,943,182	54.3%	3,291,701	6.9%	1,250,260	2.6%	81,952	0.2%	13,559,517	28.4%	2,827,682	5.9%	818,614	1.7%
2017	46,961,726	26,404,349	56.2%	2,921,710	6.2%	2,392,647	5.1%	98,486	0.2%	12,689,540	27.0%	2,214,000	4.7%	240,994	0.5%
2016	72,146,387	26,605,084	36.9%	2,895,508	4.0%	6,481,562	9.0%	589,917	0.8%	32,767,009	45.4%	2,419,990	3.4%	387,321	0.5%
2015	74,663,779	27,233,987	36.5%	2,625,308	3.5%	16,583,545	22.2%	192,274	0.3%	25,912,414	34.7%	1,474,488	2.0%	641,763	0.9%
2014	53,336,236	27,779,345	52.1%	1,034,953	1.9%	20,074,668	37.6%	321,642	0.6%	3,548,840	6.7%	376,559	0.7%	200,229	0.4%
2013	43,926,668	27,621,409	62.9%	583,575	1.3%	4,744,657	10.8%	10,035,250	22.8%	-	0.0%	147,000	0.3%	794,777	1.8%
CT Solar Lease 2 LLC:															
2022	\$ 3,863,773	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ 649,060	16.8%	\$ 3,214,713	83.2%
2021	4,073,911	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	832,687	20.4%	3,241,224	79.6%
2020	4,040,995	-	0.0%	323	0.0%	-	0.0%	-	0.0%	-	0.0%	746,721	18.5%	3,293,951	81.5%
2019	3,942,151	-	0.0%	1,736	0.0%	-	0.0%	-	0.0%	-	0.0%	738,153	18.7%	3,202,263	81.2%
2018	3,837,865	-	0.0%	1,637	0.0%	-	0.0%	-	0.0%	-	0.0%	700,015	18.2%	3,136,213	81.7%
2017	3,659,883	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	356,647	9.7%	3,303,236	90.3%
2016	2,416,597	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	233,793	9.7%	2,182,804	90.3%
2015	210,869	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	210,869	100.0%
2014	1,770	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	1,770	100.0%
2013	-	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
CEFIA Solar Services Inc:															
2022	\$ 435,436	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ 15,397	3.5%	\$ 420,039	96.5%
2021	340,145	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	20,998	6.2%	319,147	93.8%
2020	258,246	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	5,483	2.1%	252,763	97.9%
2019	176,938	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	176,938	100.0%
2018	132,458	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	132,458	100.0%
2017	129,227	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	129,227	100.0%
2016	126,075	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	126,075	100.0%
2015	123,000	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	123,000	100.0%
2014	120,000	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	120,000	100.0%
2013	-	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
CT Solar Lease 3 LLC:															
2022	\$ 804,131	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ 388,148	48.3%	\$ 415,983	51.7%
2021	899,793	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	491,782	54.7%	408,011	45.3%
2020	924,753	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	534,086	57.8%	390,666	42.2%
2019	776,695	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	402,789	51.9%	373,906	48.1%
2018	343,814	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	131,623	38.3%	211,991	61.7%
2017	-	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
2016	-	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
2015	-	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
2014	-	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
2013	-	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%

(Continued)

Table 3
(2 of 2)

Connecticut Green Bank
Operating Revenue by Source
Last Ten Years
(Unaudited)

	Utility Remittances		Interest Income Promissory Notes		RGGI Auction Proceeds		Grant Revenue		Energy System Equipment Sales		Renewable Energy Credits/Certificates Sales		Other Revenues	
	Revenue	% of Total	Revenue	% of Total	Revenue	% of Total	Revenue	% of Total	Revenue	% of Total	Revenue	% of Total	Revenue	% of Total
Eliminations:														
2022	\$ (637,582)	0.0%	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ (637,582)	100.0%
2021	(1,050,534)	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	(1,050,534)	100.0%
2020	(1,476,079)	0.0%	-	0.0%	-	0.0%	-	0.0%	(367,029)	24.9%	-	0.0%	(1,109,050)	75.1%
2019	(3,100,440)	0.0%	-	0.0%	-	0.0%	-	0.0%	(2,038,310)	65.7%	-	0.0%	(1,062,130)	34.3%
2018	(11,912,052)	0.0%	-	0.0%	-	0.0%	-	0.0%	(10,777,111)	90.5%	-	0.0%	(1,134,941)	9.5%
2017	(13,862,578)	0.0%	-	0.0%	-	0.0%	-	0.0%	(12,689,540)	91.5%	-	0.0%	(1,173,038)	8.5%
2016	(34,065,320)	0.0%	-	0.0%	-	0.0%	-	0.0%	(32,767,009)	96.4%	-	0.0%	(1,298,311)	3.6%
2015	(26,077,923)	0.0%	-	0.0%	-	0.0%	-	0.0%	(25,895,727)	99.3%	-	0.0%	(182,196)	0.7%
2014	(3,688,840)	0.0%	-	0.0%	-	0.0%	-	0.0%	(3,548,840)	96.7%	-	0.0%	(120,000)	3.3%
2013	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Total reporting entity:														
2022	\$ 60,715,377	41.6%	\$ 6,142,849	10.1%	\$ 11,568,905	19.1%	\$ -	0.0%	\$ 451,092	0.7%	\$ 13,065,877	21.5%	\$ 4,207,349	6.9%
2021	55,516,643	45.3%	6,844,740	12.3%	6,452,886	11.6%	13,288	0.0%	746,515	1.3%	12,189,916	22.0%	4,124,882	7.4%
2020	53,323,598	46.6%	6,105,613	11.5%	4,581,628	8.6%	76,402	0.1%	4,006,394	7.5%	9,648,011	18.1%	4,051,399	7.6%
2019	45,632,360	57.2%	3,909,496	8.6%	2,130,255	4.7%	200,779	0.4%	2,795,337	6.1%	6,489,479	14.2%	4,012,334	8.8%
2018	40,174,993	64.6%	3,293,338	8.2%	1,250,250	3.1%	81,952	0.2%	2,782,406	6.9%	3,659,520	9.1%	3,164,335	7.9%
2017	36,888,258	71.6%	2,921,710	7.9%	2,392,647	6.5%	98,486	0.3%	-	0.0%	2,570,647	7.0%	2,500,419	6.8%
2016	40,683,739	65.4%	2,895,504	7.1%	6,481,562	15.9%	589,917	1.5%	-	0.0%	2,653,783	6.5%	1,457,889	3.6%
2015	48,919,725	55.7%	2,625,308	5.4%	16,583,545	33.9%	192,274	0.4%	16,687	0.0%	1,474,488	3.0%	793,436	1.6%
2014	49,789,166	55.8%	1,034,953	2.1%	20,074,668	40.3%	321,642	0.6%	-	0.0%	376,559	0.8%	201,999	0.4%
2013	43,926,668	62.9%	583,575	1.3%	4,744,657	10.8%	10,035,250	22.8%	-	0.0%	147,000	0.3%	794,777	1.8%

Source: Current and prior year financial statements and Green Bank detailed records

(Concluded)

**Connecticut Green Bank
Significant Sources of Operating Revenue
Last Ten Years
(Unaudited)**

	Year Ended June 30									
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Utility Remittances:										
Eversource	\$20,338,318	\$20,252,554	\$19,993,531	\$20,975,361	\$20,842,169	\$21,135,147	\$21,223,577	\$21,899,541	\$22,322,100	\$22,144,093
United Illuminating	4,940,987	4,891,861	4,860,619	5,119,321	5,101,013	5,269,202	5,381,507	5,354,446	5,457,245	5,477,316
Total	\$25,279,305	\$25,144,415	\$24,854,150	\$26,094,682	\$25,943,182	\$26,404,349	\$26,605,084	\$27,253,987	\$27,779,345	\$27,621,409
Interest income - promissory notes:										
C-PACE loans and bonds	\$2,912,472	\$2,812,621	\$2,618,948	\$1,763,322	\$1,544,710	\$1,422,065	\$1,447,457	\$1,408,612	\$1,051	\$-
Program loans	2,948,303	3,673,418	3,030,760	1,634,692	1,161,816	827,775	654,803	519,977	453,029	-
Solar loans and lease notes	282,075	358,701	455,905	511,482	586,812	671,850	783,244	696,719	571,373	583,575
Total	\$6,142,850	\$6,844,740	\$6,105,613	\$3,909,496	\$3,293,338	\$2,921,710	\$2,896,504	\$2,625,308	\$1,034,953	\$583,575
RGGI auction proceeds:										
Renewables	\$11,568,905	\$6,452,886	\$4,581,628	\$2,130,255	\$1,250,260	\$2,392,647	\$6,481,562	\$5,651,156	\$7,476,158	\$4,744,657
Energy efficiency	-	-	-	-	-	-	-	10,952,389	12,598,510	-
Total	\$11,568,905	\$6,452,886	\$4,581,628	\$2,130,255	\$1,250,260	\$2,392,647	\$6,481,562	\$16,583,545	\$20,074,668	\$4,744,657
Grant revenue:										
Federal ARPA grants	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
DOE grants	-	13,288	76,402	100,779	56,953	73,466	589,917	143,614	321,642	8,376,681
Private foundation	-	-	-	100,000	24,999	25,000	-	48,660	-	1,622,568
Total	\$-	\$13,288	\$76,402	\$200,779	\$81,952	\$98,466	\$589,917	\$192,274	\$321,642	\$10,035,250
Sales of renewable energy credits/certificates:										
SHREC proceeds	\$10,530,954	\$9,560,919	\$7,070,360	\$4,916,117	\$2,259,950	\$-	\$-	\$-	\$-	\$-
LREC/ZREC receipts	1,499,613	1,711,148	1,567,142	1,157,112	862,718	366,647	233,793	-	-	-
Gross proceeds - RECs	1,032,310	917,850	1,014,260	420,000	595,399	2,227,500	2,443,524	1,474,488	381,444	150,000
Commissions - RECs	-	-	(3,750,000)	(3,750,000)	(10,847,000)	(13,900,000)	(23,534,000)	-	(4,885,000)	(3,000,000)
Total	\$13,065,877	\$12,189,917	\$9,648,012	\$6,489,479	\$3,659,920	\$2,570,647	\$2,653,783	\$1,474,488	\$376,559	\$147,000

Source: Current and prior year financial statements and Green Bank retained records

Notes:

- (1) Revenue based on Statutory rate of 1 mill per kWh generated by the utility.
- (2) In fiscal years 2018 and 2019 the Green Bank made a cash payments to the State of Connecticut of \$14,000,000 per year sourced primarily from utility remittances, a major component of its operating revenues.
- (3) The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort among nine Northeastern and Mid-Atlantic states to reduce greenhouse gas emissions. RGGI holds quarterly auctions of the member state's CO2 allowances. At auction, a market-based clearing price is determined from prices submitted in the winning bids and is used to value proceeds returned to the states. The Connecticut Green Bank receives a portion of Connecticut's auction proceeds which is recognized as revenue and invested in Class 1 Renewable projects.
- (4) Public Act No. 15-194 (the Act) enacted on October 1, 2015 and as amended by Public Act 16-212 created a Solar Home Energy Credit (SHREC), owned by the Green Bank, associated with energy generated from qualifying residential solar PV systems that have received incentives under the Green Bank's RSP. SHRECs are purchased by the State's two investor owned public utilities through a Master Purchase Agreement (MPA).
- (5) The Green Bank and its subsidiaries receive LREC/ZREC revenue from the State's two investor owned public utilities. RECs are secured when a solar project is registered and energized with a public utility and revenue is paid quarterly based on generation of the project.
- (6) CGB owns Class 1 Renewable Energy Credits (RECs) generated by certain commercial renewable energy facilities for which CGB provided the initial funding. Through its RSP program, CGB owns the rights to future RECs generated by facilities installed on residential properties. CGB enters into contracts to sell RECs generated during specified time periods. RECs trade on the New England Power Pool (NEPOOL) market.

Connecticut Green Bank
Outstanding Debt by Type
Last Ten Years
(Unaudited)

	For the Year Ended June 30									
	2022	2021 <i>(as restated)</i>	2020	2019	2018	2017	2016	2015	2014	2013
Primary Government - Solar Mosaic										
Line of Credit (including adjustments)				\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 4,000,000	\$ -
Cumulative Advances			1,085,956	1,085,956	1,085,956	1,085,956	1,085,956	1,085,956	126,088	-
Cumulative Repayments	(1)	(1)	(1,085,956)	(789,396)	(712,478)	(577,182)	(394,249)	(232,431)	-	-
Cumulative Outstanding Debt			-	296,560	373,478	508,794	691,707	853,525	126,088	-
Available Line of Credit			-	-	-	-	-	-	3,873,912	-
Primary Government - Line of Credit - CT Green Bank										
Line of Credit (including adjustments)				\$ 16,000,000	\$ 16,000,000	\$ -	\$ -	\$ -	\$ -	\$ -
Cumulative Advances			(1)	16,000,000	1,000,000	-	-	-	-	-
Cumulative Repayments	(1)	(1)	(1)	(16,000,000)	-	-	-	-	-	-
Cumulative Outstanding Debt			-	-	1,000,000	-	-	-	-	-
Available Line of Credit			-	-	15,000,000	-	-	-	-	-
Primary Government - Line of Credit - SHREC Warehouse 1										
Line of Credit (including adjustments)	\$ 10,000,000	\$ 10,000,000	\$ 14,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cumulative Advances	6,000,000	6,000,000	6,000,000	-	-	-	-	-	-	-
Cumulative Repayments	(6,000,000)	(6,000,000)	-	-	-	-	-	-	-	-
Cumulative Outstanding Debt	-	-	-	-	-	-	-	-	-	-
Available Line of Credit	10,000,000	10,000,000	8,000,000	-	-	-	-	-	-	-
Primary Government - Amalgamated Bank										
Line of Credit (including adjustments)	\$ 3,500,000	\$ 3,500,000	\$ 5,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cumulative Advances	5,000,000	5,000,000	5,000,000	-	-	-	-	-	-	-
Cumulative Repayments	(5,000,000)	(4,900,000)	(4,900,000)	-	-	-	-	-	-	-
Cumulative Outstanding Debt	-	100,000	100,000	-	-	-	-	-	-	-
Available Line of Credit	-	3,400,000	4,900,000	-	-	-	-	-	-	-
Primary Government - The Reinvestment Fund										
Original Term Note	(1)	(1)	\$ 2,510,837	\$ 2,510,837	\$ 2,510,837	\$ 2,510,837	\$ 2,510,837	\$ -	\$ -	\$ -
Repayments			(2,510,837)	(1,143,151)	(921,903)	(541,664)	(8,619)	-	-	-
Cumulative Outstanding Debt			-	1,367,686	1,588,934	1,969,173	2,502,218	-	-	-
Primary Government - Meriden Hydro										
Clean Renewable Energy Bond	\$ 2,957,971	\$ 2,957,971	\$ 2,957,971	\$ 2,957,971	\$ 2,957,971	\$ 2,957,971	\$ -	\$ -	\$ -	\$ -
Repayments	(526,747)	(392,399)	(268,681)	(159,640)	(53,417)	-	-	-	-	-
Cumulative Outstanding Debt	2,431,224	2,565,572	2,689,290	2,798,331	2,904,554	2,957,971	-	-	-	-
Primary Government - Connecticut State Colleges and Universities										
Clean Renewable Energy Bond	\$ 9,101,729	\$ 9,101,729	\$ 9,101,729	\$ 9,101,729	\$ 9,101,729	\$ -	\$ -	\$ -	\$ -	\$ -
Repayments	(1,566,724)	(1,038,173)	(515,976)	-	-	-	-	-	-	-
Cumulative Outstanding Debt	7,535,005	8,063,556	8,585,753	9,101,729	9,101,729	-	-	-	-	-

(Continued)

Connecticut Green Bank

Outstanding Debt by Type
Last Ten Years
(Unaudited)

For the Year Ended June 30

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Primary Government - SHREC ABS Bond										
SHREC ABS Bond	\$ 38,600,000	\$ 38,600,000	\$ 38,600,000	\$ 38,600,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Discount	(35,699)	(60,880)	(66,062)	(71,243)	-	-	-	-	-	-
Repayments	(6,928,911)	(4,474,000)	(2,344,000)	(101,000)	-	-	-	-	-	-
Cumulative Outstanding Debt	\$ 31,615,390	\$ 34,065,120	\$ 36,189,938	\$ 38,427,757	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Primary Government - Kresge Note										
Original Term Note	(1)	(1)	\$ 1,000,000	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Transfer of Note to Strategic Partner			(1,000,000)	-	-	-	-	-	-	-
Cumulative Outstanding Debt	\$ -	\$ -	\$ -	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Primary Government - Green Liberty Bonds Series 2020-1										
Series 2020-1 Bond	\$ 16,795,000	\$ 16,795,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Repayments	(1,145,000)	-	-	-	-	-	-	-	-	-
Cumulative Outstanding Debt	\$ 15,650,000	\$ 16,795,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Primary Government - Green Liberty Bonds Series 2021-1										
Series 2021-1 Bond	\$ 24,834,000	\$ 24,834,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Repayments	(499,000)	-	-	-	-	-	-	-	-	-
Cumulative Outstanding Debt	\$ 24,335,000	\$ 24,834,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Primary Government										
Leases payable	\$ 2,527,366	\$ 2,679,421	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CT Solar Lease 2 LLC - Line of Credit										
Line of Credit (including adjustments)	\$ 27,600,000	\$ 27,600,000	\$ 27,600,000	\$ 27,600,000	\$ 27,600,000	\$ 27,600,000	\$ 24,000,000	\$ 26,700,000	\$ 26,700,000	\$ 26,700,000
Cumulative Advances	27,500,633	27,500,633	27,500,633	27,500,633	27,500,633	27,500,633	18,000,000	3,000,000	-	-
Cumulative Repayments	(15,686,864)	(8,996,792)	(6,646,393)	(4,516,713)	(3,835,166)	(2,382,925)	(832,325)	-	-	-
Cumulative Outstanding Debt	\$ 11,803,769	\$ 18,503,841	\$ 20,854,240	\$ 22,983,920	\$ 23,665,467	\$ 25,107,708	\$ 17,167,675	\$ 3,000,000	\$ 26,700,000	\$ 26,700,000
Available Line of Credit	-	-	-	-	-	-	6,000,000	23,700,000	-	-
CEFIA Solar Services Inc. - Connecticut Housing Finance Authority										
Original Term Note	\$ 1,895,807	\$ 1,895,807	\$ 1,895,807	\$ 1,895,807	\$ 1,895,807	\$ 1,895,807	\$ -	\$ -	\$ -	\$ -
Repayments	(529,247)	(434,457)	(339,666)	(244,875)	(150,085)	(55,295)	-	-	-	-
Cumulative Outstanding Debt	\$ 1,366,560	\$ 1,461,350	\$ 1,556,141	\$ 1,650,932	\$ 1,745,722	\$ 1,840,512	\$ -	\$ -	\$ -	\$ -
Total Reporting Entity										
Cumulative Outstanding Debt	\$ 97,264,334	\$ 109,067,860	\$ 75,975,362	\$ 77,626,915	\$ 40,379,884	\$ 32,384,158	\$ 20,361,600	\$ 3,853,525	\$ 126,088	\$ -
Connecticut Population ⁽¹⁾	3,605,597	3,557,006	3,545,837	3,565,287	3,572,665	3,573,880	3,578,674	3,587,509	3,594,783	3,594,915
Total Outstanding Debt Per Capita	\$ 26.98	\$ 30.66	\$ 21.43	\$ 21.77	\$ 11.30	\$ 9.06	\$ 5.69	\$ 1.07	\$ 0.04	\$ -

Source: Current and prior year financial statements.

Notes:

(1) Debt agreement fully repaid in a previous fiscal year and not active in this fiscal year.

(Concluded)

Connecticut Green Bank

Demographic and Economic Statistics - For the State of Connecticut
Last Ten Years
(Unaudited)

	(1)	(2)	(3)	(3)	(4)	(5)
Year Ended June 30	Population	Median Age	Per Capita Income	Median Household Income	Population 3 Years and Over Enrolled in Public School	Unemployment Rate
2022	3,605,597	N/A	N/A	N/A	513,615	4.2%
2021	3,557,006	N/A	N/A	N/A	N/A	7.7%
2020	3,545,837	N/A	N/A	N/A	N/A	10.1%
2019	3,565,287	41.2	\$ 45,359	\$ 78,833	712,565	3.7%
2018	3,572,665	41.0	44,026	76,348	720,366	4.4%
2017	3,573,880	40.9	42,029	74,168	718,887	5.0%
2016	3,578,674	40.9	41,087	73,433	724,486	5.2%
2015	3,587,509	40.8	39,430	71,346	730,132	5.5%
2014	3,594,783	40.7	39,373	70,048	733,536	6.5%
2013	3,594,915	40.6	37,726	67,098	751,810	7.8%

Sources:

- (1) U.S. Census Bureau - Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2019; April 1, 2020; and July 1, 2020
- (2) U.S. Census Bureau - Annual Population Estimates for Selected Age Groups by Sex
- (3) U.S. Census Bureau - Selected Economic Characteristics, American Community Survey 1-Year Estimates
- (4) U.S. Census Bureau - School enrollment, American Community Survey 1-Year Estimates
- (5) U.S. Department of Labor - Databases, Tables and Calculators by Subject Local Area Unemployment Statistics

Notes:

N/A - Not available

Connecticut Green Bank

Principal Employers - For The State of Connecticut
Last Nine Calendar Years
(Unaudited)

For the Year Ended June 30

Employer	2021			2020			2019		
	Employees ⁽¹⁾	Rank	Percentage of Total State Employment ⁽²⁾	Employees ⁽¹⁾	Rank	Percentage of Total State Employment ⁽²⁾	Employees ⁽¹⁾	Rank	Percentage of Total State Employment ⁽²⁾
State of Connecticut	51,374	1	2.81%	58,818	1	3.41%	57,714	1	3.12%
Yale New Haven Health System	29,145	2	1.60	27,247	2	1.58	24,365	2	1.32
Hartford Healthcare	26,489	3	1.45	25,241	3	1.46	19,514	3	1.05
Yale University	16,837	4	0.92	16,620	5	0.96	16,089	5	0.87
Raytheon Technologies (fka United Technologies)	16,600	5	0.91	18,700	4	1.08	19,000	4	1.03
General Dynamics Electric Boat	12,000	6	0.66	11,862	6	0.69	11,862	6	0.64
CVS Health (fka Aetna Inc)	9,370	7	0.51	N/A		N/A	N/A		
Wal-Mart Stores Inc.	8,626	8	0.47	8,106	7	0.47	8,345	8	0.45
Sikorsky, A Lockheed Martin Company	8,100	9	0.44	7,900	9	0.46	7,625	9	0.41
Trinity Health of New England	8,053	10	0.44	8,053	8	0.47	6,491	13	0.35
The Travelers Cos. Inc.	7,400	11	0.41	7,400	10	0.43	7,400	10	0.40
The Hartford Financial Services Group	6,100	12	0.33	6,500	11	0.38	6,600	12	0.36
Mohegan Sun	6,000	13	0.33	6,000	12	0.35	7,000	11	0.38
Foxwoods Resort Casino	5,500	14	0.30	5,500	14	0.32	5,500	15	0.30

Employer	2018			2017			2016		
	Employees ⁽¹⁾	Rank	Percentage of Total State Employment ⁽²⁾	Employees ⁽¹⁾	Rank	Percentage of Total State Employment ⁽²⁾	Employees ⁽¹⁾	Rank	Percentage of Total State Employment ⁽²⁾
State of Connecticut	57,889	1	3.13%	57,771	1	3.19%	58,773	1	3.26%
Yale New Haven Health System	19,416	2	1.05	21,867	2	1.21	19,920	2	1.10
Hartford Healthcare	18,652	3	1.01	18,425	3	1.02	18,135	3	1.01
Raytheon Technologies (fka United Technologies)	18,000	4	0.97	16,000	5	0.88	15,000	5	0.83
Yale University	14,440	5	0.78	16,184	4	0.89	15,018	4	0.83
General Dynamics Electric Boat	11,862	6	0.64	11,430	6	0.63	10,230	6	0.57
Wal-Mart Stores Inc.	8,835	8	0.48	8,974	8	0.50	8,800	8	0.49
Trinity Health of New England	6,491	13	0.35	N/A	-	*	N/A	-	-
Sikorsky, A Lockheed Martin Company	7,900	9	0.43	7,730	9	0.43	8,000	9	0.44
The Travelers Cos. Inc.	7,400	10	0.40	7,400	10	0.41	7,400	10	0.41
The Hartford Financial Services Group	6,800	12	0.37	6,800	11	0.38	7,000	11	0.39
Mohegan Sun	7,150	11	0.39	6,800	11	0.38	6,735	12	0.37
Foxwoods Resort Casino	5,500	14	0.30	6,500	13	0.36	6,500	13	0.36

(Continued)

Connecticut Green Bank

Principal Employers - For The State of Connecticut
Last Nine Calendar Years
(Unaudited)

Employer	For the Year Ended June 30					
	2015		2014		2013	
	Employees ⁽¹⁾	Rank	Percentage of Total State Employment ⁽²⁾	Employees ⁽¹⁾	Rank	Percentage of Total State Employment ⁽²⁾
State of Connecticut	51,646	1	2.89%	54,230	1	3.05%
Yale New Haven Health System	20,071	3	1.12	18,869	3	1.06
Hartford Healthcare	18,107	4	1.01	18,597	4	1.05
Raytheon Technologies (fka United Technologies)	24,000	2	1.34	25,000	2	1.40
Yale University	14,787	5	0.83	14,787	5	0.83
General Dynamics Electric Boat	9,583	6	0.54	8,896	7	0.50
Wal-Mart Stores Inc.	8,800	7	0.49	9,289	6	0.52
Trinity Health of New England	N/A	-	-	N/A	-	-
Sikorsky, A Lockheed Martin Company	N/A	-	-	N/A	-	-
The Travelers Cos. Inc.	7,300	8	0.41	7,400	9	0.42
The Hartford Financial Services Group	7,000	9	0.39	7,000	11	0.39
Mohegan Sun	6,900	10	0.39	7,300	10	0.41
Foxwoods Resort Casino	5,301	14	0.30	7,600	8	0.43
				53,951	1	3.10%
				18,639	3	1.07
				16,951	4	0.98
				27,000	2	1.55
				14,750	5	0.85
				8,817	6	0.51
				8,761	7	0.50
				N/A	-	-
				N/A	-	-
				7,400	9	0.43
				7,700	11	0.44
				7,300	10	0.42
				7,667	8	0.44

Note:

Connecticut Green Bank was established by the Connecticut General Assembly on July 1, 2011. Accordingly, financial results are only shown beginning with Fiscal Year 2012 (Calendar Year 2013).

Sources:

(1) Hartford Business Journal, Book of Lists: Connecticut's largest employers

(2) Total State Employment from US Department of Labor - Databases, Tables & Calculators by Subject - Local Area Unemployment Statistics

N/A - Not available

(Concluded)

Connecticut Green Bank
Full-Time Equivalent Employees by Function
Last Ten Years
(Unaudited)

Function/Program	June 30									
	2022	2021	2020	2019 (1)	2018	2017	2016	2015	2014	2013
Program services:										
Statutory and infrastructure	12.00	12.00	9.00	8.00	9.00	9.00	9.00	8.00	7.00	7.00
Residential	-	-	-	1.00	6.00	6.00	6.00	6.00	5.00	3.00
Commercial and industrial	5.00	5.00	3.00	4.00	4.00	4.00	4.00	2.00	4.00	2.00
Institutional	-	-	-	-	-	-	-	1.00	1.00	1.00
Administrative and support:										
Executive	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Finance	4.00	5.00	5.00	4.00	6.00	5.00	6.00	5.00	4.00	3.00
Accounting	6.00	7.00	6.00	5.75	5.75	5.75	5.75	5.30	3.50	2.75
Legal and policy	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	2.00	2.00
Marketing	3.00	3.00	3.00	5.00	5.00	6.00	6.00	6.00	5.00	5.00
Operations	6.00	5.00	5.00	3.00	3.50	3.50	3.90	3.50	3.80	4.00
Total	43.00	44.00	38.00	37.75	46.25	46.25	47.65	43.80	39.30	33.75

Source: Connecticut Green Bank internal payroll records

Notes:

(1) Reflects staff reductions as a result of the cash payments of \$14,000,000 made to the State of Connecticut in FY 2019 and FY 2018.

Table 9

Connecticut Green Bank
Operating Indicators by Function
Last Ten Years
(Unaudited)

	For the Year Ended June 30									
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<u>Clean Energy Investment (\$\$ in Millions)</u>										
CGB dollars invested	\$ 13.3	\$ 36.0	\$ 32.8	\$ 30.1	\$ 25.0	\$ 27.2	\$ 34.9	\$ 51.4	\$ 29.1	\$ 18.4
Private dollars invested	106.8	244.5	254.6	287.2	193.3	150.1	282.4	283.3	75.3	92.7
Total project investment	\$ 120.1	\$ 280.5	\$ 287.4	\$ 317.3	\$ 218.3	\$ 177.3	\$ 317.3	\$ 314.7	\$ 104.4	\$ 111.1
Number of Clean Energy Projects	3,418	7,409	8,388	11,693	6,642	4,862	4,238	6,454	2,447	1,114
Annual Energy Savings of Clean Energy (MMBtu)	96,687	311,853	318,736	275,047	261,152	522,748	295,819	697,159	247,909	463,533
<u>Installed Capacity of Clean Energy (MW)</u>										
Anaerobic digesters	-	-	0.3	-	-	-	1.0	-	-	-
Biomass	-	-	-	-	-	-	-	0.6	-	-
CHP	-	-	-	0.5	-	0.8	-	0.3	3.0	0.7
Fuel cell	-	-	7.8	-	-	-	-	-	-	14.8
Hydro	0.9	-	0.9	1.0	-	0.2	-	0.9	-	-
Solar PV	21.2	71.8	66.3	62.9	56.4	48.9	64.9	55.4	20.4	8.0
Wind	-	-	-	-	-	-	-	5.0	-	-
Total	22.1	71.8	75.3	64.4	56.4	49.9	65.9	62.2	23.4	23.5
<u>Lifetime Production of Clean Energy (MWh)</u>										
Anaerobic digesters	-	-	31,536	-	-	-	106,171	-	-	-
Biomass	-	-	-	65,197	-	94,017	-	31,930	354,780	81,008
CHP	-	-	-	1,505,382	120,306	69,668	109,031	1,586,377	56,452	4,830
Energy efficiency	282,408	185,259	233,412	1,505,382	120,306	69,668	109,031	1,586,377	56,452	1,166,832
Fuel cell	-	-	618,106	-	-	-	-	-	-	-
Geothermal	982	1,306	854	665	315	740	806	76	84	-
Hydro	96,579	-	96,579	107,063	-	20,711	-	96,579	-	-
Solar PV	639,410	2,138,850	1,971,118	1,873,018	1,676,917	1,453,897	1,878,783	1,577,670	580,420	226,886
Wind	-	-	-	-	-	-	-	118,260	-	-
Solar thermal	-	-	-	-	-	-	580	-	-	-
Total	1,019,379	2,325,415	2,951,605	3,551,325	1,797,538	1,639,033	2,096,371	3,410,892	991,736	1,479,556
<u>Jobs Created by Year</u>										
Direct jobs (# of jobs)	540	1,145	1,127	1,400	955	868	1,949	1,720	596	579
Indirect and induced jobs (# of jobs)	706	1,487	1,492	1,833	1,245	1,191	3,102	2,659	952	1,161
<u>Lifetime CO2 Emission Reductions (Tons)</u>										
Avoided emissions	542,837	1,283,122	1,308,323	1,907,274	988,314	843,520	1,122,416	1,881,374	356,982	210,353
Homes' energy use for one year	59,303	153,651	156,809	228,895	115,467	99,667	134,776	227,343	43,648	25,364
Passenger vehicles driven for one year	107,098	277,490	2,283,208	413,377	208,597	180,094	243,482	410,577	78,828	45,807
Acres of U.S. forests in one year	603,343	1,563,243	1,595,647	2,328,770	1,175,926	1,015,720	1,372,598	2,313,025	444,087	258,056

Source: Internal Connecticut Green Bank Reporting: Key Performance Indicators

Connecticut Green Bank

Capital Asset Statistics by Function
Last Ten Years
(Unaudited)

	June 30																																																																																																																																																																																																				
	2022	2021 (as restated)	2020	2019	2018	2017	2016	2015	2014	2013																																																																																																																																																																																											
Capital assets being depreciated:											Solar lease equipment	\$86,745,121	\$ 86,941,979	\$87,440,871	\$ 84,919,294	\$75,602,983	\$64,930,842	\$47,534,491	\$21,011,832	\$1,035,159	\$ 335,744	Furniture and equipment	4,981,116	4,952,250	4,733,640	4,733,640	4,084,161	169,955	169,423	222,701	338,938	136,659	Computer hardware and software	274,881	242,176	208,510	201,134	215,458	234,137	212,832	128,628	88,337	71,470	Leasehold improvements	342,154	323,275	192,027	192,027	192,027	250,981	225,844	153,657	139,682	-	Right-to-use leased buildings	2,652,294	2,652,294	-	-	-	-	-	-	-	-	Capital assets not being depreciated:											WIP solar lease equipment	-	-	-	-	-	-	11,931,740	6,014,560	1,759,111	-	Construction in progress	-	-	-	-	-	-	4,502	7,141	7,141	-	Total capital assets	94,995,566	95,111,974	92,575,048	90,046,095	80,094,629	65,585,915	60,078,632	27,538,519	3,988,368	543,873	Less accumulated depreciation and amortization:											Solar lease equipment	17,282,451	14,436,402	11,614,390	8,715,513	6,053,786	3,619,121	1,600,070	319,144	9,865	-	Furniture and equipment	879,608	653,566	614,039	459,632	282,278	136,379	103,079	122,149	205,820	146,560	Computer hardware and software	228,340	205,219	189,629	170,590	174,621	164,972	151,573	50,906	33,845	18,093	Leasehold improvements	81,448	16,164	184,994	177,320	166,723	155,236	109,196	75,232	44,501	16,715	Right-to-use leased buildings	358,823	106,225	-	-	-	-	-	-	-	-	Total	18,830,670	15,417,576	12,603,052	9,523,055	6,677,408	4,075,708	1,963,918	567,431	294,031	181,368	Capital assets, net	\$76,164,896	\$ 79,694,398	\$79,971,996	\$ 80,523,040	\$73,417,221	\$61,510,207	\$58,114,914	\$ 26,971,088	\$3,074,337	\$ 362,505
Solar lease equipment	\$86,745,121	\$ 86,941,979	\$87,440,871	\$ 84,919,294	\$75,602,983	\$64,930,842	\$47,534,491	\$21,011,832	\$1,035,159	\$ 335,744																																																																																																																																																																																											
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Source: Current and prior year financial statements.

NON-FINANCIAL STATISTICS

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1. Statement of the Connecticut Green Bank

June 30, 2022

Re: Statement of the Connecticut Green Bank on the Non-Financial Statistics Contents of the Annual Comprehensive Financial Report (“ACFR”) for FY 2022

Dear Reader:

This is the “Non-Financial Statistics” section of the Annual Comprehensive Financial Report for FY 2022. For those of you that may be new to this section, the Green Bank is a data-driven organization not only with respect to the management of financial resources, but also in terms of the social and environmental impact we are helping create in our communities. We invite you to take a look at the methodologies we use to assess impact.¹

In FY 2022, within the midst of macroeconomic factors such as the global pandemic, war in the Ukraine, and international trade disputes (i.e., tariffs on Chinese manufactured solar panels), alongside a local market in Connecticut that is in transition (e.g., from net metering to tariffs for behind-the-meter clean energy, launch of new programs), we continue to demonstrate the innovative impact of the green bank model, including, but not limited to:

- **Residential Solar** – as the administrator of the Residential Solar Investment Program (“RSIP”) per CGS 16-245ff, we have officially achieved the 350 MW public policy target. In reaching this level of deployment, we reached over 45,000 households (including reaching vulnerable communities), mobilized over \$1.4 billion of public and private investment (including about \$160 MM of ratepayer incentives – at an average equivalent ZREC price of \$30), and helped create over 16,000 jobs in our communities. The RSIP made Connecticut the most successful residential solar PV deployment market in the entire Northeast (i.e., New England, New Jersey, and New York) on a watts per capita basis, and most likely at the lowest level of ratepayer incentives – both effective and efficient. We look forward to our utility colleagues, with the guidance of PURA, to continue working with industry to propel this market forward as a solution to reduce energy costs for families, increase the reliability of the grid, and confront climate change through the Residential Renewable Energy Solutions (“RRES”) program.
- **Energy Storage Solutions** – as the co-administrator of the Energy Storage Solutions Program (“ESS”) per Public Act 21-53 and Docket No. 17-12-03RE03, we officially launched the 580 MW residential and non-residential upfront and ongoing performance-based incentive program on January 1, 2022. Through PURA’s guidance, we are focused on reducing peak demand through the active and passive dispatch of battery storage (which will lower electric rates), providing participants with opportunities for resilience to keep the lights on when the grid is down, prioritizing deployment in low-income and distressed communities to ensure that they have

¹ <https://www.ctgreenbank.com/strategy-impact/impact/societal-impacts/>

CONNECTICUT GREEN BANK

1. STATEMENT OF THE CONNECTICUT GREEN BANK

access to this important technology, and fostering the sustained orderly development of a local battery storage industry.

- **Green Liberty Notes** – as a follow-on to the award-winning Green Liberty Bonds, we continue to increase investment opportunities in the Connecticut Green Bank for all people. Through our collaboration with Raise Green, and our partnerships with Eversource Energy and Amalgamated Bank, we created the Green Liberty Notes (“GLN’s), a minimum \$100 and maximum \$25,000 one-year note offering whose proceeds will go towards supporting the Small Business Energy Advantage (“SBEA”) program. SBEA provides an on-bill financing mechanism to support energy efficiency deployment for small businesses, when combined with incentives through the Energy Opportunities program, helps businesses reduce the burden of energy costs. We have a goal to issue GLNs every quarter for two years.

These are but a few examples of some of the impactful ways the Connecticut Green Bank is mobilizing investment in the green economy of Connecticut.

As we look ahead, there are a number of other market developments that bode well for the future of the Connecticut Green Bank in helping to build the green economy of Connecticut, including:

- **Greenhouse Gas Reduction Fund** – after over a decade of advocacy and demonstrating the efficacy of the green bank model at the local and state levels across the country, Congress passed and President Biden signed the Inflation Reduction Act (“IRA”), which included the \$27 billion Greenhouse Gas Reduction Fund (“GHGRF”). Modelled after, in large part, the Connecticut Green Bank, the GHGRF will provide \$7 billion in competitive grants, loans and other forms of financial and technical assistance for zero emission technologies to low-income and disadvantaged communities, and \$20 billion for a national climate bank that includes green banks, community development financial institutions, and other non-profits focused on avoiding and reducing GHG emissions.
- **Environmental Infrastructure** – per the passage of Public Act 21-115, we initiated efforts to better understand how the green bank model for “clean energy” could apply to “environmental infrastructure” per the scope expansion of the Connecticut Green Bank. We amended our governance documents to incorporate the legislative scope expansion, investigated the capabilities of our Green Liberty Bonds to raise capital (including 50-year bonds), engaged with stakeholders across the environmental infrastructure spectrum, held an offsite strategic retreat, and put forth a Comprehensive Plan to set a course for implementing this scope expansion.
- **Zero Emission School Buses** – per the passage of Public Act 22-25, Connecticut advanced its commitment to reduce GHG emissions by establishing targets for zero emission school buses, including 100% in environmental justice communities by 2030 and 100% in all school districts by 2040. The Connecticut Green Bank is supporting the Department of Energy and Environmental Protection (“DEEP”) and the leadership of the Environment Committee, by transferring a portion of the Regional Greenhouse Gas Initiative (“RGGI”) allowance proceeds to support vouchers for electric school buses with a focus on environmental justice communities through the Connecticut Hydrogen and Electric Automobile Purchase Rebate (“CHEAPR”).

CONNECTICUT GREEN BANK
1. STATEMENT OF THE CONNECTICUT GREEN BANK

As we continue to bolster our work on social and environmental impact methodology and transparency, we continue to engage Kestrel Verifiers to assess the Green Bank’s methods for representing impact using our indicators. The team from Kestrel has reviewed and endorsed the Green Bank’s current methodologies and found the Green Bank’s reporting to provide a high degree of transparency both in terms of activity and the underlying methodologies used to calculate this activity. They also reviewed the Green Bank’s calculations.

The result, is an ever evolving and more transparent Non-Financial Statistics section that we hope is useful to those striving to learn from the successes and challenges of the Connecticut Green Bank, including how we assess the social and environmental impact we are making by mobilizing more investment in the green economy of Connecticut.

Regards,



Bryan Garcia
President and CEO



Eric Shrago
Vice President of Operations

2. Statement of Non-Financial Statistics Auditor



KESTREL
VERIFIERS™

Connecticut Green Bank
75 Charter Oak Ave
Suite 1-103
Hartford, CT 06106
September 23, 2022

To the Board of Directors Connecticut Green Bank,

Report on Non-Financial Metrics included in the 2022 Annual Comprehensive Financial Report

In September 2022, the Connecticut Green Bank engaged Kestrel Verifiers (“Kestrel”) to conduct an independent external review of the metrics in the non-financial statistics section of Connecticut Green Bank’s Annual Comprehensive Financial Report (“Report”) for FY2022.

Kestrel confirmed the presence of science-based and externally validated methodologies, and assessed the degree of transparency exhibited in reporting on the following metrics: benefits to disadvantaged populations, clean energy generated, job years created, public health benefits, and reduction in greenhouse gas emissions.

We commend the Green Bank’s meticulous project-level data tracking and the multi-faceted approach to reporting positive impacts on air quality, public health, financial leverage, and the clean energy transition. A remarkable range of metrics are reported such as internal workforce diversity, job years supported, annual CO₂ emissions avoided, public health financial savings, and invested capital. In many cases, the Green Bank includes equivalencies that translate the technical metrics into more approachable numbers for all audiences.

We note that the Green Bank’s overall efforts in FY2022 resulted in avoided greenhouse gas emissions, improved air quality, and benefits to public health. Notable achievements include exceeding the Bank’s goal to provide 40% of investments to vulnerable communities by 2025 and continuous development and offering of investment opportunities for individual investors to support the transition to a decarbonized economy. The Green Bank’s overall impact continues to grow, with FY2022 activities resulting in more than 30 times more annual emissions avoided relative to FY2012.

Kestrel has confirmed that the Green Bonds Reporting section of the Report conforms with the Green Bank’s Green Bond Framework. The expected Key Performance Indicators of the bond-financed projects are included, and the report transparently describes the allocation of bond proceeds.

Based on the information provided to Kestrel Verifiers by Connecticut Green Bank and our understanding of best practices in goal setting, measurement and disclosure, it is our opinion that Connecticut Green Bank’s metrics, science-based methodologies are sound and represent best practice. It is our opinion that Connecticut Green Bank adequately reports on these metrics and performance against them and demonstrates a high level of transparency.

We commend the Connecticut Green Bank for leadership in reporting.

Sincerely,

Monica Reid
CEO
Kestrel Verifiers

CONNECTICUT GREEN BANK
3. ORGANIZATIONAL BACKGROUND

3. Organizational Background

The Connecticut Green Bank is the nation’s first green bank. The organization is creating a thriving marketplace to accelerate clean energy adoption and environmental infrastructure improvements in Connecticut by making financing accessible and affordable for homeowners, businesses, and institutions.

Governance

Board of Directors

Pursuant to Section 16-245n of the General Statutes of Connecticut, the powers of the Connecticut Green Bank are vested in and exercised by the Board of Directors that is comprised of twelve voting and one non-voting members each with knowledge and expertise in matters related to the purpose of the organization – see Table 1.

TABLE 1. COMPOSITION OF THE BOARD OF DIRECTORS OF THE CONNECTICUT GREEN BANK FOR FY 2022

Position	Name	Status (as of 06-30-22)	Voting
Commissioner of DECD (or designee)	Binu Chandy	Ex Officio	Yes
Commissioner of DEEP (or designee)	Vicki Hackett	Ex Officio	Yes
State Treasurer (or designee)	Sarah Sanders	Ex Officio	Yes
Commissioner of OPM (or designee)	Matthew Dayton	Ex Officio	Yes
Finance of Renewable Energy	Adrienne Farrar Houël	Appointed	Yes
Finance of Renewable Energy	Dominick Grant	Appointed	Yes
Labor Organization	John Harrity	Appointed	Yes
R&D or Manufacturing	Lonnie Reed	Appointed	Yes
Investment Fund Management	Laura Hoydick	Appointed	Yes
Environmental Organization	Matthew Ranelli	Appointed	Yes
Finance or Deployment	Tom Flynn	Appointed	Yes
Residential or Low Income	Brenda Watson	Appointed	Yes
President of the Green Bank	Bryan Garcia	Ex Officio	No

The Board of Directors of the Connecticut Green Bank is governed through statute, as well as an [Ethics Statement](#)² and [Ethical Conduct Policy](#)³, [Resolutions of Purposes](#)⁴, [Bylaws](#)⁵, [Joint Committee Bylaws](#)⁶, and [Comprehensive Plan](#)⁷. The Comprehensive Plan for the Connecticut Green Bank provides a multi-year strategy to support the vision and mission of the organization and the public policy objective of delivering consumers cheaper, cleaner, and more reliable sources of energy while creating jobs and supporting local economic development. An Employee Handbook and [Operating Procedures](#)⁸ have also

²Ethics Statement: http://www.ctgreenbank.com/wp-content/uploads/2017/02/Green-Bank_Ethics-Statement-CLEAN-REVISED-102214.pdf

³ Ethical Conduct Policy: https://ctgreenbank.com/wp-content/uploads/2020/06/Green-Bank_Ethical-Conduct-Policy_BOD_CLEAN-REVISED-January-2020.pdf

⁴ Resolutions of Purposes: https://www.ctgreenbank.com/wp-content/uploads/2021/11/5ai_Green-Bank-Resolution-of-Purpose-CLEAN-REVISED.pdf

⁵ Bylaws: https://www.ctgreenbank.com/wp-content/uploads/2021/11/5ai_Green-Bank_Revised-Bylaws_CLEAN.pdf

⁶ Joint Committee Bylaws: https://www.ctgreenbank.com/wp-content/uploads/2015/12/ECMB_CGB_Joint_Committee_Bylaws_October_2014FINAL.pdf

⁷ Comprehensive Plan: https://www.ctgreenbank.com/wp-content/uploads/2022/08/Comprehensive-Plan_FY-2023_FINAL_080122-1.pdf

⁸ Operating Procedures: https://www.ctgreenbank.com/wp-content/uploads/2022/05/5ai_Green-Bank-Operating-Procedures.pdf

CONNECTICUT GREEN BANK

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been approved by the Board of Directors and serve to guide the staff to ensure that it is following proper contracting, financial assistance, and other requirements.

As noted above, the Connecticut Green Bank's Board of Directors is comprised of twelve (12) ex officio and appointed voting members and one (1) ex officio non-voting members. The leadership of the Board of Directors, includes:

- **Chair** – Lonnie Reed
- **Vice Chair**– Vicki Hackett, Deputy Commissioner of Energy, DEEP (voted in by her peers of the Green Bank Board of Directors)
- **Secretary** – Matthew Ranelli, Partner at Shipman and Goodwin (voted in by his peers of the Green Bank Board of Directors)
- **Staff Lead** – Bryan Garcia, President and CEO

During FY 2022, the Board of Directors of the Connecticut Green Bank met seven (7) times, all regularly scheduled meetings. There was an attendance rate of 83% by the Board of Directors and 52 approved resolutions. For a link to the materials from the Board of Directors meetings that are publicly accessible – click [here](#)⁹.

Committees of the Board of Directors

There are four (4) committees of the Board of Directors of the Connecticut Green Bank, including:

- Audit, Compliance, and Governance
- Budget, Operations, and Compensation
- Deployment
- Joint Committee of the Energy Efficiency Board and the Connecticut Green Bank

Audit, Compliance and Governance Committee

The Connecticut Green Bank's Audit, Compliance and Governance (ACG) Committee is comprised of four (4) ex officio and appointed voting members. The leadership of the ACG Committee includes:

- **Chair** – Tom Flynn, Managing Partner, Coral Drive Partners, LLC
- **Members** – Lonnie Reed, Matthew Ranelli, Matthew Dayton
- **Staff Lead** – Brian Farnen, CLO and General Counsel

During FY 2022, the ACG Committee of the Connecticut Green Bank met three (3) times, all regularly scheduled meetings. There was an attendance rate of 100% by the Committee members and 6 approved resolutions. For a link to the materials from the ACG Committee meetings that are publicly accessible – click [here](#)¹⁰.

Budget, Operations, and Compensation Committee

The Connecticut Green Bank's Budget, Operations, and Compensation (BOC) Committee is comprised of five (5) ex officio and appointed voting members. The leadership of the BOC Committee, includes:

⁹ Board of Directors meetings: <http://www.ctgreenbank.com/about-us/governance/connecticut-grboard-meetings/>

¹⁰ ACG, B&O, Deployment Committee meetings: <https://www.ctgreenbank.com/about-us/governance/connecticut-grittee-meetings/>

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- **Chair** –John Harray, Labor Union Representative (designated as the Chair by the former Chair of the Board Catherine Smith)
- **Members** – Lonnie Reed, Binu Chandy, Brenda Watson, Adrienne Farrar Houël
- **Staff Lead** – Eric Shrago, Vice President of Operations

During FY 2022, the BOC Committee of the Connecticut Green Bank met three (3) times, all regularly scheduled meetings. There was an attendance rate of 78% by the Committee members and 1 approved resolution. For a link to the materials from the BOC Committee meetings that are publicly accessible – click [here](#)¹¹.

Deployment Committee

The Connecticut Green Bank’s Deployment Committee is comprised of six (6) ex officio and appointed voting members. The leadership of the Deployment Committee includes:

- **Chair** –Vicki Hackett, DEEP Designee
- **Members** – Lonnie Reed, Matthew Ranelli, Binu Chandy, Dominick Grant, Sarah Sanders
- **Staff Lead** – Bryan Garcia, President and CEO, and Bert Hunter, EVP and CIO

During FY 2022, the Deployment Committee of the Connecticut Green Bank met four (4) times, all of which were regularly scheduled meetings. There was an attendance rate of 82% by Committee members and five (5) approved resolutions. For a link to the materials from the Deployment Committee meetings that are publicly accessible – click [here](#)¹².

Joint Committee

A Joint Committee of the Energy Efficiency Board and the Connecticut Green Bank was established pursuant to Section 16-245m(d)(2) of the Connecticut General Statutes. Per by-laws established and approved by the EEB and Connecticut Green Bank, the Joint Committee is comprised of four (4) appointed and voting members, one (1) ex officio and voting member, and four (4) ex officio and non-voting members. The leadership of the Joint Committee includes:

- **Chair** – Brenda Watson, Executive Director, Operation Fuel (Green Bank designee)
- **Vice Chair** – Vicki Hackett
- **Secretary** – Bryan Garcia, Connecticut Green Bank, and Stacy Sherwood, Connecticut Energy Efficiency Fund (voted in by their peers of the EEB and the Connecticut Green Bank)
- **Members**¹³ – Bryan Garcia (non-voting), Bert Hunter (non-voting), John Harray (designated as member of the Committee by BOD Chair)
- **Staff Lead** – Bryan Garcia, President and CEO of the Connecticut Green Bank

During FY 2022, the Joint Committee of the EEB and the Connecticut Green Bank met three (3) times, including three (3) regularly scheduled meetings and no special meetings. There was an attendance rate

¹¹ ACG, B&O, Deployment Committee meetings: <http://www.ctgreenbank.com/about-us/governance/connecticut-grittee-meetings/>

¹² ACG, B&O, Deployment Committee meetings: <http://www.ctgreenbank.com/about-us/governance/connecticut-grittee-meetings/>

¹³ Note – these members are representatives from the Connecticut Green Bank.

CONNECTICUT GREEN BANK

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of 83% by the Joint Committee members and 0 approved resolutions. For a link to the materials from the Joint Committee meetings that are publicly accessible – click [here](#)¹⁴.

Open Connecticut

Open Connecticut centralizes state financial information to make it easier to follow state dollars. In Connecticut, quasi-public agencies are required to submit annual reports to the legislature, including a summary of their activities and financial information. In addition, as of Public Act 19-102, quasi-public agencies are required to provide checkbook-level vendor payment data for display on Open Connecticut. The Connecticut Green Bank was among the first to voluntarily submit this information, as well as employee payroll data, to the State Comptroller since the inception of Open Connecticut, and it will continue doing so to satisfy the importance of transparency and public disclosure. To access this information, click [here](#)¹⁵.

Ethics and Transparency

Statement of Financial Interest

It is required by state ethics laws and a determination of the Governor’s standard that senior-level staff (i.e., Director-level and above) and members of the Board of Directors annually file a Statement of Financial Interest (SFI). The Governor’s standard is the following:

“Governor Lamont has adopted the established standard which requires “filing of Annual Statements of Financial Interests by all persons in the Executive Branch and Quasi-Public Agencies who exercise (i) significant policy-making, regulatory or contractual authority; (ii) significant decision-making and/or supervisory responsibility for the review and/or award of State contracts; or (iii) significant decision-making and/or supervisory responsibility over staff that monitor State contracts.” .”

These statements include information such as names of all associated business, income over \$1,000, a list of all real property, and a list of creditors. SFIs that have been filed are available to the public under the Freedom of Information Act. The SFIs serve two purposes. First, the financial disclosure provides a checklist or reminder to the official/employee to be mindful of potential conflicts of interest. Second, the statements serve as a tool to maximize public confidence in governmental decision making.

With respect to the 2021 SFI filing required by May 2, 2022, the Connecticut Office of State Ethics (the “OSE”) received the following from the Connecticut Green Bank – see Table 2.

TABLE 2. SUMMARY OF STATE OF FINANCIAL INTEREST FILINGS WITH THE OFFICE OF STATE ETHICS FOR FY 2022

	Number of SFIs Submitted	% Submitted on Time
Senior Staff	7	100%
Board of Directors	12	100%

¹⁴ Joint Committee meeting: <http://www.ctgreenbank.com/about-us/governance/connecticut-grittee-meetings/>

¹⁵ Open Connecticut: <http://www.osc.ct.gov/openCT/quasi.html>

CONNECTICUT GREEN BANK
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Small and Minority Business Procurement

The State of Connecticut’s Supplier Diversity Program was established to ensure Connecticut small businesses have an opportunity to bid on a portion of the State’s purchases. Through Fiscal Year 2015, the program required agencies and political subdivisions to set aside 25% of their annual budgets for construction, housing rehabilitation, and purchasing goods and services (after approved exemptions by the Department of Administrative Services) to be awarded to certified small businesses, with 25% of this amount to be awarded to certified minority business enterprises. Although reporting is no longer required, the Connecticut Green Bank is performing this analysis to ensure we maintain our voluntarily commitment to meeting our diversity goals in procurement.

TABLE 3. SMALL BUSINESS PROCUREMENT¹⁶

Year	Goal	Actual	Percentage
2012	\$59,775	\$39,520	66%
2013	\$62,598	\$59,340	95%
2014	\$135,320	\$120,560	89%
2015	\$221,750	\$251,980	114%
2016	\$910,922	\$568,067	62%
2017	\$533,198	\$850,016	159%
2018	\$432,861	\$607,679	140%
2019	\$232,037	\$518,299	223%
2020	\$249,098	\$453,515	182%
2021	\$338,714	\$583,522	172%
2022	\$452,418	\$321,826	71%
Total	\$3,628,690	\$4,374,324	120%

TABLE 4. MINORITY BUSINESS ENTERPRISE PROCUREMENT¹⁷

Year	Goal	Actual	Percentage
2012	\$4,944	\$31,474	211%
2013	\$15,649	\$52,308	334%
2014	\$33,830	\$88,427	261%
2015	\$55,438	\$153,319	277%
2016	\$227,730	\$152,958	67%
2017	\$133,300	\$106,230	80%
2018	\$108,215	\$46,171	43%
2019	\$58,009	\$16,177	28%
2020	\$62,274	\$123,622	199%
2021	\$84,679	\$154,433	182%
2022	\$113,104	\$28,432	25%

¹⁶ In an act of disclosure, CGB has revised years 2016 through 2022 to include all Marketing expenditures. Prior years, CGB had DAS approval on Program Marketing Exemptions. See prior year financial reports if interested.

¹⁷ In an act of disclosure, CGB has revised years 2016 through 2022 to include all Marketing expenditures. Prior years, CGB had DAS approval on Program Marketing Exemptions.

CONNECTICUT GREEN BANK
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Total	\$907,172	\$953,551	105%
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Operational Efficiency

The Green Bank has significantly improved its operational efficiency with respect to reduced financial resources, real estate, and human capital to deliver more impact through the investment in and deployment of clean energy in Connecticut. As demonstrated in Table 5, since FY 2012, staff has grown by 1.5 times (i.e., 14 FTEs), office space has increased by 3.8 times, and general administration has increased by 2.3 times since 2012.

TABLE 5. HUMAN AND FINANCIAL RESOURCES OF THE GREEN BANK FY 2012 vs FY 2022

	Human Resources		Financial Resources				
Fiscal Year	FTE	Office Space (ft2)	Total Expenses	General Admin & Program Admin	General Admin	SBC Revenue	RGGI Revenue
2012	29.1	3,626	\$32,510,209	\$4,532,520	\$1,387,854	\$27,025,088	\$2,052,748
2022	43	13,682	\$35,819,421	\$22,931,896	\$3,214,422	\$25,279,305	\$11,568,905
Multiple	1.5x	3.8x	1.1x	5.05x	2.3x	0.94x	5.6x

With a fifty percent increase in FTEs, the impact of the organization has grown significantly. Private Investment and clean energy deployment have increased over 10 and nearly 12-fold respectively as demonstrated in Table 6.

TABLE 6. GREEN BANK IMPACT FY 2012 vs FY 2022

	Impact					
Fiscal Year	Private Investment	Clean Energy Deployment (MW)	Expected Annual Generation (MWh)	Annual Saved / Produced (MMBtu)	Job Years Supported	Annual CO2 Emissions Avoided (tons ¹⁸)
2012	\$10,184,827	1.9	3,278	11,183	151	1,242
2022	\$106,831,949	23.9	50,950	96,688	1,246	27,037
Multiple	10.5x	12.6x	15.5x	8.7x	8.25x	21.8x

As a quasi-public organization, the Connecticut Green Bank strives to leverage its resources in attracting investment and in deploying clean energy as efficiently as possible. Reviewing the Green Bank’s human capital, real estate, and expenses versus the amount of private investment and clean energy deployed shows a marked increase during the organization’s first ten years of existence.

¹⁸ Tons in this ACFR is to mean short tons, not metric tons.

CONNECTICUT GREEN BANK
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TABLE 7. GREEN BANK DEPLOYMENT EFFICIENCY FY 2012 VS FY 2022

Impact Delivered to Human and Financial Resources Used						
Fiscal Year	Private Investment / FTE	Clean Energy Deployment / FTE	Private Investment / Total Expenses	Private Investment / General Admin	Private Investment / Office Space	Clean Energy Deployment / Office Space
	(\$/FTE)	(kW/FTE)			(\$/ft2)	(kW/ft2)
2012	\$349,994	100	0.31	7.34	\$2,809	0.8
2022	\$2,484,464	556	2.98	33.24	\$7,808	1.75
Multiple	7.1x	5.56x	9.62x	4.52x	2.8x	2.2x

Workforce and Diversity

In order to achieve its mission, the Connecticut Green Bank is primarily reliant upon its most valuable asset: its people. Program Staff design and implement products and programs that bring clean energy into the targeted markets in the state. Investment Staff are responsible for tapping and leveraging efficient sources of capital, and Support Staff handle marketing, legal, operations, and accounting functions. In Fiscal Year 2022, the Green Bank added four new positions and eliminated one position. There were five new members hired to fill open vacancies. The organization had a turnover rate of 13%.

The Green Bank realizes that part of having a strong team is ensuring that different perspectives are included in its workforce. To that end, the Green Bank monitors the diversity of its team and, per Connecticut regulations, informs the Governor’s office of this. Table 8 is the report that will be filed for the fiscal year ending June 30, 2022.

TABLE 8. GREEN BANK WORKFORCE ANALYSIS FY 2022

Category or class	Grand Total	Total Male	Total Female	White Male	White Female	Black Male	Black Female	Hispanic Male	Hispanic Female	Other Male	Other Female
ALL CATEGORIES											
Officials/Managers	8	6	2	3	1	1		2			1
Professionals	25	11	14	11	14					0	
Administrative - Clerical	10	1	9	1	4	0	2	0	2	0	1
TOTALS	44	19	25	15	19	1	2	2	2	1	2

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

4. Measures of Success

The Green Bank develops a comprehensive plan every two to three years, establishing performance targets associated with the organization’s overall objectives as well as individual program objectives. Results are reported in this document through Key Performance Indicators, which have various levels of detail. This section presents performance results across all the programs – that is, at the Green Bank portfolio level. At the highest level, management is interested in the number of “Closed” Projects, the amount of Capital Deployed, and the amount of Clean Energy Generated. Table 9 below highlights these indicators. It is, of course, important to recognize that these data show the summation of numbers of projects, deployed funds, and clean energy generated across all of the Green Bank’s programs, each of which has its own unique set of projects, funds, clean energy generation, and fossil fuel reduction. These are each presented in the later sections of this report, in the program specific presentations.

TABLE 9. GREEN BANK ACTUALS VS TARGETS BY FY CLOSED¹⁹

	Actual	Target	% of Target
Fiscal Year	Closed Projects		
2012	288	0	0%
2013	1,114	0	0%
2014	2,448	4,396	56%
2015	6,458	4,485	144%
2016	7,236	14,252	51%
2017	4,873	6,846	71%
2018	6,638	5,966	111%
2019	11,687	7,748	151%
2020	8,321	8,629	96%
2021	6,992	5,186	135%
2022	3,418	3,413	100%
Total	59,473	60,921	98%
	Capital Deployed²⁰		
2012	\$9,901,511	\$0	0%
2013	\$111,044,476	\$0	0%
2014	\$101,791,981	\$56,439,000	180%
2015	\$309,805,997	\$291,602,500	106%
2016	\$314,383,133	\$591,131,745	53%
2017	\$175,371,795	\$264,858,518	66%
2018	\$211,372,256	\$218,296,752	97%
2019	\$316,349,831	\$258,917,500	122%
2020	\$282,733,593	\$296,910,000	95%
2021	\$267,513,775	\$175,138,842	153%
2022	\$118,333,631	\$128,921,193	92%
Total	\$2,218,601,979	\$2,282,216,050	97%

¹⁹ Residential solar projects that receive financing also receive an incentive under the Residential Solar Incentive Program and Multifamily and Commercial Lease projects may also use C-PACE, so they are counted in each sector’s results. In this document, unless we are separating out a specific program, these projects have been removed from the total to avoid double counting.

²⁰ Capital Deployment is defined by the Green Bank as the total project cost of projects financed or incentivized by the organization except for the residential programs where capital deployment only includes the amount financed.

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

	Actual	Target	% of Target
	Clean Energy Capacity Installed (MW)		
2012	1.9	0	0%
2013	23.5	0	0%
2014	23.4	30	79%
2015	62.2	56	112%
2016	65.9	120	55%
2017	50.0	66	76%
2018	56.4	49	116%
2019	64.3	72	89%
2020	74.0	78	95%
2021	66.1	48	137%
2022	22.2	37	61%
Total	509.8	554	92%

The above metrics show that the Green Bank continues to deploy capital to new projects that lead to increased investment in and deployment of clean energy.

CONNECTICUT GREEN BANK

4. MEASURES OF SUCCESS

The following infographic illustrates the activity and impact of the Connecticut Green Bank from FY 2012 through FY 2022:



Societal Impact Report

**FY12
FY22**

Since the Connecticut Green Bank's inception through the bipartisan legislation in July 2011, we have mobilized more than **\$2.26 billion of investment** into the State's green economy. To do this, we used **\$322.4 million** in Green Bank dollars to attract **\$1.95 billion** in private investment, a leverage ratio of **\$7.00 for every \$1**. The impact of our deployment of renewable energy and energy efficiency to families, businesses, and our communities is shown in terms of economic development, environmental protection, equity, and energy (data from FY 2012 through FY 2022).

ECONOMIC DEVELOPMENT

JOBS The Green Bank has supported the creation of more than **26,720** direct, indirect, and induced job-years.



TAX REVENUES

The Green Bank's activities have helped generate an estimated **\$113.6 million** in state tax revenues.



\$55.3 million Individual income tax
\$29.2 million corporate taxes
\$29.1 million sales taxes

ENERGY

ENERGY BURDEN

The Green Bank has reduced the energy costs on families, businesses, and our communities.



DEPLOYMENT

The Green Bank has accelerated the growth of renewable energy to more than **509 MW** and lifetime savings of over **65.6 million MMBTUs** through energy efficiency projects.



ENVIRONMENTAL PROTECTION

POLLUTION The Green Bank has helped reduce air emissions that cause climate change and worsen public health, including **9.6 million pounds** of SO_x and **11.1 million pounds** of NO_x lifetime.



10.4 MILLION tons of CO₂ : **EQUALS**



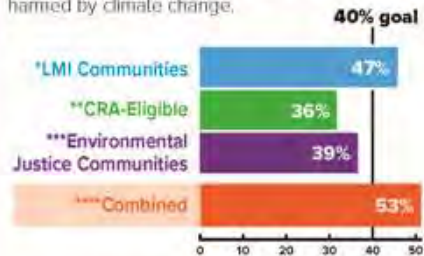
PUBLIC HEALTH The Green Bank has improved the lives of families, helping them avoid sick days, hospital visits, and even death.



\$317.1 – \$717.2 million of lifetime public health value created

EQUITY

INVESTING in vulnerable communities, The Green Bank has set **goals to reach 40% investment** in communities that may be disproportionately harmed by climate change.



*LMI Communities – census tracts where households are at or below 100% Area Median Income.
**Community Reinvestment Act (CRA) Eligible – households at or below 80% of Area Median Income and all projects in programs designed to assist LMI customers.
***Environmental Justice Community means a municipality that has been designated as distressed by Connecticut Department of Economic and Community Development (DECED) or a census block group for which 70% or more of the population have an income below 200% of the federal poverty level.
****Combined Vulnerable Communities include LMI, CRA and EJC.



Winner of the 2017 Harvard Kennedy School Ash Center Award for Innovation in American Government, the Connecticut Green Bank is the nation's first green bank.

Learn more by visiting ctgreenbank.com/strategy-impact/impact

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CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

Activity

The Connecticut Green Bank tracks projects through three phases as they move through the pipeline from application through implementation – Approved, Closed, and Completed. “Approved” signifies that the appropriate authority within the Connecticut Green Bank, whether President & CEO, Deployment Committee, or Board of Directors, has approved the agency’s investment in the project per the Comprehensive Plan and Budget. “Closed” indicates all financial and legal documents have been executed and any additional funding has been secured. “Completed” indicates the project has closed, all construction and installation are completed, and the project is operational. The full forward-looking estimates of the energy, economic, equity, and environmental benefits from these projects begin to be fully accounted and reported after they close. Table 10 below presents annual project activity by these three phases.

TABLE 10. GREEN BANK PROJECT ACTIVITY BY FY CLOSED

Fiscal Year	Approved	Closed	Completed
2012	739	288	18
2013	1,244	1,114	759
2014	2,819	2,448	1,207
2015	7,404	6,458	3,936
2016	8,031	7,236	9,526
2017	5,829	4,873	5,430
2018	7,602	6,638	5,926
2019	12,572	11,687	7,257
2020	9,044	8,321	7,889
2021	7,858	6,992	6,270
2022	3,712	3,418	4,262
Total	66,854	59,473	52,480

Summary by fields such as “Number of projects” does not capture the extent of the organization’s activities in a year as different projects have different sizes. Further demonstration of the organization’s reach can be seen in the number of multifamily units impacted by closed projects each year in Table 11.

TABLE 11. GREEN BANK NUMBER OF MULTIFAMILY HOUSING UNITS IMPACTED BY FY CLOSED

Fiscal Year	Affordable	Market Rate	Total
2012	0	0	0
2013	0	0	0
2014	120	0	120
2015	326	82	408
2016	1,442	191	1,633
2017	1,300	0	1,300
2018	533	0	533
2019	1,519	132	1,651
2020	698	103	801
2021	227	0	227
2022	102	82	184
Total	6,267	590	6,857

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

Capital Deployed

Clean Energy Investment

The Connecticut Green Bank’s intent, stated in the Comprehensive Plan, is to use public funds to attract multiples of private investment into Connecticut’s green energy economy, to decrease reliance on public funds over time, and expand the scale of clean energy investments in the state. Table 12, through Table 16 show activity to date on this subject.

TABLE 12. GREEN BANK CLEAN ENERGY INVESTMENT BY SOURCE - PUBLIC AND PRIVATE BY FY CLOSED

Fiscal Year	CGB Investment	Private Investment	Total Investment²¹
2012	\$3,401,642	\$6,499,869	\$9,901,511
2013	\$18,460,123	\$92,681,093	\$111,141,216
2014	\$31,846,075	\$75,264,439	\$107,110,514
2015	\$58,708,735	\$261,878,720	\$320,587,455
2016	\$38,045,595	\$282,346,363	\$320,391,957
2017	\$30,095,447	\$150,392,965	\$180,488,411
2018	\$28,480,168	\$193,270,935	\$221,751,103
2019	\$32,538,831	\$287,073,855	\$319,612,686
2020	\$33,055,947	\$253,121,685	\$286,177,632
2021	\$34,529,656	\$236,193,802	\$270,723,458
2022	\$13,280,982	\$106,831,949	\$120,112,932
Total	\$322,443,201	\$1,945,555,674	\$2,267,998,874

Table 12 shows the average total investment of public and private funds per project, by fiscal year, and in total. In reviewing the results from year to year it is important to note that the mix, size, and financial requirements of projects differ significantly across the program portfolio offered by the Green Bank.

²¹ Total Investment is defined by the Green Bank as the total project cost of projects financed or incentivized by the organization and includes closing costs, capitalized interest, and credit enhancements

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

TABLE 13. GREEN BANK ACTUALS BY PROGRAM BY FY CLOSED

Closed Projects												
Program Name	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
AD					1							1
Campus Efficiency Now			2									2
CEBS		1	1			1						3
CHP		2	1	2		1						6
Commercial Lease				9	17	20	19	12	23	32	12	144
Comprehensive Energy Strategy				1		1		1	2			5
Cozy Home Loan			1	1								2
CPACE		3	23	42	43	28	56	30	41	32	20	318
CPACE backed Commercial Lease				7	10	10	10	7	3	1	3	51
Grid		1		1								2
Low Income - PosiGen				4	333	661	642	847	759	970	330	4,546
Multifamily Pre-Dev					4	4	7	5	4			24
Multifamily Term			1	7	27	15	12	17	13	5	3	100
Residential Solar	288	1,109	2,384	6,381	6,785	4,445	5,150	6,468	6,849	5,206	1,592	46,657
SBEA								4,339	617	438	652	6,046
Smart-E		3	137	269	221	523	1,747	828	721	958	909	6,316
Solar Lease			107	610	472							1,189
Solar Loan		3	140	136								279
Grand Total	288	1,122	2,797	7,470	7,913	5,709	7,643	12,554	9,032	7,642	3,521	65,691

Total Investment												
Program Name	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
AD					\$10,500,000							\$10,500,000
Campus Efficiency Now			\$751,229									\$751,229
CEBS		\$250,000	\$535,190			\$1,648,000						\$2,433,190
CHP		\$3,189,000	\$6,300,000	\$642,578		\$3,401,392						\$13,532,970
Commercial Lease				\$6,611,608	\$8,351,179	\$20,061,900	\$14,270,306	\$5,903,561	\$4,968,573	\$23,457,471	\$3,527,276	\$87,151,873
Comprehensive Energy Strategy				\$34,000,000		\$4,538,212		\$6,503,800	\$20,738,702			\$65,780,714
Cozy Home Loan			\$8,575	\$10,698								\$19,273

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Total Investment												
Program Name	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
CPACE		\$1,512,144	\$21,785,167	\$29,445,393	\$29,293,679	\$10,257,896	\$22,807,349	\$18,081,439	\$24,778,562	\$40,665,089	\$22,506,884	\$221,133,604
CPACE backed Commercial Lease				\$3,775,428	\$6,742,300	\$5,026,267	\$2,831,025	\$2,231,942	\$905,682	\$1,684,519	\$1,655,323	\$24,852,485
Grid		\$70,800,000		\$22,500,000								\$93,300,000
Low Income - PosiGen				\$109,380	\$9,572,692	\$18,121,147	\$17,905,647	\$24,876,234	\$20,076,595	\$28,099,263	\$9,379,672	\$128,140,629
Multifamily Pre-Dev					\$102,150	\$124,149	\$743,806	\$263,250	\$998,036			\$2,231,392
Multifamily Term			\$420,000	\$6,282,061	\$33,903,565	\$10,770,967	\$8,749,441	\$36,529,687	\$6,807,662	\$4,195,139	\$2,060,000	\$109,718,523
Residential Solar	\$9,901,511	\$35,426,043	\$73,933,113	\$214,056,259	\$217,530,669	\$120,218,237	\$147,111,739	\$195,767,752	\$205,174,273	\$166,366,312	\$57,985,080	\$1,443,470,988
SBEA								\$47,681,205	\$10,912,879	\$8,778,001	\$11,892,905	\$79,264,990
Smart-E		\$71,924	\$2,420,079	\$7,427,583	\$6,121,602	\$10,779,285	\$34,158,262	\$11,307,273	\$11,308,492	\$16,249,542	\$16,488,177	\$116,332,219
Solar Lease			\$4,324,454	\$23,672,593	\$18,325,441							\$46,322,488
Solar Loan		\$91,924	\$4,461,833	\$4,505,386								\$9,059,143
Grand Total	\$9,901,511	\$111,341,034	\$114,939,640	\$353,038,968	\$340,443,277	\$204,947,453	\$248,577,576	\$349,146,142	\$306,669,456	\$289,495,336	\$125,495,317	\$2,453,995,709

MW												
Program Name	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
AD					1.0							1.0
Campus Efficiency Now			0.0									0.0
CEBS		0.0	0.1			0.0						0.1
CHP		0.7	3.0	0.1		0.8						4.6
Commercial Lease				2.2	2.8	9.8	6.8	2.7	2.0	13.8	1.7	41.8
Comprehensive Energy Strategy				0.0		0.2		1.0	7.7			8.9
Cozy Home Loan			0.0	0.0								0.0
CPACE		0.1	3.6	6.0	3.7	2.0	6.0	4.2	4.8	2.5	2.5	35.6
CPACE backed Commercial Lease				1.3	2.6	1.9	1.3	1.0	0.4	0.0	0.8	9.2
Grid		14.8		5.0								19.8
Low Income - PosiGen				0.0	2.2	4.2	4.3	5.9	4.8	6.7	2.2	30.3
Multifamily Pre-Dev												
Multifamily Term				1.0	1.3	2.3	0.1	1.0	1.1	0.0	0.9	7.8
Residential Solar	1.9	7.9	17.1	48.6	53.2	34.6	41.8	55.0	57.7	47.1	15.5	380.4

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MW												
Program Name	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
SBEA								0.0	0.0	0.0	0.0	0.0
Smart-E		0.0	0.3	1.3	1.0	1.3	3.9	0.9	0.9	0.8	0.2	10.7
Solar Lease			0.8	4.9	3.8							9.6
Solar Loan		0.0	1.1	1.1								2.2
Grand Total	1.9	23.5	26.1	71.6	71.7	57.1	64.2	71.7	79.4	71.0	23.9	562.0

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TABLE 14. GREEN BANK CLEAN ENERGY PROJECTS - AVERAGE PUBLIC AND PRIVATE INVESTMENTS BY FY CLOSED

Fiscal Year	Average Investment
2012	\$34,380
2013	\$99,768
2014	\$43,754
2015	\$49,642
2016	\$44,277
2017	\$37,038
2018	\$33,406
2019	\$43,485
2020	\$37,132
2021	\$41,288
2022	\$43,362
Total	\$46,139

Leverage Ratio

The table below shows in ratio form the extent to which public monies are driving private investment into the Green Bank’s programs and the clean energy economy. The Green Bank’s “leverage ratio,” as it is commonly referenced, is calculated by dividing the total monies available in each period – here the Green Bank’s fiscal year periods – by the amount of public investment. Table 15 presents these ratios by fiscal year and the Green Bank’s program categories and Table 16 presents these ratios by program segments. The increases in leverage over time illustrate the success of the Green Bank model at crowding in private capital and making limited public funds go further.

TABLE 15. GREEN BANK SECTOR LEVERAGE RATIOS BY FY CLOSED

Fiscal Year	Commercial	Infrastructure	Residential	Strategic	Total
2012	3.8	2.9	0	0	2.9
2013	2.2	3.2	24.8	12.2	6.0
2014	2.3	3.9	9.9	0	3.4
2015	4.5	6.5	4.0	17.5	5.5
2016	3.8	11.0	9.7	0	8.4
2017	4.8	10.3	6.1	1.2	6.0
2018	6.3	11.7	8.1	0	7.8
2019	5.5	12.9	13.1	5.4	9.8
2020	4.3	14.0	9.5	3.1	8.7
2021	5.0	13.7	9.6	0	7.8
2022	4.1	15.4	7.7	0	9.0
Total	3.8	9.1	8.0	7.6	7.0

TABLE 16. GREEN BANK PROGRAM LEVERAGE RATIOS BY FY CLOSED

Fiscal Year	Financing	Incentive	Total
2012	0	2.9	2.9
2013	12.0	3.1	6.0
2014	2.9	3.9	3.4
2015	4.3	6.6	5.5
2016	6.5	10.7	8.4
2017	3.4	8.8	6.0

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Fiscal Year	Financing	Incentive	Total
2018	5.8	9.9	7.8
2019	8.2	12.0	9.8
2020	4.8	12.8	8.7
2021	4.5	12.4	7.8
2022	4.2	15.5	9.0
Total	5.2	8.9	7.0

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Clean Energy Produced and Avoided Energy Use

The data below present the clean energy outputs of the projects supported by the Green Bank. Data are presented as electric capacity (MW), electricity production (MWh), and Energy Saved or Produced (MMBtu) – see Table 17.

TABLE 17. GREEN BANK INSTALLED CAPACITY, ESTIMATED GENERATION AND ENERGY SAVED AND/OR PRODUCED BY FY CLOSED²²

Fiscal Year	MW	Estimated Generation (MWh)			Energy Saved/Produced (MMBtu) ²³		
		Annual	Lifetime ²⁴	Lifetime Clean Energy Produced (kWh) / Green Bank Investment (\$)	Annual	Lifetime	Lifetime Combined Energy Generated & Saved (MMBtu) / Green Bank Investment (\$)
2012	1.9	2,210	55,238	16.2	7,539	188,473	55,407
2013	23.5	131,562	1,479,603	80.2	463,525	5,273,193	285,653
2014	23.4	51,592	995,539	31.3	247,824	4,549,412	142,856
2015	62.2	209,540	3,424,349	58.3	697,265	11,202,755	190,819
2016	65.9	91,676	2,107,571	55.4	295,822	6,760,529	177,695
2017	50.0	71,572	1,669,161	55.5	523,166	9,440,204	313,675
2018	56.4	77,736	1,866,572	65.5	258,943	5,966,320	209,490
2019	64.3	209,326	3,580,643	110.0	274,103	6,397,359	196,607
2020	74.0	163,304	2,876,888	87.0	310,954	6,922,598	209,421
2021	66.1	96,329	2,214,786	64.1	287,828	6,717,038	194,530
2022	22.2	50,950	1,019,378	76.8	96,687	2,215,183	166,794
Total	509.8	1,155,796	21,289,727	66.0	3,463,657	65,633,065	203,549

Clean Energy Technology Deployment

The Connecticut Green Bank takes a technology-agnostic approach to its financing products, and therefore will consider any commercially available technology that meets eligibility guidelines.

²² Residential solar projects that receive financing also receive an incentive under the Residential Solar Incentive Program and Multifamily and Commercial Lease projects may also use C-PACE, so they are counted in each sector's results. These projects have been removed from the total to avoid double counting.

²³ The MMBTU's include those forecast to be saved from green bank energy efficiency projects and the forecast MWh from generation projects converted to MMBTU's.

²⁴ The lifetime numbers are based on the aggregation of projects' impact for one year multiplied by the useful life of the technology for each project

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Table 18 presents the number of projects by technology and Table 19 by project type by FY closed.

Clean energy means:

- solar photovoltaic energy
- solar thermal
- geothermal energy
- wind
- ocean thermal energy
- wave or tidal energy, fuel cells
- landfill gas
- hydropower that meets the low-impact standards of the Low-Impact Hydropower Institute
- hydrogen production and hydrogen conversion technologies
- low emission advanced biomass conversion technologies
- alternative fuels used for electricity generation including:
 - ethanol
 - biodiesel or other fuel produced in Connecticut and derived from agricultural produce
 - food waste or waste vegetable oil, provided the Commissioner of Energy and Environmental Protection determines that such fuels provide net reductions in greenhouse gas emissions and fossil fuel consumption
 - usable electricity from combined heat and power systems with waste heat recovery systems
- thermal storage systems
- other energy resources and emerging technologies which have significant potential for commercialization, and which do not involve the combustion of coal, petroleum or petroleum products, municipal solid waste, or nuclear fission
- financing of energy efficiency projects, projects that seek to deploy electric, electric hybrid, natural gas or alternative fuel vehicles and associated infrastructure, any related storage, distribution, manufacturing technologies or facilities and any Class I renewable energy source, as defined in section 16-1.²⁵

²⁵ https://www.cga.ct.gov/current/pub/chap_277.htm#sec_16-1, updated by Connecticut Public Act 11-80

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TABLE 18. GREEN BANK PROJECTS BY TECHNOLOGY²⁶ BY FY CLOSED²⁷

Fiscal Year	AD	Biomass	CHP	EE ²⁸	Fuel Cell	Geothermal	Hydro	PV	Solar Thermal	Wind	Other/None	Total
# Projects												
2012	0	0	0	0	0	0	0	288	0	0	0	288
2013	0	0	2	4	1	0	0	1,107	0	0	0	1,114
2014	0	0	1	104	0	2	0	2,341	0	0	0	2,448
2015	0	1	4	135	0	2	1	6,314	0	1	0	6,458
2016	1	0	1	126	0	8	0	7,097	1	0	2	7,236
2017	0	0	1	385	0	7	1	4,472	0	0	7	4,873
2018	0	0	0	1,351	0	5	0	5,261	0	0	21	6,638
2019	0	0	2	5,062	0	10	1	6,596	0	0	16	11,687
2020	1	0	0	1,236	2	14	0	7,059	0	0	9	8,321
2021	0	0	0	1,300	0	23	0	5,658	0	0	11	6,992
2022	0	0	0	1,509	0	24	1	1,872	0	0	12	3,418
Total	2	1	11	11,212	3	95	4	48,065	1	1	78	59,473
MW												
2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	1.9
2013	0.0	0.0	0.7	0.0	14.8	0.0	0.0	8.0	0.0	0.0	0.0	23.5
2014	0.0	0.0	3.0	0.0	0.0	0.0	0.0	20.4	0.0	0.0	0.0	23.4
2015	0.0	0.6	0.3	0.0	0.0	0.0	0.9	55.4	0.0	5.0	0.0	62.2
2016	1.0	0.0	0.0	0.0	0.0	0.0	0.0	64.8	0.0	0.0	0.0	65.9
2017	0.0	0.0	0.8	0.0	0.0	0.0	0.2	49.0	0.0	0.0	0.0	50.0
2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.4	0.0	0.0	0.0	56.4

²⁶ Commercial and Residential projects can be a combination of RE and EE measures. Therefore, the data presented includes the EE generation for those projects, but it is assigned to the applicable RE technology.

²⁷ 98% of RSIP projects are accompanied by energy efficiency measures. These are typically identified during the required energy assessment required by the program. See the Residential Solar Investment Program case study for more information.

²⁸ Every RSIP project has HES IE or HES equivalent. Solar for All also include deeper EE measures (see case study).

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Fiscal Year	AD	Biomass	CHP	EE ²⁸	Fuel Cell	Geothermal	Hydro	PV	Solar Thermal	Wind	Other/None	Total
2019	0.0	0.0	0.6	0.0	0.0	0.0	1.0	62.8	0.0	0.0	0.0	64.3
2020	0.3	0.0	0.0	0.0	7.8	0.0	0.0	65.8	0.0	0.0	0.0	74.0
2021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.1	0.0	0.0	0.0	66.1
2022	0.0	0.0	0.0	0.0	0.0	0.0	0.9	21.2	0.0	0.0	0.0	22.2
Total	1.3	0.6	5.3	0.0	22.6	0.0	3.0	471.8	0.0	5.0	0.0	509.8
Expected Lifetime Savings or Generation (MWh)												
2012	0	0	0	0	0	0	0	55,238	0	0	0	55,238
2013	0	0	81,008	4,862	1,166,832	0	0	226,901	0	0	0	1,479,603
2014	0	0	354,780	59,724	0	61	0	580,974	0	0	0	995,539
2015	0	0	31,930	1,591,514	0	61	96,579	1,586,005	0	118,260	0	3,424,349
2016	106,171	0	0	114,448	0	712	0	1,885,585	655	0	0	2,107,571
2017	0	0	94,017	87,951	0	584	20,711	1,465,202	0	0	697	1,669,161
2018	0	0	0	174,748	0	236	0	1,690,678	0	0	910	1,866,572
2019	0	0	65,197	1,527,339	0	512	107,063	1,880,532	0	0	0	3,580,643
2020	31,536	0	0	269,684	618,106	574	0	1,956,988	0	0	0	2,876,888
2021	0	0	0	226,317	0	949	0	1,987,519	0	0	0	2,214,786
2022	0	0	0	282,408	0	982	96,579	639,410	0	0	0	1,019,378
Total	137,707	0	626,932	4,338,994	1,784,938	4,669	320,932	13,955,033	655	118,260	1,607	21,289,727

Solar PV deployment makes up the largest portion of Connecticut Green Bank's projects by technology: about 81% of all clean energy projects deployed are from solar PV. When comparing deployment to clean energy production, solar PV produces the most energy (66% of all clean energy production), fuel cells also contribute a large proportion given the efficiency of the technology (8% of all clean energy production), and energy efficiency is saving energy (20% from energy savings). The Green Bank also supports additional deployment of energy efficiency not captured in the above tables by requiring an energy assessment for all residential solar PV projects incentivized through the Residential Solar Investment Program (RSIP). RSIP-wide, energy assessments have been performed for an estimated 98% of completed RSIP projects, of which approximately 87% were performed through the utility-administered Home Energy Solutions (HES) program or via the DOE Home Energy Score (DOE HES) overall. If the Green Bank were to include residential energy assessments (or audits) in the number of projects supported through its residential solar PV program, then nearly 55% of all projects are energy efficiency.

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TABLE 19. GREEN BANK PROJECT TYPES BY FY CLOSED²⁹

Fiscal Year	EE³⁰	RE	RE/EE	Other/None	Total
# Projects					
2012	0	288	0	0	288
2013	4	1,109	1	0	1,114
2014	104	2,337	7	0	2,448
2015	135	6,246	77	0	6,458
2016	125	6,876	233	2	7,236
2017	385	3,978	503	7	4,873
2018	1,348	4,739	530	21	6,638
2019	5,061	5,952	658	16	11,687
2020	1,236	6,358	721	6	8,321
2021	1,300	4,790	891	11	6,992
2022	1,509	1,577	320	12	3,418
Total	11,207	44,250	3,941	75	59,473
MW					
2012	0.0	1.9	0.0	0.0	1.9
2013	0.0	23.4	0.1	0.0	23.5
2014	0.0	22.8	0.6	0.0	23.4
2015	0.0	60.4	1.8	0.0	62.2
2016	0.0	63.7	2.2	0.0	65.9
2017	0.0	46.1	3.9	0.0	50.0
2018	0.0	51.2	5.2	0.0	56.4
2019	0.0	59.2	5.1	0.0	64.3
2020	0.0	68.5	5.5	0.0	74.0
2021	0.0	59.4	6.6	0.0	66.1
2022	0.0	19.1	3.0	0.0	22.2
Total	0.0	475.8	33.9	0.0	509.8
Expected Lifetime Savings or Generation (MWh)					
2012	0	55,238	0	0	55,238
2013	4,862	1,471,866	2,875	0	1,479,603
2014	59,724	918,177	17,638	0	995,539
2015	1,591,514	1,779,345	53,490	0	3,424,349
2016	114,448	1,907,776	85,347	0	2,107,571
2017	87,951	1,423,725	156,788	697	1,669,161
2018	174,425	1,487,512	203,725	910	1,866,572
2019	1,527,339	1,837,398	215,906	0	3,580,643

²⁹ Note that projects that are part of the Residential Solar Investment Program have an EE component not reflected in this table.

³⁰ Every RSIP project has HES IE or HES equivalent. Solar for All also include deeper EE measures (see case study).

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Fiscal Year	EE ³⁰	RE	RE/EE	Other/None	Total
2020	269,684	2,373,700	233,503	0	2,876,888
2021	226,317	1,703,290	285,178	0	2,214,786
2022	282,408	545,702	191,268	0	1,019,378
Total	4,338,671	15,503,730	1,445,719	1,607	21,289,727

The Green Bank Model
Assets – Current and Non-Current

The Connecticut Green Bank’s successful shift to a financing model from one formerly driven by grants and subsidies is evidenced by a net positive change in assets since its inception. The growth of the Green Bank’s financing programs has led to a steady increase in non-current assets over time as more and more loans and leases are closed. Since 2013, the Green Bank’s balance sheet has grown by a factor of 2.8x representing the value of our investments.

Table 20. Current and Non-Current Assets

	Year Ended June 30,									
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Current Assets										
Cash and cash equivalents	\$ 52,277,220	\$ 42,861,047	\$ 8,156,093	\$ 18,947,214	\$ 19,830,102	\$ 37,148,283	\$ 48,072,061	\$ 39,893,649	\$ 71,411,034	\$ 68,105,014
Receivables:										
Accounts	4,210,087	3,892,590	3,250,767	1,774,989	1,017,356	403,727	1,430,622	35,155	4,547,770	1,795,314
Program loans	9,547,825	9,038,575	4,396,615	3,756,932	2,138,512	1,910,048	1,378,242	10,264,825	652,447	--
Utility remittance	2,041,786	2,044,619	2,214,775	1,893,965	2,377,065	2,507,659	2,670,634	2,518,850	3,402,401	2,604,826
Solar lease notes	1,016,267	990,505	967,530	942,056	908,541	869,831	845,479	803,573	766,086	704,032
SBEA promissory notes	1,129,900	1,185,782	1,549,492	1,709,491	--	--	--	--	--	--
Leases receivable	987,476	1,058,634	--	--	--	--	--	--	--	--
Interest	1,162,737	1,171,584	--	--	--	--	--	--	--	--
Other	2,085,934	111,123	2,298,036	3,004,781	1,642,417	771,083	430,002	313,228	303,147	145,521
Prepaid expenses and other assets	1,554,577	2,264,815	1,925,122	1,846,104	1,847,848	10,012,025	4,245,806	1,030,251	619,639	520,814
Contractor loans	--	--	--	--	--	--	2,272,906	3,112,663	--	--
Prepaid warranty management	261,131	259,148	259,148	259,148	259,148	--	--	--	--	--
Total Current Assets	76,274,940	64,878,422	25,017,578	34,134,680	30,020,989	53,622,656	61,345,752	57,972,194	81,702,524	73,875,521
Noncurrent Assets										
Restricted cash and cash equivalents	21,645,395	21,900,295	14,909,508	16,667,797	24,368,185	22,063,406	9,749,983	8,799,005	9,513,715	9,536,656
Investments	912,217	1,231,792	3,031,135	3,288,657	3,328,531	3,328,531	4,492,282	2,600,000	2,600,000	1,000,000
Receivables										
Program loans	82,287,432	82,898,451	81,285,206	64,800,014	43,525,021	40,296,113	31,889,275	30,253,119	12,750,457	3,788,094
Solar lease notes	1,987,394	2,969,206	3,979,704	5,361,206	6,358,184	7,242,822	8,162,635	9,015,437	9,778,315	10,536,136
Renewable energy credits	229,019	348,716	407,360	468,736	547,556	654,767	812,770	933,054	1,069,390	1,217,491
SBEA promissory notes	1,275,487	690,752	968,608	1,799,007	--	--	--	--	--	--
Leases receivable	16,281,320	17,049,036	--	--	--	--	--	--	--	--
Other	4,122,609	3,163,239	--	--	--	--	--	--	--	--
Prepaid warranty management, less current portion	3,221,310	3,466,587	3,725,735	3,984,883	4,234,756	--	--	--	--	--
Fair Value of interest rate swap	93,107	--	--	--	171,478	--	--	--	--	--
Capital assets, net of depreciation and amortization	76,164,896	79,694,398	79,971,996	80,523,040	73,417,221	61,510,207	58,114,914	26,971,087	3,074,337	362,505
Asset retirement obligation, net	--	--	--	--	--	2,535,104	2,261,472	1,029,196	--	--
Total noncurrent assets	208,220,186	213,412,472	188,279,252	176,893,340	155,950,932	137,630,950	115,483,331	79,600,898	38,786,214	26,440,882
Total Assets	\$ 284,495,126	\$ 278,290,894	\$ 213,296,830	\$ 211,028,020	\$ 185,971,921	\$ 191,253,606	\$ 176,829,083	\$ 137,573,092	\$ 120,488,738	\$ 100,316,403

Ratio of Public Funds Invested

As highlighted below in Figure 1 and Figure 2, the Connecticut Green Bank has moved toward this model by increasing the overall ratio of financing to subsidies. In addition, it should be noted that funds used for subsidies through the RSIP (including administrative and financing costs) are recovered through the sale of SHRECs to the electric distribution companies (i.e., Avangrid and Eversource Energy) through 15-year Master Purchase Agreements (“MPA”). The declining incentive block design of the RSIP means that the subsidies continue to decrease at an increasing rate and the private capital sourced increases at an increasing rate. This trend has developed even as total investment in clean energy has increased to over \$2.0 billion in total from 2012 through 2022. In this way the Connecticut Green Bank has been able to do more at a faster pace while managing ratepayer resources more efficiently.

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FIGURE 1. GREEN BANK CAPITAL DEPLOYMENT BY FY CLOSED

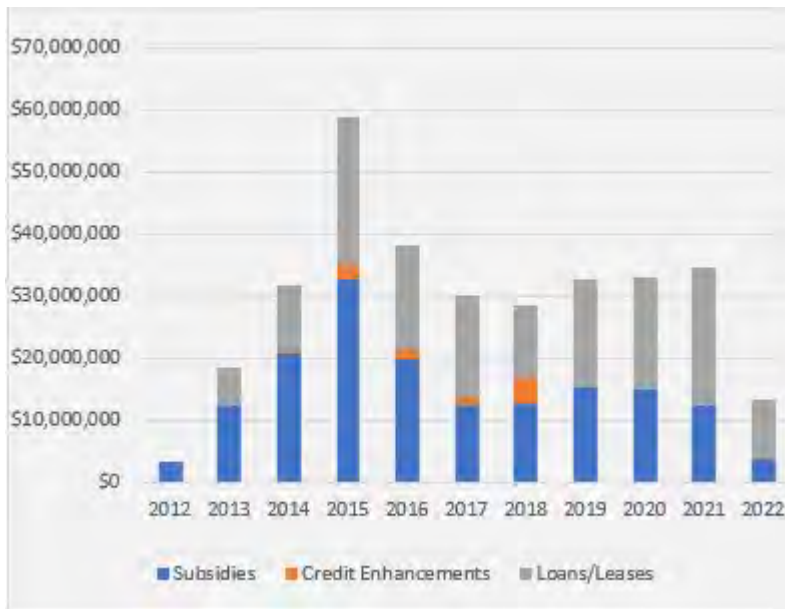
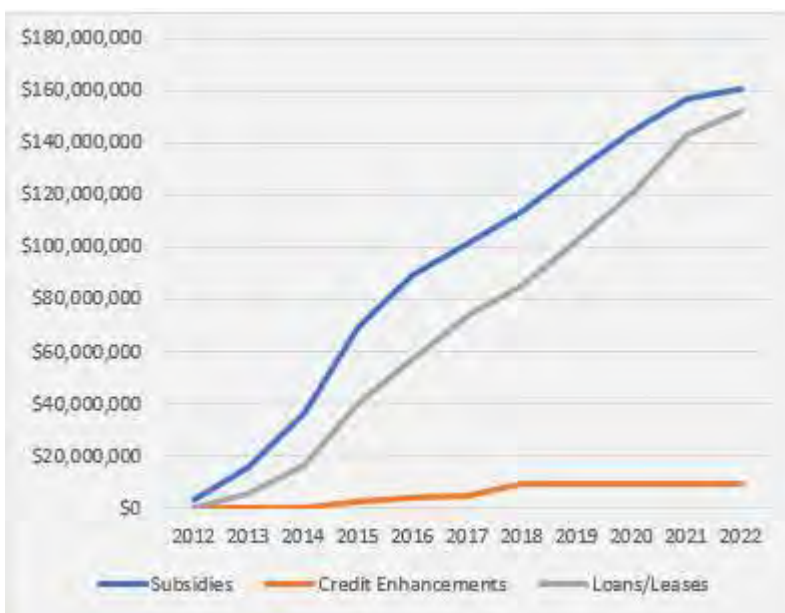


FIGURE 2. CUMULATIVE GREEN BANK FUNDS INVESTED BY TYPE BY FY CLOSED



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TABLE 21. GREEN BANK RATIO OF CAPITAL INVESTED AS SUBSIDIES, CREDIT ENHANCEMENTS, AND LOANS AND LEASES BY FY CLOSED³¹

Fiscal Year	Subsidies (Grants & Incentives)	% Subsidies	Credit Enhancements (LLR & IRB)	% Credit Enhancements	Loans and Leases (includes sell downs)	% Loans and Leases	Total
2012	\$3,401,642	100%	\$0	0%	\$0	0%	\$3,401,642
2013	\$12,443,213	67%	\$6,609	0%	\$6,010,302	33%	\$18,460,123
2014	\$20,637,392	65%	\$516,623	2%	\$10,692,059	34%	\$31,846,075
2015	\$32,842,367	56%	\$1,961,111	3%	\$23,905,257	41%	\$58,708,735
2016	\$19,850,676	52%	\$1,518,620	4%	\$16,676,298	44%	\$38,045,595
2017	\$12,385,377	41%	\$1,237,754	4%	\$16,472,316	55%	\$30,095,447
2018	\$12,600,658	44%	\$4,308,452	15%	\$11,571,058	41%	\$28,480,168
2019	\$15,275,585	47%	\$30,779	0%	\$17,232,467	53%	\$32,538,831
2020	\$14,909,468	45%	\$0	0%	\$18,146,479	55%	\$33,055,947
2021	\$12,303,121	36%	\$0	0%	\$22,226,535	64%	\$34,529,656
2022	\$3,670,893	28%	\$0	0%	\$9,610,090	72%	\$13,280,982
Total	\$160,320,391	50%	\$9,579,948	3%	\$152,542,861	47%	\$322,443,201

Creation of Private Investment Opportunities

As stated above, the Connecticut Green Bank’s approach to leveraging limited public resources has created new opportunities for the private market investment. These financial innovations have broad impact in Connecticut and beyond. In FY 2022, the Green Bank, was catalyzed upward of \$22.2 million dollars of clean energy financings. These include:

Smart-E

The Smart-E residential loan program is a financing program developed in partnership with Energize CT and local lenders that uses a credit enhancement (i.e., \$2 million loan loss reserve) to stimulate the market for residential energy efficiency (including high efficiency heating and cooling equipment and insulation), solar PV, energy storage, and health and safety loans in Connecticut. Through the product, the Connecticut Green Bank lowers the cost of capital for Connecticut residential customers seeking to clean energy upgrades and reduces the loan performance risks to lenders. The loan loss reserve is used to encourage lenders to offer below market interest rates and longer maturities for unsecured loans, mitigates their losses, and encourages customers to undertake measures that would prove uneconomical at higher interest rates.

CGB CPACE Portfolio

CGB funded \$3.2MM worth of new CPACE loans for its portfolio.

State Solar PPA Debt

The Green Bank provided \$1.5MM worth of debt to PPA State to fund supporting state solar Power Purchase Agreement projects.

³¹ This table excludes the loan loss reserves for the Smart-E loan due to its rolling nature. The loan loss reserves in this table are calculated at the close of the loan and are not updated to reflect paid down principal.

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Municipal Solar PPA Debt

The Green Bank provided \$740K worth of debt to PPA State to fund supporting municipal solar Power Purchase Agreement projects.

Other PPA Development.

The Green Bank advanced \$300,000 in debt to Inclusive Solar Manager CT I for two commercial solar PPA projects. These projects are for solar at a school and another located at a housing authority. In addition, the Green Bank purchased commercial PPA projects for \$96k to support PPA growth in the state. Further, the Green Bank expanded the commercial solar lending facility with Skyview Ventures in CT by deploying a further \$1M against 6 PPA projects at two schools, a senior center and assisted facility.

SBEA/BEA

The Green Bank purchased three tranches of loans at discount for \$819K which will earn the CGB \$46K in effective present value interest. The overall facility with Amalgamated bank that supports these purchases and that has successfully recapitalized the SBEA program was renewed.

Posigen Loan Restructure

The Green Bank restructured a loan of \$6.9MM with Posigen that supported the organization's LMI Solar program. This restructuring of our PosiGen facility by creating a Junior facility with PosiGen allows for liquidity to Posigen.

Budderfly Loan facility

The Green Bank funded a \$5MM loan facility with Budderfly to help finance energy efficiency improvements for quick serve restaurants and other small businesses. This investment came to the Green Bank through our open RFP for capital solutions.

Societal Benefits – E⁴ Framework

Societal Benefits and the Evaluation Framework

One of the Connecticut Green Bank's evaluation activities is intended to understand how the increase in investment and deployment of clean energy supported by the Green Bank results in benefits to society, including economy, environment, energy, and equity (also known as the E⁴). Working with internal and external subject matter experts, the Connecticut Green Bank has established an evaluation framework to guide the assessment, monitoring and reporting of the program impacts and processes, including, but not limited to economy, environmental, energy, and equity benefits arising from clean energy investment. The evaluation framework can be found [here](#)³².

³² CGB Evaluation Framework: https://www.ctgreenbank.com/wp-content/uploads/2018/03/CGB_DECD_Jobs-Study_Fact-Sheet.pdf

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Societal Benefits: Economy – Jobs

The Connecticut Green Bank stimulates economic activity in the state through its program related and strategic lending and investing. This economic activity can be measured by job creation. The Green Bank, in conjunction with the Connecticut Department of Economic and Community Development commissioned a study by Navigant Consulting in 2010 to quantify those jobs. This study was updated in 2016 and in 2018 and is the basis for how the Green Bank measures its impact on job creation. This study and calculator were reviewed by the Connecticut Department of Economic and Community Development which deemed them a reasonable estimation and an appropriate tool for assessing this impact. For more information on this study and the methodology, click [here](#)³³. An overview of our Jobs methodology can be found [here](#)³⁴. Essentially, investments into clean energy can be translated into manufacturing, engineering, installation, and project management jobs in the clean energy sector.

TABLE 22. GREEN BANK JOB YEARS SUPPORTED BY FY CLOSED ³⁵

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	58	93	151
2013	579	1,161	1,740
2014	596	952	1,549
2015	1,720	2,660	4,380
2016	1,949	3,101	5,050
2017	870	1,193	2,063
2018	955	1,244	2,199
2019	1,399	1,832	3,231
2020	1,103	1,455	2,558
2021	1,110	1,444	2,554
2022	540	706	1,246
Total	10,879	15,841	26,720

Societal Benefits: Economy – Tax Revenue

The aforementioned economic stimulation by the Connecticut Green Bank also generates tax revenue through personal and corporate income taxes as well as sales and use taxes. Tax revenues go into the State’s General Fund, where they are used for a wide variety of public benefit activities such as education, transportation, and public safety. In 2018, the Green Bank engaged Navigant Consulting to conduct a study on the levels of this revenue generation. The result of this study is the Navigant Tax Calculator. The Green Bank has adopted this calculator to estimate the impact of its projects to state tax revenues. This study and calculator were reviewed by the Connecticut Department of Revenue Services which found them to be both a reasonable estimation and an appropriate tool for assessing this impact. For

³³ Clean Energy Jobs in Connecticut: <http://ctgreenbank.com/wp-content/uploads/2017/02/CTGreenBank-Clean-Energy-Jobs-CT-August102016.pdf>

³⁴ CGB Economic Development Factsheet: https://www.ctgreenbank.com/wp-content/uploads/2018/03/CGB_DECD_Jobs-Study_Fact-Sheet.pdf

³⁵ See Appendix for Job Year Factors.

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more information on the Navigant study and the methodology, click [here](#)³⁶. An overview of our Tax methodology can be found [here](#)³⁷.

TABLE 23. GREEN BANK TAX REVENUES GENERATED BY FY CLOSED³⁸

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$267,742	\$79,970	\$0	\$347,712
2013	\$2,895,068	\$925,510	\$4,143,940	\$7,964,519
2014	\$2,807,482	\$1,753,691	\$811,104	\$5,372,277
2015	\$8,740,049	\$4,473,361	\$3,994,256	\$17,207,666
2016	\$9,265,086	\$4,034,490	\$2,855,474	\$16,155,050
2017	\$4,137,889	\$2,366,463	\$1,908,401	\$8,412,753
2018	\$5,077,268	\$3,045,564	\$2,263,644	\$10,386,476
2019	\$7,351,892	\$4,332,627	\$5,524,192	\$17,208,710
2020	\$5,994,353	\$3,131,685	\$2,563,111	\$11,689,149
2021	\$5,888,940	\$3,318,613	\$2,869,670	\$12,077,223
2022	\$2,840,718	\$1,749,754	\$2,214,736	\$6,805,208
Total	\$55,266,487	\$29,211,728	\$29,148,529	\$113,626,745

Societal Benefits: Environment – Emissions and Equivalencies

The Green Bank assesses the impact of its projects in terms of local environmental protection benefits produced by projects. These benefits are primarily in the form of cleaner air in the state and are measured in terms of tons of Carbon Dioxide (CO2) and pounds of Nitrous Oxide (NOx), Sulfur Dioxide (SOx) and particulate matter (PM 2.5) not emitted. The Green Bank has developed its measurement methodology for these measurements in conjunction with outside experts from the Connecticut Department of Energy and Environmental Protection and at the United States Environmental Protection Agency. These agencies have found the methodology to be a reasonable estimation and an appropriate tool for assessing this impact. For more information on this methodology, click [here](#)³⁹. For more information on the EPA’s AvERT, click [here](#)⁴⁰. Note that the lifetime values are based on the aggregation of projects’ impact for one year multiplied by the useful life of the technology for each project.

TABLE 24. GREEN BANK AVOIDED EMISSIONS BY FY CLOSED⁴¹

CO2 Emissions Avoided (tons)			
Fiscal Year	Annual	Lifetime	Green Bank Investment (\$) / Project Lifetime Tons of Avoided CO₂ Emissions

³⁶ Tax Report: https://www.ctgreenbank.com/wp-content/uploads/2018/09/Tax-Study_Final_Report_01-19-18.pdf
³⁷ Tax Methodology: <https://www.ctgreenbank.com/wp-content/uploads/2018/09/CGB-Eval-Tax-Methodology-7-24-18.pdf>
³⁸ See Appendix for Average Emission Rates.
³⁹ CGB Environmental Impact Factsheet: <https://www.ctgreenbank.com/wp-content/uploads/2017/05/CGB-Environmental-Impact-051617.pdf>
⁴⁰ Environmental Protection Agency AvERT User Manual: https://www.ctgreenbank.com/wp-content/uploads/2017/05/AVERT_fact_sheet_user_manual_03-01-17.pdf
⁴¹ See Appendix for Average Emission Rates.

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2012	1,242	31,041	\$109.58
2013	13,254	210,370	\$87.75
2014	15,647	358,796	\$88.76
2015	114,519	1,887,559	\$31.10
2016	47,636	1,127,537	\$33.74
2017	35,444	856,242	\$35.15
2018	42,195	1,016,828	\$28.01
2019	111,653	1,920,208	\$16.95
2020	58,703	1,266,654	\$26.10
2021	52,652	1,214,299	\$28.44
2022	27,037	542,837	\$24.47
Total	519,982	10,432,372	\$30.91

NOx Emissions Avoided (pounds)

Fiscal Year	Annual	Lifetime	Green Bank Investment (\$) / Project Lifetime Pounds of Avoided NO_x Emissions
2012	1,638	40,938	\$83.09
2013	70,846	822,165	\$22.45
2014	20,437	471,283	\$67.57
2015	112,274	1,946,817	\$30.16
2016	50,677	1,196,889	\$31.79
2017	32,280	781,204	\$38.52
2018	39,501	955,924	\$29.79
2019	100,611	1,763,329	\$18.45
2020	84,992	1,504,725	\$21.97
2021	50,002	1,162,008	\$29.72
2022	24,740	503,621	\$26.37
Total	587,997	11,148,904	\$28.92

SOx Emissions Avoided (pounds)

Fiscal Year	Annual	Lifetime	Green Bank Investment (\$) / Project Lifetime Pounds of Avoided SO_x Emissions
2012	2,116	52,907	\$64.30
2013	55,541	699,388	\$26.39
2014	22,860	526,676	\$60.47
2015	104,341	1,836,680	\$31.96
2016	41,147	959,272	\$39.66
2017	23,329	563,479	\$53.41
2018	32,841	795,267	\$35.81
2019	87,720	1,532,393	\$21.23
2020	68,791	1,252,357	\$26.39
2021	43,157	1,001,569	\$34.48
2022	21,522	437,116	\$30.38
Total	503,366	9,657,105	\$33.39

PM 2.5 Emissions Avoided (pounds)

Fiscal Year	Annual	Lifetime	Green Bank Investment (\$) / Project Lifetime Pounds of Avoided PM 2.5 Emissions
2012	111	2,772	\$1,227.29
2013	473	11,604	\$1,590.82
2014	1,353	31,769	\$1,002.42
2015	9,185	153,167	\$383.30
2016	4,114	98,201	\$387.43
2017	2,988	72,343	\$416.01

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2018	3,563	86,062	\$330.93
2019	8,941	154,167	\$211.06
2020	4,580	103,484	\$319.43
2021	4,433	102,697	\$336.23
2022	2,070	41,156	\$322.70
Total	41,810	857,422	\$376.06

To help put this environmental impact into everyday terms, the Green Bank calculates the environmental "equivalencies" of reduced emissions, as shown in Table 25. The Green Bank calculates environmental equivalencies using factors from the EPA's environmental equivalency calculator, which was also reviewed and deemed to be a reasonable estimation of impact by the Connecticut Department of Energy and Environment. The calculator translates abstract reductions into everyday equivalencies. For example, avoided carbon dioxide emissions can translate to avoided emissions from vehicles, or the number of tree seedlings needed to sequester an equivalent amount of carbon. For more information on this methodology, click [here](#)⁴². The EPA environmental equivalency calculator can be found [here](#)⁴³.

TABLE 25. GREEN BANK GREENHOUSE GAS EQUIVALENCIES (BASED ON REDUCTIONS OF CO₂ TONS) BY FY CLOSED

Fiscal Year	Greenhouse gas emissions from:			
	Passenger vehicles driven for one year		Miles driven by an average passenger vehicle	
	Annual	Lifetime of Asset	Annual	Lifetime of Asset
2012	245	6,124	2,830,887	70,772,178
2013	2,615	41,505	30,218,761	479,629,635
2014	3,087	70,788	35,673,914	818,030,985
2015	22,594	372,404	261,095,146	4,303,511,262
2016	9,398	222,456	108,607,883	2,570,711,346
2017	6,993	168,931	80,809,723	1,952,176,726
2018	8,325	200,614	96,202,833	2,318,302,106
2019	22,029	378,846	254,562,578	4,377,949,425
2020	11,582	249,903	133,838,161	2,887,888,824
2021	10,388	239,574	120,043,068	2,768,522,049
2022	5,334	107,098	61,643,031	1,237,632,560
Total	102,589	2,058,244	1,185,525,985	23,785,127,095
Fiscal Year	CO ₂ emissions from:			
	Gallons of gasoline consumed		Homes' energy use for one year	
	Annual	Lifetime of Asset	Annual	Lifetime of Asset
2012	126,748	3,168,697	136	3,391
2013	1,352,991	21,474,554	1,448	22,982
2014	1,597,235	36,625,865	1,709	39,197
2015	11,690,065	192,681,972	12,511	206,208
2016	4,862,722	115,098,974	5,204	123,179
2017	3,618,110	87,405,200	3,872	93,541
2018	4,307,309	103,797,804	4,610	111,084
2019	11,397,581	196,014,806	12,198	209,775
2020	5,992,363	129,300,025	6,413	138,377

⁴² <http://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>

⁴³ EPA Greenhouse Gas Equivalencies Calculator: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

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2021	5,374,712	123,955,592	5,752	132,657
2022	2,759,956	55,412,770	2,954	59,303
Total	53,079,792	1,064,936,259	56,806	1,139,695
Carbon sequestered by:				
	Tree seedlings grown for 10 years		Acres of U.S. forests in one year	
Fiscal Year	Annual	Lifetime of Asset	Annual	Lifetime of Asset
2012	18,625	465,635	1,380	34,501
2013	198,820	3,155,652	14,732	233,818
2014	234,711	5,382,113	17,391	398,788
2015	1,717,837	28,314,312	127,283	2,097,950
2016	714,569	16,913,613	52,946	1,253,215
2017	531,676	12,844,056	39,395	951,681
2018	632,952	15,252,924	46,899	1,130,166
2019	1,674,857	28,804,067	124,099	2,134,239
2020	880,568	19,000,435	65,246	1,407,838
2021	789,806	18,215,079	58,521	1,349,647
2022	405,571	8,142,819	30,051	603,343
Total	7,799,992	156,490,706	577,941	11,595,185

Social Cost of Carbon

Using the methodology adopted by the Obama Administration in 2014, the Green Bank has estimated the total avoided economic costs of the carbon emissions avoided as a result of these projects. This was done by forecasting out when the projected estimated emissions savings are likely to occur and then applying the prices identified by the White House Council on Environmental Quality at the various discount rates adjusted to 2022 dollars⁴⁴.

Table 26 shows the annual forecasted emissions avoided and the related social cost of those emissions at various discount rates. Using the 3% discount rate, in alignment with the initial study, the overall value of the Green Banks projects in terms of emissions avoided is \$505,001,171.

TABLE 26. AVOIDED CO₂ EMISSIONS FORECAST AND THE SOCIAL COSTS OF CARBON

Year	Estimated CO ₂ annual emissions avoided	Economic Value of Avoided Emissions at Different Discount Rates			
		5% Average	3% Average	2.5% Average	High Impact (95th Pct at 3%)
2011		\$0	\$0	\$0	\$0
2012	5,140	\$59,363	\$172,691	\$275,227	\$485,694
2013	9,742	\$112,525	\$337,576	\$542,167	\$951,349
2014	28,079	\$324,309	\$1,002,408	\$1,592,060	\$2,859,812
2015	128,605	\$1,485,382	\$4,726,216	\$7,426,911	\$13,638,509
2016	180,096	\$2,080,105	\$6,807,618	\$10,589,628	\$19,855,552
2017	218,269	\$2,521,003	\$8,708,920	\$13,063,380	\$24,751,668
2018	259,932	\$3,002,213	\$10,644,210	\$16,102,779	\$30,567,988

⁴⁴ https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf

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Year	Estimated CO2 annual emissions avoided	Economic Value of Avoided Emissions at Different Discount Rates			
		5% Average	3% Average	2.5% Average	High Impact (95th Pct at 3%)
2019	364,349	\$4,590,798	\$15,302,661	\$22,953,991	\$44,377,716
2020	429,403	\$5,410,478	\$18,485,799	\$27,503,262	\$54,104,777
2021	475,167	\$5,987,100	\$20,954,849	\$30,933,349	\$61,367,773
2022	524,444	\$6,607,989	\$23,127,962	\$34,691,943	\$69,383,887
2023	523,566	\$7,146,670	\$23,638,985	\$35,183,606	\$70,916,955
2024	523,566	\$7,146,670	\$24,188,729	\$35,733,349	\$72,566,187
2025	520,787	\$7,108,746	\$24,607,199	\$36,090,558	\$73,821,596
2026	449,502	\$6,607,675	\$21,710,933	\$32,094,422	\$65,132,798
2027	443,783	\$6,523,603	\$21,900,666	\$32,152,042	\$65,701,999
2028	440,983	\$6,945,479	\$22,225,532	\$32,412,234	\$66,213,564
2029	425,741	\$6,705,425	\$21,904,390	\$31,739,014	\$65,266,141
2030	360,916	\$5,684,421	\$18,569,110	\$27,285,223	\$56,465,253
2031	345,814	\$5,809,668	\$18,155,214	\$26,506,612	\$55,191,851
2032	338,363	\$5,684,492	\$18,119,317	\$26,290,774	\$55,068,513
2033	325,896	\$5,817,243	\$17,793,920	\$25,664,308	\$54,066,141
2034	320,329	\$5,717,868	\$17,826,295	\$25,562,234	\$54,151,575
2035	320,329	\$6,054,213	\$18,162,640	\$25,898,579	\$55,160,611
2036	318,000	\$6,010,196	\$18,364,487	\$26,044,182	\$56,095,161
2037	313,767	\$6,259,649	\$18,449,493	\$26,026,963	\$56,336,843
2038	306,248	\$6,109,641	\$18,328,923	\$26,046,364	\$55,951,449
2039	281,541	\$5,912,368	\$17,145,866	\$24,240,708	\$52,324,454
2040	235,769	\$4,951,156	\$14,605,911	\$20,547,298	\$44,560,405
2041	200,396	\$4,418,734	\$12,624,954	\$17,674,935	\$38,506,109
2042	165,268	\$3,644,164	\$10,585,429	\$14,750,188	\$32,276,881
2043	125,677	\$2,903,131	\$8,049,591	\$11,348,603	\$24,940,535
2044	78,896	\$1,822,492	\$5,136,113	\$7,207,127	\$15,905,383
2045	38,404	\$927,451	\$2,540,410	\$3,548,509	\$7,822,850
	10,432,372	\$158,126,977	\$505,001,171	\$735,856,245	\$1,516,787,979

Societal Benefits: Environment – Public Health

The avoided emissions described above result in cleaner air which correlates to public health benefits. Air pollution influences the prevalence and severity of asthma, bronchitis, coronary and respiratory disease, and even death.

With the adoption of the AvERT tool for assessing environmental impacts, the Green Bank is able to leverage this information to gauge public health benefits of its activities. The Green Bank assesses public health benefits and illnesses, or deaths avoided using data from the AvERT tool. After the Connecticut Department of Public Health and Connecticut Department of Energy & Environmental Protection reviewed the EPA’s Co-Benefit Risk Assessment Tool (CoBRA) in 2017 and found it to be a reasonable estimation and an appropriate tool for assessing this impact, the Green Bank’s Board of Directors approved its use. The CoBRA tool reports back low and high estimates of avoided incidents, locations, and associated costs of the health outcomes described above. These public health impacts are quantified

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and presented as total estimated public health savings of the policies in dollars. For more information on this methodology, click [here](#)⁴⁵. An overview of CoBRA can be found [here](#)⁴⁶. The factors used to measure impact from CoBRA can be found in the appendix.

TABLE 27. ECONOMIC SAVINGS DUE TO PUBLIC HEALTH FROM GREEN BANK PROJECTS (BASED ON REDUCTIONS OF EMISSIONS) BY FY CLOSED

Fiscal Year	Annual		Lifetime		Green Bank Investment (\$) / Lifetime Public Health Savings	
	Low	High	Low	High	Low	High
2012	\$42,865	\$96,778	\$1,071,624	\$2,419,440	\$3.17	\$1.41
2013	\$1,021,887	\$2,309,385	\$12,873,814	\$29,088,027	\$1.43	\$0.63
2014	\$528,321	\$1,193,030	\$12,255,640	\$27,672,792	\$2.60	\$1.15
2015	\$3,151,380	\$7,123,931	\$54,606,282	\$123,393,402	\$1.08	\$0.48
2016	\$1,612,100	\$3,640,184	\$38,428,982	\$86,769,361	\$0.99	\$0.44
2017	\$1,190,439	\$2,689,376	\$28,857,699	\$65,192,010	\$1.04	\$0.46
2018	\$1,417,856	\$3,203,443	\$34,179,845	\$77,222,975	\$0.83	\$0.37
2019	\$2,889,702	\$6,541,566	\$50,808,500	\$115,030,969	\$0.64	\$0.28
2020	\$1,878,203	\$4,253,483	\$37,237,464	\$84,362,104	\$0.89	\$0.39
2021	\$1,418,416	\$3,214,186	\$32,889,825	\$74,537,063	\$1.05	\$0.46
2022	\$692,255	\$1,567,901	\$13,926,930	\$31,549,351	\$0.95	\$0.42
Total	\$15,843,423	\$35,833,263	\$317,136,604	\$717,237,494	\$1.02	\$0.45

⁴⁵ <https://www.ctgreenbank.com/wp-content/uploads/2018/03/CGB-Eval-PUBLICHEALTH-1-25-18-new.pdf>

⁴⁶ <https://www.epa.gov/statelocalenergy/co-benefits-risk-assessment-cobra-health-impacts-screening-and-mapping-tool>

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Societal Benefits: Energy – Savings from Solar PV Financing

Working in consultation with the Department of Energy and Environmental Protection and Public Utilities Regulatory Authority, the Green Bank devised a methodology to estimate the savings customers have due to the solar they installed. The methodology takes the actual solar PV production data and assigns a hypothetical expense to that production, had it been purchased from the utilities. This is then compared against the contractual lease, loan, or PPA prices. For more information on this methodology, click [here](#)⁴⁷. This analysis is only for products where the Green Bank has clear insight to the energy production of systems and the cost. For the PPA, PosiGen, Solar Loan and Solar Lease 2 we are using their actual monthly solar expense and their savings is based on the difference between their hypothetical utility expense and their solar expense cost.

TABLE 28. ANNUAL SAVINGS BY YEAR

Product	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Solar Loan	\$0	\$0	\$7,229	\$116,300	\$145,807	\$123,867	\$142,323	\$178,722	\$181,659	\$176,586	\$179,213	\$1,251,706
PPA	\$0	\$0	\$0	\$4,626	\$61,845	\$112,902	\$368,347	\$686,417	\$716,264	\$646,140	\$650,122	\$3,246,663
Solar Lease 2	\$0	\$0	\$1,269	\$68,715	\$403,208	\$416,815	\$500,164	\$692,990	\$776,039	\$771,364	\$635,521	\$4,266,085
PosiGen	\$0	\$0	\$0	(\$35)	\$32,916	\$83,190	\$304,225	\$1,043,116	\$1,128,994	\$1,440,658	\$1,581,062	\$5,614,126
Total	\$0	\$0	\$8,498	\$189,606	\$643,776	\$736,774	\$1,315,059	\$2,601,245	\$2,802,956	\$3,034,748	\$3,045,918	\$14,378,580

Societal Benefits: Equity – Investment in Vulnerable Communities

The Green Bank stimulates economic activity in the state through its program related and strategic lending and investing, specifically in vulnerable communities. Investment can be tracked by census tract, or other means, to determine how vulnerable communities benefit from the Green Bank’s programs and products. An overview of our Equity methodology can be found [here](#)⁴⁸. The Comprehensive Plan of the Green Bank has established a goal that by 2025 no less than 40 percent of investment and benefits will inure to vulnerable communities through its incentive and financing programs. To help the Green Bank measure progress, it tracks investments and benefits (e.g., # project units, deployment) in vulnerable communities, with a focus on those communities eligible for Community Reinvestment Act – See Table 29, as well as environmental justice communities⁴⁹ – See Table 30.

⁴⁷ <https://www.ctgreenbank.com/wp-content/uploads/2021/09/CGB-Eval-Solar-Methodology-combined-6-8-2021-final.pdf>

⁴⁸ <https://www.ctgreenbank.com/wp-content/uploads/2021/10/Equity-Investment-in-Vulnerable-Communities.pdf>

⁴⁹ As defined by CGS 22a-20a <https://portal.ct.gov/DEEP/Environmental-Justice/Environmental-Justice>

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TABLE 29. GREEN BANK COMMERCIAL AND RESIDENTIAL⁵⁰ ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED⁵¹ - CRA ELIGIBLE COMMUNITIES

Fiscal Year	# Project Units ⁵²				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2012	288	273	15	5%	1.9	1.9	0.1	4%	\$9,901,511	\$9,514,915	\$386,596	4%
2013	1,114	1,027	87	8%	23.5	8.1	15.3	65%	\$111,141,216	\$37,829,389	\$73,311,827	66%
2014	2,567	2,181	386	15%	23.4	18.4	5.0	21%	\$107,110,514	\$86,736,906	\$20,373,608	19%
2015	6,749	5,533	1,216	18%	62.2	54.1	8.1	13%	\$320,587,455	\$249,319,939	\$71,267,515	22%
2016	8,311	5,501	2,810	34%	65.5	52.1	13.4	20%	\$319,178,904	\$233,774,001	\$85,404,902	27%
2017	6,146	3,273	2,873	47%	50.0	33.0	17.0	34%	\$180,488,411	\$108,344,425	\$72,143,986	40%
2018	8,383	4,627	3,756	45%	55.3	39.4	15.9	29%	\$218,341,089	\$147,843,213	\$70,497,876	32%
2019	9,250	4,972	4,278	46%	64.1	44.7	19.4	30%	\$271,196,941	\$163,486,172	\$107,710,769	40%
2020	8,572	5,361	3,211	37%	66.3	48.2	18.1	27%	\$256,398,228	\$174,428,512	\$81,969,716	32%
2021	6,649	4,412	2,237	34%	66.0	50.6	15.4	23%	\$260,439,466	\$184,533,504	\$75,905,962	29%
2022	2,772	1,946	826	30%	22.0	16.8	5.1	23%	\$107,227,375	\$79,196,106	\$28,031,268	26%
Total	60,801	39,106	21,695	36%	500.2	367.4	132.8	27%	\$2,162,011,110	\$1,475,007,083	\$687,004,027	32%

TABLE 30. GREEN BANK COMMERCIAL AND RESIDENTIAL⁵³ ACTIVITY IN ENVIRONMENTAL JUSTICE COMMUNITIES BY FY CLOSED^{54 55}

⁵⁰ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units. This table has been adjusted to include all the Low-Income Solar Lease (ESA) and Multifamily Affordable Housing projects as 80% or Below AMI regardless of which census tract the project falls into as these programs are designed to serve the LMI market.

⁵¹ Excludes projects in unknown bands.

⁵² For projects in a single-family dwelling or a commercial building the unit count is one and for projects in a multifamily building the unit counter is equal to the number of housing units within the building.

⁵³ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units. This table has been adjusted to include all the Low-Income Solar Lease (ESA) and Multifamily Affordable Housing projects as 80% or Below AMI regardless of which census tract the project falls into as these programs are designed to serve the LMI market.

⁵⁴ Excludes projects in unknown bands.

⁵⁵ As defined by CGS 22a-20a <https://portal.ct.gov/DEEP/Environmental-Justice/Environmental-Justice>

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Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Community	EJ Community	% EJ Community	Total	Not EJ Community	EJ Community	% EJ Community	Total	Not EJ Community	EJ Community	% EJ Community
2012	288	244	44	15%	1.9	1.7	0.3	14%	\$9,901,511	\$8,557,222	\$1,344,289	14%
2013	1,114	967	147	13%	23.5	7.8	15.7	67%	\$111,141,216	\$35,101,876	\$76,039,340	68%
2014	2,567	2,100	467	18%	23.4	19.0	4.4	19%	\$107,110,514	\$83,538,748	\$23,571,766	22%
2015	6,749	5,042	1,707	25%	62.2	47.6	14.7	24%	\$320,587,455	\$219,379,219	\$101,208,236	32%
2016	8,314	5,503	2,811	34%	65.9	46.5	19.4	29%	\$320,391,957	\$210,127,789	\$110,264,168	34%
2017	6,146	3,211	2,935	48%	50.0	29.6	20.4	41%	\$180,488,411	\$104,061,686	\$76,426,725	42%
2018	8,388	4,262	4,126	49%	56.4	33.2	23.2	41%	\$221,751,103	\$133,159,998	\$88,591,105	40%
2019	9,251	4,531	4,720	51%	64.3	42.2	22.1	34%	\$271,931,481	\$156,967,678	\$114,963,803	42%
2020	8,580	4,939	3,641	42%	74.0	53.0	21.0	28%	\$275,264,753	\$192,805,053	\$82,459,700	30%
2021	6,664	4,423	2,241	34%	66.1	50.7	15.4	23%	\$261,945,457	\$179,933,974	\$82,011,483	31%
2022	2,783	1,974	809	29%	22.2	16.5	5.6	25%	\$108,220,026	\$78,126,638	\$30,093,388	28%
Total	60,844	37,196	23,648	39%	509.8	347.6	162.2	32%	\$2,188,733,885	\$1,401,759,881	\$786,974,003	36%

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Community Impacts

Community and Market Descriptions

Communities across Connecticut are demonstrating leadership by supporting the deployment of clean energy. The Connecticut Green Bank distributes reports to communities on an annual basis to provide them with information about their performance in comparison to others in the state. There are many leaders of clean energy deployment across Connecticut, and we have assembled the “Top 5” in energy, economy, and environment for FY 2022 as well as FY 2012 through FY 2022. It should be noted that in a 2016 United Nations report, an estimated \$90 trillion must be invested globally through 2030 to make progress toward all these Sustainable Development Goals in order to confront climate change.⁵⁶ This equates to an average annual investment per capita of approximately \$790⁵⁷.

TABLE 31. THE “TOP 5” ON ENERGY, ECONOMY, AND ENVIRONMENTAL PERFORMANCE - FY 2022 CLOSED ACTIVITY

Municipality	Watts / Capita	Municipality	Investment / Capita	Municipality	Total Lifetime CO2 Emissions (Tons)
Kent	156.0	Bloomfield	\$438.21	Putnam	50,870
Putnam	100.8	Kent	\$398.86	Bridgeport	14,722
Union	39.9	Putnam	\$217.97	Southington	13,021
Avon	36.9	Union	\$167.68	West Hartford	12,722
Stonington	34.3	Bethlehem	\$111.72	Avon	10,753

TABLE 32. THE “TOP 5” ON ENERGY, ECONOMY, AND ENVIRONMENTAL PERFORMANCE - FY 2012 – 2022 CLOSED ACTIVITY

Municipality	Watts / Capita	Municipality	Investment / Capita	Municipality	Total Lifetime CO2 Emissions (Tons)
Colebrook	3,819.2	Colebrook	\$17,136.32	Bridgeport	1,214,336
Windsor	507.0	Windsor	\$1,981.85	Hartford	209,531
Canaan	448.8	Canaan	\$1,868.66	Waterbury	208,292
Somers	441.1	Bloomfield	\$1,415.97	Manchester	190,899
Kent	401.3	Woodbridge	\$1,359.43	Stratford	188,954

⁵⁶ <https://www.un.org/pga/71/wp-content/uploads/sites/40/2017/02/Financing-Sustainable-Development-in-a-time-of-turmoil.pdf>

⁵⁷ \$90,000,000,000/7.6B people/15 years until 2030 = \$790

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Projects In Vulnerable Communities

During the fall 2020 Special Session, the Connecticut General Assembly passed Public Act 20-5 to address emergency response by the state’s electric utilities during recent storms. Within the resiliency aspects of the bill, a definition for “vulnerable communities” was included:

“Vulnerable communities” means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, low and moderate income communities, environmental justice communities pursuant to section 22a-20a, communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, populations with increased risk and limited means to adapt to the effects of climate change, or as further defined by the Department of Energy and Environmental Protection in consultation with community representatives”.

CT DEEP’s Environmental Justice Program⁵⁸ as described [here](#) defines Environmental Justice Communities as “Environmental justice community” means (A) a United States census block group, as determined in accordance with the most recent United States census, for which thirty percent or more of the population consists of low income persons who are not institutionalized and have an income below two hundred per cent of the federal poverty level; [,] or (B) a distressed municipality, as defined in subsection (b) of section 32-9p;”. Click [here](#)⁵⁹ for more information on Distressed Communities and defined census block groups.

TABLE 33. GREEN BANK COMMERCIAL AND RESIDENTIAL⁶⁰ ACTIVITY IN VULNERABLE AND NOT VULNERABLE COMMUNITIES BY FY CLOSED⁶¹

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable
2012	288	215	73	25%	1.9	1.5	0.5	23%	\$9,901,511	\$7,675,503	\$2,226,008	22%
2013	1,114	844	270	24%	23.5	6.2	17.3	74%	\$111,141,216	\$27,502,724	\$83,638,492	75%
2014	2,567	1,613	954	37%	23.4	12.5	10.9	46%	\$107,110,514	\$62,602,938	\$44,507,576	42%
2015	6,749	3,921	2,828	42%	62.2	39.8	22.4	36%	\$320,587,455	\$181,614,637	\$138,972,818	43%
2016	8,314	3,540	4,774	57%	65.9	34.1	31.8	48%	\$320,391,957	\$143,897,435	\$176,494,522	55%
2017	6,146	1,950	4,196	68%	50.0	19.2	30.8	62%	\$180,488,411	\$65,438,315	\$115,050,096	64%
2018	8,388	2,819	5,569	66%	56.4	24.1	32.2	57%	\$221,751,103	\$93,054,864	\$128,696,238	58%
2019	13,590	7,377	6,213	46%	64.3	28.2	36.2	56%	\$319,612,686	\$148,334,628	\$171,278,057	54%
2020	9,197	4,025	5,172	56%	74.0	39.9	34.1	46%	\$286,177,632	\$147,698,290	\$138,479,342	48%
2021	7,102	3,354	3,748	53%	66.1	37.2	28.9	44%	\$270,723,458	\$129,296,833	\$141,426,625	52%

⁵⁸ <https://portal.ct.gov/DEEP/Environmental-Justice/Environmental-Justice>

⁵⁹ <https://portal.ct.gov/DEEP/Environmental-Justice/Environmental-Justice-Communities>

⁶⁰ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁶¹ Excludes projects in unknown communities.

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Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable
2022	3,435	2,022	1,413	41%	22.2	11.7	10.5	47%	\$120,112,932	\$61,442,260	\$58,670,671	49%
Total	66,890	31,680	35,210	53%	509.8	254.4	255.4	50%	\$2,267,998,874	\$1,068,558,428	\$1,199,440,446	53%

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TABLE 34. COMMERCIAL AND RESIDENTIAL⁶² PERFORMANCE INDICATORS BY PARTICIPATION IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED⁶³

Fiscal Year	KW per Project Unit (1000*MW/total units)			Total Investment per MW (\$000s)			Investment per Project Unit (\$)		
	Total	Not Vulnerable	Vulnerable	Total	Not Vulnerable	Vulnerable	Total	Not Vulnerable	Vulnerable
2012	6.7	6.9	6.2	\$5,103	\$5,163	\$4,909	\$34,380	\$35,700	\$30,493
2013	21.1	7.3	64.0	\$4,739	\$4,453	\$4,840	\$99,768	\$32,586	\$309,772
2014	9.1	7.8	11.4	\$4,577	\$4,991	\$4,098	\$41,726	\$38,811	\$46,654
2015	9.2	10.2	7.9	\$5,153	\$4,562	\$6,205	\$47,501	\$46,318	\$49,142
2016	7.9	9.6	6.7	\$4,865	\$4,222	\$5,555	\$38,536	\$40,649	\$36,970
2017	8.1	9.8	7.3	\$3,609	\$3,410	\$3,733	\$29,367	\$33,558	\$27,419
2018	6.7	8.6	5.8	\$3,934	\$3,857	\$3,991	\$26,437	\$33,010	\$23,109
2019	4.7	3.8	5.8	\$4,969	\$5,269	\$4,735	\$23,518	\$20,108	\$27,568
2020	8.0	9.9	6.6	\$3,869	\$3,703	\$4,064	\$31,116	\$36,695	\$26,775
2021	9.3	11.1	7.7	\$4,096	\$3,473	\$4,900	\$38,119	\$38,550	\$37,734
2022	6.4	5.8	7.4	\$5,421	\$5,258	\$5,604	\$34,967	\$30,387	\$41,522
Total	7.6	8.0	7.3	\$4,449	\$4,201	\$4,696	\$33,906	\$33,730	\$34,065

TABLE 35. GREEN BANK COMMERCIAL AND RESIDENTIAL⁶⁴ RELATIONSHIP OF PERFORMANCE INDICATORS BETWEEN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED⁶⁵

Fiscal Year	KW per Project Unit	Total Investment per MW (\$000s)	Investment per Project Unit (\$)
	Ratio of Not Vulnerable to Vulnerable	Ratio of Not Vulnerable to Vulnerable	Ratio of Not Vulnerable to Vulnerable
2012	1.11	1.05	1.17
2013	0.11	0.92	0.11
2014	0.68	1.22	0.83
2015	1.28	0.74	0.94
2016	1.45	0.76	1.10
2017	1.34	0.91	1.22
2018	1.48	0.97	1.43
2019	0.66	1.11	0.73
2020	1.50	0.91	1.37
2021	1.44	0.71	1.02
2022	0.78	0.94	0.73
Total	1.11	0.89	0.99

⁶² Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁶³ Excludes projects in unknown bands.

⁶⁴ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁶⁵ Excludes projects in unknown bands.

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Projects by Income Bands

In addition to tracking funding and clean energy deployment in distressed municipalities, the Green Bank works to ensure that low to moderate income (LMI) census tracts across the entire state benefit from its programs. The Green Bank defines low to moderate income as 100% or less of the Area Median Income (AMI) of a Metropolitan Statistical Area (MSA). Table 38 groups the Green Bank’s residential projects by the average area median income (AMI) of their census tract from the American Community Survey (ACS) 5-Year Estimate data. Table 39 groups the Green Bank’s residential projects by the average state median income (SMI) of their census tract from the American Community Survey (ACS) 5-Year Estimate data.

TABLE 36. OVERVIEW OF CONNECTICUT POPULATION AND HOUSEHOLDS BY METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS^{66 67 68}

MSA AMI Band	Total Population	% Total Population Distribution	Total Households	% Total Household Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution
<60%	605,886	17%	231,327	17%	68,662	8%	78,211	32%
60%-80%	540,866	15%	219,099	16%	105,090	12%	53,058	22%
80%-100%	662,005	19%	274,020	20%	166,052	19%	56,675	23%
100%-120%	692,148	19%	276,247	20%	209,603	24%	32,063	13%
>120%	1,051,590	29%	384,523	28%	326,890	37%	21,904	9%
Total	3,570,549	100%	1,385,437	100%	876,387	100%	241,958	100%

TABLE 37. OVERVIEW OF CONNECTICUT POPULATION AND HOUSEHOLDS BY METROPOLITAN STATISTICAL AREA (MSA) STATE MEDIAN INCOME (SMI) BANDS^{69 70 71}

MSA SMI Band	Total Population	% Total Population Distribution	Total Households	% Total Household Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution
<60%	642,923	18%	251,790	18%	73,061	8%	84,395	35%

⁶⁶ 2020 American Community Survey (ACS).

⁶⁷ The suite of products offered by the Connecticut Green Bank do not currently address rental properties of 1-4 units.

⁶⁸ Excludes population and households in unknown bands.

⁶⁹ 2020 American Community Survey (ACS).

⁷⁰ The suite of products offered by the Connecticut Green Bank do not currently address rental properties of 1-4 units.

⁷¹ Excludes population and households in unknown bands.

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MSA SMI Band	Total Population	% Total Population Distribution	Total Households	% Total Household Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution
60%-80%	616,580	17%	248,676	18%	130,854	15%	53,195	22%
80%-100%	676,639	19%	280,307	20%	183,587	21%	50,871	21%
100%-120%	627,810	18%	248,173	18%	182,994	21%	33,940	14%
>120%	988,543	28%	356,270	26%	305,801	35%	19,510	8%
Total	3,570,549	100%	1,385,437	100%	876,387	100%	241,958	100%

TABLE 38. GREEN BANK RESIDENTIAL⁷² ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY FY CLOSED⁷³

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2012	<60%	7	2%	0.0	2%	\$183,647	2%	228,062	17%	0.0	\$0.81	0.2
2012	60%-80%	8	3%	0.0	2%	\$202,949	2%	207,439	15%	0.0	\$0.98	0.2
2012	80%-100%	33	11%	0.2	10%	\$970,970	10%	239,356	18%	0.1	\$4.06	0.8
2012	100%-120%	83	29%	0.5	28%	\$2,820,118	28%	280,563	21%	0.3	\$10.05	2.0
2012	>120%	157	55%	1.1	57%	\$5,723,828	58%	404,748	30%	0.4	\$14.14	2.7
2012	Total	288	100%	1.9	100%	\$9,901,511	100%	1,360,184	100%	0.2	\$7.28	1.4
2013	<60%	22	2%	0.1	1%	\$482,131	1%	224,259	17%	0.1	\$2.15	0.5
2013	60%-80%	63	6%	0.4	5%	\$1,878,819	5%	222,791	16%	0.3	\$8.43	1.8
2013	80%-100%	126	11%	0.8	11%	\$3,918,983	11%	236,905	17%	0.5	\$16.54	3.5
2013	100%-120%	220	20%	1.5	19%	\$6,733,660	19%	264,685	20%	0.8	\$25.44	5.5
2013	>120%	676	61%	5.1	64%	\$22,376,479	63%	407,204	30%	1.7	\$54.95	12.4
2013	Total	1,107	100%	7.9	100%	\$35,390,072	100%	1,355,849	100%	0.8	\$26.10	5.8
2014	<60%	86	3%	0.4	3%	\$2,041,406	3%	224,369	17%	0.4	\$9.10	2.0
2014	60%-80%	170	7%	1.0	6%	\$4,685,391	6%	216,437	16%	0.8	\$21.65	4.5
2014	80%-100%	528	21%	2.6	15%	\$12,506,212	16%	231,014	17%	2.3	\$54.14	11.1

⁷² Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁷³ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2014	100%-120%	610	24%	4.3	26%	\$20,601,755	27%	278,174	21%	2.2	\$74.06	15.5
2014	>120%	1,146	45%	8.4	50%	\$37,904,164	49%	406,185	30%	2.8	\$93.32	20.7
2014	Total	2,540	100%	16.7	100%	\$77,738,929	100%	1,356,206	100%	1.9	\$57.32	12.3
2015	<60%	283	4%	1.6	3%	\$7,086,446	3%	240,062	18%	1.2	\$29.52	6.6
2015	60%-80%	656	10%	4.0	8%	\$18,789,354	8%	193,188	14%	3.4	\$97.26	20.6
2015	80%-100%	1,226	18%	7.8	16%	\$38,314,101	17%	264,609	20%	4.6	\$144.80	29.6
2015	100%-120%	1,603	24%	12.0	25%	\$57,223,067	26%	240,485	18%	6.7	\$237.95	50.1
2015	>120%	2,919	44%	22.1	47%	\$102,199,480	46%	414,212	31%	7.0	\$246.73	53.4
2015	Total	6,687	100%	47.6	100%	\$223,612,447	100%	1,352,583	100%	4.9	\$165.32	35.2
2016	<60%	874	11%	3.9	7%	\$35,889,972	14%	236,643	17%	3.7	\$151.66	16.3
2016	60%-80%	1,096	13%	6.5	12%	\$27,894,074	11%	199,269	15%	5.5	\$139.98	32.8
2016	80%-100%	1,801	22%	10.9	20%	\$51,218,250	19%	261,240	19%	6.9	\$196.06	41.6
2016	100%-120%	1,964	24%	13.3	24%	\$59,938,424	23%	251,604	19%	7.8	\$238.23	53.0
2016	>120%	2,508	30%	21.1	38%	\$90,564,080	34%	405,921	30%	6.2	\$223.11	51.9
2016	Total	8,243	100%	55.6	100%	\$265,504,800	100%	1,354,713	100%	6.1	\$195.99	41.1
2017	<60%	1,148	19%	3.9	11%	\$16,510,119	12%	242,723	18%	4.7	\$68.02	16.0
2017	60%-80%	1,117	18%	5.5	16%	\$22,665,983	17%	190,564	14%	5.9	\$118.94	28.9
2017	80%-100%	1,266	21%	6.8	19%	\$26,465,404	20%	250,616	18%	5.1	\$105.60	27.2
2017	100%-120%	1,053	17%	7.6	21%	\$27,375,830	20%	280,637	21%	3.8	\$97.55	26.9
2017	>120%	1,501	25%	11.6	33%	\$42,537,408	31%	397,174	29%	3.8	\$107.10	29.1
2017	Total	6,085	100%	35.3	100%	\$135,554,744	100%	1,361,755	100%	4.5	\$99.54	25.9
2018	<60%	2,387	29%	3.9	9%	\$25,779,254	14%	234,319	17%	10.2	\$110.02	16.7
2018	60%-80%	1,001	12%	5.9	14%	\$23,845,267	13%	219,309	16%	4.6	\$108.73	26.9
2018	80%-100%	1,334	16%	8.2	19%	\$32,703,512	18%	232,794	17%	5.7	\$140.48	35.3
2018	100%-120%	1,488	18%	10.0	24%	\$39,948,889	22%	278,265	20%	5.3	\$143.56	36.0
2018	>120%	2,093	25%	14.2	34%	\$59,565,501	33%	402,643	29%	5.2	\$147.94	35.3
2018	Total	8,303	100%	42.3	100%	\$181,842,422	100%	1,367,374	100%	6.1	\$132.99	30.9
2019	<60%	1,966	21%	4.9	9%	\$46,781,257	20%	234,319	17%	8.4	\$199.65	20.7
2019	60%-80%	1,271	14%	7.8	14%	\$29,971,877	13%	219,309	16%	5.8	\$136.67	35.6
2019	80%-100%	1,907	21%	10.1	18%	\$38,524,575	16%	232,794	17%	8.2	\$165.49	43.5

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2019	100%-120%	1,820	20%	14.1	25%	\$54,430,870	23%	278,265	20%	6.5	\$195.61	50.6
2019	>120%	2,237	24%	18.7	34%	\$69,502,160	29%	402,643	29%	5.6	\$172.61	46.3
2019	Total	9,201	100%	55.5	100%	\$239,210,739	100%	1,370,746	100%	6.7	\$174.51	40.5
2020	<60%	1,214	14%	5.4	9%	\$24,134,997	11%	231,327	17%	5.2	\$104.33	23.2
2020	60%-80%	1,194	14%	7.7	13%	\$29,248,272	13%	219,099	16%	5.4	\$133.49	35.3
2020	80%-100%	1,526	18%	11.1	19%	\$41,211,355	18%	274,020	20%	5.6	\$150.40	40.5
2020	100%-120%	2,216	26%	14.3	24%	\$53,364,489	24%	276,247	20%	8.0	\$193.18	51.6
2020	>120%	2,356	28%	20.6	35%	\$75,783,785	34%	384,523	28%	6.1	\$197.09	53.5
2020	Total	8,506	100%	59.0	100%	\$223,742,897	100%	1,385,437	100%	6.1	\$161.50	42.6
2021	<60%	752	11%	4.0	8%	\$16,526,605	8%	231,327	17%	3.3	\$71.44	17.3
2021	60%-80%	904	14%	6.1	12%	\$25,357,908	13%	219,099	16%	4.1	\$115.74	27.7
2021	80%-100%	1,257	19%	9.3	19%	\$35,848,429	18%	274,020	20%	4.6	\$130.82	34.0
2021	100%-120%	1,514	23%	11.8	24%	\$45,718,417	23%	276,247	20%	5.5	\$165.50	42.6
2021	>120%	2,157	33%	18.5	37%	\$71,181,029	37%	384,523	28%	5.6	\$185.12	48.1
2021	Total	6,584	100%	49.7	100%	\$194,632,388	100%	1,385,437	100%	4.8	\$140.48	35.8
2022	<60%	273	10%	1.4	8%	\$6,207,646	8%	231,327	17%	1.2	\$26.83	5.9
2022	60%-80%	348	13%	1.9	11%	\$8,943,394	11%	219,099	16%	1.6	\$40.82	8.6
2022	80%-100%	497	18%	2.9	17%	\$14,147,737	18%	274,020	20%	1.8	\$51.63	10.7
2022	100%-120%	646	24%	4.2	25%	\$19,699,205	24%	276,247	20%	2.3	\$71.31	15.3
2022	>120%	978	36%	6.8	39%	\$31,434,984	39%	384,523	28%	2.5	\$81.75	17.6
2022	Total	2,742	100%	17.2	100%	\$80,432,966	100%	1,385,437	100%	2.0	\$58.06	12.4
Total	<60%	9,012	15%	29.4	8%	\$181,623,480	11%	231,327	17%	39.0	\$785.14	127.1
Total	60%-80%	7,828	13%	46.8	12%	\$193,483,287	12%	219,099	16%	35.7	\$883.09	213.7
Total	80%-100%	11,501	19%	70.8	18%	\$295,829,527	18%	274,020	20%	42.0	\$1,079.59	258.4
Total	100%-120%	13,217	22%	93.6	24%	\$387,854,722	23%	276,247	20%	47.8	\$1,404.01	339.0
Total	>120%	18,728	31%	148.0	38%	\$608,772,899	37%	384,523	28%	48.7	\$1,583.19	385.0
Total	Total	60,286	100%	388.7	100%	\$1,667,563,914	100%	1,385,437	100%	43.5	\$1,203.64	280.6

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

TABLE 39. GREEN BANK RESIDENTIAL⁷⁴ ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) STATE MEDIAN INCOME (SMI) BANDS BY FY CLOSED⁷⁵

Fiscal Year	MSA SMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2012	<60%	10	3%	0.1	3%	\$227,144	2%	249,608	18%	0.0	\$0.91	0.2
2012	60%-80%	6	2%	0.0	2%	\$144,970	1%	204,836	15%	0.0	\$0.71	0.2
2012	80%-100%	66	23%	0.4	21%	\$2,125,276	21%	293,878	22%	0.2	\$7.23	1.4
2012	100%-120%	77	27%	0.5	26%	\$2,689,978	27%	260,689	19%	0.3	\$10.32	2.0
2012	>120%	129	45%	0.9	48%	\$4,714,144	48%	351,157	26%	0.4	\$13.42	2.6
2012	Total	288	100%	1.9	100%	\$9,901,511	100%	1,360,184	100%	0.2	\$7.28	1.4
2013	<60%	32	3%	0.2	2%	\$850,831	2%	251,171	19%	0.1	\$3.39	0.8
2013	60%-80%	55	5%	0.3	4%	\$1,569,188	4%	211,049	16%	0.3	\$7.44	1.5
2013	80%-100%	195	18%	1.3	16%	\$5,931,082	17%	295,748	22%	0.7	\$20.05	4.3
2013	100%-120%	222	20%	1.5	19%	\$7,302,512	21%	247,329	18%	0.9	\$29.53	6.1
2013	>120%	603	54%	4.6	58%	\$19,736,460	56%	350,547	26%	1.7	\$56.30	13.0
2013	Total	1,107	100%	7.9	100%	\$35,390,072	100%	1,355,849	100%	0.8	\$26.10	5.8
2014	<60%	125	5%	0.6	4%	\$3,093,731	4%	264,100	19%	0.5	\$11.71	2.4
2014	60%-80%	166	7%	1.0	6%	\$4,577,316	6%	189,153	14%	0.9	\$24.20	5.1
2014	80%-100%	706	28%	3.9	23%	\$19,040,790	24%	288,116	21%	2.5	\$66.09	13.6
2014	100%-120%	593	23%	4.1	25%	\$19,394,290	25%	242,617	18%	2.4	\$79.94	17.1
2014	>120%	950	37%	7.0	42%	\$31,632,801	41%	372,193	27%	2.6	\$84.99	18.9
2014	Total	2,540	100%	16.7	100%	\$77,738,929	100%	1,356,206	100%	1.9	\$57.32	12.3
2015	<60%	432	6%	2.2	5%	\$10,592,504	5%	236,756	18%	1.8	\$44.74	9.4
2015	60%-80%	863	13%	5.1	11%	\$23,978,096	11%	235,289	17%	3.7	\$101.91	21.7
2015	80%-100%	1,427	21%	10.2	21%	\$48,826,412	22%	262,503	19%	5.4	\$186.00	38.8
2015	100%-120%	1,775	27%	12.2	26%	\$57,855,049	26%	247,545	18%	7.2	\$233.72	49.5
2015	>120%	2,190	33%	17.8	37%	\$82,360,386	37%	370,463	27%	5.9	\$222.32	48.0
2015	Total	6,687	100%	47.6	100%	\$223,612,447	100%	1,352,583	100%	4.9	\$165.32	35.2
2016	<60%	917	11%	4.3	8%	\$36,618,997	14%	235,940	17%	3.9	\$155.20	18.2

⁷⁴ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁷⁵ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

Fiscal Year	MSA SMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2016	60%-80%	1,340	16%	8.7	16%	\$37,213,840	14%	235,390	17%	5.7	\$158.09	36.8
2016	80%-100%	2,058	25%	12.6	23%	\$56,972,136	21%	278,870	21%	7.4	\$204.30	45.3
2016	100%-120%	1,774	22%	13.0	23%	\$55,931,911	21%	248,827	18%	7.1	\$224.78	52.1
2016	>120%	2,154	26%	17.1	31%	\$78,767,915	30%	355,650	26%	6.1	\$221.48	48.1
2016	Total	8,243	100%	55.6	100%	\$265,504,800	100%	1,354,713	100%	6.1	\$195.99	41.1
2017	<60%	1,107	18%	3.6	10%	\$14,553,874	11%	227,939	17%	4.9	\$63.85	15.8
2017	60%-80%	1,469	24%	7.0	20%	\$28,911,780	21%	235,460	17%	6.2	\$122.79	29.6
2017	80%-100%	1,307	21%	7.8	22%	\$29,048,068	21%	285,522	21%	4.6	\$101.74	27.3
2017	100%-120%	959	16%	7.1	20%	\$26,406,131	19%	242,028	18%	4.0	\$109.10	29.4
2017	>120%	1,243	20%	9.8	28%	\$36,634,892	27%	370,765	27%	3.4	\$98.81	26.5
2017	Total	6,085	100%	35.3	100%	\$135,554,744	100%	1,361,755	100%	4.5	\$99.54	25.9
2018	<60%	2,190	26%	3.7	9%	\$20,557,078	11%	231,517	17%	9.5	\$88.79	16.1
2018	60%-80%	1,455	18%	7.8	18%	\$35,248,757	19%	235,228	17%	6.2	\$149.85	33.2
2018	80%-100%	1,575	19%	9.8	23%	\$39,096,953	22%	287,930	21%	5.5	\$135.79	33.9
2018	100%-120%	1,330	16%	8.6	20%	\$35,124,984	19%	240,427	18%	5.5	\$146.09	35.8
2018	>120%	1,753	21%	12.4	29%	\$51,814,650	28%	372,228	27%	4.7	\$139.20	33.2
2018	Total	8,303	100%	42.3	100%	\$181,842,422	100%	1,367,374	100%	6.1	\$132.99	30.9
2019	<60%	1,989	22%	5.0	9%	\$47,324,768	20%	234,069	17%	8.5	\$202.18	21.2
2019	60%-80%	1,519	17%	9.7	17%	\$36,364,000	15%	235,553	17%	6.4	\$154.38	41.0
2019	80%-100%	2,347	26%	13.5	24%	\$53,158,820	22%	297,796	22%	7.9	\$178.51	45.3
2019	100%-120%	1,547	17%	12.0	22%	\$44,548,821	19%	242,705	18%	6.4	\$183.55	49.3
2019	>120%	1,799	20%	15.4	28%	\$57,814,330	24%	360,613	26%	5.0	\$160.32	42.8
2019	Total	9,201	100%	55.5	100%	\$239,210,739	100%	1,370,746	100%	6.7	\$174.51	40.5
2020	<60%	1,236	15%	5.6	10%	\$24,838,351	11%	251,790	18%	4.9	\$98.65	22.3
2020	60%-80%	1,505	18%	9.9	17%	\$37,264,251	17%	248,676	18%	6.1	\$149.85	39.8
2020	80%-100%	2,148	25%	13.3	23%	\$49,593,974	22%	280,307	20%	7.7	\$176.93	47.4
2020	100%-120%	1,644	19%	12.7	21%	\$47,235,266	21%	248,173	18%	6.6	\$190.33	51.0
2020	>120%	1,973	23%	17.5	30%	\$64,811,056	29%	356,270	26%	5.5	\$181.92	49.2
2020	Total	8,506	100%	59.0	100%	\$223,742,897	100%	1,385,437	100%	6.1	\$161.50	42.6
2021	<60%	786	12%	4.2	8%	\$17,115,385	9%	251,790	18%	3.1	\$67.97	16.7

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

Fiscal Year	MSA SMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2021	60%-80%	1,160	18%	8.0	16%	\$32,538,551	17%	248,676	18%	4.7	\$130.85	32.0
2021	80%-100%	1,327	20%	9.7	20%	\$37,523,898	19%	280,307	20%	4.7	\$133.87	34.8
2021	100%-120%	1,327	20%	10.4	21%	\$40,490,279	21%	248,173	18%	5.3	\$163.15	41.7
2021	>120%	1,984	30%	17.4	35%	\$66,964,274	34%	356,270	26%	5.6	\$187.96	48.8
2021	Total	6,584	100%	49.7	100%	\$194,632,388	100%	1,385,437	100%	4.8	\$140.48	35.8
2022	<60%	284	10%	1.5	9%	\$6,654,018	8%	251,790	18%	1.1	\$26.43	5.9
2022	60%-80%	471	17%	2.6	15%	\$12,230,957	15%	248,676	18%	1.9	\$49.18	10.5
2022	80%-100%	511	19%	3.2	18%	\$15,017,295	19%	280,307	20%	1.8	\$53.57	11.3
2022	100%-120%	617	23%	3.7	22%	\$17,862,657	22%	248,173	18%	2.5	\$71.98	15.0
2022	>120%	859	31%	6.2	36%	\$28,668,039	36%	356,270	26%	2.4	\$80.47	17.4
2022	Total	2,742	100%	17.2	100%	\$80,432,966	100%	1,385,437	100%	2.0	\$58.06	12.4
Total	<60%	9,108	15%	31.0	8%	\$182,426,681	11%	251,790	18%	36.2	\$724.52	123.2
Total	60%-80%	10,009	17%	60.0	15%	\$250,041,704	15%	248,676	18%	40.2	\$1,005.49	241.2
Total	80%-100%	13,667	23%	85.7	22%	\$356,334,705	21%	280,307	20%	48.8	\$1,271.23	305.7
Total	100%-120%	11,865	20%	85.8	22%	\$354,841,879	21%	248,173	18%	47.8	\$1,429.82	345.9
Total	>120%	15,637	26%	126.2	32%	\$523,918,945	31%	356,270	26%	43.9	\$1,470.57	354.2
Total	Total	60,286	100%	388.7	100%	\$1,667,563,914	100%	1,385,437	100%	43.5	\$1,203.64	280.6

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In recent years the Green Bank has focused on increasing its penetration in the LMI market to deliver inclusive prosperity through the green economy. It has done so through several products and initiatives, among them the LMI solar incentive, its partnership with PosiGen, ongoing education to the market about the good credit quality of low- and moderate-income homeowners, market research made available to industry participants for targeting candidate projects (customer segmentation, demographic and geographic data), and its affordable multifamily housing energy financing products. The Green Bank has focused on increasing its penetration in the LMI market shown in Table 40 and Table 43 to deliver inclusive prosperity through the green economy by AMI and SMI bands. With the end of the RSIP in FY22, there was less activity in the LMI market.

TABLE 40. GREEN BANK RESIDENTIAL⁷⁶ ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED⁷⁷

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2012	288	240	48	17%	1.9	1.7	0.3	15%	\$9,901,511	\$8,543,945	\$1,357,565	14%
2013	1,107	896	211	19%	7.9	6.5	1.3	17%	\$35,390,072	\$29,110,139	\$6,279,933	18%
2014	2,540	1,756	784	31%	16.7	12.7	4.0	24%	\$77,738,929	\$58,505,919	\$19,233,009	25%
2015	6,687	4,522	2,165	32%	47.6	34.2	13.4	28%	\$223,612,447	\$159,422,547	\$64,189,900	29%
2016	8,243	4,472	3,771	46%	55.6	34.4	21.2	38%	\$265,504,800	\$150,502,505	\$115,002,295	43%
2017	6,085	2,554	3,531	58%	35.3	19.1	16.2	46%	\$135,554,744	\$69,913,238	\$65,641,506	48%
2018	8,303	3,581	4,722	57%	42.3	24.3	18.0	43%	\$181,842,422	\$99,514,389	\$82,328,033	45%
2019	9,201	4,057	5,144	56%	55.5	32.7	22.8	41%	\$239,210,739	\$123,933,030	\$115,277,709	48%
2020	8,506	4,572	3,934	46%	59.0	34.8	24.2	41%	\$223,742,897	\$129,148,273	\$94,594,624	42%
2021	6,584	3,671	2,913	44%	49.7	30.3	19.4	39%	\$194,632,388	\$116,899,446	\$77,732,941	40%
2022	2,742	1,624	1,118	41%	17.2	11.0	6.2	36%	\$80,432,966	\$51,134,189	\$29,298,777	36%
Total	60,286	31,945	28,341	47%	388.7	241.7	147.0	38%	\$1,667,563,914	\$996,627,620	\$670,936,294	40%

⁷⁶ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁷⁷ Excludes projects in unknown bands.

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TABLE 41. GREEN BANK RESIDENTIAL⁷⁸ PERFORMANCE INDICATORS BY PARTICIPATION IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED⁷⁹

Fiscal Year	KW per Project Unit (1000*MW/total units)			Total Investment per MW (\$000s)			Investment per Project Unit (\$)		
	Total	Over 100% AMI	100% or Below AMI	Total	Over 100% AMI	100% or Below AMI	Total	Over 100% AMI	100% or Below AMI
2012	6.7	6.9	6.0	\$5,103	\$5,177	\$4,682	\$34,380	\$35,600	\$28,283
2013	7.1	7.3	6.4	\$4,498	\$4,462	\$4,672	\$31,969	\$32,489	\$29,763
2014	6.6	7.2	5.1	\$4,652	\$4,596	\$4,831	\$30,606	\$33,318	\$24,532
2015	7.1	7.6	6.2	\$4,702	\$4,667	\$4,791	\$33,440	\$35,255	\$29,649
2016	6.8	7.7	5.6	\$4,771	\$4,374	\$5,414	\$32,210	\$33,654	\$30,496
2017	5.8	7.5	4.6	\$3,838	\$3,655	\$4,053	\$22,277	\$27,374	\$18,590
2018	5.1	6.8	3.8	\$4,300	\$4,103	\$4,565	\$21,901	\$27,790	\$17,435
2019	6.0	8.1	4.4	\$4,310	\$3,786	\$5,061	\$25,998	\$30,548	\$22,410
2020	6.9	7.6	6.1	\$3,790	\$3,707	\$3,910	\$26,304	\$28,248	\$24,045
2021	7.5	8.2	6.7	\$3,920	\$3,863	\$4,008	\$29,561	\$31,844	\$26,685
2022	6.3	6.8	5.5	\$4,679	\$4,650	\$4,730	\$29,334	\$31,487	\$26,206
Total	6.4	7.6	5.2	\$4,290	\$4,124	\$4,563	\$27,661	\$31,198	\$23,674

TABLE 42. GREEN BANK RESIDENTIAL⁸⁰ RELATIONSHIP OF PERFORMANCE INDICATORS BETWEEN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED⁸¹

Fiscal Year	KW per Project Unit	Total Investment per MW (\$000s)	Investment per Project Unit (\$)
	Ratio of Above 100% AMI to Below 100% AMI	Ratio of Above 100% AMI to Below 100% AMI	Ratio of Above 100% AMI to Below 100% AMI
2012	1.14	1.11	1.26
2013	1.14	0.95	1.09
2014	1.43	0.95	1.36
2015	1.22	0.97	1.19
2016	1.37	0.81	1.10
2017	1.63	0.90	1.47
2018	1.77	0.90	1.59
2019	1.82	0.75	1.36
2020	1.24	0.95	1.17
2021	1.24	0.96	1.19
2022	1.22	0.98	1.20
Total	1.46	0.90	1.32

⁷⁸ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁷⁹ Excludes projects in unknown bands.

⁸⁰ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁸¹ Excludes projects in unknown bands.

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TABLE 43. GREEN BANK RESIDENTIAL⁸² ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) STATE MEDIAN INCOME (SMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED⁸³

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% SMI	100% or Below SMI	% at 100% or Below	Total	Over 100% SMI	100% or Below SMI	% at 100% or Below	Total	Over 100% SMI	100% or Below SMI	% at 100% or Below
2012	288	206	82	28%	1.9	1.4	0.5	26%	\$9,901,511	\$7,404,122	\$2,497,389	25%
2013	1,107	825	282	25%	7.9	6.1	1.8	23%	\$35,390,072	\$27,038,972	\$8,351,100	24%
2014	2,540	1,543	997	39%	16.7	11.2	5.5	33%	\$77,738,929	\$51,027,091	\$26,711,837	34%
2015	6,687	3,965	2,722	41%	47.6	30.0	17.5	37%	\$223,612,447	\$140,215,435	\$83,397,013	37%
2016	8,243	3,928	4,315	52%	55.6	30.1	25.6	46%	\$265,504,800	\$134,699,827	\$130,804,973	49%
2017	6,085	2,202	3,883	64%	35.3	16.9	18.4	52%	\$135,554,744	\$63,041,022	\$72,513,721	53%
2018	8,303	3,083	5,220	63%	42.3	21.0	21.3	50%	\$181,842,422	\$86,939,634	\$94,902,789	52%
2019	9,201	3,346	5,855	64%	55.5	27.4	28.1	51%	\$239,210,739	\$102,363,151	\$136,847,588	57%
2020	8,506	3,617	4,889	57%	59.0	30.2	28.8	49%	\$223,742,897	\$112,046,322	\$111,696,575	50%
2021	6,584	3,311	3,273	50%	49.7	27.8	21.9	44%	\$194,632,388	\$107,454,553	\$87,177,834	45%
2022	2,742	1,476	1,266	46%	17.2	9.9	7.3	42%	\$80,432,966	\$46,530,696	\$33,902,270	42%
Total	60,286	27,502	32,784	54%	388.7	212.0	176.7	45%	\$1,667,563,914	\$878,760,824	\$788,803,090	47%

⁸² Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁸³ Excludes projects in unknown bands.

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TABLE 44. GREEN BANK RESIDENTIAL⁸⁴ PERFORMANCE INDICATORS BY PARTICIPATION IN METROPOLITAN STATISTICAL AREA (MSA) STATE MEDIAN INCOME (SMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED⁸⁵

Fiscal Year	KW per Project Unit			Total Investment per MW (\$000s)			Investment per Project Unit (\$)		
	Total	Over 100% SMI	100% or Below SMI	Total	Over 100% SMI	100% or Below SMI	Total	Over 100% SMI	100% or Below SMI
2012	6.7	7.0	6.1	\$5,103	\$5,134	\$5,014	\$34,380	\$35,942	\$30,456
2013	7.1	7.4	6.3	\$4,498	\$4,447	\$4,670	\$31,969	\$32,775	\$29,614
2014	6.6	7.2	5.6	\$4,652	\$4,566	\$4,826	\$30,606	\$33,070	\$26,792
2015	7.1	7.6	6.4	\$4,702	\$4,670	\$4,758	\$33,440	\$35,363	\$30,638
2016	6.8	7.7	5.9	\$4,771	\$4,479	\$5,114	\$32,210	\$34,292	\$30,314
2017	5.8	7.7	4.7	\$3,838	\$3,721	\$3,946	\$22,277	\$28,629	\$18,675
2018	5.1	6.8	4.1	\$4,300	\$4,145	\$4,452	\$21,901	\$28,200	\$18,181
2019	6.0	8.2	4.8	\$4,310	\$3,735	\$4,870	\$25,998	\$30,593	\$23,373
2020	6.9	8.4	5.9	\$3,790	\$3,709	\$3,876	\$26,304	\$30,978	\$22,847
2021	7.5	8.4	6.7	\$3,920	\$3,871	\$3,981	\$29,561	\$32,454	\$26,635
2022	6.3	6.7	5.7	\$4,679	\$4,687	\$4,669	\$29,334	\$31,525	\$26,779
Total	6.4	7.7	5.4	\$4,290	\$4,145	\$4,464	\$27,661	\$31,953	\$24,061

TABLE 45. GREEN BANK RESIDENTIAL⁸⁶ RELATIONSHIP OF PERFORMANCE INDICATORS BETWEEN METROPOLITAN STATISTICAL AREA (MSA) STATE MEDIAN INCOME (SMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED⁸⁷

Fiscal Year	KW per Project Unit	Total Investment per MW (\$000s)	Investment per Project Unit (\$)
	Ratio of Above 100% SMI to Below 100% SMI	Ratio of Above 100% SMI to Below 100% SMI	Ratio of Above 100% SMI to Below 100% SMI
2012	1.15	1.02	1.18
2013	1.16	0.95	1.11
2014	1.30	0.95	1.23
2015	1.18	0.98	1.15
2016	1.29	0.88	1.13
2017	1.63	0.94	1.53
2018	1.67	0.93	1.55
2019	1.71	0.77	1.31
2020	1.42	0.96	1.36
2021	1.25	0.97	1.22
2022	1.17	1.00	1.18
Total	1.43	0.93	1.33

⁸⁴ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁸⁵ Excludes projects in unknown bands.

⁸⁶ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁸⁷ Excludes projects in unknown bands.

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Projects by CRA Eligibility

The Community Reinvestment Act was enacted by Congress in 1977 to encourage depository institutions to lend in low-to-moderate-income communities. These lending institutions are rated by regulators as to the volume of their lending to projects in these communities by regulators. Projects are potentially compliant with CRA requirements if they are below 80% of a Metropolitan Statistical Area’s (MSA) Adjusted Median Income (AMI) level.

TABLE 46. GREEN BANK COMMERCIAL AND RESIDENTIAL⁸⁸ ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED⁸⁹

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2012	288	273	15	5%	1.9	1.9	0.1	4%	\$9,901,511	\$9,514,915	\$386,596	4%
2013	1,114	1,027	87	8%	23.5	8.1	15.3	65%	\$111,141,216	\$37,829,389	\$73,311,827	66%
2014	2,567	2,181	386	15%	23.4	18.4	5.0	21%	\$107,110,514	\$86,736,906	\$20,373,608	19%
2015	6,749	5,533	1,216	18%	62.2	54.1	8.1	13%	\$320,587,455	\$249,319,939	\$71,267,515	22%
2016	8,311	5,501	2,810	34%	65.5	52.1	13.4	20%	\$319,178,904	\$233,774,001	\$85,404,902	27%
2017	6,146	3,273	2,873	47%	50.0	33.0	17.0	34%	\$180,488,411	\$108,344,425	\$72,143,986	40%
2018	8,383	4,627	3,756	45%	55.3	39.4	15.9	29%	\$218,341,089	\$147,843,213	\$70,497,876	32%
2019	9,250	4,972	4,278	46%	64.1	44.7	19.4	30%	\$271,196,941	\$163,486,172	\$107,710,769	40%
2020	8,572	5,361	3,211	37%	66.3	48.2	18.1	27%	\$256,398,228	\$174,428,512	\$81,969,716	32%
2021	6,649	4,412	2,237	34%	66.0	50.6	15.4	23%	\$260,439,466	\$184,533,504	\$75,905,962	29%
2022	2,772	1,946	826	30%	22.0	16.8	5.1	23%	\$107,227,375	\$79,196,106	\$28,031,268	26%
Total	60,801	39,106	21,695	36%	500.2	367.4	132.8	27%	\$2,162,011,110	\$1,475,007,083	\$687,004,027	32%

⁸⁸ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units. This table has been adjusted to include all the Low-Income Solar Lease (ESA) and Multifamily Affordable Housing projects as 80% or Below AMI regardless of which census tract the project falls into as these programs are designed to serve the LMI market.

⁸⁹ Excludes projects in unknown bands.

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TABLE 47. GREEN BANK COMMERCIAL AND RESIDENTIAL⁹⁰ PERFORMANCE INDICATORS BY PARTICIPATION IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED⁹¹

Fiscal Year	KW per Project Unit (1000*MW/total units)			Total Investment per MW (\$000s)			Investment per Project Unit (\$)		
	Total	Over 80% AMI	80% or Below AMI	Total	Over 80% AMI	80% or Below AMI	Total	Over 80% AMI	80% or Below AMI
2012	6.7	6.8	5.8	\$5,103	\$5,133	\$4,461	\$34,380	\$34,853	\$25,773
2013	21.1	7.9	176.0	\$4,739	\$4,647	\$4,787	\$99,768	\$36,835	\$842,665
2014	9.1	8.4	12.9	\$4,577	\$4,708	\$4,090	\$41,726	\$39,769	\$52,781
2015	9.2	9.8	6.6	\$5,153	\$4,606	\$8,822	\$47,501	\$45,061	\$58,608
2016	7.9	9.5	4.8	\$4,870	\$4,484	\$6,373	\$38,404	\$42,497	\$30,393
2017	8.1	10.1	5.9	\$3,609	\$3,282	\$4,245	\$29,367	\$33,102	\$25,111
2018	6.6	8.5	4.2	\$3,948	\$3,748	\$4,446	\$26,046	\$31,952	\$18,769
2019	6.9	9.0	4.5	\$4,231	\$3,655	\$5,560	\$29,319	\$32,881	\$25,178
2020	7.7	9.0	5.6	\$3,868	\$3,622	\$4,519	\$29,911	\$32,537	\$25,528
2021	9.9	11.5	6.9	\$3,945	\$3,649	\$4,914	\$39,170	\$41,825	\$33,932
2022	7.9	8.6	6.2	\$4,883	\$4,710	\$5,448	\$38,682	\$40,697	\$33,936
Total	8.2	9.4	6.1	\$4,322	\$4,015	\$5,173	\$35,559	\$37,718	\$31,666

TABLE 48. GREEN BANK COMMERCIAL AND RESIDENTIAL⁹² RELATIONSHIP OF PERFORMANCE INDICATORS BETWEEN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED⁹³

Fiscal Year	KW per Project Unit	Total Investment per MW (\$000s)	Investment per Project Unit (\$)
	Ratio of Above 80% AMI to Below 80% AMI	Ratio of Above 80% AMI to Below 80% AMI	Ratio of Above 80% AMI to Below 80% AMI
2012	1.18	1.15	1.35
2013	0.05	0.97	0.04
2014	0.65	1.15	0.75
2015	1.47	0.52	0.77
2016	1.99	0.70	1.40
2017	1.70	0.77	1.32
2018	2.02	0.84	1.70
2019	1.99	0.66	1.31
2020	1.59	0.80	1.27
2021	1.66	0.74	1.23
2022	1.39	0.86	1.20
Total	1.53	0.78	1.19

⁹⁰ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁹¹ Excludes projects in unknown bands.

⁹² Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁹³ Excludes projects in unknown bands.

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Distressed Communities

Connecticut’s “distressed communities⁹⁴” are particularly affected by the state’s high energy prices. On average, Connecticut’s neediest households owe \$1,678 more in annual energy bills than they can afford⁹⁵. The Green Bank’s financing products and marketing efforts seek to bring lower and more predictable energy costs to homes and businesses in these communities.

TABLE 49. DISTRESSED AND NOT DISTRESSED MUNICIPALITIES, POPULATION, AND HOUSEHOLDS IN CONNECTICUT

For more information on DECD Distressed Municipality criterions, click [here](#)⁹⁶

2021⁹⁷ DECD Distressed Designation						
	Municipalities	% of All Municipalities	Population	% of State Population	Households	% of total Households
Distressed	25	15%	964,777	27%	375,703	27%
Not Distressed	144	85%	2,605,772	73%	1,009,734	73%
Total	169	100%	3,570,549	100%	1,385,437	100%

TABLE 50. GREEN BANK COMMERCIAL AND RESIDENTIAL⁹⁸ ACTIVITY IN DISTRESSED COMMUNITIES BY FY CLOSED⁹⁹

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2012	Yes	35	12%	0.2	10%	\$997,129	10%	447,962	33%	0.1	\$2.23	0.4
2012	No	253	88%	1.7	90%	\$8,904,382	90%	912,222	67%	0.3	\$9.76	1.9
2012	Total	288	100%	1.9	100%	\$9,901,511	100%	447,962	33%	0.1	\$2.23	0.4
2013	Yes	119	11%	15.5	66%	\$75,138,078	68%	912,222	67%	0.3	\$9.76	1.9

⁹⁴ Distressed Municipalities are defined by the Connecticut Department of Economic and community Development by a combination of per capita income, poverty rates, unemployment rates, growth, age of buildings, education.

⁹⁵ Mapping Household Energy & Transportation Affordability in Connecticut: <https://www.ctgreenbank.com/wp-content/uploads/2020/11/Mapping-Household-Energy-and-Transportation-Affordability-Report-Oct-2020.pdf> \$21,678 is the average energy affordability gap for Households earning less than 100% of the Federal Poverty Level. For households earning less than 200% FPL the average energy affordability gap is \$858.

⁹⁶ Department of Economic and Community Development: https://portal.ct.gov/DECD/Content/About_DECD/Research-and-Publications/02_Review_Publications/Distressed-Municipalities

⁹⁷ As designated by DECD in 2021.

⁹⁸ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

⁹⁹ Excludes projects in unknown communities.

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Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2013	No	995	89%	7.9	34%	\$36,003,137	32%	1,360,184	100%	0.2	\$7.28	1.4
2013	Total	1,114	100%	23.5	100%	\$111,141,216	100%	426,564	31%	0.3	\$176.15	36.4
2014	Yes	389	15%	3.9	17%	\$21,470,661	20%	929,285	69%	1.1	\$38.74	8.5
2014	No	2,178	85%	19.5	83%	\$85,639,853	80%	1,355,849	100%	0.8	\$81.97	17.3
2014	Total	2,567	100%	23.4	100%	\$107,110,514	100%	416,415	31%	0.9	\$51.56	9.5
2015	Yes	1,498	22%	13.1	21%	\$94,022,507	29%	939,791	69%	2.3	\$91.13	20.7
2015	No	5,251	78%	49.1	79%	\$226,564,948	71%	1,356,206	100%	1.9	\$78.98	17.3
2015	Total	6,749	100%	62.2	100%	\$320,587,455	100%	423,559	31%	3.5	\$221.98	30.9
2016	Yes	2,434	29%	16.9	26%	\$99,438,223	31%	929,024	69%	5.7	\$243.87	52.9
2016	No	5,880	71%	48.9	74%	\$220,953,735	69%	1,352,583	100%	5.0	\$237.02	46.0
2016	Total	8,314	100%	65.9	100%	\$320,391,957	100%	438,710	32%	5.5	\$226.66	38.6
2017	Yes	2,273	37%	15.9	32%	\$60,828,435	34%	916,003	68%	6.4	\$241.22	53.4
2017	No	3,873	63%	34.1	68%	\$119,659,976	66%	1,354,713	100%	6.1	\$236.50	48.6
2017	Total	6,146	100%	50.0	100%	\$180,488,411	100%	435,595	32%	5.2	\$139.64	36.4
2018	Yes	3,737	45%	20.7	37%	\$79,123,980	36%	926,160	68%	4.2	\$129.20	36.9
2018	No	4,651	55%	35.7	63%	\$142,627,123	64%	1,361,755	100%	4.5	\$132.54	36.7
2018	Total	8,388	100%	56.4	100%	\$221,751,103	100%	430,098	31%	8.7	\$183.97	48.1
2019	Yes	4,280	46%	19.8	31%	\$106,082,135	39%	937,276	69%	5.0	\$152.17	38.1
2019	No	4,971	54%	44.5	69%	\$165,849,346	61%	1,367,374	100%	6.1	\$162.17	41.2
2019	Total	9,251	100%	64.3	100%	\$271,931,481	100%	421,653	31%	10.2	\$251.59	47.0
2020	Yes	2,907	34%	18.4	25%	\$72,929,372	26%	949,093	69%	5.2	\$174.75	46.9
2020	No	5,673	66%	55.5	75%	\$202,335,381	74%	1,370,746	100%	6.7	\$198.38	46.9
2020	Total	8,580	100%	74.0	100%	\$275,264,753	100%	427,553	31%	6.8	\$170.57	43.1
2021	Yes	1,936	29%	12.9	20%	\$57,147,346	22%	957,884	69%	5.9	\$211.23	58.0
2021	No	4,727	71%	53.2	80%	\$204,770,371	78%	1,385,437	100%	6.2	\$198.68	53.4
2021	Total	6,663	100%	66.1	100%	\$261,917,717	100%	375,703	27%	5.2	\$152.11	34.4
2022	Yes	649	23%	4.7	22%	\$25,696,803	24%	1,009,734	73%	4.7	\$202.80	52.6
2022	No	2,122	77%	17.0	78%	\$81,250,430	76%	1,385,437	100%	4.8	\$189.05	47.7
2022	Total	2,771	100%	21.8	100%	\$106,947,233	100%	375,703	27%	1.7	\$68.40	12.6

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Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
Total	Yes	20,257	33%	142.2	28%	\$692,874,669	32%	1,009,734	73%	2.1	\$80.47	16.9
Total	No	40,574	67%	367.2	72%	\$1,494,558,682	68%	1,385,437	100%	2.0	\$77.19	15.7
Total	Total	60,831	100%	509.4	100%	\$2,187,433,351	100%	375,703	27%	53.9	\$1,844.21	378.4

TABLE 51. GREEN BANK COMMERCIAL AND RESIDENTIAL¹⁰⁰ ACTIVITY IN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED¹⁰¹

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
2012	288	253	35	12%	1.9	1.7	0.2	10%	\$9,901,511	\$8,904,382	\$997,129	10%
2013	1,114	995	119	11%	23.5	7.9	15.5	66%	\$111,141,216	\$36,003,137	\$75,138,078	68%
2014	2,567	2,178	389	15%	23.4	19.5	3.9	17%	\$107,110,514	\$85,639,853	\$21,470,661	20%
2015	6,749	5,251	1,498	22%	62.2	49.1	13.1	21%	\$320,587,455	\$226,564,948	\$94,022,507	29%
2016	8,314	5,880	2,434	29%	65.9	48.9	16.9	26%	\$320,391,957	\$220,953,735	\$99,438,223	31%
2017	6,146	3,873	2,273	37%	50.0	34.1	15.9	32%	\$180,488,411	\$119,659,976	\$60,828,435	34%
2018	8,388	4,651	3,737	45%	56.4	35.7	20.7	37%	\$221,751,103	\$142,627,123	\$79,123,980	36%
2019	9,251	4,971	4,280	46%	64.3	44.5	19.8	31%	\$271,931,481	\$165,849,346	\$106,082,135	39%
2020	8,580	5,673	2,907	34%	74.0	55.5	18.4	25%	\$275,264,753	\$202,335,381	\$72,929,372	26%
2021	6,663	4,727	1,936	29%	66.1	53.2	12.9	20%	\$261,917,717	\$204,770,371	\$57,147,346	22%
2022	2,771	2,122	649	23%	21.8	17.0	4.7	22%	\$106,947,233	\$81,250,430	\$25,696,803	24%
Total	60,831	40,574	20,257	33%	509.4	367.2	142.2	28%	\$2,187,433,351	\$1,494,558,682	\$692,874,669	32%

¹⁰⁰ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

¹⁰¹ Excludes projects in unknown communities.

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TABLE 52. GREEN BANK COMMERCIAL AND RESIDENTIAL¹⁰² PERFORMANCE INDICATORS BY PARTICIPATION IN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED¹⁰³

Fiscal Year	KW per Project Unit (1000*MW/total units)			Total Investment per MW (\$000s)			Investment per Project Unit (\$)		
	Total	Not Distressed	Distressed	Total	Not Distressed	Distressed	Total	Not Distressed	Distressed
2012	6.7	6.9	5.7	\$5,103	\$5,119	\$4,965	\$34,380	\$35,195	\$28,489
2013	21.1	8.0	130.4	\$4,739	\$4,534	\$4,843	\$99,768	\$36,184	\$631,412
2014	9.1	8.9	10.1	\$4,577	\$4,400	\$5,449	\$41,726	\$39,320	\$55,195
2015	9.2	9.4	8.7	\$5,153	\$4,612	\$7,189	\$47,501	\$43,147	\$62,765
2016	7.9	8.3	7.0	\$4,865	\$4,516	\$5,875	\$38,536	\$37,577	\$40,854
2017	8.1	8.8	7.0	\$3,609	\$3,505	\$3,833	\$29,367	\$30,896	\$26,761
2018	6.7	7.7	5.5	\$3,934	\$3,999	\$3,823	\$26,437	\$30,666	\$21,173
2019	7.0	9.0	4.6	\$4,228	\$3,727	\$5,351	\$29,395	\$33,363	\$24,786
2020	8.6	9.8	6.3	\$3,722	\$3,644	\$3,954	\$32,082	\$35,666	\$25,088
2021	9.9	11.2	6.7	\$3,963	\$3,852	\$4,418	\$39,309	\$43,319	\$29,518
2022	7.9	8.0	7.3	\$4,909	\$4,768	\$5,415	\$38,595	\$38,290	\$39,594
Total	8.4	9.1	7.0	\$4,294	\$4,070	\$4,873	\$35,959	\$36,835	\$34,204

TABLE 53. GREEN BANK COMMERCIAL AND RESIDENTIAL¹⁰⁴ RELATIONSHIP OF PERFORMANCE INDICATORS BETWEEN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED¹⁰⁵

Fiscal Year	KW per Project Unit	Total Investment per MW (\$000s)	Investment per Project Unit (\$)
	Ratio of Not Distressed to Distressed	Ratio of Not Distressed to Distressed	Ratio of Not Distressed to Distressed
2012	1.20	1.03	1.24
2013	0.06	0.94	0.06
2014	0.88	0.81	0.71
2015	1.07	0.64	0.69
2016	1.20	0.77	0.92
2017	1.26	0.91	1.15
2018	1.38	1.05	1.45
2019	1.93	0.70	1.35
2020	1.54	0.92	1.42
2021	1.68	0.87	1.47
2022	1.10	0.88	0.97
Total	1.29	0.84	1.08

¹⁰² Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

¹⁰³ Excludes projects in unknown bands.

¹⁰⁴ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

¹⁰⁵ Excludes projects in unknown bands.

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Projects in Areas Designated as Environmental Justice Block Groups

These are United States census block groups, as determined in accordance with the most recent United States census, for which thirty per cent or more of the population consists of low-income persons who are not institutionalized and have an income below two hundred per cent of the federal poverty level or where the Connecticut Department of Energy and Environmental Protection has designated the block to be an Environmental Justice (EJ) Community. These block groups are specifically part of the State of Connecticut’s definition of Vulnerable Communities.

TABLE 54. GREEN BANK COMMERCIAL AND RESIDENTIAL¹⁰⁶ ACTIVITY IN ENVIRONMENTAL JUSTICE BLOCK GROUPS BY FY CLOSED¹⁰⁷

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2012	288	279	9	3%	1.9	1.9	0.1	3%	\$9,901,511	\$9,554,351	\$347,160	4%
2013	1,114	1,082	32	3%	23.5	23.3	0.2	1%	\$111,141,216	\$110,162,989	\$978,226	1%
2014	2,567	2,481	86	3%	23.4	22.9	0.5	2%	\$107,110,514	\$104,742,298	\$2,368,216	2%
2015	6,749	6,516	233	3%	62.2	60.5	1.7	3%	\$320,587,455	\$312,634,184	\$7,953,271	2%
2016	8,314	7,902	412	5%	65.9	63.2	2.7	4%	\$320,391,957	\$308,648,048	\$11,743,909	4%
2017	6,146	5,470	676	11%	50.0	45.4	4.6	9%	\$180,488,411	\$164,614,057	\$15,874,354	9%
2018	8,388	7,988	400	5%	56.4	52.2	4.1	7%	\$221,751,103	\$208,660,656	\$13,090,447	6%
2019	13,590	13,127	463	3%	64.3	61.9	2.5	4%	\$319,612,686	\$310,204,956	\$9,407,730	3%
2020	9,197	8,451	746	8%	74.0	71.3	2.6	4%	\$286,177,632	\$276,370,669	\$9,806,963	3%
2021	7,102	6,795	307	4%	66.1	63.6	2.5	4%	\$270,723,458	\$245,821,653	\$24,901,804	9%
2022	3,435	3,274	161	5%	22.2	21.3	0.9	4%	\$120,112,932	\$115,708,617	\$4,404,315	4%
Total	66,890	63,365	3,525	5%	509.8	487.3	22.4	4%	\$2,267,998,874	\$2,167,122,478	\$100,876,396	4%

¹⁰⁶ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

¹⁰⁷ Excludes projects in unknown bands.

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TABLE 55. GREEN BANK COMMERCIAL AND RESIDENTIAL¹⁰⁸ PERFORMANCE INDICATORS BY PARTICIPATION IN ENVIRONMENTAL JUSTICE POVERTY AREAS BY FY CLOSED¹⁰⁹

Fiscal Year	KW per Project Unit (1000*MW/total units)			Total Investment per MW (\$000s)			Investment per Project Unit (\$)		
	Total	Not EJ Block Group	EJ Block Group	Total	Not EJ Block Group	EJ Block Group	Total	Not EJ Block Group	EJ Block Group
2012	6.7	6.7	7.1	\$5,103	\$5,091	\$5,458	\$34,380	\$34,245	\$38,573
2013	21.1	21.5	6.2	\$4,739	\$4,737	\$4,967	\$99,768	\$101,814	\$30,570
2014	9.1	9.2	6.0	\$4,577	\$4,576	\$4,618	\$41,726	\$42,218	\$27,537
2015	9.2	9.3	7.4	\$5,153	\$5,170	\$4,590	\$47,501	\$47,979	\$34,134
2016	7.9	8.0	6.6	\$4,865	\$4,887	\$4,346	\$38,536	\$39,059	\$28,505
2017	8.1	8.3	6.8	\$3,609	\$3,626	\$3,447	\$29,367	\$30,094	\$23,483
2018	6.7	6.5	10.3	\$3,934	\$3,994	\$3,170	\$26,437	\$26,122	\$32,726
2019	4.7	4.7	5.3	\$4,969	\$5,015	\$3,816	\$23,518	\$23,631	\$20,319
2020	8.0	8.4	3.5	\$3,869	\$3,875	\$3,719	\$31,116	\$32,703	\$13,146
2021	9.3	9.4	8.1	\$4,096	\$3,866	\$9,954	\$38,119	\$36,177	\$81,113
2022	6.4	6.5	5.4	\$5,421	\$5,438	\$5,021	\$34,967	\$35,342	\$27,356
Total	7.6	7.7	6.4	\$4,449	\$4,447	\$4,499	\$33,906	\$34,201	\$28,617

TABLE 56. GREEN BANK COMMERCIAL AND RESIDENTIAL¹¹⁰ RELATIONSHIP OF PERFORMANCE INDICATORS BETWEEN ENVIRONMENTAL JUSTICE POVERTY AREAS AND NOT DISTRESSED NOT ENVIRONMENTAL JUSTICE POVERTY AREAS BY FY CLOSED¹¹¹

Fiscal Year	KW per Project Unit	Total Investment per MW (\$000s)	Investment per Project Unit (\$)
	Ratio of Not EJ Block Group to EJ Block Group	Ratio of Not EJ Block Group to EJ Block Group	Ratio of Not EJ Block Group to EJ Block Group
2012	0.95	0.93	0.89
2013	3.49	0.95	3.33
2014	1.55	0.99	1.53
2015	1.25	1.13	1.41
2016	1.22	1.12	1.37
2017	1.22	1.05	1.28
2018	0.63	1.26	0.80
2019	0.89	1.31	1.16
2020	2.39	1.04	2.49
2021	1.15	0.39	0.45
2022	1.19	1.08	1.29

¹⁰⁸ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

¹⁰⁹ Excludes projects in unknown bands.

¹¹⁰ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

¹¹¹ Excludes projects in unknown bands.

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Total	1.21	0.99	1.20
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Ethnicity

Ensuring that the benefits of the Green Economy reach all communities is core to the mission of the Green Bank. The Green Bank has sought to make sure that our programs are reaching not just those in in distressed municipalities and income bands, but that the programs are penetrating into those communities across race and ethnicity. The Green Bank categorizes each census tract in Connecticut as “Majority Hispanic”, “Majority Black,” “Majority White,” or “Majority Asian” based on designations published by CT Data Collaborative¹¹².

Table 61 and Table 62 groups the Green Bank’s residential projects by the average area median income (AMI) of their census average state median income (AMI) of their census tract from the American Community Survey (ACS) 5-Year Estimate data by Ethnicity.

TABLE 57. OVERVIEW OF CONNECTICUT POPULATION AND HOUSEHOLDS BY ETHNICITY CATEGORY^{113 114}

Ethnicity Category	Total Population	% Total Population Distribution	Total Households	% Total Household Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution
Majority Black	164,759	5%	60,343	4%	25,577	3%	16,058	7%
Majority Hispanic	519,607	15%	193,968	14%	62,372	7%	59,377	25%
Majority White	2,881,783	81%	1,129,133	82%	788,350	90%	164,757	68%
Majority Asian	4,400	0%	1,993	0%	88	0%	1,766	1%
Total	3,570,549	100%	1,385,437	100%	876,387	100%	241,958	100%

TABLE 58. OVERVIEW OF CONNECTICUT POPULATION BY ETHNICITY CATEGORY BY METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS AND INCOME^{115 116}

	Majority Black		Majority Hispanic		Majority White		Majority Asian	
	Total Population	% Population	Total Population	% Population	Total Population	% Population	Total Population	% Population
<60%	91,708	56%	357,959	69%	156,219	5%	0	0%
60%-80%	35,912	22%	149,568	29%	355,386	12%	0	0%
80%-100%	19,404	12%	12,080	2%	630,521	22%	0	0%
100%-120%	15,208	9%	0	0%	672,540	23%	4,400	100%

¹¹² <https://www.ctdata.org/blog/most-common-raceethnicity-by-census-tract>

¹¹³ 2020 American Community Survey (ACS).

¹¹⁴ The suite of products offered by the Connecticut Green Bank do not currently address rental properties of 1-4 units.

¹¹⁵ 2020 American Community Survey (ACS).

¹¹⁶ The suite of products offered by the Connecticut Green Bank do not currently address rental properties of 1-4 units.

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	Majority Black		Majority Hispanic		Majority White		Majority Asian	
	Total Population	% Population	Total Population	% Population	Total Population	% Population	Total Population	% Population
>120%	0	0%	0	0%	1,051,590	36%	0	0%
Grand Total	164,759	100%	519,607	100%	2,881,783	100%	4,400	100%

TABLE 59. OVERVIEW OF CONNECTICUT OWNER OCCUPIED HOUSEHOLDS (OOH) BY ETHNICITY CATEGORY BY METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS AND INCOME¹¹⁷

	Majority Black		Majority Hispanic		Majority White		Majority Asian	
	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution
<60%	9,549	37%	36,027	58%	23,086	3%	0	0%
60%-80%	7,132	28%	23,995	38%	73,963	9%	0	0%
80%-100%	4,568	18%	2,350	4%	159,134	20%	0	0%
100%-120%	4,328	17%	0	0%	205,187	26%	88	100%
>120%	0	0%	0	0%	326,890	41%	0	0%
Grand Total	25,577	100%	62,372	100%	788,350	100%	88	100%

TABLE 60. OVERVIEW OF CONNECTICUT OWNER AND RENTAL OCCUPIED HOUSEHOLDS (ORH) BY ETHNICITY CATEGORY BY METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS AND INCOME¹¹⁸

	Majority Black		Majority Hispanic		Majority White		Majority Asian	
	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution
<60%	11,714	73%	44,840	76%	21,657	13%	0	0%
60%-80%	2,302	14%	14,212	24%	36,544	22%	0	0%
80%-100%	1,307	8%	325	1%	55,043	33%	0	0%
100%-120%	735	5%	0	0%	29,562	18%	1,766	100%
>120%	0	0%	0	0%	21,904	13%	0	0%
Grand Total	16,058	100%	59,377	100%	164,757	100%	1,766	100%

¹¹⁷ 2020 American Community Survey (ACS).

¹¹⁸ 2020 American Community Survey (ACS).

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TABLE 61. GREEN BANK COMMERCIAL AND RESIDENTIAL¹¹⁹ ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY ETHNICITY CATEGORY BY FY CLOSED¹²⁰

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population
2012	<60%	1	14.3%	130,338	21.4%	2	28.6%	267,578	43.9%	4	57.1%	211,447	34.7%	0	0.0%	0	0.0%
2012	60%-80%	0	0.0%	50,463	9.6%	1	12.5%	46,451	8.8%	7	87.5%	430,303	81.6%	0	0.0%	0	0.0%
2012	80%-100%	0	0.0%	12,967	2.2%	0	0.0%	0	0.0%	33	100.0%	576,473	97.8%	0	0.0%	0	0.0%
2012	100%-120%	0	0.0%	13,518	1.9%	0	0.0%	0	0.0%	83	100.0%	709,146	98.1%	0	0.0%	0	0.0%
2012	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	157	100.0%	1,116,395	100.0%	0	0.0%	0	0.0%
2012	Total	1	0.3%	208,256	5.8%	3	1.0%	315,320	8.8%	284	98.6%	3,048,637	85.3%	0	0.0%	0	0.0%
2013	<60%	2	8.3%	105,728	17.5%	8	33.3%	291,958	48.4%	14	58.3%	205,340	34.1%	0	0.0%	0	0.0%
2013	60%-80%	4	6.3%	62,973	11.1%	3	4.8%	58,042	10.2%	56	88.9%	446,346	78.7%	0	0.0%	0	0.0%
2013	80%-100%	0	0.0%	6,811	1.2%	0	0.0%	0	0.0%	128	100.0%	580,729	98.8%	0	0.0%	0	0.0%
2013	100%-120%	3	1.4%	13,050	1.9%	0	0.0%	0	0.0%	219	98.6%	674,211	98.1%	0	0.0%	0	0.0%
2013	>120%	0	0.0%	6,473	0.6%	0	0.0%	0	0.0%	677	100.0%	1,124,298	99.4%	0	0.0%	0	0.0%
2013	Total	9	0.8%	196,363	5.5%	11	1.0%	351,246	9.8%	1,094	98.2%	3,035,952	84.7%	0	0.0%	0	0.0%
2014	<60%	14	15.1%	121,933	19.9%	13	14.0%	257,389	41.9%	66	71.0%	234,813	38.2%	0	0.0%	0	0.0%
2014	60%-80%	23	13.3%	48,498	8.9%	12	6.9%	70,300	12.9%	138	79.8%	427,334	78.2%	0	0.0%	0	0.0%
2014	80%-100%	0	0.0%	7,211	1.2%	3	0.6%	8,171	1.4%	532	99.4%	561,679	97.3%	0	0.0%	0	0.0%
2014	100%-120%	5	0.8%	12,878	1.8%	0	0.0%	1,119	0.2%	608	99.2%	706,859	98.1%	0	0.0%	0	0.0%
2014	>120%	7	0.6%	14,031	1.2%	0	0.0%	0	0.0%	1,146	99.4%	1,111,879	98.8%	0	0.0%	0	0.0%
2014	Total	49	1.9%	206,238	5.7%	28	1.1%	338,179	9.4%	2,490	97.0%	3,047,636	84.8%	0	0.0%	0	0.0%
2015	<60%	69	22.9%	110,813	16.7%	108	35.9%	338,370	51.1%	124	41.2%	213,436	32.2%	0	0.0%	0	0.0%
2015	60%-80%	49	7.4%	42,986	8.8%	92	13.9%	46,866	9.6%	520	78.7%	399,974	81.7%	0	0.0%	0	0.0%
2015	80%-100%	30	2.4%	21,223	3.3%	5	0.4%	3,107	0.5%	1,196	96.9%	618,838	95.2%	3	0.2%	6,995	1.1%

¹¹⁹ Residential Owner-occupied properties of 1-4 units and multifamily housing greater than 4 units.

¹²⁰ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population
2015	100%-120%	19	1.2%	3,415	0.5%	0	0.0%	1,058	0.2%	1,597	98.8%	627,268	99.3%	0	0.0%	0	0.0%
2015	>120%	15	0.5%	6,641	0.6%	0	0.0%	0	0.0%	2,922	99.5%	1,144,333	99.4%	0	0.0%	0	0.0%
2015	Total	182	2.7%	187,128	5.2%	205	3.0%	389,401	10.8%	6,359	94.2%	3,009,698	83.8%	3	0.0%	6,995	0.2%
2016	<60%	233	26.4%	109,692	16.9%	406	46.0%	338,922	52.2%	244	27.6%	201,003	30.9%	0	0.0%	0	0.0%
2016	60%-80%	100	9.1%	41,838	8.2%	109	9.9%	53,161	10.4%	894	81.1%	414,089	81.3%	0	0.0%	0	0.0%
2016	80%-100%	82	4.5%	17,988	2.8%	3	0.2%	5,164	0.8%	1,729	95.2%	617,932	96.4%	2	0.1%	0	0.0%
2016	100%-120%	13	0.7%	0	0.0%	0	0.0%	0	0.0%	1,962	99.1%	645,907	98.9%	5	0.3%	7,402	1.1%
2016	>120%	52	2.1%	11,169	1.0%	0	0.0%	0	0.0%	2,477	97.9%	1,115,374	99.0%	0	0.0%	0	0.0%
2016	Total	480	5.8%	182,789	5.1%	518	6.2%	399,390	11.1%	7,306	87.9%	2,998,989	83.6%	7	0.1%	7,402	0.2%
2017	<60%	133	11.5%	113,965	17.2%	832	71.8%	346,455	52.2%	194	16.7%	202,761	30.6%	0	0.0%	0	0.0%
2017	60%-80%	80	7.1%	24,281	5.0%	129	11.5%	79,948	16.4%	917	81.4%	384,167	78.7%	0	0.0%	0	0.0%
2017	80%-100%	54	4.2%	15,657	2.6%	16	1.3%	10,830	1.8%	1,207	94.5%	585,556	95.7%	0	0.0%	0	0.0%
2017	100%-120%	5	0.5%	4,214	0.6%	0	0.0%	0	0.0%	1,062	99.2%	710,852	98.3%	4	0.4%	7,737	1.1%
2017	>120%	44	2.9%	14,631	1.3%	0	0.0%	0	0.0%	1,469	97.1%	1,084,646	98.7%	0	0.0%	0	0.0%
2017	Total	316	5.1%	175,792	4.9%	977	15.9%	437,233	12.2%	4,849	78.9%	2,973,716	82.7%	4	0.1%	7,737	0.2%
2018	<60%	454	18.9%	103,879	16.3%	1,641	68.5%	330,170	51.8%	302	12.6%	202,746	31.8%	0	0.0%	0	0.0%
2018	60%-80%	97	9.6%	36,569	6.6%	138	13.6%	80,567	14.6%	780	76.8%	435,871	78.8%	0	0.0%	0	0.0%
2018	80%-100%	71	5.3%	19,669	3.5%	44	3.3%	17,924	3.1%	1,229	91.4%	531,520	93.4%	0	0.0%	0	0.0%
2018	100%-120%	29	1.9%	8,805	1.2%	0	0.0%	0	0.0%	1,464	97.5%	694,040	97.6%	8	0.5%	7,957	1.1%
2018	>120%	62	2.9%	9,517	0.9%	0	0.0%	0	0.0%	2,064	97.1%	1,093,967	99.1%	0	0.0%	0	0.0%
2018	Total	713	8.5%	182,170	5.1%	1,823	21.7%	428,661	12.0%	5,839	69.7%	2,962,716	82.7%	8	0.1%	7,957	0.2%
2019	<60%	335	16.9%	106,329	16.8%	1,376	69.6%	341,405	54.1%	267	13.5%	183,874	29.1%	0	0.0%	0	0.0%
2019	60%-80%	165	12.9%	32,049	6.1%	144	11.2%	71,728	13.6%	975	75.9%	422,251	80.3%	0	0.0%	0	0.0%
2019	80%-100%	88	4.6%	21,054	3.4%	53	2.8%	7,832	1.3%	1,772	92.6%	584,126	95.3%	0	0.0%	0	0.0%
2019	100%-120%	62	3.4%	12,627	1.8%	5	0.3%	2,620	0.4%	1,751	95.8%	686,767	96.7%	10	0.5%	7,953	1.1%
2019	>120%	23	1.0%	6,394	0.6%	0	0.0%	0	0.0%	2,224	99.0%	1,080,098	99.4%	0	0.0%	0	0.0%
2019	Total	673	7.3%	180,323	5.0%	1,578	17.1%	423,585	11.8%	6,989	75.6%	2,963,213	82.9%	10	0.1%	7,953	0.2%
2020	<60%	356	29.1%	91,708	15.1%	619	50.5%	357,959	59.1%	250	20.4%	156,219	25.8%	0	0.0%	0	0.0%
2020	60%-80%	97	8.0%	35,912	6.6%	170	14.1%	149,568	27.7%	939	77.9%	355,386	65.7%	0	0.0%	0	0.0%

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population
2020	80%-100%	83	5.4%	19,404	2.9%	55	3.6%	12,080	1.8%	1,396	91.0%	630,521	95.2%	0	0.0%	0	0.0%
2020	100%-120%	59	2.6%	15,208	2.2%	3	0.1%	0	0.0%	2,162	97.1%	672,540	97.2%	3	0.1%	4,400	0.6%
2020	>120%	11	0.5%	0	0.0%	0	0.0%	0	0.0%	2,369	99.5%	1,051,590	100.0%	0	0.0%	0	0.0%
2020	Total	606	7.1%	164,759	4.6%	847	9.9%	519,607	14.6%	7,116	83.0%	2,881,783	80.7%	3	0.0%	4,400	0.1%
2021	<60%	252	33.2%	91,708	15.1%	306	40.3%	357,959	59.1%	202	26.6%	156,219	25.8%	0	0.0%	0	0.0%
2021	60%-80%	84	9.2%	35,912	6.6%	210	23.1%	149,568	27.7%	616	67.7%	355,386	65.7%	0	0.0%	0	0.0%
2021	80%-100%	49	3.9%	19,404	2.9%	46	3.6%	12,080	1.8%	1,174	92.5%	630,521	95.2%	0	0.0%	0	0.0%
2021	100%-120%	45	2.9%	15,208	2.2%	0	0.0%	0	0.0%	1,481	97.0%	672,540	97.2%	1	0.1%	4,400	0.6%
2021	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2,183	100.0%	1,051,590	100.0%	0	0.0%	0	0.0%
2021	Total	430	6.5%	164,759	4.6%	562	8.5%	519,607	14.6%	5,656	85.1%	2,881,783	80.7%	1	0.0%	4,400	0.1%
2022	<60%	63	22.6%	91,708	15.1%	126	45.2%	357,959	59.1%	90	32.3%	156,219	25.8%	0	0.0%	0	0.0%
2022	60%-80%	25	7.2%	35,912	6.6%	74	21.2%	149,568	27.7%	250	71.6%	355,386	65.7%	0	0.0%	0	0.0%
2022	80%-100%	17	3.4%	19,404	2.9%	16	3.2%	12,080	1.8%	474	93.5%	630,521	95.2%	0	0.0%	0	0.0%
2022	100%-120%	19	2.9%	15,208	2.2%	0	0.0%	0	0.0%	627	96.5%	672,540	97.2%	4	0.6%	4,400	0.6%
2022	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	987	100.0%	1,051,590	100.0%	0	0.0%	0	0.0%
2022	Total	124	4.5%	164,759	4.6%	216	7.8%	519,607	14.6%	2,428	87.6%	2,881,783	80.7%	4	0.1%	4,400	0.1%
Total	<60%	1,912	21.0%	91,708	15.1%	5,437	59.7%	357,959	59.1%	1,757	19.3%	156,219	25.8%	0	0.0%	0	0.0%
Total	60%-80%	724	9.2%	35,912	6.6%	1,082	13.7%	149,568	27.7%	6,092	77.1%	355,386	65.7%	0	0.0%	0	0.0%
Total	80%-100%	474	4.1%	19,404	2.9%	241	2.1%	12,080	1.8%	10,870	93.8%	630,521	95.2%	5	0.0%	0	0.0%
Total	100%-120%	259	1.9%	15,208	2.2%	8	0.1%	0	0.0%	13,016	97.7%	672,540	97.2%	35	0.3%	4,400	0.6%
Total	>120%	214	1.1%	0	0.0%	0	0.0%	0	0.0%	18,675	98.9%	1,051,590	100.0%	0	0.0%	0	0.0%
Total	Total	3,583	5.9%	164,759	4.6%	6,768	11.1%	519,607	14.6%	50,410	82.9%	2,881,783	80.7%	40	0.1%	4,400	0.1%

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

TABLE 62. GREEN BANK RESIDENTIAL¹²¹ ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY ETHNICITY CATEGORY BY FY CLOSED¹²²

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2012	<60%	1	14.3%	13,052	20.8%	2	28.6%	21,021	33.5%	4	57.1%	28,616	45.6%	0	0.0%	0	0.0%
2012	60%-80%	0	0.0%	8,714	8.5%	1	12.5%	7,447	7.3%	7	87.5%	86,017	84.2%	0	0.0%	0	0.0%
2012	80%-100%	0	0.0%	3,490	2.3%	0	0.0%	0	0.0%	33	100.0%	147,195	97.7%	0	0.0%	0	0.0%
2012	100%-120%	0	0.0%	3,488	1.6%	0	0.0%	0	0.0%	83	100.0%	212,996	98.4%	0	0.0%	0	0.0%
2012	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	157	100.0%	349,212	100.0%	0	0.0%	0	0.0%
2012	Total	1	0.3%	28,744	3.3%	3	1.0%	28,468	3.2%	284	98.6%	824,036	93.5%	0	0.0%	0	0.0%
2013	<60%	2	9.1%	10,766	17.6%	6	27.3%	21,781	35.7%	14	63.6%	28,457	46.6%	0	0.0%	0	0.0%
2013	60%-80%	4	6.3%	10,827	9.8%	3	4.8%	9,574	8.7%	56	88.9%	89,566	81.4%	0	0.0%	0	0.0%
2013	80%-100%	0	0.0%	1,926	1.3%	0	0.0%	0	0.0%	126	100.0%	147,750	98.7%	0	0.0%	0	0.0%
2013	100%-120%	3	1.4%	3,177	1.6%	0	0.0%	0	0.0%	217	98.6%	199,650	98.4%	0	0.0%	0	0.0%
2013	>120%	0	0.0%	1,808	0.5%	0	0.0%	0	0.0%	676	100.0%	348,900	99.5%	0	0.0%	0	0.0%
2013	Total	9	0.8%	28,504	3.3%	9	0.8%	31,355	3.6%	1,089	98.4%	814,323	93.2%	0	0.0%	0	0.0%
2014	<60%	12	14.0%	12,067	20.4%	9	10.5%	17,945	30.3%	65	75.6%	29,282	49.4%	0	0.0%	0	0.0%
2014	60%-80%	23	13.5%	8,576	8.2%	12	7.1%	10,507	10.1%	135	79.4%	85,445	81.7%	0	0.0%	0	0.0%
2014	80%-100%	0	0.0%	1,868	1.3%	2	0.4%	1,491	1.0%	526	99.6%	145,487	97.7%	0	0.0%	0	0.0%
2014	100%-120%	5	0.8%	3,280	1.6%	0	0.0%	0	0.0%	605	99.2%	205,632	98.4%	0	0.0%	0	0.0%
2014	>120%	7	0.6%	3,745	1.1%	0	0.0%	0	0.0%	1,139	99.4%	344,034	98.9%	0	0.0%	0	0.0%
2014	Total	47	1.9%	29,536	3.4%	23	0.9%	29,943	3.4%	2,470	97.2%	809,880	93.2%	0	0.0%	0	0.0%
2015	<60%	66	23.3%	12,243	18.4%	99	35.0%	27,292	41.0%	118	41.7%	27,097	40.7%	0	0.0%	0	0.0%
2015	60%-80%	49	7.5%	7,491	7.8%	92	14.0%	7,075	7.4%	515	78.5%	81,493	84.8%	0	0.0%	0	0.0%
2015	80%-100%	30	2.4%	5,767	3.5%	5	0.4%	513	0.3%	1,189	97.0%	158,372	95.9%	2	0.2%	553	0.3%
2015	100%-120%	19	1.2%	863	0.5%	0	0.0%	0	0.0%	1,584	98.8%	182,766	99.5%	0	0.0%	0	0.0%
2015	>120%	15	0.5%	1,877	0.5%	0	0.0%	0	0.0%	2,904	99.5%	350,176	99.5%	0	0.0%	0	0.0%
2015	Total	179	2.7%	28,241	3.3%	196	2.9%	34,880	4.0%	6,310	94.4%	799,904	92.6%	2	0.0%	553	0.1%

¹²¹ Residential Owner-occupied properties of 1-4 units.

¹²² Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
4. MEASURES OF SUCCESS

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2016	<60%	232	26.5%	11,333	18.0%	400	45.8%	26,620	42.2%	242	27.7%	25,103	39.8%	0	0.0%	0	0.0%
2016	60%-80%	100	9.1%	7,872	7.9%	108	9.9%	8,551	8.6%	888	81.0%	82,650	83.4%	0	0.0%	0	0.0%
2016	80%-100%	82	4.6%	4,736	2.9%	3	0.2%	937	0.6%	1,715	95.2%	159,339	96.6%	1	0.1%	0	0.0%
2016	100%-120%	12	0.6%	0	0.0%	0	0.0%	0	0.0%	1,949	99.2%	186,570	99.7%	3	0.2%	559	0.3%
2016	>120%	52	2.1%	3,063	0.9%	0	0.0%	0	0.0%	2,456	97.9%	341,514	99.1%	0	0.0%	0	0.0%
2016	Total	478	5.8%	27,004	3.1%	511	6.2%	36,108	4.2%	7,250	88.0%	795,176	92.6%	4	0.0%	559	0.1%
2017	<60%	132	11.5%	11,916	18.4%	828	72.1%	28,817	44.5%	188	16.4%	24,022	37.1%	0	0.0%	0	0.0%
2017	60%-80%	78	7.0%	5,276	5.4%	128	11.5%	12,600	12.9%	911	81.6%	79,579	81.7%	0	0.0%	0	0.0%
2017	80%-100%	54	4.3%	4,323	2.8%	16	1.3%	2,062	1.3%	1,196	94.5%	149,029	95.9%	0	0.0%	0	0.0%
2017	100%-120%	5	0.5%	1,101	0.5%	0	0.0%	0	0.0%	1,044	99.1%	207,746	99.2%	4	0.4%	637	0.3%
2017	>120%	44	2.9%	4,014	1.2%	0	0.0%	0	0.0%	1,457	97.1%	335,348	98.8%	0	0.0%	0	0.0%
2017	Total	313	5.1%	26,630	3.1%	972	16.0%	43,479	5.0%	4,796	78.8%	795,724	91.8%	4	0.1%	637	0.1%
2018	<60%	453	19.0%	10,135	16.3%	1,634	68.5%	28,053	45.1%	300	12.6%	24,059	38.7%	0	0.0%	0	0.0%
2018	60%-80%	97	9.7%	7,948	7.3%	136	13.6%	11,560	10.6%	768	76.7%	89,634	82.1%	0	0.0%	0	0.0%
2018	80%-100%	71	5.3%	4,704	3.2%	44	3.3%	3,271	2.2%	1,219	91.4%	138,013	94.5%	0	0.0%	0	0.0%
2018	100%-120%	28	1.9%	2,274	1.1%	0	0.0%	0	0.0%	1,452	97.6%	201,977	98.6%	8	0.5%	629	0.3%
2018	>120%	62	3.0%	2,828	0.8%	0	0.0%	0	0.0%	2,031	97.0%	341,161	99.2%	0	0.0%	0	0.0%
2018	Total	711	8.6%	27,889	3.2%	1,814	21.8%	42,884	5.0%	5,770	69.5%	794,844	91.8%	8	0.1%	629	0.1%
2019	<60%	330	16.8%	10,903	17.0%	1,371	69.7%	29,840	46.5%	265	13.5%	23,497	36.6%	0	0.0%	0	0.0%
2019	60%-80%	163	12.8%	6,102	6.0%	142	11.2%	10,367	10.3%	966	76.0%	84,519	83.7%	0	0.0%	0	0.0%
2019	80%-100%	88	4.6%	5,119	3.3%	53	2.8%	1,488	1.0%	1,766	92.6%	148,956	95.8%	0	0.0%	0	0.0%
2019	100%-120%	62	3.4%	3,330	1.6%	5	0.3%	627	0.3%	1,743	95.8%	202,850	97.8%	10	0.5%	648	0.3%
2019	>120%	23	1.0%	2,074	0.6%	0	0.0%	0	0.0%	2,214	99.0%	335,436	99.4%	0	0.0%	0	0.0%
2019	Total	666	7.2%	27,528	3.2%	1,571	17.1%	42,322	4.9%	6,954	75.6%	795,258	91.9%	10	0.1%	648	0.1%
2020	<60%	355	29.2%	9,549	13.9%	611	50.3%	36,027	52.5%	248	20.4%	23,086	33.6%	0	0.0%	0	0.0%
2020	60%-80%	95	8.0%	7,132	6.8%	166	13.9%	23,995	22.8%	933	78.1%	73,963	70.4%	0	0.0%	0	0.0%
2020	80%-100%	83	5.4%	4,568	2.8%	55	3.6%	2,350	1.4%	1,388	91.0%	159,134	95.8%	0	0.0%	0	0.0%
2020	100%-120%	59	2.7%	4,328	2.1%	3	0.1%	0	0.0%	2,151	97.1%	205,187	97.9%	3	0.1%	88	0.0%
2020	>120%	11	0.5%	0	0.0%	0	0.0%	0	0.0%	2,345	99.5%	326,890	100.0%	0	0.0%	0	0.0%

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2020	Total	603	7.1%	25,577	2.9%	835	9.8%	62,372	7.1%	7,065	83.1%	788,350	90.0%	3	0.0%	88	0.0%
2021	<60%	250	33.2%	9,549	13.9%	302	40.2%	36,027	52.5%	200	26.6%	23,086	33.6%	0	0.0%	0	0.0%
2021	60%-80%	84	9.3%	7,132	6.8%	210	23.2%	23,995	22.8%	610	67.5%	73,963	70.4%	0	0.0%	0	0.0%
2021	80%-100%	48	3.8%	4,568	2.8%	46	3.7%	2,350	1.4%	1,163	92.5%	159,134	95.8%	0	0.0%	0	0.0%
2021	100%-120%	45	3.0%	4,328	2.1%	0	0.0%	0	0.0%	1,468	97.0%	205,187	97.9%	1	0.1%	88	0.0%
2021	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2,157	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2021	Total	427	6.5%	25,577	2.9%	558	8.5%	62,372	7.1%	5,598	85.0%	788,350	90.0%	1	0.0%	88	0.0%
2022	<60%	61	22.3%	9,549	13.9%	124	45.4%	36,027	52.5%	88	32.2%	23,086	33.6%	0	0.0%	0	0.0%
2022	60%-80%	25	7.2%	7,132	6.8%	73	21.0%	23,995	22.8%	250	71.8%	73,963	70.4%	0	0.0%	0	0.0%
2022	80%-100%	16	3.2%	4,568	2.8%	15	3.0%	2,350	1.4%	466	93.8%	159,134	95.8%	0	0.0%	0	0.0%
2022	100%-120%	19	2.9%	4,328	2.1%	0	0.0%	0	0.0%	623	96.4%	205,187	97.9%	4	0.6%	88	0.0%
2022	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	978	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2022	Total	121	4.4%	25,577	2.9%	212	7.7%	62,372	7.1%	2,405	87.7%	788,350	90.0%	4	0.1%	88	0.0%
Total	<60%	1,894	21.0%	9,549	13.9%	5,386	59.8%	36,027	52.5%	1,732	19.2%	23,086	33.6%	0	0.0%	0	0.0%
Total	60%-80%	718	9.2%	7,132	6.8%	1,071	13.7%	23,995	22.8%	6,039	77.1%	73,963	70.4%	0	0.0%	0	0.0%
Total	80%-100%	472	4.1%	4,568	2.8%	239	2.1%	2,350	1.4%	10,787	93.8%	159,134	95.8%	3	0.0%	0	0.0%
Total	100%-120%	257	1.9%	4,328	2.1%	8	0.1%	0	0.0%	12,919	97.7%	205,187	97.9%	33	0.2%	88	0.0%
Total	>120%	214	1.1%	0	0.0%	0	0.0%	0	0.0%	18,514	98.9%	326,890	100.0%	0	0.0%	0	0.0%
Total	Total	3,555	5.9%	25,577	2.9%	6,704	11.1%	62,372	7.1%	49,991	82.9%	788,350	90.0%	36	0.1%	88	0.0%

CONNECTICUT GREEN BANK
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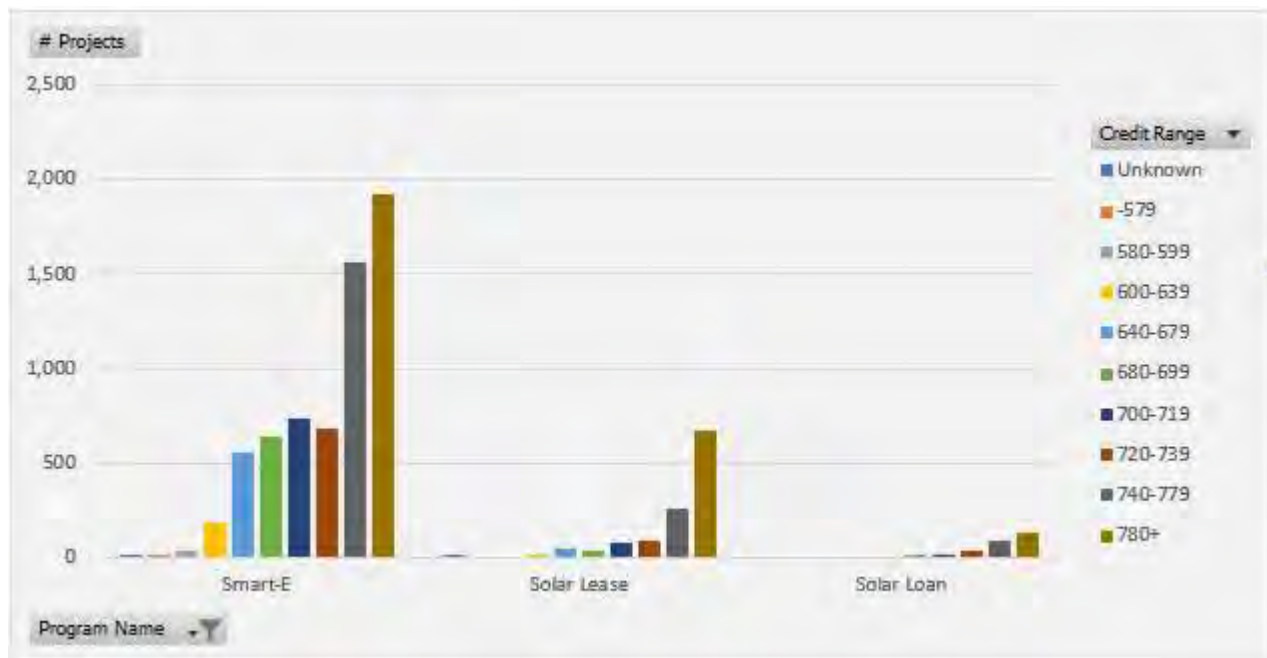
Credit Quality of Homeowners

The credit quality of borrowers in Green Bank residential financing programs that do FICO-based underwriting reflects the relatively high FICO scores in the state; 90% of single-family households that are Green Bank borrowers in these programs have a FICO of 680 or higher. The Green Bank has begun to focus on ensuring that credit-challenged customers also have access to energy financing products. Initiatives such as the partnership with PosiGen, which uses an alternative underwriting approach, and a new version of the Smart-E program which broadens credit eligibility to serve credit-challenged households are examples of this. The Smart-E program now has six lenders with experience serving this market including Capital 4 Change - a Community Development Financial Institution, and all the participating credit unions.

TABLE 63. CREDIT SCORE RANGES OF HOUSEHOLD BORROWERS USING RESIDENTIAL FINANCING PROGRAMS FY 2012-FY 2022

Program Name	Unknown	-579	580-599	600-639	640-679	680-699	700-719	720-739	740-779	780+	Grand Total
Smart-E	2	1	34	188	556	636	731	688	1,560	1,920	6,316
Solar Lease	4			1	45	39	78	85	264	673	1,189
Solar Loan						11	15	34	90	129	279
Grand Total	6	1	34	189	601	686	824	807	1,914	2,722	7,784
	0%	0%	0%	2%	8%	9%	11%	10%	25%	35%	100%

FIGURE 3. CREDIT SCORE RANGES OF HOUSEHOLD BORROWERS USING RESIDENTIAL FINANCING PROGRAMS



Customer Types and Market Segments

The Connecticut Green Bank targets end users of energy in Connecticut both at work and at home. A breakdown of projects by year by sector is shown in Table 64.

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TABLE 64. GREEN BANK ACTIVITY IN RESIDENTIAL AND COMMERCIAL AND INDUSTRIAL MARKETS BY FY CLOSED

Fiscal Year	# Projects	# Project Units	Total Investment	Installed Capacity (MW)	Expected Annual Generation (MWh)	Annual Saved / Produced (MMBtu)
Commercial and Industrial						
2012	0	0	\$0	0.0	0	0
2013	7	7	\$75,751,144	15.6	122,597	432,931
2014	27	27	\$29,371,586	6.7	32,134	182,330
2015	62	62	\$96,975,007	14.7	154,415	513,096
2016	71	71	\$54,887,158	10.2	25,614	72,689
2017	61	61	\$44,933,667	14.7	26,321	361,017
2018	85	85	\$39,908,681	14.1	18,437	59,627
2019	4,389	4,389	\$80,401,947	8.8	139,741	36,952
2020	686	686	\$62,304,398	14.9	87,659	63,091
2021	503	503	\$74,585,080	16.4	32,275	69,811
2022	687	687	\$39,582,388	5.0	26,785	14,191
Total	6,578	6,578	\$598,701,055	120.9	665,976	1,805,735
Multifamily						
2012	0	0	\$0	0.0	0	0
2013	0	0	\$0	0.0	0	0
2014	1	120	\$420,000	0.0	18	61
2015	3	294	\$1,051,296	0.0	56	212
2016	19	1,097	\$31,239,253	0.5	1,091	3,778
2017	15	1,288	\$7,702,985	1.0	1,125	11,128
2018	18	1,768	\$9,335,247	0.1	1,409	5,221
2019	15	1,918	\$31,479,010	0.0	0	756
2020	10	886	\$5,250,111	0.4	3,469	724
2021	3	113	\$3,861,233	0.0	0	0
2022	1	18	\$61,000	0.0	0	0
Total	85	7,502	\$90,400,135	2.0	7,168	21,879
Residential						
2012	288	288	\$9,901,511	1.9	2,210	7,539
2013	1,107	1,107	\$35,390,072	7.9	8,965	30,593
2014	2,420	2,420	\$77,318,929	16.7	19,441	65,433
2015	6,393	6,393	\$222,561,152	47.6	55,069	183,957
2016	7,146	7,146	\$234,265,546	55.1	64,972	219,355
2017	4,797	4,797	\$127,851,759	34.4	44,127	151,021
2018	6,535	6,535	\$172,507,175	42.2	57,891	194,095
2019	7,283	7,283	\$207,731,728	55.5	69,585	236,396
2020	7,625	7,625	\$218,623,123	58.6	72,176	247,140
2021	6,486	6,486	\$192,277,145	49.7	64,054	218,018
2022	2,730	2,730	\$80,469,544	17.2	24,165	82,497
Total	52,810	52,810	\$1,578,897,684	386.8	482,653	1,636,043
Grand Total	59,473	66,890	\$2,267,998,874	509.8	1,155,796	3,463,657

5. Green Bonds

The Green Bank views Green Bond issuance as a key tool for expanding the organization’s reach and impact. While the organization had previously issued privately placed Clean Renewable Energy Bonds (CREB’s), FY2019 marked the Green Bank’s first publicly offered debt issuance, the SHREC ABS Note Series A & Series B Climate Bond. The success of this offering and the potential to use debt capital markets as a tool for accessing capital and engaging investors, led us to build a larger multi-year strategy. The “Green Bonds Us” strategy seeks to raise additional lower cost capital from individual investors through bonds, including smaller denomination bonds, to support the clean economy and accelerate deployment of clean energy.

Green Bond Framework

The Green Bank has always valued transparency as a management principle and a cornerstone of leadership. The organization believes that clear and publicly available data, allows for transactions to be replicated with ease, thus expediting the transformation of a market. With bonds, we believe the same is true and that impact investors require assurance that their investments are going to the intended purpose. Ergo, the Green Bank obtained certification from the Climate Bonds Initiative (CBI) for our SHREC ABS 2019-1 Class A and Class B bonds, and worked with Kestrel Verifiers who provided an independent external review of the Certified Climate Bonds. CBI has built a thorough certification regime using established standards for specific technologies for which the proceeds are used and incorporating transparency and robust reporting practices.

With bond issuance at the heart of our strategy, the Green Bank needed an efficient way to operationalize the certification process. In FY 2020, the Green Bank adopted a Green Bond Framework that holds the organization to high standards of transparency and reporting on all future bond issuances. The Framework commits the organization to certify its bonds as Climate Bonds per CBI, where applicable. If no CBI Standard applies, the Green Bank will issue the bonds as Green Bonds. The Framework also commits the Green Bank to engage in regular impact reporting, which is presented in the next part of this Non-Financial Statistics section.

Working with Kestrel Verifiers and CBI, the Green Bank received programmatic certification in April 2020, thus reducing the cost, effort, and time needed to issue Certified Climate Bonds in the future. The framework and Kestrel Verifiers’ Second Party Opinion on the framework are publicly available on the Green Bank’s [website](#).

Bond Issuances

SHREC ABS 2019-1 Class A and Class B notes

In April 2019, the Connecticut Green Bank sold \$38.6 million in investment-grade rated asset-backed securities. This first-of-its-kind issuance monetized the solar home renewable energy



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credits (SHRECs) generated through the Residential Solar Investment Program (RSIP). The sale was comprised of two tranches of SHRECs produced by more than 105 megawatts of 14,000 residential solar photovoltaic (PV) systems. The SHRECs were aggregated by the Green Bank and sold in annual tranches to Connecticut's two investor-owned utilities, Eversource Energy and United Illuminating Company, at a fixed, predetermined price over 15 years. The funds raised through this sale will recover the costs of administering and managing the RSIP, including the incentives offered to residential participants in the program. RSIP is discussed in further detail in the section below, Case 3 – Residential Solar Investment Program. The 2019 bonds won Environmental Finance's annual award for Innovation in 2020, highlighting the creative bond-structuring approach for leveraging additional environmental benefits. The bonds received Post-Issuance Certification from the Climate Bonds Initiative in May 2020.

SHREC Green Liberty Bonds, Series 2020 (Series Maturity 2035)

In June 2019, the Connecticut Green Bank sold \$16.8 million of investment-grade rated municipal securities, the inaugural offering of Green Liberty Bonds. Modeled after the World War II Series-E bonds, which were purchased by more than 80 million Americans, Green Liberty Bonds are an opportunity for investors to take on the shared challenge of climate change and green infrastructure investment through the purchase of bonds. Green Liberty Bonds are lower-dollar denomination bonds (offered in \$1,000 increments), making it easier for individual investors to consider an investment. This issuance was backed by the third tranche of SHRECs, which total just over 39 megawatts across 4,800 residential solar systems. As with the ABS monetization, proceeds from the sale went to recover the costs of administering and managing the RSIP.

The Series 2020 Bonds were the first transaction to be certified as Climate Bonds under the Green Bank's programmatic framework. The transaction won The Bond Buyer Award in Innovative Financing.

SHREC Green Liberty Bonds, Series 2021 (Series Maturity 2036)

Following the initial sale of Green Liberty Bonds, in May, the Green Bank sold its second offering of Green Liberty Bonds, back by revenues from tranche 4 (59.4 megawatts across nearly 7,000 solar systems) in May 2021. As with the first Green Liberty Bond issuance, this \$24.8 offering was well received by a wide array of retail and institutional investors. The issuance was the second transaction to be certified as a Climate Bond using the Green Bank's Programmatic Framework.

Green Liberty Notes

Based on the success of the Green Liberty Bonds in providing Connecticut Residents a way to invest in the Green Economy, the Connecticut Green Bank introduced our Green Liberty Notes in April 2022. Through a partnership with the green economy focused crowd-funding platform Raise Green, the Green Liberty Notes are offered in lower denominations (\$100) making investing in the Green Economy more accessible to people of varying means. The Green Liberty Notes are backed by the interest payments coming from the energy efficiency loans made through the Small Business Energy Advantage program and purchased by the Green Bank. These notes have been verified by Kestrel Verifiers as adhering to the International Capital Markets Association's Green Bonds Principles. All Proceeds have been fully allocated.

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Use of Proceeds

One Climate Bond was issued by the Green Bank in FY20. All proceeds from the 2019-1 Class A and Class B Notes have been allocated to the SHREC Program and none are outstanding.

Two Climate Bonds were issued in FY 2021. All proceeds from these bonds have been allocated to the SHREC Program and none are outstanding.

The Green Bank will annually report on the use of proceeds from each bond issued and the associated impact¹²³. This information will continue to be included in the Non-Financial Statistics portion of the Annual Comprehensive Financial Report.

The use of proceeds from the Green Bonds issued by the Green Bank are illustrated in Table 65 below.

TABLE 65. GREEN BOND ISSUANCES

Issuance	Gross Proceeds	Underwriting Fees & Out of Pocket Expenses	Net Bond Proceeds after Underwriting Fees & Out of Pocket Expenses	Proceeds Used	Use
SHREC Series 2019-1 Class A and Class B	\$38,527,549.54	\$1,018,746.00	\$37,508,803.54	\$37,508,803.54	The proceeds from this offering were used to reimburse the Green Bank for incentives and program administration costs of the RSIP.
SHREC Green Liberty Bonds, Series 2020	\$16,795,000.00	\$594,056.97	\$16,200,943.03	\$16,200,943.03	The proceeds from this offering were used to reimburse the Green Bank for incentives and program administration costs of the RSIP.
SHREC Green Liberty Bonds, Series 2021	\$24,834,000.00	\$625,004.00	\$24,208,996.00	\$24,208,996.00	The proceeds from this offering were used to reimburse the Green Bank for incentives and program administration costs of the RSIP.
Green Liberty Notes 1 (April 2022)	\$190,400	\$3,856	\$186,544	\$186,544	The proceeds from this offering were used to reimburse the Green Bank for purchasing small business energy efficiency loans from Eversource.
Green Liberty Notes 2 (June 2022)	\$114,435	\$2,716	\$111,719	\$111,719	The proceeds from this offering were used to reimburse the Green Bank for purchasing small business energy efficiency loans from Eversource.

¹²³ <https://www.ctgreenbank.com/wp-content/uploads/2022/02/2021-Post-Bond-Issuance-Verification-Report.pdf>

CONNECTICUT GREEN BANK
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Key Performance Indicators

In alignment with the Green Bank’s targets for issuing Green Bonds, the issuance of the 2019 bonds and two issuances of Green Liberty Bonds as well as the Green Liberty Notes have directly supported the organization’s goal to increase annual clean energy investment on a per capita basis by a factor of ten. The Key Performance Indicators for the Green Bonds closed activity are reflected in Table 66 through Table 68.

TABLE 66. GREEN BONDS PROJECT TYPES AND INVESTMENT BY FY CLOSED

Issuance	# RE Projects	Total Investment	Green Bank Investment¹²⁴	Private Investment	Leverage Ratio
SHREC Series 2019-1 Class A and Class B	14,054	\$424,480,644	\$39,729,311	\$384,751,333	10.7
SHREC Green Liberty Bonds, Series 2020	4,818	\$138,657,232	\$11,903,880	\$126,753,352	11.6
SHREC Green Liberty Bonds, Series 2021	6,957	\$217,737,291	\$17,754,852	\$199,982,439	12.3
Total	25,829	\$780,875,168	\$69,388,044	\$711,487,124	11.3

TABLE 67. GREEN BONDS PROJECT CAPACITY, GENERATION AND SAVINGS BY FY CLOSED

Issuance	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)
SHREC Series 2019-1 Class A and Class B	109,048.0	124,183,805	3,104,595	423,715	10,592,879
SHREC Green Liberty Bonds, Series 2020	39,296.3	44,750,626	1,118,766	152,689	3,817,228
SHREC Green Liberty Bonds, Series 2021	59,359.8	67,598,929	1,689,973	230,648	5,766,189
Total	207,704.0	236,533,361	5,913,334	807,052	20,176,296

TABLE 68. GREEN BONDS PROJECT AVERAGES BY FY CLOSED

¹²⁴ Includes incentives, interest rate buydowns and loan loss reserves.

CONNECTICUT GREEN BANK
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Issuance	Average Total Investment	Average Incentive Amount	Average Installed Capacity (kW)	Average Expected Annual Generation (kWh)	Average Annual Saved / Produced (MMBtu)
SHREC Series 2019-1 Class A and Class B	\$30,204	\$2,827	7.8	8,836	30
SHREC Green Liberty Bonds, Series 2020	\$28,779	\$2,471	8.2	9,288	32
SHREC Green Liberty Bonds, Series 2021	\$31,298	\$2,552	8.5	9,717	33
Average	\$30,232	\$2,686	8.0	9,158	31

Societal Impacts

Ratepayers in Connecticut enjoy of the societal benefits, also referred to as social benefits, of Green Bonds. Since issuance, these bonds have supported creation of 9,066 job years, avoided the lifetime emission of 3,292,158 tons of carbon dioxide, 3,324,684 pounds of nitrous oxide, 2,763,734 pounds of sulfur oxide, and 283,937 pounds of particulate matter as illustrated by Table 69 and Table 71. These projects are estimated to have generated \$24.6 million in tax revenue in their construction for the state of CT as shown in Table 70. The lifetime economic value of the public health impacts is estimated between \$108.9 and \$246.1 million as illustrated in Table 72. See Calculations and Assumptions in the appendix for the metrics included in the following tables.

TABLE 69. GREEN BONDS JOB YEARS SUPPORTED BY FY CLOSED

Issuance	Direct Jobs	Indirect and Induced Jobs	Total Jobs
SHREC Series 2019-1 Class A and Class B	2,244	3,426	5,670
SHREC Green Liberty Bonds, Series 2020	549	722	1,271
SHREC Green Liberty Bonds, Series 2021	902	1,222	2,125
Total	3,695	5,371	9,066

TABLE 70. GREEN BONDS TAX REVENUES GENERATED BY FY CLOSED

Issuance	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
SHREC Series 2019-1 Class A and Class B	\$10,672,490	\$3,428,360	\$0	\$14,100,850
SHREC Green Liberty Bonds, Series 2020	\$2,918,589	\$1,119,879	\$0	\$4,038,468
SHREC Green Liberty Bonds, Series 2021	\$4,708,771	\$1,758,575	\$0	\$6,467,347
Total	\$18,299,850	\$6,306,814	\$0	\$24,606,664

CONNECTICUT GREEN BANK
5. GREEN BOND IMPACT

TABLE 71. GREEN BONDS AVOIDED EMISSIONS BY FY CLOSED

Issuance	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
SHREC Series 2019-1 Class A and Class B	69,507	1,737,668	72,218	1,805,459	58,284	1,457,101	6,053	151,314
SHREC Green Liberty Bonds, Series 2020	24,700	617,503	23,783	594,577	20,148	503,700	2,105	52,627
SHREC Green Liberty Bonds, Series 2021	37,479	936,987	36,986	924,649	32,117	802,932	3,200	79,996
Total	131,686	3,292,158	132,987	3,324,684	110,549	2,763,734	11,357	283,937

TABLE 72. GREEN BONDS PUBLIC HEALTH IMPACT BY FY CLOSED

Issuance	Annual		Lifetime	
	Low	High	Low	High
SHREC Series 2019-1 Class A and Class B	\$2,409,166	\$5,439,251	\$60,229,146	\$135,981,267
SHREC Green Liberty Bonds, Series 2020	\$865,521	\$1,954,194	\$21,638,013	\$48,854,844
SHREC Green Liberty Bonds, Series 2021	\$1,082,474	\$2,450,903	\$27,061,861	\$61,272,586
Total	\$4,357,161	\$9,844,348	\$108,929,020	\$246,108,697

At present we are working on how we attribute impact with regard to the projects supported by the Green Liberty Notes and will have impact numbers in next year's ACFR.

6. Programs

Program Logic Model and the Financing Market Transformation Strategy

The Connecticut Green Bank has prepared an Evaluation Framework¹²⁵ and developed a Program Logic Model (PLM) that presents the green bank model of attracting and deploying private capital through financing – see Figure 4. In addition to representing graphically how a program is structured, this PLM serves as a foundation for evaluating clean energy deployment through subsidy and financing programs of the Connecticut Green Bank.

FIGURE 4. CONNECTICUT GREEN BANK PROGRAM LOGIC MODEL – INCLUDING SUBSIDIES AND FINANCING



The above figure is a generalized market transformation and impact logic model. It has been adapted to individual Green Bank programs to incorporate the unique circumstances of each of those programs, enabling a clearer definition of program objectives and of metrics for reporting and future evaluation. Additionally, with the continued maturation of the organization’s programs, more data are becoming available to quantify and present the societal impacts associated with those programs.

As the Green Bank’s available capital expands to support more clean energy deployment, greater coordination with utilities is sought. As such, various other key participants have been included in this overall logic model. Beginning by identifying the multitude of interactions that occur across their respective programs, the Green Bank and the utilities will be better prepared to accommodate the funding

¹²⁵ Evaluation Framework – Assessing, Monitoring, and Reporting of Program Impacts and Processes by Opinion Dynamics and Dunskey Energy Consulting for the Connecticut Green Bank (July 2016)

CONNECTICUT GREEN BANK

6. PROGRAMS – PROGRAM LOGIC MODEL

demands of clean energy projects over the short, medium, and long term. In addition, the model facilitates the identification and capture of known interventions in the clean energy environment, which may impact the trajectory of the Green Bank’s financing efforts over time.

The PLM includes three (3) components – Energize CT Market Environment (including Other Ongoing Market Activities), Green Bank Financing Market Transformation Process, and Societal Impacts.

Energize CT Market Environment

Energize CT is an initiative of the Green Bank, the Connecticut Energy Efficiency Fund, the State, and the local electric and gas utilities. It provides Connecticut consumers, businesses, and communities the resources and information they need to make it simple to save energy and build a clean energy future for everyone in the state. Under this umbrella, the electric and gas investor-owned utilities (IOUs) provide information, marketing, and deliver the energy efficiency programs that have been approved by the State and supported by the Connecticut Energy Efficiency Fund. Operating under a statutory mandate that all cost-effective energy efficiency be acquired, with guidance from the Connecticut Energy Efficiency Board and its consultants, the utilities offer a variety of programs and encouragements for residential, commercial, and industrial customers to make decisions to participate in these cost-reducing opportunities. A range of methods is used to encourage customers to participate in the programs, among them targeted information, low cost/no cost measures, financial incentives, discounted retail products, and product and project financing. Informed by aggregate consumer and demographic data, the Green Bank promotes its programs and market offerings with direct incentives and financing opportunities in addition to a host of marketing, communication, and outreach tools.¹²⁶

The impetus behind increased coordination among the utility administered energy efficiency programs and the Green Bank’s programs is threefold: 1) more energy savings, and resulting emissions reductions, are expected to be acquired more economically both to the programs and to the project participants, 2) delivery efficiencies and greater savings could be found in coordinating financing that each entity offers to common customer segments within the sphere of program activities that they offer, and 3) coordination through a Joint Committee of the Energy Efficiency Board and the Connecticut Green Bank is required by statute.¹²⁷ It is important to note that a number of other ongoing market activities are occurring through Energize CT or outside of the Green Bank’s market transformation process. From introducing new products, reducing purchasing barriers, education, and awareness programs to workforce development, and improving building practices – there are a variety of activities that help move the market toward more clean energy deployment.

Finance Market Transformation Process

The efforts of the Green Bank are exemplified through the financing market transformation process which focuses on accelerating the deployment of clean energy – more customers and “deeper” more comprehensive measures being undertaken – by securing increasingly affordable and attractive private

¹²⁶ Per Public Act 15-194 “An Act Concerning the Encouragement of Local Economic Development and Access to Residential Renewable Energy,” the Connecticut Green Bank administers a rebate and performance-based incentive program to support solar PV.

¹²⁷ Pursuant to Section 15-245m(d)(2) of Connecticut General Statutes, the Joint Committee shall examine opportunities to coordinate the programs and activities contained in the plan developed under Section 16-245n(c) of the General Statutes [Comprehensive Plan of the Connecticut Green Bank] with the programs and activities contained in the plan developed under section 16-245m(d)(1) of the General Statutes [Energy Conservation and Load Management Plan] and to provide financing to increase the benefits of programs funded by the plan developed under section 16-245m(d)(1) of the General Statutes so as to reduce the long-term cost, environmental impacts, and security risks of energy in the state.

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capital. The Green Bank can enter the process at several points (i.e., from numbers 2 through 4 in the above PLM figure), such as supplying capital through financing offers, marketing clean energy financing, or offsetting clean energy financing risk by backstopping loans, or sharing loan performance data.

Below is a breakdown of each component of the financing market transformation process of the Green Bank:

- **Supply of Capital** – financing programs aim to increase the supply of affordable and attractive capital available to support energy savings and clean energy production in the marketplace. This is done at the Green Bank does this by:
 - a. Providing financing (loans or leases) to customers using Green Bank capital; and/or
 - b. Establishing structures, programs, and public-private partnerships that connect third-party capital with energy savings projects.

Beyond ensuring that financing is available for clean energy projects, the Green Bank’s Supply of Capital interventions can lead to, but are not limited to benefits such as:

- a. Reduced interest rates, which lower the cost of capital for clean energy projects;
- b. More loan term options to better match savings cash flows (e.g., longer terms for longer payback projects, early repayment, or deferred first year payments);
- c. Less restrictive underwriting criteria, resulting in increased eligibility and access to financing; and
- d. Increased marketing efforts by lenders to leverage clean energy investment opportunities.

Each of these features is intended to increase uptake of clean energy projects, in order to increase energy savings, clean energy production, and other positive societal impacts. The long-term goal of the efforts is to achieve these attractive features in the market and reduce the need for Green Bank intervention (e.g., program graduation), through the provision of performance data that convinces private capital providers to offer such features on their own.

- **Consumer Demand** – in combination with a comprehensive set of clean energy programs under the Energize CT initiative, offered by the utilities, the Green Bank drives consumer demand for clean energy by marketing financing programs and increasing awareness of the potential benefits stemming from clean energy projects through the range of programs it offers. It should also be noted that through channel marketing strategies (e.g., contractor channels to the customer) success will be determined by an increase in demand for financing. The results of the increased demand are expected to, but are not limited to:
 - a. Increase in the number of clean energy projects; and
 - b. Increase in the associated average savings and/or clean energy production per project.

Increasing affordable and attractive financing offerings in the marketplace is an important component of unlocking consumer demand and driving greater energy savings and clean energy production and is central to the Green Bank’s market transformation efforts.

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- **Financing Performance Data** – Green Bank gathers and communicates the performance of clean energy financing either through its own programs or for other financing options in the marketplace.¹²⁸ This increases access to valuable information that can help lenders and customers identify promising clean energy investments. Enabling access to this information (i.e., data transparency) is important to encouraging market competition.

Ultimately, data on the performance of Green Bank sponsored financial products is expected to continue to play a pivotal role in attracting of private capital to achieve more affordable and accessible financing offerings. As the Green Bank increases the access to affordable and attractive capital, and more customers use this financing for their clean energy projects, data demonstrating strong and reliable project performance of these projects is also expected to enable lower interest rates due to a better-informed assumption of risk.¹²⁹

- **Financing Risk Profile** – Green Bank can help reduce clean energy financing risk profiles in many ways. For example, it can absorb a portion or all of the credit risk by providing loan loss reserve (LLR) funds and guarantees or taking the first-loss position on investments (i.e., subordinated debt). It can also channel or attract rebates and incentives to finance energy saving projects thus improving their economic performance and lowering the associated performance risk. In the long run, by making clean energy financing performance data available to the market, Green Bank programs increase lenders’ and borrowers’ understanding of clean energy investment risk profiles, which is expected to enable them to (1) design more affordable and attractive financing products and (2) select projects for financing to reduce risks.

This element of the PLM is key linking role in the Market Transformation feedback loop, leading to longer term impacts, as the market (1) recognizes the expected advantageous risk/return profile associated with clean energy investments and (2) takes further steps to increase the supply of affordable and attractive capital with less Green Bank credit enhancement needed to spark demand for clean energy investments.

Ensuring that financing performance and risk profile data are available to the market is important from various perspectives. For a deeper examination and presentation, please see the report by the State Energy Efficiency Action Network.¹³⁰

Societal Impact – Economy, Environment, Energy, and Equity

The efforts to accelerate and scale-up investment in clean energy deployment by the Green Bank, lead to a myriad of societal impacts and benefits, including economy (e.g., jobs, tax revenues), environment (e.g., avoidance of emissions, improvement of public health), energy (e.g., reduction of energy burden), and equity (e.g., increase in investment in vulnerable communities).

¹²⁸ “Performance of Solar Leasing for Low- and Middle-Income Customers in Connecticut” by LBNL (May 2021)

¹²⁹ “Long-Term Performance of Energy Efficiency Loan Portfolios” by SEEACTION Network (November 2021 – forthcoming)

¹³⁰ State and Local Energy Efficiency Action Network. (2014). *Energy Efficiency Finance Programs: Use Case Analysis to Define Data Needs and Guidelines*. Prepared by: Peter Thompson, Peter Larsen, Chris Kramer, and Charles Goldman of Lawrence Berkeley National Laboratory. Click [here](http://www4.eere.energy.gov/seeaction/publication/energy-efficiency-finance-programs-use-case-analysis-define-data-needs-and-guidelines) (<http://www4.eere.energy.gov/seeaction/publication/energy-efficiency-finance-programs-use-case-analysis-define-data-needs-and-guidelines>)

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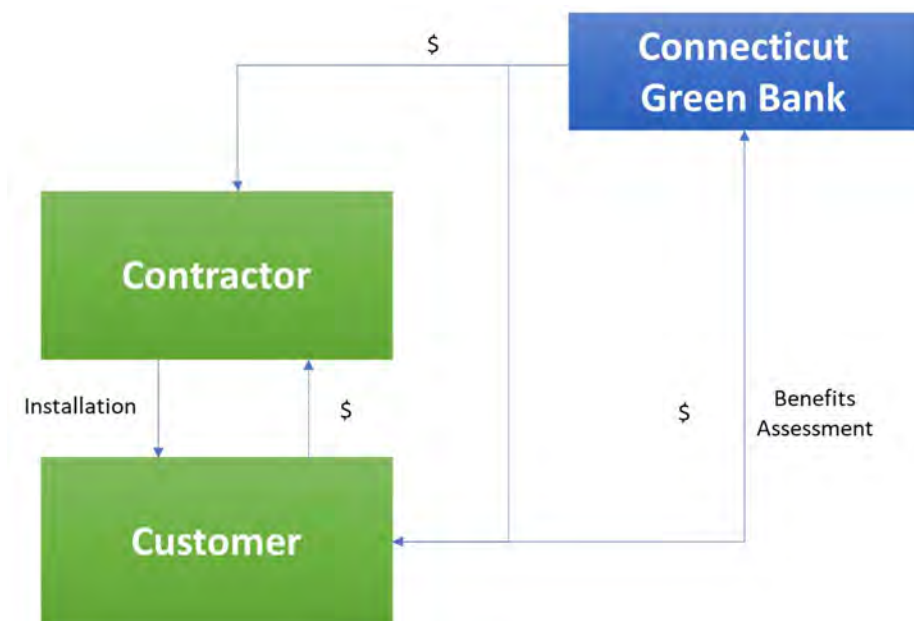
All the elements of the PLM ultimately aim to contribute to Green Bank program impacts and benefits. The impacts may also include consideration of secondary or indirect benefits such as GDP growth and energy savings supported by lenders who have leveraged Green Bank data or marketing efforts.

Case 1 – Commercial Property Assessed Clean Energy (C-PACE)

Description

Commercial Property Assessed Clean Energy (C-PACE) creates an opportunity for building owners to pay for clean energy improvements or clean energy production projects over time through a voluntary benefit assessment on their property tax bills. This process makes it easier for building owners to secure low-interest, long-term capital to fund energy improvements and is structured so that energy savings more than offset the benefit assessment.

FIGURE 5. LEGAL STRUCTURE AND FLOWS OF CAPITAL FOR C-PACE



For a municipality to participate in the C-PACE program, its legislative body must pass a resolution enabling it to enter into an agreement with the Connecticut Green Bank to assess and assign benefit assessments against C-PACE borrowers' liabilities. As of June 30, 2022, there are 139 cities and towns signed up for C-PACE (82% of municipalities) representing 96% of commercial and industrial building space in Connecticut¹³¹. Additionally, as of June 30, 2022, nearly \$245 million in C-PACE benefit assessment advances have been closed that are expected to save over \$312 million in avoided energy costs over the life of the projects.

Key Performance Indicators

The Key Performance Indicators for C-PACE closed activity are reflected in Table 73 through Table 76. These illustrate the volume of projects by year, investment, generation capacity installed, and the amount

¹³¹ Based on a commercial and industrial sector analysis of the real estate market in CT performed by HR&A Advisors in 2013.

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of energy saved and/or produced. It also breaks down the volume of projects by energy efficiency, renewable generation, or both.

TABLE 73. C-PACE PROJECT TYPES AND INVESTMENT BY FY CLOSED

Fiscal Year	EE	RE	RE/EE	Other	# Projects	Total Investment ¹³²	Green Bank Investment ¹³³	Private Investment	Leverage Ratio
2012	0	0	0	0	0	\$0	\$0	\$0	0
2013	2	0	1	0	3	\$1,512,144	\$210,302	\$1,301,842	7.2
2014	6	14	3	0	23	\$21,785,167	\$9,550,120	\$12,235,046	2.3
2015	10	30	9	0	49	\$33,220,821	\$15,285,856	\$17,934,965	2.2
2016	10	35	8	0	53	\$36,035,979	\$7,680,696	\$28,355,283	4.7
2017	5	27	6	0	38	\$15,284,163	\$4,624,486	\$10,659,677	3.3
2018	10	46	9	1	66	\$25,638,374	\$5,858,293	\$19,780,081	4.4
2019	2	32	3	0	37	\$20,313,381	\$5,499,415	\$14,813,966	3.7
2020	3	37	4	0	44	\$25,684,244	\$3,854,615	\$21,829,629	6.7
2021	9	19	4	1	33	\$42,349,608	\$2,389,891	\$39,959,717	17.7
2022	3	16	2	2	23	\$24,162,207	\$5,004,220	\$19,157,987	4.8
Total	60	256	49	4	369	\$245,986,089	\$59,957,895	\$186,028,195	4.1

TABLE 74. C-PACE PROJECT CAPACITY, GENERATION AND SAVINGS BY FY CLOSED

Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)	Annual Cost Savings	Lifetime Cost Savings
2012	0.0	0	0	0	0	\$0	\$0
2013	101.0	513,495	7,657	2,275	39,195	\$151,607	\$2,538,186
2014	3,631.0	8,409,814	154,673	39,140	764,533	\$2,026,632	\$40,635,908
2015	7,284.5	14,311,634	308,791	34,567	664,723	\$2,487,099	\$58,534,753
2016	6,367.7	15,315,444	278,056	16,753	374,001	\$1,118,380	\$82,458,936
2017	3,916.4	6,142,726	131,693	9,108	150,506	\$372,403	\$15,172,649
2018	7,284.8	10,700,244	236,250	33,231	724,214	\$1,234,927	\$25,889,113
2019	5,154.3	10,686,545	209,423	22,736	477,226	\$873,902	\$20,682,469
2020	5,241.4	7,671,548	169,655	25,556	563,474	\$1,199,730	\$32,577,317
2021	2,532.7	4,242,529	88,405	16,095	342,118	\$805,651	\$18,344,150
2022	3,237.5	6,524,353	163,109	7,438	164,175	\$945,358	\$15,808,381
Total	44,751.3	84,518,333	1,747,711	206,899	4,264,165	\$11,215,690	\$312,641,861

TABLE 75. C-PACE PROJECT AVERAGES BY FY CLOSED

Fiscal Year	Average Total Investment	Average Amount Financed	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)	Average Finance Term (years)	Average Finance Rate
2012	\$0	\$0	0.0	0	0	0.00
2013	\$504,048	\$350,503	33.7	758	17	5.00
2014	\$947,181	\$883,582	157.9	1,702	18	5.57
2015	\$677,976	\$668,048	148.7	864	18	5.60

¹³² Includes closing costs and capitalized interest.

¹³³ Includes incentives, interest rate buydowns and loan loss reserves.

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Fiscal Year	Average Total Investment	Average Amount Financed	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)	Average Finance Term (years)	Average Finance Rate
2016	\$679,924	\$629,843	130.0	698	18	5.66
2017	\$402,215	\$388,473	103.1	651	16	5.58
2018	\$388,460	\$357,538	113.8	604	16	5.71
2019	\$549,010	\$460,496	139.3	784	19	6.11
2020	\$583,733	\$545,428	121.9	673	17	6.08
2021	\$1,283,321	\$1,207,182	115.1	644	17	5.34
2022	\$1,050,531	\$1,044,662	215.8	1,488	18	5.21
Average	\$666,629	\$625,341	130.5	808	17	5.67

TABLE 76. C-PACE PROJECT APPLICATION YIELD¹³⁴ BY FY RECEIVED¹³⁵

Fiscal Year	Applications Received	Projects in Review/On Hold	Projects Approved	Projects Withdrawn	Applications Denied	Approved Rate	Denied Rate
2012	0	0	0	0	0	0%	0%
2013	55	0	25	12	18	67%	33%
2014	145	0	44	49	52	64%	36%
2015	144	0	51	39	54	63%	38%
2016	111	1	44	17	49	55%	45%
2017	98	1	47	21	29	70%	30%
2018	80	2	57	10	11	86%	14%
2019	63	0	42	14	7	89%	11%
2020	72	2	50	11	9	87%	13%
2021	50	7	26	7	10	77%	23%
2022	29	9	15	1	4	80%	20%
Total	847	22	401	181	243	71%	29%

C-PACE has been used as a financing tool across a wide variety of end-use customers in Connecticut in its 10 years of existence as illustrated by Table 77.

TABLE 77. TYPES OF END-USE CUSTOMERS PARTICIPATING IN C-PACE

Property Type	# of Properties	Square Footage	Average Square Footage per Property
Agricultural	3	337,026	112,342
Athletic/Recreational Facility	4	143,388	35,847
Education	9	555,210	61,690
Hotel	5	312,375	62,475

¹³⁴ Applications received are complete initial applications that have been received for C-PACE financing. Applications denied are any initial applications received for C-PACE financing that do not meet programmatic requirements. Projects in review are projects that are being reviewed, either technically or financially, prior to being approved. Projects approved are projects that have gone through technical and financial underwriting and have met all the necessary programmatic requirements. These include projects that have been approved and are waiting to close, projects that have closed, and projects that have completed construction and are in repayment. Projects withdrawn are projects that have been approved at the application stage but have since fallen out of our pipeline for numerous reasons and are no longer active. Projects in this category could have fallen out of our pipeline in the in review or the approved stage.

¹³⁵ This table represents projects whose initial applications have been approved and are proceeding through the C-PACE financing pipeline prior to loan closure.

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Property Type	# of Properties	Square Footage	Average Square Footage per Property
House of Worship	13	311,014	28,274
Industrial	90	4,095,897	47,079
Multifamily/apartment (> 5 units)	24	1,394,440	63,384
Non-profit	29	1,279,606	45,700
Nursing Home/Rehab Facility	1	175,680	175,680
Office	91	5,929,707	67,383
Public assembly	4	200,224	50,056
Retail	73	2,092,715	28,667
Special Purpose	5	224,215	44,843
Warehouse & storage	18	867,945	48,219
Grand Total	369	17,919,442	50,054

To date, 139 municipalities have opted into the C-PACE program resulting in 369 closed projects – see Table 78.

TABLE 78. MUNICIPALITIES PARTICIPATING IN C-PACE

Municipality	Opt in Date	# Closed Projects
Ansonia	9/27/2013	1
Avon	4/9/2013	2
Barkhamsted	7/21/2014	0
Beacon Falls	4/11/2013	0
Berlin	10/30/2013	3
Bethany	9/2/2016	1
Bethel	1/24/2014	2
Bloomfield	6/21/2013	5
Bolton	4/9/2020	1
Branford	9/9/2013	2
Bridgeport	12/7/2012	20
Bristol	11/19/2014	11
Brookfield	8/5/2013	5
Burlington	1/12/2016	0
Canaan	8/8/2013	1
Canterbury	11/5/2014	0
Canton	7/9/2013	1
Cheshire	10/27/2014	3
Chester	7/25/2013	0
Clinton	5/29/2013	4
Colchester	3/31/2021	0
Columbia	10/21/2014	0
Coventry	6/24/2013	0
Cromwell	4/9/2014	1

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Municipality	Opt in Date	# Closed Projects
Danbury	10/8/2013	4
Darien	2/28/2014	8
Deep River	7/22/2014	1
Durham	4/2/2013	1
East Granby	6/27/2013	0
East Haddam	8/1/2013	2
East Hampton	7/10/2013	0
East Hartford	4/11/2013	5
East Haven	2/28/2017	3
East Lyme	9/11/2014	3
East Windsor	11/27/2013	8
Eastford	11/10/2014	0
Easton	5/14/2015	0
Ellington	8/27/2014	1
Enfield	1/3/2014	2
Essex	7/17/2014	2
Fairfield	4/30/2014	9
Farmington	12/17/2013	7
Franklin	10/6/2015	0
Glastonbury	6/14/2013	5
Granby	11/28/2013	0
Greenwich	9/23/2013	1
Griswold	3/15/2016	1
Groton	10/21/2013	3
Guilford	3/21/2016	1
Haddam	9/18/2015	0
Hamden	3/3/2014	2
Hartford	2/5/2013	28
Hebron	12/20/2016	0
Kent	9/17/2014	1
Killingly	12/9/2014	0
Killingworth	5/31/2013	3
Lebanon	5/13/2015	0
Ledyard	1/14/2016	1
Litchfield	4/5/2021	0
Madison	9/5/2014	3
Manchester	8/1/2013	7
Mansfield	8/27/2013	0
Meriden	5/24/2013	4
Middlefield	7/21/2015	0
Middletown	3/25/2013	9
Milford	8/2/2013	4
Monroe	3/8/2017	0

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Municipality	Opt in Date	# Closed Projects
Montville	12/4/2013	1
Morris	5/25/2022	0
Naugatuck	6/30/2014	2
New Britain	7/17/2013	14
New Canaan	10/24/2014	0
New Fairfield	4/4/2019	0
New Hartford	2/6/2018	0
New Haven	12/6/2013	4
New London	6/18/2013	11
New Milford	6/10/2013	3
Newington	10/29/2014	2
Newtown	8/8/2013	5
Norfolk	5/13/2014	0
North Branford	5/24/2013	0
North Canaan	12/19/2013	2
North Haven	7/24/2014	3
North Stonington	2/23/2015	2
Norwalk	12/3/2012	5
Norwich	10/7/2013	2
Old Lyme	1/25/2016	0
Old Saybrook	2/20/2013	1
Orange	5/17/2016	0
Oxford	3/21/2016	2
Plainfield	6/14/2016	1
Plainville	6/28/2013	3
Plymouth	2/28/2019	0
Pomfret	10/16/2019	0
Portland	6/9/2016	1
Preston	1/8/2015	0
Putnam	3/5/2013	4
Redding	10/20/2015	0
Ridgefield	5/2/2018	4
Rocky Hill	10/8/2013	3
Salisbury	8/31/2016	0
Seymour	1/27/2014	0
Sharon	2/21/2014	0
Shelton	9/30/2014	2
Simsbury	12/11/2014	1
Somers	5/23/2014	2
South Windsor	8/29/2014	6
Southbury	4/11/2013	0
Southington	5/15/2013	5
Sprague	12/30/2013	0

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Municipality	Opt in Date	# Closed Projects
Stafford	9/26/2013	0
Stamford	4/23/2013	17
Stonington	1/27/2014	5
Stratford	2/26/2013	6
Suffield	5/24/2013	0
Thomaston	2/23/2016	1
Tolland	4/11/2013	0
Torrington	5/8/2013	2
Trumbull	7/31/2013	2
Vernon	7/22/2013	4
Washington	5/20/2019	1
Waterbury	5/10/2013	8
Waterford	8/23/2013	1
Watertown	4/11/2014	7
West Hartford	1/3/2013	5
West Haven	5/6/2014	4
Westbrook	5/21/2013	0
Weston	9/8/2014	1
Westport	2/7/2013	5
Wethersfield	5/28/2013	1
Willington	7/2/2014	1
Wilton	2/27/2013	2
Winchester	1/19/2022	0
Windham	5/1/2013	1
Windsor	5/16/2013	4
Windsor Locks	7/30/2015	2
Woodbridge	5/30/2014	5
Woodbury	3/18/2015	1
Woodstock	4/15/2016	0
Total	139	369

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Vulnerable Communities Penetration

C-PACE has been used to finance projects in Vulnerable Communities throughout Connecticut. As reflected in Table 79 , the majority of C-PACE funds have been invested in these communities.

TABLE 79. C-PACE ACTIVITY IN VULNERABLE AND NOT VULNERABLE COMMUNITIES BY FY CLOSED¹³⁶

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	0	3	100%	0.1	0.0	0.1	100%	\$1,512,144	\$0	\$1,512,144	100%
2014	23	8	15	65%	3.6	0.9	2.8	76%	\$21,785,167	\$8,528,712	\$13,256,454	61%
2015	49	16	33	67%	7.3	2.5	4.8	65%	\$33,220,821	\$11,336,424	\$21,884,398	66%
2016	53	23	30	57%	6.4	2.8	3.6	57%	\$36,035,979	\$12,978,140	\$23,057,839	64%
2017	38	13	25	66%	3.9	0.9	3.0	76%	\$15,284,163	\$4,319,499	\$10,964,665	72%
2018	66	34	32	48%	7.3	3.4	3.9	54%	\$25,638,374	\$10,793,393	\$14,844,981	58%
2019	37	9	28	76%	5.2	1.6	3.5	69%	\$20,313,381	\$5,336,770	\$14,976,612	74%
2020	44	16	28	64%	5.2	2.0	3.3	62%	\$25,684,244	\$6,967,821	\$18,716,423	73%
2021	33	13	20	61%	2.5	1.5	1.1	42%	\$42,349,608	\$7,895,621	\$34,453,987	81%
2022	23	10	13	57%	3.2	1.5	1.7	52%	\$24,162,207	\$4,221,557	\$19,940,650	83%
Total	369	142	227	62%	44.8	17.1	27.7	62%	\$245,986,089	\$72,377,936	\$173,608,153	71%

Area Median Income Band Penetration

C-PACE has been used to fund projects in economically diverse locations across the state as reflected by Table 80 for Metropolitan Statistical Area (MSA) Area Median Income (AMI). It should be noted that C-PACE is not an income targeted program.

TABLE 80. C-PACE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY FY CLOSED¹³⁷

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2012	<60%	0	0%	0.0	0%	\$0	0%	609,363	17%	0.0	\$0.00	0.0
2012	60%-80%	0	0%	0.0	0%	\$0	0%	527,217	15%	0.0	\$0.00	0.0

¹³⁶ Excludes projects in unknown communities.

¹³⁷ Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2012	80%-100%	0	0%	0.0	0%	\$0	0%	589,440	17%	0.0	\$0.00	0.0
2012	100%-120%	0	0%	0.0	0%	\$0	0%	722,664	20%	0.0	\$0.00	0.0
2012	>120%	0	0%	0.0	0%	\$0	0%	1,116,395	31%	0.0	\$0.00	0.0
2012	Total	0	0%	0.0	0%	\$0	0%	3,572,213	100%	0.0	\$0.00	0.0
2013	<60%	1	33%	0.0	0%	\$150,877	10%	603,026	17%	0.0	\$0.25	0.0
2013	60%-80%	0	0%	0.0	0%	\$0	0%	567,361	16%	0.0	\$0.00	0.0
2013	80%-100%	1	33%	0.1	100%	\$711,251	47%	587,540	16%	0.0	\$1.21	0.2
2013	100%-120%	1	33%	0.0	0%	\$650,016	43%	687,261	19%	0.0	\$0.95	0.0
2013	>120%	0	0%	0.0	0%	\$0	0%	1,130,771	32%	0.0	\$0.00	0.0
2013	Total	3	100%	0.1	100%	\$1,512,144	100%	3,583,561	100%	0.0	\$0.42	0.0
2014	<60%	7	30%	0.5	14%	\$6,432,379	30%	614,135	17%	0.0	\$10.47	0.8
2014	60%-80%	1	4%	0.1	2%	\$243,296	1%	546,132	15%	0.0	\$0.45	0.1
2014	80%-100%	6	26%	2.1	59%	\$6,435,779	30%	577,061	16%	0.0	\$11.15	3.7
2014	100%-120%	3	13%	0.3	7%	\$800,605	4%	720,856	20%	0.0	\$1.11	0.4
2014	>120%	6	26%	0.7	18%	\$7,873,108	36%	1,125,910	31%	0.0	\$6.99	0.6
2014	Total	23	100%	3.6	100%	\$21,785,167	100%	3,592,053	100%	0.0	\$6.06	1.0
2015	<60%	16	33%	1.7	23%	\$7,067,391	21%	662,619	18%	0.0	\$10.67	2.6
2015	60%-80%	5	10%	0.8	10%	\$3,373,609	10%	489,826	14%	0.0	\$6.89	1.6
2015	80%-100%	5	10%	0.5	7%	\$3,706,915	11%	650,163	18%	0.0	\$5.70	0.8
2015	100%-120%	10	20%	1.2	16%	\$4,832,634	15%	631,741	18%	0.0	\$7.65	1.9
2015	>120%	13	27%	3.1	43%	\$14,240,271	43%	1,150,974	32%	0.0	\$12.37	2.7
2015	Total	49	100%	7.3	100%	\$33,220,821	100%	3,593,222	100%	0.0	\$9.25	2.0
2016	<60%	9	18%	0.7	12%	\$3,685,924	11%	649,617	18%	0.0	\$5.67	1.1
2016	60%-80%	6	12%	0.8	13%	\$2,836,167	8%	509,088	14%	0.0	\$5.57	1.5
2016	80%-100%	10	20%	1.5	25%	\$14,497,984	42%	641,084	18%	0.0	\$22.61	2.4
2016	100%-120%	10	20%	1.9	32%	\$7,613,263	22%	653,309	18%	0.0	\$11.65	2.9
2016	>120%	15	30%	1.1	18%	\$6,189,587	18%	1,126,543	31%	0.0	\$5.49	1.0
2016	Total	50	100%	6.1	100%	\$34,822,925	100%	3,588,570	100%	0.0	\$9.70	1.7
2017	<60%	8	21%	1.7	42%	\$5,582,105	37%	663,181	18%	0.0	\$8.42	2.5
2017	60%-80%	4	11%	0.4	10%	\$1,273,519	8%	488,396	14%	0.0	\$2.61	0.8
2017	80%-100%	7	18%	0.4	9%	\$1,487,162	10%	612,043	17%	0.0	\$2.43	0.6

CONNECTICUT GREEN BANK
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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2017	100%-120%	12	32%	0.8	21%	\$3,937,789	26%	722,803	20%	0.0	\$5.45	1.1
2017	>120%	7	18%	0.7	17%	\$3,003,588	20%	1,099,277	31%	0.0	\$2.73	0.6
2017	Total	38	100%	3.9	100%	\$15,284,163	100%	3,594,478	100%	0.0	\$4.25	1.1
2018	<60%	7	11%	0.9	15%	\$3,737,638	17%	636,795	18%	0.0	\$5.87	1.5
2018	60%-80%	13	21%	1.5	24%	\$4,566,439	21%	553,007	15%	0.0	\$8.26	2.7
2018	80%-100%	7	11%	0.4	6%	\$3,130,891	14%	569,113	16%	0.0	\$5.50	0.7
2018	100%-120%	10	16%	1.2	20%	\$3,719,576	17%	710,802	20%	0.0	\$5.23	1.7
2018	>120%	24	39%	2.1	34%	\$7,073,817	32%	1,103,484	31%	0.0	\$6.41	1.9
2018	Total	61	100%	6.2	100%	\$22,228,360	100%	3,581,504	100%	0.0	\$6.21	1.7
2019	<60%	10	28%	1.0	20%	\$3,436,732	18%	636,795	18%	0.0	\$5.40	1.6
2019	60%-80%	11	31%	1.2	24%	\$6,843,705	35%	553,007	15%	0.0	\$12.38	2.1
2019	80%-100%	5	14%	0.9	18%	\$2,306,180	12%	569,113	16%	0.0	\$4.05	1.5
2019	100%-120%	7	19%	1.5	31%	\$5,981,738	31%	710,802	20%	0.0	\$8.42	2.1
2019	>120%	3	8%	0.4	8%	\$1,010,486	5%	1,103,484	31%	0.0	\$0.92	0.3
2019	Total	36	100%	4.9	100%	\$19,578,841	100%	3,575,074	100%	0.0	\$5.48	1.4
2020	<60%	11	26%	0.6	12%	\$8,746,679	35%	605,886	17%	0.0	\$14.44	1.0
2020	60%-80%	8	19%	1.3	26%	\$6,289,326	25%	540,866	15%	0.0	\$11.63	2.4
2020	80%-100%	7	17%	1.1	22%	\$2,860,441	11%	662,005	19%	0.0	\$4.32	1.7
2020	100%-120%	1	2%	0.1	3%	\$280,852	1%	692,148	19%	0.0	\$0.41	0.2
2020	>120%	15	36%	1.9	37%	\$6,770,758	27%	1,051,590	29%	0.0	\$6.44	1.8
2020	Total	42	100%	5.0	100%	\$24,948,056	100%	3,570,549	100%	0.0	\$6.99	1.4
2021	<60%	8	24%	0.3	14%	\$13,330,706	31%	605,886	17%	0.0	\$22.00	0.6
2021	60%-80%	3	9%	0.3	12%	\$1,514,827	4%	540,866	15%	0.0	\$2.80	0.6
2021	80%-100%	7	21%	0.3	13%	\$19,341,709	46%	662,005	19%	0.0	\$29.22	0.5
2021	100%-120%	4	12%	0.1	6%	\$959,535	2%	692,148	19%	0.0	\$1.39	0.2
2021	>120%	11	33%	1.4	55%	\$7,202,831	17%	1,051,590	29%	0.0	\$6.85	1.3
2021	Total	33	100%	2.5	100%	\$42,349,608	100%	3,570,549	100%	0.0	\$11.86	0.7
2022	<60%	4	21%	0.0	1%	\$5,555,360	24%	605,886	17%	0.0	\$9.17	0.1
2022	60%-80%	1	5%	0.2	8%	\$882,092	4%	540,866	15%	0.0	\$1.63	0.4
2022	80%-100%	6	32%	0.5	17%	\$9,506,198	41%	662,005	19%	0.0	\$14.36	0.8
2022	100%-120%	3	16%	1.4	46%	\$5,312,213	23%	692,148	19%	0.0	\$7.67	2.0

CONNECTICUT GREEN BANK
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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2022	>120%	5	26%	0.9	29%	\$2,077,060	9%	1,051,590	29%	0.0	\$1.98	0.8
2022	Total	19	100%	3.1	100%	\$23,332,923	100%	3,570,549	100%	0.0	\$6.53	0.9
Total	<60%	81	23%	7.5	18%	\$57,725,792	24%	605,886	17%	0.1	\$95.28	12.4
Total	60%-80%	52	15%	6.5	15%	\$27,822,981	12%	540,866	15%	0.1	\$51.44	12.1
Total	80%-100%	61	17%	7.9	19%	\$63,984,510	27%	662,005	19%	0.1	\$96.65	11.9
Total	100%-120%	61	17%	8.6	20%	\$34,088,220	14%	692,148	19%	0.1	\$49.25	12.4
Total	>120%	99	28%	12.2	29%	\$55,441,507	23%	1,051,590	29%	0.1	\$52.72	11.6
Total	Total	354	100%	42.7	100%	\$239,063,010	100%	3,570,549	100%	0.1	\$66.95	12.0

TABLE 81. C-PACE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED¹³⁸

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	1	2	67%	0.1	0.0	0.1	100%	\$1,512,144	\$650,016	\$862,128	57%
2014	23	9	14	61%	3.6	0.9	2.7	75%	\$21,785,167	\$8,673,712	\$13,111,454	60%
2015	49	23	26	53%	7.3	4.3	3.0	41%	\$33,220,821	\$19,072,905	\$14,147,916	43%
2016	50	25	25	50%	6.1	3.0	3.0	50%	\$34,822,925	\$13,802,850	\$21,020,076	60%
2017	38	19	19	50%	3.9	1.5	2.4	62%	\$15,284,163	\$6,941,377	\$8,342,786	55%
2018	61	34	27	44%	6.2	3.4	2.8	46%	\$22,228,360	\$10,793,393	\$11,434,968	51%
2019	36	10	26	72%	4.9	1.9	3.0	62%	\$19,578,841	\$6,992,223	\$12,586,618	64%
2020	42	16	26	62%	5.0	2.0	3.0	60%	\$24,948,056	\$7,051,610	\$17,896,446	72%
2021	33	15	18	55%	2.5	1.5	1.0	39%	\$42,349,608	\$8,162,366	\$34,187,242	81%
2022	19	8	11	58%	3.1	2.3	0.8	26%	\$23,332,923	\$7,389,273	\$15,943,650	68%
Total	354	160	194	55%	42.7	20.8	21.9	51%	\$239,063,010	\$89,529,726	\$149,533,283	63%

¹³⁸ Excludes projects in unknown bands.

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6. PROGRAMS – C-PACE

TABLE 82. C-PACE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED¹³⁹

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	2	1	33%	0.1	0.1	0.0	0%	\$1,512,144	\$1,361,267	\$150,877	10%
2014	23	15	8	35%	3.6	3.1	0.6	16%	\$21,785,167	\$15,109,492	\$6,675,675	31%
2015	49	28	21	43%	7.3	4.8	2.5	34%	\$33,220,821	\$22,779,821	\$10,441,001	31%
2016	50	35	15	30%	6.1	4.5	1.5	25%	\$34,822,925	\$28,300,834	\$6,522,091	19%
2017	38	26	12	32%	3.9	1.8	2.1	53%	\$15,284,163	\$8,428,540	\$6,855,624	45%
2018	61	41	20	33%	6.2	3.8	2.4	39%	\$22,228,360	\$13,924,284	\$8,304,077	37%
2019	36	15	21	58%	4.9	2.8	2.2	44%	\$19,578,841	\$9,298,404	\$10,280,438	53%
2020	42	23	19	45%	5.0	3.1	1.9	38%	\$24,948,056	\$9,912,051	\$15,036,005	60%
2021	33	22	11	33%	2.5	1.9	0.6	25%	\$42,349,608	\$27,504,075	\$14,845,534	35%
2022	19	14	5	26%	3.1	2.8	0.3	9%	\$23,332,923	\$16,895,471	\$6,437,452	28%
Total	354	221	133	38%	42.7	28.7	14.0	33%	\$239,063,010	\$153,514,237	\$85,548,773	36%

Distressed Community Penetration

For a breakdown of C-PACE project volume and investment by census tracts categorized by Distressed Communities – see Table 83. It should be noted that C-PACE is not an income targeted program.

TABLE 83. C-PACE ACTIVITY IN DISTRESSED COMMUNITIES BY FY CLOSED

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2012	Yes	0	0%	0.0	0%	\$0	0%	1,171,385	33%	0.0	\$0.00	0.0
2012	No	0	0%	0.0	0%	\$0	0%	2,400,828	67%	0.0	\$0.00	0.0
2012	Total	0	0%	0.0	0%	\$0	0%	3,572,213	100%	0.0	\$0.00	0.0
2013	Yes	2	67%	0.0	0%	\$800,893	53%	1,124,923	31%	0.0	\$0.71	0.0
2013	No	1	33%	0.1	100%	\$711,251	47%	2,458,638	69%	0.0	\$0.29	0.0

¹³⁹ Excludes projects in unknown bands.

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Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2013	Total	3	100%	0.1	100%	\$1,512,144	100%	3,583,561	100%	0.0	\$0.42	0.0
2014	Yes	7	30%	1.4	40%	\$9,047,808	42%	1,106,027	31%	0.0	\$8.18	1.3
2014	No	16	70%	2.2	60%	\$12,737,358	58%	2,486,026	69%	0.0	\$5.12	0.9
2014	Total	23	100%	3.6	100%	\$21,785,167	100%	3,592,053	100%	0.0	\$6.06	1.0
2015	Yes	24	49%	4.0	54%	\$17,076,960	51%	1,122,550	31%	0.0	\$15.21	3.5
2015	No	25	51%	3.3	46%	\$16,143,862	49%	2,470,672	69%	0.0	\$6.53	1.3
2015	Total	49	100%	7.3	100%	\$33,220,821	100%	3,593,222	100%	0.0	\$9.25	2.0
2016	Yes	15	28%	1.5	23%	\$15,195,507	42%	1,162,653	32%	0.0	\$13.07	1.3
2016	No	38	72%	4.9	77%	\$20,840,472	58%	2,425,917	68%	0.0	\$8.59	2.0
2016	Total	53	100%	6.4	100%	\$36,035,979	100%	3,588,570	100%	0.0	\$10.04	1.8
2017	Yes	10	26%	2.0	51%	\$6,525,193	43%	1,150,554	32%	0.0	\$5.67	1.7
2017	No	28	74%	1.9	49%	\$8,758,970	57%	2,443,924	68%	0.0	\$3.58	0.8
2017	Total	38	100%	3.9	100%	\$15,284,163	100%	3,594,478	100%	0.0	\$4.25	1.1
2018	Yes	18	27%	2.4	32%	\$9,966,950	39%	1,130,773	32%	0.0	\$8.81	2.1
2018	No	48	73%	4.9	68%	\$15,671,425	61%	2,450,731	68%	0.0	\$6.39	2.0
2018	Total	66	100%	7.3	100%	\$25,638,374	100%	3,581,504	100%	0.0	\$7.16	2.0
2019	Yes	18	49%	2.1	40%	\$10,102,595	50%	1,098,707	31%	0.0	\$9.19	1.9
2019	No	19	51%	3.1	60%	\$10,210,786	50%	2,476,367	69%	0.0	\$4.12	1.2
2019	Total	37	100%	5.2	100%	\$20,313,381	100%	3,575,074	100%	0.0	\$5.68	1.4
2020	Yes	17	39%	1.5	29%	\$5,444,051	21%	1,102,319	31%	0.0	\$4.94	1.4
2020	No	27	61%	3.7	71%	\$20,240,193	79%	2,468,230	69%	0.0	\$8.20	1.5
2020	Total	44	100%	5.2	100%	\$25,684,244	100%	3,570,549	100%	0.0	\$7.19	1.5
2021	Yes	9	27%	0.7	27%	\$6,023,312	14%	964,777	27%	0.0	\$6.24	0.7
2021	No	24	73%	1.9	73%	\$36,326,296	86%	2,605,772	73%	0.0	\$13.94	0.7
2021	Total	33	100%	2.5	100%	\$42,349,608	100%	3,570,549	100%	0.0	\$11.86	0.7
2022	Yes	7	37%	1.1	35%	\$9,494,297	41%	964,777	27%	0.0	\$9.84	1.1
2022	No	12	63%	2.0	65%	\$13,838,626	59%	2,605,772	73%	0.0	\$5.31	0.8
2022	Total	19	100%	3.1	100%	\$23,332,923	100%	3,570,549	100%	0.0	\$6.53	0.9
Total	Yes	127	35%	16.6	37%	\$89,677,567	37%	964,777	27%	0.1	\$92.95	17.2

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Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
Total	No	238	65%	28.0	63%	\$155,479,239	63%	2,605,772	73%	0.1	\$59.67	10.7
Total	Total	365	100%	44.6	100%	\$245,156,805	100%	3,570,549	100%	0.1	\$68.66	12.5

TABLE 84. C-PACE ACTIVITY IN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED¹⁴⁰

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	1	2	67%	0.1	0.1	0.0	0%	\$1,512,144	\$711,251	\$800,893	53%
2014	23	16	7	30%	3.6	2.2	1.4	40%	\$21,785,167	\$12,737,358	\$9,047,808	42%
2015	49	25	24	49%	7.3	3.3	4.0	54%	\$33,220,821	\$16,143,862	\$17,076,960	51%
2016	53	38	15	28%	6.4	4.9	1.5	23%	\$36,035,979	\$20,840,472	\$15,195,507	42%
2017	38	28	10	26%	3.9	1.9	2.0	51%	\$15,284,163	\$8,758,970	\$6,525,193	43%
2018	66	48	18	27%	7.3	4.9	2.4	32%	\$25,638,374	\$15,671,425	\$9,966,950	39%
2019	37	19	18	49%	5.2	3.1	2.1	40%	\$20,313,381	\$10,210,786	\$10,102,595	50%
2020	44	27	17	39%	5.2	3.7	1.5	29%	\$25,684,244	\$20,240,193	\$5,444,051	21%
2021	33	24	9	27%	2.5	1.9	0.7	27%	\$42,349,608	\$36,326,296	\$6,023,312	14%
2022	19	12	7	37%	3.1	2.0	1.1	35%	\$23,332,923	\$13,838,626	\$9,494,297	41%
Total	365	238	127	35%	44.6	28.0	16.6	37%	\$245,156,805	\$155,479,239	\$89,677,567	37%

Environmental Justice Poverty Level Penetration

The progress made by CPACE in reaching environmental justice communities is displayed in the following table.

TABLE 85. C-PACE ACTIVITY IN ENVIRONMENTAL JUSTICE POVERTY AREAS BY FY CLOSED¹⁴¹

¹⁴⁰ Excludes projects in unknown communities.

¹⁴¹ Excludes projects in unknown bands.

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Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	3	0	0%	0.1	0.1	0.0	0%	\$1,512,144	\$1,512,144	\$0	0%
2014	23	22	1	4%	3.6	3.6	0.0	0%	\$21,785,167	\$21,683,610	\$101,557	0%
2015	49	46	3	6%	7.3	7.1	0.2	2%	\$33,220,821	\$32,564,817	\$656,004	2%
2016	53	49	4	8%	6.4	5.9	0.5	8%	\$36,035,979	\$34,106,912	\$1,929,067	5%
2017	38	32	6	16%	3.9	3.5	0.4	11%	\$15,284,163	\$12,818,723	\$2,465,440	16%
2018	66	62	4	6%	7.3	6.9	0.4	6%	\$25,638,374	\$24,120,685	\$1,517,689	6%
2019	37	37	0	0%	5.2	5.2	0.0	0%	\$20,313,381	\$20,313,381	\$0	0%
2020	44	41	3	7%	5.2	4.9	0.4	7%	\$25,684,244	\$24,433,764	\$1,250,480	5%
2021	33	30	3	9%	2.5	2.5	0.0	2%	\$42,349,608	\$26,153,617	\$16,195,991	38%
2022	23	22	1	4%	3.2	3.2	0.0	0%	\$24,162,207	\$24,001,170	\$161,036	1%
Total	369	344	25	7%	44.8	42.8	1.9	4%	\$245,986,089	\$221,708,824	\$24,277,265	10%

Ethnicity

The progress made by CPACE in reaching diverse communities is displayed in the following table.

TABLE 86. C-PACE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY ETHNICITY CATEGORY BY FY CLOSED¹⁴²

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population
2012	<60%	0	0.0%	13,052	20.8%	0	0.0%	21,021	33.5%	0	0.0%	28,616	45.6%	0	0.0%	0	0.0%
2012	60%-80%	0	0.0%	8,714	8.5%	0	0.0%	7,447	7.3%	0	0.0%	86,017	84.2%	0	0.0%	0	0.0%
2012	80%-100%	0	0.0%	3,490	2.3%	0	0.0%	0	0.0%	0	0.0%	147,195	97.7%	0	0.0%	0	0.0%
2012	100%-120%	0	0.0%	3,488	1.6%	0	0.0%	0	0.0%	0	0.0%	212,996	98.4%	0	0.0%	0	0.0%
2012	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	349,212	100.0%	0	0.0%	0	0.0%
2012	Total	0	0.0%	28,744	3.3%	0	0.0%	28,468	3.2%	0	0.0%	824,036	93.5%	0	0.0%	0	0.0%

¹⁴² Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population
2013	<60%	0	0.0%	10,766	17.6%	1	100.0%	21,781	35.7%	0	0.0%	28,457	46.6%	0	0.0%	0	0.0%
2013	60%-80%	0	0.0%	10,827	9.8%	0	0.0%	9,574	8.7%	0	0.0%	89,566	81.4%	0	0.0%	0	0.0%
2013	80%-100%	0	0.0%	1,926	1.3%	0	0.0%	0	0.0%	1	100.0%	147,750	98.7%	0	0.0%	0	0.0%
2013	100%-120%	0	0.0%	3,177	1.6%	0	0.0%	0	0.0%	1	100.0%	199,650	98.4%	0	0.0%	0	0.0%
2013	>120%	0	0.0%	1,808	0.5%	0	0.0%	0	0.0%	0	0.0%	348,900	99.5%	0	0.0%	0	0.0%
2013	Total	0	0.0%	28,504	3.3%	1	33.3%	31,355	3.6%	2	66.7%	814,323	93.2%	0	0.0%	0	0.0%
2014	<60%	2	28.6%	12,067	20.4%	4	57.1%	17,945	30.3%	1	14.3%	29,282	49.4%	0	0.0%	0	0.0%
2014	60%-80%	0	0.0%	8,576	8.2%	0	0.0%	10,507	10.1%	1	100.0%	85,445	81.7%	0	0.0%	0	0.0%
2014	80%-100%	0	0.0%	1,868	1.3%	1	16.7%	1,491	1.0%	5	83.3%	145,487	97.7%	0	0.0%	0	0.0%
2014	100%-120%	0	0.0%	3,280	1.6%	0	0.0%	0	0.0%	3	100.0%	205,632	98.4%	0	0.0%	0	0.0%
2014	>120%	0	0.0%	3,745	1.1%	0	0.0%	0	0.0%	6	100.0%	344,034	98.9%	0	0.0%	0	0.0%
2014	Total	2	8.7%	29,536	3.4%	5	21.7%	29,943	3.4%	16	69.6%	809,880	93.2%	0	0.0%	0	0.0%
2015	<60%	3	18.8%	12,243	18.4%	7	43.8%	27,292	41.0%	6	37.5%	27,097	40.7%	0	0.0%	0	0.0%
2015	60%-80%	0	0.0%	7,491	7.8%	0	0.0%	7,075	7.4%	5	100.0%	81,493	84.8%	0	0.0%	0	0.0%
2015	80%-100%	0	0.0%	5,767	3.5%	0	0.0%	513	0.3%	4	80.0%	158,372	95.9%	1	20.0%	553	0.3%
2015	100%-120%	0	0.0%	863	0.5%	0	0.0%	0	0.0%	10	100.0%	182,766	99.5%	0	0.0%	0	0.0%
2015	>120%	0	0.0%	1,877	0.5%	0	0.0%	0	0.0%	13	100.0%	350,176	99.5%	0	0.0%	0	0.0%
2015	Total	3	6.1%	28,241	3.3%	7	14.3%	34,880	4.0%	38	77.6%	799,904	92.6%	1	2.0%	553	0.1%
2016	<60%	1	11.1%	11,333	18.0%	6	66.7%	26,620	42.2%	2	22.2%	25,103	39.8%	0	0.0%	0	0.0%
2016	60%-80%	0	0.0%	7,872	7.9%	1	16.7%	8,551	8.6%	5	83.3%	82,650	83.4%	0	0.0%	0	0.0%
2016	80%-100%	0	0.0%	4,736	2.9%	0	0.0%	937	0.6%	9	90.0%	159,339	96.6%	1	10.0%	0	0.0%
2016	100%-120%	1	10.0%	0	0.0%	0	0.0%	0	0.0%	7	70.0%	186,570	99.7%	2	20.0%	559	0.3%
2016	>120%	0	0.0%	3,063	0.9%	0	0.0%	0	0.0%	15	100.0%	341,514	99.1%	0	0.0%	0	0.0%
2016	Total	2	4.0%	27,004	3.1%	7	14.0%	36,108	4.2%	38	76.0%	795,176	92.6%	3	6.0%	559	0.1%
2017	<60%	1	12.5%	11,916	18.4%	3	37.5%	28,817	44.5%	4	50.0%	24,022	37.1%	0	0.0%	0	0.0%
2017	60%-80%	0	0.0%	5,276	5.4%	0	0.0%	12,600	12.9%	4	100.0%	79,579	81.7%	0	0.0%	0	0.0%
2017	80%-100%	0	0.0%	4,323	2.8%	0	0.0%	2,062	1.3%	7	100.0%	149,029	95.9%	0	0.0%	0	0.0%
2017	100%-120%	0	0.0%	1,101	0.5%	0	0.0%	0	0.0%	12	100.0%	207,746	99.2%	0	0.0%	637	0.3%
2017	>120%	0	0.0%	4,014	1.2%	0	0.0%	0	0.0%	7	100.0%	335,348	98.8%	0	0.0%	0	0.0%

CONNECTICUT GREEN BANK
6. PROGRAMS – C-PACE

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population
2017	Total	1	2.6%	26,630	3.1%	3	7.9%	43,479	5.0%	34	89.5%	795,724	91.8%	0	0.0%	637	0.1%
2018	<60%	1	14.3%	10,135	16.3%	4	57.1%	28,053	45.1%	2	28.6%	24,059	38.7%	0	0.0%	0	0.0%
2018	60%-80%	0	0.0%	7,948	7.3%	1	7.7%	11,560	10.6%	12	92.3%	89,634	82.1%	0	0.0%	0	0.0%
2018	80%-100%	0	0.0%	4,704	3.2%	0	0.0%	3,271	2.2%	7	100.0%	138,013	94.5%	0	0.0%	0	0.0%
2018	100%-120%	1	10.0%	2,274	1.1%	0	0.0%	0	0.0%	9	90.0%	201,977	98.6%	0	0.0%	629	0.3%
2018	>120%	0	0.0%	2,828	0.8%	0	0.0%	0	0.0%	24	100.0%	341,161	99.2%	0	0.0%	0	0.0%
2018	Total	2	3.3%	27,889	3.2%	5	8.2%	42,884	5.0%	54	88.5%	794,844	91.8%	0	0.0%	629	0.1%
2019	<60%	3	30.0%	10,903	17.0%	5	50.0%	29,840	46.5%	2	20.0%	23,497	36.6%	0	0.0%	0	0.0%
2019	60%-80%	1	9.1%	6,102	6.0%	2	18.2%	10,367	10.3%	8	72.7%	84,519	83.7%	0	0.0%	0	0.0%
2019	80%-100%	0	0.0%	5,119	3.3%	0	0.0%	1,488	1.0%	5	100.0%	148,956	95.8%	0	0.0%	0	0.0%
2019	100%-120%	0	0.0%	3,330	1.6%	0	0.0%	627	0.3%	7	100.0%	202,850	97.8%	0	0.0%	648	0.3%
2019	>120%	0	0.0%	2,074	0.6%	0	0.0%	0	0.0%	3	100.0%	335,436	99.4%	0	0.0%	0	0.0%
2019	Total	4	11.1%	27,528	3.2%	7	19.4%	42,322	4.9%	25	69.4%	795,258	91.9%	0	0.0%	648	0.1%
2020	<60%	1	9.1%	9,549	13.9%	8	72.7%	36,027	52.5%	2	18.2%	23,086	33.6%	0	0.0%	0	0.0%
2020	60%-80%	2	25.0%	7,132	6.8%	3	37.5%	23,995	22.8%	3	37.5%	73,963	70.4%	0	0.0%	0	0.0%
2020	80%-100%	0	0.0%	4,568	2.8%	0	0.0%	2,350	1.4%	7	100.0%	159,134	95.8%	0	0.0%	0	0.0%
2020	100%-120%	0	0.0%	4,328	2.1%	0	0.0%	0	0.0%	1	100.0%	205,187	97.9%	0	0.0%	0	0.0%
2020	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	15	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2020	Total	3	7.1%	25,577	2.9%	11	26.2%	62,372	7.1%	28	66.7%	788,350	90.0%	0	0.0%	0	0.0%
2021	<60%	2	25.0%	9,549	13.9%	4	50.0%	36,027	52.5%	2	25.0%	23,086	33.6%	0	0.0%	0	0.0%
2021	60%-80%	0	0.0%	7,132	6.8%	0	0.0%	23,995	22.8%	3	100.0%	73,963	70.4%	0	0.0%	0	0.0%
2021	80%-100%	1	14.3%	4,568	2.8%	0	0.0%	2,350	1.4%	6	85.7%	159,134	95.8%	0	0.0%	0	0.0%
2021	100%-120%	0	0.0%	4,328	2.1%	0	0.0%	0	0.0%	4	100.0%	205,187	97.9%	0	0.0%	0	0.0%
2021	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	11	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2021	Total	3	9.1%	25,577	2.9%	4	12.1%	62,372	7.1%	26	78.8%	788,350	90.0%	0	0.0%	0	0.0%
2022	<60%	2	50.0%	9,549	13.9%	1	25.0%	36,027	52.5%	1	25.0%	23,086	33.6%	0	0.0%	0	0.0%
2022	60%-80%	0	0.0%	7,132	6.8%	1	100.0%	23,995	22.8%	0	0.0%	73,963	70.4%	0	0.0%	0	0.0%
2022	80%-100%	1	16.7%	4,568	2.8%	1	16.7%	2,350	1.4%	4	66.7%	159,134	95.8%	0	0.0%	0	0.0%
2022	100%-120%	0	0.0%	4,328	2.1%	0	0.0%	0	0.0%	3	100.0%	205,187	97.9%	0	0.0%	0	0.0%

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population
2022	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2022	Total	3	15.8%	25,577	2.9%	3	15.8%	62,372	7.1%	13	68.4%	788,350	90.0%	0	0.0%	0	0.0%
Total	<60%	16	19.8%	9,549	13.9%	43	53.1%	36,027	52.5%	22	27.2%	23,086	33.6%	0	0.0%	0	0.0%
Total	60%-80%	3	5.8%	7,132	6.8%	8	15.4%	23,995	22.8%	41	78.8%	73,963	70.4%	0	0.0%	0	0.0%
Total	80%-100%	2	3.3%	4,568	2.8%	2	3.3%	2,350	1.4%	55	90.2%	159,134	95.8%	2	3.3%	0	0.0%
Total	100%-120%	2	3.3%	4,328	2.1%	0	0.0%	0	0.0%	57	93.4%	205,187	97.9%	2	3.3%	0	0.0%
Total	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	99	100.0%	326,890	100.0%	0	0.0%	0	0.0%
Total	Total	23	6.5%	25,577	2.9%	53	15.0%	62,372	7.1%	274	77.4%	788,350	90.0%	4	1.1%	0	0.0%

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Societal Benefits

Ratepayers in Connecticut continue to enjoy the societal benefits of C-PACE. In its 9 years of existence, the program has supported the creation of 2,563 job years, avoided the lifetime emission of 919,122 tons of carbon dioxide, 928,909 pounds of nitrous oxide, 830,637 pounds of sulfur oxide, and 69,628 pounds of particulate matter as illustrated by Table 87 and Table 89.

CPACE is estimated to have generated \$18.5 million in tax revenue for the State of Connecticut since its inception as shown in Table 88. The lifetime economic value of the public health impacts of C-PACE are estimated between \$26.9 and \$60.2 million as illustrated in Table 90.

TABLE 87. C-PACE JOB YEARS SUPPORTED BY FY CLOSED

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	0	0	0
2013	9	15	24
2014	109	174	282
2015	142	227	369
2016	178	285	463
2017	54	73	128
2018	85	111	197
2019	70	91	161
2020	85	111	196
2021	199	256	456
2022	124	165	288
Total	1,056	1,508	2,563

TABLE 88. C-PACE TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$0	\$0	\$0	\$0
2013	\$42,924	\$45,544	\$46,694	\$135,162
2014	\$489,858	\$773,000	\$366,235	\$1,629,093
2015	\$703,863	\$1,065,722	\$727,217	\$2,496,802
2016	\$842,312	\$1,081,158	\$682,137	\$2,605,607
2017	\$279,811	\$431,322	\$108,236	\$819,370
2018	\$443,118	\$927,492	\$162,881	\$1,533,492
2019	\$356,435	\$710,712	\$277,137	\$1,344,285
2020	\$498,434	\$890,085	\$428,230	\$1,816,749
2021	\$1,057,796	\$1,064,436	\$1,750,961	\$3,873,192
2022	\$628,452	\$593,747	\$1,078,374	\$2,300,573
Total	\$5,343,004	\$7,583,217	\$5,628,104	\$18,554,325

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TABLE 89. C-PACE AVOIDED EMISSIONS BY FY CLOSED

Fiscal Year	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
2012	0	0	0	0	0	0	0	0
2013	283	4,224	386	5,811	477	7,148	24	360
2014	4,700	86,427	6,077	113,223	6,872	128,033	400	7,497
2015	7,350	161,935	7,848	171,247	7,487	161,458	454	9,626
2016	8,626	156,267	9,181	163,676	8,099	136,665	716	13,207
2017	3,345	71,784	3,000	64,793	2,203	46,446	282	6,108
2018	5,858	129,664	5,398	121,162	4,446	100,178	491	10,956
2019	3,493	79,579	3,316	76,213	2,864	65,724	294	6,734
2020	4,222	93,557	3,987	89,322	3,447	77,070	354	7,902
2021	2,331	48,692	2,177	46,168	1,886	39,883	194	4,096
2022	3,480	86,993	3,092	77,295	2,721	68,033	126	3,142
Total	43,688	919,122	44,461	928,909	40,502	830,637	3,336	69,628

TABLE 90. C-PACE ECONOMIC VALUE OF PUBLIC HEALTH BY FY CLOSED

Fiscal Year	Annual		Lifetime	
	Low	High	Low	High
2012	\$0	\$0	\$0	\$0
2013	\$8,806	\$19,901	\$134,682	\$304,304
2014	\$150,753	\$340,563	\$2,851,883	\$6,441,221
2015	\$199,974	\$451,698	\$4,366,477	\$9,861,765
2016	\$272,210	\$615,006	\$5,075,552	\$11,464,986
2017	\$108,806	\$245,823	\$2,403,559	\$5,429,445
2018	\$187,290	\$423,368	\$4,167,303	\$9,420,126
2019	\$98,485	\$223,004	\$2,255,109	\$5,106,830
2020	\$112,179	\$254,192	\$2,510,089	\$5,688,581
2021	\$61,329	\$138,948	\$1,298,363	\$2,942,195
2022	\$64,272	\$145,483	\$1,606,810	\$3,637,068
Total	\$1,264,104	\$2,857,988	\$26,669,829	\$60,296,521

Financing Program

Commercial Property Assessed Clean Energy (C-PACE) is a structure through which commercial property owners can finance clean energy improvements through a voluntary benefit assessment on their property, repaid through their municipality along with real property taxes. A lien, or voluntary benefit assessment, is placed on the improved property as security for the financing, and the Connecticut Green Bank requires lender consent from existing mortgage holders prior to approving a C-PACE project. As of June 30, 2022, 99 banks and specialized lending institutions have provided lender consent for 347 projects – demonstrating that existing mortgage holders see that C-PACE adds adding value to properties and increases net income to the business occupying the building as a result of lower energy prices.

The Connecticut Green Bank administers the C-PACE program as an “open” platform. Private lenders work directly with building owners to finance projects. The lenders and owners then work with the

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Connecticut Green to approve the project and place the benefit assessment on the property. In addition, the Connecticut Green Bank maintains a warehouse of capital from which it finances C-PACE transactions. Through the warehouse, funds are advanced to either the customer or the contractor during construction based on the project meeting certain deliverables. Once the project is completed, the construction advances convert to long term financing whereby the property owner pays a benefit assessment over time to the municipality at the same time real property taxes are paid on the property. As the benefit assessment payments are made by the property owners, they are then remitted from the associated municipalities to the Connecticut Green Bank, or its designated servicer, to repay the capital providers for the energy improvements financed through C-PACE.

Financial Performance

To date there have been no foreclosures and as of June 30, 2022, there are eight (8) delinquencies with a principal balance outstanding of 8,207,027.23 or 3.75% of the portfolio.

Marketing

To accelerate the adoption of C-PACE to finance clean energy and energy efficiency projects, the Connecticut Green Bank has implemented marketing efforts that target specific industry verticals. The Green Bank used a group purchase model, in which it aggregated several C-PACE projects at auto retailers and offered interest rate reductions on the portfolio of projects. Connecticut Green Bank continues to work with the State of Connecticut's Department of Economic and Community Development (DECD) to target manufacturing facilities through its Manufacturing Innovation Fund (MIF). Promoted via its multi touch "Energy on the Line" marketing campaign, the Green Bank was able to access \$800,000 through MIF to provide manufacturers an incentive in the form of a grant equal to a 1% interest rate reduction, applied to the total project amount of a closed C-PACE project.

Connecticut Green Bank has also established relationships with contractors and provided them with materials and resources to support their use of C-PACE. Green Bank provides sales materials, serving as both a means of originating projects for the Green Bank and a way of creating more skilled and active C-PACE contractors. The Green Bank is focusing on its contractor network through a broader, organization-wide effort to increase contractor participation. This engagement is intended to foster stronger relationships and improve communication to the contractor base.

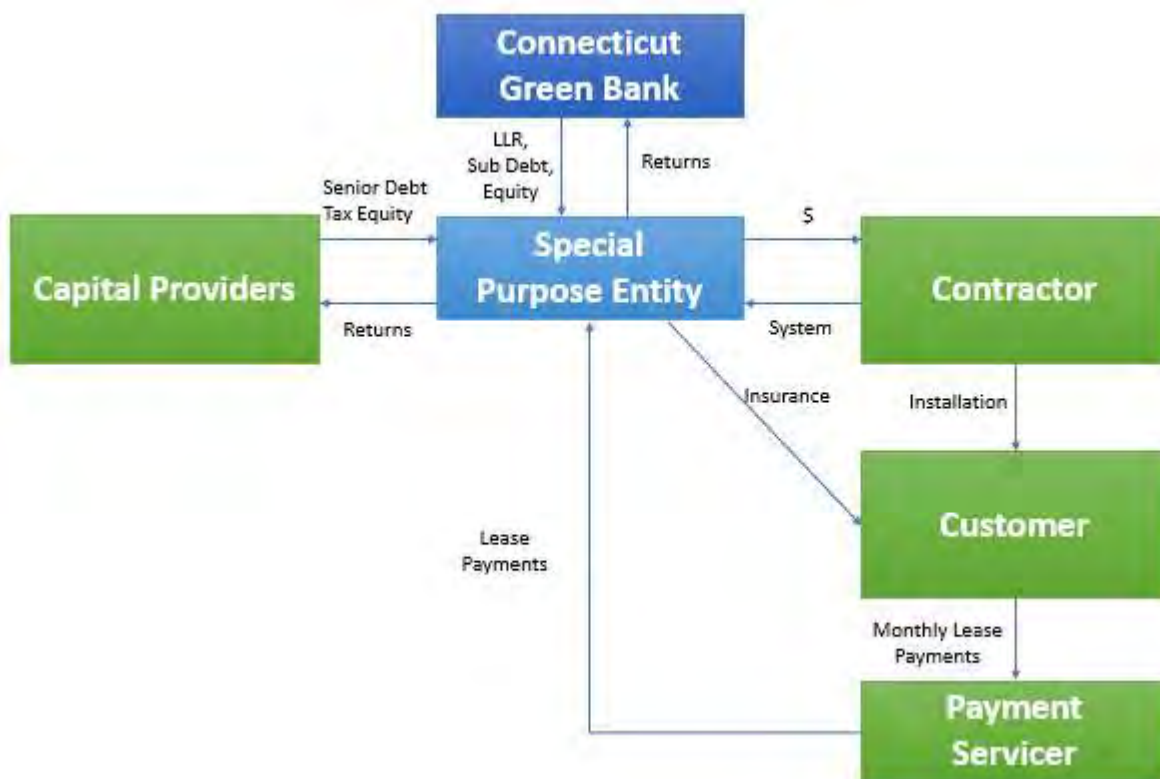
Case 2 – CT Green Bank PPA and Commercial Solar Lease

Description

The Green Bank has used third-party ownership structures to deploy distributed solar generation in Connecticut in both the Residential and Commercial sectors. These funds are a unique combination of a tax equity investor and a syndicate of debt providers and the Green Bank to support solar PV installations (i.e., rooftop residential lease financing for solar PV and commercial leases and PPAs for rooftop, carport, and ground mount solar PV).

Residential leases were one of the first products to graduate from Green Bank funding, but the organization still actively pursues new projects in the Commercial, Industrial, and Institutional sector for development and sale, and performs asset management functions for its entire owned portfolio of Residential and Commercial operational projects.

FIGURE 6. LEGAL STRUCTURE AND FLOWS OF CAPITAL FOR THE CT GREEN BANK PPA¹⁴³



The CT Solar Lease 2 fund was the second “solar PV fund” established using a combination of ratepayer funds and private capital. In developing this fund, which was fully utilized in 2017, the Green Bank sought to innovate both in the types of credits that would be underwritten and via broadening the sources of capital in the fund. Before these innovations by the Green Bank, a fund had not been established that would underwrite residential solar PV installations as well as installations on a “commercial scale” such

¹⁴³ It should be noted that the Special Purpose Entity structure includes several entities – CT Solar Lease II, LLC and CEFIA Holdings, LLC that provide different functions.

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as for municipal and school buildings, community oriented not-for-profit structures (all of which can't take advantage of Federal tax incentives due to their tax-exempt status) as well as a vast array of for-profit enterprises. These commercial-scale projects were historically the most difficult to finance: too small to attract investment funds, and similarly if aggregated to a size worthy of investment, comprised of off-takers that for the most part are non-investment grade or “unrated” credits that are difficult to underwrite in a manner that would permit deploying solar PV at scale. By prudently assessing these risks and operational issues, the Green Bank was able to obtain the support of the tax equity investor and lenders from Main Street – not Wall Street – in the fund. CT Solar Lease 2 was the first fund to secure solar leases and power purchase agreements using a PACE lien – an innovation that has prompted California to introduce legislation to enable the same security arrangement for its businesses and not for profit organizations. The Green Bank's leadership and innovation was recognized by the Clean Energy States Alliance “State Leadership in Clean Energy” award in 2016, and the Green Bank has continued its work on this front – solely with respect to commercial-scale projects – via a CT Solar Lease 3 fund, as well as through sourcing arrangements to deliver a number of these projects to Onyx Renewables (a Blackstone portfolio company), Inclusive Prosperity Capital, and other regional solar asset owners, so as to accelerate market adoption of financing strategies for this sector.

Key Performance Indicators

The Key Performance Indicators for PPA and Solar Lease closed activity are reflected in Table 91 through Table 93. These illustrate the volume of projects by year, investment, generation capacity installed, and the amount of energy saved and/or produced.

TABLE 91. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE PROJECT TYPES AND INVESTMENT BY FY CLOSED

Fiscal Year	EE	RE	RE/EE	# Projects	Total Investment	Green Bank Investment ¹⁴⁴	Private Investment	Leverage Ratio
2012	0	0	0	0	\$0	\$0	\$0	0
2013	0	0	0	0	\$0	\$0	\$0	0
2014	0	0	0	0	\$0	\$0	\$0	0
2015	0	16	0	16	\$10,387,036	\$2,700,629	\$7,686,407	3.8
2016	0	27	0	27	\$15,093,478	\$3,924,304	\$11,169,174	3.8
2017	0	28	2	30	\$25,088,167	\$6,157,306	\$18,930,861	4.1
2018	0	28	1	29	\$17,101,331	\$3,885,874	\$13,215,457	4.4
2019	0	19	0	19	\$8,135,503	\$2,849,490	\$5,286,013	2.9
2020	0	26	0	26	\$5,874,254	\$3,311,570	\$2,562,684	1.8
2021	0	33	0	33	\$25,141,990	\$14,146,718	\$10,995,271	1.8
2022	0	15	0	15	\$5,182,599	\$2,259,023	\$2,923,576	2.3
Total	0	192	3	195	\$112,004,358	\$39,234,915	\$72,769,443	2.9

TABLE 92. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE PROJECT CAPACITY, GENERATION AND SAVINGS¹⁴⁵ BY FY CLOSED

¹⁴⁴ Includes incentives, interest rate buydowns and loan loss reserves.

¹⁴⁵ The Green Bank currently estimates annual savings and is in the process of reviewing and updating this methodology to include actual savings where possible.

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Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)
2012	0.0	0	0	0	0
2013	0.0	0	0	0	0
2014	0.0	0	0	0	0
2015	3,490.4	3,974,856	99,371	8,680	216,999
2016	5,463.0	6,221,207	155,530	10,987	274,673
2017	11,650.6	13,267,749	331,694	38,007	950,178
2018	8,063.6	9,182,862	229,572	26,920	673,004
2019	3,618.3	4,120,463	103,012	10,340	258,494
2020	2,379.6	2,709,843	67,746	7,616	190,388
2021	13,824.3	15,743,056	393,576	53,715	1,342,883
2022	2,505.2	2,850,644	71,266	7,436	185,901
Total	50,994.9	58,070,680	1,451,767	163,701	4,092,520

TABLE 93. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE PROJECT AVERAGES BY FY CLOSED

Fiscal Year	Average Total Investment	Average Amount Financed	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)	Average Finance Term (years)	Average PPA Lease Price
2012	\$0	\$0	0.0	0	0	\$0.00
2013	\$0	\$0	0.0	0	0	\$0.00
2014	\$0	\$0	0.0	0	0	\$0.00
2015	\$649,190	\$649,190	218.1	964	21	\$0.10
2016	\$559,018	\$559,018	202.3	646	20	\$0.10
2017	\$836,272	\$836,272	388.4	1,900	20	\$0.09
2018	\$589,701	\$589,701	278.1	1,346	20	\$0.08
2019	\$428,184	\$428,184	190.4	862	20	\$0.08
2020	\$225,933	\$225,933	91.5	331	20	\$0.10
2021	\$761,878	\$761,878	432.0	1,679	20	\$0.08
2022	\$345,507	\$345,507	167.0	572	20	\$0.08
Average	\$574,381	\$574,381	262.9	1,121	20	\$0.09

The types of Commercial end-use customers participating in the PPA and Solar Lease program are shown in Table 94.

TABLE 94. TYPES OF END-USE CUSTOMERS PARTICIPATING IN CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE

Property Type	# of Properties
Agricultural	4
Athletic/Recreational Facility	7
Education	77
House of Worship	10
Industrial	2
Multifamily/apartment (> 5 units)	15
Municipal building	24
Non-profit	13
Nursing Home/Rehab Facility	4
Office	20
Public assembly	2

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Property Type	# of Properties
Retail	1
Special Purpose	14
Warehouse & storage	2
Grand Total	195

Customer Savings

The difference between the cost of electricity for a customer using a Green Bank supported solar PV system and the cost of that electricity had it been purchased from the customer’s utility is how we estimate customer savings. For commercial customers, savings is strictly the difference between the utility rate and a customer’s contractual PPA rate all multiplied by the Solar PV Generation.

TABLE 95. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE ANNUAL SAVINGS¹⁴⁶

Fiscal Year	Annual Savings	Cumulative # of Meters	Generation kWh ¹⁴⁷	kW Installed
2012	\$0	0	0	0
2013	\$0	0	0	0
2014	\$0	0	0	0
2015	\$4,626	14	232,944	1,711
2016	\$61,845	52	3,311,532	5,942
2017	\$112,902	99	8,145,045	11,556
2018	\$368,347	122	13,190,003	14,568
2019	\$686,417	131	16,013,706	18,495
2020	\$716,264	143	20,989,049	19,681
2021	\$646,140	143	20,523,979	19,681
2022	\$650,122	143	20,073,738	19,681
Total	\$3,246,663	143	102,479,996	19,681

¹⁴⁶ All data points required to calculate annual savings for each meter may not be available yet as we wait on data ingestion.

¹⁴⁷ Generation is the production we see in our meters as of today: Any increase to generation is due to data backfilling or due to getting access to previously inaccessible meters; any decrease in generation from last year’s report is data that is temporarily missing due to a meter replacement. Annual Savings is a function of generation so there might be an increase or decrease in savings.

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Vulnerable Communities Penetration

PPA and Commercial Solar Lease projects have been developed and financed in Vulnerable Communities throughout Connecticut since the products' inception, as reflected in Table 96.

TABLE 96. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE ACTIVITY IN VULNERABLE AND NOT VULNERABLE COMMUNITIES BY FY CLOSED¹⁴⁸

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2015	16	10	6	38%	3.5	2.6	0.9	25%	\$10,387,036	\$7,854,184	\$2,532,852	24%
2016	27	20	7	26%	5.5	3.9	1.5	28%	\$15,093,478	\$11,040,003	\$4,053,476	27%
2017	30	15	15	50%	11.7	3.9	7.7	66%	\$25,088,167	\$8,418,561	\$16,669,606	66%
2018	29	16	13	45%	8.1	2.7	5.4	67%	\$17,101,331	\$5,692,947	\$11,408,384	67%
2019	19	10	9	47%	3.6	1.4	2.2	61%	\$8,135,503	\$3,368,262	\$4,767,241	59%
2020	26	20	6	23%	2.4	1.7	0.7	29%	\$5,874,254	\$4,192,376	\$1,681,878	29%
2021	33	23	10	30%	13.8	11.4	2.5	18%	\$25,141,990	\$19,394,766	\$5,747,224	23%
2022	15	9	6	40%	2.5	1.8	0.7	29%	\$5,182,599	\$3,629,474	\$1,553,125	30%
Total	195	123	72	37%	51.0	29.4	21.6	42%	\$112,004,358	\$63,590,573	\$48,413,785	43%

Area Median Income Band Penetration

The PPA and Commercial Solar Lease program has been used to fund projects in economically diverse locations across the state as reflected by Table 97 and Table 98 for Metropolitan Statistical Area (MSA) Area Median Income (AMI). It should be noted that these PPA and Commercial Solar Lease funds are not part of an income targeted program.

TABLE 97. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY FY CLOSED¹⁴⁹

¹⁴⁸ Excludes projects in unknown communities.

¹⁴⁹ Excludes projects in unknown bands.

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6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2012	<60%	0	0%	0.0	0%	\$0	0%	609,363	17%	0.0	\$0.00	0.0
2012	60%-80%	0	0%	0.0	0%	\$0	0%	527,217	15%	0.0	\$0.00	0.0
2012	80%-100%	0	0%	0.0	0%	\$0	0%	589,440	17%	0.0	\$0.00	0.0
2012	100%-120%	0	0%	0.0	0%	\$0	0%	722,664	20%	0.0	\$0.00	0.0
2012	>120%	0	0%	0.0	0%	\$0	0%	1,116,395	31%	0.0	\$0.00	0.0
2012	Total	0	0%	0.0	0%	\$0	0%	3,572,213	100%	0.0	\$0.00	0.0
2013	<60%	0	0%	0.0	0%	\$0	0%	603,026	17%	0.0	\$0.00	0.0
2013	60%-80%	0	0%	0.0	0%	\$0	0%	567,361	16%	0.0	\$0.00	0.0
2013	80%-100%	0	0%	0.0	0%	\$0	0%	587,540	16%	0.0	\$0.00	0.0
2013	100%-120%	0	0%	0.0	0%	\$0	0%	687,261	19%	0.0	\$0.00	0.0
2013	>120%	0	0%	0.0	0%	\$0	0%	1,130,771	32%	0.0	\$0.00	0.0
2013	Total	0	0%	0.0	0%	\$0	0%	3,583,561	100%	0.0	\$0.00	0.0
2014	<60%	0	0%	0.0	0%	\$0	0%	614,135	17%	0.0	\$0.00	0.0
2014	60%-80%	0	0%	0.0	0%	\$0	0%	546,132	15%	0.0	\$0.00	0.0
2014	80%-100%	0	0%	0.0	0%	\$0	0%	577,061	16%	0.0	\$0.00	0.0
2014	100%-120%	0	0%	0.0	0%	\$0	0%	720,856	20%	0.0	\$0.00	0.0
2014	>120%	0	0%	0.0	0%	\$0	0%	1,125,910	31%	0.0	\$0.00	0.0
2014	Total	0	0%	0.0	0%	\$0	0%	3,592,053	100%	0.0	\$0.00	0.0
2015	<60%	1	6%	0.0	1%	\$92,004	1%	662,619	18%	0.0	\$0.14	0.0
2015	60%-80%	1	6%	0.1	2%	\$265,000	3%	489,826	14%	0.0	\$0.54	0.2
2015	80%-100%	3	19%	0.8	22%	\$2,093,948	20%	650,163	18%	0.0	\$3.22	1.2
2015	100%-120%	3	19%	0.4	11%	\$1,139,382	11%	631,741	18%	0.0	\$1.80	0.6
2015	>120%	8	50%	2.3	65%	\$6,796,702	65%	1,150,974	32%	0.0	\$5.91	2.0
2015	Total	16	100%	3.5	100%	\$10,387,036	100%	3,593,222	100%	0.0	\$2.89	1.0
2016	<60%	0	0%	0.0	0%	\$0	0%	649,617	18%	0.0	\$0.00	0.0
2016	60%-80%	1	4%	0.1	3%	\$493,254	3%	509,088	14%	0.0	\$0.97	0.3
2016	80%-100%	6	22%	1.4	25%	\$3,560,222	24%	641,084	18%	0.0	\$5.55	2.1
2016	100%-120%	10	37%	2.1	38%	\$5,784,206	38%	653,309	18%	0.0	\$8.85	3.2
2016	>120%	10	37%	1.9	34%	\$5,255,797	35%	1,126,543	31%	0.0	\$4.67	1.7
2016	Total	27	100%	5.5	100%	\$15,093,478	100%	3,588,570	100%	0.0	\$4.21	1.5

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6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2017	<60%	4	13%	1.4	12%	\$3,476,531	14%	663,181	18%	0.0	\$5.24	2.2
2017	60%-80%	5	17%	2.3	20%	\$5,200,276	21%	488,396	14%	0.0	\$10.65	4.8
2017	80%-100%	4	13%	1.3	11%	\$3,419,591	14%	612,043	17%	0.0	\$5.59	2.1
2017	100%-120%	9	30%	3.7	32%	\$6,839,183	27%	722,803	20%	0.0	\$9.46	5.1
2017	>120%	8	27%	2.9	25%	\$6,152,586	25%	1,099,277	31%	0.0	\$5.60	2.7
2017	Total	30	100%	11.7	100%	\$25,088,167	100%	3,594,478	100%	0.0	\$6.98	3.2
2018	<60%	4	14%	1.4	17%	\$3,023,342	18%	636,795	18%	0.0	\$4.75	2.1
2018	60%-80%	4	14%	0.7	9%	\$1,492,598	9%	553,007	15%	0.0	\$2.70	1.3
2018	80%-100%	3	10%	1.9	24%	\$4,164,416	24%	569,113	16%	0.0	\$7.32	3.3
2018	100%-120%	4	14%	0.6	7%	\$1,079,828	6%	710,802	20%	0.0	\$1.52	0.8
2018	>120%	14	48%	3.5	43%	\$7,341,147	43%	1,103,484	31%	0.0	\$6.65	3.2
2018	Total	29	100%	8.1	100%	\$17,101,331	100%	3,581,504	100%	0.0	\$4.77	2.3
2019	<60%	4	21%	0.4	10%	\$843,434	10%	636,795	18%	0.0	\$1.32	0.6
2019	60%-80%	5	26%	1.8	51%	\$3,923,807	48%	553,007	15%	0.0	\$7.10	3.3
2019	80%-100%	0	0%	0.0	0%	\$0	0%	569,113	16%	0.0	\$0.00	0.0
2019	100%-120%	2	11%	0.2	6%	\$494,343	6%	710,802	20%	0.0	\$0.70	0.3
2019	>120%	8	42%	1.2	33%	\$2,873,919	35%	1,103,484	31%	0.0	\$2.60	1.1
2019	Total	19	100%	3.6	100%	\$8,135,503	100%	3,575,074	100%	0.0	\$2.28	1.0
2020	<60%	0	0%	0.0	0%	\$0	0%	605,886	17%	0.0	\$0.00	0.0
2020	60%-80%	4	15%	0.5	19%	\$1,173,968	20%	540,866	15%	0.0	\$2.17	0.8
2020	80%-100%	2	8%	0.2	10%	\$507,910	9%	662,005	19%	0.0	\$0.77	0.3
2020	100%-120%	9	35%	0.4	18%	\$1,205,363	21%	692,148	19%	0.0	\$1.74	0.6
2020	>120%	11	42%	1.3	53%	\$2,987,014	51%	1,051,590	29%	0.0	\$2.84	1.2
2020	Total	26	100%	2.4	100%	\$5,874,254	100%	3,570,549	100%	0.0	\$1.65	0.7
2021	<60%	1	3%	0.0	0%	\$1,684,519	7%	605,886	17%	0.0	\$2.78	0.0
2021	60%-80%	3	9%	0.6	4%	\$972,366	4%	540,866	15%	0.0	\$1.80	1.0
2021	80%-100%	5	15%	1.8	13%	\$2,782,967	11%	662,005	19%	0.0	\$4.20	2.7
2021	100%-120%	9	27%	2.1	16%	\$3,805,693	15%	692,148	19%	0.0	\$5.50	3.1
2021	>120%	15	45%	9.3	68%	\$15,896,445	63%	1,051,590	29%	0.0	\$15.12	8.9
2021	Total	33	100%	13.8	100%	\$25,141,990	100%	3,570,549	100%	0.0	\$7.04	3.9

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2022	<60%	2	14%	0.2	7%	\$462,428	9%	605,886	17%	0.0	\$0.76	0.3
2022	60%-80%	0	0%	0.0	0%	\$0	0%	540,866	15%	0.0	\$0.00	0.0
2022	80%-100%	4	29%	0.6	22%	\$1,090,697	21%	662,005	19%	0.0	\$1.65	0.8
2022	100%-120%	1	7%	0.4	14%	\$635,507	12%	692,148	19%	0.0	\$0.92	0.5
2022	>120%	7	50%	1.4	56%	\$2,928,178	57%	1,051,590	29%	0.0	\$2.78	1.3
2022	Total	14	100%	2.5	100%	\$5,116,809	100%	3,570,549	100%	0.0	\$1.43	0.7
Total	<60%	16	8%	3.4	7%	\$9,582,258	9%	605,886	17%	0.0	\$15.82	5.6
Total	60%-80%	23	12%	6.1	12%	\$13,521,268	12%	540,866	15%	0.0	\$25.00	11.3
Total	80%-100%	27	14%	7.9	15%	\$17,619,751	16%	662,005	19%	0.0	\$26.62	11.9
Total	100%-120%	47	24%	9.9	19%	\$20,983,504	19%	692,148	19%	0.1	\$30.32	14.3
Total	>120%	81	42%	23.7	47%	\$50,231,788	45%	1,051,590	29%	0.1	\$47.77	22.6
Total	Total	194	100%	51.0	100%	\$111,938,568	100%	3,570,549	100%	0.1	\$31.35	14.3

TABLE 98. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED¹⁵⁰

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2015	16	11	5	31%	3.5	2.6	0.9	24%	\$10,387,036	\$7,936,084	\$2,450,952	24%
2016	27	20	7	26%	5.5	3.9	1.5	28%	\$15,093,478	\$11,040,003	\$4,053,476	27%
2017	30	17	13	43%	11.7	6.6	5.1	43%	\$25,088,167	\$12,991,769	\$12,096,398	48%
2018	29	18	11	38%	8.1	4.1	4.0	49%	\$17,101,331	\$8,420,975	\$8,680,356	51%
2019	19	10	9	47%	3.6	1.4	2.2	61%	\$8,135,503	\$3,368,262	\$4,767,241	59%
2020	26	20	6	23%	2.4	1.7	0.7	29%	\$5,874,254	\$4,192,376	\$1,681,878	29%

¹⁵⁰ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK

6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2021	33	24	9	27%	13.8	11.5	2.3	17%	\$25,141,990	\$19,702,138	\$5,439,852	22%
2022	14	8	6	43%	2.5	1.7	0.7	30%	\$5,116,809	\$3,563,684	\$1,553,125	30%
Total	194	128	66	34%	51.0	33.6	17.4	34%	\$111,938,568	\$71,215,291	\$40,723,277	36%

TABLE 99. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED¹⁵¹

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2015	16	14	2	13%	3.5	3.4	0.1	3%	\$10,387,036	\$10,030,032	\$357,004	3%
2016	27	26	1	4%	5.5	5.3	0.1	3%	\$15,093,478	\$14,600,224	\$493,254	3%
2017	30	21	9	30%	11.7	7.9	3.8	32%	\$25,088,167	\$16,411,360	\$8,676,807	35%
2018	29	21	8	28%	8.1	6.0	2.1	26%	\$17,101,331	\$12,585,392	\$4,515,940	26%
2019	19	10	9	47%	3.6	1.4	2.2	61%	\$8,135,503	\$3,368,262	\$4,767,241	59%
2020	26	22	4	15%	2.4	1.9	0.5	19%	\$5,874,254	\$4,700,287	\$1,173,968	20%
2021	33	29	4	12%	13.8	13.3	0.6	4%	\$25,141,990	\$22,485,105	\$2,656,885	11%
2022	14	12	2	14%	2.5	2.3	0.2	7%	\$5,116,809	\$4,654,381	\$462,428	9%
Total	194	155	39	20%	51.0	41.5	9.5	19%	\$111,938,568	\$88,835,042	\$23,103,526	21%

Distressed Community Penetration

For a breakdown of PPA and Commercial Solar Lease project volume and investment by census tracts categorized by Distressed Communities – see Table 100. It should be noted that the PPA and Commercial Solar Lease is not an income targeted program.

¹⁵¹ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

TABLE 100. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE ACTIVITY IN DISTRESSED COMMUNITIES BY FY CLOSED

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2012	Yes	0	0%	0.0	0%	\$0	0%	1,171,385	33%	0.0	\$0.00	0.0
2012	No	0	0%	0.0	0%	\$0	0%	2,400,828	67%	0.0	\$0.00	0.0
2012	Total	0	0%	0.0	0%	\$0	0%	3,572,213	100%	0.0	\$0.00	0.0
2013	Yes	0	0%	0.0	0%	\$0	0%	1,124,923	31%	0.0	\$0.00	0.0
2013	No	0	0%	0.0	0%	\$0	0%	2,458,638	69%	0.0	\$0.00	0.0
2013	Total	0	0%	0.0	0%	\$0	0%	3,583,561	100%	0.0	\$0.00	0.0
2014	Yes	0	0%	0.0	0%	\$0	0%	1,106,027	31%	0.0	\$0.00	0.0
2014	No	0	0%	0.0	0%	\$0	0%	2,486,026	69%	0.0	\$0.00	0.0
2014	Total	0	0%	0.0	0%	\$0	0%	3,592,053	100%	0.0	\$0.00	0.0
2015	Yes	2	13%	0.1	4%	\$371,867	4%	1,122,550	31%	0.0	\$0.33	0.1
2015	No	14	88%	3.4	96%	\$10,015,169	96%	2,470,672	69%	0.0	\$4.05	1.4
2015	Total	16	100%	3.5	100%	\$10,387,036	100%	3,593,222	100%	0.0	\$2.89	1.0
2016	Yes	1	4%	0.1	3%	\$493,254	3%	1,162,653	32%	0.0	\$0.42	0.1
2016	No	26	96%	5.3	97%	\$14,600,224	97%	2,425,917	68%	0.0	\$6.02	2.2
2016	Total	27	100%	5.5	100%	\$15,093,478	100%	3,588,570	100%	0.0	\$4.21	1.5
2017	Yes	3	10%	2.5	22%	\$5,745,903	23%	1,150,554	32%	0.0	\$4.99	2.2
2017	No	27	90%	9.1	78%	\$19,342,264	77%	2,443,924	68%	0.0	\$7.91	3.7
2017	Total	30	100%	11.7	100%	\$25,088,167	100%	3,594,478	100%	0.0	\$6.98	3.2
2018	Yes	11	38%	5.0	62%	\$10,513,316	61%	1,130,773	32%	0.0	\$9.30	4.4
2018	No	18	62%	3.1	38%	\$6,588,015	39%	2,450,731	68%	0.0	\$2.69	1.3
2018	Total	29	100%	8.1	100%	\$17,101,331	100%	3,581,504	100%	0.0	\$4.77	2.3
2019	Yes	5	26%	0.5	14%	\$1,121,548	14%	1,098,707	31%	0.0	\$1.02	0.4
2019	No	14	74%	3.1	86%	\$7,013,955	86%	2,476,367	69%	0.0	\$2.83	1.3
2019	Total	19	100%	3.6	100%	\$8,135,503	100%	3,575,074	100%	0.0	\$2.28	1.0
2020	Yes	1	4%	0.1	4%	\$224,311	4%	1,102,319	31%	0.0	\$0.20	0.1
2020	No	25	96%	2.3	96%	\$5,649,943	96%	2,468,230	69%	0.0	\$2.29	0.9
2020	Total	26	100%	2.4	100%	\$5,874,254	100%	3,570,549	100%	0.0	\$1.65	0.7
2021	Yes	3	9%	0.2	2%	\$2,239,141	9%	964,777	27%	0.0	\$2.32	0.3

CONNECTICUT GREEN BANK

6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Project Units / 1,000 People	Total Investment / Population	Watts / Population
2021	No	30	91%	13.6	98%	\$22,902,849	91%	2,605,772	73%	0.0	\$8.79	5.2
2021	Total	33	100%	13.8	100%	\$25,141,990	100%	3,570,549	100%	0.0	\$7.04	3.9
2022	Yes	2	14%	0.2	8%	\$462,428	9%	964,777	27%	0.0	\$0.48	0.2
2022	No	12	86%	2.1	92%	\$4,407,925	91%	2,605,772	73%	0.0	\$1.69	0.8
2022	Total	14	100%	2.3	100%	\$4,870,353	100%	3,570,549	100%	0.0	\$1.36	0.6
Total	Yes	28	14%	8.8	17%	\$21,171,768	19%	964,777	27%	0.0	\$21.94	9.1
Total	No	166	86%	42.0	83%	\$90,520,344	81%	2,605,772	73%	0.1	\$34.74	16.1
Total	Total	194	100%	50.8	100%	\$111,692,112	100%	3,570,549	100%	0.1	\$31.28	14.2

TABLE 101. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE ACTIVITY IN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED¹⁵²

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2015	16	14	2	13%	3.5	3.4	0.1	4%	\$10,387,036	\$10,015,169	\$371,867	4%
2016	27	26	1	4%	5.5	5.3	0.1	3%	\$15,093,478	\$14,600,224	\$493,254	3%
2017	30	27	3	10%	11.7	9.1	2.5	22%	\$25,088,167	\$19,342,264	\$5,745,903	23%
2018	29	18	11	38%	8.1	3.1	5.0	62%	\$17,101,331	\$6,588,015	\$10,513,316	61%
2019	19	14	5	26%	3.6	3.1	0.5	14%	\$8,135,503	\$7,013,955	\$1,121,548	14%
2020	26	25	1	4%	2.4	2.3	0.1	4%	\$5,874,254	\$5,649,943	\$224,311	4%
2021	33	30	3	9%	13.8	13.6	0.2	2%	\$25,141,990	\$22,902,849	\$2,239,141	9%
2022	14	12	2	14%	2.3	2.1	0.2	8%	\$4,870,353	\$4,407,925	\$462,428	9%
Total	194	166	28	14%	50.8	42.0	8.8	17%	\$111,692,112	\$90,520,344	\$21,171,768	19%

¹⁵² Excludes projects in unknown communities.

CONNECTICUT GREEN BANK
6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

Environmental Justice Poverty Level Penetration

Table 102 shows that the PPA and Commercial Solar Lease program has not achieved significant environmental justice poverty level penetration in some years since inception.

TABLE 102. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE ACTIVITY IN ENVIRONMENTAL JUSTICE POVERTY AREAS BY FY CLOSED¹⁵³

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2015	16	15	1	6%	3.5	3.5	0.0	1%	\$10,387,036	\$10,305,136	\$81,900	1%
2016	27	27	0	0%	5.5	5.5	0.0	0%	\$15,093,478	\$15,093,478	\$0	0%
2017	30	28	2	7%	11.7	9.0	2.7	23%	\$25,088,167	\$20,514,959	\$4,573,208	18%
2018	29	26	3	10%	8.1	6.2	1.9	24%	\$17,101,331	\$12,936,915	\$4,164,416	24%
2019	19	19	0	0%	3.6	3.6	0.0	0%	\$8,135,503	\$8,135,503	\$0	0%
2020	26	26	0	0%	2.4	2.4	0.0	0%	\$5,874,254	\$5,874,254	\$0	0%
2021	33	32	1	3%	13.8	13.5	0.3	2%	\$25,141,990	\$24,619,379	\$522,611	2%
2022	15	15	0	0%	2.5	2.5	0.0	0%	\$5,182,599	\$5,182,599	\$0	0%
Total	195	188	7	4%	51.0	46.1	4.9	10%	\$112,004,358	\$102,662,223	\$9,342,135	8%

Ethnicity

The PPA and Commercial Solar Lease product deployment activity has been primarily in majority white areas since program inception.

¹⁵³ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

TABLE 103. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY ETHNICITY CATEGORY BY FY CLOSED¹⁵⁴

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population
2012	<60%	0	0.0%	13,052	20.8%	0	0.0%	21,021	33.5%	0	0.0%	28,616	45.6%	0	0.0%	0	0.0%
2012	60%-80%	0	0.0%	8,714	8.5%	0	0.0%	7,447	7.3%	0	0.0%	86,017	84.2%	0	0.0%	0	0.0%
2012	80%-100%	0	0.0%	3,490	2.3%	0	0.0%	0	0.0%	0	0.0%	147,195	97.7%	0	0.0%	0	0.0%
2012	100%-120%	0	0.0%	3,488	1.6%	0	0.0%	0	0.0%	0	0.0%	212,996	98.4%	0	0.0%	0	0.0%
2012	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	349,212	100.0%	0	0.0%	0	0.0%
2012	Total	0	0.0%	28,744	3.3%	0	0.0%	28,468	3.2%	0	0.0%	824,036	93.5%	0	0.0%	0	0.0%
2013	<60%	0	0.0%	10,766	17.6%	0	0.0%	21,781	35.7%	0	0.0%	28,457	46.6%	0	0.0%	0	0.0%
2013	60%-80%	0	0.0%	10,827	9.8%	0	0.0%	9,574	8.7%	0	0.0%	89,566	81.4%	0	0.0%	0	0.0%
2013	80%-100%	0	0.0%	1,926	1.3%	0	0.0%	0	0.0%	0	0.0%	147,750	98.7%	0	0.0%	0	0.0%
2013	100%-120%	0	0.0%	3,177	1.6%	0	0.0%	0	0.0%	0	0.0%	199,650	98.4%	0	0.0%	0	0.0%
2013	>120%	0	0.0%	1,808	0.5%	0	0.0%	0	0.0%	0	0.0%	348,900	99.5%	0	0.0%	0	0.0%
2013	Total	0	0.0%	28,504	3.3%	0	0.0%	31,355	3.6%	0	0.0%	814,323	93.2%	0	0.0%	0	0.0%
2014	<60%	0	0.0%	12,067	20.4%	0	0.0%	17,945	30.3%	0	0.0%	29,282	49.4%	0	0.0%	0	0.0%
2014	60%-80%	0	0.0%	8,576	8.2%	0	0.0%	10,507	10.1%	0	0.0%	85,445	81.7%	0	0.0%	0	0.0%
2014	80%-100%	0	0.0%	1,868	1.3%	0	0.0%	1,491	1.0%	0	0.0%	145,487	97.7%	0	0.0%	0	0.0%
2014	100%-120%	0	0.0%	3,280	1.6%	0	0.0%	0	0.0%	0	0.0%	205,632	98.4%	0	0.0%	0	0.0%
2014	>120%	0	0.0%	3,745	1.1%	0	0.0%	0	0.0%	0	0.0%	344,034	98.9%	0	0.0%	0	0.0%
2014	Total	0	0.0%	29,536	3.4%	0	0.0%	29,943	3.4%	0	0.0%	809,880	93.2%	0	0.0%	0	0.0%
2015	<60%	0	0.0%	12,243	18.4%	1	100.0%	27,292	41.0%	0	0.0%	27,097	40.7%	0	0.0%	0	0.0%
2015	60%-80%	0	0.0%	7,491	7.8%	0	0.0%	7,075	7.4%	1	100.0%	81,493	84.8%	0	0.0%	0	0.0%
2015	80%-100%	0	0.0%	5,767	3.5%	0	0.0%	513	0.3%	3	100.0%	158,372	95.9%	0	0.0%	553	0.3%
2015	100%-120%	0	0.0%	863	0.5%	0	0.0%	0	0.0%	3	100.0%	182,766	99.5%	0	0.0%	0	0.0%
2015	>120%	0	0.0%	1,877	0.5%	0	0.0%	0	0.0%	8	100.0%	350,176	99.5%	0	0.0%	0	0.0%
2015	Total	0	0.0%	28,241	3.3%	1	6.3%	34,880	4.0%	15	93.8%	799,904	92.6%	0	0.0%	553	0.1%

¹⁵⁴ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population
2016	<60%	0	0.0%	11,333	18.0%	0	0.0%	26,620	42.2%	0	0.0%	25,103	39.8%	0	0.0%	0	0.0%
2016	60%-80%	0	0.0%	7,872	7.9%	0	0.0%	8,551	8.6%	1	100.0%	82,650	83.4%	0	0.0%	0	0.0%
2016	80%-100%	0	0.0%	4,736	2.9%	0	0.0%	937	0.6%	5	83.3%	159,339	96.6%	1	16.7%	0	0.0%
2016	100%-120%	1	10.0%	0	0.0%	0	0.0%	0	0.0%	8	80.0%	186,570	99.7%	1	10.0%	559	0.3%
2016	>120%	0	0.0%	3,063	0.9%	0	0.0%	0	0.0%	10	100.0%	341,514	99.1%	0	0.0%	0	0.0%
2016	Total	1	3.7%	27,004	3.1%	0	0.0%	36,108	4.2%	24	88.9%	795,176	92.6%	2	7.4%	559	0.1%
2017	<60%	0	0.0%	11,916	18.4%	1	25.0%	28,817	44.5%	3	75.0%	24,022	37.1%	0	0.0%	0	0.0%
2017	60%-80%	2	40.0%	5,276	5.4%	0	0.0%	12,600	12.9%	3	60.0%	79,579	81.7%	0	0.0%	0	0.0%
2017	80%-100%	0	0.0%	4,323	2.8%	0	0.0%	2,062	1.3%	4	100.0%	149,029	95.9%	0	0.0%	0	0.0%
2017	100%-120%	0	0.0%	1,101	0.5%	0	0.0%	0	0.0%	9	100.0%	207,746	99.2%	0	0.0%	637	0.3%
2017	>120%	0	0.0%	4,014	1.2%	0	0.0%	0	0.0%	8	100.0%	335,348	98.8%	0	0.0%	0	0.0%
2017	Total	2	6.7%	26,630	3.1%	1	3.3%	43,479	5.0%	27	90.0%	795,724	91.8%	0	0.0%	637	0.1%
2018	<60%	0	0.0%	10,135	16.3%	4	100.0%	28,053	45.1%	0	0.0%	24,059	38.7%	0	0.0%	0	0.0%
2018	60%-80%	0	0.0%	7,948	7.3%	1	25.0%	11,560	10.6%	3	75.0%	89,634	82.1%	0	0.0%	0	0.0%
2018	80%-100%	0	0.0%	4,704	3.2%	0	0.0%	3,271	2.2%	3	100.0%	138,013	94.5%	0	0.0%	0	0.0%
2018	100%-120%	0	0.0%	2,274	1.1%	0	0.0%	0	0.0%	4	100.0%	201,977	98.6%	0	0.0%	629	0.3%
2018	>120%	0	0.0%	2,828	0.8%	0	0.0%	0	0.0%	14	100.0%	341,161	99.2%	0	0.0%	0	0.0%
2018	Total	0	0.0%	27,889	3.2%	5	17.2%	42,884	5.0%	24	82.8%	794,844	91.8%	0	0.0%	629	0.1%
2019	<60%	2	50.0%	10,903	17.0%	2	50.0%	29,840	46.5%	0	0.0%	23,497	36.6%	0	0.0%	0	0.0%
2019	60%-80%	1	20.0%	6,102	6.0%	0	0.0%	10,367	10.3%	4	80.0%	84,519	83.7%	0	0.0%	0	0.0%
2019	80%-100%	0	0.0%	5,119	3.3%	0	0.0%	1,488	1.0%	0	0.0%	148,956	95.8%	0	0.0%	0	0.0%
2019	100%-120%	0	0.0%	3,330	1.6%	0	0.0%	627	0.3%	2	100.0%	202,850	97.8%	0	0.0%	648	0.3%
2019	>120%	0	0.0%	2,074	0.6%	0	0.0%	0	0.0%	8	100.0%	335,436	99.4%	0	0.0%	0	0.0%
2019	Total	3	15.8%	27,528	3.2%	2	10.5%	42,322	4.9%	14	73.7%	795,258	91.9%	0	0.0%	648	0.1%
2020	<60%	0	0.0%	9,549	13.9%	0	0.0%	36,027	52.5%	0	0.0%	23,086	33.6%	0	0.0%	0	0.0%
2020	60%-80%	0	0.0%	7,132	6.8%	1	25.0%	23,995	22.8%	3	75.0%	73,963	70.4%	0	0.0%	0	0.0%
2020	80%-100%	0	0.0%	4,568	2.8%	0	0.0%	2,350	1.4%	2	100.0%	159,134	95.8%	0	0.0%	0	0.0%
2020	100%-120%	0	0.0%	4,328	2.1%	0	0.0%	0	0.0%	9	100.0%	205,187	97.9%	0	0.0%	0	0.0%
2020	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	11	100.0%	326,890	100.0%	0	0.0%	0	0.0%

CONNECTICUT GREEN BANK
6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population	# Project Units	% Project Units	Total Population	% Population
2020	Total	0	0.0%	25,577	2.9%	1	3.8%	62,372	7.1%	25	96.2%	788,350	90.0%	0	0.0%	0	0.0%
2021	<60%	0	0.0%	9,549	13.9%	1	100.0%	36,027	52.5%	0	0.0%	23,086	33.6%	0	0.0%	0	0.0%
2021	60%-80%	0	0.0%	7,132	6.8%	0	0.0%	23,995	22.8%	3	100.0%	73,963	70.4%	0	0.0%	0	0.0%
2021	80%-100%	0	0.0%	4,568	2.8%	0	0.0%	2,350	1.4%	5	100.0%	159,134	95.8%	0	0.0%	0	0.0%
2021	100%-120%	0	0.0%	4,328	2.1%	0	0.0%	0	0.0%	9	100.0%	205,187	97.9%	0	0.0%	0	0.0%
2021	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	15	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2021	Total	0	0.0%	25,577	2.9%	1	3.0%	62,372	7.1%	32	97.0%	788,350	90.0%	0	0.0%	0	0.0%
2022	<60%	0	0.0%	9,549	13.9%	1	50.0%	36,027	52.5%	1	50.0%	23,086	33.6%	0	0.0%	0	0.0%
2022	60%-80%	0	0.0%	7,132	6.8%	0	0.0%	23,995	22.8%	0	0.0%	73,963	70.4%	0	0.0%	0	0.0%
2022	80%-100%	0	0.0%	4,568	2.8%	0	0.0%	2,350	1.4%	4	100.0%	159,134	95.8%	0	0.0%	0	0.0%
2022	100%-120%	0	0.0%	4,328	2.1%	0	0.0%	0	0.0%	1	100.0%	205,187	97.9%	0	0.0%	0	0.0%
2022	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	7	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2022	Total	0	0.0%	25,577	2.9%	1	7.1%	62,372	7.1%	13	92.9%	788,350	90.0%	0	0.0%	0	0.0%
Total	<60%	2	12.5%	9,549	13.9%	10	62.5%	36,027	52.5%	4	25.0%	23,086	33.6%	0	0.0%	0	0.0%
Total	60%-80%	3	13.0%	7,132	6.8%	2	8.7%	23,995	22.8%	18	78.3%	73,963	70.4%	0	0.0%	0	0.0%
Total	80%-100%	0	0.0%	4,568	2.8%	0	0.0%	2,350	1.4%	26	96.3%	159,134	95.8%	1	3.7%	0	0.0%
Total	100%-120%	1	2.1%	4,328	2.1%	0	0.0%	0	0.0%	45	95.7%	205,187	97.9%	1	2.1%	0	0.0%
Total	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	81	100.0%	326,890	100.0%	0	0.0%	0	0.0%
Total	Total	6	3.1%	25,577	2.9%	12	6.2%	62,372	7.1%	174	89.7%	788,350	90.0%	2	1.0%	0	0.0%

CONNECTICUT GREEN BANK
6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

Societal Benefits

Ratepayers in Connecticut receive the societal benefits of the PPA and CT Solar Lease. Over the course of its existence, the program has supported the creation of 854 job years and avoided the lifetime emission of 804,681 tons of carbon dioxide, 794,221 pounds of nitrous oxide, 672,135 pounds of sulfur oxide, and 68,950 pounds of particulate matter as illustrated by Table 104 and Table 106.

The PPA’s and leases have generated more than \$3.4 million in tax revenue for the State of Connecticut since inception as demonstrated in Table 105. The value of the lifetime public health impacts of the program is estimated to be between \$23.5 and \$53.2 million as seen in Table 107.

TABLE 104. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE JOB YEARS SUPPORTED BY FY CLOSED

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	0	0	0
2013	0	0	0
2014	0	0	0
2015	35	56	90
2016	55	87	142
2017	83	109	191
2018	53	68	121
2019	25	33	58
2020	19	26	44
2021	78	101	179
2022	12	16	28
Total	360	494	854

TABLE 105. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0
2015	\$160,324	\$175,714	\$0	\$336,038
2016	\$232,968	\$255,331	\$0	\$488,299
2017	\$450,855	\$273,267	\$0	\$724,122
2018	\$324,324	\$142,312	\$0	\$466,637
2019	\$127,249	\$137,625	\$0	\$264,875
2020	\$91,881	\$99,373	\$0	\$191,253
2021	\$393,252	\$425,318	\$0	\$818,570
2022	\$74,868	\$101,079	\$0	\$175,947
Total	\$1,855,720	\$1,610,020	\$0	\$3,465,740

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6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

TABLE 106. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE AVOIDED EMISSIONS BY FY CLOSED

Fiscal Year	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
2012	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0
2015	2,266	56,651	2,755	68,886	2,760	69,005	199	4,977
2016	3,498	87,439	3,584	89,595	2,565	64,124	307	7,681
2017	7,291	182,277	6,871	171,778	5,579	139,482	622	15,549
2018	5,075	126,873	4,905	122,613	4,218	105,440	432	10,799
2019	2,277	56,937	2,202	55,060	1,896	47,404	194	4,846
2020	1,501	37,525	1,505	37,624	1,321	33,019	129	3,217
2021	8,702	217,541	8,415	210,367	7,245	181,116	741	18,516
2022	1,578	39,438	1,532	38,297	1,302	32,547	135	3,364
Total	32,187	804,681	31,769	794,221	26,885	672,135	2,758	68,950

TABLE 107. CT GREEN BANK PPA AND COMMERCIAL SOLAR LEASE VALUE OF PUBLIC HEALTH BY FY CLOSED

Fiscal Year	Annual		Lifetime	
	Low	High	Low	High
2012	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0
2015	\$77,112	\$174,099	\$1,927,805	\$4,352,467
2016	\$120,691	\$272,489	\$3,017,286	\$6,812,222
2017	\$214,777	\$486,208	\$5,369,436	\$12,155,200
2018	\$142,004	\$321,708	\$3,550,100	\$8,042,696
2019	\$64,195	\$145,414	\$1,604,874	\$3,635,362
2020	\$43,240	\$97,909	\$1,081,001	\$2,447,716
2021	\$236,146	\$535,264	\$5,903,646	\$13,381,598
2022	\$42,317	\$95,883	\$1,057,915	\$2,397,069
Total	\$940,482	\$2,128,973	\$23,512,062	\$53,224,331

Financing Program

The CT Solar Lease 2 fund was a financing structure developed in partnership with a tax equity investor (i.e., US Bank) and a syndicate of local lenders (i.e. Key Bank and Webster Bank) that used a credit enhancement (i.e., \$3,500,000 loan loss reserve),¹⁵⁵ in combination with \$2.3 million in subordinated debt and \$11.5 million in sponsor equity from the Connecticut Green Bank as the “member manager” to provide approximately \$80 million in lease financing for residential and commercial solar PV projects. Through the product, the Connecticut Green Bank lowered the barriers to Connecticut residential and

¹⁵⁵ From repurposed American Recovery and Reinvestment Act funds.

CONNECTICUT GREEN BANK

6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

commercial customers seeking to install solar PV with no up-front investment, thus increasing demand, while at the same time reducing the market's reliance on subsidies through the RSIP or being more competitive in a reverse auction through the Zero Emission Renewable Energy Credit (ZREC) program. As a lease (or PPA for certain commercial customers), capital provided to consumers through the CT Solar Lease is now being returned to the Connecticut Green Bank, the tax equity investor, and the lenders – it is not a subsidy. The financial structure of the CT Solar Lease product, both historically and on an ongoing basis through the CT Solar Lease 3 fund, includes origination by contractors, servicing of lease and PPA payments, insurance and “one call” system performance and insurance resolution, and financing features in combination with the support of the Connecticut Green Bank, whereas under the partnerships with entities such as Onyx Renewables, Inclusive Prosperity Capital and other regional solar asset owners, the Connecticut Green Bank originates projects together with local contractors, but the partner entities then hold the ongoing ownership and asset management responsibilities. In some cases, the Connecticut Green provides construction and / or term loan financing to the partner entities.

Financial Performance

To date there are no defaults and as of June 30, 2022 there are 8 delinquencies totaling \$24,169, or 1.8% of the annual income in the Commercial Solar Lease and CT Green Bank PPA portfolio.

CONNECTICUT GREEN BANK
6. PROGRAMS – CT GREEN BANK PPA AND CT SOLAR LEASE

Marketing

To increase the deployment of solar through the PPA, the Green Bank has used a few channels. In 2020, the Green Bank introduced the Solar Municipal Assistance Program (MAP), to make it easier for municipalities to access renewable energy and achieve energy savings at their buildings. Solar MAP provides technical assistance through every step of the process so towns and cities can realize all the cost-saving benefits of going solar with fewer challenges and roadblocks. Through the PPA, the municipality purchases the electricity generated by the solar array, and locks in low electricity cost so the cash flow is positive in year one. The first round of municipalities included Manchester, Mansfield, Portland, and Woodbridge, with second and third rounds in the works.

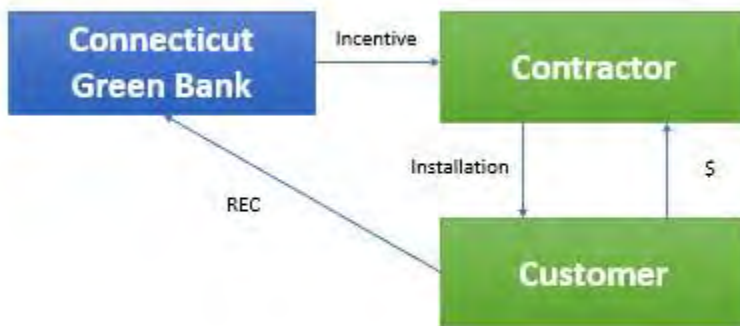
The Green Bank also promotes the PPA through its network of contractors and is focusing on its contractor network through a broader, organization-wide effort to increase contractor participation. This engagement is intended to foster stronger relationships and improve communication to the contractor base.

Case 3 – Residential Solar Investment Program

Description

The RSIP is a subsidy program that provides incentives to reduce the cost for homeowners to own solar photovoltaic (PV) systems or for third party owners (TPOs) to provide clean electricity from solar PV systems through leases or power purchase agreements (PPAs) with homeowners. Incentives are provided either upfront (i.e., through an expected performance-based buy-down or EPBB) for homeowner-owned systems or are paid out over time¹⁵⁶ based on system production (i.e., through a performance-based incentive or PBI and a low to moderate income performance-based incentive or LMI-PBI) for third-party owned projects. With either incentive type, the Connecticut Green Bank retains ownership of the Renewable Energy Credits (RECs) and other environmental attributes.

FIGURE 7. LEGAL STRUCTURE AND FLOWS OF CAPITAL FOR THE RSIP¹⁵⁷



The subsidy under the RSIP has decreased over time – see Table 108, supporting the goal of reducing market reliance on incentives while moving it towards innovative low-cost financing and sustained orderly development.

In September 23, 2020, as RSIP was reaching its statutory target of 350 MW, the Board of Directors approved the RSIP Extension (RSIP-E), consisting of additional 32 MW of capacity over the RSIP statutory target, including up to 10 MW in Step 16 to ensure RSIP could achieve the 350 MW deployment goal of the public policy, and an additional 22 MW in Step 17 to support the residential solar PV industry toward achieving the sustained, orderly development in the context of COVID-19 impacts.

December 31, 2021 marked the official end of RSIP, and the transition to a tariff-based compensation for residential solar PV systems in the state.

TABLE 108. RSIP AND RSIP-E SUBSIDY BY STEP AND INCENTIVE TYPE

¹⁵⁶ The PBI is paid out quarterly over a period of six years.

¹⁵⁷ The Green Bank incentive is issued to the Contractor on behalf of the Customer. In the case of Third-Party Owned systems, RECs flow from the Contractor to the Connecticut Green Bank.

CONNECTICUT GREEN BANK
6. PROGRAMS – RESIDENTIAL SOLAR INVESTMENT PROGRAM

RSIP Subsidy by Step	Start Date	EPBB (\$/W)			PBI (\$/kWh)		LMI (\$/kWh)	
		≤5 kW	5 to 10 kW	>10 kW, ≤ 20 kW	≤10 kW	>10 kW, ≤ 20 kW	≤10 kW	>10 kW, ≤ 20 kW
Step 1	3/2/2012	\$2.450	\$1.250	\$0.000	\$0.300	\$0.000	N/A	N/A
Step 2	5/8/2012	\$2.275	\$1.075	\$0.000	\$0.300	\$0.000	N/A	N/A
Step 3	1/4/2013 EPBB, 4/1/2013 PBI	\$1.750	\$0.550	\$0.000	\$0.225	\$0.000	N/A	N/A
Step 4	1/6/2014	\$1.250	\$0.750	\$0.000	\$0.180	\$0.000	N/A	N/A
Step 5	9/1/2014	\$0.800		\$0.400	\$0.125	\$0.060	N/A	N/A
Step 6	1/1/2015	\$0.675		\$0.400	\$0.080	\$0.060	N/A	N/A
Step 7	4/11/2015	\$0.540		\$0.400	\$0.064	\$0.060	N/A	N/A
Step 8	8/8/2015	\$0.540		\$0.400	\$0.054		\$0.110	\$0.055
Step 9	2/1/2016	\$0.513		\$0.400	\$0.046		\$0.110	\$0.055
Step 10	9/1/2016	\$0.487		\$0.400	\$0.039		\$0.110	\$0.055
Step 11	8/1/2017	\$0.487		\$0.400	\$0.039		\$0.110	\$0.055
Step 12	1/15/2018	\$0.463		\$0.400	\$0.035		\$0.110	\$0.055
Step 13	6/1/2018	\$0.463		\$0.400	\$0.035		\$0.090	\$0.045
Step 14	9/24/2018	\$0.463		\$0.400	\$0.035		\$0.090	\$0.045
Step 15	1/15/2020	\$0.426		\$0.328	\$0.030		\$0.081	\$0.041
Step 16	10/28/2020	\$0.426		\$0.328	\$0.030		\$0.081	\$0.041
Step 17	1/30/2021	\$0.358		\$0.207	\$0.030		\$0.073	\$0.036

Key Performance Indicators

The Key Performance Indicators for RSIP closed activity are reflected in Table 109 through Table 114. These illustrate the volume of projects by year, investment, generation capacity installed, and the amount of energy saved and/or produced. They also present the volume of projects by energy efficiency, renewable generation, or both. It should be noted that as part of the requirements for receiving an RSIP incentive, an energy efficiency assessment must be conducted through the utility-administered Home Energy Solutions (HES) program, the DOE Home Energy Score, or RSIP-approved alternatives such as audits performed by BPI-certified professionals.¹⁵⁸ Consequently, each RSIP project from solar PV (e.g. RE project) also includes Energy Efficiency (EE). The benefits from the EE measures (e.g., investment, savings, etc.) have not been calculated, as approximately 90% of energy efficiency assessments are conducted through the HES program for which benefits are tracked by the Connecticut Energy Efficiency Fund.¹⁵⁹ The Key Performance Indicators for RSIP only include the investment and impact of the renewable energy installation and not those associated with the energy audits.

TABLE 109. RSIP AND RSIP-E PROJECT TYPES AND INVESTMENT BY FY CLOSED

Fiscal Year	# Projects	Total Investment	Green Bank Investment ¹⁶⁰	Private Investment	Leverage Ratio
2012	288	\$9,901,511	\$3,401,642	\$6,499,869	2.9
2013	1,109	\$35,426,043	\$11,915,456	\$23,510,587	3.0

¹⁵⁸ Non-HES audits were performed by Building Performance Institute (BPI) certified auditors, Home Energy Rating System (HERS) raters, other certified energy managers or were exempt due to being new construction or having a health and safety exemption.

¹⁵⁹ RSIP-wide, an estimated 90% of audits performed were either HES audits or DOE Home Energy Scores (HES). In FY20, 95% of audits were either HES or DOE HES.

¹⁶⁰ Includes incentives, interest rate buydowns and loan loss reserves.

CONNECTICUT GREEN BANK
6. PROGRAMS – RESIDENTIAL SOLAR INVESTMENT PROGRAM

Fiscal Year	# Projects	Total Investment	Green Bank Investment ¹⁶⁰	Private Investment	Leverage Ratio
2014	2,384	\$73,933,113	\$20,068,612	\$53,864,501	3.7
2015	6,381	\$214,056,259	\$33,112,683	\$180,943,575	6.5
2016	6,785	\$217,530,669	\$18,774,485	\$198,756,185	11.6
2017	4,445	\$120,218,237	\$11,553,673	\$108,664,564	10.4
2018	5,150	\$147,111,739	\$12,557,709	\$134,554,031	11.7
2019	6,468	\$195,767,752	\$15,155,093	\$180,612,659	12.9
2020	6,849	\$205,174,273	\$14,701,787	\$190,472,486	14.0
2021	5,206	\$166,366,312	\$12,174,888	\$154,191,425	13.7
2022	1,592	\$57,985,080	\$3,764,231	\$54,220,850	15.4
Total	46,657	\$1,443,470,988	\$157,180,257	\$1,286,290,731	9.2

TABLE 110. RSIP AND RSIP-E PROJECT CAPACITY, GENERATION AND SAVINGS BY FY CLOSED

Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)	Annual Cost Savings	Lifetime Cost Savings
2012	1,940.2	2,209,534	55,238	7,539	188,473	\$345,254	\$8,631,360
2013	7,890.4	8,985,553	224,639	30,659	766,468	\$1,329,469	\$33,236,730
2014	17,144.1	19,523,747	488,094	66,615	1,665,376	\$2,857,939	\$71,448,480
2015	48,629.0	55,378,728	1,384,468	188,952	4,723,805	\$7,649,543	\$191,238,570
2016	53,196.0	60,579,639	1,514,491	206,698	5,167,443	\$8,133,858	\$203,346,450
2017	34,628.6	39,435,061	985,877	134,552	3,363,811	\$5,328,666	\$133,216,650
2018	41,785.9	47,585,772	1,189,644	162,363	4,059,066	\$6,173,820	\$154,345,500
2019	54,983.2	62,614,914	1,565,373	213,642	5,341,052	\$7,753,838	\$193,845,960
2020	57,696.4	65,704,672	1,642,617	224,184	5,604,608	\$8,210,581	\$205,264,530
2021	47,087.5	53,623,279	1,340,582	182,963	4,574,066	\$6,240,953	\$156,023,820
2022	15,459.2	17,604,937	440,123	60,068	1,501,701	\$1,908,490	\$47,712,240
Total	380,440.7	433,245,835	10,831,146	1,478,235	36,955,870	\$55,932,412	\$1,398,310,290

TABLE 111. RSIP AND RSIP-E PROJECT AVERAGES BY FY CLOSED

Fiscal Year	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)	Average Incentive Amount	Average Total Investment	Average Incentive (\$/W)	Average Installed Cost (\$/W) ¹⁶¹	Incentive % of Cost	Net Cost to Customer after RSIP Incentive
2012	6.7	26	\$11,811	\$34,380	\$1.75	\$5.13	34%	\$22,569
2013	7.1	28	\$10,744	\$31,944	\$1.51	\$4.31	34%	\$21,200
2014	7.2	28	\$8,418	\$31,012	\$1.17	\$4.07	27%	\$22,594
2015	7.6	30	\$5,189	\$33,546	\$0.68	\$3.91	15%	\$28,357
2016	7.8	30	\$2,767	\$32,061	\$0.35	\$3.41	9%	\$29,293
2017	7.8	30	\$2,599	\$27,046	\$0.33	\$3.33	10%	\$24,446

¹⁶¹ Average Installed Cost per Watt figures include reported installed costs without including those projects where financing costs for some third-party ownership installers are included as part of the installed cost and projects that include battery storage costs. Average Total Investment, Incentive % of Cost and Net Cost to Customer are calculated based on Average Installed Cost.

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Fiscal Year	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)	Average Incentive Amount	Average Total Investment	Average Incentive (\$/W)	Average Installed Cost (\$/W) ¹⁶¹	Incentive % of Cost	Net Cost to Customer after RSIP Incentive
2018	8.1	32	\$2,438	\$28,565	\$0.30	\$3.41	9%	\$26,127
2019	8.5	33	\$2,343	\$30,267	\$0.28	\$3.45	8%	\$27,924
2020	8.4	33	\$2,147	\$29,957	\$0.25	\$3.48	7%	\$27,810
2021	9.0	35	\$2,339	\$31,957	\$0.26	\$3.42	7%	\$29,618
2022	9.7	38	\$2,364	\$36,423	\$0.24	\$3.63	6%	\$34,058
Average	8.2	32	\$3,369	\$30,938	\$0.41	\$3.53	11%	\$27,569

TABLE 112. RSIP AND RSIP-E PROJECT APPLICATION YIELD¹⁶² BY FY RECEIVED

Fiscal Year	Applications Received	Applications in Review	Applications Approved	Applications Withdrawn	Applications Denied	Applications Cancelled	Approved Rate	Denied Rate
2012	0	0	291	0	39	52	76%	10.2%
2013	0	0	1,137	0	17	125	89%	1.3%
2014	0	0	2,518	0	15	256	90%	0.5%
2015	0	0	6,402	0	20	1,448	81%	0.3%
2016	0	0	6,723	0	30	1,958	77%	0.3%
2017	0	0	4,405	0	35	869	83%	0.7%
2018	0	0	5,076	0	38	1,498	77%	0.6%
2019	0	0	6,540	0	12	2,457	73%	0.1%
2020	0	0	6,793	0	4	2,306	75%	0.0%
2021	0	0	5,222	0	16	2,606	67%	0.2%
2022	0	0	1,548	0	15	510	75%	0.7%
Total	0	0	46,655	0	241	14,085	77%	0.4%

¹⁶² Applications Received are applications for incentives submitted to RSIP for review. Applications in Review are submitted applications yet to be reviewed, approved, or rejected. Applications Withdrawn are those that have been withdrawn by the submitter due to the need for corrections. Applications Denied are those that are not approved for an incentive because the project does not meet RSIP requirements. Applications Cancelled include projects that: (1) were rejected due to need for corrections and not resubmitted and successfully approved, (2) expired before the project was installed, or (3) did not move forward (e.g., customer cancellation) and the contractor cancelled the project. The Approved Rate reflects the number of Applications Approved relative to the number of Applications Received.

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TABLE 113. RSIP AND RSIP-E SYSTEMS CLOSED THROUGH THE SUBSIDY BY STEP

RSIP Subsidy by Step	Installed Capacity (kW)	Incentive Amount	Total Investment	Average Incentive (\$/W)	Average Installed Cost (\$/W) ¹⁶³	Incentive % of Cost	Net Cost to Customer	ZREC Equivalent Incentive (\$/MWh)
Step 1	1,380.8	\$2,470,307	\$7,222,670	\$1.79	\$5.27	34%	\$4,752,363	\$139
Step 2	5,999.0	\$9,767,901	\$27,018,842	\$1.63	\$4.34	36%	\$17,250,941	\$121
Step 3	13,052.9	\$16,041,875	\$55,696,798	\$1.23	\$4.11	29%	\$39,654,923	\$94
Step 4	19,081.6	\$19,713,594	\$83,929,539	\$1.03	\$4.05	23%	\$64,215,945	\$77
Step 5	13,015.5	\$9,725,583	\$58,034,525	\$0.75	\$3.94	17%	\$48,308,942	\$58
Step 6	11,628.4	\$5,953,158	\$51,242,975	\$0.51	\$3.86	12%	\$45,289,817	\$42
Step 7	18,862.7	\$7,533,597	\$81,921,357	\$0.40	\$3.64	9%	\$74,387,760	\$32
Step 8	26,897.5	\$9,569,521	\$110,978,884	\$0.36	\$3.40	9%	\$101,409,363	\$28
Step 9	25,938.7	\$8,598,147	\$98,346,216	\$0.33	\$3.35	9%	\$89,748,069	\$25
Step 10	29,805.9	\$9,676,036	\$102,556,232	\$0.32	\$3.29	9%	\$92,880,195	\$22
Step 11	18,056.5	\$5,825,890	\$63,430,435	\$0.32	\$3.41	9%	\$57,604,546	\$23
Step 12	15,896.0	\$4,453,628	\$56,410,297	\$0.28	\$3.44	8%	\$51,956,669	\$20
Step 13	17,530.5	\$4,823,309	\$61,695,566	\$0.28	\$3.40	8%	\$56,872,257	\$20
Step 14	75,947.2	\$20,677,573	\$269,526,622	\$0.27	\$3.46	8%	\$248,849,048	\$20
Step 15	56,926.9	\$13,877,631	\$195,708,971	\$0.24	\$3.40	7%	\$181,831,340	\$18
Step 16	9,858.3	\$3,044,643	\$36,946,503	\$0.31	\$3.33	8%	\$33,901,860	\$23
Step 17	20,562.5	\$5,427,863	\$82,804,556	\$0.26	\$3.92	7%	\$77,376,693	\$21
Total	380,440.7	\$157,180,257	\$1,443,470,988	\$0.41	\$3.53	11%	\$1,286,290,731	\$30

TABLE 114. RSIP AND RSIP-E THIRD PARTY OWNED (PBI) VS HOMEOWNER-OWNED SYSTEMS (EPBB)

Fiscal Year	# of PBI Projects	% PBI Projects	# of EPBB Projects	% EPBB Projects	Total
2012	58	20%	230	80%	288
2013	346	31%	763	69%	1,109
2014	1,170	49%	1,214	51%	2,384
2015	4,624	72%	1,757	28%	6,381
2016	5,832	86%	953	14%	6,785
2017	3,377	76%	1,068	24%	4,445
2018	3,864	75%	1,286	25%	5,150
2019	5,075	78%	1,393	22%	6,468
2020	5,522	81%	1,327	19%	6,849
2021	2,967	57%	2,239	43%	5,206
2022	598	38%	994	62%	1,592
Total	33,433	72%	13,224	28%	46,657

¹⁶³ Average Installed Cost per Watt figures include reported installed costs without including those projects where financing costs for some third-party ownership installers are included as part of the installed cost and projects that include battery storage costs. Incentive % of Cost is calculated based on Average Installed Cost.

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Vulnerable Communities Penetration

The RSIP and RSIP-E have been very effective in reaching vulnerable communities, including low-and-moderate income households. Over the 11 years of RSIP, 50% of projects have been deployed in vulnerable communities. Despite the fact that projects in vulnerable communities tend to be smaller in terms of MW and investment, RSIP has performed very well, deploying 46% of capacity (in MW) and 46% of total investments.

TABLE 115. RSIP ACTIVITY IN VULNERABLE AND NOT VULNERABLE COMMUNITIES BY FY CLOSED¹⁶⁴

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable
2012	288	215	73	25%	1.9	1.5	0.5	23%	\$9,901,511	\$7,675,503	\$2,226,008	22%
2013	1,109	845	264	24%	7.9	6.2	1.7	22%	\$35,426,043	\$27,476,228	\$7,949,815	22%
2014	2,384	1,599	785	33%	17.1	12.0	5.1	30%	\$73,933,113	\$51,310,266	\$22,622,847	31%
2015	6,381	3,924	2,457	39%	48.6	31.5	17.2	35%	\$214,056,259	\$137,661,597	\$76,394,662	36%
2016	6,785	3,397	3,388	50%	53.2	28.6	24.6	46%	\$217,530,669	\$117,332,849	\$100,197,820	46%
2017	4,445	1,818	2,627	59%	34.6	15.7	18.9	55%	\$120,218,237	\$53,586,346	\$66,631,891	55%
2018	5,150	2,102	3,048	59%	41.8	19.2	22.6	54%	\$147,111,739	\$66,447,090	\$80,664,649	55%
2019	6,468	2,791	3,677	57%	55.0	26.7	28.3	51%	\$195,767,752	\$93,445,330	\$102,322,422	52%
2020	6,849	3,150	3,699	54%	57.7	29.8	27.9	48%	\$205,174,273	\$104,533,045	\$100,641,228	49%
2021	5,206	2,491	2,715	52%	47.1	25.6	21.5	46%	\$166,366,312	\$89,470,811	\$76,895,501	46%
2022	1,592	856	736	46%	15.5	9.2	6.2	40%	\$57,985,080	\$34,251,569	\$23,733,512	41%
Total	46,657	23,188	23,469	50%	380.4	206.0	174.5	46%	\$1,443,470,988	\$783,190,633	\$660,280,354	46%

Area Median Income Band Penetration

For a breakdown of RSIP project volume and investment by census tracts categorized by Area Median Income (AMI) bands – see Table 116. It should be noted that RSIP is not an income targeted program. However, following the UCONN study¹⁶⁵ in December of 2014, the Green Bank Board of Directors approved the Income-Targeted incentive to better penetrate these tracts and to create inclusive prosperity. This special incentive is one of the methods through which the Green Bank has expanded its reach of previously underserved communities.

¹⁶⁴ Excludes projects in unknown communities.

¹⁶⁵The memo, titled 7cii_Role of a Green Bank_Market Analysis_Low Income Solar and Housing_Memo_121214, can be found amongst board meeting materials here: https://www.ctgreenbank.com/wp-content/uploads/2017/07/CGB_BOD_Online-Meeting-Materials_121914_redacted.pdf

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Table 117 shows that starting in fiscal year 2016, the percent distribution of solar PV projects in the low to moderate income bands, i.e., < 60%, 60-80%, and 80-100% AMI, exceeded the percent distribution of those income bands among owner-occupied 1–4-unit households, and this holds for RSIP overall as illustrated by the totals.

TABLE 116. RSIP AND RSIP-E ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY FY CLOSED¹⁶⁶

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2012	<60%	7	2%	0.0	2%	\$183,647	2%	62,689	7%	0.1	\$2.93	0.6
2012	60%-80%	8	3%	0.0	2%	\$202,949	2%	102,178	12%	0.1	\$1.99	0.5
2012	80%-100%	33	11%	0.2	10%	\$970,970	10%	150,685	17%	0.2	\$6.44	1.3
2012	100%-120%	83	29%	0.5	28%	\$2,820,118	28%	216,484	25%	0.4	\$13.03	2.5
2012	>120%	157	55%	1.1	57%	\$5,723,828	58%	349,212	40%	0.4	\$16.39	3.2
2012	Total	288	100%	1.9	100%	\$9,901,511	100%	881,248	100%	0.3	\$11.24	2.2
2013	<60%	22	2%	0.1	1%	\$482,131	1%	61,004	7%	0.4	\$7.90	1.7
2013	60%-80%	63	6%	0.4	5%	\$1,868,703	5%	109,967	13%	0.6	\$16.99	3.7
2013	80%-100%	126	11%	0.8	11%	\$3,933,886	11%	149,676	17%	0.8	\$26.28	5.6
2013	100%-120%	221	20%	1.5	19%	\$6,736,134	19%	202,827	23%	1.1	\$33.21	7.2
2013	>120%	677	61%	5.1	64%	\$22,405,188	63%	350,708	40%	1.9	\$63.89	14.5
2013	Total	1,109	100%	7.9	100%	\$35,426,043	100%	874,182	100%	1.3	\$40.52	9.0
2014	<60%	77	3%	0.4	3%	\$1,952,045	3%	59,294	7%	1.3	\$32.92	7.5
2014	60%-80%	163	7%	1.0	6%	\$4,501,278	6%	104,528	12%	1.6	\$43.06	9.6
2014	80%-100%	394	17%	2.6	15%	\$11,452,751	15%	148,846	17%	2.6	\$76.94	17.5
2014	100%-120%	604	25%	4.4	26%	\$19,294,835	26%	208,912	24%	2.9	\$92.36	21.2
2014	>120%	1,146	48%	8.7	50%	\$36,732,204	50%	347,779	40%	3.3	\$105.62	24.9
2014	Total	2,384	100%	17.1	100%	\$73,933,113	100%	869,359	100%	2.7	\$85.04	19.7
2015	<60%	264	4%	1.5	3%	\$6,678,296	3%	66,632	8%	4.0	\$100.23	23.0
2015	60%-80%	590	9%	3.9	8%	\$17,245,663	8%	96,059	11%	6.1	\$179.53	41.0

¹⁶⁶ Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2015	80%-100%	1,107	17%	8.1	17%	\$36,389,376	17%	165,205	19%	6.7	\$220.27	48.8
2015	100%-120%	1,639	26%	12.5	26%	\$56,130,035	26%	183,629	21%	8.9	\$305.67	68.2
2015	>120%	2,781	44%	22.6	46%	\$97,612,888	46%	352,053	41%	7.9	\$277.27	64.1
2015	Total	6,381	100%	48.6	100%	\$214,056,259	100%	863,578	100%	7.4	\$247.87	56.3
2016	<60%	565	8%	3.5	7%	\$14,472,891	7%	63,056	7%	9.0	\$229.52	56.0
2016	60%-80%	904	13%	6.4	12%	\$25,146,806	12%	99,073	12%	9.1	\$253.82	64.4
2016	80%-100%	1,324	20%	10.2	19%	\$41,993,837	19%	165,012	19%	8.0	\$254.49	61.8
2016	100%-120%	1,635	24%	12.8	24%	\$52,363,625	24%	187,129	22%	8.7	\$279.83	68.2
2016	>120%	2,357	35%	20.3	38%	\$83,553,510	38%	344,577	40%	6.8	\$242.48	59.0
2016	Total	6,785	100%	53.2	100%	\$217,530,669	100%	858,847	100%	7.9	\$253.28	61.9
2017	<60%	565	13%	3.6	10%	\$13,866,646	12%	64,755	7%	8.7	\$214.14	56.0
2017	60%-80%	769	17%	5.3	15%	\$18,315,848	15%	97,455	11%	7.9	\$187.94	54.1
2017	80%-100%	872	20%	6.8	20%	\$23,772,081	20%	155,414	18%	5.6	\$152.96	43.7
2017	100%-120%	916	21%	7.4	21%	\$25,071,653	21%	209,484	24%	4.4	\$119.68	35.5
2017	>120%	1,323	30%	11.5	33%	\$39,192,009	33%	339,362	39%	3.9	\$115.49	33.9
2017	Total	4,445	100%	34.6	100%	\$120,218,237	100%	866,470	100%	5.1	\$138.74	40.0
2018	<60%	600	12%	3.9	9%	\$15,019,194	10%	62,247	7%	9.6	\$241.28	63.3
2018	60%-80%	824	16%	5.9	14%	\$20,945,506	14%	109,142	13%	7.5	\$191.91	53.8
2018	80%-100%	1,058	21%	8.2	20%	\$28,741,474	20%	145,988	17%	7.2	\$196.88	56.2
2018	100%-120%	1,129	22%	9.8	24%	\$33,866,797	23%	204,880	24%	5.5	\$165.30	48.0
2018	>120%	1,539	30%	13.9	33%	\$48,538,768	33%	343,989	40%	4.5	\$141.11	40.5
2018	Total	5,150	100%	41.8	100%	\$147,111,739	100%	866,246	100%	5.9	\$169.83	48.2
2019	<60%	692	11%	4.7	9%	\$17,859,286	9%	62,247	7%	11.1	\$286.91	75.3
2019	60%-80%	1,050	16%	7.7	14%	\$27,763,516	14%	109,142	13%	9.6	\$254.38	70.2
2019	80%-100%	1,229	19%	10.0	18%	\$35,576,447	18%	145,988	17%	8.4	\$243.69	68.7
2019	100%-120%	1,573	24%	14.0	25%	\$49,278,719	25%	204,880	24%	7.7	\$240.52	68.3
2019	>120%	1,924	30%	18.6	34%	\$65,289,784	33%	343,989	40%	5.6	\$189.80	54.1
2019	Total	6,468	100%	55.0	100%	\$195,767,752	100%	865,756	100%	7.5	\$226.12	63.5

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2020	<60%	755	11%	4.8	8%	\$17,977,015	9%	68,662	8%	11.0	\$261.82	69.3
2020	60%-80%	1,022	15%	7.6	13%	\$27,463,900	13%	105,090	12%	9.7	\$261.34	72.4
2020	80%-100%	1,331	19%	10.7	19%	\$38,149,094	19%	166,052	19%	8.0	\$229.74	64.6
2020	100%-120%	1,628	24%	14.1	24%	\$49,755,965	24%	209,603	24%	7.8	\$237.38	67.4
2020	>120%	2,108	31%	20.4	35%	\$71,687,312	35%	326,890	37%	6.4	\$219.30	62.5
2020	Total	6,844	100%	57.7	100%	\$205,033,286	100%	876,387	100%	7.8	\$233.95	65.8
2021	<60%	540	10%	3.5	8%	\$12,915,743	8%	68,662	8%	7.9	\$188.11	51.4
2021	60%-80%	732	14%	5.6	12%	\$20,156,629	12%	105,090	12%	7.0	\$191.80	53.6
2021	80%-100%	1,029	20%	8.8	19%	\$31,347,282	19%	166,052	19%	6.2	\$188.78	53.3
2021	100%-120%	1,194	23%	11.1	24%	\$39,536,942	24%	209,603	24%	5.7	\$188.63	53.1
2021	>120%	1,704	33%	17.9	38%	\$62,113,466	37%	326,890	37%	5.2	\$190.01	54.7
2021	Total	5,199	100%	47.0	100%	\$166,070,062	100%	876,387	100%	5.9	\$189.49	53.6
2022	<60%	149	9%	1.0	7%	\$4,195,520	7%	68,662	8%	2.2	\$61.10	14.7
2022	60%-80%	212	13%	1.7	11%	\$6,263,942	11%	105,090	12%	2.0	\$59.61	16.4
2022	80%-100%	278	17%	2.7	17%	\$10,226,187	18%	166,052	19%	1.7	\$61.58	16.1
2022	100%-120%	380	24%	3.8	24%	\$13,930,376	24%	209,603	24%	1.8	\$66.46	17.9
2022	>120%	573	36%	6.3	41%	\$23,369,056	40%	326,890	37%	1.8	\$71.49	19.3
2022	Total	1,592	100%	15.5	100%	\$57,985,080	100%	876,387	100%	1.8	\$66.16	17.6
Total	<60%	4,236	9%	27.2	7%	\$105,602,413	7%	68,662	8%	61.7	\$1,538.00	396.2
Total	60%-80%	6,337	14%	45.5	12%	\$169,874,741	12%	105,090	12%	60.3	\$1,616.47	433.4
Total	80%-100%	8,781	19%	69.2	18%	\$262,553,385	18%	166,052	19%	52.9	\$1,581.15	416.5
Total	100%-120%	11,002	24%	92.0	24%	\$348,785,198	24%	209,603	24%	52.5	\$1,664.03	438.9
Total	>120%	16,289	35%	146.4	38%	\$556,218,013	39%	326,890	37%	49.8	\$1,701.54	447.9
Total	Total	46,645	100%	380.3	100%	\$1,443,033,750	100%	876,387	100%	53.2	\$1,646.57	434.0

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TABLE 117. RSIP AND RSIP-E ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED¹⁶⁷

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2012	288	240	48	17%	1.9	1.7	0.3	15%	\$9,901,511	\$8,543,945	\$1,357,565	14%
2013	1,109	898	211	19%	7.9	6.5	1.4	17%	\$35,426,043	\$29,141,322	\$6,284,721	18%
2014	2,384	1,750	634	27%	17.1	13.1	4.1	24%	\$73,933,113	\$56,027,039	\$17,906,074	24%
2015	6,381	4,420	1,961	31%	48.6	35.1	13.5	28%	\$214,056,259	\$153,742,923	\$60,313,336	28%
2016	6,785	3,992	2,793	41%	53.2	33.1	20.1	38%	\$217,530,669	\$135,917,135	\$81,613,534	38%
2017	4,445	2,239	2,206	50%	34.6	18.9	15.7	45%	\$120,218,237	\$64,263,662	\$55,954,575	47%
2018	5,150	2,668	2,482	48%	41.8	23.8	18.0	43%	\$147,111,739	\$82,405,565	\$64,706,174	44%
2019	6,468	3,497	2,971	46%	55.0	32.6	22.4	41%	\$195,767,752	\$114,568,503	\$81,199,248	41%
2020	6,844	3,736	3,108	45%	57.7	34.6	23.1	40%	\$205,033,286	\$121,443,277	\$83,590,009	41%
2021	5,199	2,898	2,301	44%	47.0	29.0	18.0	38%	\$166,070,062	\$101,650,408	\$64,419,654	39%
2022	1,592	953	639	40%	15.5	10.1	5.4	35%	\$57,985,080	\$37,299,432	\$20,685,649	36%
Total	46,645	27,291	19,354	41%	380.3	238.4	141.9	37%	\$1,443,033,750	\$905,003,211	\$538,030,539	37%

TABLE 118. RSIP AND RSIP-E ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED¹⁶⁸

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2012	288	273	15	5%	1.9	2	0	4%	\$9,901,511	\$9,514,915	\$386,596	4%
2013	1,109	1,024	85	8%	7.9	7	1	7%	\$35,426,043	\$33,075,208	\$2,350,834	7%
2014	2,384	2,144	240	10%	17.1	16	1	8%	\$73,933,113	\$67,479,790	\$6,453,323	9%
2015	6,381	5,527	854	13%	48.6	43	5	11%	\$214,056,259	\$190,132,299	\$23,923,959	11%
2016	6,785	5,316	1,469	22%	53.2	43	10	19%	\$217,530,669	\$177,910,972	\$39,619,697	18%
2017	4,445	3,111	1,334	30%	34.6	26	9	26%	\$120,218,237	\$88,035,743	\$32,182,494	27%
2018	5,150	3,726	1,424	28%	41.8	32	10	23%	\$147,111,739	\$111,147,040	\$35,964,699	24%

¹⁶⁷ Excludes projects in unknown bands.

¹⁶⁸ Excludes projects in unknown bands.

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Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2019	6,468	4,726	1,742	27%	55.0	43	12	22%	\$195,767,752	\$150,144,950	\$45,622,802	23%
2020	6,844	5,067	1,777	26%	57.7	45	12	21%	\$205,033,286	\$159,592,371	\$45,440,915	22%
2021	5,199	3,927	1,272	24%	47.0	38	9	19%	\$166,070,062	\$132,997,690	\$33,072,372	20%
2022	1,592	1,231	361	23%	15.5	13	3	18%	\$57,985,080	\$47,525,619	\$10,459,462	18%
Total	46,645	36,072	10,573	23%	380.3	308	73	19%	\$1,443,033,750	\$1,167,556,597	\$275,477,154	19%

Distressed Community Penetration

For a breakdown of RSIP project volume and investment by census tracts categorized by Distressed Communities – see Table 119. It should be noted that RSIP is not an income targeted program.

TABLE 119. RSIP AND RSIP-E ACTIVITY IN DISTRESSED COMMUNITIES BY FY CLOSED

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2012	Yes	35	12%	0.2	10%	\$997,129	10%	447,962	33%	0.1	\$2.23	0.4
2012	No	253	88%	1.7	90%	\$8,904,382	90%	912,222	67%	0.3	\$9.76	1.9
2012	Total	288	100%	1.9	100%	\$9,901,511	100%	1,360,184	100%	0.2	\$7.28	1.4
2013	Yes	114	10%	0.7	9%	\$3,223,649	9%	426,564	31%	0.3	\$7.56	1.7
2013	No	995	90%	7.2	91%	\$32,202,394	91%	929,285	69%	1.1	\$34.65	7.7
2013	Total	1,109	100%	7.9	100%	\$35,426,043	100%	1,355,849	100%	0.8	\$26.13	5.8
2014	Yes	379	16%	2.5	15%	\$11,085,042	15%	416,415	31%	0.9	\$26.62	6.0
2014	No	2,005	84%	14.6	85%	\$62,848,071	85%	939,791	69%	2.1	\$66.87	15.6
2014	Total	2,384	100%	17.1	100%	\$73,933,113	100%	1,356,206	100%	1.8	\$54.51	12.6
2015	Yes	1,366	21%	9.3	19%	\$41,293,226	19%	423,559	31%	3.2	\$97.49	22.0
2015	No	5,015	79%	39.3	81%	\$172,763,032	81%	929,024	69%	5.4	\$185.96	42.3
2015	Total	6,381	100%	48.6	100%	\$214,056,259	100%	1,352,583	100%	4.7	\$158.26	36.0
2016	Yes	2,020	30%	14.4	27%	\$58,910,345	27%	438,710	32%	4.6	\$134.28	32.9
2016	No	4,765	70%	38.8	73%	\$158,620,324	73%	916,003	68%	5.2	\$173.17	42.3
2016	Total	6,785	100%	53.2	100%	\$217,530,669	100%	1,354,713	100%	5.0	\$160.57	39.3

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Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2017	Yes	1,621	36%	11.3	33%	\$39,720,647	33%	435,595	32%	3.7	\$91.19	26.0
2017	No	2,824	64%	23.3	67%	\$80,497,590	67%	926,160	68%	3.0	\$86.92	25.2
2017	Total	4,445	100%	34.6	100%	\$120,218,237	100%	1,361,755	100%	3.3	\$88.28	25.4
2018	Yes	1,891	37%	13.7	33%	\$49,410,307	34%	430,098	31%	4.4	\$114.88	31.9
2018	No	3,259	63%	28.1	67%	\$97,701,432	66%	937,276	69%	3.5	\$104.24	29.9
2018	Total	5,150	100%	41.8	100%	\$147,111,739	100%	1,367,374	100%	3.8	\$107.59	30.6
2019	Yes	2,304	36%	17.4	32%	\$63,497,159	32%	421,653	31%	5.5	\$150.59	41.2
2019	No	4,164	64%	37.6	68%	\$132,270,593	68%	949,093	69%	4.4	\$139.37	39.6
2019	Total	6,468	100%	55.0	100%	\$195,767,752	100%	1,370,746	100%	4.7	\$142.82	40.1
2020	Yes	2,200	32%	15.8	27%	\$57,639,954	28%	427,553	31%	5.1	\$134.81	36.9
2020	No	4,649	68%	41.9	73%	\$147,534,319	72%	957,884	69%	4.9	\$154.02	43.8
2020	Total	6,849	100%	57.7	100%	\$205,174,273	100%	1,385,437	100%	4.9	\$148.09	41.6
2021	Yes	1,505	29%	11.0	23%	\$39,944,835	24%	375,703	27%	4.0	\$106.32	29.3
2021	No	3,701	71%	36.1	77%	\$126,421,477	76%	1,009,734	73%	3.7	\$125.20	35.7
2021	Total	5,206	100%	47.1	100%	\$166,366,312	100%	1,385,437	100%	3.8	\$120.08	34.0
2022	Yes	363	23%	2.8	18%	\$10,837,873	19%	375,703	27%	1.0	\$28.85	7.4
2022	No	1,228	77%	12.7	82%	\$47,099,608	81%	1,009,734	73%	1.2	\$46.65	12.5
2022	Total	1,591	100%	15.4	100%	\$57,937,480	100%	1,385,437	100%	1.1	\$41.82	11.1
Total	Yes	13,798	30%	99.1	26%	\$376,560,167	26%	375,703	27%	36.7	\$1,002.28	263.9
Total	No	32,858	70%	281.3	74%	\$1,066,863,221	74%	1,009,734	73%	32.5	\$1,056.58	278.6
Total	Total	46,656	100%	380.4	100%	\$1,443,423,388	100%	1,385,437	100%	33.7	\$1,041.85	274.6

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TABLE 120. RSIP AND RSIP-E ACTIVITY IN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED¹⁶⁹

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
2012	288	253	35	12%	1.9	1.7	0.2	10%	\$9,901,511	\$8,904,382	\$997,129	10%
2013	1,109	995	114	10%	7.9	7.2	0.7	9%	\$35,426,043	\$32,202,394	\$3,223,649	9%
2014	2,384	2,005	379	16%	17.1	14.6	2.5	15%	\$73,933,113	\$62,848,071	\$11,085,042	15%
2015	6,381	5,015	1,366	21%	48.6	39.3	9.3	19%	\$214,056,259	\$172,763,032	\$41,293,226	19%
2016	6,785	4,765	2,020	30%	53.2	38.8	14.4	27%	\$217,530,669	\$158,620,324	\$58,910,345	27%
2017	4,445	2,824	1,621	36%	34.6	23.3	11.3	33%	\$120,218,237	\$80,497,590	\$39,720,647	33%
2018	5,150	3,259	1,891	37%	41.8	28.1	13.7	33%	\$147,111,739	\$97,701,432	\$49,410,307	34%
2019	6,468	4,164	2,304	36%	55.0	37.6	17.4	32%	\$195,767,752	\$132,270,593	\$63,497,159	32%
2020	6,849	4,649	2,200	32%	57.7	41.9	15.8	27%	\$205,174,273	\$147,534,319	\$57,639,954	28%
2021	5,206	3,701	1,505	29%	47.1	36.1	11.0	23%	\$166,366,312	\$126,421,477	\$39,944,835	24%
2022	1,591	1,228	363	23%	15.4	12.7	2.8	18%	\$57,937,480	\$47,099,608	\$10,837,873	19%
Total	46,656	32,858	13,798	30%	380.4	281.3	99.1	26%	\$1,443,423,388	\$1,066,863,221	\$376,560,167	26%

Environmental Justice Poverty Level Penetration

For a breakdown of RSIP penetration in Environmental Justice Poverty Level – see Table 121.

TABLE 121. RSIP AND RSIP-E ACTIVITY IN ENVIRONMENTAL JUSTICE POVERTY AREAS BY FY CLOSED¹⁷⁰

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2012	288	279	9	3%	1.9	1.9	0.1	3%	\$9,901,511	\$9,554,351	\$347,160	4%
2013	1,109	1,077	32	3%	7.9	7.7	0.2	2%	\$35,426,043	\$34,447,816	\$978,226	3%
2014	2,384	2,302	82	3%	17.1	16.6	0.5	3%	\$73,933,113	\$71,694,153	\$2,238,960	3%
2015	6,381	6,150	231	4%	48.6	47.1	1.6	3%	\$214,056,259	\$207,039,770	\$7,016,489	3%
2016	6,785	6,489	296	4%	53.2	51.0	2.2	4%	\$217,530,669	\$208,877,254	\$8,653,416	4%

¹⁶⁹ Excludes projects in unknown communities.

¹⁷⁰ Excludes projects in unknown bands.

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Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2017	4,445	4,251	194	4%	34.6	33.2	1.4	4%	\$120,218,237	\$115,451,614	\$4,766,623	4%
2018	5,150	4,907	243	5%	41.8	40.0	1.7	4%	\$147,111,739	\$141,080,490	\$6,031,249	4%
2019	6,468	6,150	318	5%	55.0	52.5	2.4	4%	\$195,767,752	\$187,134,407	\$8,633,344	4%
2020	6,849	6,568	281	4%	57.7	55.5	2.2	4%	\$205,174,273	\$197,424,504	\$7,749,769	4%
2021	5,206	4,949	257	5%	47.1	45.0	2.1	4%	\$166,366,312	\$159,134,778	\$7,231,534	4%
2022	1,592	1,496	96	6%	15.5	14.6	0.8	5%	\$57,985,080	\$54,934,121	\$3,050,960	5%
Total	46,657	44,618	2,039	4%	380.4	365.2	15.2	4%	\$1,443,470,988	\$1,386,773,258	\$56,697,730	4%

Ethnicity

While the RSIP has been effective in reaching Low to Moderate Income (LMI) households, Green Bank has also investigated whether the RSIP has been successful in reaching communities of color (i.e., Black, and Hispanic households). When examining solar deployment by the racial and ethnic makeup of the census tract, Table 122 demonstrates that RSIP has been very successful in reaching communities of color.

TABLE 122. RSIP AND RSIP-E ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY ETHNICITY CATEGORY BY FY CLOSED¹⁷¹

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2012	<60%	1	14.3%	13,052	20.8%	2	28.6%	21,021	33.5%	4	57.1%	28,616	45.6%	0	0.0%	0	0.0%
2012	60%-80%	0	0.0%	8,714	8.5%	1	12.5%	7,447	7.3%	7	87.5%	86,017	84.2%	0	0.0%	0	0.0%
2012	80%-100%	0	0.0%	3,490	2.3%	0	0.0%	0	0.0%	33	100.0%	147,195	97.7%	0	0.0%	0	0.0%
2012	100%-120%	0	0.0%	3,488	1.6%	0	0.0%	0	0.0%	83	100.0%	212,996	98.4%	0	0.0%	0	0.0%
2012	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	157	100.0%	349,212	100.0%	0	0.0%	0	0.0%
2012	Total	1	0.3%	28,744	3.3%	3	1.0%	28,468	3.2%	284	98.6%	824,036	93.5%	0	0.0%	0	0.0%
2013	<60%	2	9.1%	10,766	17.6%	6	27.3%	21,781	35.7%	14	63.6%	28,457	46.6%	0	0.0%	0	0.0%
2013	60%-80%	4	6.3%	10,827	9.8%	3	4.8%	9,574	8.7%	56	88.9%	89,566	81.4%	0	0.0%	0	0.0%

¹⁷¹ Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2013	80%-100%	0	0.0%	1,926	1.3%	0	0.0%	0	0.0%	126	100.0%	147,750	98.7%	0	0.0%	0	0.0%
2013	100%-120%	3	1.4%	3,177	1.6%	0	0.0%	0	0.0%	218	98.6%	199,650	98.4%	0	0.0%	0	0.0%
2013	>120%	0	0.0%	1,808	0.5%	0	0.0%	0	0.0%	677	100.0%	348,900	99.5%	0	0.0%	0	0.0%
2013	Total	9	0.8%	28,504	3.3%	9	0.8%	31,355	3.6%	1,091	98.4%	814,323	93.2%	0	0.0%	0	0.0%
2014	<60%	12	15.6%	12,067	20.4%	9	11.7%	17,945	30.3%	56	72.7%	29,282	49.4%	0	0.0%	0	0.0%
2014	60%-80%	22	13.5%	8,576	8.2%	11	6.7%	10,507	10.1%	130	79.8%	85,445	81.7%	0	0.0%	0	0.0%
2014	80%-100%	0	0.0%	1,868	1.3%	2	0.5%	1,491	1.0%	392	99.5%	145,487	97.7%	0	0.0%	0	0.0%
2014	100%-120%	4	0.7%	3,280	1.6%	0	0.0%	0	0.0%	600	99.3%	205,632	98.4%	0	0.0%	0	0.0%
2014	>120%	6	0.5%	3,745	1.1%	0	0.0%	0	0.0%	1,140	99.5%	344,034	98.9%	0	0.0%	0	0.0%
2014	Total	44	1.8%	29,536	3.4%	22	0.9%	29,943	3.4%	2,318	97.2%	809,880	93.2%	0	0.0%	0	0.0%
2015	<60%	64	24.2%	12,243	18.4%	99	37.5%	27,292	41.0%	101	38.3%	27,097	40.7%	0	0.0%	0	0.0%
2015	60%-80%	46	7.8%	7,491	7.8%	51	8.6%	7,075	7.4%	493	83.6%	81,493	84.8%	0	0.0%	0	0.0%
2015	80%-100%	31	2.8%	5,767	3.5%	5	0.5%	513	0.3%	1,069	96.6%	158,372	95.9%	2	0.2%	553	0.3%
2015	100%-120%	19	1.2%	863	0.5%	0	0.0%	0	0.0%	1,620	98.8%	182,766	99.5%	0	0.0%	0	0.0%
2015	>120%	14	0.5%	1,877	0.5%	0	0.0%	0	0.0%	2,767	99.5%	350,176	99.5%	0	0.0%	0	0.0%
2015	Total	174	2.7%	28,241	3.3%	155	2.4%	34,880	4.0%	6,050	94.8%	799,904	92.6%	2	0.0%	553	0.1%
2016	<60%	174	30.8%	11,333	18.0%	216	38.2%	26,620	42.2%	175	31.0%	25,103	39.8%	0	0.0%	0	0.0%
2016	60%-80%	99	11.0%	7,872	7.9%	105	11.6%	8,551	8.6%	700	77.4%	82,650	83.4%	0	0.0%	0	0.0%
2016	80%-100%	81	6.1%	4,736	2.9%	3	0.2%	937	0.6%	1,239	93.6%	159,339	96.6%	1	0.1%	0	0.0%
2016	100%-120%	10	0.6%	0	0.0%	0	0.0%	0	0.0%	1,622	99.2%	186,570	99.7%	3	0.2%	559	0.3%
2016	>120%	53	2.2%	3,063	0.9%	0	0.0%	0	0.0%	2,304	97.8%	341,514	99.1%	0	0.0%	0	0.0%
2016	Total	417	6.1%	27,004	3.1%	324	4.8%	36,108	4.2%	6,040	89.0%	795,176	92.6%	4	0.1%	559	0.1%
2017	<60%	133	23.5%	11,916	18.4%	256	45.3%	28,817	44.5%	176	31.2%	24,022	37.1%	0	0.0%	0	0.0%
2017	60%-80%	75	9.8%	5,276	5.4%	124	16.1%	12,600	12.9%	570	74.1%	79,579	81.7%	0	0.0%	0	0.0%
2017	80%-100%	48	5.5%	4,323	2.8%	16	1.8%	2,062	1.3%	808	92.7%	149,029	95.9%	0	0.0%	0	0.0%
2017	100%-120%	5	0.5%	1,101	0.5%	0	0.0%	0	0.0%	908	99.1%	207,746	99.2%	3	0.3%	637	0.3%
2017	>120%	44	3.3%	4,014	1.2%	0	0.0%	0	0.0%	1,279	96.7%	335,348	98.8%	0	0.0%	0	0.0%
2017	Total	305	6.9%	26,630	3.1%	396	8.9%	43,479	5.0%	3,741	84.2%	795,724	91.8%	3	0.1%	637	0.1%
2018	<60%	168	28.0%	10,135	16.3%	263	43.8%	28,053	45.1%	169	28.2%	24,059	38.7%	0	0.0%	0	0.0%

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2018	60%-80%	89	10.8%	7,948	7.3%	118	14.3%	11,560	10.6%	617	74.9%	89,634	82.1%	0	0.0%	0	0.0%
2018	80%-100%	64	6.0%	4,704	3.2%	40	3.8%	3,271	2.2%	954	90.2%	138,013	94.5%	0	0.0%	0	0.0%
2018	100%-120%	27	2.4%	2,274	1.1%	0	0.0%	0	0.0%	1,098	97.3%	201,977	98.6%	4	0.4%	629	0.3%
2018	>120%	54	3.5%	2,828	0.8%	0	0.0%	0	0.0%	1,485	96.5%	341,161	99.2%	0	0.0%	0	0.0%
2018	Total	402	7.8%	27,889	3.2%	421	8.2%	42,884	5.0%	4,323	83.9%	794,844	91.8%	4	0.1%	629	0.1%
2019	<60%	154	22.3%	10,903	17.0%	316	45.7%	29,840	46.5%	222	32.1%	23,497	36.6%	0	0.0%	0	0.0%
2019	60%-80%	151	14.4%	6,102	6.0%	125	11.9%	10,367	10.3%	774	73.7%	84,519	83.7%	0	0.0%	0	0.0%
2019	80%-100%	82	6.7%	5,119	3.3%	45	3.7%	1,488	1.0%	1,102	89.7%	148,956	95.8%	0	0.0%	0	0.0%
2019	100%-120%	60	3.8%	3,330	1.6%	5	0.3%	627	0.3%	1,500	95.4%	202,850	97.8%	8	0.5%	648	0.3%
2019	>120%	18	0.9%	2,074	0.6%	0	0.0%	0	0.0%	1,906	99.1%	335,436	99.4%	0	0.0%	0	0.0%
2019	Total	465	7.2%	27,528	3.2%	491	7.6%	42,322	4.9%	5,504	85.1%	795,258	91.9%	8	0.1%	648	0.1%
2020	<60%	175	23.2%	12,029	17.5%	355	47.0%	27,793	40.5%	225	29.8%	28,840	42.0%	0	0.0%	0	0.0%
2020	60%-80%	86	8.4%	6,275	6.0%	151	14.8%	20,490	19.5%	785	76.8%	78,311	74.5%	0	0.0%	14	0.0%
2020	80%-100%	74	5.6%	4,243	2.6%	52	3.9%	5,388	3.2%	1,205	90.5%	156,421	94.2%	0	0.0%	0	0.0%
2020	100%-120%	50	3.1%	4,328	2.1%	2	0.1%	0	0.0%	1,573	96.6%	204,447	97.5%	3	0.2%	828	0.4%
2020	>120%	12	0.6%	0	0.0%	0	0.0%	0	0.0%	2,096	99.4%	326,890	100.0%	0	0.0%	0	0.0%
2020	Total	397	5.8%	26,875	3.1%	560	8.2%	53,671	6.1%	5,884	86.0%	794,999	90.7%	3	0.0%	842	0.1%
2021	<60%	131	24.3%	12,029	17.5%	243	45.0%	27,793	40.5%	166	30.7%	28,840	42.0%	0	0.0%	0	0.0%
2021	60%-80%	70	9.6%	6,275	6.0%	178	24.3%	20,490	19.5%	484	66.1%	78,311	74.5%	0	0.0%	14	0.0%
2021	80%-100%	35	3.4%	4,243	2.6%	42	4.1%	5,388	3.2%	952	92.5%	156,421	94.2%	0	0.0%	0	0.0%
2021	100%-120%	35	2.9%	4,328	2.1%	0	0.0%	0	0.0%	1,158	97.0%	204,447	97.5%	1	0.1%	828	0.4%
2021	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1,704	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2021	Total	271	5.2%	26,875	3.1%	463	8.9%	53,671	6.1%	4,464	85.9%	794,999	90.7%	1	0.0%	842	0.1%
2022	<60%	34	22.8%	12,029	17.5%	69	46.3%	27,793	40.5%	46	30.9%	28,840	42.0%	0	0.0%	0	0.0%
2022	60%-80%	20	9.4%	6,275	6.0%	42	19.8%	20,490	19.5%	150	70.8%	78,311	74.5%	0	0.0%	14	0.0%
2022	80%-100%	8	2.9%	4,243	2.6%	8	2.9%	5,388	3.2%	262	94.2%	156,421	94.2%	0	0.0%	0	0.0%
2022	100%-120%	10	2.6%	4,328	2.1%	0	0.0%	0	0.0%	368	96.8%	204,447	97.5%	2	0.5%	828	0.4%
2022	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	573	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2022	Total	72	4.5%	26,875	3.1%	119	7.5%	53,671	6.1%	1,399	87.9%	794,999	90.7%	2	0.1%	842	0.1%

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
Total	<60%	1,048	24.7%	12,029	17.5%	1,834	43.3%	27,793	40.5%	1,354	32.0%	28,840	42.0%	0	0.0%	0	0.0%
Total	60%-80%	662	10.4%	6,275	6.0%	909	14.3%	20,490	19.5%	4,766	75.2%	78,311	74.5%	0	0.0%	14	0.0%
Total	80%-100%	423	4.8%	4,243	2.6%	213	2.4%	5,388	3.2%	8,142	92.7%	156,421	94.2%	3	0.0%	0	0.0%
Total	100%-120%	223	2.0%	4,328	2.1%	7	0.1%	0	0.0%	10,748	97.7%	204,447	97.5%	24	0.2%	828	0.4%
Total	>120%	201	1.2%	0	0.0%	0	0.0%	0	0.0%	16,088	98.8%	326,890	100.0%	0	0.0%	0	0.0%
Total	Total	2,557	5.5%	26,875	3.1%	2,963	6.4%	53,671	6.1%	41,098	88.1%	794,999	90.7%	27	0.1%	842	0.1%

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6. PROGRAMS – SMART-E LOAN

Societal Benefits

RSIP is a driver of job creation and cleaner air in the state of Connecticut. Over the course of its existence, the program has supported the creation of 16,457 job years and avoided the lifetime emission of 6,031,211 tons of carbon dioxide, 6,225,526 pounds of nitrous oxide, 5,484,954 pounds of sulfur oxide, and 519,718 pounds of particulate matter as illustrated by Table 123 and Table 125.

The RSIP has generated more than \$45.1 million in tax revenue for the State of Connecticut since inception as demonstrated in Table 124. The value of the lifetime public health impacts of the RSIP is estimated to be between \$189.2 and \$427.8 million as seen in Table 126.

TABLE 123. RSIP AND RSIP-E JOB YEARS SUPPORTED BY FY CLOSED

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	58	93	151
2013	209	333	542
2014	436	695	1,131
2015	1,263	2,012	3,275
2016	1,284	2,044	3,328
2017	470	612	1,082
2018	574	749	1,322
2019	764	997	1,761
2020	800	1,046	1,846
2021	649	848	1,497
2022	226	296	522
Total	6,733	9,724	16,457

TABLE 124. RSIP AND RSIP-E TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$267,742	\$79,970	\$0	\$347,712
2013	\$957,938	\$286,122	\$0	\$1,244,060
2014	\$1,999,188	\$597,128	\$0	\$2,596,316
2015	\$5,788,189	\$1,728,847	\$0	\$7,517,037
2016	\$5,882,139	\$1,756,908	\$0	\$7,639,047
2017	\$2,509,941	\$970,954	\$0	\$3,480,896
2018	\$3,071,430	\$1,188,162	\$0	\$4,259,593
2019	\$4,087,280	\$1,581,136	\$0	\$5,668,416
2020	\$4,283,670	\$1,657,109	\$0	\$5,940,779
2021	\$3,473,430	\$1,343,673	\$0	\$4,817,103
2022	\$1,210,625	\$468,322	\$0	\$1,678,947
Total	\$33,531,572	\$11,658,332	\$0	\$45,189,904

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TABLE 125. RSIP AND RSIP-E AVOIDED EMISSIONS BY FY CLOSED

Fiscal Year	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
2012	1,242	31,041	1,638	40,938	2,116	52,907	111	2,772
2013	5,108	127,702	7,476	186,909	9,478	236,962	451	11,273
2014	10,969	274,237	14,494	362,340	16,125	403,133	979	24,473
2015	31,704	792,607	37,706	942,638	36,619	915,487	2,773	69,322
2016	34,227	855,680	36,659	916,484	29,341	733,515	3,001	75,014
2017	21,518	537,939	19,562	489,042	13,326	333,155	1,856	46,392
2018	26,184	654,607	24,828	620,711	20,564	514,103	2,231	55,777
2019	34,609	865,227	33,468	836,694	28,814	720,352	2,946	73,643
2020	36,317	907,922	35,119	877,981	30,236	755,898	3,091	77,277
2021	29,639	740,979	28,662	716,543	24,676	616,908	2,523	63,068
2022	9,731	243,269	9,410	235,247	8,101	202,536	828	20,706
Total	241,248	6,031,211	249,021	6,225,526	219,398	5,484,954	20,789	519,718

TABLE 126. RSIP AND RSIP-E PUBLIC HEALTH IMPACT BY FY CLOSED

Fiscal Year	Annual		Lifetime	
	Low	High	Low	High
2012	\$42,865	\$96,778	\$1,071,624	\$2,419,440
2013	\$174,320	\$393,567	\$4,357,993	\$9,839,181
2014	\$378,761	\$855,140	\$9,469,017	\$21,378,503
2015	\$1,073,770	\$2,424,286	\$26,844,248	\$60,607,155
2016	\$1,175,245	\$2,653,388	\$29,381,125	\$66,334,705
2017	\$764,555	\$1,726,175	\$19,113,874	\$43,154,373
2018	\$914,233	\$2,064,366	\$22,855,833	\$51,609,145
2019	\$992,032	\$2,246,525	\$24,800,798	\$56,163,135
2020	\$985,570	\$2,233,959	\$24,639,252	\$55,848,971
2021	\$804,338	\$1,823,166	\$20,108,452	\$45,579,158
2022	\$264,052	\$598,517	\$6,601,288	\$14,962,919
Total	\$7,569,740	\$17,115,867	\$189,243,504	\$427,896,683

Marketing

Considering that FY22 was the final year in RSIP and RSIP-E, Project volume was significantly lower than previous years. Despite the anticipated end of RSIP in December 2020, the approval by the Board of Directors of the RSIP-E allowed the deployment of 47.1 MW of capacity in FY 2021 and 15.5 MW in FY 2022.

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There are 33,433 PBI systems (owned by a third party) representing 72% of closed RSIP projects, and 13,224 EPBB or homeowner-owned projects, representing 28% of closed RSIP volume. See Figure 8 for details on TPO market share and Figure 9 for details on homeowner-owned projects.

FIGURE 8. RSIP TOP 10 TPO MARKET SHARE BY PROJECT VOLUME

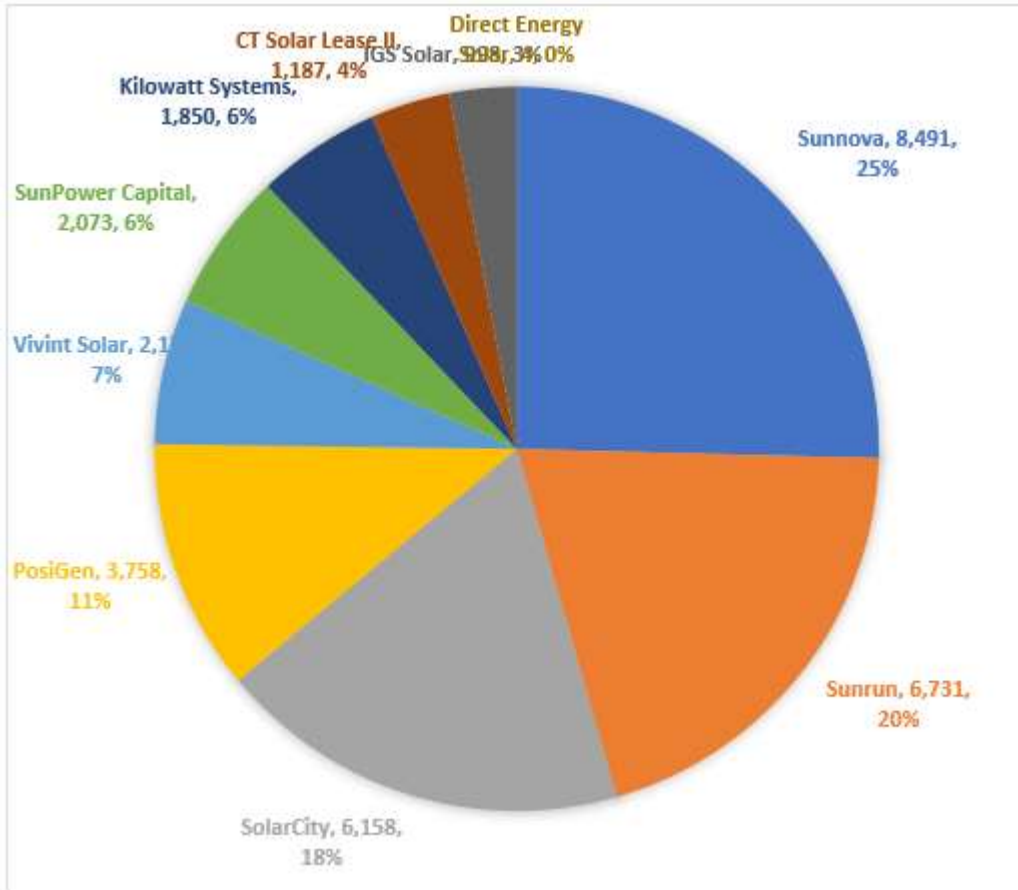
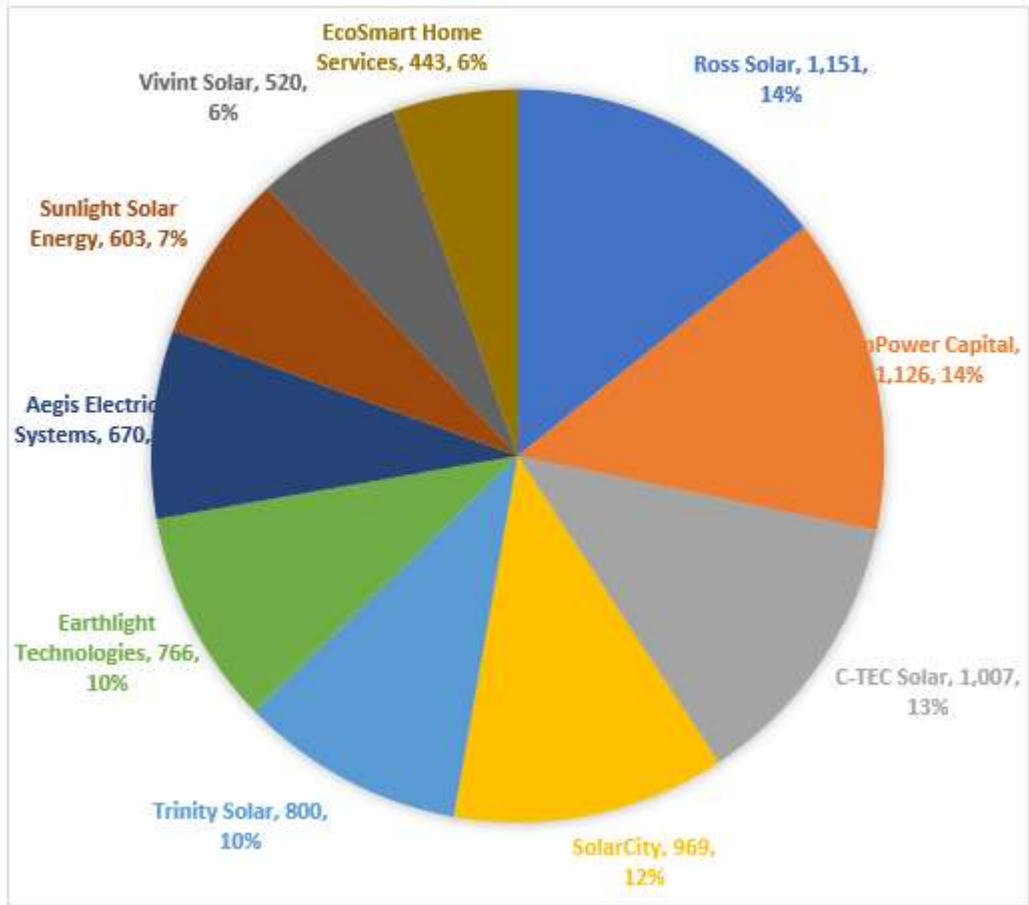


FIGURE 9. RSIP TOP 10 CONTRACTOR MARKET SHARE BY HOMEOWNER-OWNED PROJECT VOLUME

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The RSIP continued to be successful in reaching low to moderate income households. Adoption has largely been driven by the Green Bank’s Solar for All partnership with PosiGen and complemented by efforts supported by a U.S. Department of Energy grant, “State Strategies for Solar Adoption in Low-and-Moderate Income Communities.”

On January 1, 2022, a production based (per kWh) tariff compensation became available to all solar PV customers, based on the requirements stipulated by Section 7 in PA 18-50, amended by PA 19-35, and as developed and determined by PURA and stakeholders through continued docket processes. The program is called Residential Renewable Energy Solutions (RRES) Program and is being administered by the EDCs.

TABLE 127. RSIP VOLUME, CAPACITY AND COST DATA BY FY CLOSED AND SOLARIZE PARTICIPATION¹⁷²

¹⁷² Public supported Solarize ended in 2015. Projects are attributed to years based on the year their application was approved. Solarize projects assigned to years later than 2017 are the result of solarize efforts supported by the Green Bank in 2015 or before. Privately supported Solarize is associated with years 2016-2019. Note that the difference in average installed costs across RSIP for Solarize vs non-Solarize projects also reflects a larger prevalence of homeowner-owned (i.e., EPBB) projects participating in Solarize vs third-party owned (i.e., PBI) projects. Because the average installed cost for EPBB projects is higher than for PBI projects, some years show a higher Solarize than non-Solarize price at least in part because more of the Solarize projects are EPBB projects.

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Fiscal Year	CGB Solarize Type	# Projects	Installed Capacity (kW)	Green Bank Incentive Amount	Total Investment	Average Incentive (\$/W) ¹⁷³	Average Installed Cost (\$/W) ¹⁷⁴	Incentive % of Cost	Net Cost to Customer
2012	No	288	1,940.2	\$3,401,642	\$9,901,511	\$1.75	\$5.13	34%	\$6,499,869
2012 Total		288	1,940.2	\$3,401,642	\$9,901,511	\$1.75	\$5.13	34%	\$6,499,869
2013	No	785	5,466.2	\$8,398,948	\$26,127,846	\$1.54	\$4.64	32%	\$17,728,898
	Yes	324	2,424.1	\$3,516,508	\$9,298,197	\$1.45	\$3.84	38%	\$5,781,689
2013 Total		1,109	7,890.4	\$11,915,456	\$35,426,043	\$1.51	\$4.31	34%	\$23,510,587
2014	No	1,675	12,112.9	\$14,269,794	\$54,799,394	\$1.18	\$4.26	26%	\$40,529,600
	Yes	709	5,031.2	\$5,798,818	\$19,133,719	\$1.15	\$3.80	30%	\$13,334,901
2014 Total		2,384	17,144.1	\$20,068,612	\$73,933,113	\$1.17	\$4.07	27%	\$53,864,501
2015	No	5,481	41,116.3	\$27,531,116	\$184,803,348	\$0.67	\$3.92	15%	\$157,272,233
	Yes	900	7,512.7	\$5,581,568	\$29,252,910	\$0.74	\$3.89	19%	\$23,671,343
2015 Total		6,381	48,629.0	\$33,112,683	\$214,056,259	\$0.68	\$3.91	15%	\$180,943,575
2016	No	6,691	52,370.0	\$18,429,956	\$214,362,753	\$0.35	\$3.40	9%	\$195,932,797
	Yes	94	826.0	\$344,529	\$3,167,916	\$0.42	\$3.84	11%	\$2,823,387
2016 Total		6,785	53,196.0	\$18,774,485	\$217,530,669	\$0.35	\$3.41	9%	\$198,756,185
2017	No	4,403	34,268.9	\$11,406,104	\$118,965,384	\$0.33	\$3.33	10%	\$107,559,280
	Yes	42	359.7	\$147,569	\$1,252,853	\$0.41	\$3.48	12%	\$1,105,284
2017 Total		4,445	34,628.6	\$11,553,673	\$120,218,237	\$0.33	\$3.33	10%	\$108,664,564
2018	No	5,143	41,735.3	\$12,537,936	\$146,932,839	\$0.30	\$3.41	9%	\$134,394,903
	Yes	7	50.6	\$19,773	\$178,900	\$0.39	\$3.53	11%	\$159,127
2018 Total		5,150	41,785.9	\$12,557,709	\$147,111,739	\$0.30	\$3.41	9%	\$134,554,031
2019	No	6,468	54,983.2	\$15,155,093	\$195,767,752	\$0.28	\$3.45	8%	\$180,612,659
2019 Total		6,468	54,983.2	\$15,155,093	\$195,767,752	\$0.28	\$3.45	8%	\$180,612,659
2020	No	6,849	57,696.4	\$14,701,787	\$205,174,273	\$0.25	\$3.48	7%	\$190,472,486
2020 Total		6,849	57,696.4	\$14,701,787	\$205,174,273	\$0.25	\$3.48	7%	\$190,472,486
2021	No	5,206	47,087.5	\$12,174,888	\$166,366,312	\$0.26	\$3.42	7%	\$154,191,425
2021 Total		5,206	47,087.5	\$12,174,888	\$166,366,312	\$0.26	\$3.42	7%	\$154,191,425
2022	No	1,592	15,459.2	\$3,764,231	\$57,985,080	\$0.24	\$3.63	6%	\$54,220,850
2022 Total		1,592	15,459.2	\$3,764,231	\$57,985,080	\$0.24	\$3.63	6%	\$54,220,850
Total		46,657	380,440.7	\$157,180,257	\$1,443,470,988	\$0.41	\$3.53	11%	\$1,286,290,731

SHREC Program

Legislation enacted by the General Assembly enables the Connecticut Green Bank to recover the costs of the RSIP by aggregating and monetizing the Solar Home Renewable Energy Credits (SHRECs) earned for solar energy generated by systems whose owners received RSIP incentives.¹⁷⁵ The SHRECs are sold through long-term contracts to the state’s two investor-owned utilities, as mandated by the law. Through the SHREC Master Purchase Agreement, the Green Bank has thus far sold its Tranche 1 through Tranche 6 SHRECs to the utilities – for a total of just over 301 MW of residential solar PV projects supported through the RSIP. Tranches 1 and 2, totaling 109 MW, were included in the Green Bank’s first

¹⁷³ Average Incentive, Average Installed Cost, and Incentive % of Cost represent the averages by fiscal year and are not differentiated for Solarize versus non-Solarize.

¹⁷⁴ Average Installed Cost per Watt figures include reported installed costs without including those projects where financing costs for some third-party ownership installers are included as part of the installed cost and projects that include battery storage costs. Incentive % of Cost is calculated based on Average Installed Cost.

¹⁷⁵ RSIP projects with an incentive approved on or after January 1, 2015 can provide SHRECs. Approximately 56 MW of RSIP projects approved prior to 2015 can provide non-SHREC RECs.

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securitization of SHREC revenues, closing in March 2019, for \$38.6 million. Tranche 3, which was just over 39 MW, was included in the Green Bank's second securitization of SHREC revenues, in the form of Green Liberty Bonds, which sold out on July 15, 2020 for over \$16 million. Tranche 4, which was over 59 MW, was the Green Bank's May 2021 Green Liberty Bond offering and sold for over \$24.8 million.

Tranches 5 and 6, totaling over 93 MW of generation capacity have not been securitized yet.

Market Transformation

The Connecticut Green Bank contracted with Cadmus Group, Inc., to conduct a cost-effectiveness analysis¹⁷⁶ of its Residential Solar Investment Program (RSIP), completed in March 2016.¹⁷⁷ The findings of the study were: (1) RSIP is cost-effective from the perspective of program participants, the Connecticut Green Bank (as program administrator), from a total resource perspective, and for society as a whole. (2) RSIP has increasingly made efficient use of program funds by reducing incentives while supporting market growth through financing, marketing, outreach, and education. (3) RSIP benefits sufficiently outweigh costs to allow for bundling of residential solar PV with emerging technologies such as energy storage, while maintaining cost-effectiveness. The study included data from RSIP steps 1 through 7, for which cost-effectiveness was found to increase with progressive steps as incentives were reduced. Cadmus noted that incentives represented the large majority of program costs. Therefore, the general pattern of increasing cost-effectiveness would be expected to continue as incentives were reduced further.

Residential battery storage paired with solar PV is an emerging market in Connecticut with an estimated 450 battery storage systems came through RSIP, associated with solar PV projects approved for incentives through FY 2021, 97% of these 450 installations occurred in the past three fiscal years. The solar PV was incentivized through RSIP, but no incentive was provided for the battery storage. The projects were purchased by customers primarily for the purpose of backup power though it is possible that some customers are participating in a pilot demand response program, Connected Solutions,¹⁷⁸ that has been implemented by Eversource, modeled on their Massachusetts program.

On June 16, 2021, Governor Lamont signed PA 21-53 into law¹⁷⁹. Section 1 of PA 21-53 established an energy storage goal of one thousand (1,000) megawatts (MW) by December 31, 2030, along with interim goals of three hundred (300) MW by December 31, 2024, and six hundred fifty (650) MW by December 31, 2027. Section 2 of PA 21-53 directs the Public Utility Regulatory Authority (PURA) to "develop and implement one or more programs, and associated funding mechanisms, for electric storage resources connected to the electric distribution system."

On July 28, 2021, PURA issued its Final Decision in Docket No. 17-12-03RE03, PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Electric Storage (Storage

¹⁷⁶ The cost-effectiveness tests include the Utility Cost Test/Program Administrator Cost Test (UCT/PACT), Participant Cost Test (PCT), Societal Cost Test (SCT), Total Resource Cost Test (TRC), and Ratepayer Impact Measure (RIM).
<https://www.nationalenergyscreeningproject.org/national-standard-practice-manual>

¹⁷⁷ <https://ctgreenbank.com/about-us/studies-and-reports/>

¹⁷⁸ <https://www.eversource.com/content/ct-c/residential/save-money-energy/manage-energy-costs-usage/demand-response/battery-storage-demand-response>

¹⁷⁹ See, Public Act 21-53, <https://www.cga.ct.gov/2021/ACT/PA/PDF/2021PA-00053-R00SB-00952-PA.PDF>.

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Decision) establishing the Electric Storage Program pursuant to Public Act 21-53 (PA 21-53) and §§ 16-11, 16-19, 16-19e, and 16-244i of the General Statutes of Connecticut (Conn. Gen. Stat.), and in accordance with the Interim Decision dated October 2, 2019 in Docket No. 17-12-03, PURA Investigation into Distribution System Planning of the Electric Distribution Companies (Equitable Modern Grid Decision).

The key program elements include a declining-block upfront incentive and a performance-based incentive structure, which together comprise a nine-year Program available to all customers of the state's EDCs with an end goal of deploying 580 MW of electric storage by 2030. The Program is to be administered jointly by the CGB and the EDCs ("Program Administrators"); the CGB shall administer the upfront incentive portion and shall be responsible for the communication and promotion of the Program, while the EDCs shall administer the performance incentive portion of the Program. The CGB and the EDCs shall jointly be responsible for Evaluation, Measurement, and Verification (EM&V).

PURA's adopted the following seven (7) Program Objectives to guide the Program Administrators in the development and implementation of the Program:

- 1) Provide positive net present value to all ratepayers, or a subset of ratepayers paying for the benefits that accrue to that subset of ratepayers;
- 2) Provide multiple types of benefits to the electric grid, including, but not limited to, customer, local, or community resilience, ancillary services, peak shaving, and avoiding or deferring distribution system upgrades or supporting the deployment of other distributed energy resources;
- 3) Foster the sustained, orderly development of a state-based electric energy storage industry;
- 4) Prioritize delivering increased resilience to: (1) low-to-moderate income (LMI) customers, customers in environmental justice or economically distressed communities, customers coded medical hardship, and public housing authorities as defined in Conn. Gen. Stat. § 8-39(b); (2) customers on the grid-edge who consistently experience more and/or longer than average outages during major storms; and (3) critical facilities as defined in Conn. Gen. Stat § 16-243y(a)(2).
- 5) Lower the barriers to entry, financial or otherwise, for electric storage deployment in Connecticut;
- 6) Maximize the long-term environmental benefits of electric storage by reducing emissions associated with fossil-based peaking generation; and
- 7) Maximize the benefits to ratepayers derived from the wholesale capacity market.

During the first half of FY 2022, CGB worked with the EDCs designing key aspects of the program, including: customers, contractors and manufacturers enrollment processes; customers, sites, projects and technology eligibility requirements; application submission, review and approvals processes; operational requirements including the design of active and passive dispatch modes; incentive levels, contracts, and the infrastructure required to administer and support the program.

On January 1, 2022, CGB and Program Administrators successfully launched the much-anticipated battery storage program, called Energy Storage Solutions (ESS) Programs.

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By June 30, 2022, 23 projects had been approved (21 residential projects and two C&I projects) totaling over 5,636 kWh of energy capacity. An additional 109 projects have applied to the program (76 residential, 33 C&I), totaling 172,011 kWh of energy capacity.

FIGURE 10. COUNT OF PROJECTS BY APPLICATION STATUS, CUSTOMER TYPE, AND UTILITY

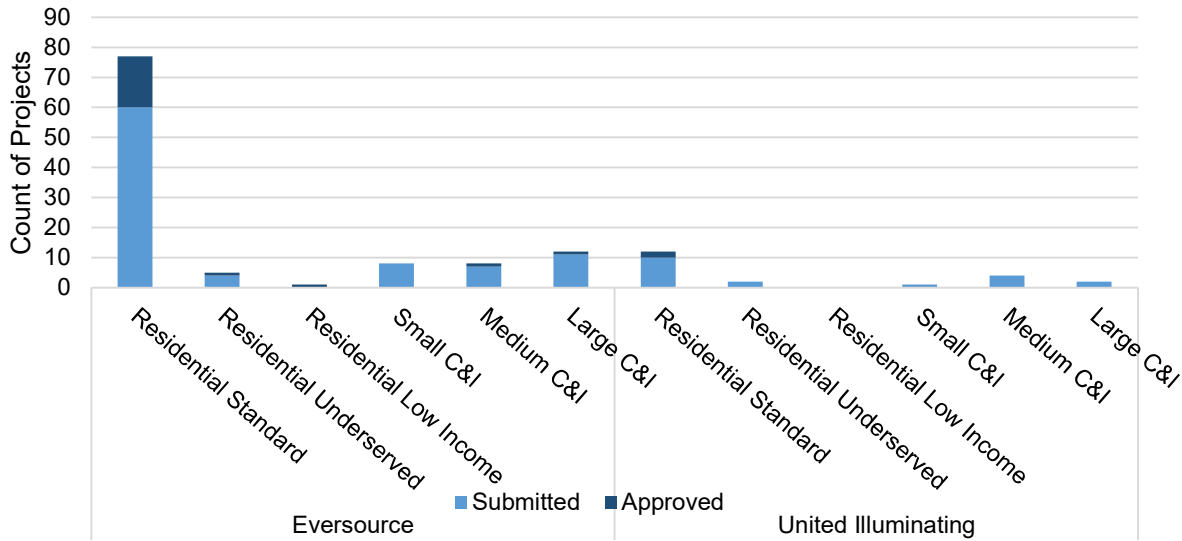


Table 128 below shows ESS progress towards the program capacity goals by sector.

TABLE 128. PROGRESS MADE TOWARD PROGRAM GOALS

Customer Type	Application Submitted (kW)	Application Approved (kW)	Application Complete (kW)	Total (kW)	Program Goals (2022-2024) (kW)	Percent of Approved Capacity Relative to Goal as of June 30, 2022
Residential	768	185	0	953	50,000	0.37%
C&I	60,111	2,626	0	62,737	50,000	5.3%

Case 4 – Smart-E Loan

Description

The Smart-E residential loan program is a financing program developed in partnership with Energize CT and local lenders that uses a credit enhancement (i.e., \$1,923,522 loan loss reserve).¹⁸⁰ to stimulate the market for residential energy efficiency, solar, storage, and health and safety loans in Connecticut. Through the product, the Connecticut Green Bank lowers the cost of capital for Connecticut residential customers seeking to install solar PV, high efficiency heating and cooling equipment, insulation or other home energy upgrades and reduces the loan performance risks to lenders. The \$1.7 million loan loss reserve is used to encourage lenders to offer below market interest rates and longer terms for unsecured loans, mitigates their losses, and encourages customers to undertake measures that would prove uneconomical at higher interest rates. In Fiscal year 2019, Inclusive Prosperity Capital (IPC) began managing the day-to-day operations of the Smart-E Loan program. With support from the Hewlett Foundation, and in partnership with Michigan Saves, IPC developed a new online platform for contractors and lenders. In doing so, IPC is soliciting other Green Banks and similar organizations around the country, to use the new platform to bring overall costs down for all programs.

The Smart-E Loan was designed to make it easy and affordable for homeowners to make energy efficiency and clean energy improvements to their homes with no out-of-pocket cash and at interest rates low enough and repayment terms long enough to make the improvements “cash flow positive.” At the same time, the Green Bank was intentional in opening conversations with local lenders to demonstrate the value of loans that would help their existing customers with burdensome energy costs and serve as an effective marketing tool to attract new relationships. In return for a “second loss” reserve which would be available beyond an agreed “normal” level of loan losses, lenders agreed to lengthen their terms and lower their rates. The end result is a successful loan product that has enabled thousands of homeowners throughout the state to lower energy costs and make their homes more comfortable in the summer heat or the depths of winter.

The financial structure of the Smart-E Loan product includes origination,¹⁸¹ servicing,¹⁸² and financing features in combination with the support of the Connecticut Green Bank.

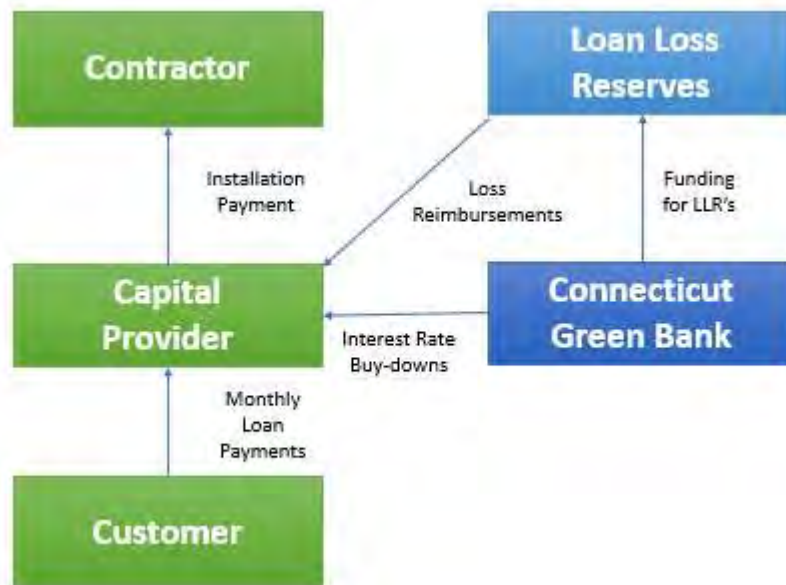
¹⁸⁰ During FY2017, the Green Bank, in an effort to optimize its resources, now holds the Loan Loss Reserve on its balance sheet. The total calculated loan loss reserve as of 6/30/22 is \$4,419,995, of which the Green Bank holds \$1,923,522 on its balance sheet.

¹⁸¹ Network of participating community banks and credit unions with local contractors.

¹⁸² Network of participating community banks and credit unions.

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FIGURE 11. LEGAL STRUCTURE AND FLOWS OF CAPITAL FOR THE SMART-E LOAN



Key Performance Indicators

The Key Performance Indicators for Smart-E closed activity are reflected in Table 129 through Table 132. These illustrate the volume of projects by year, investment, generation capacity installed, and the amount of energy saved and/or produced. It also breaks down the volume of projects by energy efficiency, renewable generation, or both.

TABLE 129. SMART-E LOAN PROJECT TYPES AND INVESTMENT BY FY CLOSED

Fiscal Year	EE	RE	RE/E E	Other	# Projects	Amount Financed	Total Investment	Green Bank Investment ¹⁸³	Private Investment	Leverage Ratio
2012	0	0	0	0	0	\$0	\$0	\$0	\$0	0
2013	1	2	0	0	3	\$55,400	\$71,924	\$1,584	\$70,340	45.4
2014	94	39	4	0	137	\$1,714,779	\$2,420,079	\$45,524	\$2,374,555	53.2
2015	121	80	68	0	269	\$5,106,112	\$7,427,583	\$428,955	\$6,998,628	17.3
2016	103	52	65	1	221	\$4,479,173	\$6,121,602	\$360,765	\$5,760,837	17.0
2017	371	68	79	5	523	\$8,611,955	\$10,779,285	\$1,063,665	\$9,715,620	10.1
2018	1,332	258	147	10	1,747	\$27,365,624	\$34,158,262	\$4,265,079	\$29,893,183	8.0
2019	718	97	9	4	828	\$10,686,364	\$11,307,273	\$3,205	\$11,304,068	100
2020	612	98	7	4	721	\$9,805,247	\$11,308,492	\$0	\$11,308,492	100
2021	852	83	15	8	958	\$14,535,791	\$16,249,542	\$0	\$16,249,542	100
2022	853	39	7	10	909	\$14,797,947	\$16,488,177	\$0	\$16,488,177	100
Total	5,057	816	401	42	6,316	\$97,158,392	\$116,332,219	\$6,168,777	\$110,163,443	18.9

¹⁸³ Includes incentives and interest rate buydowns. It does not include the loan loss reserves for Smart-E of \$1,923,522 and \$1,173,242 in interest rate buydowns that were paid out to nine Smart-E Loan lenders in FY 2022 related to 497 closed loans.

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TABLE 130. SMART-E LOAN PROJECT CAPACITY, GENERATION AND SAVINGS BY FY CLOSED

Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)	Annual Cost Savings	Lifetime Cost Savings
2012	0.0	0	0	0	0	\$0	\$0
2013	16.8	23,077	557	68	1,633	\$2,748	\$66,955
2014	336.4	789,994	17,873	2,558	57,548	\$88,566	\$2,035,333
2015	1,302.2	2,379,199	56,515	7,041	165,908	\$263,241	\$6,233,604
2016	955.5	2,009,039	47,599	6,026	141,695	\$228,126	\$5,317,658
2017	1,290.4	3,892,570	89,154	12,078	274,097	\$398,052	\$9,003,622
2018	3,889.0	11,424,640	257,219	34,702	770,637	\$1,113,668	\$24,925,204
2019	917.5	3,694,607	80,249	11,651	249,912	\$373,720	\$8,030,304
2020	932.5	3,144,786	68,278	9,622	205,258	\$331,789	\$7,088,180
2021	834.9	4,099,702	86,480	12,936	268,745	\$462,993	\$9,504,918
2022	247.5	3,421,184	68,979	11,441	229,538	\$408,335	\$8,024,036
Total	10,722.6	34,878,799	772,901	108,124	2,364,972	\$3,671,237	\$80,229,815

TABLE 131. SMART-E LOAN PROJECT AVERAGES BY FY CLOSED

Fiscal Year	Average Total Investment	Average Amount Financed	Average Installed Capacity (kW)	Average Number of Measures	Average Annual Saved / Produced (MMBtu)	Average Finance Term at Origination (months)	Average Finance Rate	Average DTI	Average FICO Score
2012	\$0	\$0	0.0	0	0	0	0.00	0	0
2013	\$23,975	\$18,467	5.6	1	23	100	5.49	52	748
2014	\$17,665	\$12,517	2.5	1	19	90	5.21	31	750
2015	\$27,612	\$18,982	4.8	2	26	100	4.20	31	756
2016	\$27,700	\$20,268	4.3	2	27	100	4.10	32	756
2017	\$20,610	\$16,466	2.5	2	23	102	2.73	20	749
2018	\$19,553	\$15,664	2.2	2	20	102	2.00	16	751
2019	\$13,656	\$12,906	1.1	2	14	89	4.79	15	733
2020	\$15,684	\$13,600	1.3	1	13	87	4.83	15	737
2021	\$16,962	\$15,173	0.9	1	14	97	3.30	17	743
2022	\$18,139	\$16,279	0.3	1	13	93	4.69	16	736
Average	\$18,419	\$15,383	1.7	2	17	96	3.57	18	744

TABLE 132. SMART-E LOAN PROJECT APPLICATION YIELD¹⁸⁴ BY FY RECEIVED

Fiscal Year	Applications Received	Applications in Review	Applications Approved	Applications Withdrawn	Applications Denied	Approved Rate	Denied Rate
2012	0	0	0	0	0	0%	0%

¹⁸⁴ Applications received are applications submitted by the homeowner to a participating lending institution for credit approval. Applications in review are submitted applications yet to be reviewed, approved, or rejected. Applications withdrawn are applications that have been cancelled by the submitter due to the project not moving forward. Applications denied are applications that are not approved because the customer does not meet underwriting requirements.

CONNECTICUT GREEN BANK
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Fiscal Year	Applications Received	Applications in Review	Applications Approved	Applications Withdrawn	Applications Denied	Approved Rate	Denied Rate
2013	21	0	15	1	5	76%	24%
2014	285	0	170	45	70	75%	25%
2015	540	0	292	103	145	73%	27%
2016	408	0	212	66	130	68%	32%
2017	1,102	0	661	198	243	78%	22%
2018	2,960	1	1,668	576	715	76%	24%
2019	1,808	31	834	359	584	67%	33%
2020	1,625	31	746	289	559	65%	35%
2021	2,186	65	1,214	362	545	74%	26%
2022	1,767	54	1,096	193	424	75%	25%
Total	12,702	182	6,908	2,192	3,420	73%	27%

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6. PROGRAMS – SMART-E LOAN

Vulnerable Communities Penetration

For a breakdown of Smart-E project volume and investment by census tracts categorized by Vulnerable Community Penetration – see Table 133. It should be noted that Smart-E is available statewide. Targeted outreach to homeowners in vulnerable communities is a key goal for FY22.

TABLE 133. SMART-E LOAN ACTIVITY IN VULNERABLE AND NOT VULNERABLE COMMUNITIES BY FY CLOSED¹⁸⁵

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	1	2	67%	0.0	0.0	0.0	36%	\$71,924	\$28,937	\$42,987	60%
2014	137	72	65	47%	0.3	0.2	0.1	37%	\$2,420,079	\$1,391,498	\$1,028,581	43%
2015	269	170	99	37%	1.3	1.1	0.2	18%	\$7,427,583	\$5,581,252	\$1,846,331	25%
2016	221	128	93	42%	1.0	0.7	0.3	28%	\$6,121,602	\$4,052,379	\$2,069,224	34%
2017	523	316	207	40%	1.3	0.8	0.5	36%	\$10,779,285	\$7,051,027	\$3,728,258	35%
2018	1,747	1,008	739	42%	3.9	2.9	1.0	26%	\$34,158,262	\$21,933,493	\$12,224,768	36%
2019	828	455	373	45%	0.9	0.7	0.2	22%	\$11,307,273	\$6,811,747	\$4,495,525	40%
2020	721	420	301	42%	0.9	0.6	0.3	34%	\$11,308,492	\$7,204,908	\$4,103,584	36%
2021	958	590	368	38%	0.8	0.6	0.2	24%	\$16,249,542	\$10,813,328	\$5,436,214	30%
2022	909	529	380	42%	0.2	0.2	0.0	10%	\$16,488,177	\$10,187,931	\$6,300,246	38%
Total	6,316	3,689	2,627	42%	10.7	7.8	2.9	27%	\$116,332,219	\$75,056,502	\$41,275,717	34%

Area Median Income Band Penetration

For a breakdown of Smart-E loan volume and investment by census tracts categorized by Area Median Income (AMI) bands – see Table 134. It should be noted that Smart-E is not an income targeted program and only in the second half of FY17 began offering the expanded credit-challenged version of the program, opening new opportunities to partner with mission-oriented lenders focused on reaching consumers in underserved lower income markets.

TABLE 134. SMART-E LOAN ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY FY CLOSED¹⁸⁶

¹⁸⁵ Excludes projects in unknown communities.

¹⁸⁶ Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2012	<60%	0	0%	0.0	0%	\$0	0%	62,689	7%	0.0	\$0.00	0.0
2012	60%-80%	0	0%	0.0	0%	\$0	0%	102,178	12%	0.0	\$0.00	0.0
2012	80%-100%	0	0%	0.0	0%	\$0	0%	150,685	17%	0.0	\$0.00	0.0
2012	100%-120%	0	0%	0.0	0%	\$0	0%	216,484	25%	0.0	\$0.00	0.0
2012	>120%	0	0%	0.0	0%	\$0	0%	349,212	40%	0.0	\$0.00	0.0
2012	Total	0	0%	0.0	0%	\$0	0%	881,248	100%	0.0	\$0.00	0.0
2013	<60%	0	0%	0.0	0%	\$0	0%	61,004	7%	0.0	\$0.00	0.0
2013	60%-80%	0	0%	0.0	0%	\$0	0%	109,967	13%	0.0	\$0.00	0.0
2013	80%-100%	1	33%	0.0	0%	\$8,598	12%	149,676	17%	0.0	\$0.06	0.0
2013	100%-120%	1	33%	0.0	36%	\$34,389	48%	202,827	23%	0.0	\$0.17	0.0
2013	>120%	1	33%	0.0	64%	\$28,937	40%	350,708	40%	0.0	\$0.08	0.0
2013	Total	3	100%	0.0	100%	\$71,924	100%	874,182	100%	0.0	\$0.08	0.0
2014	<60%	12	9%	0.0	5%	\$161,135	7%	59,294	7%	0.2	\$2.72	0.3
2014	60%-80%	15	11%	0.0	6%	\$209,132	9%	104,528	12%	0.1	\$2.00	0.2
2014	80%-100%	31	23%	0.1	24%	\$565,009	23%	148,846	17%	0.2	\$3.80	0.5
2014	100%-120%	26	19%	0.1	16%	\$480,629	20%	208,912	24%	0.1	\$2.30	0.3
2014	>120%	53	39%	0.2	48%	\$1,004,174	41%	347,779	40%	0.2	\$2.89	0.5
2014	Total	137	100%	0.3	100%	\$2,420,079	100%	869,359	100%	0.2	\$2.78	0.4
2015	<60%	12	4%	0.0	0%	\$128,175	2%	66,632	8%	0.2	\$1.92	0.0
2015	60%-80%	23	9%	0.0	2%	\$305,741	4%	96,059	11%	0.2	\$3.18	0.3
2015	80%-100%	53	20%	0.2	12%	\$1,154,183	16%	165,205	19%	0.3	\$6.99	1.0
2015	100%-120%	54	20%	0.3	25%	\$1,633,600	22%	183,629	21%	0.3	\$8.90	1.8
2015	>120%	127	47%	0.8	60%	\$4,205,884	57%	352,053	41%	0.4	\$11.95	2.2
2015	Total	269	100%	1.3	100%	\$7,427,583	100%	863,578	100%	0.3	\$8.60	1.5
2016	<60%	11	5%	0.0	1%	\$162,874	3%	63,056	7%	0.2	\$2.58	0.1
2016	60%-80%	22	10%	0.0	1%	\$309,972	5%	99,073	12%	0.2	\$3.13	0.1
2016	80%-100%	36	16%	0.2	16%	\$948,786	15%	165,012	19%	0.2	\$5.75	0.9
2016	100%-120%	48	22%	0.2	23%	\$1,335,356	22%	187,129	22%	0.3	\$7.14	1.2
2016	>120%	104	47%	0.6	60%	\$3,364,614	55%	344,577	40%	0.3	\$9.76	1.7

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2016	Total	221	100%	1.0	100%	\$6,121,602	100%	858,847	100%	0.3	\$7.13	1.1
2017	<60%	37	7%	0.1	7%	\$711,963	7%	64,755	7%	0.6	\$10.99	1.4
2017	60%-80%	59	11%	0.1	6%	\$901,645	8%	97,455	11%	0.6	\$9.25	0.9
2017	80%-100%	80	15%	0.2	18%	\$1,590,468	15%	155,414	18%	0.5	\$10.23	1.5
2017	100%-120%	128	24%	0.3	24%	\$2,624,415	24%	209,484	24%	0.6	\$12.53	1.5
2017	>120%	219	42%	0.6	45%	\$4,950,793	46%	339,362	39%	0.6	\$14.59	1.7
2017	Total	523	100%	1.3	100%	\$10,779,285	100%	866,470	100%	0.6	\$12.44	1.5
2018	<60%	119	7%	0.1	2%	\$1,710,344	5%	62,247	7%	1.9	\$27.48	1.2
2018	60%-80%	196	11%	0.2	6%	\$3,184,433	9%	109,142	13%	1.8	\$29.18	2.3
2018	80%-100%	286	16%	0.5	12%	\$4,896,713	14%	145,988	17%	2.0	\$33.54	3.2
2018	100%-120%	419	24%	1.1	27%	\$8,415,263	25%	204,880	24%	2.0	\$41.07	5.2
2018	>120%	727	42%	2.0	52%	\$15,951,509	47%	343,989	40%	2.1	\$46.37	5.9
2018	Total	1,747	100%	3.9	100%	\$34,158,262	100%	866,246	100%	2.0	\$39.43	4.5
2019	<60%	57	7%	0.0	2%	\$711,547	6%	62,247	7%	0.9	\$11.43	0.3
2019	60%-80%	104	13%	0.0	5%	\$1,150,921	10%	109,142	13%	1.0	\$10.55	0.5
2019	80%-100%	151	18%	0.1	11%	\$1,891,095	17%	145,988	17%	1.0	\$12.95	0.7
2019	100%-120%	194	23%	0.2	25%	\$2,554,504	23%	204,880	24%	0.9	\$12.47	1.1
2019	>120%	322	39%	0.5	56%	\$4,999,205	44%	343,989	40%	0.9	\$14.53	1.5
2019	Total	828	100%	0.9	100%	\$11,307,273	100%	865,756	100%	1.0	\$13.06	1.1
2020	<60%	47	7%	0.0	2%	\$609,616	5%	68,662	8%	0.7	\$8.88	0.3
2020	60%-80%	70	10%	0.0	4%	\$948,380	8%	105,090	12%	0.7	\$9.02	0.3
2020	80%-100%	129	18%	0.2	18%	\$1,716,156	15%	166,052	19%	0.8	\$10.34	1.0
2020	100%-120%	208	29%	0.3	34%	\$3,391,768	30%	209,603	24%	1.0	\$16.18	1.5
2020	>120%	266	37%	0.4	42%	\$4,621,722	41%	326,890	37%	0.8	\$14.14	1.2
2020	Total	720	100%	0.9	100%	\$11,287,642	100%	876,387	100%	0.8	\$12.88	1.1
2021	<60%	45	5%	0.0	0%	\$645,780	4%	68,662	8%	0.7	\$9.41	0.0
2021	60%-80%	93	10%	0.1	10%	\$1,313,849	8%	105,090	12%	0.9	\$12.50	0.8
2021	80%-100%	170	18%	0.1	10%	\$2,577,567	16%	166,052	19%	1.0	\$15.52	0.5
2021	100%-120%	243	25%	0.2	23%	\$3,911,227	24%	209,603	24%	1.2	\$18.66	0.9

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2021	>120%	407	42%	0.5	57%	\$7,801,118	48%	326,890	37%	1.2	\$23.86	1.5
2021	Total	958	100%	0.8	100%	\$16,249,542	100%	876,387	100%	1.1	\$18.54	1.0
2022	<60%	50	6%	0.0	0%	\$772,450	5%	68,662	8%	0.7	\$11.25	0.0
2022	60%-80%	107	12%	0.0	0%	\$1,959,182	12%	105,090	12%	1.0	\$18.64	0.0
2022	80%-100%	178	20%	0.0	10%	\$2,882,548	18%	166,052	19%	1.1	\$17.36	0.2
2022	100%-120%	207	23%	0.0	18%	\$3,960,654	24%	209,603	24%	1.0	\$18.90	0.2
2022	>120%	361	40%	0.2	72%	\$6,815,766	42%	326,890	37%	1.1	\$20.85	0.5
2022	Total	903	100%	0.2	100%	\$16,390,600	100%	876,387	100%	1.0	\$18.70	0.3
Total	<60%	390	6%	0.2	2%	\$5,613,885	5%	68,662	8%	5.7	\$81.76	3.3
Total	60%-80%	689	11%	0.6	5%	\$10,283,256	9%	105,090	12%	6.6	\$97.85	5.3
Total	80%-100%	1,115	18%	1.5	14%	\$18,231,123	16%	166,052	19%	6.7	\$109.79	8.9
Total	100%-120%	1,528	24%	2.8	26%	\$28,341,804	24%	209,603	24%	7.3	\$135.22	13.2
Total	>120%	2,587	41%	5.7	53%	\$53,743,723	46%	326,890	37%	7.9	\$164.41	17.4
Total	Total	6,309	100%	10.7	100%	\$116,213,791	100%	876,387	100%	7.2	\$132.61	12.2

TABLE 135. SMART-E LOAN ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED¹⁸⁷

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	2	1	33%	0.0	0.0	0.0	0%	\$71,924	\$63,326	\$8,598	12%
2014	137	79	58	42%	0.3	0.2	0.1	35%	\$2,420,079	\$1,484,803	\$935,276	39%
2015	269	181	88	33%	1.3	1.1	0.2	15%	\$7,427,583	\$5,839,483	\$1,588,100	21%
2016	221	152	69	31%	1.0	0.8	0.2	17%	\$6,121,602	\$4,699,970	\$1,421,632	23%

¹⁸⁷ Excludes projects in unknown bands.

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Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2017	523	347	176	34%	1.3	0.9	0.4	31%	\$10,779,285	\$7,575,208	\$3,204,076	30%
2018	1,747	1,146	601	34%	3.9	3.1	0.8	20%	\$34,158,262	\$24,366,772	\$9,791,490	29%
2019	828	516	312	38%	0.9	0.7	0.2	19%	\$11,307,273	\$7,553,710	\$3,753,563	33%
2020	720	474	246	34%	0.9	0.7	0.2	24%	\$11,287,642	\$8,013,490	\$3,274,152	29%
2021	958	650	308	32%	0.8	0.7	0.2	20%	\$16,249,542	\$11,712,345	\$4,537,197	28%
2022	903	568	335	37%	0.2	0.2	0.0	10%	\$16,390,600	\$10,776,420	\$5,614,180	34%
Total	6,309	4,115	2,194	35%	10.7	8.5	2.2	21%	\$116,213,791	\$82,085,527	\$34,128,264	29%

TABLE 136. SMART-E LOAN ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED¹⁸⁸

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2012	0	0	0	0%	0.0	0	0	0%	\$0	\$0	\$0	0%
2013	3	3	0	0%	0.0	0	0	0%	\$71,924	\$71,924	\$0	0%
2014	137	110	27	20%	0.3	0	0	11%	\$2,420,079	\$2,049,812	\$370,267	15%
2015	269	234	35	13%	1.3	1	0	2%	\$7,427,583	\$6,993,666	\$433,917	6%
2016	221	188	33	15%	1.0	1	0	2%	\$6,121,602	\$5,648,756	\$472,847	8%
2017	523	427	96	18%	1.3	1	0	14%	\$10,779,285	\$9,165,677	\$1,613,608	15%
2018	1,747	1,432	315	18%	3.9	4	0	8%	\$34,158,262	\$29,263,485	\$4,894,777	14%
2019	828	667	161	19%	0.9	1	0	7%	\$11,307,273	\$9,444,805	\$1,862,468	16%
2020	720	603	117	16%	0.9	1	0	6%	\$11,287,642	\$9,729,646	\$1,557,996	14%
2021	958	820	138	14%	0.8	1	0	10%	\$16,249,542	\$14,289,913	\$1,959,629	12%
2022	903	746	157	17%	0.2	0	0	0%	\$16,390,600	\$13,658,968	\$2,731,632	17%
Total	6,309	5,230	1,079	17%	10.7	10	1	7%	\$116,213,791	\$100,316,650	\$15,897,141	14%

¹⁸⁸ Excludes projects in unknown bands.

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Distressed Community Penetration

For a breakdown of Smart-E project volume and investment by census tracts categorized by Distressed Communities – see Table 137. It should be noted that Smart-E is not an income targeted program.

TABLE 137. SMART-E LOAN ACTIVITY IN DISTRESSED COMMUNITIES BY FY CLOSED

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2012	Yes	0	0%	0	0%	0.0	0%	447,962	33%	0.0	\$0.00	0.0
2012	No	0	0%	0	0%	0.0	0%	912,222	67%	0.0	\$0.00	0.0
2012	Total	0	0%	0	0%	0.0	0%	1,360,184	100%	0.0	\$0.00	0.0
2013	Yes	1	33%	1	33%	0.0	36%	426,564	31%	0.0	\$0.08	0.0
2013	No	2	67%	2	67%	0.0	64%	929,285	69%	0.0	\$0.04	0.0
2013	Total	3	100%	3	100%	0.0	100%	1,355,849	100%	0.0	\$0.05	0.0
2014	Yes	23	17%	23	17%	0.1	25%	416,415	31%	0.1	\$1.23	0.2
2014	No	114	83%	114	83%	0.3	75%	939,791	69%	0.1	\$2.03	0.3
2014	Total	137	100%	137	100%	0.3	100%	1,356,206	100%	0.1	\$1.78	0.2
2015	Yes	33	12%	33	12%	0.1	6%	423,559	31%	0.1	\$1.49	0.2
2015	No	236	88%	236	88%	1.2	94%	929,024	69%	0.3	\$7.32	1.3
2015	Total	269	100%	269	100%	1.3	100%	1,352,583	100%	0.2	\$5.49	1.0
2016	Yes	66	30%	66	30%	0.1	15%	438,710	32%	0.2	\$3.19	0.3
2016	No	155	70%	155	70%	0.8	85%	916,003	68%	0.2	\$5.15	0.9
2016	Total	221	100%	221	100%	1.0	100%	1,354,713	100%	0.2	\$4.52	0.7
2017	Yes	117	22%	117	22%	0.2	19%	435,595	32%	0.3	\$4.45	0.6
2017	No	406	78%	406	78%	1.0	81%	926,160	68%	0.4	\$9.55	1.1
2017	Total	523	100%	523	100%	1.3	100%	1,361,755	100%	0.4	\$7.92	0.9
2018	Yes	376	22%	376	22%	0.4	12%	430,098	31%	0.9	\$13.52	1.0
2018	No	1,371	78%	1,371	78%	3.4	88%	937,276	69%	1.5	\$30.24	3.7
2018	Total	1,747	100%	1,747	100%	3.9	100%	1,367,374	100%	1.3	\$24.98	2.8
2019	Yes	184	22%	184	22%	0.1	11%	421,653	31%	0.4	\$5.19	0.2
2019	No	644	78%	644	78%	0.8	89%	949,093	69%	0.7	\$9.61	0.9
2019	Total	828	100%	828	100%	0.9	100%	1,370,746	100%	0.6	\$8.25	0.7

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Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2020	Yes	153	21%	153	21%	0.2	20%	427,553	31%	0.4	\$4.81	0.4
2020	No	568	79%	568	79%	0.7	80%	957,884	69%	0.6	\$9.66	0.8
2020	Total	721	100%	721	100%	0.9	100%	1,385,437	100%	0.5	\$8.16	0.7
2021	Yes	156	16%	156	16%	0.1	8%	375,703	27%	0.4	\$5.58	0.2
2021	No	802	84%	802	84%	0.8	92%	1,009,734	73%	0.8	\$14.02	0.8
2021	Total	958	100%	958	100%	0.8	100%	1,385,437	100%	0.7	\$11.73	0.6
2022	Yes	152	17%	152	17%	0.0	0%	375,703	27%	0.4	\$6.02	0.0
2022	No	751	83%	751	83%	0.2	100%	1,009,734	73%	0.7	\$14.01	0.2
2022	Total	903	100%	903	100%	0.2	100%	1,385,437	100%	0.7	\$11.84	0.2
Total	Yes	1,261	20%	1,261	20%	1.4	13%	375,703	27%	3.4	\$50.39	3.6
Total	No	5,049	80%	5,049	80%	9.4	87%	1,009,734	73%	5.0	\$96.38	9.3
Total	Total	6,310	100%	6,310	100%	10.7	100%	1,385,437	100%	4.6	\$83.91	7.7

TABLE 138. SMART-E LOAN ACTIVITY IN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED¹⁸⁹

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	2	1	33%	0.0	0.0	0.0	36%	\$71,924	\$37,535	\$34,389	48%
2014	137	114	23	17%	0.3	0.3	0.1	25%	\$2,420,079	\$1,908,919	\$511,160	21%
2015	269	236	33	12%	1.3	1.2	0.1	6%	\$7,427,583	\$6,795,909	\$631,674	9%
2016	221	155	66	30%	1.0	0.8	0.1	15%	\$6,121,602	\$4,720,950	\$1,400,652	23%
2017	523	406	117	22%	1.3	1.0	0.2	19%	\$10,779,285	\$8,840,853	\$1,938,432	18%
2018	1,747	1,371	376	22%	3.9	3.4	0.4	12%	\$34,158,262	\$28,342,968	\$5,815,294	17%
2019	828	644	184	22%	0.9	0.8	0.1	11%	\$11,307,273	\$9,120,640	\$2,186,632	19%
2020	721	568	153	21%	0.9	0.7	0.2	20%	\$11,308,492	\$9,253,622	\$2,054,870	18%
2021	958	802	156	16%	0.8	0.8	0.1	8%	\$16,249,542	\$14,151,833	\$2,097,709	13%
2022	903	751	152	17%	0.2	0.2	0.0	0%	\$16,404,514	\$14,143,765	\$2,260,748	14%

¹⁸⁹ Excludes projects in unknown communities.

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Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
Total	6,310	5,049	1,261	20%	10.7	9.4	1.4	13%	\$116,248,555	\$97,316,994	\$18,931,561	16%

Environmental Justice Poverty Level Penetration

The activity of the Smart-e Loan in Environmental Justice Communities is recorded in Table 139.

TABLE 139. SMART-E LOAN ACTIVITY IN ENVIRONMENTAL JUSTICE POVERTY AREAS BY FY CLOSED¹⁹⁰

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	3	0	0%	0.0	0.0	0.0	0%	\$71,924	\$71,924	\$0	0%
2014	137	133	4	3%	0.3	0.3	0.0	0%	\$2,420,079	\$2,390,490	\$29,589	1%
2015	269	265	4	1%	1.3	1.3	0.0	2%	\$7,427,583	\$7,319,069	\$108,515	1%
2016	221	215	6	3%	1.0	0.9	0.0	3%	\$6,121,602	\$5,978,294	\$143,308	2%
2017	523	506	17	3%	1.3	1.2	0.0	3%	\$10,779,285	\$10,449,522	\$329,763	3%
2018	1,747	1,665	82	5%	3.9	3.7	0.1	4%	\$34,158,262	\$32,653,701	\$1,504,561	4%
2019	828	790	38	5%	0.9	0.9	0.0	2%	\$11,307,273	\$10,865,974	\$441,298	4%
2020	721	691	30	4%	0.9	0.9	0.0	1%	\$11,308,492	\$10,936,552	\$371,940	3%
2021	958	922	36	4%	0.8	0.8	0.0	4%	\$16,249,542	\$15,622,072	\$627,470	4%
2022	909	853	56	6%	0.2	0.2	0.0	0%	\$16,488,177	\$15,476,294	\$1,011,883	6%
Total	6,316	6,043	273	4%	10.7	10.4	0.3	3%	\$116,332,219	\$111,763,892	\$4,568,327	4%

Ethnicity

The activity of the Smart-E Loan in terms of ethnicity is recorded in Table 140.

¹⁹⁰ Excludes projects in unknown bands.

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TABLE 140. SMART-E LOAN ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY ETHNICITY CATEGORY BY FY CLOSED¹⁹¹

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2012	<60%	0	0.0%	13,052	20.8%	0	0.0%	21,021	33.5%	0	0.0%	28,616	45.6%	0	0.0%	0	0.0%
2012	60%-80%	0	0.0%	8,714	8.5%	0	0.0%	7,447	7.3%	0	0.0%	86,017	84.2%	0	0.0%	0	0.0%
2012	80%-100%	0	0.0%	3,490	2.3%	0	0.0%	0	0.0%	0	0.0%	147,195	97.7%	0	0.0%	0	0.0%
2012	100%-120%	0	0.0%	3,488	1.6%	0	0.0%	0	0.0%	0	0.0%	212,996	98.4%	0	0.0%	0	0.0%
2012	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	349,212	100.0%	0	0.0%	0	0.0%
2012	Total	0	0.0%	28,744	3.3%	0	0.0%	28,468	3.2%	0	0.0%	824,036	93.5%	0	0.0%	0	0.0%
2013	<60%	0	0.0%	10,766	17.6%	0	0.0%	21,781	35.7%	0	0.0%	28,457	46.6%	0	0.0%	0	0.0%
2013	60%-80%	0	0.0%	10,827	9.8%	0	0.0%	9,574	8.7%	0	0.0%	89,566	81.4%	0	0.0%	0	0.0%
2013	80%-100%	0	0.0%	1,926	1.3%	0	0.0%	0	0.0%	1	100.0%	147,750	98.7%	0	0.0%	0	0.0%
2013	100%-120%	0	0.0%	3,177	1.6%	0	0.0%	0	0.0%	1	100.0%	199,650	98.4%	0	0.0%	0	0.0%
2013	>120%	0	0.0%	1,808	0.5%	0	0.0%	0	0.0%	1	100.0%	348,900	99.5%	0	0.0%	0	0.0%
2013	Total	0	0.0%	28,504	3.3%	0	0.0%	31,355	3.6%	3	100.0%	814,323	93.2%	0	0.0%	0	0.0%
2014	<60%	1	8.3%	12,067	20.4%	1	8.3%	17,945	30.3%	10	83.3%	29,282	49.4%	0	0.0%	0	0.0%
2014	60%-80%	3	20.0%	8,576	8.2%	2	13.3%	10,507	10.1%	10	66.7%	85,445	81.7%	0	0.0%	0	0.0%
2014	80%-100%	0	0.0%	1,868	1.3%	0	0.0%	1,491	1.0%	31	100.0%	145,487	97.7%	0	0.0%	0	0.0%
2014	100%-120%	2	7.7%	3,280	1.6%	0	0.0%	0	0.0%	24	92.3%	205,632	98.4%	0	0.0%	0	0.0%
2014	>120%	1	1.9%	3,745	1.1%	0	0.0%	0	0.0%	52	98.1%	344,034	98.9%	0	0.0%	0	0.0%
2014	Total	7	5.1%	29,536	3.4%	3	2.2%	29,943	3.4%	127	92.7%	809,880	93.2%	0	0.0%	0	0.0%
2015	<60%	0	0.0%	12,243	18.4%	0	0.0%	27,292	41.0%	12	100.0%	27,097	40.7%	0	0.0%	0	0.0%
2015	60%-80%	1	4.3%	7,491	7.8%	0	0.0%	7,075	7.4%	22	95.7%	81,493	84.8%	0	0.0%	0	0.0%
2015	80%-100%	0	0.0%	5,767	3.5%	0	0.0%	513	0.3%	53	100.0%	158,372	95.9%	0	0.0%	553	0.3%
2015	100%-120%	0	0.0%	863	0.5%	0	0.0%	0	0.0%	54	100.0%	182,766	99.5%	0	0.0%	0	0.0%
2015	>120%	0	0.0%	1,877	0.5%	0	0.0%	0	0.0%	127	100.0%	350,176	99.5%	0	0.0%	0	0.0%
2015	Total	1	0.4%	28,241	3.3%	0	0.0%	34,880	4.0%	268	99.6%	799,904	92.6%	0	0.0%	553	0.1%
2016	<60%	1	9.1%	11,333	18.0%	2	18.2%	26,620	42.2%	8	72.7%	25,103	39.8%	0	0.0%	0	0.0%

¹⁹¹ Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2016	60%-80%	0	0.0%	7,872	7.9%	0	0.0%	8,551	8.6%	22	100.0%	82,650	83.4%	0	0.0%	0	0.0%
2016	80%-100%	1	2.8%	4,736	2.9%	0	0.0%	937	0.6%	35	97.2%	159,339	96.6%	0	0.0%	0	0.0%
2016	100%-120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	48	100.0%	186,570	99.7%	0	0.0%	559	0.3%
2016	>120%	0	0.0%	3,063	0.9%	0	0.0%	0	0.0%	104	100.0%	341,514	99.1%	0	0.0%	0	0.0%
2016	Total	2	0.9%	27,004	3.1%	2	0.9%	36,108	4.2%	217	98.2%	795,176	92.6%	0	0.0%	559	0.1%
2017	<60%	5	13.5%	11,916	18.4%	11	29.7%	28,817	44.5%	21	56.8%	24,022	37.1%	0	0.0%	0	0.0%
2017	60%-80%	1	1.7%	5,276	5.4%	5	8.5%	12,600	12.9%	53	89.8%	79,579	81.7%	0	0.0%	0	0.0%
2017	80%-100%	3	3.8%	4,323	2.8%	0	0.0%	2,062	1.3%	77	96.3%	149,029	95.9%	0	0.0%	0	0.0%
2017	100%-120%	0	0.0%	1,101	0.5%	0	0.0%	0	0.0%	128	100.0%	207,746	99.2%	0	0.0%	637	0.3%
2017	>120%	1	0.5%	4,014	1.2%	0	0.0%	0	0.0%	218	99.5%	335,348	98.8%	0	0.0%	0	0.0%
2017	Total	10	1.9%	26,630	3.1%	16	3.1%	43,479	5.0%	497	95.0%	795,724	91.8%	0	0.0%	637	0.1%
2018	<60%	10	8.4%	10,135	16.3%	49	41.2%	28,053	45.1%	60	50.4%	24,059	38.7%	0	0.0%	0	0.0%
2018	60%-80%	8	4.1%	7,948	7.3%	24	12.2%	11,560	10.6%	164	83.7%	89,634	82.1%	0	0.0%	0	0.0%
2018	80%-100%	12	4.2%	4,704	3.2%	4	1.4%	3,271	2.2%	270	94.4%	138,013	94.5%	0	0.0%	0	0.0%
2018	100%-120%	1	0.2%	2,274	1.1%	0	0.0%	0	0.0%	414	98.8%	201,977	98.6%	4	1.0%	629	0.3%
2018	>120%	10	1.4%	2,828	0.8%	0	0.0%	0	0.0%	717	98.6%	341,161	99.2%	0	0.0%	0	0.0%
2018	Total	41	2.3%	27,889	3.2%	77	4.4%	42,884	5.0%	1,625	93.0%	794,844	91.8%	4	0.2%	629	0.1%
2019	<60%	7	12.3%	10,903	17.0%	25	43.9%	29,840	46.5%	25	43.9%	23,497	36.6%	0	0.0%	0	0.0%
2019	60%-80%	9	8.7%	6,102	6.0%	12	11.5%	10,367	10.3%	83	79.8%	84,519	83.7%	0	0.0%	0	0.0%
2019	80%-100%	3	2.0%	5,119	3.3%	6	4.0%	1,488	1.0%	142	94.0%	148,956	95.8%	0	0.0%	0	0.0%
2019	100%-120%	5	2.6%	3,330	1.6%	0	0.0%	627	0.3%	187	96.4%	202,850	97.8%	2	1.0%	648	0.3%
2019	>120%	5	1.6%	2,074	0.6%	0	0.0%	0	0.0%	317	98.4%	335,436	99.4%	0	0.0%	0	0.0%
2019	Total	29	3.5%	27,528	3.2%	43	5.2%	42,322	4.9%	754	91.1%	795,258	91.9%	2	0.2%	648	0.1%
2020	<60%	9	19.1%	12,029	17.5%	19	40.4%	27,793	40.5%	19	40.4%	28,840	42.0%	0	0.0%	0	0.0%
2020	60%-80%	5	7.1%	6,275	6.0%	11	15.7%	20,490	19.5%	54	77.1%	78,311	74.5%	0	0.0%	14	0.0%
2020	80%-100%	1	0.8%	4,243	2.6%	1	0.8%	5,388	3.2%	127	98.4%	156,421	94.2%	0	0.0%	0	0.0%
2020	100%-120%	7	3.4%	4,328	2.1%	1	0.5%	0	0.0%	200	96.2%	204,447	97.5%	0	0.0%	828	0.4%
2020	>120%	1	0.4%	0	0.0%	0	0.0%	0	0.0%	265	99.6%	326,890	100.0%	0	0.0%	0	0.0%
2020	Total	23	3.2%	26,875	3.1%	32	4.4%	53,671	6.1%	665	92.4%	794,999	90.7%	0	0.0%	842	0.1%

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2021	<60%	10	22.2%	12,029	17.5%	17	37.8%	27,793	40.5%	18	40.0%	28,840	42.0%	0	0.0%	0	0.0%
2021	60%-80%	6	6.5%	6,275	6.0%	17	18.3%	20,490	19.5%	70	75.3%	78,311	74.5%	0	0.0%	14	0.0%
2021	80%-100%	9	5.3%	4,243	2.6%	1	0.6%	5,388	3.2%	160	94.1%	156,421	94.2%	0	0.0%	0	0.0%
2021	100%-120%	8	3.3%	4,328	2.1%	0	0.0%	0	0.0%	235	96.7%	204,447	97.5%	0	0.0%	828	0.4%
2021	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	407	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2021	Total	33	3.4%	26,875	3.1%	35	3.7%	53,671	6.1%	890	92.9%	794,999	90.7%	0	0.0%	842	0.1%
2022	<60%	7	14.0%	12,029	17.5%	15	30.0%	27,793	40.5%	28	56.0%	28,840	42.0%	0	0.0%	0	0.0%
2022	60%-80%	6	5.6%	6,275	6.0%	22	20.6%	20,490	19.5%	79	73.8%	78,311	74.5%	0	0.0%	14	0.0%
2022	80%-100%	9	5.1%	4,243	2.6%	5	2.8%	5,388	3.2%	164	92.1%	156,421	94.2%	0	0.0%	0	0.0%
2022	100%-120%	9	4.3%	4,328	2.1%	0	0.0%	0	0.0%	196	94.7%	204,447	97.5%	2	1.0%	828	0.4%
2022	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	361	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2022	Total	31	3.4%	26,875	3.1%	42	4.7%	53,671	6.1%	828	91.7%	794,999	90.7%	2	0.2%	842	0.1%
Total	<60%	50	12.8%	12,029	17.5%	139	35.6%	27,793	40.5%	201	51.5%	28,840	42.0%	0	0.0%	0	0.0%
Total	60%-80%	39	5.7%	6,275	6.0%	93	13.5%	20,490	19.5%	557	80.8%	78,311	74.5%	0	0.0%	14	0.0%
Total	80%-100%	38	3.4%	4,243	2.6%	17	1.5%	5,388	3.2%	1,060	95.1%	156,421	94.2%	0	0.0%	0	0.0%
Total	100%-120%	32	2.1%	4,328	2.1%	1	0.1%	0	0.0%	1,487	97.3%	204,447	97.5%	8	0.5%	828	0.4%
Total	>120%	18	0.7%	0	0.0%	0	0.0%	0	0.0%	2,569	99.3%	326,890	100.0%	0	0.0%	0	0.0%
Total	Total	177	2.8%	26,875	3.1%	250	4.0%	53,671	6.1%	5,874	93.1%	794,999	90.7%	8	0.1%	842	0.1%

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Societal Benefits

Ratepayers in Connecticut enjoy the societal benefits of the Smart-E Loan. Over the course of its existence, the program has supported the creation of 1,458 job years, avoided the lifetime emission of 378,762 tons of carbon dioxide, 344,253 pounds of nitrous oxide, 288,142 pounds of sulfur oxide, and 31,010 pounds of particulate matter as illustrated by Table 141 and Table 143.

Since Inception, Smart-E has generated \$7.2 million in tax revenues for the State of Connecticut as shown in Table 142. The lifetime economic value of the public health impacts of the Smart-E program is estimated to be between \$12.6 and \$28.6 million as seen in Table 144.

TABLE 141. SMART-E LOAN JOB YEARS SUPPORTED BY FY CLOSED

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	0	0	0
2013	0	1	1
2014	18	28	46
2015	56	89	145
2016	45	72	117
2017	49	66	115
2018	148	193	342
2019	58	75	132
2020	59	76	135
2021	90	117	206
2022	95	124	219
Total	618	840	1,458

TABLE 142. SMART-E LOAN TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$0	\$0	\$0	\$0
2013	\$2,242	\$518	\$258	\$3,018
2014	\$106,455	\$31,710	\$31,445	\$169,610
2015	\$248,715	\$63,998	\$44,120	\$356,833
2016	\$224,345	\$66,923	\$50,103	\$341,371
2017	\$248,183	\$147,327	\$156,374	\$551,883
2018	\$770,644	\$475,646	\$543,352	\$1,789,642
2019	\$309,062	\$216,139	\$260,123	\$785,324
2020	\$310,609	\$214,533	\$240,973	\$766,115
2021	\$457,614	\$331,590	\$381,804	\$1,171,008
2022	\$479,666	\$369,631	\$439,414	\$1,288,711
Total	\$3,157,536	\$1,918,014	\$2,147,965	\$7,223,516

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TABLE 143. SMART-E LOAN AVOIDED EMISSIONS BY FY CLOSED

Fiscal Year	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
2012	0	0	0	0	0	0	0	0
2013	13	307	12	292	10	252	1	26
2014	422	9,604	401	9,195	362	8,319	35	795
2015	1,276	30,671	1,368	33,027	1,305	31,508	107	2,585
2016	1,060	25,490	1,096	26,432	922	22,227	88	2,130
2017	1,902	44,434	1,584	37,173	1,075	25,239	155	3,638
2018	5,715	130,925	4,991	115,006	4,035	93,144	467	10,730
2019	1,841	40,658	1,650	36,630	1,441	31,961	149	3,307
2020	1,531	33,955	1,381	30,801	1,204	26,816	124	2,768
2021	1,821	39,705	1,622	35,544	1,417	31,019	146	3,204
2022	1,087	23,013	950	20,151	832	17,657	86	1,827
Total	16,667	378,762	15,056	344,253	12,603	288,142	1,360	31,010

TABLE 144. SMART-E LOAN PUBLIC HEALTH IMPACT BY FY CLOSED

Fiscal Year	Annual		Lifetime	
	Low	High	Low	High
2012	\$0	\$0	\$0	\$0
2013	\$436	\$985	\$10,572	\$23,873
2014	\$14,071	\$31,789	\$321,205	\$725,591
2015	\$44,275	\$99,992	\$1,056,609	\$2,386,200
2016	\$36,675	\$82,831	\$873,435	\$1,972,587
2017	\$68,740	\$155,291	\$1,584,369	\$3,579,112
2018	\$201,774	\$455,868	\$4,576,126	\$10,338,282
2019	\$55,638	\$125,880	\$1,213,036	\$2,744,576
2020	\$43,400	\$98,276	\$948,700	\$2,148,423
2021	\$55,736	\$126,186	\$1,182,485	\$2,677,344
2022	\$45,060	\$101,987	\$910,021	\$2,059,777
Total	\$565,806	\$1,279,085	\$12,676,558	\$28,655,765

Financial Performance

As of 6/30/22, there have been 137 defaults, 120 of which have been charged off by the lenders, with original principal balances totaling \$1,920,693 or 1.98% of the portfolio, and 126 delinquencies with original principal balances totaling \$1,794,303 or 1.85% of the portfolio. Based on the total principal outstanding, as of 6/30/22, there were charged off defaults of \$1,340,560 or 2.79% and delinquencies of \$1,230,690 or 2.56%. To date the secondary loan loss reserve has been used to reimburse two participating lenders for nine defaulted loans totaling \$73,542 or 0.08% of the portfolio or 0.15% of the outstanding principal.

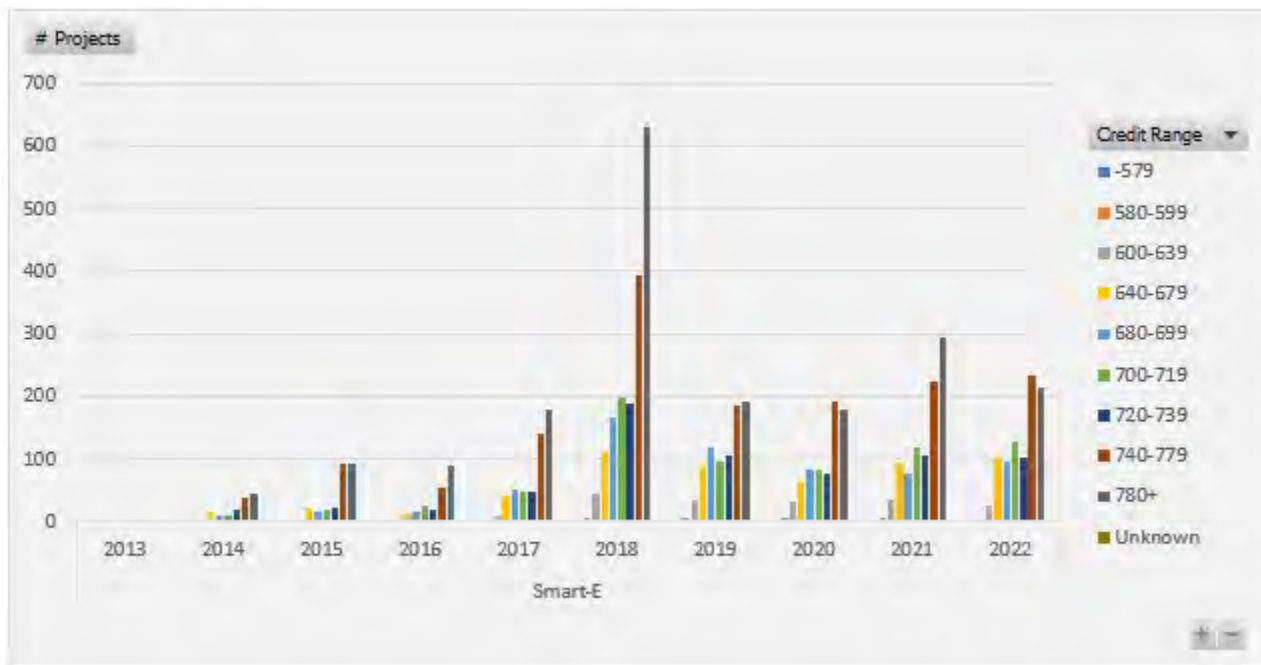
The household customers that accessed the Smart-E Loan since its launch in 2013 had varying credit scores – see Table 145.

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TABLE 145. CREDIT SCORE RANGES OF HOUSEHOLD CUSTOMERS USING THE SMART-E LOAN BY FY CLOSED

Fiscal Year	-579	580-599	600-639	640-679	680-699	700-719	720-739	740-779	780+	Unknown	Grand Total
2012											
2013					1			1	1		3
2014				15	9	11	18	38	46		137
2015			1	24	15	19	22	94	94		269
2016			3	13	15	27	19	55	89		221
2017		4	10	41	51	49	49	140	179		523
2018		5	46	113	168	199	190	395	631		1,747
2019		6	34	90	120	95	105	186	192		828
2020		8	31	64	84	84	77	192	179	2	721
2021		8	36	94	77	118	105	224	296		958
2022	1	3	27	102	96	129	103	235	213		909
Total	1	34	188	556	636	731	688	1,560	1,920	2	6,316
	0%	1%	3%	9%	10%	12%	11%	25%	30%	0%	100%

FIGURE 12. CREDIT SCORE RANGES OF HOUSEHOLD CUSTOMERS USING THE SMART-E LOAN BY FY CLOSED



Of the Smart-E Loans approved and closed with household customers, Table 146 presents the lenders offering the financing products in this program with accompanying data.

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TABLE 146. SMART-E LOAN LENDERS

Lender	# of Loans	Total Amount Financed	% of Loans	Min Loan Amount	Max Loan Amount	Average Loan Amount	Average Interest Rate	Average Term (months)	Decline Rate
Capital For Change	3,278	\$46,423,515	51.9%	\$954	\$45,000	\$14,162	3.70	97	28%
CorePlus Federal Credit Union	501	\$6,920,516	7.9%	\$1,993	\$45,107	\$13,813	4.16	82	11%
Eastern Connecticut Savings Bank	407	\$9,069,158	6.4%	\$1,800	\$50,000	\$22,283	3.42	106	34%
First National Bank of Suffield	71	\$1,341,987	1.1%	\$3,778	\$45,000	\$18,901	2.48	109	7%
Ion Bank	174	\$2,140,056	2.8%	\$2,720	\$25,000	\$12,299	4.04	92	29%
Liberty Bank	23	\$307,434	0.4%	\$4,550	\$25,000	\$13,367	5.10	85	26%
Mutual Security Credit Union	580	\$11,286,114	9.2%	\$0	\$45,000	\$19,459	2.95	102	17%
Nutmeg State Financial Credit Union	1,037	\$16,215,642	16.4%	\$1,802	\$40,000	\$15,637	3.23	94	31%
Patriot Bank	77	\$1,106,890	1.2%	\$5,000	\$25,000	\$14,375	3.52	88	29%
Quinnipiac Bank & Trust	7	\$84,056	0.1%	\$8,550	\$16,556	\$12,008	4.85	98	20%
Thomaston Savings Bank	66	\$791,065	1.0%	\$2,925	\$25,000	\$11,986	3.93	92	19%
Union Savings Bank	78	\$1,152,501	1.2%	\$4,100	\$25,000	\$14,776	3.69	94	39%
Workers Federal Credit Union	17	\$319,459	0.3%	\$7,000	\$40,000	\$18,792	3.08	88	0%
Grand Total	6,316	\$97,158,392	100.0%	\$0	\$50,000	\$15,383	3.57	96	27%

Marketing

To accelerate the deployment of natural gas conversions in the state, the Smart-E program was launched in 2014 with an Energize Norwich campaign in partnership with Norwich Public Utilities and 2 local lenders. Building on that success, and to accelerate the deployment of residential solar PV through the RSIP and the uptake of the Smart-E Loan financing product, the Connecticut Green Bank implemented “Solarize Connecticut” through the end of 2015. Green Bank Solarize Connecticut programs were town based and designed to use a combination of group purchasing, time-limited offers, and grassroots outreach. The Green Bank deployed ARRA dollars into interest rate buydown programs to support market transformation efforts for key technologies that support the state’s climate change mitigation goals. A 0.99% promotion in FY18 resulted in significant volume for measures such as heat pumps and solar + energy efficiency bundles. The Green Bank’s own digital marketing and earned media initiatives constitute a key driver of volume in FY20 along with ongoing, in person and webinar trainings and support, for contractors. In FY2021, special offers were introduced to encourage clean energy deployment and support the broad network of participating contractors whose businesses were impacted by the pandemic.

In FY22, the Green Bank ran a digital marketing campaign from November through June to support Home Solutions and Smart-E. This campaign included display advertising, Facebook ads (specific to Smart-E

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improvement measures), and search engine marketing (SEM). In total, these ads received more than 9 million impressions across their respective platforms, helping increase awareness of the program.

Additionally, in late FY22, the Green Bank team began outreach to Smart-E contractors as part of a broader, organization-wide effort to increase contractor participation. This engagement is intended to foster stronger relationships and improve communication to the contractor base, which is a key channel for this program.

TABLE 147. SMART-E LOAN PROJECT CHANNELS

Channel	# Projects	Total Investment	Installed Capacity (MW)
EV	3	\$9,719	0.0
Health and Safety	6	\$82,570	0.0
Home Performance	654	\$9,962,275	0.0
HVAC	4,519	\$67,550,273	0.0
Solar	1,116	\$38,454,985	10.7
Unknown	18	272,397	0
Grand Total	6,316	\$116,332,219	10.7

TABLE 148. SMART-E LOAN MEASURES

# of Measures	# Projects
Unknown	17
1	3,861
2	1,671
3	510
4	142
5	72
6	27
7	10
8	3
9	2
10	1
Total	6,316

In FY 2018, building on the success of the traditional Smart-E Loan program, the Green Bank gained experience in the automotive lending market by initiating a pilot program to extend the Smart-E Loan brand to cover new and used electric vehicles. Working with three regional credit union lenders, the Green Bank used an interest rate buydown to 0.99% and then 1.99% to save customers an average of \$900 on used EVs and \$2000 on new EVs. This allowed the Green Bank to test the effectiveness of a vehicle financing offer with an IRB and inform the design of future scalable programs, with an aim of also keeping more pre-owned EVs in operation in the state. The pilot concluded with 121 loans. Following the conclusion of the pilot, one Smart-E lender created an EV-specific auto loan.¹⁹²

In FY20, in response to requests from contractors and utility partners to address barriers to completing home energy assessments that lead to deeper energy efficiency projects, health and safety measures (i.e., asbestos and mold remediation) were reclassified as standalone Smart-E measures that can be

¹⁹² For reference: <https://www.mscu.net/borrow/green-loans>

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financed in full, up to \$25,000. Health and safety measures had previously been limited to 25% of the total loan amount.

Case 5 – Low Income Solar Lease and Energy-Efficiency Energy Savings Agreement (ESA)

Description

Through the solar developer PosiGen, a respondent to the Connecticut Green Bank's 2015 RFP soliciting solar financing solutions to address underserved markets, the Green Bank supports solar and energy efficiency deployment targeted at the state's low- to moderate-income (LMI) population. In Connecticut, PosiGen develops and originates these solar projects as project sponsor, utilizing tax equity from multiple investors, senior debt capital from private lenders, and subordinated debt from the Green Bank. Initially the Green Bank supplied a debt advance of \$5,000,000 (followed by another \$3.5 million), which was subordinated to an additional \$8,500,000 advanced by private lenders Enhanced Capital and Stonehenge Capital to leverage over \$46 million in value for solar projects targeting LMI homeowners. The RSIP program's tiered LMI performance-based incentive (PBI) provides PosiGen a higher incentive for customers demonstrating these income requirements. In FY2019, The Green Bank partnered with Inclusive Prosperity Capital to help manage the Green Bank's investment and engagement with PosiGen.

To continue to expand the program, in FY'22 the Green Bank and Forbright Bank closed on a \$140 million credit facility designed to allow PosiGen to continue to provide affordable solar system and energy efficiency leases to residential customers nationally, including low-to-moderate income homeowners in Connecticut. The Green Bank allocated up to \$20 million for its own funding, 40% of which was participated out to other lenders.

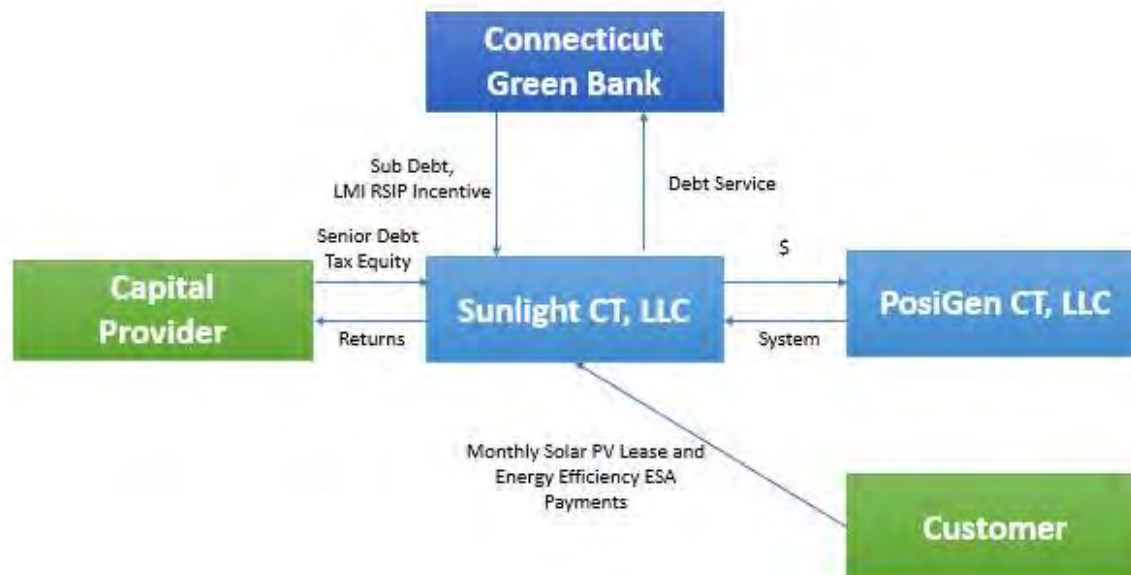
Through the partnership with PosiGen, the Connecticut Green Bank lowers the financial barriers to Connecticut LMI residential customers seeking to install solar PV with no up-front investment and energy efficiency measures. PosiGen's model also includes an alternative underwriting approach that does not rely on credit scores and a community-based marketing approach – two key ingredients for targeting this underserved market segment. Capital provided to PosiGen to be able to offer consumers a solar PV lease and energy efficiency upgrades is repaid to the Connecticut Green Bank, the tax equity investor, and the lenders through consumer lease repayments. This contrasts with traditional energy program subsidies targeted to LMI homeowners, which are typically in the form of grants only.

The financial structure of the Low-Income Solar Lease product includes origination, servicing, and financing features¹⁹³ in combination with the support of the Connecticut Green Bank.

¹⁹³ Origination, servicing, and financing managed by PosiGen.

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FIGURE 13. LEGAL STRUCTURE AND FLOWS OF CAPITAL FOR THE LOW-INCOME SOLAR LEASE



Connecticut represented the first expansion for PosiGen outside of its initial market in Louisiana, where starting in 2011, it paired solar leasing and energy efficiency services to maximize savings for LMI customers. Given the strategic emphasis the Green Bank has placed on driving investment for lower income homeowners, the organization developed a flexible funding structure to rapidly bring PosiGen to market. The concept started with the Green Bank providing “anchor capital” for PosiGen in the form of low-cost debt, together with PosiGen’s own resources and tax equity from U.S. Bank (U.S. Bank was already an investor in the Connecticut market through the Green Bank’s CT Solar Lease). Documentation was structured to facilitate funding by a senior lender, providing for the subordination of the Green Bank’s loans once this senior lender could be secured. With initial capital requirements underwritten by the Green Bank, PosiGen had the financial backing and capital flexibility it needed to confidently secure its base of operation in Bridgeport, hire management and local staff, pursue local partnerships with existing energy efficiency and solar PV contractors, and resolve supply chain issues. By using its balance sheet as an initial source of low-cost debt capital, the Green Bank made it possible for a developer that had proven its business model in another market to bring its innovative approach to Connecticut to build investment in solar and energy efficiency for homeowners of more modest means. The investment had the intended impact: PosiGen could establish operations and get a market started, and its rapid success in Connecticut enabled the Green Bank and PosiGen to secure senior lenders and new sources of tax equity to enable operations to expand to several cities throughout Connecticut.

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Key Performance Indicators

The Key Performance Indicators for the Low-Income Solar Lease’s closed projects are reflected in Table 149 through Table 151. These illustrate the volume of projects by year, investment, generation capacity installed, and the amount of energy saved and/or produced.

TABLE 149. LOW INCOME SOLAR LEASE PROJECT TYPES AND INVESTMENT BY FY CLOSED¹⁹⁴

Fiscal Year	EE	RE	RE/EE¹⁹⁵	# Projects	Total Investment	Green Bank Investment¹⁹⁶	Private Investment	Leverage Ratio
2012	0	0	0	0	\$0	\$0	\$0	0
2013	0	0	0	0	\$0	\$0	\$0	0
2014	0	0	0	0	\$0	\$0	\$0	0
2015	0	4	0	4	\$109,380	\$20,000	\$89,380	5.5
2016	0	174	159	333	\$9,572,692	\$1,665,000	\$7,907,692	5.7
2017	0	244	417	661	\$18,121,147	\$3,305,000	\$14,816,147	5.5
2018	0	269	373	642	\$17,905,647	\$3,210,000	\$14,695,647	5.6
2019	0	202	645	847	\$24,876,234	\$4,235,000	\$20,641,234	5.9
2020	0	52	707	759	\$20,076,595	\$3,795,000	\$16,281,595	5.3
2021	0	98	872	970	\$28,099,263	\$4,850,000	\$23,249,263	5.8
2022	0	19	311	330	\$9,379,672	\$1,650,000	\$7,729,672	5.7
Total	0	1,062	3,484	4,546	\$128,140,629	\$22,730,000	\$105,410,629	5.6

TABLE 150. LOW INCOME SOLAR LEASE PROJECT CAPACITY, GENERATION AND SAVINGS BY FY CLOSED

Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)¹⁹⁷	Lifetime Saved / Produced (MMBtu)	Annual Cost Savings	Lifetime Cost Savings
2012	0.0	0	0	0	0	\$0	\$0
2013	0.0	0	0	0	0	\$0	\$0
2014	0.0	0	0	0	0	\$0	\$0
2015	25.0	44,093	1,102	162	2,720	\$4,795	\$119,880
2016	2,179.3	3,782,369	94,559	13,496	226,440	\$399,200	\$9,980,010
2017	4,199.4	7,363,959	184,099	26,790	449,480	\$792,407	\$19,810,170
2018	4,275.8	7,690,856	192,271	27,092	436,560	\$769,630	\$19,240,740
2019	5,948.5	10,496,672	262,417	35,743	575,960	\$1,015,384	\$25,384,590
2020	4,803.5	8,806,035	220,151	32,030	516,120	\$909,889	\$22,747,230
2021	6,658.0	11,845,242	296,131	40,934	659,600	\$1,162,836	\$29,070,900
2022	2,239.2	4,000,293	100,007	13,926	224,400	\$395,604	\$9,890,100
Total	30,328.7	54,029,519	1,350,738	190,175	3,091,280	\$5,449,745	\$136,243,620

¹⁹⁴ Note that this investment is exclusive of Green Bank investments into PosiGen’s lease funds and represents just the incentives paid for the systems participating in the lease.

¹⁹⁵ All projects that receive an RSIP incentive are required to do an energy audit/assessment.

¹⁹⁶ Includes incentives, interest rate buydowns and loan loss reserves.

¹⁹⁷ Includes only the MMBtus for the HES audit. MMTBtus for other ECMs are not included.

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TABLE 151. LOW INCOME SOLAR LEASE PROJECT AVERAGES BY FY CLOSED

Fiscal Year	Average Total Investment	Average Amount Financed	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)	Average Finance Term (months)	Average Lease Price per Month	Average ESA Price per month ¹⁹⁸
2012	\$0	\$0	0.0	0	0	\$0	-
2013	\$0	\$0	0.0	0	0	\$0	-
2014	\$0	\$0	0.0	0	0	\$0	-
2015	\$27,345	\$27,345	6.3	41	240	\$79	\$10
2016	\$28,747	\$28,747	6.5	41	240	\$81	\$10
2017	\$27,415	\$27,415	6.4	41	240	\$80	\$10
2018	\$27,890	\$27,890	6.7	42	240	\$86	\$10
2019	\$29,370	\$29,370	7.0	42	240	\$91	\$0
2020	\$26,451	\$26,451	6.3	42	240	\$83	\$0
2021	\$28,968	\$28,968	6.9	42	240	\$86	\$0
2022	\$28,423	\$28,423	6.8	42	240	\$82	\$0
Average	\$28,188	\$28,188	6.7	42	240	\$85	\$10

In fiscal year 2019 PosiGen changed their lease structure so that all customers now receive in depth energy efficiency services that were previously part of an optional, \$10 a month energy savings agreement. This change helps ensure PosiGen customers are maximizing the benefits of their PV system to reduce total energy burden.

Customer Savings

Financial savings is an important motivator for many to go solar. It is especially so for the customers in the Solar for All initiative. Savings is calculated as the difference between the customers’ lease payment for their solar PV system and the cost of that electricity had it been purchased from the customer’s utility is how we estimate customer savings. This directly reduces their energy burden.

TABLE 152. LOW INCOME SOLAR LEASE ANNUAL SAVINGS¹⁹⁹

Fiscal Year	Annual Savings	Cumulative # of Meters ²⁰⁰	Generation kWh ²⁰¹	KW Installed
2012	\$0	0	0	0
2013	\$0	0	0	0
2014	\$0	0	0	0
2015	(\$35)	4	3,607	28

¹⁹⁸ PosiGen’s ESA provides energy efficiency measures valued at over \$2000 to lessees.

¹⁹⁹ All data points required to calculate annual savings for each meter may not be available yet as we wait on data ingestion.

²⁰⁰ The changes in Cumulative # of meters are due to more data points flowing into our calculator due to new data ingestion and now we are now using energize date instead of approval date to organize projects by FY, this will make it difficult to compare last year’s table to this year’s table.

²⁰¹ Generation is the production we see in our meters as of today: Any increase to generation is due to data backfilling or due to getting access to previously inaccessible meters; any decrease in generation from last year’s report is data that is temporarily missing due to a meter replacement. Annual Savings is a function of generation so there might be an increase or decrease in savings.

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Fiscal Year	Annual Savings	Cumulative # of Meters²⁰⁰	Generation kWh²⁰¹	KW Installed
2016	\$32,916	178	120,883	1,746
2017	\$83,190	552	1,807,597	4,062
2018	\$304,225	1416	4,738,755	9,811
2019	\$1,043,116	2,198	10,030,632	15,274
2020	\$1,128,994	2,777	14,494,192	18,961
2021	\$1,440,658	3,282	18,168,029	22,469
2022	\$1,581,062	3,583	20,665,962	24,664
Total	\$5,614,126	3,583	70,029,657	24,664

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Vulnerable Communities Penetration

The Low-Income Solar Lease has been directly targeted to reach those in vulnerable communities. The activity of the product towards this goal is displayed in the following table.

TABLE 153. LOW INCOME SOLAR LEASE ACTIVITY IN VULNERABLE AND NOT VULNERABLE COMMUNITIES BY FY CLOSED²⁰²

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2015	4	0	4	100%	0.0	0.0	0.0	100%	\$109,380	\$0	\$109,380	100%
2016	333	0	333	100%	2.2	0.0	2.2	100%	\$9,572,692	\$0	\$9,572,692	100%
2017	661	0	661	100%	4.2	0.0	4.2	100%	\$18,121,147	\$0	\$18,121,147	100%
2018	642	0	642	100%	4.3	0.0	4.3	100%	\$17,905,647	\$0	\$17,905,647	100%
2019	847	0	847	100%	5.9	0.0	5.9	100%	\$24,876,234	\$0	\$24,876,234	100%
2020	759	0	759	100%	4.8	0.0	4.8	100%	\$20,076,595	\$0	\$20,076,595	100%
2021	970	1	969	100%	6.7	0.0	6.7	100%	\$28,099,263	\$27,740	\$28,071,523	100%
2022	330	0	330	100%	2.2	0.0	2.2	100%	\$9,379,672	\$0	\$9,379,672	100%
Total	4,546	1	4,545	100%	30.3	0.0	30.3	100%	\$128,140,629	\$27,740	\$128,112,889	100%

Area Median Income Band Penetration

For a breakdown of PosiGen Solar for All volume and investment by census tracts categorized by Area Median Income bands – see Table 154. As an income-targeted program, this table illustrates the degree to which the goal of serving consumers in lower income communities is being met.

TABLE 154. LOW INCOME SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY FY CLOSED²⁰³

²⁰² Excludes projects in unknown communities.

²⁰³ Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2012	<60%	0	0%	0.0	0%	\$0	0%	62,689	7%	0.0	\$0.00	0.0
2012	60%-80%	0	0%	0.0	0%	\$0	0%	102,178	12%	0.0	\$0.00	0.0
2012	80%-100%	0	0%	0.0	0%	\$0	0%	150,685	17%	0.0	\$0.00	0.0
2012	100%-120%	0	0%	0.0	0%	\$0	0%	216,484	25%	0.0	\$0.00	0.0
2012	>120%	0	0%	0.0	0%	\$0	0%	349,212	40%	0.0	\$0.00	0.0
2012	Total	0	0%	0.0	0%	\$0	0%	881,248	100%	0.0	\$0.00	0.0
2013	<60%	0	0%	0.0	0%	\$0	0%	61,004	7%	0.0	\$0.00	0.0
2013	60%-80%	0	0%	0.0	0%	\$0	0%	109,967	13%	0.0	\$0.00	0.0
2013	80%-100%	0	0%	0.0	0%	\$0	0%	149,676	17%	0.0	\$0.00	0.0
2013	100%-120%	0	0%	0.0	0%	\$0	0%	202,827	23%	0.0	\$0.00	0.0
2013	>120%	0	0%	0.0	0%	\$0	0%	350,708	40%	0.0	\$0.00	0.0
2013	Total	0	0%	0.0	0%	\$0	0%	874,182	100%	0.0	\$0.00	0.0
2014	<60%	0	0%	0.0	0%	\$0	0%	59,294	7%	0.0	\$0.00	0.0
2014	60%-80%	0	0%	0.0	0%	\$0	0%	104,528	12%	0.0	\$0.00	0.0
2014	80%-100%	0	0%	0.0	0%	\$0	0%	148,846	17%	0.0	\$0.00	0.0
2014	100%-120%	0	0%	0.0	0%	\$0	0%	208,912	24%	0.0	\$0.00	0.0
2014	>120%	0	0%	0.0	0%	\$0	0%	347,779	40%	0.0	\$0.00	0.0
2014	Total	0	0%	0.0	0%	\$0	0%	869,359	100%	0.0	\$0.00	0.0
2015	<60%	3	75%	0.0	76%	\$82,380	75%	66,632	8%	0.0	\$1.24	0.3
2015	60%-80%	0	0%	0.0	0%	\$0	0%	96,059	11%	0.0	\$0.00	0.0
2015	80%-100%	0	0%	0.0	0%	\$0	0%	165,205	19%	0.0	\$0.00	0.0
2015	100%-120%	0	0%	0.0	0%	\$0	0%	183,629	21%	0.0	\$0.00	0.0
2015	>120%	1	25%	0.0	24%	\$27,000	25%	352,053	41%	0.0	\$0.08	0.0
2015	Total	4	100%	0.0	100%	\$109,380	100%	863,578	100%	0.0	\$0.13	0.0
2016	<60%	126	38%	0.8	37%	\$3,538,390	37%	63,056	7%	2.0	\$56.12	12.7
2016	60%-80%	74	22%	0.5	22%	\$2,152,697	22%	99,073	12%	0.7	\$21.73	4.9
2016	80%-100%	55	17%	0.4	17%	\$1,635,976	17%	165,012	19%	0.3	\$9.91	2.3
2016	100%-120%	37	11%	0.2	11%	\$1,034,383	11%	187,129	22%	0.2	\$5.53	1.3

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2016	>120%	41	12%	0.3	13%	\$1,211,246	13%	344,577	40%	0.1	\$3.52	0.8
2016	Total	333	100%	2.2	100%	\$9,572,692	100%	858,847	100%	0.4	\$11.15	2.5
2017	<60%	249	38%	1.5	35%	\$6,522,678	36%	64,755	7%	3.8	\$100.73	22.9
2017	60%-80%	144	22%	0.9	21%	\$3,883,348	21%	97,455	11%	1.5	\$39.85	9.2
2017	80%-100%	127	19%	0.8	20%	\$3,550,114	20%	155,414	18%	0.8	\$22.84	5.3
2017	100%-120%	61	9%	0.4	10%	\$1,824,184	10%	209,484	24%	0.3	\$8.71	2.0
2017	>120%	80	12%	0.6	13%	\$2,340,824	13%	339,362	39%	0.2	\$6.90	1.7
2017	Total	661	100%	4.2	100%	\$18,121,147	100%	866,470	100%	0.8	\$20.91	4.8
2018	<60%	217	34%	1.4	32%	\$5,834,990	33%	62,247	7%	3.5	\$93.74	22.2
2018	60%-80%	154	24%	1.0	23%	\$4,162,008	23%	109,142	13%	1.4	\$38.13	9.1
2018	80%-100%	122	19%	0.8	19%	\$3,445,604	19%	145,988	17%	0.8	\$23.60	5.7
2018	100%-120%	75	12%	0.5	13%	\$2,217,953	12%	204,880	24%	0.4	\$10.83	2.6
2018	>120%	74	12%	0.5	13%	\$2,245,093	13%	343,989	40%	0.2	\$6.53	1.6
2018	Total	642	100%	4.3	100%	\$17,905,647	100%	866,246	100%	0.7	\$20.67	4.9
2019	<60%	240	28%	1.6	26%	\$6,535,550	26%	62,247	7%	3.9	\$104.99	25.1
2019	60%-80%	211	25%	1.4	24%	\$5,946,613	24%	109,142	13%	1.9	\$54.49	13.1
2019	80%-100%	138	16%	1.0	16%	\$4,063,501	16%	145,988	17%	0.9	\$27.83	6.7
2019	100%-120%	137	16%	1.0	17%	\$4,254,558	17%	204,880	24%	0.7	\$20.77	4.9
2019	>120%	121	14%	1.0	16%	\$4,076,011	16%	343,989	40%	0.4	\$11.85	2.8
2019	Total	847	100%	5.9	100%	\$24,876,234	100%	865,756	100%	1.0	\$28.73	6.9
2020	<60%	203	27%	1.1	24%	\$4,745,166	24%	68,662	8%	3.0	\$69.11	16.6
2020	60%-80%	160	21%	1.0	20%	\$4,121,099	21%	105,090	12%	1.5	\$39.21	9.3
2020	80%-100%	156	21%	1.0	21%	\$4,174,006	21%	166,052	19%	0.9	\$25.14	6.0
2020	100%-120%	121	16%	0.8	17%	\$3,445,163	17%	209,603	24%	0.6	\$16.44	3.9
2020	>120%	119	16%	0.9	18%	\$3,591,161	18%	326,890	37%	0.4	\$10.99	2.6
2020	Total	759	100%	4.8	100%	\$20,076,595	100%	876,387	100%	0.9	\$22.91	5.5
2021	<60%	231	24%	1.4	21%	\$5,910,787	21%	68,662	8%	3.4	\$86.09	20.3
2021	60%-80%	171	18%	1.1	16%	\$4,630,452	16%	105,090	12%	1.6	\$44.06	10.3

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2021	80%-100%	183	19%	1.3	20%	\$5,488,439	20%	166,052	19%	1.1	\$33.05	7.8
2021	100%-120%	195	20%	1.4	21%	\$5,827,750	21%	209,603	24%	0.9	\$27.80	6.6
2021	>120%	189	20%	1.5	22%	\$6,214,095	22%	326,890	37%	0.6	\$19.01	4.5
2021	Total	969	100%	6.7	100%	\$28,071,523	100%	876,387	100%	1.1	\$32.03	7.6
2022	<60%	80	24%	0.5	22%	\$2,102,008	22%	68,662	8%	1.2	\$30.61	7.3
2022	60%-80%	52	16%	0.3	14%	\$1,326,718	14%	105,090	12%	0.5	\$12.62	3.0
2022	80%-100%	60	18%	0.4	18%	\$1,654,514	18%	166,052	19%	0.4	\$9.96	2.4
2022	100%-120%	75	23%	0.6	25%	\$2,336,901	25%	209,603	24%	0.4	\$11.15	2.7
2022	>120%	63	19%	0.5	21%	\$1,959,532	21%	326,890	37%	0.2	\$5.99	1.4
2022	Total	330	100%	2.2	100%	\$9,379,672	100%	876,387	100%	0.4	\$10.70	2.6
Total	<60%	1,349	30%	8.3	27%	\$35,271,948	28%	68,662	8%	19.6	\$513.70	120.7
Total	60%-80%	966	21%	6.2	20%	\$26,222,934	20%	105,090	12%	9.2	\$249.53	58.8
Total	80%-100%	841	19%	5.7	19%	\$24,012,154	19%	166,052	19%	5.1	\$144.61	34.3
Total	100%-120%	701	15%	5.0	16%	\$20,940,891	16%	209,603	24%	3.3	\$99.91	23.8
Total	>120%	688	15%	5.2	17%	\$21,664,962	17%	326,890	37%	2.1	\$66.28	15.8
Total	Total	4,545	100%	30.3	100%	\$128,112,889	100%	876,387	100%	5.2	\$146.18	34.6

TABLE 155. LOW INCOME SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED²⁰⁴

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%

²⁰⁴ Excludes projects in unknown bands.

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Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2015	4	1	3	75%	0.0	0.0	0.0	76%	\$109,380	\$27,000	\$82,380	75%
2016	333	78	255	77%	2.2	0.5	1.7	76%	\$9,572,692	\$2,245,629	\$7,327,062	77%
2017	661	141	520	79%	4.2	1.0	3.2	76%	\$18,121,147	\$4,165,008	\$13,956,140	77%
2018	642	149	493	77%	4.3	1.1	3.2	75%	\$17,905,647	\$4,463,045	\$13,442,602	75%
2019	847	258	589	70%	5.9	2.0	4.0	67%	\$24,876,234	\$8,330,569	\$16,545,665	67%
2020	759	240	519	68%	4.8	1.7	3.1	65%	\$20,076,595	\$7,036,325	\$13,040,270	65%
2021	969	384	585	60%	6.7	2.9	3.8	57%	\$28,071,523	\$12,041,845	\$16,029,678	57%
2022	330	138	192	58%	2.2	1.0	1.2	54%	\$9,379,672	\$4,296,433	\$5,083,239	54%
Total	4,545	1,389	3,156	69%	30.3	10.2	20.2	67%	\$128,112,889	\$42,605,854	\$85,507,035	67%

TABLE 156. LOW INCOME SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED²⁰⁵

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2012	0	0	0	0%	0.0	0	0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0	0	0%	\$0	\$0	\$0	0%
2014	0	0	0	0%	0.0	0	0	0%	\$0	\$0	\$0	0%
2015	4	0	4	100%	0.0	0	0	100%	\$109,380	\$0	\$109,380	100%
2016	333	0	333	100%	2.2	0	2	100%	\$9,572,692	\$0	\$9,572,692	100%
2017	661	0	661	100%	4.2	0	4	100%	\$18,121,147	\$0	\$18,121,147	100%
2018	642	0	642	100%	4.3	0	4	100%	\$17,905,647	\$0	\$17,905,647	100%
2019	847	0	847	100%	5.9	0	6	100%	\$24,876,234	\$0	\$24,876,234	100%
2020	759	0	759	100%	4.8	0	5	100%	\$20,076,595	\$0	\$20,076,595	100%
2021	969	0	969	100%	6.7	0	7	100%	\$28,071,523	\$0	\$28,071,523	100%
2022	330	0	330	100%	2.2	0	2	100%	\$9,379,672	\$0	\$9,379,672	100%
Total	4,545	0	4,545	100%	30.3	0	30	100%	\$128,112,889	\$0	\$128,112,889	100%

²⁰⁵ Excludes projects in unknown bands.

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The Green Bank has made great progress in its penetration of underserved markets and the low-income lease and ESA through PosiGen has been key to reaching these markets.

Distressed Community Penetration

For a breakdown of Low-Income Solar Lease project volume and investment by census tracts categorized by Distressed Communities – see Table 157. As an income-targeted program, this table illustrates the degree to which the goal of serving consumers in lower income communities is being met.

TABLE 157. LOW INCOME SOLAR LEASE ACTIVITY IN DISTRESSED COMMUNITIES BY FY CLOSED

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2012	Yes	0	0%	0.0	0%	\$0	0%	447,962	33%	0.0	\$0.00	0.0
2012	No	0	0%	0.0	0%	\$0	0%	912,222	67%	0.0	\$0.00	0.0
2012	Total	0	0%	0.0	0%	\$0	0%	1,360,184	100%	0.0	\$0.00	0.0
2013	Yes	0	0%	0.0	0%	\$0	0%	426,564	31%	0.0	\$0.00	0.0
2013	No	0	0%	0.0	0%	\$0	0%	929,285	69%	0.0	\$0.00	0.0
2013	Total	0	0%	0.0	0%	\$0	0%	1,355,849	100%	0.0	\$0.00	0.0
2014	Yes	0	0%	0.0	0%	\$0	0%	416,415	31%	0.0	\$0.00	0.0
2014	No	0	0%	0.0	0%	\$0	0%	939,791	69%	0.0	\$0.00	0.0
2014	Total	0	0%	0.0	0%	\$0	0%	1,356,206	100%	0.0	\$0.00	0.0
2015	Yes	2	50%	0.0	44%	\$49,500	45%	423,559	31%	0.0	\$0.12	0.0
2015	No	2	50%	0.0	56%	\$59,880	55%	929,024	69%	0.0	\$0.06	0.0
2015	Total	4	100%	0.0	100%	\$109,380	100%	1,352,583	100%	0.0	\$0.08	0.0
2016	Yes	195	59%	1.3	58%	\$5,572,292	58%	438,710	32%	0.4	\$12.70	2.9
2016	No	138	41%	0.9	42%	\$4,000,400	42%	916,003	68%	0.2	\$4.37	1.0
2016	Total	333	100%	2.2	100%	\$9,572,692	100%	1,354,713	100%	0.2	\$7.07	1.6
2017	Yes	406	61%	2.5	60%	\$10,882,517	60%	435,595	32%	0.9	\$24.98	5.8
2017	No	255	39%	1.7	40%	\$7,238,630	40%	926,160	68%	0.3	\$7.82	1.8
2017	Total	661	100%	4.2	100%	\$18,121,147	100%	1,361,755	100%	0.5	\$13.31	3.1
2018	Yes	405	63%	2.7	62%	\$11,140,960	62%	430,098	31%	0.9	\$25.90	6.2

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Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2018	No	237	37%	1.6	38%	\$6,764,687	38%	937,276	69%	0.3	\$7.22	1.7
2018	Total	642	100%	4.3	100%	\$17,905,647	100%	1,367,374	100%	0.5	\$13.09	3.1
2019	Yes	473	56%	3.2	54%	\$13,443,547	54%	421,653	31%	1.1	\$31.88	7.6
2019	No	374	44%	2.7	46%	\$11,432,687	46%	949,093	69%	0.4	\$12.05	2.9
2019	Total	847	100%	5.9	100%	\$24,876,234	100%	1,370,746	100%	0.6	\$18.15	4.3
2020	Yes	445	59%	2.7	55%	\$11,075,760	55%	427,553	31%	1.0	\$25.90	6.2
2020	No	314	41%	2.2	45%	\$9,000,835	45%	957,884	69%	0.3	\$9.40	2.2
2020	Total	759	100%	4.8	100%	\$20,076,595	100%	1,385,437	100%	0.5	\$14.49	3.5
2021	Yes	445	46%	2.8	43%	\$12,071,784	43%	375,703	27%	1.2	\$32.13	7.6
2021	No	524	54%	3.8	57%	\$15,999,739	57%	1,009,734	73%	0.5	\$15.85	3.8
2021	Total	969	100%	6.7	100%	\$28,071,523	100%	1,385,437	100%	0.7	\$20.26	4.8
2022	Yes	146	44%	0.9	42%	\$3,921,164	42%	375,703	27%	0.4	\$10.44	2.5
2022	No	184	56%	1.3	58%	\$5,458,508	58%	1,009,734	73%	0.2	\$5.41	1.3
2022	Total	330	100%	2.2	100%	\$9,379,672	100%	1,385,437	100%	0.2	\$6.77	1.6
Total	Yes	2,517	55%	16.1	53%	\$68,157,523	53%	375,703	27%	6.7	\$181.41	42.9
Total	No	2,028	45%	14.2	47%	\$59,955,365	47%	1,009,734	73%	2.0	\$59.38	14.1
Total	Total	4,545	100%	30.3	100%	\$128,112,889	100%	1,385,437	100%	3.3	\$92.47	21.9

TABLE 158. LOW INCOME SOLAR LEASE ACTIVITY IN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED²⁰⁶

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%

²⁰⁶ Excludes projects in unknown communities.

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Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
2015	4	2	2	50%	0.0	0.0	0.0	44%	\$109,380	\$59,880	\$49,500	45%
2016	333	138	195	59%	2.2	0.9	1.3	58%	\$9,572,692	\$4,000,400	\$5,572,292	58%
2017	661	255	406	61%	4.2	1.7	2.5	60%	\$18,121,147	\$7,238,630	\$10,882,517	60%
2018	642	237	405	63%	4.3	1.6	2.7	62%	\$17,905,647	\$6,764,687	\$11,140,960	62%
2019	847	374	473	56%	5.9	2.7	3.2	54%	\$24,876,234	\$11,432,687	\$13,443,547	54%
2020	759	314	445	59%	4.8	2.2	2.7	55%	\$20,076,595	\$9,000,835	\$11,075,760	55%
2021	969	524	445	46%	6.7	3.8	2.8	43%	\$28,071,523	\$15,999,739	\$12,071,784	43%
2022	330	184	146	44%	2.2	1.3	0.9	42%	\$9,379,672	\$5,458,508	\$3,921,164	42%
Total	4,545	2,028	2,517	55%	30.3	14.2	16.1	53%	\$128,112,889	\$59,955,365	\$68,157,523	53%

Environmental Justice Poverty Level Penetration

The progress made by the Low-Income Solar Lease in reaching Environmental Justice Communities is displayed in the following table.

TABLE 159. LOW INCOME SOLAR LEASE ACTIVITY IN ENVIRONMENTAL JUSTICE POVERTY AREAS BY FY CLOSED²⁰⁷

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2015	4	4	0	0%	0.0	0.0	0.0	0%	\$109,380	\$109,380	\$0	0%
2016	333	325	8	2%	2.2	2.1	0.1	2%	\$9,572,692	\$9,345,041	\$227,651	2%
2017	661	641	20	3%	4.2	4.1	0.1	3%	\$18,121,147	\$17,612,305	\$508,842	3%
2018	642	613	29	5%	4.3	4.1	0.2	5%	\$17,905,647	\$17,084,363	\$821,285	5%
2019	847	801	46	5%	5.9	5.6	0.3	5%	\$24,876,234	\$23,552,811	\$1,323,423	5%
2020	759	725	34	4%	4.8	4.6	0.2	5%	\$20,076,595	\$19,160,881	\$915,713	5%

²⁰⁷ Excludes projects in unknown bands.

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Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2021	970	914	56	6%	6.7	6.3	0.4	5%	\$28,099,263	\$26,543,302	\$1,555,961	6%
2022	330	315	15	5%	2.2	2.1	0.1	4%	\$9,379,672	\$8,964,036	\$415,635	4%
Total	4,546	4,338	208	5%	30.3	29.0	1.4	5%	\$128,140,629	\$122,372,120	\$5,768,509	5%

Ethnicity

The progress made by the low-income solar lease in reaching diverse communities is displayed in the following table.

TABLE 160. LOW INCOME SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY ETHNICITY CATEGORY BY FY CLOSED²⁰⁸

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2012	<60%	0	0.0%	13,052	20.8%	0	0.0%	21,021	33.5%	0	0.0%	28,616	45.6%	0	0.0%	0	0.0%
2012	60%-80%	0	0.0%	8,714	8.5%	0	0.0%	7,447	7.3%	0	0.0%	86,017	84.2%	0	0.0%	0	0.0%
2012	80%-100%	0	0.0%	3,490	2.3%	0	0.0%	0	0.0%	0	0.0%	147,195	97.7%	0	0.0%	0	0.0%
2012	100%-120%	0	0.0%	3,488	1.6%	0	0.0%	0	0.0%	0	0.0%	212,996	98.4%	0	0.0%	0	0.0%
2012	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	349,212	100.0%	0	0.0%	0	0.0%
2012	Total	0	0.0%	28,744	3.3%	0	0.0%	28,468	3.2%	0	0.0%	824,036	93.5%	0	0.0%	0	0.0%
2013	<60%	0	0.0%	10,766	17.6%	0	0.0%	21,781	35.7%	0	0.0%	28,457	46.6%	0	0.0%	0	0.0%
2013	60%-80%	0	0.0%	10,827	9.8%	0	0.0%	9,574	8.7%	0	0.0%	89,566	81.4%	0	0.0%	0	0.0%
2013	80%-100%	0	0.0%	1,926	1.3%	0	0.0%	0	0.0%	0	0.0%	147,750	98.7%	0	0.0%	0	0.0%
2013	100%-120%	0	0.0%	3,177	1.6%	0	0.0%	0	0.0%	0	0.0%	199,650	98.4%	0	0.0%	0	0.0%
2013	>120%	0	0.0%	1,808	0.5%	0	0.0%	0	0.0%	0	0.0%	348,900	99.5%	0	0.0%	0	0.0%
2013	Total	0	0.0%	28,504	3.3%	0	0.0%	31,355	3.6%	0	0.0%	814,323	93.2%	0	0.0%	0	0.0%

²⁰⁸ Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2014	<60%	0	0.0%	12,067	20.4%	0	0.0%	17,945	30.3%	0	0.0%	29,282	49.4%	0	0.0%	0	0.0%
2014	60%-80%	0	0.0%	8,576	8.2%	0	0.0%	10,507	10.1%	0	0.0%	85,445	81.7%	0	0.0%	0	0.0%
2014	80%-100%	0	0.0%	1,868	1.3%	0	0.0%	1,491	1.0%	0	0.0%	145,487	97.7%	0	0.0%	0	0.0%
2014	100%-120%	0	0.0%	3,280	1.6%	0	0.0%	0	0.0%	0	0.0%	205,632	98.4%	0	0.0%	0	0.0%
2014	>120%	0	0.0%	3,745	1.1%	0	0.0%	0	0.0%	0	0.0%	344,034	98.9%	0	0.0%	0	0.0%
2014	Total	0	0.0%	29,536	3.4%	0	0.0%	29,943	3.4%	0	0.0%	809,880	93.2%	0	0.0%	0	0.0%
2015	<60%	2	66.7%	12,243	18.4%	0	0.0%	27,292	41.0%	1	33.3%	27,097	40.7%	0	0.0%	0	0.0%
2015	60%-80%	0	0.0%	7,491	7.8%	0	0.0%	7,075	7.4%	0	0.0%	81,493	84.8%	0	0.0%	0	0.0%
2015	80%-100%	0	0.0%	5,767	3.5%	0	0.0%	513	0.3%	0	0.0%	158,372	95.9%	0	0.0%	553	0.3%
2015	100%-120%	0	0.0%	863	0.5%	0	0.0%	0	0.0%	0	0.0%	182,766	99.5%	0	0.0%	0	0.0%
2015	>120%	0	0.0%	1,877	0.5%	0	0.0%	0	0.0%	1	100.0%	350,176	99.5%	0	0.0%	0	0.0%
2015	Total	2	50.0%	28,241	3.3%	0	0.0%	34,880	4.0%	2	50.0%	799,904	92.6%	0	0.0%	553	0.1%
2016	<60%	60	47.6%	11,333	18.0%	40	31.7%	26,620	42.2%	26	20.6%	25,103	39.8%	0	0.0%	0	0.0%
2016	60%-80%	7	9.5%	7,872	7.9%	12	16.2%	8,551	8.6%	55	74.3%	82,650	83.4%	0	0.0%	0	0.0%
2016	80%-100%	6	10.9%	4,736	2.9%	0	0.0%	937	0.6%	49	89.1%	159,339	96.6%	0	0.0%	0	0.0%
2016	100%-120%	1	2.7%	0	0.0%	0	0.0%	0	0.0%	36	97.3%	186,570	99.7%	0	0.0%	559	0.3%
2016	>120%	2	4.9%	3,063	0.9%	0	0.0%	0	0.0%	39	95.1%	341,514	99.1%	0	0.0%	0	0.0%
2016	Total	76	22.8%	27,004	3.1%	52	15.6%	36,108	4.2%	205	61.6%	795,176	92.6%	0	0.0%	559	0.1%
2017	<60%	73	29.3%	11,916	18.4%	129	51.8%	28,817	44.5%	47	18.9%	24,022	37.1%	0	0.0%	0	0.0%
2017	60%-80%	20	13.9%	5,276	5.4%	24	16.7%	12,600	12.9%	100	69.4%	79,579	81.7%	0	0.0%	0	0.0%
2017	80%-100%	8	6.3%	4,323	2.8%	7	5.5%	2,062	1.3%	112	88.2%	149,029	95.9%	0	0.0%	0	0.0%
2017	100%-120%	1	1.6%	1,101	0.5%	0	0.0%	0	0.0%	59	96.7%	207,746	99.2%	1	1.6%	637	0.3%
2017	>120%	5	6.3%	4,014	1.2%	0	0.0%	0	0.0%	75	93.8%	335,348	98.8%	0	0.0%	0	0.0%
2017	Total	107	16.2%	26,630	3.1%	160	24.2%	43,479	5.0%	393	59.5%	795,724	91.8%	1	0.2%	637	0.1%
2018	<60%	98	45.2%	10,135	16.3%	90	41.5%	28,053	45.1%	29	13.4%	24,059	38.7%	0	0.0%	0	0.0%
2018	60%-80%	40	26.0%	7,948	7.3%	33	21.4%	11,560	10.6%	81	52.6%	89,634	82.1%	0	0.0%	0	0.0%
2018	80%-100%	14	11.5%	4,704	3.2%	17	13.9%	3,271	2.2%	91	74.6%	138,013	94.5%	0	0.0%	0	0.0%
2018	100%-120%	6	8.0%	2,274	1.1%	0	0.0%	0	0.0%	69	92.0%	201,977	98.6%	0	0.0%	629	0.3%

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2018	>120%	10	13.5%	2,828	0.8%	0	0.0%	0	0.0%	64	86.5%	341,161	99.2%	0	0.0%	0	0.0%
2018	Total	168	26.2%	27,889	3.2%	140	21.8%	42,884	5.0%	334	52.0%	794,844	91.8%	0	0.0%	629	0.1%
2019	<60%	91	37.9%	10,903	17.0%	99	41.3%	29,840	46.5%	50	20.8%	23,497	36.6%	0	0.0%	0	0.0%
2019	60%-80%	49	23.2%	6,102	6.0%	27	12.8%	10,367	10.3%	135	64.0%	84,519	83.7%	0	0.0%	0	0.0%
2019	80%-100%	22	15.9%	5,119	3.3%	10	7.2%	1,488	1.0%	106	76.8%	148,956	95.8%	0	0.0%	0	0.0%
2019	100%-120%	13	9.5%	3,330	1.6%	0	0.0%	627	0.3%	122	89.1%	202,850	97.8%	2	1.5%	648	0.3%
2019	>120%	3	2.5%	2,074	0.6%	0	0.0%	0	0.0%	118	97.5%	335,436	99.4%	0	0.0%	0	0.0%
2019	Total	178	21.0%	27,528	3.2%	136	16.1%	42,322	4.9%	531	62.7%	795,258	91.9%	2	0.2%	648	0.1%
2020	<60%	63	31.0%	12,029	17.5%	96	47.3%	27,793	40.5%	44	21.7%	28,840	42.0%	0	0.0%	0	0.0%
2020	60%-80%	19	11.9%	6,275	6.0%	30	18.8%	20,490	19.5%	111	69.4%	78,311	74.5%	0	0.0%	14	0.0%
2020	80%-100%	18	11.5%	4,243	2.6%	13	8.3%	5,388	3.2%	125	80.1%	156,421	94.2%	0	0.0%	0	0.0%
2020	100%-120%	7	5.8%	4,328	2.1%	1	0.8%	0	0.0%	112	92.6%	204,447	97.5%	1	0.8%	828	0.4%
2020	>120%	1	0.8%	0	0.0%	0	0.0%	0	0.0%	118	99.2%	326,890	100.0%	0	0.0%	0	0.0%
2020	Total	108	14.2%	26,875	3.1%	140	18.4%	53,671	6.1%	510	67.2%	794,999	90.7%	1	0.1%	842	0.1%
2021	<60%	71	30.7%	12,029	17.5%	115	49.8%	27,793	40.5%	45	19.5%	28,840	42.0%	0	0.0%	0	0.0%
2021	60%-80%	29	17.0%	6,275	6.0%	43	25.1%	20,490	19.5%	99	57.9%	78,311	74.5%	0	0.0%	14	0.0%
2021	80%-100%	14	7.7%	4,243	2.6%	9	4.9%	5,388	3.2%	160	87.4%	156,421	94.2%	0	0.0%	0	0.0%
2021	100%-120%	11	5.6%	4,328	2.1%	0	0.0%	0	0.0%	184	94.4%	204,447	97.5%	0	0.0%	828	0.4%
2021	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	189	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2021	Total	125	12.9%	26,875	3.1%	167	17.2%	53,671	6.1%	677	69.9%	794,999	90.7%	0	0.0%	842	0.1%
2022	<60%	29	36.3%	12,029	17.5%	31	38.8%	27,793	40.5%	20	25.0%	28,840	42.0%	0	0.0%	0	0.0%
2022	60%-80%	5	9.6%	6,275	6.0%	13	25.0%	20,490	19.5%	34	65.4%	78,311	74.5%	0	0.0%	14	0.0%
2022	80%-100%	2	3.3%	4,243	2.6%	3	5.0%	5,388	3.2%	55	91.7%	156,421	94.2%	0	0.0%	0	0.0%
2022	100%-120%	1	1.3%	4,328	2.1%	0	0.0%	0	0.0%	74	98.7%	204,447	97.5%	0	0.0%	828	0.4%
2022	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	63	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2022	Total	37	11.2%	26,875	3.1%	47	14.2%	53,671	6.1%	246	74.5%	794,999	90.7%	0	0.0%	842	0.1%
Total	<60%	487	36.1%	12,029	17.5%	600	44.5%	27,793	40.5%	262	19.4%	28,840	42.0%	0	0.0%	0	0.0%
Total	60%-80%	169	17.5%	6,275	6.0%	182	18.8%	20,490	19.5%	615	63.7%	78,311	74.5%	0	0.0%	14	0.0%

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		Majority Black				Majority Hispanic				Majority White				Majority Asian			
Fiscal Year	MSA AMI Band	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
Total	80%-100%	84	10.0%	4,243	2.6%	59	7.0%	5,388	3.2%	698	83.0%	156,421	94.2%	0	0.0%	0	0.0%
Total	100%-120%	40	5.7%	4,328	2.1%	1	0.1%	0	0.0%	656	93.6%	204,447	97.5%	4	0.6%	828	0.4%
Total	>120%	21	3.1%	0	0.0%	0	0.0%	0	0.0%	667	96.9%	326,890	100.0%	0	0.0%	0	0.0%
Total	Total	801	17.6%	26,875	3.1%	842	18.5%	53,671	6.1%	2,898	63.8%	794,999	90.7%	4	0.1%	842	0.1%

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Societal Benefits

Over the course of its existence, the program has supported the creation of 1,213 job years, avoided the lifetime emission of 745,258 tons of carbon dioxide, 714,549 pounds of nitrous oxide, 593,147 pounds of sulfur oxide, and 63,611 pounds of particulate matter as illustrated by Table 161 and Table 163.

The Low-Income Solar Lease has generated \$3.1 million in tax revenues for the State of Connecticut since its inception as shown in Table 162. The lifetime economic value of the public health impacts from the Green Bank’s partnership with PosiGen programs is estimated to be between \$22.2 and \$50.2 as seen in Table 164.

TABLE 161. LOW INCOME SOLAR LEASE JOB YEARS SUPPORTED BY FY CLOSED

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	0	0	0
2013	0	0	0
2014	0	0	0
2015	1	1	2
2016	57	90	147
2017	71	93	163
2018	70	90	161
2019	97	127	223
2020	77	103	180
2021	110	144	253
2022	36	48	84
Total	518	695	1,213

TABLE 162. LOW INCOME SOLAR LEASE TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0
2015	\$2,958	\$369	\$0	\$3,327
2016	\$258,850	\$32,295	\$0	\$291,146
2017	\$378,337	\$61,136	\$0	\$439,473
2018	\$373,838	\$60,409	\$0	\$434,248
2019	\$518,879	\$83,847	\$0	\$602,725
2020	\$419,047	\$67,714	\$0	\$486,760
2021	\$585,281	\$94,578	\$0	\$679,858
2022	\$195,183	\$31,539	\$0	\$226,722
Total	\$2,732,372	\$431,888	\$0	\$3,164,259

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6. PROGRAMS – LOW INCOME SOLAR LEASE

TABLE 163. LOW INCOME SOLAR LEASE AVOIDED EMISSIONS BY FY CLOSED

Fiscal Year	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
2012	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0
2015	25	620	25	634	18	453	2	54
2016	2,102	52,553	2,062	51,553	1,471	36,763	183	4,579
2017	4,010	100,249	3,621	90,529	2,616	65,390	344	8,589
2018	4,250	106,253	4,107	102,664	3,519	87,973	362	9,048
2019	5,800	145,012	5,603	140,081	4,808	120,191	494	12,345
2020	4,867	121,670	4,704	117,609	4,040	101,005	414	10,358
2021	6,545	163,630	6,322	158,057	5,418	135,453	557	13,933
2022	2,211	55,271	2,137	53,423	1,837	45,919	188	4,705
Total	29,810	745,258	28,582	714,549	23,726	593,147	2,544	63,611

TABLE 164. LOW INCOME SOLAR LEASE PUBLIC HEALTH IMPACT BY FY CLOSED

Fiscal Year	Annual		Lifetime	
	Low	High	Low	High
2012	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0
2015	\$855	\$1,931	\$21,385	\$48,281
2016	\$72,851	\$164,495	\$1,821,281	\$4,112,366
2017	\$140,915	\$318,207	\$3,522,870	\$7,955,179
2018	\$140,558	\$317,605	\$3,513,948	\$7,940,135
2019	\$159,544	\$361,550	\$3,988,593	\$9,038,749
2020	\$133,349	\$302,208	\$3,333,723	\$7,555,189
2021	\$180,136	\$408,205	\$4,503,407	\$10,205,115
2022	\$60,135	\$136,300	\$1,503,372	\$3,407,501
Total	\$888,343	\$2,010,501	\$22,208,580	\$50,262,515

Financial Performance

To date there have been forty-six defaults with an original principal balance of \$839,535 or 1.2% of the portfolio, of which one charge-off with original principal balance of \$16,798 or 0.03% of the portfolio. As of 6/30/2022²⁰⁹ there are 177 delinquencies totaling \$3,612,074 of original principal

²⁰⁹ July 2022 loan servicing report

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balance²¹⁰ or 4.62% of the portfolio. This performance is consistent with expectations for a low-to-moderate income targeted product using an alternative underwriting approach.

Marketing

To build the pipeline of projects for the lease, Connecticut Green Bank supports PosiGen's community-based marketing campaigns, leveraging the institution's market analysis and local experience and connections. The Green Bank also co-brands the program so partnering community organizations and consumers know there is governmental involvement, especially critical given the targeting of underserved communities and homeowners. This includes assisting with PosiGen's outreach efforts through its Solar for All campaigns which are modeled after Green Bank Solarize campaigns.

²¹⁰ Based on average lease price in PosiGen Pipeline Reporting July 2022

Case 6 – Multifamily Programs

Description

The Green Bank provides a suite of financing options that support property owners in assessing, designing, funding, and monitoring high impact energy efficiency and renewable energy upgrades for multifamily properties, defined as buildings with 5 or more units. The Green Bank contracted with Inclusive Prosperity Capital (IPC), to manage and administer these programs on behalf of CGB.

The Green Bank encourages owners to take a holistic approach to their buildings by implementing energy upgrades that will deliver a high return on investment over the long term through energy and operating cost savings, increased property values, and improvement of resident health, safety and living environment. The organization partners with building owners to finance a project design approach that is both technology and fuel agnostic – whereby owners identify the combination of renewable energy and energy efficiency measures/technology approaches that will deliver the most benefits and highest impact. This holistic approach and focus on deeper efficiency measures is particularly important in Connecticut due to the need of the state’s old and aging housing stock need for significant capital improvements and health and safety remediation. We are catalyzing holistic projects that reap the benefits of significant energy and operating cost savings, which can also be used to finance other capital improvements like full roof replacements and remediation of mold, asbestos, lead, etc. which have additional health and safety benefits.

The Green Bank Multifamily programs primarily target the low- and moderate-income market in Connecticut, for all ownership types, including private and non-profit owned apartments, condominiums, cooperatives, and state and federally funded affordable housing developments, including senior and assisted living facilities.

Pre-development resources

In a sector that is traditionally difficult to address, multifamily projects present a significant need for pre-development financing, trusted technical support, and streamlined access to funding programs. In 2015, the Green Bank established pre-development energy loan programs to support property owners in identifying high-quality technical assistance providers, and fund the work needed to scope and secure financing for deeper, cost-effective energy upgrades. Eligible assessment and design services funded under the pre-development Navigator loan include those for energy and water efficiency, efficient fuel conversion, renewable energy systems, energy storage and EV charging stations, qualified health and safety measures, and performance benchmarking.

The Green Bank is working to change the model of pre-development and technical assistance from one that is primarily grant-funded in the low- and moderate-income housing space to one that is loan driven and financially sustainable.

This program is supported by a revolving loan fund which provides loans of 1.99% to 3.99% for up to two-year terms. The affordable multifamily version of this program is administered in partnership with the Housing Development Fund (HDF), a local CDFI, and funded by a portion of a \$5 million program-related investment from the MacArthur Foundation.

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- **Navigator Pre-Development Energy Loan**²¹¹ funds pre-development costs for building owners to assess, scope and design their project.

Term Financing Solutions

The Green Bank offers the following term financing options for project implementation²¹².

- **Loans Improving Multifamily Energy (LIME) Loan**²¹³ typically funds energy improvement projects for low- and moderate-income properties (where at least 60% of units serve renters at 80% or lower of Area Median Income) and is geared towards mid-cycle energy improvements. LIME has recently been expanded to serve market rate properties in addition to properties that house low- and moderate-income residents. The LIME Loan program is delivered through a partnership with Capital for Change, a local CDFI. LIME typically provides alternatively secured loans (not secured by mortgages although mortgage security is also possible) that cover 100% of project costs, require no money down, and are repaid from energy cost savings for terms up to 20 years. Projected energy savings are used to cover the debt service of the loan. The Green Bank supports LIME with a \$625,000 loan loss reserve and provided \$3.5 million to capitalize the initial \$5 million loan fund. When it is necessary to lower the overall cost of capital to close a loan, funds from the \$5 million program-related investment from the MacArthur Foundation, housed at HDF, may be used to support the program.
- **CT Green Bank Power Purchase Agreements**²¹⁴ offer solar-only financing that allows owners to go solar and lock in lower long-term electricity rates with no upfront cost and without the risk or hassle of purchasing and maintaining a system. Solar financing is available for multifamily properties through the Green Bank's solar power purchase agreement facilities. See the Case 2 – CT Green Bank PPA & Solar Lease for more information.
- **Commercial Property Assessed Clean Energy**²¹⁵ (C-PACE) funds 100% of project costs with no money down. C-PACE loans are for a term of up to 20 years and are secured by using a benefit assessment on the borrower's property tax bill. The program serves market rate as well as affordable multifamily properties; however, to-date, given difficulties acquiring lender consent, multifamily C-PACE financing continues to be limited. See Case 1 – C-PACE for more information.
- **EnergizeCT Health & Safety Revolving Loan Fund**²¹⁶ funds health and safety improvements necessary to allow subsequent energy improvements in existing properties. The program is funded by \$1.5 million from DEEP and provides low-interest, 2.99% fixed rate loans made available on a rolling application basis.

²¹¹ Navigator Pre-Development Energy Loan: <https://www.ctgreenbank.com/programs/multifamily/navigator/>

²¹² Owners are also encouraged to seek other sources of capital if they can be secured under more favorable terms than those offered by the Green Bank.

²¹³ Loans Improving Multifamily Energy (LIME) Loan: <https://ctgreenbank.com/programs/multifamily/lime/>

²¹⁴ Solar Power Purchase Agreement: <https://ctgreenbank.com/programs/multifamily/solarppa/>

²¹⁵ Commercial Property Assessed Clean Energy: <http://www.CPACE.com/>

²¹⁶ <https://ctgreenbank.com/programs/multifamily/energizect-health-safety-loan/>

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6. PROGRAMS – MULTIFAMILY PROGRAMS

Key Performance Indicators

The Key Performance Indicators for Multifamily programs closed activity are reflected in Table 165 through

Table 167. These illustrate the volume of projects by year, investment, generation capacity installed, and the amount of energy saved and/or produced. It also breaks down the volume of projects by energy efficiency, renewable generation, or both.

TABLE 165. MULTIFAMILY PROJECT TYPES AND INVESTMENT BY FY CLOSED

Fiscal Year	EE	RE	RE/EE	Other	# Projects	# Project Units	Amount Financed	Total Investment ²¹⁷	Green Bank Investment ²¹⁸	Private Investment	Leverage Ratio
2012	0	0	0	0	0	0	\$0	\$0	\$0	\$0	0
2013	0	0	0	0	0	0	\$0	\$0	\$0	\$0	0
2014	1	0	0	0	1	120	\$250,000	\$420,000	\$0	\$420,000	0
2015	3	4	0	0	7	408	\$5,550,204	\$6,282,061	\$4,921,542	\$1,360,520	1.3
2016	14	15	1	1	31	1,767	\$28,041,912	\$34,005,715	\$1,256,148	\$32,749,567	27.1
2017	8	8	1	2	19	1,535	\$9,778,782	\$10,895,117	\$2,150,058	\$8,745,059	5.1
2018	6	2	1	10	19	1,792	\$8,979,221	\$9,493,247	\$158,914	\$9,334,333	59.7
2019	2	7	1	12	22	2,289	\$33,757,412	\$36,792,937	\$1,345,149	\$35,447,788	27.4
2020	4	7	4	2	17	1,273	\$7,350,101	\$7,805,699	\$343,523	\$7,462,176	22.7
2021	2	1	0	2	5	227	\$4,180,385	\$4,195,139	\$213,691	\$3,981,449	19.6
2022	1	1	1	0	3	184	\$2,060,000	\$2,060,000	\$1,959,400	\$100,600	1.1
Total	41	45	9	29	124	9,595	\$99,948,016	\$111,949,915	\$12,348,424	\$99,601,491	9.1

TABLE 166. MULTIFAMILY PROJECT CAPACITY, GENERATION AND SAVINGS BY FY CLOSED

Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)	Annual Cost Savings	Lifetime Cost Savings
2012	0.0	0	0	0	0	\$0	\$0
2013	0.0	0	0	0	0	\$0	\$0
2014	0.0	17,873	214	61	733	\$69,534	\$834,408
2015	1,030.0	4,147,155	101,912	5,450	130,331	\$243,673	\$5,918,657
2016	1,286.7	2,209,496	45,563	7,100	144,480	\$531,098	\$10,320,114
2017	2,278.8	2,620,026	63,326	11,557	105,941	\$370,090	\$6,926,347
2018	135.2	1,475,091	19,703	5,412	72,259	\$269,666	\$3,389,711
2019	1,032.3	4,710,729	74,304	6,265	93,967	\$345,822	\$4,838,273
2020	1,095.1	4,214,999	53,341	2,966	61,203	\$54,910	\$822,143
2021	41.1	46,782	1,170	1,370	18,611	\$25,475	\$354,618
2022	939.6	3,908,256	97,706	4,609	115,225	\$189,870	\$4,746,758
Total	7,838.8	23,350,407	457,237	44,789	742,751	\$2,100,139	\$38,151,031

²¹⁷ This number includes financing and investment for the entire project supported including clean energy, health and safety remediation, and project design.

²¹⁸ Includes incentives, interest rate buydowns and loan loss reserves.

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TABLE 167. MULTIFAMILY PROJECT AVERAGES BY FY CLOSED

Fiscal Year	Average Total Investment	Average Amount Financed	Average Amount Financed per Unit	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)	Average Finance Term (months)	Average Finance Rate
2012	\$0	\$0	\$0	0.0	0	0	0.00
2013	\$0	\$0	\$0	0.0	0	0	0.00
2014	\$420,000	\$250,000	\$2,083	0.0	61	9	6.00
2015	\$897,437	\$792,886	\$13,603	257.5	779	27	6.00
2016	\$1,096,959	\$904,578	\$17,172	80.4	229	13	4.29
2017	\$573,427	\$514,673	\$7,522	253.2	608	12	4.23
2018	\$499,645	\$472,591	\$16,847	45.1	285	11	2.73
2019	\$1,672,406	\$1,534,428	\$20,447	147.5	285	14	4.06
2020	\$459,159	\$432,359	\$9,176	136.9	174	17	6.00
2021	\$839,028	\$836,077	\$18,416	41.1	274	18	5.88
2022	\$686,667	\$686,667	\$11,196	469.8	1,536	10	5.00
Average	\$902,822	\$806,032	\$14,576	156.8	361	14	4.23

As the Green Bank’s Multifamily programs are predominantly income-targeted, Table 168 shows a breakdown of projects completed in a year by property type and reflects the number of units impacted.

TABLE 168. MULTIFAMILY PROJECTS BY LOW TO MODERATE INCOME (LMI) OR MARKET RATE PROPERTY BY FY CLOSED

Fiscal Year	Affordable		Market Rate		Total	
	# Projects	# Units	# Projects	# Units	# Projects	# Units
2014	1	120			1	120
2015	5	326	2	82	7	408
2016	26	1,442	1	191	27	1,633
2017	15	1,300			15	1,300
2018	12	533			12	533
2019	16	1,519	1	132	17	1,651
2020	11	698	2	103	13	801
2021	4	227	1	0	5	227
2022	2	102	1	82	3	184
Grand Total	92	6,267	8	590	100	6,857

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Vulnerable Communities Penetration

Due to the Multifamily focus on properties serving low-income residents, a majority of units served are in vulnerable communities.

TABLE 169. MULTIFAMILY ACTIVITY IN VULNERABLE AND NOT VULNERABLE COMMUNITIES BY FY CLOSED²¹⁹

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	120	0	120	100%	0.0	0.0	0.0	0%	\$420,000	\$0	\$420,000	100%
2015	408	0	408	100%	1.0	0.1	0.9	89%	\$6,282,061	\$438,750	\$5,843,311	93%
2016	1,767	191	1,576	89%	1.3	0.1	1.2	92%	\$34,005,715	\$330,082	\$33,675,633	99%
2017	1,535	0	1,535	100%	2.3	0.0	2.3	100%	\$10,895,117	\$0	\$10,895,117	100%
2018	1,792	0	1,792	100%	0.1	0.0	0.1	100%	\$9,493,247	\$0	\$9,493,247	100%
2019	2,289	0	2,289	100%	1.0	0.0	1.0	100%	\$36,792,937	\$0	\$36,792,937	100%
2020	1,273	0	1,273	100%	1.1	0.0	1.1	100%	\$7,805,699	\$0	\$7,805,699	100%
2021	227	0	227	100%	0.0	0.0	0.0	0%	\$4,195,139	\$113,991	\$4,081,148	97%
2022	184	0	184	100%	0.9	0.0	0.9	100%	\$2,060,000	\$0	\$2,060,000	100%
Total	9,595	191	9,404	98%	7.8	0.3	7.6	97%	\$111,949,915	\$882,823	\$111,067,092	99%

Area Median Income Band Penetration

For a breakdown of Multifamily volume and investment by census tracts categorized by Area Median Income bands – see Table 170. As a program predominantly focused on properties that serve low-to-moderate income residents, this table doesn't reflect the degree to which the goal of serving lower income residents is being met. The program is equally focused on affordable housing properties located in more affluent communities and affordable housing properties in lower income census tracts.

TABLE 170. MULTIFAMILY ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY FY CLOSED²²⁰

²¹⁹ Excludes projects in unknown communities.

²²⁰ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution	Project Units / 1,000 Owner/Rental Occupied 5+ Unit Households	Total Investment / Owner/Rental Occupied 5+ Unit Household	Watts / Owner/Rental Occupied 5+ Unit Household
2012	<60%	0	0%	0.0	0%	\$0	0%	82,921	36%	0.0	\$0.00	0.0
2012	60%-80%	0	0%	0.0	0%	\$0	0%	50,652	22%	0.0	\$0.00	0.0
2012	80%-100%	0	0%	0.0	0%	\$0	0%	44,767	19%	0.0	\$0.00	0.0
2012	100%-120%	0	0%	0.0	0%	\$0	0%	30,372	13%	0.0	\$0.00	0.0
2012	>120%	0	0%	0.0	0%	\$0	0%	21,402	9%	0.0	\$0.00	0.0
2012	Total	0	0%	0.0	0%	\$0	0%	230,119	100%	0.0	\$0.00	0.0
2013	<60%	0	0%	0.0	0%	\$0	0%	80,839	36%	0.0	\$0.00	0.0
2013	60%-80%	0	0%	0.0	0%	\$0	0%	52,190	23%	0.0	\$0.00	0.0
2013	80%-100%	0	0%	0.0	0%	\$0	0%	45,349	20%	0.0	\$0.00	0.0
2013	100%-120%	0	0%	0.0	0%	\$0	0%	27,681	12%	0.0	\$0.00	0.0
2013	>120%	0	0%	0.0	0%	\$0	0%	21,484	9%	0.0	\$0.00	0.0
2013	Total	0	0%	0.0	0%	\$0	0%	227,548	100%	0.0	\$0.00	0.0
2014	<60%	0	0%	0.0	0%	\$0	0%	81,615	35%	0.0	\$0.00	0.0
2014	60%-80%	0	0%	0.0	0%	\$0	0%	52,443	23%	0.0	\$0.00	0.0
2014	80%-100%	120	100%	0.0	0%	\$420,000	100%	41,554	18%	2.9	\$10.11	0.0
2014	100%-120%	0	0%	0.0	0%	\$0	0%	31,976	14%	0.0	\$0.00	0.0
2014	>120%	0	0%	0.0	0%	\$0	0%	22,534	10%	0.0	\$0.00	0.0
2014	Total	120	100%	0.0	0%	\$420,000	100%	230,127	100%	0.5	\$1.83	0.0
2015	<60%	16	4%	0.0	0%	\$33,234	1%	84,158	37%	0.2	\$0.39	0.0
2015	60%-80%	41	10%	0.0	0%	\$445,000	7%	44,668	19%	0.9	\$9.96	0.0
2015	80%-100%	113	28%	0.0	0%	\$540,000	9%	53,494	23%	2.1	\$10.09	0.0
2015	100%-120%	16	4%	0.0	1%	\$58,782	1%	24,388	11%	0.7	\$2.41	0.6
2015	>120%	222	54%	1.0	99%	\$5,205,046	83%	23,491	10%	9.5	\$221.58	43.3
2015	Total	408	100%	1.0	100%	\$6,282,061	100%	230,204	100%	1.8	\$27.29	4.5
2016	<60%	295	17%	0.1	6%	\$19,758,029	58%	86,225	37%	3.4	\$229.15	0.9
2016	60%-80%	193	11%	0.1	11%	\$1,815,713	5%	45,398	19%	4.3	\$40.00	3.2
2016	80%-100%	553	31%	0.5	38%	\$7,046,916	21%	49,125	21%	11.3	\$143.45	10.0
2016	100%-120%	672	38%	0.5	42%	\$5,290,361	16%	30,753	13%	21.9	\$172.03	17.7

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution	Project Units / 1,000 Owner/Rental Occupied 5+ Unit Households	Total Investment / Owner/Rental Occupied 5+ Unit Household	Watts / Owner/Rental Occupied 5+ Unit Household
2016	>120%	54	3%	0.0	2%	\$94,696	0%	22,618	10%	2.4	\$4.19	1.1
2016	Total	1,767	100%	1.3	100%	\$34,005,715	100%	234,119	100%	7.5	\$145.25	5.5
2017	<60%	653	43%	1.5	65%	\$4,410,412	40%	86,272	37%	7.6	\$51.12	17.2
2017	60%-80%	314	20%	0.3	14%	\$3,611,545	33%	43,920	19%	7.1	\$82.23	7.4
2017	80%-100%	455	30%	0.0	2%	\$1,558,600	14%	51,444	22%	8.8	\$30.30	0.8
2017	100%-120%	81	5%	0.3	11%	\$898,560	8%	32,673	14%	2.5	\$27.50	7.7
2017	>120%	32	2%	0.2	8%	\$416,000	4%	21,018	9%	1.5	\$19.79	8.3
2017	Total	1,535	100%	2.3	100%	\$10,895,117	100%	235,327	100%	6.5	\$46.30	9.7
2018	<60%	1,689	94%	0.0	27%	\$8,936,053	94%	83,249	35%	20.3	\$107.34	0.4
2018	60%-80%	6	0%	0.0	0%	\$50,000	1%	55,429	23%	0.1	\$0.90	0.0
2018	80%-100%	41	2%	0.0	0%	\$179,194	2%	45,080	19%	0.9	\$3.98	0.0
2018	100%-120%	32	2%	0.0	30%	\$170,000	2%	34,590	14%	0.9	\$4.91	1.2
2018	>120%	24	1%	0.1	43%	\$158,000	2%	21,753	9%	1.1	\$7.26	2.7
2018	Total	1,792	100%	0.1	100%	\$9,493,247	100%	240,101	100%	7.5	\$39.54	0.6
2019	<60%	1,295	57%	0.2	16%	\$27,735,377	75%	83,249	35%	15.6	\$333.16	1.9
2019	60%-80%	290	13%	0.4	43%	\$3,019,000	8%	55,429	23%	5.2	\$54.47	8.1
2019	80%-100%	523	23%	0.0	0%	\$741,057	2%	45,080	19%	11.6	\$16.44	0.0
2019	100%-120%	150	7%	0.3	34%	\$4,724,074	13%	34,590	14%	4.3	\$136.57	10.0
2019	>120%	31	1%	0.1	8%	\$573,430	2%	21,753	9%	1.4	\$26.36	3.6
2019	Total	2,289	100%	1.0	100%	\$36,792,937	100%	241,178	100%	9.5	\$152.56	4.3
2020	<60%	440	35%	0.6	58%	\$5,245,683	67%	78,211	32%	5.6	\$67.07	8.1
2020	60%-80%	241	19%	0.4	33%	\$1,754,119	22%	53,058	22%	4.5	\$33.06	6.8
2020	80%-100%	208	16%	0.1	9%	\$489,397	6%	56,675	23%	3.7	\$8.64	1.8
2020	100%-120%	384	30%	0.0	0%	\$316,500	4%	32,063	13%	12.0	\$9.87	0.0
2020	>120%	0	0%	0.0	0%	\$0	0%	21,904	9%	0.0	\$0.00	0.0
2020	Total	1,273	100%	1.1	100%	\$7,805,699	100%	241,958	100%	5.3	\$32.26	4.5
2021	<60%	88	40%	0.0	0%	\$645,400	21%	78,211	32%	1.1	\$8.25	0.0
2021	60%-80%	18	8%	0.0	0%	\$2,033,833	67%	53,058	22%	0.3	\$38.33	0.0

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner/Rental Occupied 5+ Unit Households	% Owner/Rental Occupied 5+ Unit Household Distribution	Project Units / 1,000 Owner/Rental Occupied 5+ Unit Households	Total Investment / Owner/Rental Occupied 5+ Unit Household	Watts / Owner/Rental Occupied 5+ Unit Household
2021	80%-100%	114	52%	0.0	0%	\$219,915	7%	56,675	23%	2.0	\$3.88	0.0
2021	100%-120%	0	0%	0.0	100%	\$113,991	4%	32,063	13%	0.0	\$3.56	1.3
2021	>120%	0	0%	0.0	0%	\$0	0%	21,904	9%	0.0	\$0.00	0.0
2021	Total	220	100%	0.0	100%	\$3,013,139	100%	241,958	100%	0.9	\$12.45	0.2
2022	<60%	18	10%	0.0	0%	\$61,000	3%	78,211	32%	0.2	\$0.78	0.0
2022	60%-80%	0	0%	0.0	0%	\$0	0%	53,058	22%	0.0	\$0.00	0.0
2022	80%-100%	0	0%	0.0	0%	\$0	0%	56,675	23%	0.0	\$0.00	0.0
2022	100%-120%	82	45%	0.9	96%	\$1,900,000	92%	32,063	13%	2.6	\$59.26	28.1
2022	>120%	84	46%	0.0	4%	\$99,000	5%	21,904	9%	3.8	\$4.52	1.8
2022	Total	184	100%	0.9	100%	\$2,060,000	100%	241,958	100%	0.8	\$8.51	3.9
Total	<60%	4,494	47%	2.4	31%	\$66,825,188	60%	78,211	32%	57.5	\$854.42	30.7
Total	60%-80%	1,103	12%	1.3	16%	\$12,729,209	11%	53,058	22%	20.8	\$239.91	24.1
Total	80%-100%	2,127	22%	0.6	8%	\$11,195,078	10%	56,675	23%	37.5	\$197.53	11.2
Total	100%-120%	1,417	15%	2.1	27%	\$13,472,268	12%	32,063	13%	44.2	\$420.18	66.7
Total	>120%	447	5%	1.4	18%	\$6,546,172	6%	21,904	9%	20.4	\$298.86	63.5
Total	Total	9,588	100%	7.8	100%	\$110,767,915	100%	241,958	100%	39.6	\$457.80	32.4

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

TABLE 171. MULTIFAMILY ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED²²¹

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	120	0	120	100%	0.0	0.0	0.0	0%	\$420,000	\$0	\$420,000	100%
2015	408	238	170	42%	1.0	1.0	0.0	0%	\$6,282,061	\$5,263,827	\$1,018,234	16%
2016	1,767	726	1,041	59%	1.3	0.6	0.7	56%	\$34,005,715	\$5,385,057	\$28,620,658	84%
2017	1,535	113	1,422	93%	2.3	0.4	1.9	81%	\$10,895,117	\$1,314,560	\$9,580,556	88%
2018	1,792	56	1,736	97%	0.1	0.1	0.0	27%	\$9,493,247	\$328,000	\$9,165,247	97%
2019	2,289	181	2,108	92%	1.0	0.4	0.6	59%	\$36,792,937	\$5,297,504	\$31,495,433	86%
2020	1,273	384	889	70%	1.1	0.0	1.1	100%	\$7,805,699	\$316,500	\$7,489,199	96%
2021	220	0	220	100%	0.0	0.0	0.0	0%	\$3,013,139	\$113,991	\$2,899,148	96%
2022	184	166	18	10%	0.9	0.9	0.0	0%	\$2,060,000	\$1,999,000	\$61,000	3%
Total	9,588	1,864	7,724	81%	7.8	3.5	4.3	55%	\$110,767,915	\$20,018,439	\$90,749,475	82%

²²¹ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

TABLE 172. MULTIFAMILY ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED²²²

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2012	0	0	0	0%	0.0	0	0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0	0	0%	\$0	\$0	\$0	0%
2014	120	0	120	100%	0.0	0	0	0%	\$420,000	\$0	\$420,000	100%
2015	408	82	326	80%	1.0	1	0	1%	\$6,282,061	\$5,138,750	\$1,143,311	18%
2016	1,767	191	1,576	89%	1.3	0	1	92%	\$34,005,715	\$330,082	\$33,675,633	99%
2017	1,535	100	1,435	93%	2.3	0	2	100%	\$10,895,117	\$8,600	\$10,886,517	100%
2018	1,792	0	1,792	100%	0.1	0	0	100%	\$9,493,247	\$0	\$9,493,247	100%
2019	2,289	0	2,289	100%	1.0	0	1	100%	\$36,792,937	\$0	\$36,792,937	100%
2020	1,273	32	1,241	97%	1.1	0	1	100%	\$7,805,699	\$159,489	\$7,646,210	98%
2021	220	0	220	100%	0.0	0	0	0%	\$3,013,139	\$113,991	\$2,899,148	96%
2022	184	82	102	55%	0.9	1	0	4%	\$2,060,000	\$1,900,000	\$160,000	8%
Total	9,588	487	9,101	95%	7.8	2	6	74%	\$110,767,915	\$7,650,912	\$103,117,003	93%

Distressed Community Penetration

For a breakdown of Multifamily project volume and investment by census tracts categorized by Distressed Communities – see Table 173. As a program predominantly focused on properties that serve low-to-moderate income residents, this table doesn’t reflect the degree to which the goal of serving lower income residents is being met. The program is equally focused on affordable housing properties located in more affluent communities and affordable housing properties in lower income census tracts.

TABLE 173. MULTIFAMILY ACTIVITY IN DISTRESSED COMMUNITIES BY FY CLOSED

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2012	Yes	0	0%	0.0	0%	\$0	0%	447,962	33%	0.0	\$0.00	0.0
2012	No	0	0%	0.0	0%	\$0	0%	912,222	67%	0.0	\$0.00	0.0

²²² Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2012	Total	0	0%	0.0	0%	\$0	0%	1,360,184	100%	0.0	\$0.00	0.0
2013	Yes	0	0%	0.0	0%	\$0	0%	426,564	31%	0.0	\$0.00	0.0
2013	No	0	0%	0.0	0%	\$0	0%	929,285	69%	0.0	\$0.00	0.0
2013	Total	0	0%	0.0	0%	\$0	0%	1,355,849	100%	0.0	\$0.00	0.0
2014	Yes	0	0%	0.0	0%	\$0	0%	416,415	31%	0.0	\$0.00	0.0
2014	No	120	100%	0.0	0%	\$420,000	100%	939,791	69%	0.1	\$0.45	0.0
2014	Total	120	100%	0.0	0%	\$420,000	100%	1,356,206	100%	0.1	\$0.31	0.0
2015	Yes	211	52%	0.9	87%	\$5,273,234	84%	423,559	31%	0.5	\$12.45	2.1
2015	No	197	48%	0.1	13%	\$1,008,827	16%	929,024	69%	0.2	\$1.09	0.1
2015	Total	408	100%	1.0	100%	\$6,282,061	100%	1,352,583	100%	0.3	\$4.64	0.8
2016	Yes	341	19%	0.3	26%	\$20,319,907	60%	438,710	32%	0.8	\$46.32	0.8
2016	No	1,426	81%	1.0	74%	\$13,685,808	40%	916,003	68%	1.6	\$14.94	1.0
2016	Total	1,767	100%	1.3	100%	\$34,005,715	100%	1,354,713	100%	1.3	\$25.10	0.9
2017	Yes	596	39%	1.4	63%	\$4,252,412	39%	435,595	32%	1.4	\$9.76	3.3
2017	No	939	61%	0.8	37%	\$6,642,705	61%	926,160	68%	1.0	\$7.17	0.9
2017	Total	1,535	100%	2.3	100%	\$10,895,117	100%	1,361,755	100%	1.1	\$8.00	1.7
2018	Yes	1,507	84%	0.0	27%	\$4,889,924	52%	430,098	31%	3.5	\$11.37	0.1
2018	No	285	16%	0.1	73%	\$4,603,323	48%	937,276	69%	0.3	\$4.91	0.1
2018	Total	1,792	100%	0.1	100%	\$9,493,247	100%	1,367,374	100%	1.3	\$6.94	0.1
2019	Yes	1,955	85%	0.7	69%	\$32,786,561	89%	421,653	31%	4.6	\$77.76	1.7
2019	No	334	15%	0.3	31%	\$4,006,376	11%	949,093	69%	0.4	\$4.22	0.3
2019	Total	2,289	100%	1.0	100%	\$36,792,937	100%	1,370,746	100%	1.7	\$26.84	0.8
2020	Yes	777	61%	0.9	79%	\$6,888,274	88%	427,553	31%	1.8	\$16.11	2.0
2020	No	496	39%	0.2	21%	\$917,425	12%	957,884	69%	0.5	\$0.96	0.2
2020	Total	1,273	100%	1.1	100%	\$7,805,699	100%	1,385,437	100%	0.9	\$5.63	0.8
2021	Yes	113	50%	0.0	0%	\$3,861,233	92%	375,703	27%	0.3	\$10.28	0.0
2021	No	114	50%	0.0	100%	\$333,906	8%	1,009,734	73%	0.1	\$0.33	0.0
2021	Total	227	100%	0.0	100%	\$4,195,139	100%	1,385,437	100%	0.2	\$3.03	0.0

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2022	Yes	100	54%	0.9	96%	\$1,961,000	95%	375,703	27%	0.3	\$5.22	2.4
2022	No	84	46%	0.0	4%	\$99,000	5%	1,009,734	73%	0.1	\$0.10	0.0
2022	Total	184	100%	0.9	100%	\$2,060,000	100%	1,385,437	100%	0.1	\$1.49	0.7
Total	Yes	5,600	58%	5.2	66%	\$80,232,545	72%	375,703	27%	14.9	\$213.55	13.8
Total	No	3,995	42%	2.7	34%	\$31,717,370	28%	1,009,734	73%	4.0	\$31.41	2.6
Total	Total	9,595	100%	7.8	100%	\$111,949,915	100%	1,385,437	100%	6.9	\$80.80	5.7

TABLE 174. MULTIFAMILY ACTIVITY IN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED²²³

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	120	120	0	0%	0.0	0.0	0.0	0%	\$420,000	\$420,000	\$0	0%
2015	408	197	211	52%	1.0	0.1	0.9	87%	\$6,282,061	\$1,008,827	\$5,273,234	84%
2016	1,767	1,426	341	19%	1.3	1.0	0.3	26%	\$34,005,715	\$13,685,808	\$20,319,907	60%
2017	1,535	939	596	39%	2.3	0.8	1.4	63%	\$10,895,117	\$6,642,705	\$4,252,412	39%
2018	1,792	285	1,507	84%	0.1	0.1	0.0	27%	\$9,493,247	\$4,603,323	\$4,889,924	52%
2019	2,289	334	1,955	85%	1.0	0.3	0.7	69%	\$36,792,937	\$4,006,376	\$32,786,561	89%
2020	1,273	496	777	61%	1.1	0.2	0.9	79%	\$7,805,699	\$917,425	\$6,888,274	88%
2021	227	114	113	50%	0.0	0.0	0.0	0%	\$4,195,139	\$333,906	\$3,861,233	92%
2022	184	84	100	54%	0.9	0.0	0.9	96%	\$2,060,000	\$99,000	\$1,961,000	95%
Total	9,595	3,995	5,600	58%	7.8	2.7	5.2	66%	\$111,949,915	\$31,717,370	\$80,232,545	72%

²²³ Excludes projects in unknown communities.

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

Environmental Justice Poverty Level Penetration

The progress made by the Multifamily Products in reaching environmental justice communities is displayed in the following table.

TABLE 175. MULTIFAMILY ACTIVITY IN ENVIRONMENTAL JUSTICE POVERTY AREAS BY FY CLOSED²²⁴

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	120	120	0	0%	0.0	0.0	0.0	0%	\$420,000	\$420,000	\$0	0%
2015	408	408	0	0%	1.0	1.0	0.0	0%	\$6,282,061	\$6,282,061	\$0	0%
2016	1,767	1,665	102	6%	1.3	1.3	0.0	0%	\$34,005,715	\$33,306,319	\$699,396	2%
2017	1,535	1,072	463	30%	2.3	2.2	0.1	5%	\$10,895,117	\$7,011,517	\$3,883,600	36%
2018	1,792	1,709	83	5%	0.1	0.1	0.0	30%	\$9,493,247	\$9,317,697	\$175,550	2%
2019	2,289	2,185	104	5%	1.0	1.0	0.0	0%	\$36,792,937	\$36,603,187	\$189,750	1%
2020	1,273	848	425	33%	1.1	1.1	0.0	0%	\$7,805,699	\$7,632,199	\$173,500	2%
2021	227	227	0	0%	0.0	0.0	0.0	0%	\$4,195,139	\$4,195,139	\$0	0%
2022	184	184	0	0%	0.9	0.9	0.0	0%	\$2,060,000	\$2,060,000	\$0	0%
Total	9,595	8,418	1,177	12%	7.8	7.7	0.2	2%	\$111,949,915	\$106,828,118	\$5,121,796	5%

Ethnicity

The progress made by the multifamily products in reaching diverse communities is displayed in the following table.

²²⁴ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

TABLE 176. MULTIFAMILY ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY ETHNICITY CATEGORY BY FY CLOSED²²⁵

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	ORH 5+ Units ²²⁶	% 5+ Units	# Project Units	% Project Units	ORH 5+ Units	% 5+ Units	# Project Units	% Project Units	ORH 5+ Units	% 5+ Units	# Project Units	% Project Units	ORH 5+ Units	% 5+ Units
2012	<60%	0	0.0%	13,052	20.8%	0	0.0%	21,021	33.5%	0	0.0%	28,616	45.6%	0	0.0%	0	0.0%
2012	60%-80%	0	0.0%	8,714	8.5%	0	0.0%	7,447	7.3%	0	0.0%	86,017	84.2%	0	0.0%	0	0.0%
2012	80%-100%	0	0.0%	3,490	2.3%	0	0.0%	0	0.0%	0	0.0%	147,195	97.7%	0	0.0%	0	0.0%
2012	100%-120%	0	0.0%	3,488	1.6%	0	0.0%	0	0.0%	0	0.0%	212,996	98.4%	0	0.0%	0	0.0%
2012	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	349,212	100.0%	0	0.0%	0	0.0%
2012	Total	0	0.0%	28,744	3.3%	0	0.0%	28,468	3.2%	0	0.0%	824,036	93.5%	0	0.0%	0	0.0%
2013	<60%	0	0.0%	10,766	17.6%	0	0.0%	21,781	35.7%	0	0.0%	28,457	46.6%	0	0.0%	0	0.0%
2013	60%-80%	0	0.0%	10,827	9.8%	0	0.0%	9,574	8.7%	0	0.0%	89,566	81.4%	0	0.0%	0	0.0%
2013	80%-100%	0	0.0%	1,926	1.3%	0	0.0%	0	0.0%	0	0.0%	147,750	98.7%	0	0.0%	0	0.0%
2013	100%-120%	0	0.0%	3,177	1.6%	0	0.0%	0	0.0%	0	0.0%	199,650	98.4%	0	0.0%	0	0.0%
2013	>120%	0	0.0%	1,808	0.5%	0	0.0%	0	0.0%	0	0.0%	348,900	99.5%	0	0.0%	0	0.0%
2013	Total	0	0.0%	28,504	3.3%	0	0.0%	31,355	3.6%	0	0.0%	814,323	93.2%	0	0.0%	0	0.0%
2014	<60%	0	0.0%	12,067	20.4%	0	0.0%	17,945	30.3%	0	0.0%	29,282	49.4%	0	0.0%	0	0.0%
2014	60%-80%	0	0.0%	8,576	8.2%	0	0.0%	10,507	10.1%	0	0.0%	85,445	81.7%	0	0.0%	0	0.0%
2014	80%-100%	0	0.0%	1,868	1.3%	0	0.0%	1,491	1.0%	120	100.0%	145,487	97.7%	0	0.0%	0	0.0%
2014	100%-120%	0	0.0%	3,280	1.6%	0	0.0%	0	0.0%	0	0.0%	205,632	98.4%	0	0.0%	0	0.0%
2014	>120%	0	0.0%	3,745	1.1%	0	0.0%	0	0.0%	0	0.0%	344,034	98.9%	0	0.0%	0	0.0%
2014	Total	0	0.0%	29,536	3.4%	0	0.0%	29,943	3.4%	120	100.0%	809,880	93.2%	0	0.0%	0	0.0%
2015	<60%	0	0.0%	12,243	18.4%	0	0.0%	27,292	41.0%	16	100.0%	27,097	40.7%	0	0.0%	0	0.0%
2015	60%-80%	0	0.0%	7,491	7.8%	41	100.0%	7,075	7.4%	0	0.0%	81,493	84.8%	0	0.0%	0	0.0%
2015	80%-100%	0	0.0%	5,767	3.5%	0	0.0%	513	0.3%	113	100.0%	158,372	95.9%	0	0.0%	553	0.3%
2015	100%-120%	0	0.0%	863	0.5%	0	0.0%	0	0.0%	16	100.0%	182,766	99.5%	0	0.0%	0	0.0%
2015	>120%	0	0.0%	1,877	0.5%	0	0.0%	0	0.0%	222	100.0%	350,176	99.5%	0	0.0%	0	0.0%

²²⁵ Excludes projects in unknown bands.

²²⁶ Total Owner and Rental Occupied 5+ Unit Households

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	ORH 5+ Units ²²⁶	% 5+ Units	# Project Units	% Project Units	ORH 5+ Units	% 5+ Units	# Project Units	% Project Units	ORH 5+ Units	% 5+ Units	# Project Units	% Project Units	ORH 5+ Units	% 5+ Units
2015	Total	0	0.0%	28,241	3.3%	41	10.0%	34,880	4.0%	367	90.0%	799,904	92.6%	0	0.0%	553	0.1%
2016	<60%	38	12.9%	11,333	18.0%	203	68.8%	26,620	42.2%	54	18.3%	25,103	39.8%	0	0.0%	0	0.0%
2016	60%-80%	0	0.0%	7,872	7.9%	0	0.0%	8,551	8.6%	193	100.0%	82,650	83.4%	0	0.0%	0	0.0%
2016	80%-100%	0	0.0%	4,736	2.9%	0	0.0%	937	0.6%	553	100.0%	159,339	96.6%	0	0.0%	0	0.0%
2016	100%-120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	481	71.6%	186,570	99.7%	191	28.4%	559	0.3%
2016	>120%	0	0.0%	3,063	0.9%	0	0.0%	0	0.0%	54	100.0%	341,514	99.1%	0	0.0%	0	0.0%
2016	Total	38	2.2%	27,004	3.1%	203	11.5%	36,108	4.2%	1,335	75.6%	795,176	92.6%	191	10.8%	559	0.1%
2017	<60%	0	0.0%	11,916	18.4%	596	91.3%	28,817	44.5%	57	8.7%	24,022	37.1%	0	0.0%	0	0.0%
2017	60%-80%	0	0.0%	5,276	5.4%	0	0.0%	12,600	12.9%	314	100.0%	79,579	81.7%	0	0.0%	0	0.0%
2017	80%-100%	0	0.0%	4,323	2.8%	0	0.0%	2,062	1.3%	455	100.0%	149,029	95.9%	0	0.0%	0	0.0%
2017	100%-120%	0	0.0%	1,101	0.5%	0	0.0%	0	0.0%	81	100.0%	207,746	99.2%	0	0.0%	637	0.3%
2017	>120%	0	0.0%	4,014	1.2%	0	0.0%	0	0.0%	32	100.0%	335,348	98.8%	0	0.0%	0	0.0%
2017	Total	0	0.0%	26,630	3.1%	596	38.8%	43,479	5.0%	939	61.2%	795,724	91.8%	0	0.0%	637	0.1%
2018	<60%	281	16.6%	10,135	16.3%	1,333	78.9%	28,053	45.1%	75	4.4%	24,059	38.7%	0	0.0%	0	0.0%
2018	60%-80%	0	0.0%	7,948	7.3%	0	0.0%	11,560	10.6%	6	100.0%	89,634	82.1%	0	0.0%	0	0.0%
2018	80%-100%	0	0.0%	4,704	3.2%	0	0.0%	3,271	2.2%	41	100.0%	138,013	94.5%	0	0.0%	0	0.0%
2018	100%-120%	0	0.0%	2,274	1.1%	0	0.0%	0	0.0%	32	100.0%	201,977	98.6%	0	0.0%	629	0.3%
2018	>120%	0	0.0%	2,828	0.8%	0	0.0%	0	0.0%	24	100.0%	341,161	99.2%	0	0.0%	0	0.0%
2018	Total	281	15.7%	27,889	3.2%	1,333	74.4%	42,884	5.0%	178	9.9%	794,844	91.8%	0	0.0%	629	0.1%
2019	<60%	264	20.4%	10,903	17.0%	1,024	79.1%	29,840	46.5%	7	0.5%	23,497	36.6%	0	0.0%	0	0.0%
2019	60%-80%	0	0.0%	6,102	6.0%	0	0.0%	10,367	10.3%	290	100.0%	84,519	83.7%	0	0.0%	0	0.0%
2019	80%-100%	0	0.0%	5,119	3.3%	0	0.0%	1,488	1.0%	523	100.0%	148,956	95.8%	0	0.0%	0	0.0%
2019	100%-120%	0	0.0%	3,330	1.6%	0	0.0%	627	0.3%	150	100.0%	202,850	97.8%	0	0.0%	648	0.3%
2019	>120%	0	0.0%	2,074	0.6%	0	0.0%	0	0.0%	31	100.0%	335,436	99.4%	0	0.0%	0	0.0%
2019	Total	264	11.5%	27,528	3.2%	1,024	44.7%	42,322	4.9%	1,001	43.7%	795,258	91.9%	0	0.0%	648	0.1%
2020	<60%	176	40.0%	12,029	17.5%	264	60.0%	27,793	40.5%	0	0.0%	28,840	42.0%	0	0.0%	0	0.0%
2020	60%-80%	0	0.0%	6,275	6.0%	159	66.0%	20,490	19.5%	82	34.0%	78,311	74.5%	0	0.0%	14	0.0%
2020	80%-100%	0	0.0%	4,243	2.6%	0	0.0%	5,388	3.2%	208	100.0%	156,421	94.2%	0	0.0%	0	0.0%

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	ORH 5+ Units ²²⁶	% 5+ Units	# Project Units	% Project Units	ORH 5+ Units	% 5+ Units	# Project Units	% Project Units	ORH 5+ Units	% 5+ Units	# Project Units	% Project Units	ORH 5+ Units	% 5+ Units
2020	100%-120%	0	0.0%	4,328	2.1%	0	0.0%	0	0.0%	384	100.0%	204,447	97.5%	0	0.0%	828	0.4%
2020	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	326,890	100.0%	0	0.0%	0	0.0%
2020	Total	176	13.8%	26,875	3.1%	423	33.2%	53,671	6.1%	674	52.9%	794,999	90.7%	0	0.0%	842	0.1%
2021	<60%	88	100.0%	12,029	17.5%	0	0.0%	27,793	40.5%	0	0.0%	28,840	42.0%	0	0.0%	0	0.0%
2021	60%-80%	0	0.0%	6,275	6.0%	0	0.0%	20,490	19.5%	18	100.0%	78,311	74.5%	0	0.0%	14	0.0%
2021	80%-100%	0	0.0%	4,243	2.6%	0	0.0%	5,388	3.2%	114	100.0%	156,421	94.2%	0	0.0%	0	0.0%
2021	100%-120%	0	0.0%	4,328	2.1%	0	0.0%	0	0.0%	0	0.0%	204,447	97.5%	0	0.0%	828	0.4%
2021	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	326,890	100.0%	0	0.0%	0	0.0%
2021	Total	88	40.0%	26,875	3.1%	0	0.0%	53,671	6.1%	132	60.0%	794,999	90.7%	0	0.0%	842	0.1%
2022	<60%	0	0.0%	12,029	17.5%	18	100.0%	27,793	40.5%	0	0.0%	28,840	42.0%	0	0.0%	0	0.0%
2022	60%-80%	0	0.0%	6,275	6.0%	0	0.0%	20,490	19.5%	0	0.0%	78,311	74.5%	0	0.0%	14	0.0%
2022	80%-100%	0	0.0%	4,243	2.6%	0	0.0%	5,388	3.2%	0	0.0%	156,421	94.2%	0	0.0%	0	0.0%
2022	100%-120%	0	0.0%	4,328	2.1%	0	0.0%	0	0.0%	82	100.0%	204,447	97.5%	0	0.0%	828	0.4%
2022	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	84	100.0%	326,890	100.0%	0	0.0%	0	0.0%
2022	Total	0	0.0%	26,875	3.1%	18	9.8%	53,671	6.1%	166	90.2%	794,999	90.7%	0	0.0%	842	0.1%
Total	<60%	847	18.8%	12,029	17.5%	3,438	76.5%	27,793	40.5%	209	4.7%	28,840	42.0%	0	0.0%	0	0.0%
Total	60%-80%	0	0.0%	6,275	6.0%	200	18.1%	20,490	19.5%	903	81.9%	78,311	74.5%	0	0.0%	14	0.0%
Total	80%-100%	0	0.0%	4,243	2.6%	0	0.0%	5,388	3.2%	2,127	100.0%	156,421	94.2%	0	0.0%	0	0.0%
Total	100%-120%	0	0.0%	4,328	2.1%	0	0.0%	0	0.0%	1,226	86.5%	204,447	97.5%	191	13.5%	828	0.4%
Total	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	447	100.0%	326,890	100.0%	0	0.0%	0	0.0%
Total	Total	847	8.8%	26,875	3.1%	3,638	37.9%	53,671	6.1%	4,912	51.2%	794,999	90.7%	191	2.0%	842	0.1%

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

Societal Benefits

Over the course of its existence, the Green Bank’s Multifamily Program has supported the creation of 2,627 job years, avoided the lifetime emission of 193,006 tons of carbon dioxide, 187,417 pounds of nitrous oxide, 158,478 pounds of sulfur oxide, and 7,652 pounds of particulate matter as illustrated by Table 177 and Table 179.

Multifamily programs are estimated to have generated \$14.5 million in tax revenues for the State of Connecticut since inception as shown in Table 178. The lifetime economic value of the public health impacts of these programs are estimated between \$3.7 and \$8.3 million as illustrated in Table 180.

TABLE 177. MULTIFAMILY JOB YEARS SUPPORTED BY FY CLOSED

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	0	0	0
2013	0	0	0
2014	5	9	14
2015	28	45	73
2016	380	606	986
2017	207	314	521
2018	151	197	348
2019	233	314	547
2020	18	23	40
2021	22	29	51
2022	18	29	47
Total	1,063	1,565	2,627

TABLE 178. MULTIFAMILY TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0
2014	\$28,346	\$8,258	\$24,487	\$61,092
2015	\$187,446	\$209,860	\$277,195	\$674,501
2016	\$1,965,119	\$703,277	\$1,533,106	\$4,201,501
2017	\$665,067	\$434,807	\$1,124,438	\$2,224,312
2018	\$777,572	\$530,210	\$1,557,411	\$2,865,193
2019	\$986,946	\$686,542	\$1,897,759	\$3,571,247
2020	\$93,903	\$74,384	\$107,396	\$275,682
2021	\$119,349	\$81,910	\$237,943	\$439,201
2022	\$65,322	\$76,854	\$102,811	\$244,987
Total	\$4,889,069	\$2,806,101	\$6,862,546	\$14,557,716

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

TABLE 179. MULTIFAMILY AVOIDED EMISSIONS BY FY CLOSED

Fiscal Year	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
2012	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0
2014	10	116	8	100	7	88	1	9
2015	2,166	53,182	1,851	45,168	1,708	41,482	13	258
2016	1,229	25,375	1,214	25,196	1,005	20,288	104	2,164
2017	1,427	34,484	1,287	31,150	967	23,270	121	2,941
2018	801	10,723	701	9,477	614	8,289	64	865
2019	201	5,034	195	4,868	168	4,191	17	428
2020	647	12,650	2,272	28,701	1,700	22,146	35	877
2021	26	646	25	625	22	538	2	55
2022	2,032	50,796	1,685	42,132	1,527	38,185	2	53
Total	8,538	193,006	9,238	187,417	7,718	158,478	360	7,652

TABLE 180. MULTIFAMILY ECONOMIC VALUE OF PUBLIC HEALTH IMPACT BY FY CLOSED

Fiscal Year	Annual		Lifetime	
	Low	High	Low	High
2012	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0
2014	\$295	\$667	\$3,539	\$8,000
2015	\$5,115	\$11,555	\$98,720	\$222,960
2016	\$40,706	\$91,939	\$858,016	\$1,937,594
2017	\$50,343	\$113,670	\$1,222,697	\$2,760,618
2018	\$24,786	\$56,022	\$336,256	\$759,928
2019	\$10,238	\$23,127	\$255,951	\$578,166
2020	\$9,416	\$21,259	\$235,403	\$531,478
2021	\$908	\$2,049	\$22,689	\$51,226
2022	\$27,155	\$61,385	\$678,872	\$1,534,614
Total	\$168,962	\$381,671	\$3,712,144	\$8,384,583

Financial Performance

To date there have been no defaults and as of 6/30/2022 there was 1 delinquency (for a pre-development loan) representing \$58,288 of original principal, 0.05% of the portfolio.

Marketing

The Green Bank’s multifamily programs are built on partnerships with key housing organizations in Connecticut that support the Green Bank’s multifamily programs with marketing, outreach, demonstration, and education programs to build awareness and demand from property owners. Our approach is to leverage and collaborate with these well-established organizations, building

CONNECTICUT GREEN BANK
6. PROGRAMS – MULTIFAMILY PROGRAMS

on their initiatives and programs, as we work to scale and “mainstream” holistic clean energy improvements in the multifamily sector. Key partners include CDFI’s Capital for Change and the Housing Development Fund, Department of Housing, Connecticut Housing Finance Authority, and the HUD Connecticut Field Office, as well as the utility companies. These organizations partner with us at conferences and in other public outreach and education activities.

In 2017, we established a Multifamily Peer-to-Peer network where advanced practitioners, including owners, developers, architects, professional service providers and funders, gather on a monthly basis to exchange information and discuss their projects – with the goal of building greater professional capacity in the sector and awareness of Green Bank programs. While the COVID-19 pandemic has brought the Peet-to-Peer network into the virtual world for its meetings, the Green Bank continues to sponsor and support the group. We have tapped the experts in the network on multiple occasions to ask for their input on policy and definitions that apply to this sector.

CONNECTICUT GREEN BANK
6. PROGRAMS – STRATEGIC INVESTMENTS

Case 7 – Strategic Investments

Description

The Green Bank’s financial resources may be considered for part of the capital stack for projects that are outside any of the organization’s existing programs and are aligned with its mission. Opportunities are evaluated as they arise, and projects are selected based on the opportunity to expand the Green Bank’s experience with specific technologies, advance economic development in a specific locale, or drive adoption of clean energy that might not otherwise occur.

Key Performance Indicators

The Key Performance Indicators for the Strategic Program closed activity are reflected in Table 181 through

Table 183.

TABLE 181. STRATEGIC PROJECT TYPES AND INVESTMENT BY FY CLOSED

Fiscal Year	EE	RE	RE/EE	Other	# Projects	Total Investment	Green Bank Investment ²²⁷	Private Investment	Leverage Ratio
2012	0	0	0	0	0	\$0	\$0	\$0	\$0
2013	0	1	0	0	1	\$70,800,000	\$5,800,000	\$65,000,000	12.2
2014	0	0	0	0	0	\$0	\$0	\$0	\$0
2015	1	1	0	1	2	\$56,500,000	\$3,227,000	\$53,273,000	17.5
2016	0	0	0	0	0	\$0	\$0	\$0	\$0
2017	0	1	0	0	1	\$4,538,212	\$3,900,000	\$638,212	1.2
2018	0	0	0	0	0	\$0	\$0	\$0	\$0
2019	0	1	0	0	1	\$6,503,800	\$1,200,000	\$5,303,800	5.4
2020	0	2	0	0	2	\$20,738,702	\$6,723,188	\$14,015,514	3.1
2021	0	0	0	0	0	\$0	\$0	\$0	\$0
2022	0	0	0	0	0	\$0	\$0	\$0	\$0
Total	1	6	0	0	7	\$159,080,714	\$20,850,188	\$138,230,526	7.6

TABLE 182. STRATEGIC PROJECT CAPACITY, GENERATION AND SAVINGS BY FY CLOSED

Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)
2012	0	0	0	0	0
2013	14,800.0	116,683,200	1,166,832	398,123	3,981,231
2014	0	0	0	0	0
2015	5,000.0	136,494,997	1,661,591	465,850	403,503
2016	0	0	0	0	0
2017	193.0	828,433	20,711	2,827	70,665
2018	0	0	0	0	0
2019	997.7	4,282,527	107,063	3,876	96,900
2020	7,700.0	60,444,000	614,952	29,919	305,015

²²⁷ Includes incentives, interest rate buydowns and loan loss reserves.

CONNECTICUT GREEN BANK
6. PROGRAMS – STRATEGIC INVESTMENTS

Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)
2021	0	0	0	0	0
2022	0	0	0	0	0
Total	28,690.7	318,733,060	3,571,149	900,594	10,124,702

TABLE 183. STRATEGIC PROJECT AVERAGES BY FY CLOSED

Fiscal Year	Average Total Investment	Average Amount Financed	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)
2012	\$0	\$0	0	0
2013	\$70,800,000	\$5,800,000	14,800.0	398,123
2014	\$0	\$0	0	0
2015	\$28,250,000	\$1,613,500	2,500.0	232,925
2016	\$0	\$0	0	0
2017	\$4,538,212	\$3,900,000	193.0	2,827
2018	\$0	\$0	0	0
2019	\$6,503,800	\$6,503,800	997.7	0
2020	\$10,369,351	\$10,369,351	3,850.0	0
2021	\$0	\$0	0	0
2022	\$0	\$0	0	0
Average	\$22,725,816	\$5,738,500	4,781.8	216,700

Societal Benefits

Ratepayers in Connecticut enjoy of the societal benefits of Strategic Investments. Over the course of its existence, the program has supported the creation of 2,096 job years, avoided the lifetime emission of 1,089,248 tons of carbon dioxide, 1,798,303 pounds of nitrous oxide, 1,454,162 pounds of sulfur oxide, and 17,794 pounds of particulate matter as illustrated by Table 184 and Table 186.

These projects are estimated to have generated \$15 million in tax revenues for the State of Connecticut since inception as shown in Table 185. The lifetime economic value of the public health impacts of these projects are estimated between \$15 and \$34 million as illustrated in Table 187.

TABLE 184. STRATEGIC JOB YEARS SUPPORTED BY FY CLOSED

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	0	0	0
2013	340	779	1,119
2014	0	0	0
2015	279	360	639
2016	0	0	0
2017	28	36	64
2018	0	0	0

CONNECTICUT GREEN BANK
6. PROGRAMS – STRATEGIC INVESTMENTS

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2019	38	49	87
2020	75	111	187
2021	0	0	0
2022	0	0	0
Total	760	1,336	2,096

TABLE 185. STRATEGIC TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$0	\$0	\$0	\$0
2013	\$1,782,886	\$503,246	\$3,907,840	\$6,193,972
2014	\$0	\$0	\$0	\$0
2015	\$2,001,357	\$1,253,139	\$3,036,598	\$6,291,094
2016	\$0	\$0	\$0	\$0
2017	\$148,127	\$176,704	\$237,072	\$561,903
2018	\$0	\$0	\$0	\$0
2019	\$212,284	\$253,238	\$339,752	\$805,275
2020	\$452,443	\$127,944	\$1,150,259	\$1,730,646
2021	\$0	\$0	\$0	\$0
2022	\$0	\$0	\$0	\$0
Total	\$4,597,097	\$2,078,414	\$8,792,602	\$15,468,113

TABLE 186. STRATEGIC AVOIDED EMISSIONS BY FY CLOSED

Fiscal Year	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
2012	0	0	0	0	0	0	0	0
2013	7,876	78,761	63,009	630,089	45,623	456,231	0	0
2014	0	0	0	0	0	0	0	0
2015	74,261	904,728	65,253	798,227	58,574	719,983	5,897	71,794
2016	0	0	0	0	0	0	0	0
2017	430	10,759	356	8,906	323	8,077	0	0
2018	0	0	0	0	0	0	0	0
2019	2,225	55,619	1,841	46,037	1,670	41,755	0	0
2020	3,938	39,381	31,504	315,045	22,812	228,116	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
Total	88,730	1,089,248	161,964	1,798,303	129,002	1,454,162	5,897	71,794

CONNECTICUT GREEN BANK
6. PROGRAMS – STRATEGIC INVESTMENTS

TABLE 187. STRATEGIC PUBLIC HEALTH IMPACT BY FY CLOSED

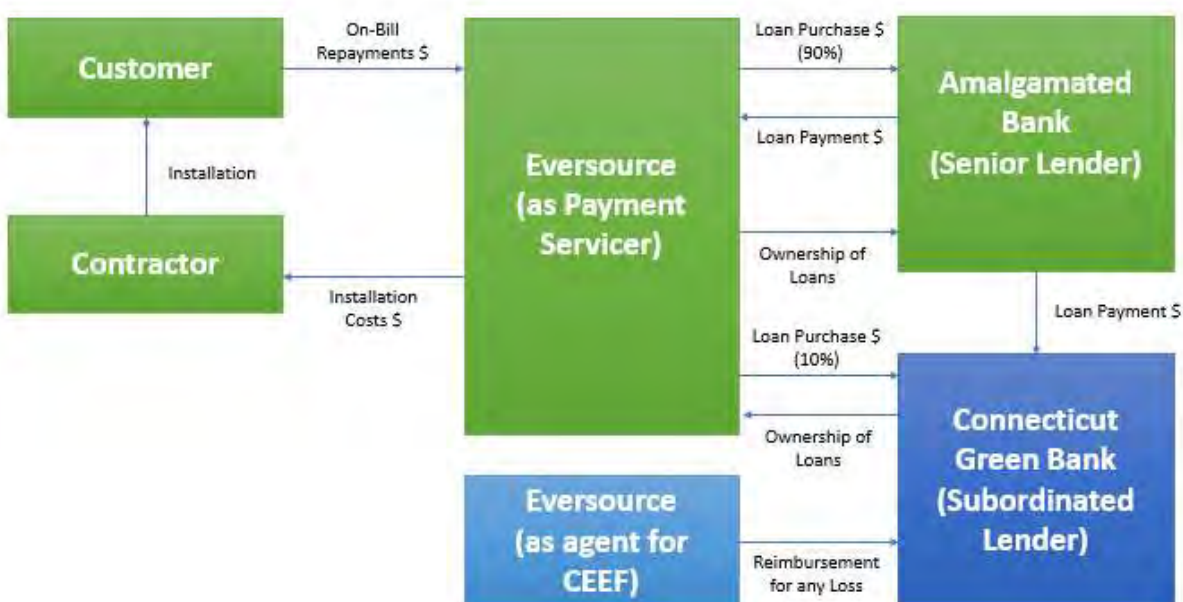
Fiscal Year	Annual		Lifetime	
	Low	High	Low	High
2012	\$0	\$0	\$0	\$0
2013	\$839,171	\$1,896,841	\$8,391,713	\$18,968,414
2014	\$0	\$0	\$0	\$0
2015	\$1,835,092	\$4,151,858	\$22,394,808	\$50,664,313
2016	\$0	\$0	\$0	\$0
2017	\$5,678	\$12,835	\$141,954	\$320,869
2018	\$0	\$0	\$0	\$0
2019	\$29,353	\$66,348	\$733,821	\$1,658,711
2020	\$419,586	\$948,421	\$4,195,856	\$9,484,207
2021	\$0	\$0	\$0	\$0
2022	\$0	\$0	\$0	\$0
Total	\$3,128,880	\$7,076,304	\$35,858,151	\$81,096,515

Case 8 – Small Business Energy Advantage (SBEA)

Description

The Small Business Energy Advantage program was created in partnership by the United Illuminating and Eversource under the guidance of the Energy Efficiency Board. The program enables small businesses, with an average 12-month peak demand between 10 and 200 kw to reduce their energy costs through energy efficiency improvements in their office, shops, restaurants, and factories. Businesses can borrow up to \$100,000 to address these measures, at zero interest and repay their financing on their electric bills. Municipalities and Connecticut State Agencies can borrow up to \$1,000,000.

FIGURE 14. LEGAL STRUCTURE AND FLOWS OF CAPITAL FOR SBEA



Key Performance Indicators

The Key Performance Indicators for SBEA closed activity are reflected in Table 188 and Table 189. These illustrate the volume of projects by year, investment, and generation capacity installed. They also break down the volume of projects by energy efficiency, renewable generation, or both.

TABLE 188. SBEA PROJECT TYPES AND INVESTMENT BY FY CLOSED

Fiscal Year	EE	# Projects	Total Investment	Green Bank Investment	Private Investment	Leverage Ratio
2012	0	0	\$0	\$0	\$0	0
2013	0	0	\$0	\$0	\$0	0
2014	0	0	\$0	\$0	\$0	0
2015	0	0	\$0	\$0	\$0	0
2016	0	0	\$0	\$0	\$0	0
2017	0	0	\$0	\$0	\$0	0

CONNECTICUT GREEN BANK
6. PROGRAMS – SBEA

Fiscal Year	EE	# Projects	Total Investment	Green Bank Investment	Private Investment	Leverage Ratio
2018	0	0	\$0	\$0	\$0	0
2019	4,339	4,339	\$47,681,205	\$4,486,648	\$43,194,557	10.6
2020	617	617	\$10,912,879	\$1,011,807	\$9,901,072	10.8
2021	438	438	\$8,778,001	\$839,926	\$7,938,075	10.5
2022	652	652	\$11,892,905	\$1,461,453	\$10,431,452	8.1
Total	6,046	6,046	\$79,264,990	\$7,799,834	\$71,465,156	10.2

TABLE 189. SBEA PROJECT CAPACITY, GENERATION AND SAVINGS BY FY CLOSED²²⁸

Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)	Annual Cost Savings	Lifetime Cost Savings
2012	0.0	0	0	0	0	\$0	\$0
2013	0.0	0	0	0	0	\$0	\$0
2014	0.0	0	0	0	0	\$0	\$0
2015	0.0	0	0	0	0	\$0	\$0
2016	0.0	0	0	0	0	\$0	\$0
2017	0.0	0	0	0	0	\$0	\$0
2018	0.0	0	0	0	0	\$0	\$0
2019	0.0	121,741,576	1,460,899	0	0	\$0	\$0
2020	0.0	17,311,456	207,737	0	0	\$0	\$0
2021	0.0	12,289,188	147,470	0	0	\$0	\$0
2022	0.0	18,293,583	219,523	0	0	\$0	\$0
Total	0.0	169,635,804	2,035,630	0	0	\$0	\$0

Societal Benefits

Over the course of its existence, the program has supported the creation of 959 job years, avoided the lifetime emission of 1,103,619 tons of carbon dioxide, 952,646 pounds of nitrous oxide, 836,923 pounds of sulfur oxide, and 87,878 pounds of particulate matter as illustrated by Table 190 and Table 191.

SBEA has generated \$8.4 million in tax revenues for the State of Connecticut since its inception as shown in Table 192. The lifetime economic value of the public health impacts of these projects are estimated between \$27.0 and \$61.2 million as illustrated in Table 193.

TABLE 190. SBEA JOB YEARS SUPPORTED BY FY CLOSED²²⁹

²²⁸ Energy Savings numbers for SBEA are provided by to the Green Bank by Eversource using their established methodology. These savings numbers are not included in overall Green Bank impact numbers.

²²⁹ These jobs estimates were calculated using the established Green Bank methodology but are not included in overall Green Bank impact numbers.

CONNECTICUT GREEN BANK
6. PROGRAMS – SBEA

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	0	0	0
2013	0	0	0
2014	0	0	0
2015	0	0	0
2016	0	0	0
2017	0	0	0
2018	0	0	0
2019	253	324	577
2020	58	74	132
2021	47	60	106
2022	63	81	144
Total	420	539	959

TABLE 191. SBEA AVOIDED EMISSIONS BY FY CLOSED²³⁰

Fiscal Year	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
2012	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	66,002	792,028	56,973	683,679	50,052	600,630	5,256	63,067
2020	9,385	112,625	8,102	97,218	7,117	85,409	747	8,968
2021	6,663	79,951	5,751	69,014	5,053	60,630	531	6,366
2022	9,918	119,015	8,561	102,734	7,521	90,254	790	9,477
Total	91,968	1,103,619	79,387	952,645	69,744	836,923	7,323	87,878

TABLE 192. SBEA TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0
2015	\$0	\$0	\$0	\$0

²³⁰ These avoided emissions are based on averages provided by Eversource.

CONNECTICUT GREEN BANK
6. PROGRAMS – SBEA

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2016	\$0	\$0	\$0	\$0
2017	\$0	\$0	\$0	\$0
2018	\$0	\$0	\$0	\$0
2019	\$1,373,552	\$937,508	\$2,779,957	\$5,091,018
2020	\$314,367	\$214,569	\$636,254	\$1,165,190
2021	\$252,868	\$172,593	\$511,784	\$937,245
2022	\$342,599	\$233,838	\$693,392	\$1,269,829
Total	\$2,283,387	\$1,558,508	\$4,621,387	\$8,463,282

TABLE 193. SBEA PUBLIC HEALTH IMPACT BY FY CLOSED

Fiscal Year	Annual		Lifetime	
	Low	High	Low	High
2012	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0
2015	\$0	\$0	\$0	\$0
2016	\$0	\$0	\$0	\$0
2017	\$0	\$0	\$0	\$0
2018	\$0	\$0	\$0	\$0
2019	\$1,619,163	\$3,664,421	\$19,429,956	\$43,973,057
2020	\$230,242	\$521,075	\$2,762,908	\$6,252,898
2021	\$163,446	\$369,905	\$1,961,354	\$4,438,855
2022	\$243,305	\$550,637	\$2,919,656	\$6,607,642
Total	\$2,256,156	\$5,106,038	\$27,073,874	\$61,272,453

Financing Program

SBEA offer participants zero-interest, on-bill financing for up to 4 years. Businesses are eligible for up to \$100,000 per meter, with higher limits for municipalities and the state. The Connecticut Green Bank and Amalgamated Bank have partnered together to supply capital for Eversource’s SBEA financing. The loans are originally funded by Eversource. Connecticut Green Bank and Amalgamated Bank purchase these loans on a quarterly basis at a rate discounted to bring their customer-facing rate to 0%. Connecticut Green Bank contributes 10% of the capital for these purchases and the remaining 90% comes from Amalgamated Bank. Loan losses are backed by the Connecticut Energy Efficiency Fund.

Financial Performance

As of June 30, 2022, there were 220 delinquent SBEA loans with a balance of \$ \$2,092,169 or 10.5% of the outstanding balance. These delinquencies represent 2.6% of the original balance.

CONNECTICUT GREEN BANK
6. PROGRAMS – SBEA

Marketing

SBEA is marketed by the utilities through a network of authorized contractors. They offer a free energy assessment and incentives, in addition to the financing. At present, the Green Bank is not involved with efforts to market SBEA.

Case 9 – Anaerobic Digestion and Combined Heat and Power Pilot Programs

Description

These pilot programs were initiated in 2011 per Public Act 11-80 Section 103, the Green Bank is to develop a three-year pilot program for AD and CHP by setting aside \$2 million a year for each pilot for three years – for a total of \$12 million. Funds to support the pilot programs could be used as grants, power purchase agreements or loans. There were to be no more than five (5) AD projects, each no more than 3 MW in size, and no more than 50 MW of CHP projects each not to exceed 5 MW in size. Both pilot programs supported projects at no more than \$450 per kW on a grant basis; Seven projects were supported over the duration of these pilots (see Table 143 below). Due to the Connecticut General Assembly’s reallocation of monies from the Clean Energy Fund to the General Fund in 2017, the Green Bank cancelled existing commitments for these pilots the following year.

Key Performance Indicators

The Key Performance Indicators for the AD and CHP Pilot Programs closed activity are reflected in Table 194 through Table 196. These illustrate the volume of projects by year, investment, generation capacity installed, and the amount of energy saved and/or produced. They also break down the volume of projects by energy efficiency, renewable generation, or both.

TABLE 194. AD AND CHP PILOT PROJECT TYPES AND INVESTMENT BY FY CLOSED

Fiscal Year	EE	RE	RE/EE	# Projects	Total Investment	Green Bank Investment²³¹	Private Investment	Leverage Ratio
2012	0	0	0	0	\$0	\$0	\$0	0
2013	0	2	0	2	\$3,189,000	\$304,500	\$2,884,500	10.5
2014	0	1	0	1	\$6,300,000	\$630,000	\$5,670,000	10.0
2015	0	2	0	2	\$642,578	\$60,750	\$581,828	10.6
2016	0	1	0	1	\$10,500,000	\$1,997,403	\$8,502,597	5.3
2017	0	1	0	1	\$3,401,392	\$502,860	\$2,898,532	6.8
2018	0	0	0	0	\$0	\$0	\$0	0
2019	0	0	0	0	\$0	\$0	\$0	0
2020	0	0	0	0	\$0	\$0	\$0	0
2021	0	0	0	0	\$0	\$0	\$0	0
2022	0	0	0	0	\$0	\$0	\$0	0
Total	0	7	0	7	\$24,032,970	\$3,495,513	\$20,537,457	6.9

²³¹ Includes incentives, interest rate buydowns and loan loss reserves.

CONNECTICUT GREEN BANK
6. PROGRAMS – PILOT PROGRAMS

TABLE 195. AD AND CHP PILOT PROJECT CAPACITY, GENERATION AND SAVINGS BY FY CLOSED

Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)	Annual Food/Organic Waste (tons/year)
2012	0	0	0	0	0	0
2013	685.0	5,400,540	81,008	32,533	488,002	0
2014	3,000.0	23,652,000	354,780	142,482	2,137,234	0
2015	135.0	1,064,340	15,965	4,000	60,001	0
2016	1,010.0	7,078,080	106,171	44,949	674,240	40,000
2017	795.0	6,267,780	94,017	304,445	4,566,675	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
Total	5,625.0	43,462,740	651,941	528,410	7,926,152	40,000

TABLE 196. AD AND CHP PILOT PROJECT AVERAGES BY FY CLOSED

Fiscal Year	Average Total Investment	Average Amount Financed	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)
2012	\$0	\$0	0	0
2013	\$1,594,500	\$0	342.5	16,267
2014	\$6,300,000	\$0	3,000.0	142,482
2015	\$321,289	\$0	67.5	2,000
2016	\$10,500,000	\$1,997,403	1,010.0	44,949
2017	\$3,401,392	\$502,860	795.0	304,445
2018	\$0	\$0	0	0
2019	\$0	\$0	0	0
2020	\$0	\$0	0	0
2021	\$0	\$0	0	0
2022	\$0	\$0	0	0
Average	\$3,433,281	\$1,250,132	803.6	75,487

Societal Benefits

Ratepayers in Connecticut continue to enjoy the societal benefits of the AD and CHP Programs despite the fact that the programs are now closed. Over the course of their existence, these programs have supported the creation of 188 job years as illustrated by Table 197, and generated over \$2 million in tax revenues for the State of Connecticut as shown in Table 198. We have not included environmental or public health impacts for these pilots as the Avert and CoBRA models are not compatible with the technologies of these pilots.

TABLE 197. AD AND CHP PILOT JOB YEARS SUPPORTED BY FY CLOSED

CONNECTICUT GREEN BANK
6. PROGRAMS – PILOT PROGRAMS

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	0	0	0
2013	12	20	32
2014	25	39	64
2015	3	4	6
2016	20	32	51
2017	13	21	34
2018	0	0	0
2019	0	0	0
2020	0	0	0
2021	0	0	0
2022	0	0	0
Total	73	115	188

TABLE 198. AD AND CHP TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$0	\$0	\$0	\$0
2013	\$103,438	\$84,824	\$174,572	\$362,834
2014	\$204,347	\$167,574	\$344,873	\$716,794
2015	\$20,843	\$17,092	\$35,176	\$73,110
2016	\$101,777	\$0	\$600,933	\$702,709
2017	\$73,820	\$90,474	\$186,198	\$350,492
2018	\$0	\$0	\$0	\$0
2019	\$0	\$0	\$0	\$0
2020	\$0	\$0	\$0	\$0
2021	\$0	\$0	\$0	\$0
2022	\$0	\$0	\$0	\$0
Total	\$504,225	\$359,963	\$1,341,752	\$2,205,940

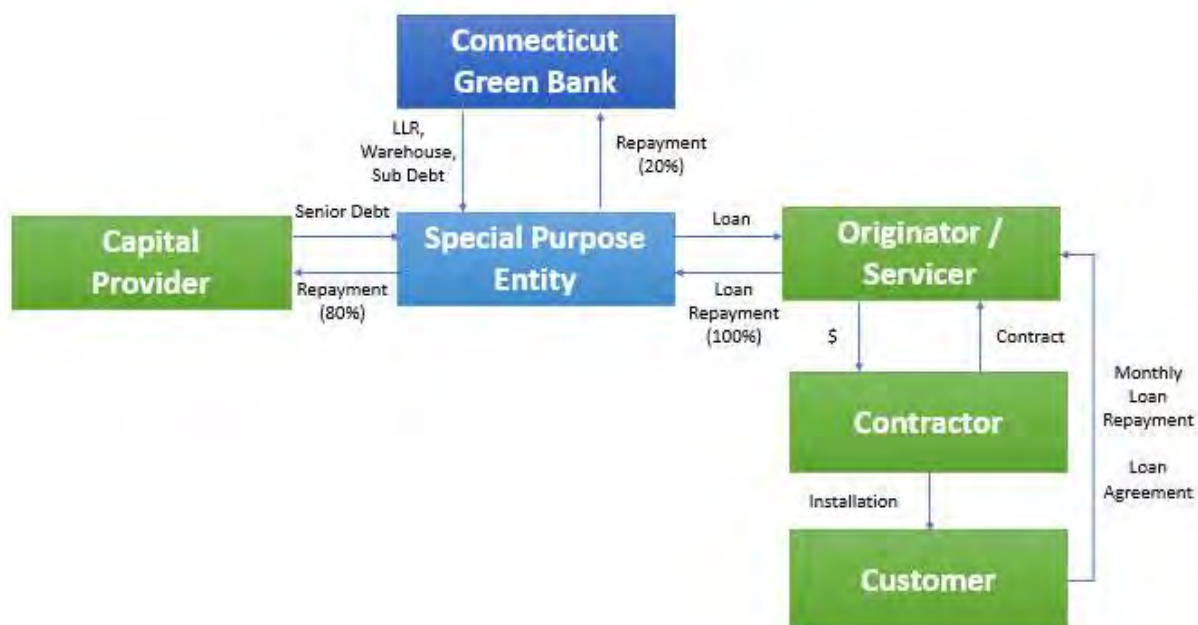
CONNECTICUT GREEN BANK
6. PROGRAMS – CT SOLAR LOAN

Case 10 – CT Solar Loan (Graduated)

Description

The Connecticut Solar Loan was a \$5 million pilot public-private partnership between the Green Bank and Sungage Financial, which resulted in the first crowd-funded solar loan program in the country. It was the first of the Green Bank’s ventures to be retired and graduated from the Green Bank’s funding to a \$100 million pool of capital from the Digital Federal Credit Union. The purpose of the program was to enable citizens to own solar PV systems installed on their homes. The Connecticut Solar Loan ended in FY 2015.

FIGURE 15. LEGAL STRUCTURE AND FLOWS OF CAPITAL FOR THE CT SOLAR LOAN



The CT Solar Loan yields a rate of return to the capital providers that is commensurate with the risks they are taking. The program provided 19 contractors with an important sales tool and gave nearly 300 customers the ability to own solar PV through low-interest and long-term financing along with access to federal tax credits and state incentives (i.e., the RSIP Expected Performance Based Buydown). Of the \$6.0 million invested by the Connecticut Green Bank into the CT Solar Loan, \$1.0 million has been sold to the crowd-funding platform Mosaic, \$2.6 million to a Community Development Financial Institution in The Reinvestment Fund, and the remaining is on the balance sheet of the Connecticut Green Bank.

In structuring the solar loan product, the Green Bank’s objective was to enable homeowners of varying financial means to own their own solar PV systems. Prior creation of the CT Solar Loan, a homeowner would need to use their own savings or their own home equity (most often though a home equity line of credit) to pay for the system. At that time, a new system often required an investment exceeding \$25,000. The requirement for such a level of personal financial resources dramatically constrained the “ownership” market for solar PV. So, the Green Bank with its partner

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Sungage Financial, developed the CT Solar Loan which made 15-year financing available at affordable interest rates without the need to have a lien on the home or limit the purchase to certain manufacturers. In developing the CT Solar Loan, the Green Bank had to overcome the risk of being unable to sell the loans to private investors which would have tied up capital resources of the Green Bank and limited its ability to deploy investment of additional clean energy. Ultimately, the Green Bank became confident that a sufficient rate of return could be offered to enable the investments to “clear” the market without a discount (or loss) to the Green Bank. The combination of crowdsourced funding and a structured private placement enabled the Green Bank to sell the investments with recourse limited to the underlying consumer loans. as the Green Bank also established a limited loan loss reserve using American Recovery and Reinvestment Act funds from the US Department of Energy.

The CT Solar Loan was the Connecticut Green Bank’s first residential product graduation. It started off as the first crowd-funded residential solar PV transaction with Sungage Financial through Mosaic.²³² It graduated to a partnership between Sungage Financial and Digital Federal Credit Union – with no resources from the Connecticut Green Bank.²³³ The loan offering from Sungage Financial now includes 5-, 10-, and 20-year maturity terms at affordable interest rates and is being offered in California, Florida, Massachusetts, New Jersey, New York, Texas and Connecticut.

Key Performance Indicators

The Key Performance Indicators for the CT Solar Loan closed activity are reflected in Table 199 through Table 202. These illustrate the volume of projects by year, investment, generation capacity installed, and the amount of energy saved and/or produced. It also breaks down the volume of projects by energy efficiency, renewable generation, or both.

TABLE 199. CT SOLAR LOAN PROJECT TYPES AND INVESTMENT BY FY CLOSED

Fiscal Year	EE ²³⁴	RE	RE/EE	# Projects	Total Investment	Green Bank Investment ²³⁵	Private Investment	Leverage Ratio
2012	0	0	0	0	\$0	\$0	\$0	0
2013	0	3	0	3	\$91,924	\$5,025	\$86,899	18.3
2014	0	140	0	140	\$4,461,833	\$232,100	\$4,229,733	19.2
2015	0	136	0	136	\$4,505,386	\$222,549	\$4,282,838	20.2
Total	0	279	0	279	\$9,059,143	\$459,674	\$8,599,469	19.7

TABLE 200. CT SOLAR LOAN PROJECT CAPACITY, GENERATION AND SAVINGS BY FY CLOSED

Fiscal Year	Installed Capacity (kW)	Expected Annual	Expected Lifetime Savings or	Annual Saved /	Lifetime Saved /	Annual Cost Savings	Lifetime Cost Savings
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²³² <http://www.businesswire.com/news/home/20140206005031/en/Sungage-Financial-CEFIA-Mosaic-Announce-5-Million#.VgRTgVIXL4Y>

²³³ <http://www.ctgreenbank.com/ct-solar-loan-partner-graduates-connecticut-green-bank/>

²³⁴ All projects that receive an RSIP incentive are required to do an energy audit/assessment.

²³⁵ Includes incentives, interest rate buydowns and loan loss reserves.

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		Generation (kWh)	Generation (MWh)	Produced (MMBtu)	Produced (MMBtu)		
2012	0	0	0	0	0	\$0	\$0
2013	17.0	19,407	485	66	1,655	\$3,596	\$89,910
2014	1,107.9	1,261,626	31,541	4,305	107,617	\$167,832	\$4,195,800
2015	1,067.2	1,215,364	30,384	4,147	103,671	\$163,037	\$4,075,920
Total	2,192.1	2,496,398	62,410	8,518	212,943	\$334,465	\$8,361,630

TABLE 201. CT SOLAR LOAN PROJECT AVERAGES BY FY CLOSED

Fiscal Year	Average Total Investment	Average Amount Financed	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)	Average Finance Term (months)	Average Finance Rate	Average DTI	Average FICO Score
2012	\$0	\$0	0	0	0	0	0	0
2013	\$30,641	\$19,658	5.7	22	180	5.58	0	758
2014	\$31,870	\$19,819	7.9	31	180	5.57	0	771
2015	\$33,128	\$22,942	7.8	30	180	3.34	0	771
Average	\$32,470	\$21,340	7.9	31	180	4.48	0	771

TABLE 202. CT SOLAR LOAN PROJECT APPLICATION YIELD²³⁶ BY FY RECEIVED

Fiscal Year	Applications Received	Applications Approved	Applications Withdrawn	Applications Denied	Approved Rate	Denied Rate
2012	0	0	0	0	0	0
2013	14	7	5	2	86%	14%
2014	284	163	54	67	76%	24%
2015	164	109	37	18	89%	11%
Total	462	279	96	87	81%	19%

Customer Savings

Financial Savings is often a significant motivator for going solar. For the Solar Loan, savings is estimated as the difference between a customer’s loan payment for a Green Bank supported solar PV system and the hypothetical cost of purchasing the electricity generated that customer’s system from a utility. For the Solar Loan customers, many are not realizing a savings in real dollar terms as their finance costs are higher than the retail electricity rate cost of the electricity they generate. This is in line with expectations and can be seen comparing the electricity costs vs the levelized cost of electricity (LCOE) which takes into account tax credits and future savings after

²³⁶ Applications received are applications submitted to Sungage Financial (servicer of the CT Solar Loan) for credit approval. Applications approved are applications that have met the credit requirements for the program and can move to loan closing, pending formal technical approval of the solar equipment by the Residential Solar Investment Program. Applications withdrawn are applications that have been cancelled by the submitter due to the project not moving forward. Applications denied are applications that are not approved because the customer does not meet underwriting requirements.

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the loan is paid and spreads that across the life of the system. When that analysis is performed, we see that on the whole, customers are saving money as expected.

TABLE 203. CT SOLAR LOAN ANNUAL SAVINGS²³⁷

Fiscal Year	Savings	Savings using LCOE²³⁸	Cumulative # of Meters	Generation kWh²³⁹	kW Installed
2012	\$0	\$0	0	0	0
2013	\$0	\$0	0	0	0
2014	(\$2,684)	\$7,229	22	116,146	174
2015	(\$15,602)	\$116,300	205	1,373,881	1,590
2016	(\$53,970)	\$145,807	274	2,326,245	2,147
2017	(\$107,985)	\$123,867	274	2,097,321	2,147
2018	(\$112,686)	\$142,323	274	1,882,963	2,147
2019	(\$88,047)	\$178,722	274	1,770,902	2,147
2020	(\$80,965)	\$181,659	274	1,817,329	2,147
2021	(\$107,977)	\$176,586	274	1,618,683	2,147
2022	(\$114,428)	\$179,213	274	1,537,537	2,147
Total	(\$684,344)	\$1,251,706	274	14,541,007	2,147

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²³⁷ All data points required to calculate annual savings for each meter may not be available yet as we wait on data ingestion.

²³⁸ Savings using LCOE: Savings is equal to the difference between the retail rate and LCOE times solar generation. LCOE is calculated using the post incentive install cost per kW, 20 years of fixed O&M cost/kW discounted at the average solar loan interest rate, and the estimated lifetime hours of operation. The interest rate used to discount the O&M cost is 6.5836% and the annual O&M cost is assumed to be 33.6 \$/kW/year. The total lifetime hours of operation is calculated based on the assumption that solar is producing electricity 13.5% of the year and reduces by 5% (5.695 hours) every year. The post incentive install cost/kW is calculated based on the customer's Gross system Cost, RSIP incentive and system size. Lastly, the tax credit solar loan customers receive is 30%.

²³⁹ Generation is the production we see in our meters as of today: Any increase to generation is due to data backfilling or due to getting access to previously inaccessible meters; any decrease in generation from last year's report is data that is temporarily missing due to a meter replacement. Annual Savings is a function of generation so there might be an increase or decrease in savings.

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Vulnerable Communities Penetration

The penetration of the CT Solar Loan in vulnerable communities is displayed in the table below.

TABLE 204. CT SOLAR LOAN ACTIVITY IN VULNERABLE AND NOT VULNERABLE COMMUNITIES BY FY CLOSED²⁴⁰

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	1	2	67%	0.0	0.0	0.0	78%	\$91,924	\$19,900	\$72,024	78%
2014	140	100	40	29%	1.1	0.8	0.3	25%	\$4,461,833	\$3,351,908	\$1,109,924	25%
2015	136	96	40	29%	1.1	0.8	0.3	26%	\$4,505,386	\$3,323,876	\$1,181,511	26%
Total	279	197	82	29%	2.2	1.6	0.6	26%	\$9,059,143	\$6,695,684	\$2,363,459	26%

Area Median Income Band Penetration

For a breakdown of the CT Solar Loan volume and investment by census tracts categorized by Area Median Income bands – see Table 205. It should be noted that the CT Solar Loan is not an income-targeted program.

TABLE 205. CT SOLAR LOAN ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY FY CLOSED²⁴¹

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2012	<60%	0	0%	0.0	0%	\$0	0%	61,168	7%	0.0	\$0.00	0.0
2012	60%-80%	0	0%	0.0	0%	\$0	0%	101,640	12%	0.0	\$0.00	0.0
2012	80%-100%	0	0%	0.0	0%	\$0	0%	151,346	17%	0.0	\$0.00	0.0
2012	100%-120%	0	0%	0.0	0%	\$0	0%	216,988	25%	0.0	\$0.00	0.0
2012	>120%	0	0%	0.0	0%	\$0	0%	350,196	40%	0.0	\$0.00	0.0

²⁴⁰ Excludes projects in unknown communities.

²⁴¹ Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2012	Total	0	0%	0.0	0%	\$0	0%	881,338	100%	0.0	\$0.00	0.0
2013	<60%	0	0%	0.0	0%	\$0	0%	59,494	7%	0.0	\$0.00	0.0
2013	60%-80%	1	33%	0.0	31%	\$33,775	37%	109,189	12%	0.0	\$0.31	0.0
2013	80%-100%	0	0%	0.0	0%	\$0	0%	150,603	17%	0.0	\$0.00	0.0
2013	100%-120%	1	33%	0.0	47%	\$38,249	42%	203,157	23%	0.0	\$0.19	0.0
2013	>120%	1	33%	0.0	22%	\$19,900	22%	351,633	40%	0.0	\$0.06	0.0
2013	Total	3	100%	0.0	100%	\$91,924	100%	874,076	100%	0.0	\$0.11	0.0
2014	<60%	1	1%	0.0	0%	\$9,948	0%	57,673	7%	0.0	\$0.17	0.0
2014	60%-80%	3	2%	0.0	2%	\$89,796	2%	103,934	12%	0.0	\$0.86	0.2
2014	80%-100%	24	17%	0.2	14%	\$637,228	14%	149,038	17%	0.2	\$4.28	1.1
2014	100%-120%	49	35%	0.4	37%	\$1,624,516	36%	209,561	24%	0.2	\$7.75	2.0
2014	>120%	63	45%	0.5	47%	\$2,100,345	47%	348,270	40%	0.2	\$6.03	1.5
2014	Total	140	100%	1.1	100%	\$4,461,833	100%	868,476	100%	0.2	\$5.14	1.3
2015	<60%	1	1%	0.0	0%	\$22,510	0%	64,361	7%	0.0	\$0.35	0.1
2015	60%-80%	10	7%	0.1	6%	\$286,560	6%	96,305	11%	0.1	\$2.98	0.7
2015	80%-100%	18	13%	0.1	13%	\$603,685	13%	164,873	19%	0.1	\$3.66	0.8
2015	100%-120%	30	22%	0.2	23%	\$1,008,757	22%	184,613	21%	0.2	\$5.46	1.3
2015	>120%	77	57%	0.6	58%	\$2,583,874	57%	352,621	41%	0.2	\$7.33	1.7
2015	Total	136	100%	1.1	100%	\$4,505,386	100%	862,773	100%	0.2	\$5.22	1.2
Total	<60%	2	1%	0.0	0%	\$32,458	0%	60,769	7%	0.0	\$0.53	0.1
Total	60%-80%	14	5%	0.1	4%	\$410,131	5%	99,220	12%	0.1	\$4.13	0.9
Total	80%-100%	42	15%	0.3	14%	\$1,240,913	14%	165,331	19%	0.3	\$7.51	1.8
Total	100%-120%	80	29%	0.7	30%	\$2,671,522	29%	187,463	22%	0.4	\$14.25	3.5
Total	>120%	141	51%	1.1	52%	\$4,704,119	52%	345,311	40%	0.4	\$13.62	3.3
Total	Total	279	100%	2.2	100%	\$9,059,143	100%	858,094	100%	0.3	\$10.56	2.6

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TABLE 206. CT SOLAR LOAN ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED²⁴²

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	2	1	33%	0.0	0.0	0.0	31%	\$91,924	\$58,149	\$33,775	37%
2014	140	112	28	20%	1.1	0.9	0.2	16%	\$4,461,833	\$3,721,449	\$740,383	17%
2015	136	107	29	21%	1.1	0.9	0.2	20%	\$4,505,386	\$3,588,731	\$916,655	20%
Total	279	221	58	21%	2.2	1.8	0.4	18%	\$9,059,143	\$7,368,329	\$1,690,814	19%

TABLE 207. CT SOLAR LOAN ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED²⁴³

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2012	0	0	0	0%	0.0	0	0	0%	\$0	\$0	\$0	0%
2013	3	2	1	33%	0.0	0	0	31%	\$91,924	\$58,149	\$33,775	37%
2014	140	136	4	3%	1.1	1	0	2%	\$4,461,833	\$4,358,677	\$103,155	2%
2015	136	126	10	7%	1.1	1	0	6%	\$4,505,386	\$4,214,298	\$291,088	6%
Total	279	264	15	5%	2.2	2	0	4%	\$9,059,143	\$8,631,124	\$428,019	5%

Distressed Community Penetration

For a breakdown of the CT Solar Loan project volume and investment by census tracts categorized by Distressed Communities – see Table 208. It should be noted that the CT Solar Loan is not an income-targeted program.

TABLE 208. CT SOLAR LOAN ACTIVITY IN DISTRESSED COMMUNITIES BY FY CLOSED

²⁴² Excludes projects in unknown bands.

²⁴³ Excludes projects in unknown bands.

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Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Households	% Total Household Distribution	Project Units / 1,000 Total Households	Total Investment / Total Household	Watts / Total Household
2012	Yes	0	0%	0.0	0%	\$0	0%	447,962	33%	0.0	\$0.00	0.0
2012	No	0	0%	0.0	0%	\$0	0%	912,222	67%	0.0	\$0.00	0.0
2012	Total	0	0%	0.0	0%	\$0	0%	1,360,184	100%	0.0	\$0.00	0.0
2013	Yes	2	67%	0.0	78%	\$72,024	78%	426,564	31%	0.0	\$0.17	0.0
2013	No	1	33%	0.0	22%	\$19,900	22%	929,285	69%	0.0	\$0.02	0.0
2013	Total	3	100%	0.0	100%	\$91,924	100%	1,355,849	100%	0.0	\$0.07	0.0
2014	Yes	26	19%	0.2	18%	\$757,309	17%	416,415	31%	0.1	\$1.82	0.5
2014	No	114	81%	0.9	82%	\$3,704,523	83%	939,791	69%	0.1	\$3.94	1.0
2014	Total	140	100%	1.1	100%	\$4,461,833	100%	1,356,206	100%	0.1	\$3.29	0.8
2015	Yes	18	13%	0.1	11%	\$483,091	11%	423,559	31%	0.0	\$1.14	0.3
2015	No	118	87%	1.0	89%	\$4,022,296	89%	929,024	69%	0.1	\$4.33	1.0
2015	Total	136	100%	1.1	100%	\$4,505,386	100%	1,352,583	100%	0.1	\$3.33	0.8
Total	Yes	46	16%	0.3	15%	\$1,312,424	14%	435,595	32%	0.1	\$3.01	0.7
Total	No	233	84%	1.9	85%	\$7,746,719	86%	926,160	68%	0.3	\$8.36	2.0
Total	Total	279	100%	2.2	100%	\$9,059,143	100%	1,361,755	100%	0.2	\$6.65	1.6

TABLE 209. CT SOLAR LOAN ACTIVITY IN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED²⁴⁴

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	1	2	67%	0.0	0.0	0.0	78%	\$91,924	\$19,900	\$72,024	78%
2014	140	114	26	19%	1.1	0.9	0.2	18%	\$4,461,833	\$3,704,523	\$757,309	17%
2015	136	118	18	13%	1.1	1.0	0.1	11%	\$4,505,386	\$4,022,296	\$483,091	11%
Total	279	233	46	16%	2.2	1.9	0.3	15%	\$9,059,143	\$7,746,719	\$1,312,424	14%

²⁴⁴ Excludes projects in unknown communities.

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Environmental Justice Poverty Level Penetration

The penetration of the CT Solar Loan in Environmental Justice Communities is displayed in the following table.

TABLE 210. CT SOLAR LOAN ACTIVITY IN ENVIRONMENTAL JUSTICE POVERTY AREAS BY FY CLOSED²⁴⁵

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	3	3	0	0%	0.0	0.0	0.0	0%	\$91,924	\$91,924	\$0	0%
2014	140	137	3	2%	1.1	1.1	0.0	1%	\$4,461,833	\$4,397,968	\$63,865	1%
2015	136	131	5	4%	1.1	1.0	0.0	2%	\$4,505,386	\$4,397,734	\$107,653	2%
Total	279	271	8	3%	2.2	2.2	0.0	2%	\$9,059,143	\$8,887,626	\$171,517	2%

Ethnicity

The progress made by the CT Solar Loan in reaching diverse communities is displayed in the following table.

TABLE 211. CT SOLAR LOAN ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY ETHNICITY CATEGORY BY FY CLOSED²⁴⁶

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2012	<60%	0	0.0%	5,176	8.3%	0	0.0%	10,882	17.4%	0	0.0%	16,828	26.8%	0	0.0%	29,803	47.5%
2012	60%-80%	0	0.0%	5,006	4.9%	0	0.0%	2,270	2.2%	0	0.0%	73,816	72.2%	0	0.0%	21,086	20.6%
2012	80%-100%	0	0.0%	1,855	1.2%	0	0.0%	0	0.0%	0	0.0%	140,062	93.0%	0	0.0%	8,768	5.8%
2012	100%-120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	211,803	97.8%	0	0.0%	4,681	2.2%

²⁴⁵ Excludes projects in unknown bands.

²⁴⁶ Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2012	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	348,384	99.8%	0	0.0%	828	0.2%
2012	Total	0	0.0%	12,037	1.4%	0	0.0%	13,152	1.5%	0	0.0%	790,893	89.7%	0	0.0%	65,166	7.4%
2013	<60%	0	0.0%	3,382	5.5%	0	0.0%	11,821	19.4%	0	0.0%	14,269	23.4%	0	0.0%	31,532	51.7%
2013	60%-80%	0	0.0%	5,736	5.2%	0	0.0%	2,738	2.5%	1	100.0%	75,591	68.7%	0	0.0%	25,902	23.6%
2013	80%-100%	0	0.0%	1,926	1.3%	0	0.0%	0	0.0%	0	0.0%	139,931	93.5%	0	0.0%	7,819	5.2%
2013	100%-120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	198,438	97.8%	0	0.0%	4,389	2.2%
2013	>120%	0	0.0%	1,808	0.5%	0	0.0%	0	0.0%	1	100.0%	346,905	98.9%	0	0.0%	1,995	0.6%
2013	Total	0	0.0%	12,852	1.5%	0	0.0%	14,559	1.7%	3	100.0%	775,134	88.7%	0	0.0%	71,637	8.2%
2014	<60%	0	0.0%	4,160	7.0%	0	0.0%	12,689	21.4%	1	100.0%	14,635	24.7%	0	0.0%	27,810	46.9%
2014	60%-80%	0	0.0%	5,373	5.1%	0	0.0%	4,357	4.2%	3	100.0%	68,387	65.4%	0	0.0%	26,411	25.3%
2014	80%-100%	0	0.0%	1,868	1.3%	0	0.0%	0	0.0%	23	95.8%	140,090	94.1%	1	4.2%	6,888	4.6%
2014	100%-120%	0	0.0%	1,669	0.8%	0	0.0%	0	0.0%	49	100.0%	205,048	98.2%	0	0.0%	2,195	1.1%
2014	>120%	0	0.0%	1,813	0.5%	0	0.0%	0	0.0%	63	100.0%	344,034	98.9%	0	0.0%	1,932	0.6%
2014	Total	0	0.0%	14,883	1.7%	0	0.0%	17,046	2.0%	139	99.3%	772,194	88.8%	1	0.7%	65,236	7.5%
2015	<60%	0	0.0%	3,503	5.3%	0	0.0%	14,297	21.5%	1	100.0%	10,404	15.6%	0	0.0%	38,428	57.7%
2015	60%-80%	0	0.0%	4,605	4.8%	0	0.0%	2,578	2.7%	9	100.0%	68,171	71.0%	0	0.0%	20,705	21.6%
2015	80%-100%	0	0.0%	1,859	1.1%	0	0.0%	0	0.0%	19	100.0%	151,172	91.5%	0	0.0%	12,174	7.4%
2015	100%-120%	0	0.0%	863	0.5%	0	0.0%	0	0.0%	29	100.0%	181,464	98.8%	0	0.0%	1,302	0.7%
2015	>120%	0	0.0%	1,877	0.5%	0	0.0%	0	0.0%	78	100.0%	348,323	98.9%	0	0.0%	1,853	0.5%
2015	Total	0	0.0%	12,707	1.5%	0	0.0%	16,875	2.0%	136	100.0%	759,534	88.0%	0	0.0%	74,462	8.6%
Total	<60%	0	0.0%	6,086	9.5%	0	0.0%	15,991	24.9%	2	100.0%	13,853	21.6%	0	0.0%	28,310	44.1%
Total	60%-80%	0	0.0%	3,472	3.4%	0	0.0%	5,799	5.7%	13	100.0%	60,805	60.2%	0	0.0%	30,912	30.6%
Total	80%-100%	0	0.0%	3,957	2.5%	0	0.0%	691	0.4%	42	97.7%	142,115	91.4%	1	2.3%	8,800	5.7%
Total	100%-120%	0	0.0%	434	0.2%	0	0.0%	0	0.0%	79	100.0%	200,119	96.5%	0	0.0%	6,902	3.3%
Total	>120%	0	0.0%	2,074	0.6%	0	0.0%	0	0.0%	142	100.0%	334,664	99.2%	0	0.0%	772	0.2%
Total	Total	0	0.0%	16,023	1.9%	0	0.0%	22,481	2.6%	278	99.6%	751,556	86.8%	1	0.4%	75,696	8.7%

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Societal Benefits

Ratepayers in Connecticut continue to enjoy the societal benefits of the CT Solar Loan Program despite its closure. Over the course of its existence, the program has led to the creation of 132 job years, avoided the lifetime emission of 35,015 tons of carbon dioxide, 46,896 pounds of nitrous oxide, 53,064 pounds of sulfur oxide, and 3,131 pounds of particulate matter as illustrated by Table 212 and Table 214.

The Solar Loan Program is estimated to have generated \$463,746 million in tax revenue for the State of Connecticut as shown in Table 213. The lifetime economic value of the public health impacts of this program is estimated between \$1.2 and 2.7 million as illustrated in Table 215.

TABLE 212. CT SOLAR LOAN JOB YEARS SUPPORTED BY FY CLOSED

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	0	0	0
2013	1	1	1
2014	25	40	65
2015	25	41	66
Total	51	82	132

TABLE 213. CT SOLAR LOAN TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$0	\$0	\$0	\$0
2013	\$2,350	\$2,336	\$0	\$4,686
2014	\$114,374	\$113,724	\$0	\$228,098
2015	\$115,810	\$115,152	\$0	\$230,962
Total	\$232,534	\$231,212	\$0	\$463,746

TABLE 214. CT SOLAR LOAN AVOIDED EMISSIONS BY FY CLOSED

Fiscal Year	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
2012	0	0	0	0	0	0	0	0
2013	10	277	17	417	22	537	0	24
2014	706	17,541	980	24,519	1,163	29,008	51	1,583
2015	686	17,200	879	21,964	939	23,519	44	1,518
Total	1,402	35,018	1,876	46,900	2,124	53,064	95	3,125

TABLE 215. CT SOLAR LOAN PUBLIC HEALTH IMPACT BY FY CLOSED

Fiscal Year	Annual		Lifetime	
	Low	High	Low	High

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2012	\$0	\$0	\$0	\$0
2013	\$377	\$850	\$9,413	\$21,251
2014	\$24,476	\$55,259	\$611,889	\$1,381,481
2015	\$23,578	\$53,233	\$589,451	\$1,330,823
Total	\$48,430	\$109,342	\$1,210,753	\$2,733,555

Financing Program

Launched in March of 2013, the CT Solar Loan provided up to \$55,000 per loan, with 15-year maturity terms and affordable 6.49% interest rates (including 0.25% ACH payment benefit) to provide homeowners with the upfront capital they needed to finance residential solar PV projects. The program ended in FY2015.

The program involved a financing product developed in partnership with Sungage Financial²⁴⁷ that utilized credit enhancements (i.e., \$300,000 loan loss reserve and \$168,000 interest rate buy-downs)²⁴⁸ in combination with a \$5 million warehouse of funds and \$1 million of subordinated debt from the Connecticut Green Bank. Through this product, the Connecticut Green Bank lowered the barriers for Connecticut homeowners seeking to install solar PV installations thus increasing demand while at the same time reducing the market’s reliance on subsidies being offered through the RSIP. The CT Solar Loan was the first dedicated residential solar loan product not secured by a lien on the home or tied to a particular PV equipment OEM supplier. As a loan, capital provided to consumers for the CT Solar Loan is returned to the Connecticut Green Bank – it is not a subsidy. In fact, approximately 80% of the loan value was sold to retail investors through a “crowd funding” platform or to institutional investors without recourse to the Connecticut Green Bank. The financial structure of the CT Solar Loan product includes origination,²⁴⁹ servicing,²⁵⁰ and financing features in combination with the support of the Connecticut Green Bank.

Financial Performance

To date there has been 1 default with an original principal balance of \$26,698 or 0.44% of the portfolio, and as of 6/30/2022 there are no delinquencies.

The household customers that accessed the CT Solar Loan since its launch in 2013 had varying credit scores – see Table 216.

TABLE 216. CREDIT SCORE RANGES OF HOUSEHOLD CUSTOMERS USING THE CT SOLAR LOAN BY FY CLOSED

Fiscal Year	Unknown	580-599	600-639	640-679	680-699	700-719	720-739	740-779	780+	Grand Total
2012	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	1	1	1	3
2014	0	0	0	0	5	7	18	47	63	140
2015	0	0	0	0	6	8	15	42	65	136

²⁴⁷ Sungage Financial (<http://www.sungagefinancial.com/>) won a competitive RFP through the Connecticut Green Bank’s Financial Innovation RFP to support a residential solar PV loan program

²⁴⁸ From repurposed American Recovery and Reinvestment Act funds

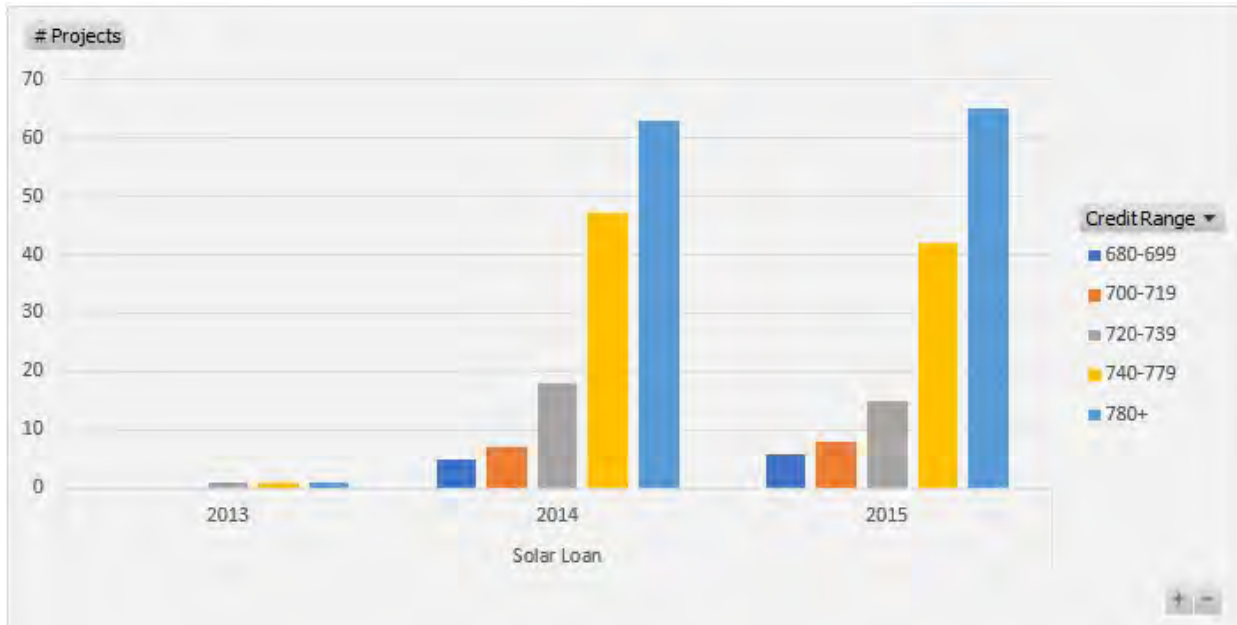
²⁴⁹ Sungage Financial in partnership with local contractors

²⁵⁰ Concord Servicing Corporation

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Fiscal Year	Unknown	580-599	600-639	640-679	680-699	700-719	720-739	740-779	780+	Grand Total
Total	0	0	0	0	11	15	34	90	129	279
	0%	0%	0%	0%	4%	5%	12%	32%	46%	100%

FIGURE 16. CREDIT SCORE RANGES OF HOUSEHOLD CUSTOMERS USING THE CT SOLAR LOAN BY FY CLOSED



Marketing

To accelerate the deployment of residential solar PV through the RSIP and the uptake of the CT Solar Loan financing product, the Connecticut Green Bank implemented Solarize Connecticut. Green Bank Solarize programs are designed to use a combination of group purchasing, time-limited offers, and grassroots outreach, while local clean energy advocates volunteer and coordinate with their towns to help speed the process – see Table 217.

TABLE 217. NUMBER OF PROJECTS, INVESTMENT, AND INSTALLED CAPACITY THROUGH GREEN BANK SOLARIZE CONNECTICUT FOR THE CT SOLAR LOAN FINANCING PRODUCT

	# Projects	Total Investment	Installed Capacity (MW)
Solarize	168	\$5,209,925	1.3
Not Solarize	111	\$3,849,218	0.9
Total	279	\$9,059,143	2.2
% Solarize	60%	58%	59%

The Green Bank Solarize Connecticut program provided a significant marketing channel to catalyze origination for the CT Solar Loan. Nearly 60 percent of the total projects, investment, and installed capacity came from Solarize Connecticut.

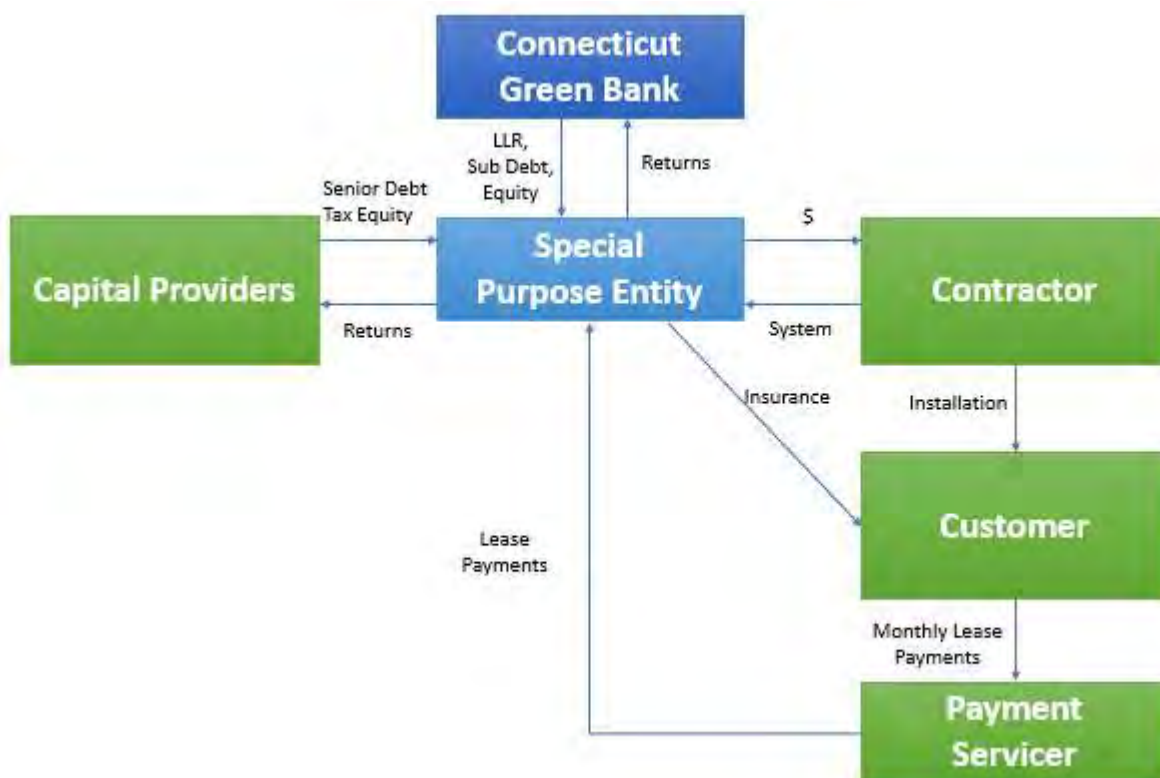
Case 11 – CT Solar Lease (Graduated)

Description

The Green Bank has used third-party ownership structures to deploy distributed solar generation in Connecticut in both the Residential and Commercial sectors. These funds are a unique combination of a tax equity investor and a syndicate of debt providers and the Green Bank to support solar PV installations (i.e., rooftop residential lease financing for solar PV and commercial leases and PPAs for rooftop, carport, and ground mount solar PV). The Residential Solar Lease ended in FY 2016.

Residential leases were one of the first products to graduate from Green Bank funding, but the organization still actively pursues new projects in the Commercial, Industrial, and Institutional sector for its funds. The Green Bank also performs asset management functions for the entire portfolio including the now closed Residential portion of the program.

FIGURE 17. LEGAL STRUCTURE AND FLOWS OF CAPITAL FOR THE CT SOLAR LEASE²⁵¹



The CT Solar Lease 2 fund was the second “solar PV fund” established using a combination of ratepayer funds and private capital. In developing this fund, which was fully utilized in 2017, the Green Bank sought to innovate both in the types of credits that would be underwritten and via broadening the sources of capital in the fund. Before these innovations by the Green Bank, a fund had not been established that would underwrite residential solar PV installations as well as installations on a “commercial scale” such

²⁵¹ It should be noted that the Special Purpose Entity structure includes several entities – CT Solar Lease II, LLC and CEFIA Holdings, LLC that provide different functions.

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as for municipal and school buildings, community oriented not-for-profit structures (all of which can't take advantage of Federal tax incentives due to their tax-exempt status) as well as a vast array of for-profit enterprises. These commercial-scale projects are discussed above in the Solar PPA and Commercial Lease section.

Key Performance Indicators

The Key Performance Indicators for Solar Lease closed activity are reflected in Table 218 through Table 221. These illustrate the volume of projects by year, investment, generation capacity installed, and the amount of energy saved and/or produced.

TABLE 218. RESIDENTIAL SOLAR LEASE PROJECT INVESTMENT BY FY CLOSED

Fiscal Year	EE ²⁵²	RE	RE/EE	# Projects	Total Investment ²⁵³	Green Bank Investment ²⁵⁴	Private Investment	Leverage Ratio
2012	0	0	0	0	\$0	\$0	\$0	0
2013	0	0	0	0	\$0	\$0	\$0	0
2014	0	107	0	107	\$4,324,454	\$888,178	\$3,436,276	4.9
2015	0	610	0	610	\$23,672,593	\$4,861,996	\$18,810,597	4.9
2016	0	472	0	472	\$18,325,441	\$3,763,771	\$14,561,669	4.9
Total	0	1,189	0	1,189	\$46,322,488	\$9,513,946	\$36,808,543	4.9

TABLE 219. RESIDENTIAL SOLAR LEASE PROJECT CAPACITY, GENERATION AND SAVINGS²⁵⁵ BY FY CLOSED

Fiscal Year	Installed Capacity (kW)	Expected Annual Generation (kWh)	Expected Lifetime Savings or Generation (MWh)	Annual Saved / Produced (MMBtu)	Lifetime Saved / Produced (MMBtu)
2012	0	0	0	0	0
2013	0	0	0	0	0
2014	817.1	930,503	23,263	3,175	79,372
2015	4,894.7	5,574,098	139,352	19,019	475,471
2016	3,841.9	4,375,207	109,380	14,928	373,205
Total	9,553.7	10,879,808	271,995	37,122	928,048

TABLE 220. RESIDENTIAL SOLAR LEASE PROJECT AVERAGES BY FY CLOSED

Fiscal Year	Average Total Investment	Average Amount Financed	Average Installed Capacity (kW)	Average Annual Saved / Produced (MMBtu)	Average Finance Term (months)	Average DTI	Average FICO Score
2012	\$0	\$0	0.0	0	0	0	0
2013	\$0	\$0	0.0	0	0	0	0
2014	\$40,415	\$38,182	7.6	30	240	30	785
2015	\$38,808	\$36,663	8.0	31	240	31	777
2016	\$38,825	\$36,679	8.1	32	240	35	776
Average	\$38,959	\$36,806	8.0	31	240	33	777

²⁵² All projects that receive an RSIP incentive are required to do an energy audit/assessment.

²⁵³ Includes closing costs and capitalized interest for C-PACE.

²⁵⁴ Includes incentives, interest rate buydowns and loan loss reserves.

²⁵⁵ The Green Bank currently estimates annual savings and is in the process of reviewing and updating this methodology to include actual savings where possible.

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TABLE 221. RESIDENTIAL SOLAR LEASE PROJECT APPLICATION YIELD²⁵⁶ BY FY RECEIVED

Fiscal Year	Applications Received	Applications Approved	Applications Withdrawn	Applications Denied	Approved Rate	Denied Rate
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	669	196	256	217	68%	32%
2015	1,813	847	619	347	81%	19%
2016	351	146	154	51	85%	15%
Total	2,833	1,189	1,029	615	78%	22%

Customer Savings

Financial Savings is often a significant motivator for going solar. For the Solar Lease, savings is estimated as the difference between a customer’s lease payment for a Green Bank supported solar PV system and the hypothetical cost of purchasing the electricity generated that customer’s system from a utility. Savings is only positive if the hypothetical avoided utility cost of the solar PV generation is greater than the customer’s Solar Lease Payment.

TABLE 222. RESIDENTIAL SOLAR LEASE ANNUAL SAVINGS²⁵⁷

Fiscal Year	Annual Savings	Cumulative # of Meters ²⁵⁸	Generation kWh ²⁵⁹	kW Installed
2012	\$0	0	0	0
2013	\$0	0	0	0
2014	\$1,269	29	109,088	218
2015	\$68,715	331	1,662,914	2,587
2016	\$403,208	1,143	8,181,871	9,178
2017	\$416,815	1,164	9,868,875	9,364
2018	\$500,164	1,164	9,306,908	9,364
2019	\$692,990	1,164	9,076,612	9,364
2020	\$776,039	1,164	9,538,784	9,364
2021	\$771,364	1,164	9,081,947	9,364
2022	\$635,521	1,164	8,183,735	9,364
Total	\$4,266,085	1,164	65,010,734	9,364

²⁵⁶ Applications received are applications submitted to Renew Financial (servicer of the CT Solar Lease) for credit approval. Applications approved are applications that have met the credit requirements for the program and can move to lease signing, pending formal technical approval of the solar equipment by the Residential Solar Investment Program. Applications withdrawn are applications that have been cancelled by the submitter due to the project not moving forward. Applications denied are applications that are not approved because the customer does not meet underwriting requirements.

²⁵⁷ All data points required to calculate annual savings for each meter may not be available yet as we wait on data ingestion.

²⁵⁸ The number of customers has changed because we are now only including customers who are in repayment or fully prepaid.

²⁵⁹ Generation is the production we see in our meters as of today: Any increase to generation is due to data backfilling or due to getting access to previously inaccessible meters; any decrease in generation from last year’s report is data that is temporarily missing due to a meter replacement. Annual Savings is a function of generation so there might be an increase or decrease in savings.

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Vulnerable Communities Penetration

The activity of the solar lease in vulnerable communities is displayed in the table below.

TABLE 223. RESIDENTIAL SOLAR LEASE ACTIVITY IN VULNERABLE AND NOT VULNERABLE COMMUNITIES BY FY CLOSED²⁶⁰

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable	Total	Not Vulnerable	Vulnerable	% Vulnerable
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	107	79	28	26%	0.8	0.6	0.2	24%	\$4,324,454	\$3,280,154	\$1,044,300	24%
2015	610	386	224	37%	4.9	3.2	1.7	34%	\$23,672,593	\$15,503,043	\$8,169,550	35%
2016	472	281	191	40%	3.8	2.4	1.4	38%	\$18,325,441	\$11,419,971	\$6,905,470	38%
Total	1,189	746	443	37%	9.6	6.2	3.3	35%	\$46,322,488	\$30,203,168	\$16,119,320	35%

Area Median Income Band Penetration

The CT Solar Lease program has been used to fund projects in economically diverse locations across the state as reflected by Table 224 for Metropolitan Statistical Area (MSA) Area Median Income (AMI). It should be noted that these Solar Lease funds are not part of an income targeted program.

TABLE 224. RESIDENTIAL SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY FY CLOSED²⁶¹

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2012	<60%	0	0%	0.0	0%	\$0	0%	61,168	7%	0.0	\$0.00	0.0
2012	60%-80%	0	0%	0.0	0%	\$0	0%	101,640	12%	0.0	\$0.00	0.0
2012	80%-100%	0	0%	0.0	0%	\$0	0%	151,346	17%	0.0	\$0.00	0.0
2012	100%-120%	0	0%	0.0	0%	\$0	0%	216,988	25%	0.0	\$0.00	0.0
2012	>120%	0	0%	0.0	0%	\$0	0%	350,196	40%	0.0	\$0.00	0.0

²⁶⁰ Excludes projects in unknown communities.

²⁶¹ Excludes projects in unknown bands.

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Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
2012	Total	0	0%	0.0	0%	\$0	0%	881,338	100%	0.0	\$0.00	0.0
2013	<60%	0	0%	0.0	0%	\$0	0%	59,494	7%	0.0	\$0.00	0.0
2013	60%-80%	0	0%	0.0	0%	\$0	0%	109,189	12%	0.0	\$0.00	0.0
2013	80%-100%	0	0%	0.0	0%	\$0	0%	150,603	17%	0.0	\$0.00	0.0
2013	100%-120%	0	0%	0.0	0%	\$0	0%	203,157	23%	0.0	\$0.00	0.0
2013	>120%	0	0%	0.0	0%	\$0	0%	351,633	40%	0.0	\$0.00	0.0
2013	Total	0	0%	0.0	0%	\$0	0%	874,076	100%	0.0	\$0.00	0.0
2014	<60%	0	0%	0.0	0%	\$0	0%	57,673	7%	0.0	\$0.00	0.0
2014	60%-80%	6	6%	0.0	5%	\$212,213	5%	103,934	12%	0.1	\$2.04	0.4
2014	80%-100%	13	12%	0.1	11%	\$483,999	11%	149,038	17%	0.1	\$3.25	0.6
2014	100%-120%	43	40%	0.3	42%	\$1,799,656	42%	209,561	24%	0.2	\$8.59	1.6
2014	>120%	45	42%	0.3	42%	\$1,828,585	42%	348,270	40%	0.1	\$5.25	1.0
2014	Total	107	100%	0.8	100%	\$4,324,454	100%	868,476	100%	0.1	\$4.98	0.9
2015	<60%	5	1%	0.0	1%	\$163,570	1%	64,361	7%	0.1	\$2.54	0.5
2015	60%-80%	43	7%	0.3	6%	\$1,430,822	6%	96,305	11%	0.4	\$14.86	3.0
2015	80%-100%	120	20%	0.9	19%	\$4,384,447	19%	164,873	19%	0.7	\$26.59	5.5
2015	100%-120%	165	27%	1.3	27%	\$6,309,374	27%	184,613	21%	0.9	\$34.18	7.1
2015	>120%	277	45%	2.4	48%	\$11,384,379	48%	352,621	41%	0.8	\$32.29	6.7
2015	Total	610	100%	4.9	100%	\$23,672,592	100%	862,773	100%	0.7	\$27.44	5.7
2016	<60%	20	4%	0.1	4%	\$655,757	4%	60,769	7%	0.3	\$10.79	2.3
2016	60%-80%	35	7%	0.2	6%	\$1,171,212	6%	99,220	12%	0.4	\$11.80	2.5
2016	80%-100%	84	18%	0.6	17%	\$3,079,698	17%	165,331	19%	0.5	\$18.63	3.9
2016	100%-120%	129	27%	1.0	27%	\$4,999,536	27%	187,463	22%	0.7	\$26.67	5.6
2016	>120%	204	43%	1.8	46%	\$8,419,238	46%	345,311	40%	0.6	\$24.38	5.1
2016	Total	472	100%	3.8	100%	\$18,325,440	100%	858,094	100%	0.6	\$21.36	4.5
Total	<60%	25	2%	0.2	2%	\$819,327	2%	60,769	7%	0.4	\$13.48	2.8
Total	60%-80%	84	7%	0.6	6%	\$2,814,247	6%	99,220	12%	0.8	\$28.36	5.8
Total	80%-100%	217	18%	1.6	17%	\$7,948,145	17%	165,331	19%	1.3	\$48.07	9.9
Total	100%-120%	337	28%	2.7	28%	\$13,108,566	28%	187,463	22%	1.8	\$69.93	14.4

CONNECTICUT GREEN BANK
6. PROGRAMS – CT SOLAR LEASE

Fiscal Year	MSA AMI Band	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Owner Occupied 1-4 Unit Households	% Owner Occupied 1-4 Unit Household Distribution	Project Units / 1,000 Owner Occupied 1-4 Unit Households	Total Investment / Owner Occupied 1-4 Unit Household	Watts / Owner Occupied 1-4 Unit Household
Total	>120%	526	44%	4.5	47%	\$21,632,202	47%	345,311	40%	1.5	\$62.65	12.9
Total	Total	1,189	100%	9.6	100%	\$46,322,487	100%	858,094	100%	1.4	\$53.98	11.1

TABLE 225. RESIDENTIAL SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 100% BY FY CLOSED²⁶²

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below	Total	Over 100% AMI	100% or Below AMI	% at 100% or Below
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	107	85	22	21%	0.8	0.7	0.1	18%	\$4,324,454	\$3,530,648	\$793,806	18%
2015	610	434	176	29%	4.9	3.6	1.3	27%	\$23,672,593	\$17,316,957	\$6,355,636	27%
2016	472	328	144	31%	3.8	2.8	1.0	27%	\$18,325,441	\$13,338,418	\$4,987,023	27%
Total	1,189	847	342	29%	9.6	7.0	2.5	26%	\$46,322,488	\$34,186,023	\$12,136,465	26%

TABLE 226. RESIDENTIAL SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS ABOVE OR BELOW 80% BY FY CLOSED²⁶³

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below	Total	Over 80% AMI	80% or Below AMI	% at 80% or Below
2012	0	0	0	0%	0.0	0	0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0	0	0%	\$0	\$0	\$0	0%
2014	107	99	8	7%	0.8	1	0	6%	\$4,324,454	\$4,047,725	\$276,729	6%
2015	610	548	62	10%	4.9	4	0	9%	\$23,672,593	\$21,532,476	\$2,140,118	9%
2016	472	414	58	12%	3.8	3	0	10%	\$18,325,441	\$16,425,166	\$1,900,275	10%
Total	1,189	1,061	128	11%	9.6	9	1	9%	\$46,322,488	\$42,005,367	\$4,317,122	9%

²⁶² Excludes projects in unknown bands.

²⁶³ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
6. PROGRAMS – CT SOLAR LEASE

Distressed Community Penetration

For a breakdown of Solar Lease project volume and investment by census tracts categorized by Distressed Communities see Table 227. It should be noted that Solar Lease is not an income targeted program.

TABLE 227. RESIDENTIAL SOLAR LEASE ACTIVITY IN DISTRESSED COMMUNITIES BY FY CLOSED

Fiscal Year	Distressed	# Project Units	% Project Distribution	Installed Capacity (MW)	% MW Distribution	Total Investment	% Investment Distribution	Total Population	% Population Distribution	Total Investment / Population	Watts / Population	Total Households	% Total Household Distribution	Total Investment / Total Household	Watts / Total Household
2012	Yes	0	0%	0.0	0%	\$0	0%	1,171,385	33%	\$0.00	0.0	447,962	33%	\$0.00	0.0
2012	No	0	0%	0.0	0%	\$0	0%	2,400,828	67%	\$0.00	0.0	912,222	67%	\$0.00	0.0
2012	Total	0	0%	0.0	0%	\$0	0%	3,572,213	100%	\$0.00	0.0	1,360,184	100%	\$0.00	0.0
2013	Yes	0	0%	0.0	0%	\$0	0%	1,124,923	31%	\$0.00	0.0	426,564	31%	\$0.00	0.0
2013	No	0	0%	0.0	0%	\$0	0%	2,458,638	69%	\$0.00	0.0	929,285	69%	\$0.00	0.0
2013	Total	0	0%	0.0	0%	\$0	0%	3,583,561	100%	\$0.00	0.0	1,355,849	100%	\$0.00	0.0
2014	Yes	15	14%	0.1	12%	\$533,309	12%	1,106,027	31%	\$0.48	0.1	416,415	31%	\$1.28	0.2
2014	No	92	86%	0.7	88%	\$3,791,145	88%	2,486,026	69%	\$1.52	0.3	939,791	69%	\$4.03	0.8
2014	Total	107	100%	0.8	100%	\$4,324,454	100%	3,592,053	100%	\$1.20	0.2	1,356,206	100%	\$3.19	0.6
2015	Yes	95	16%	0.7	15%	\$3,504,032	15%	1,122,550	31%	\$3.12	0.6	423,559	31%	\$8.27	1.7
2015	No	515	84%	4.2	85%	\$20,168,561	85%	2,470,672	69%	\$8.16	1.7	929,024	69%	\$21.71	4.5
2015	Total	610	100%	4.9	100%	\$23,672,592	100%	3,593,222	100%	\$6.59	1.4	1,352,583	100%	\$17.50	3.6
2016	Yes	97	21%	0.8	20%	\$3,601,098	20%	1,162,653	32%	\$3.10	0.6	438,710	32%	\$8.21	1.7
2016	No	375	79%	3.1	80%	\$14,724,342	80%	2,425,917	68%	\$6.07	1.3	916,003	68%	\$16.07	3.4
2016	Total	472	100%	3.8	100%	\$18,325,440	100%	3,588,570	100%	\$5.11	1.1	1,354,713	100%	\$13.53	2.8
Total	Yes	207	17%	1.6	16%	\$7,638,439	16%	1,162,653	32%	\$6.57	1.4	438,710	32%	\$17.41	3.6
Total	No	982	83%	8.0	84%	\$38,684,047	84%	2,425,917	68%	\$15.95	3.3	916,003	68%	\$42.23	8.7
Total	Total	1,189	100%	9.6	100%	\$46,322,487	100%	3,588,570	100%	\$12.91	2.7	1,354,713	100%	\$34.19	7.1

CONNECTICUT GREEN BANK
6. PROGRAMS – CT SOLAR LEASE

TABLE 228. RESIDENTIAL SOLAR LEASE ACTIVITY IN DISTRESSED AND NOT DISTRESSED COMMUNITIES BY FY CLOSED²⁶⁴

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed	Total	Not Distressed	Distressed	% Distressed
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	107	92	15	14%	0.8	0.7	0.1	12%	\$4,324,454	\$3,791,145	\$533,309	12%
2015	610	515	95	16%	4.9	4.2	0.7	15%	\$23,672,593	\$20,168,561	\$3,504,032	15%
2016	472	375	97	21%	3.8	3.1	0.8	20%	\$18,325,441	\$14,724,343	\$3,601,098	20%
Total	1,189	982	207	17%	9.6	8.0	1.6	16%	\$46,322,488	\$38,684,049	\$7,638,440	16%

Environmental Justice Poverty Level Penetration

The activity of the solar lease in Environmental Justice communities is displayed in the table below.

TABLE 229. RESIDENTIAL SOLAR LEASE ACTIVITY IN ENVIRONMENTAL JUSTICE POVERTY AREAS BY FY CLOSED²⁶⁵

Fiscal Year	# Project Units				MW				Total Investment			
	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group	Total	Not EJ Block Group	EJ Block Group	% EJ Block Group
2012	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2013	0	0	0	0%	0.0	0.0	0.0	0%	\$0	\$0	\$0	0%
2014	107	106	1	1%	0.8	0.8	0.0	1%	\$4,324,454	\$4,287,407	\$37,048	1%
2015	610	589	21	3%	4.9	4.7	0.2	3%	\$23,672,593	\$22,938,129	\$734,464	3%
2016	472	454	18	4%	3.8	3.7	0.1	3%	\$18,325,441	\$17,693,024	\$632,417	3%
Total	1,189	1,149	40	3%	9.6	9.3	0.3	3%	\$46,322,488	\$44,918,560	\$1,403,928	3%

Ethnicity

The progress made by the solar lease in terms of reaching diverse communities is displayed in the table below.

²⁶⁴ Excludes projects in unknown communities.

²⁶⁵ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
6. PROGRAMS – CT SOLAR LEASE

TABLE 230. RESIDENTIAL SOLAR LEASE ACTIVITY IN METROPOLITAN STATISTICAL AREA (MSA) AREA MEDIAN INCOME (AMI) BANDS BY ETHNICITY CATEGORY BY FY CLOSED²⁶⁶

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2012	<60%	0	0.0%	5,176	8.3%	0	0.0%	10,882	17.4%	0	0.0%	16,828	26.8%	0	0.0%	29,803	47.5%
2012	60%-80%	0	0.0%	5,006	4.9%	0	0.0%	2,270	2.2%	0	0.0%	73,816	72.2%	0	0.0%	21,086	20.6%
2012	80%-100%	0	0.0%	1,855	1.2%	0	0.0%	0	0.0%	0	0.0%	140,062	93.0%	0	0.0%	8,768	5.8%
2012	100%-120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	211,803	97.8%	0	0.0%	4,681	2.2%
2012	>120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	348,384	99.8%	0	0.0%	828	0.2%
2012	Total	0	0.0%	12,037	1.4%	0	0.0%	13,152	1.5%	0	0.0%	790,893	89.7%	0	0.0%	65,166	7.4%
2013	<60%	0	0.0%	3,382	5.5%	0	0.0%	11,821	19.4%	0	0.0%	14,269	23.4%	0	0.0%	31,532	51.7%
2013	60%-80%	0	0.0%	5,736	5.2%	0	0.0%	2,738	2.5%	0	0.0%	75,591	68.7%	0	0.0%	25,902	23.6%
2013	80%-100%	0	0.0%	1,926	1.3%	0	0.0%	0	0.0%	0	0.0%	139,931	93.5%	0	0.0%	7,819	5.2%
2013	100%-120%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	198,438	97.8%	0	0.0%	4,389	2.2%
2013	>120%	0	0.0%	1,808	0.5%	0	0.0%	0	0.0%	0	0.0%	346,905	98.9%	0	0.0%	1,995	0.6%
2013	Total	0	0.0%	12,852	1.5%	0	0.0%	14,559	1.7%	0	0.0%	775,134	88.7%	0	0.0%	71,637	8.2%
2014	<60%	0	0.0%	4,160	7.0%	0	0.0%	12,689	21.4%	0	0.0%	14,635	24.7%	0	0.0%	27,810	46.9%
2014	60%-80%	0	0.0%	5,373	5.1%	0	0.0%	4,357	4.2%	5	62.5%	68,387	65.4%	3	37.5%	26,411	25.3%
2014	80%-100%	0	0.0%	1,868	1.3%	0	0.0%	0	0.0%	14	100.0%	140,090	94.1%	0	0.0%	6,888	4.6%
2014	100%-120%	0	0.0%	1,669	0.8%	0	0.0%	0	0.0%	43	100.0%	205,048	98.2%	0	0.0%	2,195	1.1%
2014	>120%	0	0.0%	1,813	0.5%	0	0.0%	0	0.0%	42	100.0%	344,034	98.9%	0	0.0%	1,932	0.6%
2014	Total	0	0.0%	14,883	1.7%	0	0.0%	17,046	2.0%	104	97.2%	772,194	88.8%	3	2.8%	65,236	7.5%
2015	<60%	0	0.0%	3,503	5.3%	1	10.0%	14,297	21.5%	4	40.0%	10,404	15.6%	5	50.0%	38,428	57.7%
2015	60%-80%	3	5.8%	4,605	4.8%	1	1.9%	2,578	2.7%	37	71.2%	68,171	71.0%	11	21.2%	20,705	21.6%
2015	80%-100%	3	2.6%	1,859	1.1%	0	0.0%	0	0.0%	106	93.0%	151,172	91.5%	5	4.4%	12,174	7.4%
2015	100%-120%	0	0.0%	863	0.5%	0	0.0%	0	0.0%	157	98.1%	181,464	98.8%	3	1.9%	1,302	0.7%
2015	>120%	2	0.7%	1,877	0.5%	0	0.0%	0	0.0%	272	99.3%	348,323	98.9%	0	0.0%	1,853	0.5%
2015	Total	8	1.3%	12,707	1.5%	2	0.3%	16,875	2.0%	576	94.4%	759,534	88.0%	24	3.9%	74,462	8.6%
2016	<60%	1	4.3%	4,215	6.7%	1	4.3%	13,369	21.2%	5	21.7%	12,849	20.4%	16	69.6%	32,623	51.7%

²⁶⁶ Excludes projects in unknown bands.

CONNECTICUT GREEN BANK
6. PROGRAMS – CT SOLAR LEASE

Fiscal Year	MSA AMI Band	Majority Black				Majority Hispanic				Majority White				Majority Asian			
		# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH	# Project Units	% Project Units	OOH 1-4 Units	% OOH
2016	60%-80%	1	2.9%	5,339	5.4%	2	5.7%	3,251	3.3%	27	77.1%	65,052	65.7%	5	14.3%	25,431	25.7%
2016	80%-100%	0	0.0%	4,736	2.9%	0	0.0%	0	0.0%	82	95.3%	154,059	93.4%	4	4.7%	6,217	3.8%
2016	100%-120%	1	0.9%	0	0.0%	0	0.0%	0	0.0%	113	99.1%	185,324	99.0%	0	0.0%	1,805	1.0%
2016	>120%	0	0.0%	1,980	0.6%	0	0.0%	0	0.0%	214	100.0%	340,833	98.9%	0	0.0%	1,764	0.5%
2016	Total	3	0.6%	16,270	1.9%	3	0.6%	16,620	1.9%	441	93.4%	758,117	88.3%	25	5.3%	67,840	7.9%
Total	<60%	1	3.0%	6,086	9.5%	2	6.1%	15,991	24.9%	9	27.3%	13,853	21.6%	21	63.6%	28,310	44.1%
Total	60%-80%	4	4.2%	3,472	3.4%	3	3.2%	5,799	5.7%	69	72.6%	60,805	60.2%	19	20.0%	30,912	30.6%
Total	80%-100%	3	1.4%	3,957	2.5%	0	0.0%	691	0.4%	202	94.4%	142,115	91.4%	9	4.2%	8,800	5.7%
Total	100%-120%	1	0.3%	434	0.2%	0	0.0%	0	0.0%	313	98.7%	200,119	96.5%	3	0.9%	6,902	3.3%
Total	>120%	2	0.4%	2,074	0.6%	0	0.0%	0	0.0%	528	99.6%	334,664	99.2%	0	0.0%	772	0.2%
Total	Total	11	0.9%	16,023	1.9%	5	0.4%	22,481	2.6%	1,121	94.3%	751,556	86.8%	52	4.4%	75,696	8.7%

CONNECTICUT GREEN BANK
6. PROGRAMS – CT SOLAR LEASE

Societal Benefits

Ratepayers in Connecticut receive the societal benefits of the CT Solar Lease. Over the course of its existence, the program has supported the creation of 577 job years and avoided the lifetime emission of 154,900 tons of carbon dioxide, 185,742 pounds of nitrous oxide, 182,109 pounds of sulfur oxide, and 13,613 pounds of particulate matter as illustrated by Table 231 and Table 233

The residential leases have generated more than \$2.3 million in tax revenue for the State of Connecticut since inception as demonstrated in Table 232. The value of the lifetime public health impacts of the Solar Lease programs is estimated to be between \$5.2 and \$11.9 million as seen in Table 234.

TABLE 231. RESIDENTIAL SOLAR LEASE JOB YEARS SUPPORTED BY FY CLOSED

Fiscal Year	Direct Jobs	Indirect and Induced Jobs	Total Jobs
2012	0	0	0
2013	0	0	0
2014	19	31	50
2015	114	184	299
2016	87	141	228
Total	221	356	577

TABLE 232. RESIDENTIAL SOLAR LEASE TAX REVENUES GENERATED BY FY CLOSED

Fiscal Year	Individual Income Tax Revenue Generated	Corporate Tax Revenue Generated	Sales Tax Revenue Generated	Total Tax Revenue Generated
2012	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0
2014	\$110,473	\$109,845	\$0	\$220,317
2015	\$604,741	\$601,303	\$0	\$1,206,044
2016	\$468,143	\$465,480	\$0	\$933,623
Total	\$1,183,357	\$1,176,628	\$0	\$2,359,984

CONNECTICUT GREEN BANK
6. PROGRAMS – CT SOLAR LEASE

TABLE 233. RESIDENTIAL SOLAR LEASE AVOIDED EMISSIONS BY FY CLOSED

Fiscal Year	CO2 Emissions Avoided (tons)		NOx Emissions Avoided (pounds)		SOx Emissions Avoided (pounds)		PM 2.5 (pounds)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
2012	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0
2014	518	12,863	728	18,205	876	21,779	38	1,169
2015	3,198	79,765	3,906	97,201	3,931	97,913	255	6,983
2016	2,478	62,272	2,828	70,336	2,508	62,417	203	5,461
Total	6,194	154,900	7,462	185,742	7,315	182,109	496	13,613

TABLE 234. RESIDENTIAL SOLAR LEASE VALUE OF PUBLIC HEALTH BY FY CLOSED

Fiscal Year	Annual		Lifetime	
	Low	High	Low	High
2012	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0
2014	\$18,052	\$40,756	\$451,294	\$1,018,901
2015	\$108,138	\$244,145	\$2,703,438	\$6,103,637
2016	\$84,879	\$191,634	\$2,121,975	\$4,790,852
Total	\$211,068	\$476,536	\$5,276,707	\$11,913,390

Financing Program

The CT Solar Lease 2 fund was a financing structure developed in partnership with a tax equity investor (i.e., US Bank) and a syndicate of local lenders (i.e. Key Bank and Webster Bank) that used a credit enhancement (i.e., \$3,500,000 loan loss reserve),²⁶⁷ in combination with \$2.3 million in subordinated debt and \$11.5 million in sponsor equity from the Connecticut Green Bank as the “member manager” to provide approximately \$80 million in lease financing for residential and commercial solar PV projects. Through the product, the Connecticut Green Bank lowered the barriers to Connecticut residential and commercial customers seeking to install solar PV with no up-front investment, thus increasing demand, while at the same time reducing the market’s reliance on subsidies through the RSIP or being more competitive in a reverse auction through the Zero Emission Renewable Energy Credit (ZREC) program. As a lease, capital provided to consumers through the CT Solar Lease is now being returned to the Connecticut Green Bank, the tax equity investor, and the lenders – it is not a subsidy. The financial structure of the CT Solar Lease product includes origination by contractors, servicing of lease and PPA payments, insurance and “one call” system performance and insurance resolution, and financing features in combination with the support of the Connecticut Green Bank.

Financial Performance

To date there are 9 defaults with an original principal balance of \$210,995 or 0.76% of the Residential Solar Lease portfolio and as of June 30, 2021 there are 10 delinquencies.

²⁶⁷ From repurposed American Recovery and Reinvestment Act funds

CONNECTICUT GREEN BANK
6. PROGRAMS – CT SOLAR LEASE

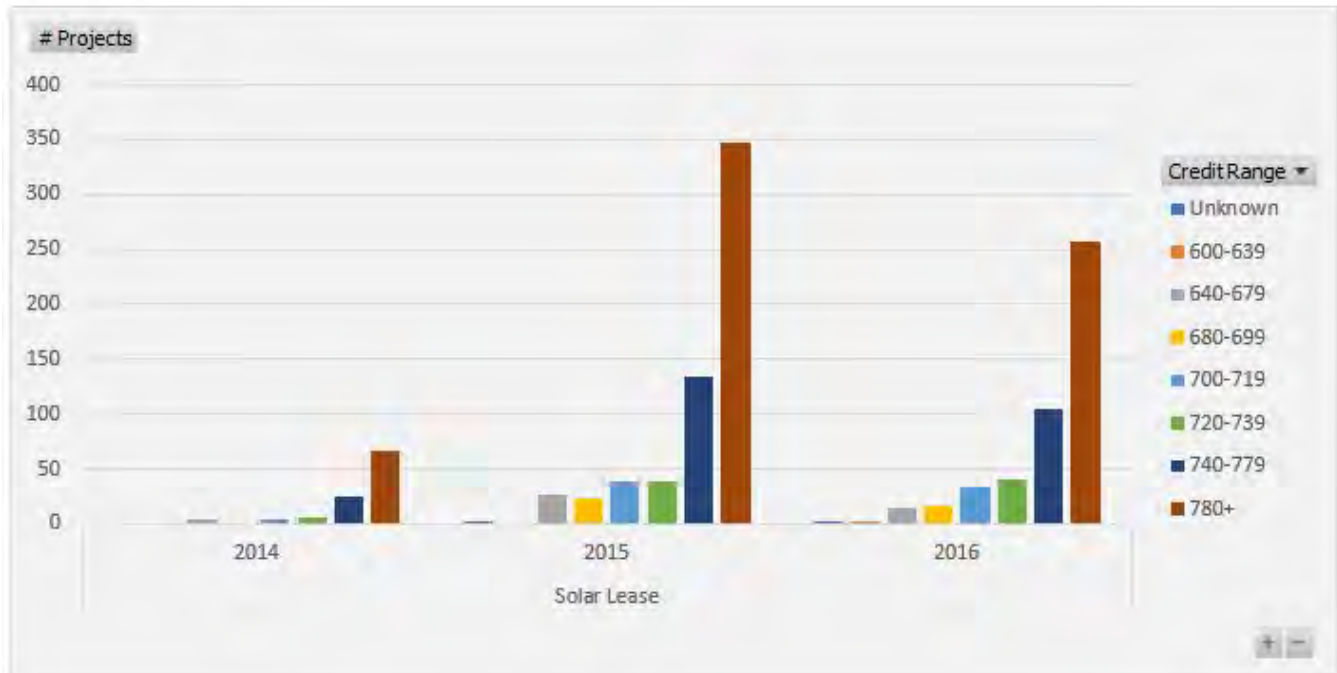
The household customers that accessed the CT Solar Lease since its launch in 2014 had varying credit scores – see Table 235.

TABLE 235. CREDIT SCORE RANGES OF HOUSEHOLD CUSTOMERS USING THE CT SOLAR LEASE BY FY CLOSED

Fiscal Year	Unknown	580-599	600-639	640-679	680-699	700-719	720-739	740-779	780+	Grand Total
2012	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	4	0	5	6	25	67	107
2015	2	0	0	26	23	39	38	134	348	610
2016	2	0	1	15	16	34	41	105	258	472
Total	4	0	1	45	39	78	85	264	673	1,189
	0%	0%	0%	4%	3%	7%	7%	22%	57%	100%

CONNECTICUT GREEN BANK
6. PROGRAMS – CT SOLAR LEASE

FIGURE 18. CREDIT SCORE RANGES OF HOUSEHOLD CUSTOMERS USING THE CT SOLAR LEASE BY FY CLOSED



Marketing

To accelerate deployment of residential solar PV through the RSIP and the uptake of the CT Residential Solar Lease financing product, the Connecticut Green Bank implemented the Solarize Connecticut program, which included group purchasing, time-limited offers, grassroots outreach, and support from local clean energy advocates who volunteered and coordinated with their towns to help speed the process – see Table 236.

The Green Bank also implemented channel marketing through residential and commercial solar installers who gained the ability to grow their businesses by providing the CT Residential Solar Lease product to their customers.

TABLE 236. NUMBER OF RESIDENTIAL PROJECTS, INVESTMENT, AND INSTALLED CAPACITY THROUGH GREEN BANK SOLARIZE CONNECTICUT FOR THE CT SOLAR LEASE FINANCING PRODUCT

Solarize	# Projects	Total Investment	Installed Capacity (MW)
Solarize	325	\$12,418,840	2.5
Not Solarize	864	\$33,903,647	7.0
Total	1,189	\$46,322,487	9.6
% Solarize	27%	27%	27%

The Green Bank Solarize Connecticut program provided a marketing channel and origination catalyst for the CT Residential Solar Leases comprising 27 percent of the total projects, investment, and installed capacity.

7. Appendix

Terms and Definitions

The following is meant to serve as guide to the reader of common terms used in this section and to illustrate how the Green Bank defines these terms:

Applications Received - This is the number of applications submitted to CGB seeking an incentive or financing during a specific period regardless of whether they were approved or rejected. The specific metric is calculated by subtracting the total number of applications received at the beginning of the time period from the total number of applications received at the end of the time period. This indicates interest in our program.

Approved - An approved project is one whose application has been reviewed by Green Bank staff and has been authorized to proceed to the funding stage, involving the project's requested CGB financing and/or incentives. The number of approvals in one period is an indicator of potential completed projects in subsequent periods.

Closed - A "Closed" project is one that has been approved by the CGB and for which CGB financing and/or incentives have been mobilized. For RSIP projects, once a project is approved, it is considered closed. This status also suggests that physical work is in progress or is imminent.

Completed – is a project that is generating or saving energy and has been deemed completed by the Green Bank and contractors based on program specific standards.

Gross Investment - This is the total system costs for all clean and renewable energy installations and/or the total costs of all energy efficiency projects during the specified time period, regardless of how much of the projects are being financed. Closing costs for CGB financing are not included in this total.

Principal Amount Financed - This is the total amount of money that is being borrowed regardless of whether it is wholly or partially from the CGB. For some programs, this amount will be greater than the gross investment, to include closing costs that are rolled into the loans. Principal Amount Financed equals Gross Investment plus closing costs that are financed, minus any part of the projects paid upfront by the borrowers:

Principal Amount Financed = Gross Investment + Fees Financed – Owners' Contributions

This should also equal CGB investment plus third party investment:

Principal Amount Financed = CGB Investment + Third Party Financing

CGB Investment - Green Bank investment activity is broken down into two categories, presented below as separate metrics.

CGB Investment = CGB Incentives + CGB Financing

CGB Incentives - CGB incentives are funds that are not intended to be repaid by the recipient and are used to reduce the cost of a specific product or technology. At present, RSIP is the only active incentive program administered by CGB.

CGB Financing - CGB financing includes the total funds deployed by the Green Bank during the specified time period with the intention either that the funds will be repaid or to bolster the creditworthiness of borrowers. CGB Financing is the sum of the types of financing below, each of which is its own metric.

CGB Financing = CGB Loans and Leases + CGB Credit Enhancements

CGB Loans and Leases - Loans and leases are the types of CGB financing in which capital is directly lent to fund projects. It does not include third party lending.

CGB Credit Enhancements - Credit enhancements involve the deployment of CGB capital to bolster the credit of borrowers. This financing category is comprised of the three categories of funds below, each as its own metric.

CGB Credit Enhancements = Loan Loss Reserves + Guarantees + Interest Rate Buy-Downs

Loan Loss Reserves - Loan Loss Reserves are capital that the CGB has segregated as part of a program to ensure against losses incurred by participating lenders due to the failure of borrowers to repay loans.

Guarantees - Guarantees reflect a specified dollar commitment that CGB has made to external lenders for repayment of specific transactions in the event one or more borrowers fail to repay the lenders.

Interest Rate Buy-Downs - Interest rate buy-downs involve the deployment of CGB capital by paying a portion of the interest on borrowers' loans to decrease their cost of capital.

Third Party Financing - This metric captures the amount of project financing that is provided by parties other than the CGB and project owner. It is this type of financing that the CGB seek to grow in relation to its own financing.

Leverage Ratio

This metric presents the relationship between private financing and CGB's direct financing.

Leverage Ratio = Gross Investment / CGB Investment

Mobilization Ratio

This metric presents the relationship between private financing and CGB's direct investment (both financing and incentives).

Mobilization Ratio = Third-Party Financing Amount / CGB Investment

Community Activity Table

See the Municipality Tables in [here](#).²⁶⁸

²⁶⁸ <https://www.ctgreenbank.com/wp-content/uploads/2022/10/FY22-ACFR-NFS-Appendix.xlsx>

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7. APPENDIX

Contractor Activity Table

See the Contractor Tables in [here](#).²⁶⁹

Trained Contractor Table

See the Trained Contractor table in [here](#).²⁷⁰

Calculations and Assumptions

TABLE 237. CAPACITY FACTORS AND EXPECTED USEFUL LIFE (EUL) BY TECHNOLOGY

Technology	Capacity Factor	EUL
AD	0.80	15
CHP	0.90	15
EE	0.0	12
Fuel Cell	0.90	10
Geothermal	0.0	25
Hydro	0.49	25
PV	0.13	25
PV/Biomass	0.13	25
Solar Thermal	0.0	20
Wind	0.18	15

TABLE 238. JOB YEAR FACTORS BY YEAR APPROVED BY TECHNOLOGY

	2009 Factors - Approved prior to 6/30/2016			2016 Factors - Approved after 7/1/2016			2018 Factors - Approved after 7/1/2018		
	Direct Job Years	Indirect and Induced Jobs	Total Job Years per \$1M Invested	Direct Job Years	Indirect and Induced Jobs	Total Job Years per \$1M Invested	Direct Job Years	Indirect and Induced Jobs	Total Job Years per \$1M Invested
Fuel Cell R&D/Engineering	2.9	4.6	7.5	2.9	3.8	6.7	2.8	3.7	6.5
Fuel Cell Manufacturing	4.8	11.0	15.8	4.9	6.4	11.3	3.9	5.8	9.7
Solar PV - Residential	5.9	9.4	15.3	3.9	5.1	9.0	3.9	5.1	9.0
Solar PV - Non-Residential	3.4	5.4	8.8	3.1	4.0	7.1	3.1	4.0	7.1
Ductless Split Heat Pump	6.7	10.7	17.4	6.7	8.7	15.4	6.5	8.5	15.0
Geothermal	8.3	13.3	21.6	6.7	8.7	15.4	6.7	8.7	15.4
Solar Thermal	7.6	12.2	19.8	5.6	7.3	12.9	5.6	7.3	12.9
Wind Installation	6.2	9.9	16.1	6.2	8.0	14.2	5.8	7.6	13.4

²⁶⁹ <https://www.ctgreenbank.com/wp-content/uploads/2022/10/FY22-ACFR-NFS-Appendix.xlsx>

²⁷⁰ <https://www.ctgreenbank.com/wp-content/uploads/2022/10/FY22-ACFR-NFS-Appendix.xlsx>

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	2009 Factors - Approved prior to 6/30/2016			2016 Factors - Approved after 7/1/2016			2018 Factors - Approved after 7/1/2018		
	Direct Job Years	Indirect and Induced Jobs	Total Job Years per \$1M Invested	Direct Job Years	Indirect and Induced Jobs	Total Job Years per \$1M Invested	Direct Job Years	Indirect and Induced Jobs	Total Job Years per \$1M Invested
Renewable Energy									
Hydro Installation	6.2	9.9	16.1	6.2	8.0	14.2	5.8	7.6	13.4
EV Charging Stations - Installation	3.1	5.0	8.1	3.1	4.0	7.1	2.9	3.8	6.7
Storage Installation	2.2	3.5	5.7	2.2	2.9	5.1	2.2	2.9	5.1
Utility Scale Storage	2.1	3.4	5.5	2.1	2.7	4.9	2.1	2.7	4.9
AD	1.9	3.0	4.9	1.9	2.5	4.4	1.9	2.5	4.4
CHP	3.9	6.2	10.1	3.9	5.0	8.9	3.9	5.0	8.9
Energy Efficiency									
Residential	12.9	20.6	33.5	0.0	0.0	0.0	0.0	0.0	0.0
Residential Lighting ¹	0.0	0.0	0.0	7.7	10.0	17.7	7.5	9.7	17.2
Residential Home Energy Solutions (HES) - Audits ¹	7.7	12.3	20.0	7.8	10.2	18.0	7.7	10.0	17.7
Residential HES - Weatherization & HVAC	0.0	0.0	0.0	5.6	7.3	12.9	5.4	7.0	12.5
Residential Gas Conversion	0.0	0.0	0.0	5.6	7.3	12.9	5.4	7.0	12.5
Small Business Energy Advantage	9.1	14.6	23.7	6.2	8.0	14.2	5.8	7.5	13.3
Large Commercial and Industrial	7.6	12.2	19.8	5.6	7.3	12.9	5.3	6.8	12.1

TABLE 239. RESIDENTIAL SINGLE FAMILY ANNUAL AND LIFETIME MMBTUS AND COST SAVINGS²⁷¹

Improvement Type	Average Annual Savings MMBTUs	Average Lifetime Savings MMBTUs	Average Annual \$ Savings	Average Lifetime \$ Savings	Average Expected Useful Life (EUL)
Air Source Heat Pump	10	190	\$419	\$8,374	20
Boiler	18	370	\$372	\$7,441	20
Central AC	3	58	\$142	\$2,552	18
Ductless Heat Pump	10	176	\$443	\$7,975	18
Furnace	15	295	\$357	\$7,136	20
Geothermal Heat Pump	5	104	\$1,593	\$31,860	20
Heat Pump Water Heater	6	78	\$215	\$2,584	12
Insulation	19	471	\$413	\$10,328	25
Other	7	138	\$154	\$3,075	20
Solar Hot Water Heater	6	157	\$150	\$3,740	25
Solar PV ¹	27	680	\$1,199	\$29,970	25
Water Heater	5	102	\$78	\$1,564	20
Windows	8	197	\$134	\$3,362	25

²⁷¹ This chart was developed in in conjunction with utility staff as a guide for the Residential Sector based on utility program savings documents from 2016-17.

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7. APPENDIX

1. Used for other residential market programs.

TABLE 240. AVERAGE EMISSION RATES BY YEAR COMPLETED BY TECHNOLOGY

	Year Completed						
	2018 ⁴	2017	2016	2015	2014	2013	2012 ⁵
CO2 tons							
AD	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CHP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EE Only ¹	0.542	0.530	0.543	0.570	0.549	0.555	0.536
Fuel Cell ²	0.068	0.068	0.068	0.068	0.068	0.068	0.068
Geothermal ²	0.400	0.400	0.400	0.400	0.400	0.400	0.400
Hydro ²	0.520	0.520	0.520	0.520	0.520	0.520	0.520
Solar PV ¹	0.553	0.539	0.562	0.575	0.551	0.572	0.558
Solar Thermal ²	0.547	0.547	0.547	0.547	0.547	0.547	0.547
Wind ¹	0.539	0.528	0.537	0.575	0.562	0.558	0.523
NOX pounds							
AD	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CHP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EE Only ¹	0.468	0.400	0.480	0.648	0.739	0.741	0.548
Fuel Cell ²	0.540	0.540	0.540	0.540	0.540	0.540	0.540
Geothermal ²	0.335	0.335	0.335	0.335	0.335	0.335	0.335
Hydro ²	0.430	0.430	0.430	0.430	0.430	0.430	0.430
Solar PV ¹	0.535	0.463	0.575	0.697	0.790	0.859	0.689
Solar Thermal ²	0.453	0.453	0.453	0.453	0.453	0.453	0.453
Wind ¹	0.422	0.367	0.428	0.642	0.760	0.737	0.469
SO2 pounds							
AD	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CHP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EE Only ¹	0.411	0.261	0.340	0.665	0.890	0.952	0.732
Fuel Cell ²	0.391	0.391	0.391	0.391	0.391	0.391	0.391
Geothermal ²	0.297	0.297	0.297	0.297	0.297	0.297	0.297
Hydro ²	0.390	0.390	0.390	0.390	0.390	0.390	0.390
Solar PV ¹	0.460	0.303	0.411	0.698	0.956	1.107	0.911
Solar Thermal ²	0.411	0.411	0.411	0.411	0.411	0.411	0.411
Wind ¹	0.405	0.267	0.333	0.723	1.012	1.000	0.643
PM2.5 pounds³							
AD	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CHP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EE Only ¹	0.043	0.042	0.043	0.045	0.045	0.045	0.045
Fuel Cell ²	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Geothermal ²	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hydro ²	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Solar PV ¹	0.047	0.046	0.049	0.050	0.050	0.050	0.050
Solar Thermal ²	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Wind ¹	0.041	0.040	0.039	0.044	0.044	0.044	0.044

1. Average Emission Rates from AVERT Model.
2. Average Emission Rates from 2007 New England Marginal Emission Rate Analysis.
3. PM 2.5 Rates for 2012 - 2014 are unavailable and use the 2015 rates.
4. 2018 rates are used for projects completed in 2019,2020 and those pending completion.
5. 2012 rates are used for projects completed prior to 2012.

TABLE 241. TAX GENERATION RATES PER \$1 MILLION DEPLOYED BY TECHNOLOGY AND PRODUCT STRUCTURE

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Technology and Program	2010-2016			2017 and later		
	Personal Income Tax Factor	Corporate Tax Factor	Sales Tax Factor	Personal Income Tax Factor	Corporate Tax Factor	Sales Tax Factor
Anaerobic Digestion Pilot	\$9,693.00	-	\$57,231.69	\$10,823.00	-	\$57,231.69
Biomass - CPACE	\$9,693.00	-	\$57,231.69	\$10,823.00	-	\$57,231.69
CHP - Pilot/Strategic Investments	\$32,436.00	\$26,599.00	\$54,741.79	\$21,703.00	\$26,599.00	\$54,741.79
Energy Efficiency - CPACE	\$39,888.00	\$19,662.00	\$58,303.00	\$28,807.00	\$19,662.00	\$58,303.00
Energy Efficiency - Home Energy Solutions Audits (HES)	\$96,903.00	\$5,152.00	\$18,694.00	\$40,976.00	\$5,152.00	\$18,694.00
Energy Efficiency - Multifamily (non-CPACE)	\$67,491.00	\$19,662.00	\$58,303.00	\$28,807.00	\$19,662.00	\$58,303.00
Energy Efficiency (non HES) - Smart-E	\$67,491.00	\$22,910.00	\$30,773.00	\$28,908.00	\$22,910.00	\$30,773.00
Fuel Cell - Strategic Investments	\$25,182.00	\$7,108.00	\$55,195.48	\$23,489.00	\$7,108.00	\$55,195.48
Geothermal - CPACE	\$43,515.00	\$26,887.00	-	\$35,791.22	\$26,887.00	-
Geothermal - Smart-E	\$43,515.00	\$26,887.00	-	\$35,791.00	\$26,887.00	-
Hydro - CPACE	\$28,674.00	\$38,937.00	\$52,239.00	\$32,640.00	\$38,937.00	\$52,239.00
Other - CPACE	\$28,674.00	\$19,662.00	\$58,303.00	\$28,807.00	\$19,662.00	\$58,303.00
Solar PV - CEBS	\$15,435.00	\$41,893.01	-	\$15,641.23	\$41,893.01	-
Solar PV - Clean Energy Communities	\$15,435.00	\$41,893.01	-	\$15,641.23	\$41,893.01	-
Solar PV - CPACE	\$15,435.00	\$41,893.01	-	\$15,641.23	\$41,893.01	-
Solar PV - CPACE Onyx	\$15,435.00	\$16,916.65	-	\$15,641.23	\$16,916.65	-
Solar PV - CPACE SL2	\$15,435.00	\$16,916.65	-	\$15,641.23	\$16,916.65	-
Solar PV - CPACE SL3	\$27,040.50	\$3,373.73	-	\$20,878.21	\$3,373.73	-
Solar PV - Low Income - PosiGen	\$27,040.50	\$3,373.73	-	\$20,878.21	\$3,373.73	-
Solar PV - Multifamily (blank)	\$15,435.00	\$14,617.00	-	\$15,641.00	\$14,617.00	-
Solar PV - OSDG	\$15,435.00	\$41,893.01	-	\$15,641.23	\$41,893.01	-
Solar PV - RSIP	\$27,040.50	\$8,076.60	-	\$20,878.21	\$8,076.60	-
Solar PV - Smart-E	\$27,040.50	\$5,250.00	-	\$20,878.21	\$5,250.00	-
Solar PV - Solar Lease SL2	\$27,040.50	\$26,886.74	-	\$20,878.21	\$26,886.74	-

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Technology and Program	2010-2016			2017 and later		
	Personal Income Tax Factor	Corporate Tax Factor	Sales Tax Factor	Personal Income Tax Factor	Corporate Tax Factor	Sales Tax Factor
Solar PV - Solar Loan	\$27,040.50	\$26,886.74	-	\$20,878.21	\$26,886.74	-
Solar PV - Solar PV - Lease Onyx	\$15,435.00	\$16,916.65	-	\$15,641.23	\$16,916.65	-
Solar PV - Solar PV - Lease SL2	\$15,435.00	\$16,916.65	-	\$15,641.23	\$16,916.65	-
Solar PV - Solar PV - Lease SL3	\$27,040.50	\$ 3,373.73	-	\$20,878.21	\$ 3,373.73	-
Solar Thermal - CPACE	\$39,888.00	\$26,887.00	-	\$29,826.00	\$26,887.00	-
Solar Thermal - Smart-E and Pilots	\$39,888.00	\$26,887.00	-	\$29,826.00	\$26,887.00	-
Waste Heat Recovery - CPACE	\$39,888.00	\$26,599.00	\$54,741.79	\$21,703.00	\$26,599.00	\$54,741.79
Wind - Strategic	\$28,674.00	\$15,501.00	\$52,239.00	\$32,640.00	\$15,501.00	\$52,239.00

TABLE 242. PUBLIC HEALTH SAVINGS RATES PER TON OF POLLUTANT AVOIDED

Ton avoided	PM _{2.5} - Low	PM _{2.5} - High	SO _x - Low	SO _x - High	NO _x - Low	NO _x - High
1	\$120,799	\$273,010	\$28,665	\$64,794	\$5,881	\$13,293



Memo

To: Connecticut Green Bank Board of Directors
From: Eric Shrago, Vice President of Operations
Date: October 14, 2022
Re: Job Creation and Tax Revenue Contribution Estimate Measurement Methodology

Describing the contributions of the projects supported by the Connecticut Green Bank to the economy helps illustrate the how the continued deployment of clean energy and thus the Green Bank helps society. Estimation of the jobs created and tax revenue generated by the projects supported by the Green Bank is an existing part of the Societal Impact section of the Evaluation Framework.

Late last year, the Green Bank engaged Navigant Consulting to update a study and model for estimating the jobs created and taxes generated by Green Bank supported projects based on the evolutions in the state's clean energy economy. The study was an update of the 2019 jobs and tax study which built on studies from 2016 and 2008 that were commissioned by the Green Bank and the Connecticut Department of Economic and Community Development (DECD). The model estimates the number of direct indirect, and induced jobs created as well as the personal and corporate income taxes as well as sales and use taxes based on the jobs created and financial structures of projects. In the latest edition, we have included property tax estimates as well. The original study and the resulting tax calculator have been reviewed by the CT DECD and the CT Department of Revenue Services (DRS), who have found this to be an acceptable and reasonable tool for estimating this tax revenue. DECD also reviewed the most recent job calculations to ensure that we are using DECD inputs correctly.

The Audit Compliance and Governance Committee met on October 11, 2022, to review these methodologies and recommended that the Board of Directors approve of them.

Resolution

WHEREAS, the Audit, Compliance and Governance Committee has reviewed and recommended the approval of these updated methodologies;

RESOLVED, that the Connecticut Green Bank Board of Directors approves of the proposed Jobs Study and Tax Calculator for the Evaluation and Measurement of the jobs created and tax revenue generated by Green Bank supported projects.



Clean Energy Jobs in Connecticut

Final Report

January 21, 2021



Disclaimer

This deliverable was prepared by Guidehouse Inc. for the sole use and benefit of, and pursuant to a client relationship exclusively with the Connecticut Green Bank (“Client”). The work presented in this deliverable represents Guidehouse’s professional judgement based on the information available at the time this report was prepared. Guidehouse is not responsible for a third party’s use of, or reliance upon, the deliverable, nor any decisions based on the report. Readers of the report are advised that they assume all liabilities incurred by them, or third parties, as a result of their reliance on the report, or the data, information, findings and opinions contained in the report.

Executive Summary

2020 Refresh of Connecticut Clean Energy Jobs Study



\$1 million investment in surveyed clean energy technologies generates between **4 and 13 direct, indirect, and induced job-years** by technology group



Technologies with **relatively lower average wages** and **higher cost allocation to labor** generate **more job-years**, with some **residential EE technologies, anaerobic digestion, and wind** generating the most of those surveyed



Numbers of job-years created are likely conservative, as not all segments of clean technology value chains are fully addressed in this study

A \$1 million invested creates:

6	Fuel cell job-years
5	Solar PV job-years
4	Meter installation job-years
7	EV charging station job-years
4	Storage job-years
8	Residential EE job-years
6	Non-residential EE job-years
13	Anaerobic digestion job-years
6	CHP job-years
10	Wind job-years
3	Hydro job-years

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2021 Study Overview



Jobs Impact Based on Dollars Invested



Appendix

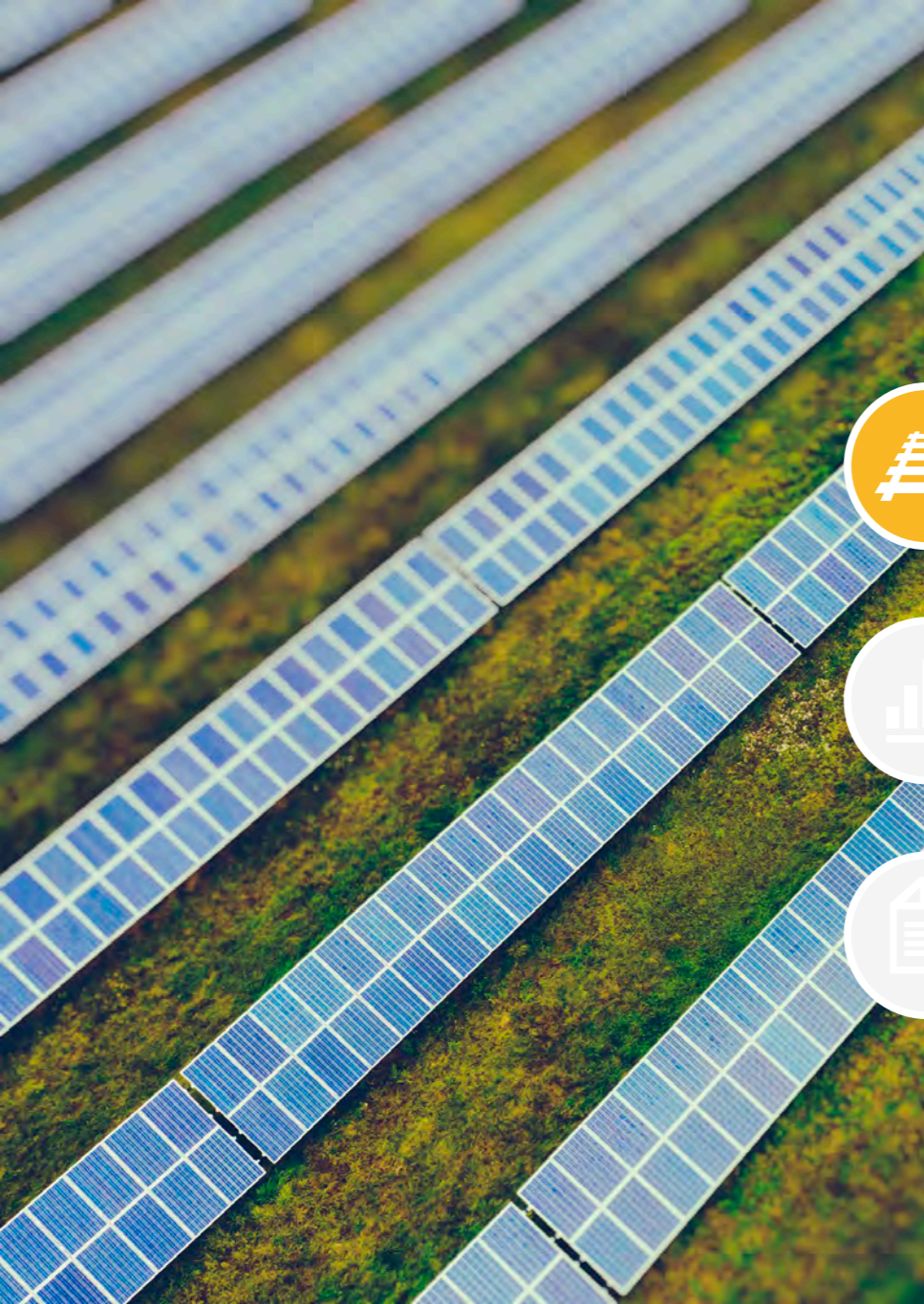


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2021 Study Overview



Jobs Impact Based on Dollars Invested



Appendix

As the industry evolves, the Green Bank has commissioned studies to understand clean energy job creation

	2009-2010 Study	2015-2016 Refresh	2020 Refresh
Central Focus	To provide detailed inventory/accounting of RE and EE and wages, jobs impact based on dollars invested, clean energy value chain, and a summary of DECD work	To provide an updated calculator tool to estimate the economic development benefits (i.e., job-years created) from clean energy investments in Connecticut	To refresh the calculator tool to update job-years created from clean energy investments in Connecticut
Study Pool	74 companies interviewed, 95 researched	31 companies interviewed, 40 researched	54 technology interviews conducted ¹ , 60 companies researched online
Data Focus	Job counts and industry insights	Technology-specific data inputs for calculator	Technology-specific data inputs for calculator
Tech	EE in general and RE, primarily solar PV and fuel cells	New distributed energy resources (DER) such as electric vehicle (EV) charging and energy storage	All previous technologies plus meter installation, anaerobic digestion, CHP, and additional sectors (e.g., res, storage)

RE = Renewable Energy technology; EE = Energy Efficiency technology; DECD = CT Department of Economic Community Development |

¹Fewer distinct interviews were conducted, as most interviews addressed more than one technology or sector

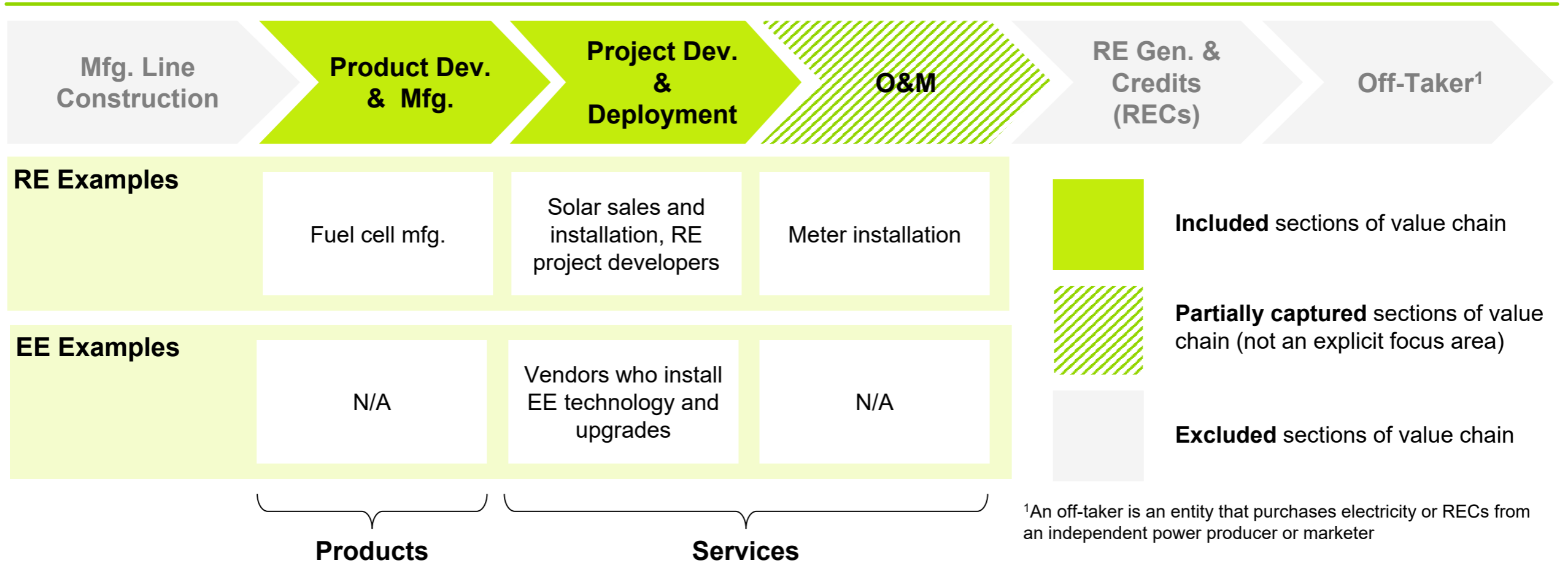
Technologies considered are largely the same as prior studies, with some additional sectors and infrastructure

Renewable Energy	
Technology	Sector
Fuel Cell	Manufacturing, R&D/Engineering
Solar PV	Residential, Non-residential, Utility scale
Meter Installation	Non-residential
EV Charging Stations	Residential, Non-residential
Storage	Residential, Non-residential, Utility scale
Anaerobic Digestion	Non-residential
CHP	Non-residential
Offshore Wind	Utility scale
Onshore Wind	Utility scale
Hydro	Utility Scale

Energy Efficiency	
Technology	Sector
Lighting	Residential
Home Energy Solutions (HES) - Audits	Residential
HES - Weatherization & HVAC	Residential
Gas Conversion	Residential
Small Business Energy Advantage	Non-residential
Large Commercial and Industrial	Non-residential
Ductless & Air Source Heat Pump	Residential
Ground Source Geothermal Heat Pump	Residential
Solar Thermal	Residential

The jobs study focuses on the section of the value chain most closely associated with project installation

RE/EE Value Chain



In line with value chain focus, the “jobs types” considered include manufacturing, installer, electrician, & engineering/PM

Companies were asked about wages and personnel in four job categories:

General Job Type	Example Specific Occupation Types ¹
Manufacturing	Production occupations (e.g., assemblers, fabricators, equipment operators, and process workers)
Installers/Field Technicians	Installation and construction occupations (e.g., solar PV installers, heating, AC and refrigeration mechanics and installers, insulation workers, floor, ceiling and wall)
Electricians	Electricians, electro-mechanical technicians, electrical and electronics installers and repairers
Engineers/Project Managers	Engineers (e.g., mechanical, civil, and electrical engineers); management occupations (e.g., project, construction, and engineering managers)



All sales, marketing, accounting, etc. are considered part of company overhead



Salaries and job responsibilities can vary significantly in engineer/PM category

1. Specific Occupation titles from Bureau of Labor Statistics – May 2015 State Occupational Employment and Wage Estimates Connecticut
http://www.bls.gov/oes/current/oes_ct.htm

Guidehouse interviewed private companies that employ people in CT – multiplier was used for indirect & induced jobs

Direct Jobs

For the purpose of this analysis, direct jobs are considered **existing jobs in the specified CT industries**.

In policy analysis, direct jobs are commonly defined as the initial change in final demand for the industry sector in question. Direct job impacts describe the changes in economic activity for sectors that first experience a change in demand because of a project, policy decision, or some other stimuli.

Primary focus of study

Indirect Jobs

Represents the **response as supplying industries increase output** in order to accommodate the initial change in final demand. These indirect beneficiaries will then spend money for supplies and services, which results in another round of indirect spending.

Secondary scope (estimated via 1.2 multiplier from DECD August 11, 2021 email)

Induced Jobs

Jobs generated by the **spending of households who benefit from the additional wages and business income** they earn through direct and indirect activity. The increase in income, in effect, increases the purchasing power of households.

Guidehouse used interviews from top employers in CT to extrapolate findings to whole CT market

54 Technology interviews conducted¹

60 Companies researched online

118 Relevant companies identified

- Focus was on **product development** and **manufacturing** as well as **project development** and **deployment** jobs across various leading and emerging **RE** and **EE** technologies
- **Interview data** was largely used to estimate **weighted average wages**, **project cost allocation**, and **state-wide industry** size
- For **data points not available from interviews**, data from similar industries, the 2015-2016 study (applying inflation as appropriate), secondary research, and professional judgement were used to fill gaps
- In general, **job-years** presented in this study include **direct, indirect, and induced jobs**
- **Cross-checking** was conducted using resources from CGB, utility plans, publicly-available studies, and professional judgement

¹Fewer distinct interviews were conducted, as most interviews addressed more than one technology or sector

Focused interviews gathered results from top employers or other sources and extrapolated for all current jobs

Guidehouse interview process



1 Build the initial company database. Guidehouse developed a company and contact list using information from CGB, Guidehouse's 2016 study, trade organizations, utilities, other public sources, and companies known to the evaluation team.

2 Research primary contact information. Missing email addresses and telephone numbers were obtained from CGB and researched through online searches and phone calls.

3 Create, test, and revise the interview questions. The interview question set was refined to be concise while capturing information that was of greatest interest (see Appendix)

4 Conduct interviews. Guidehouse managed the interview process and conducted the interviews. The evaluation team conducted 54 formal interviews for RE and EE technologies. Most companies provided data for more than one technology or sector.

5 Data collection and follow up. Guidehouse documented all interview data and followed up with interview contacts for more information, as necessary.

6 Review and clean the data set. Guidehouse worked with CGB to extensively review the analysis and results for accuracy and completeness, especially with 2015-2016 data and secondary resources



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2021 Study Overview



Jobs Impact Based on Dollars Invested



Appendix

\$1 million invested in clean technology generates 4-13 job years, depending on technology

A \$1 million invested creates:

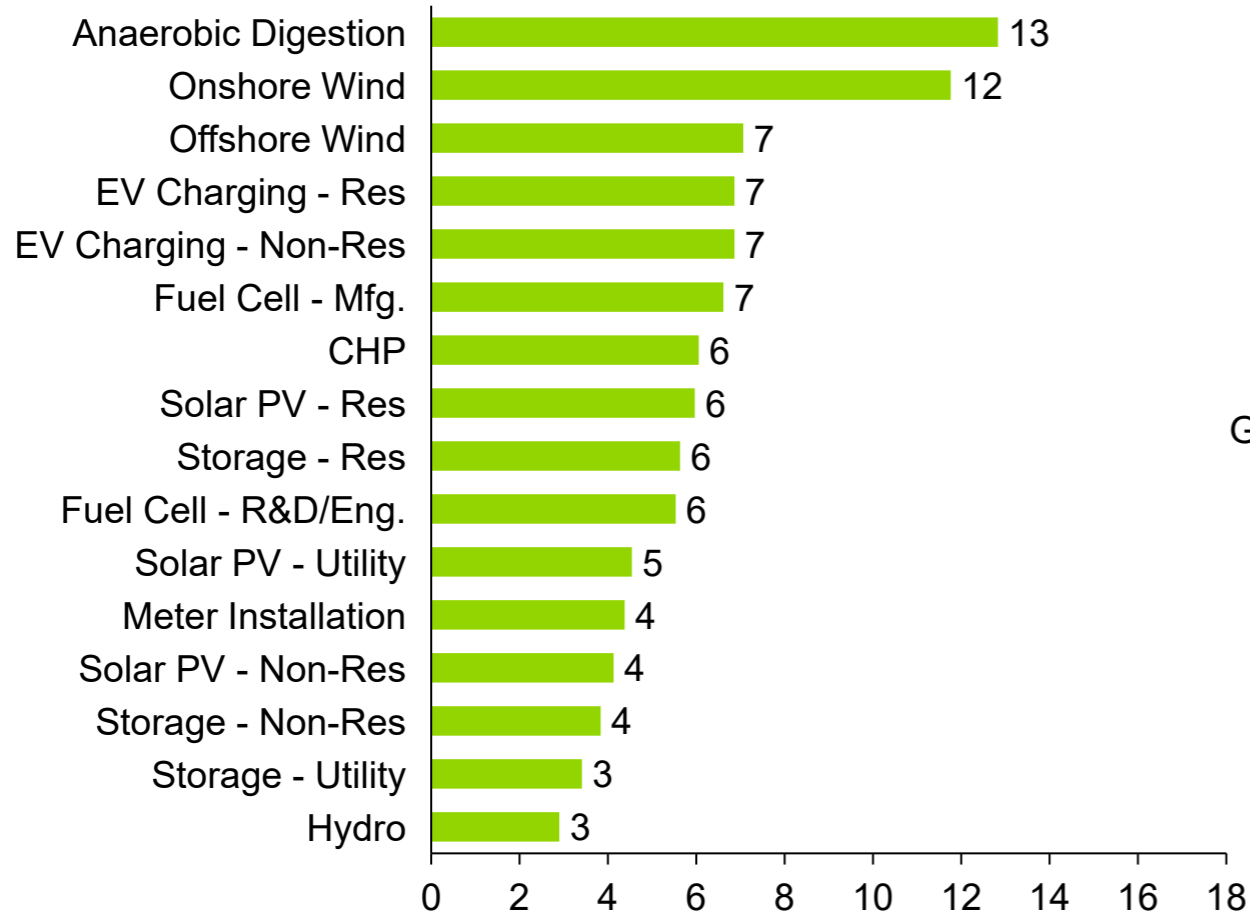
6	Fuel cell job-years
5	Solar PV job-years
4	Meter installation job-years
7	EV charging station job-years
4	Storage job-years
8	Residential EE job-years
6	Non-residential EE job-years
13	Anaerobic digestion job-years
6	CHP job-years
10	Wind job-years
3	Hydro job-years

Key findings:

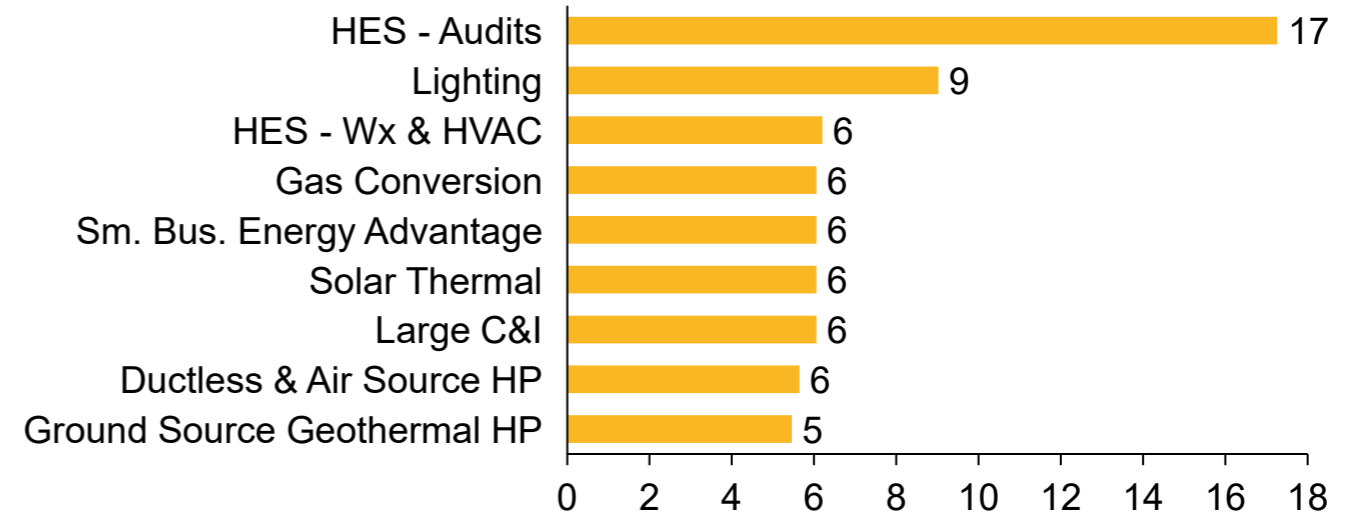
- Technologies with **relatively higher labor spend** and **relatively lower average wages** generate **more direct job-years**
- **Relatively low average wages** and **relatively high labor as percent of project cost** contribute to **anaerobic digestion** generating **highest job-years** of technologies surveyed
- There is **variation within technologies** for job-years generated, as different types of projects have different labor and project allocation – for example, **non-residential and utility-scale projects** tend to have more higher wage jobs and thus **fewer job-years** generated
- As **solar PV, storage, and solar meters are often deployed together** in CT, similar project economics and average wages lead to **similar job-years generated**
- **Variations between technologies for the same sectors** are largely due to more **skilled labor being paid higher wages**, as larger projects generally have more engineers and PMs
- **Job-years are conservative**, as the study only addresses development, manufacturing, installation, and partially O&M parts of value chain

A \$1 million investment in clean energy creates an average of 7 job-years across technologies and sectors

Renewable Energy Job-Years Created

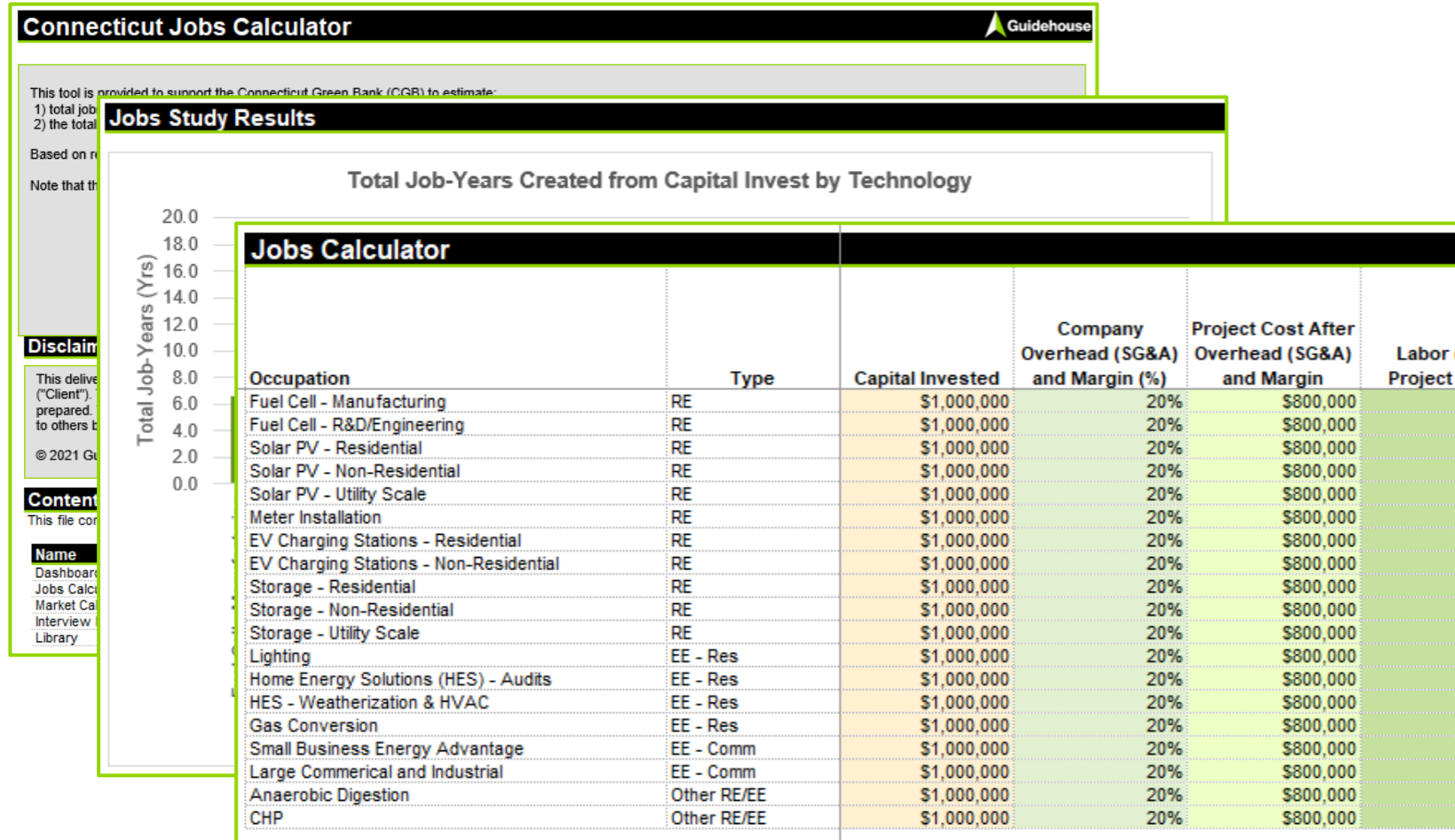


Energy Efficiency Job-Years Created



Note: Inputs and outputs have been compared with 2015-2016 study and are generally aligned

Jobs calculator estimates the job-years created from \$1 million in investment

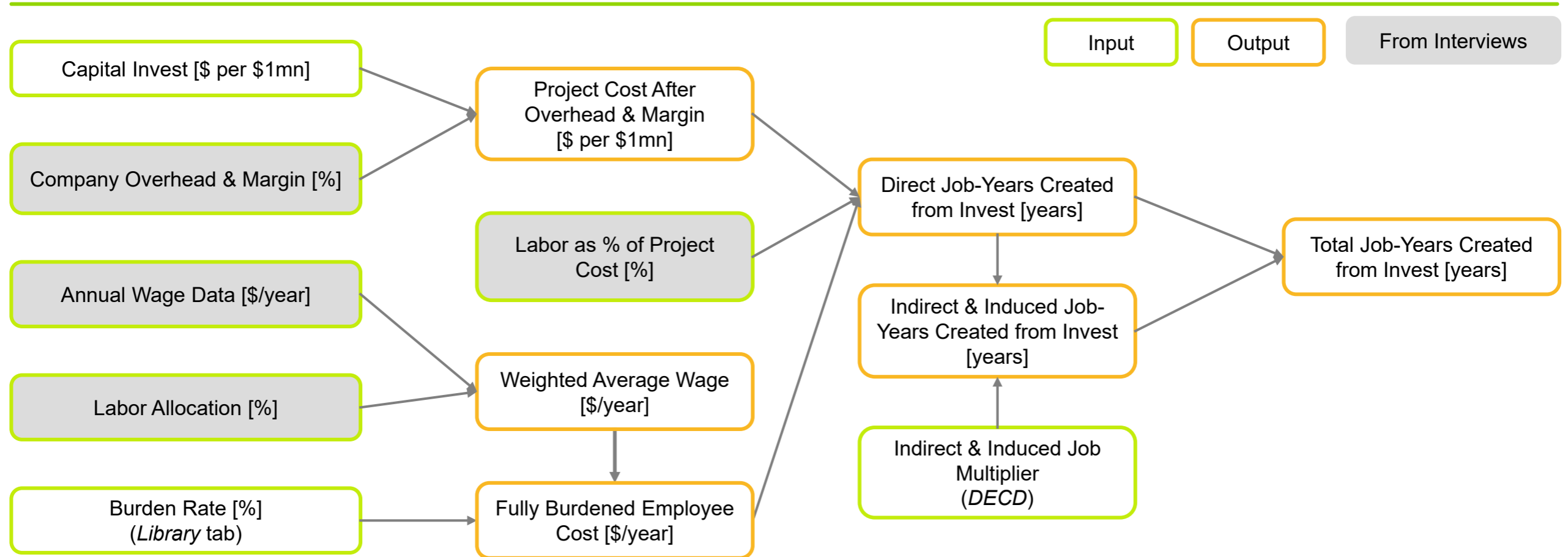


Compared to Previous Study

- Values are representative of the **2020** market in Connecticut
- **Additional technologies and sectors** were analyzed
- **Average wage** calculation is based on **interview data** rather than Bureau of Labor Statistics average wages

Calculation is based on technology-specific average wage data and project cost allocation from interviews

Overall model flow



The weighted average wage is calculated by multiplying salary data by job type by labor allocation

Calculation

Labor Allocation [%]
(from interviews)



Annual Wage Data [\$/year]
(from interviews)



Weighted Average Wage [\$/year]

Example for Residential Solar PV

Technology	Manufacturing	Installers/ Field Techs	Electricians	Engineers/ PMs/ R&D
Solar PV – Residential	0%	77%	16%	7%



Technology	Manufacturing	Installers/ Field Techs	Electricians	Engineers/ PMs/ R&D
Solar PV – Residential	N/A	\$57,000	83,000	\$100,000



Technology	Weighted Average Wage
Solar PV – Residential	\$64,000

Assumptions around direct job types and global factors are consistent across technologies

Tech-agnostic assumptions

- **Distribution/supply** work is considered **indirect**.
- **Subcontracted** work is considered **indirect** – note these jobs may be more significant in some sectors (e.g., EV charging installation), less so in others
- **Assumed 20% for company overhead (SG&A)** costs (including jobs) and **margin**; validated with interview data
- **Excluded from the weighted average wage** but **included in company overhead** are administrative and executive, O&M, finance and accounting, and sales and marketing jobs
- **Labor** is the percentage of the project cost that is used to pay installers, electricians, project managers and engineers.
- **Non-Labor** is the percentage of the project cost that is used to cover **all other project expenses**, including materials and non-labor soft costs
- **Total Indirect and Induced Job-Years** is calculated from **DECD inputs**¹
- The **burden rate** was provided by **DECD** and validated with interview data²
- If **data was not available** for a certain sector, **data from 2015-2016** (inflated to 2020 \$ as necessary) or **similar sectors** were used

¹CT DECD email 8/11/2021 | ²CT DECD email 9/23/2021



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2021 Study Overview



Jobs Impact Based on Dollars Invested



Appendix

Interview Guide

The interview guide was streamlined compared to the 2015-2016, with content largely the same

Your Company

1. Please tell us a little about yourself and your role in the company.
2. Describe your overall business.
3. Describe your [technology type and detail] business.
 - Do you offer primarily products, equipment installation, or services?
 - Note: Some companies may be involved in multiple technologies and the following questions will be technology type and detail-specific.
4. Which market(s) do you primarily serve within the [technology type and detail] business?
5. What is your market share (%) for [technology type(s)] in CT?
 - How does your market share vary by Market Segment?
6. How many FTE (full-time equivalent) employees did you have working on [Type & Technology Detail] jobs in CT at the end of 2020?
 - How many locations do you have in CT?
 - How many CT employees by job type (see table below)?
 - What is the average direct wage and the average fully burdened wages (i.e. direct wage plus benefits such as health insurance and retirement contributions) by job type for CT employees?

Project Economics

7. What are the attributes of your typical project?
 - What is average project cost?
8. Could you break out the project costs by cost category in the table below?
9. How is a typical project financed (i.e. bank loans, equity investors, tax credits, customer out of pocket)?
 - If there's more than one source of finance, what is the typical % share by source?
 - Which, if any, federal or CT tax credits do you receive for [technology type and detail]?

Job Type	# of CT employees	Direct Wage (\$/year)	Fully Burdened Wage (\$/year)
Manufacturing			
Installers/Field Technicians			
Electricians			
Engineers/Managers/R&D			
Sales/Marketing/Accounting/Office/etc.			

Cost Category	% of Project Costs
Fully burdened labor costs (internal staff and subcontracted)	
Material costs (technology and balance of system/plant)	
Fully burdened indirect labor costs (sales, marketing, accounting, management)	
Overhead and profit (property or vehicle rental and leasing costs, profit)	
Total	100%

Weighted Average Wage by Technology

Renewable Energy	
Technology	Weighted Average Wage (\$/year)
Fuel Cell – Manufacturing	\$82,000
Fuel Cell – R&D/Engineering	\$98,000
Solar PV – Res	\$64,000
Solar PV – Non-Res	\$82,000
Solar PV – Utility Scale	\$82,000
Meter Installation	\$78,000
EV Charging Stations – Res	\$74,000
EV Charging Stations – Non-Res	\$74,000
Storage – Res	\$60,000
Storage – Non-Res	\$79,000
Storage – Utility Scale	\$79,000
Anaerobic Digestion	\$48,000
CHP	\$67,000
Offshore Wind	\$115,000
Onshore Wind	\$69,000
Hydro	\$81,000

Energy Efficiency	
Technology	Weighted Average Wage (\$/year)
Lighting	\$75,000
HES – Audits	\$55,000
HES – Weatherization & HVAC	\$68,000
Gas Conversion	\$71,000
Small Business Energy Advantage	\$71,000
Large Commercial and Industrial	\$67,000
Ductless & Air Source HP	\$74,000
Ground Source Geothermal HP	\$87,000
Solar Thermal	\$71,000

Source: Guidehouse analysis of interview data

Labor as % of Project Cost by Technology

Renewable Energy	
Technology	Labor as % of Project Cost
Fuel Cell – Manufacturing	40%
Fuel Cell – R&D/Engineering	40%
Solar PV – Res	28%
Solar PV – Non-Res	25%
Solar PV – Utility Scale	28%
Meter Installation	25%
EV Charging Stations – Res	38%
EV Charging Stations – Non-Res	38%
Storage – Res	25%
Storage – Non-Res	23%
Storage – Utility Scale	20%
Anaerobic Digestion	46%
CHP	30%
Offshore Wind	60%
Onshore Wind	60%
Hydro	18%

Energy Efficiency	
Technology	Labor as % of Project Cost
Lighting	50%
HES – Audits	70%
HES – Weatherization & HVAC	31%
Gas Conversion	32%
Small Business Energy Advantage	32%
Large Commercial and Industrial	30%
Ductless & Air Source HP	31%
Ground Source Geothermal HP	35%
Solar Thermal	32%

Source: Guidehouse analysis of interview data

Contact

Steven Tobias

Director

steven.tobias@guidehouse.com

(781) 270-8438

Nicole Reed Fry

Associate Director

nicole.reed.fry@guidehouse.com

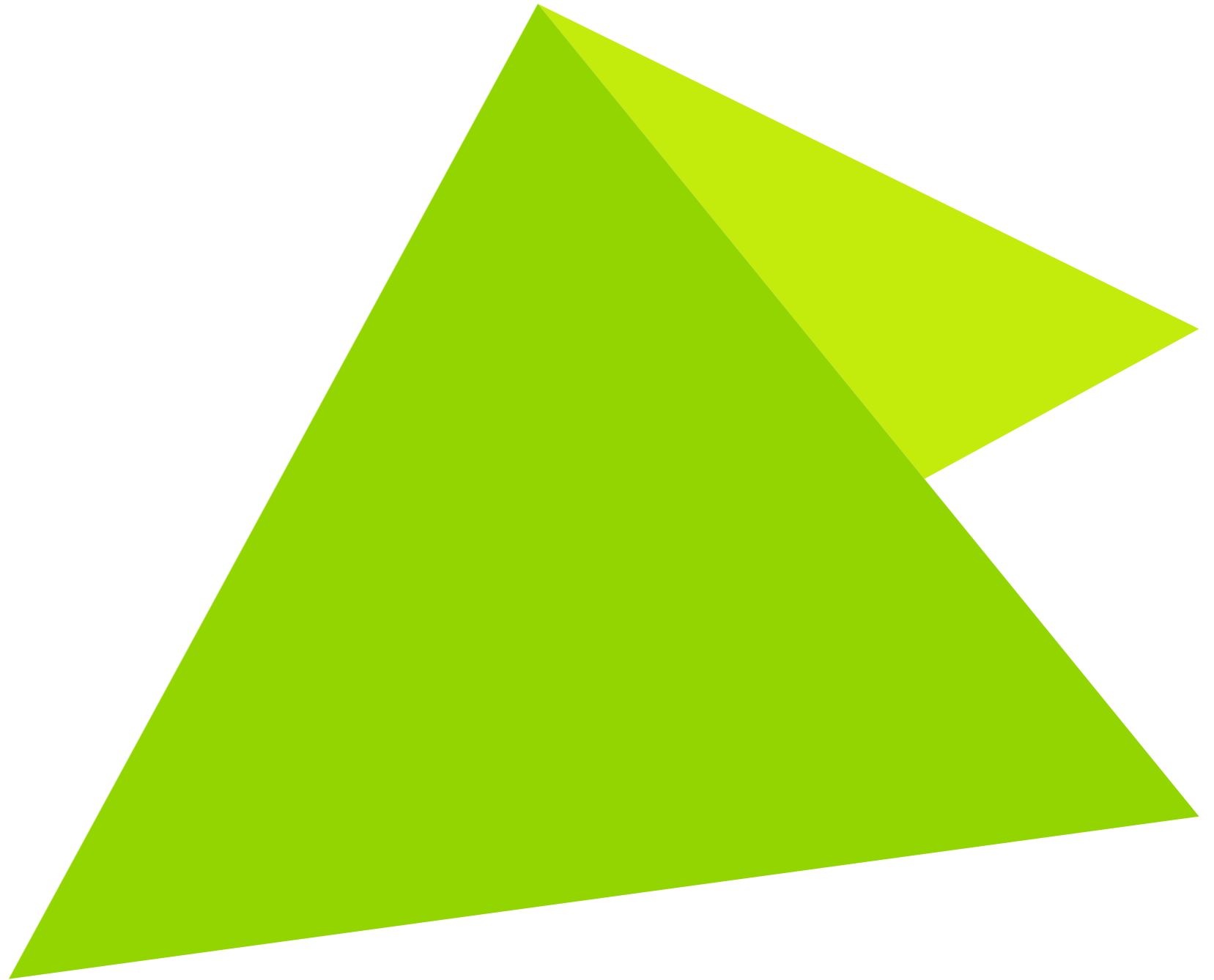
(301) 728-2526

Jennifer Castor

Managing Consultant

jcastor@guidehouse.com

(484) 883-3300

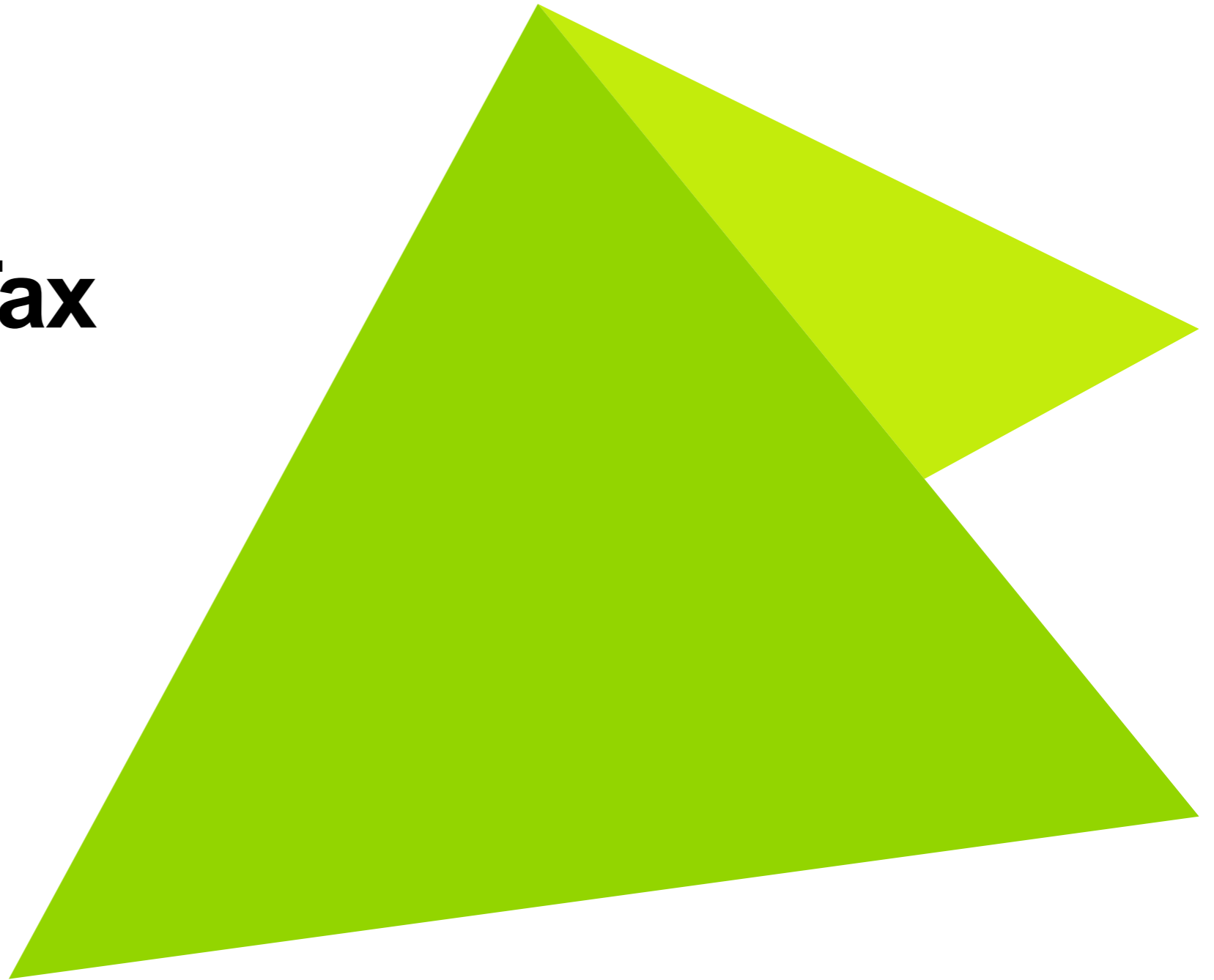




Clean Energy Tax Revenue in Connecticut

Final Report

December 24, 2021



Disclaimer

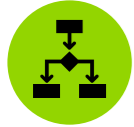
This deliverable was prepared by Guidehouse Inc. for the sole use and benefit of, and pursuant to a client relationship exclusively with the Connecticut Green Bank (“Client”). The work presented in this deliverable represents Guidehouse’s professional judgement based on the information available at the time this report was prepared. Guidehouse is not responsible for a third party’s use of, or reliance upon, the deliverable, nor any decisions based on the report. Readers of the report are advised that they assume all liabilities incurred by them, or third parties, as a result of their reliance on the report, or the data, information, findings and opinions contained in the report.

Executive Summary

2018 Refresh of Connecticut Clean Energy Tax Revenue Study



\$1 million investment in surveyed clean energy technologies generates between approximately **\$10,000 and \$155,000 in tax revenue** over the project lifetime



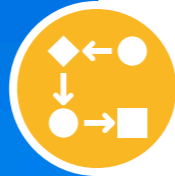
Individual income tax, corporate income tax, sales and use tax, and property tax all vary depending on **technology, business model, and sector** the project is deployed in



Property tax and sales and use tax exemptions play a deciding role in hierarchy of total tax generation; in technologies/sectors without exemptions, **these tax categories can account for more than 50% of tax generated**

Technology	Taxes as % of Invest
EV Charging Stations	8-15%
CHP	13%
Hydro	11%
Wind	8-11%
Meter Installation	8-11%
C&I Energy Efficiency	10%
Residential Energy Efficiency	5-10%
Storage	2-8%
Anaerobic Digestion	7%
Solar PV	1-7%
Fuel Cell	4-5%

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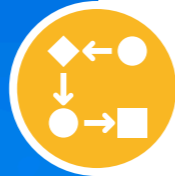


Technology Dashboards



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Business Models



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The Green Bank has commissioned studies to understand impacts of clean energy invest on tax revenue generation

Our statement of purpose

Refresh the 2018 tax revenue calculator to determine the taxes generated in the State of Connecticut as a result of investment in renewable energy (RE) and energy efficiency (EE) projects. Specifically:

- 1** Refresh **individual income tax, corporate income tax, and sales tax** assumptions from the 2018 tax revenue calculator
- 2** Define **property tax assumptions**
- 3** Calculate **total taxes generated per \$1 million invested** in agreed-upon technologies and business models

The results of the tax revenue calculator will assist the CGB in quantifying benefits of clean energy investment to the state legislators and other parties



Technologies are largely the same as in 2018, with some additional sectors, infrastructure, and business models

Renewable Energy	
Technology	Sector
Fuel Cell	Manufacturing, R&D/Engineering
Solar PV	Residential, Non-residential, Utility scale
Meter Installation	Residential, Non-residential
EV Charging Stations	Residential , Non-residential,
Storage	Residential, Non-residential , Utility scale
Anaerobic Digestion	Non-residential
CHP	Non-residential
Onshore Wind	Utility-scale
Offshore Wind	Utility-scale
Hydro	Utility-scale

Energy Efficiency	
Technology	Sector
Lighting	Residential
Home Energy Solutions (HES) - Audits	Residential
HES - Weatherization & HVAC	Residential
Ductless & Air Source Heat Pumps	Residential
Geothermal Heat Pumps	Residential
Solar Thermal	Residential
Gas Conversion	Residential
Small Business Energy Advantage	Non-residential
Large Commercial and Industrial	Non-residential

 **Note that many of these technologies are modeled across multiple common business models** (e.g., majority financing via for-profit bank loan vs. lease/PPA agreement)

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As modeled, increased taxes can be driven by five broad factors

Potential drivers

Higher wage jobs

Engineering, Project Management, and Research & Development jobs generally pay higher wages than installer jobs, leading to **higher individual income taxes**

Higher job intensity

Greater percentage of project cost associated with labor vs. materials leads to more jobs created and **higher individual income taxes**

Profitable industry

Industries that are not yet profitable such as anaerobic digestion, generate **lower corporate income tax**

More for-profit parties involved

Involvement of more parties in financing leads to **more opportunities for taxable corporate income**

Non-exempt tax status

Industries and business models that do not have exemptions for property and sales tax leads to **application of these tax categories**

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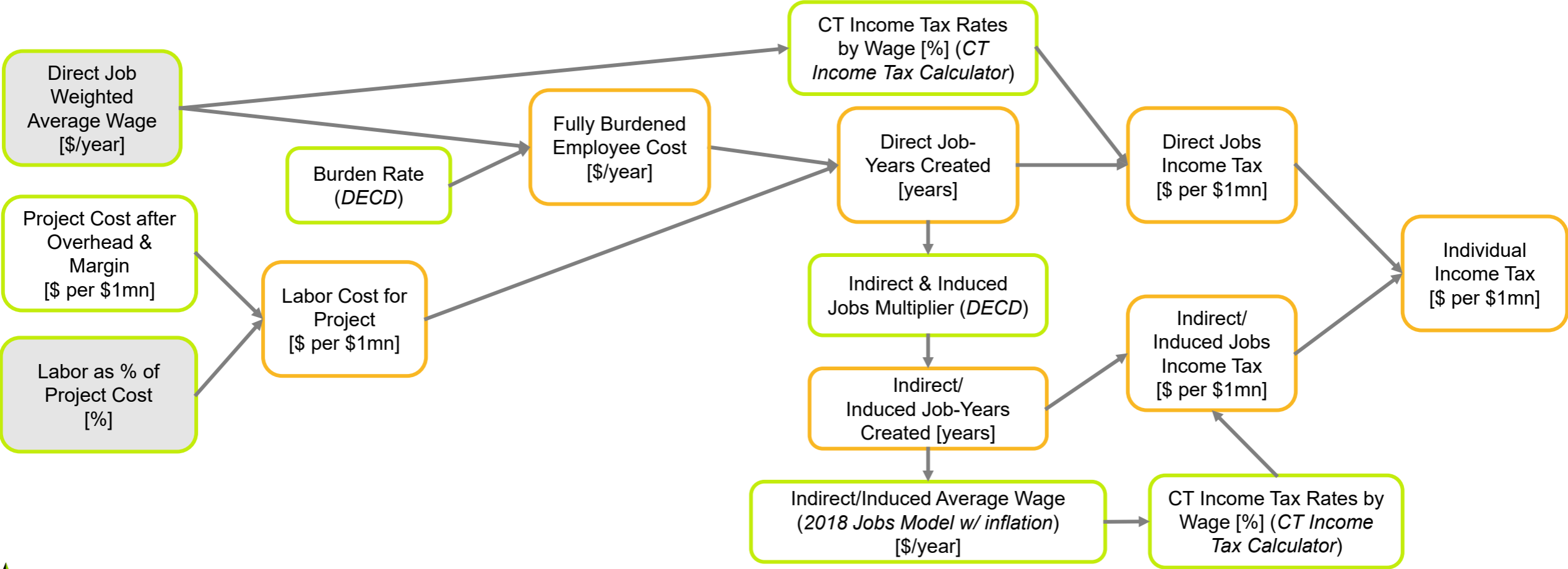


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Individual income tax is grounded in interview data for wages and project cost allocation

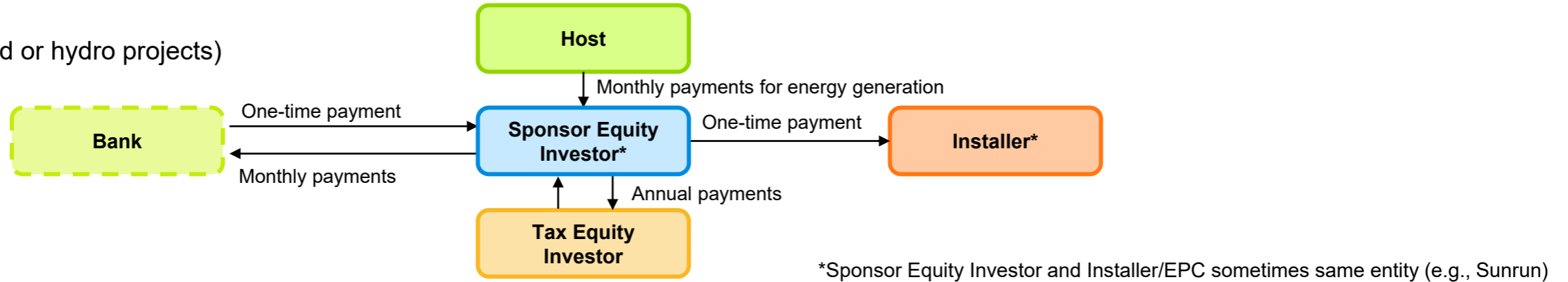
Individual income tax calculation methodology:

Input
Output
From Interviews



Three broad business model relationships were used to approximate corporate income tax

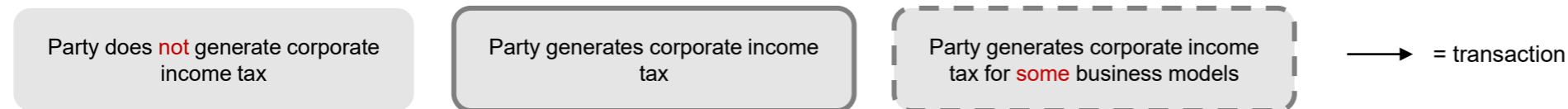
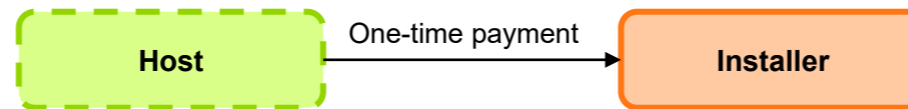
Lease/PPA
(e.g., solar, wind or hydro projects)



Loan
(e.g., ductless split heat pump, CHP)



No Financing
(e.g., lighting, HES Audits)



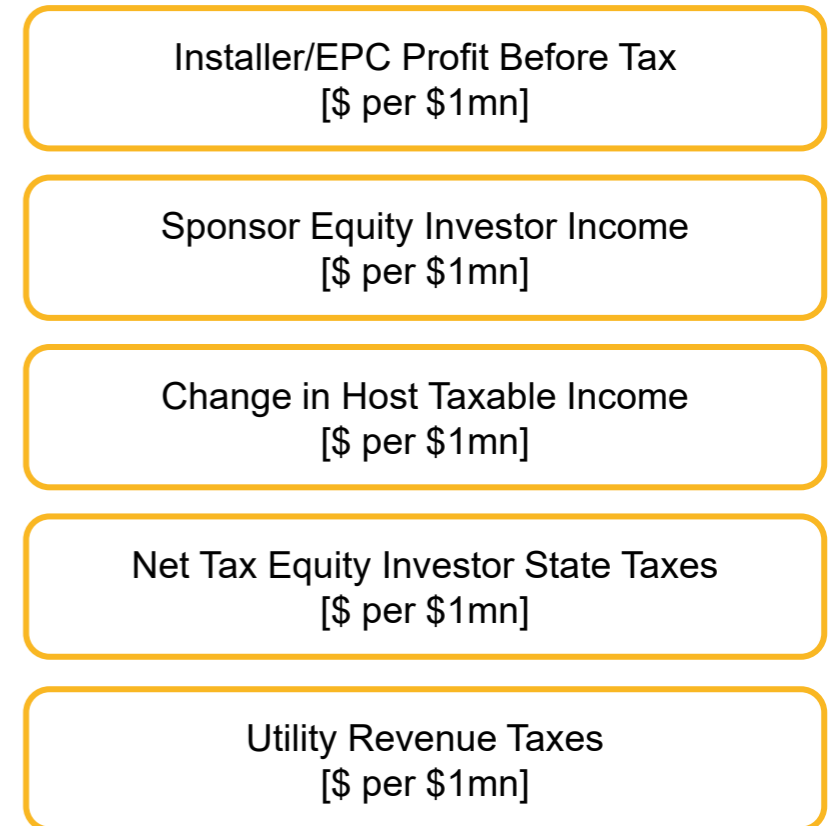
Note: See **Utility Meter Installation** Technology Dashboard for explanation of business model

These business models and involved parties lead to five “buckets” of corporate income tax

Parties involved and income tax modeled

- **Installer** – company that installs technology
Taxable income modeled as a percentage of project installed cost
- **Sponsor Equity Investor** – company that provides partial funding for project for equity
Taxable income modeled as percentage of project distributions over useful life
- **For-Profit Bank** – bank loan obtained to fund percentage of the project
Taxable income modeled as loan proceeds over loan period
- **Host** – property on which the project is sited
Taxable income modeled as savings from buying power for cheaper than from utility
- **Tax Equity Investor** – company that provides partial funding for the project for income tax benefits
Taxable income modeled as a portion of project distributions and tax benefits over investment life
- **Utility** – energy supplier that funds utility-based meter installation (not present on previous)
Taxable income modeled as revenue from utility rate of return

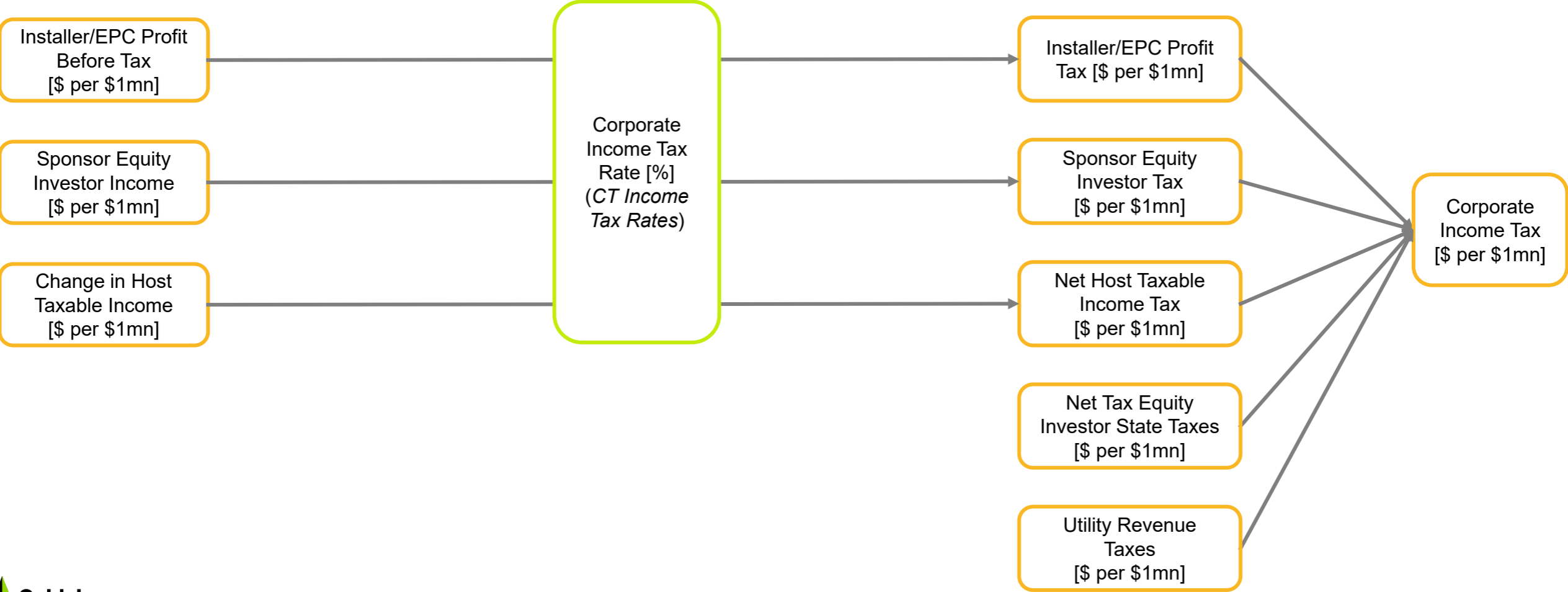
Income tax “buckets”



Majority of corporate income tax modeled as party income times tax rate, with some nuance

Corporate income tax calculation overall methodology:

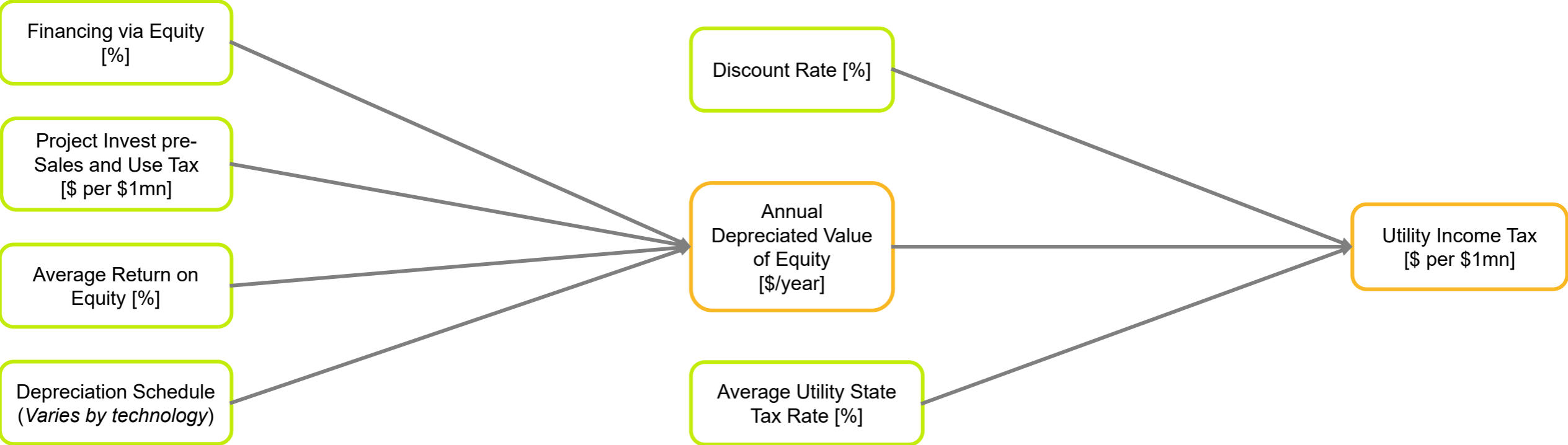
Input
Output
From Interviews



Utility income tax estimates revenue from return on equity to determine taxable income

Utility income tax calculation overall methodology:

Input Output From Interviews



+ Tax category only applicable to utility meter installation business model

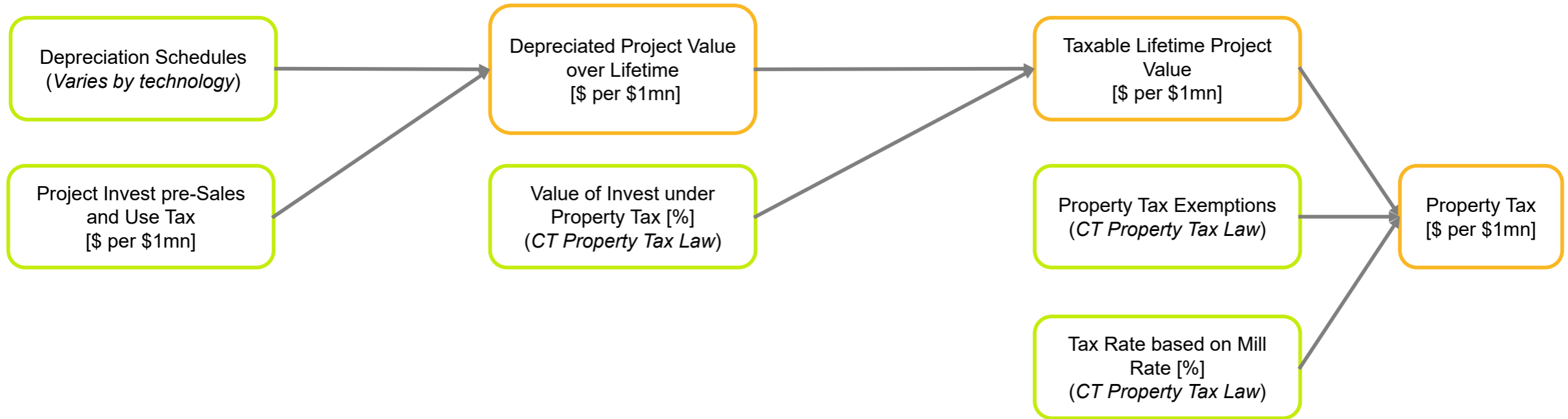
Property tax uses depreciated value of project over lifetime and mill rates to estimate taxes paid

Property income tax calculation overall methodology:

Input

Output

From Interviews



Exemptions play a large part in property tax, as many behind-the-meter electricity-generating technologies are exempt and is considered not applicable to small (<\$5,000 average project size) and **energy efficiency** investments

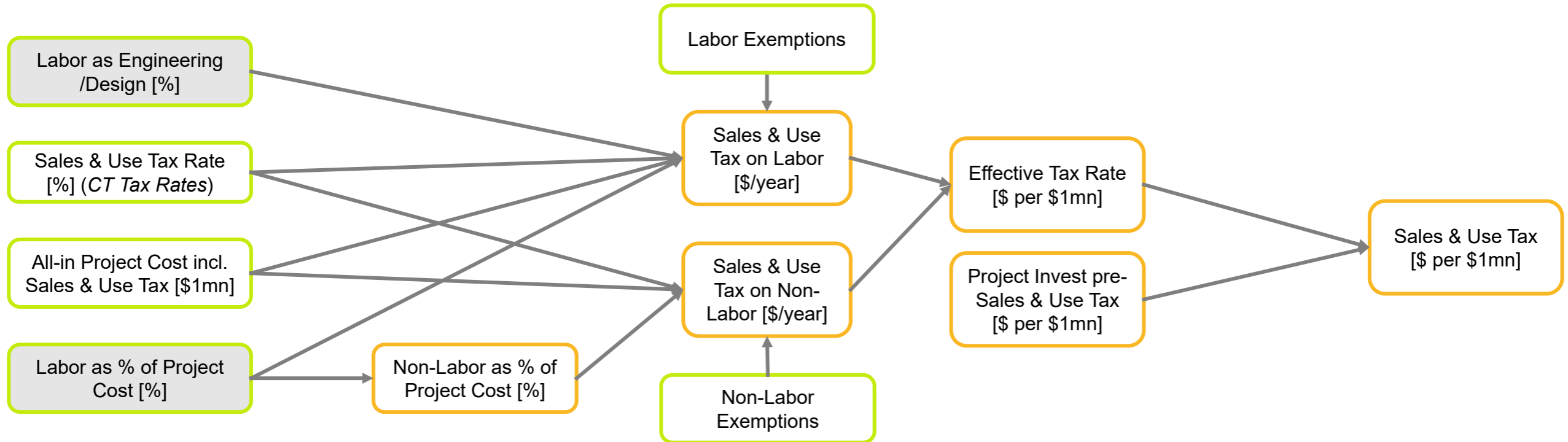
Sales and use tax applies tax rate separately to labor and non-labor portions of projects from interview data

Property income tax calculation overall methodology:

Input

Output

From Interviews



+ Exemptions play a large part in sales and use tax, as many electricity-generating technologies have exemptions for labor, non-labor, or both

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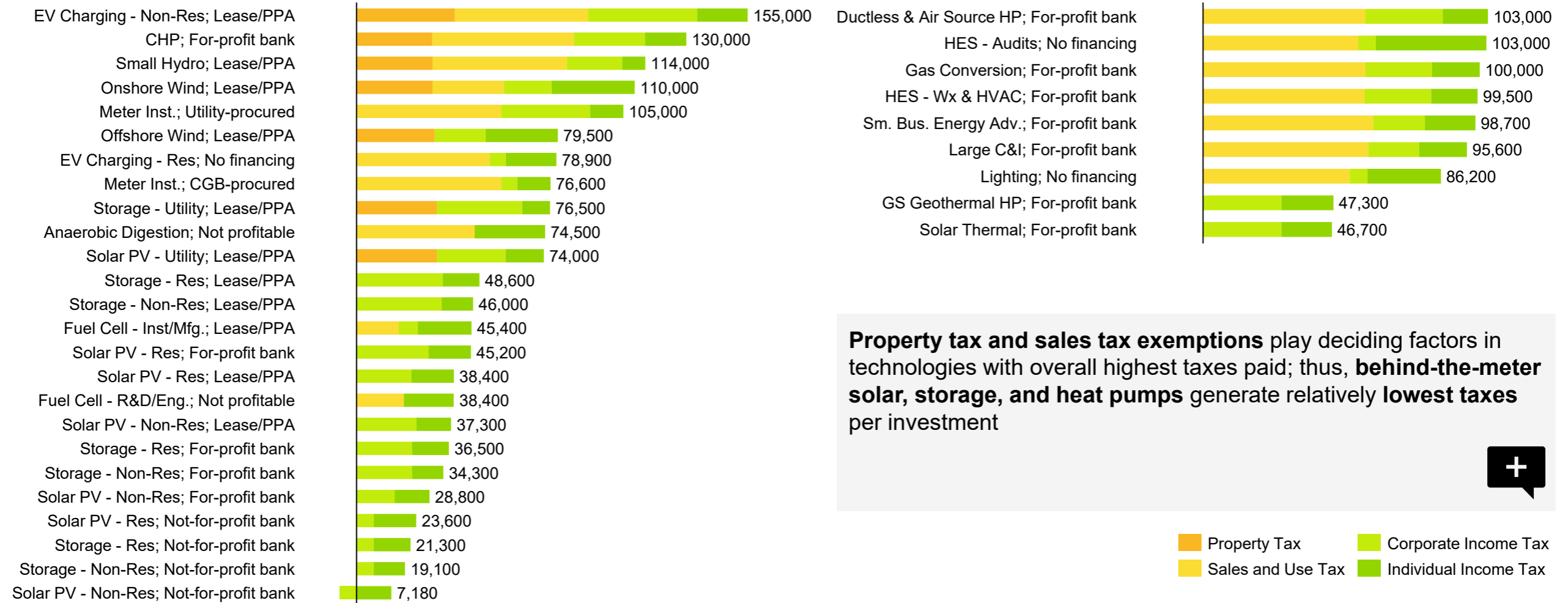


Technology Dashboards



Sources & Appendix

Total tax varies significantly across technologies & business models, from \$10,000 to \$155,000 per \$1 million invest

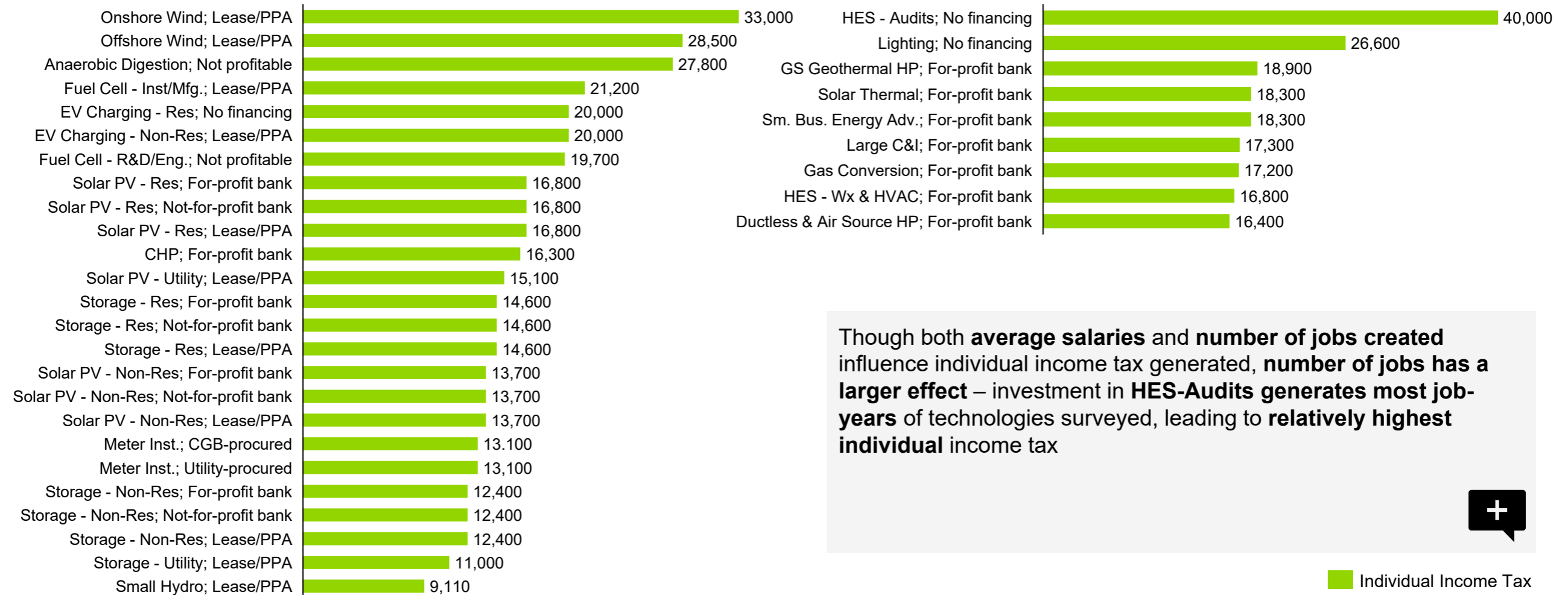


Property tax and sales tax exemptions play deciding factors in technologies with overall highest taxes paid; thus, **behind-the-meter solar, storage, and heat pumps** generate relatively **lowest taxes** per investment

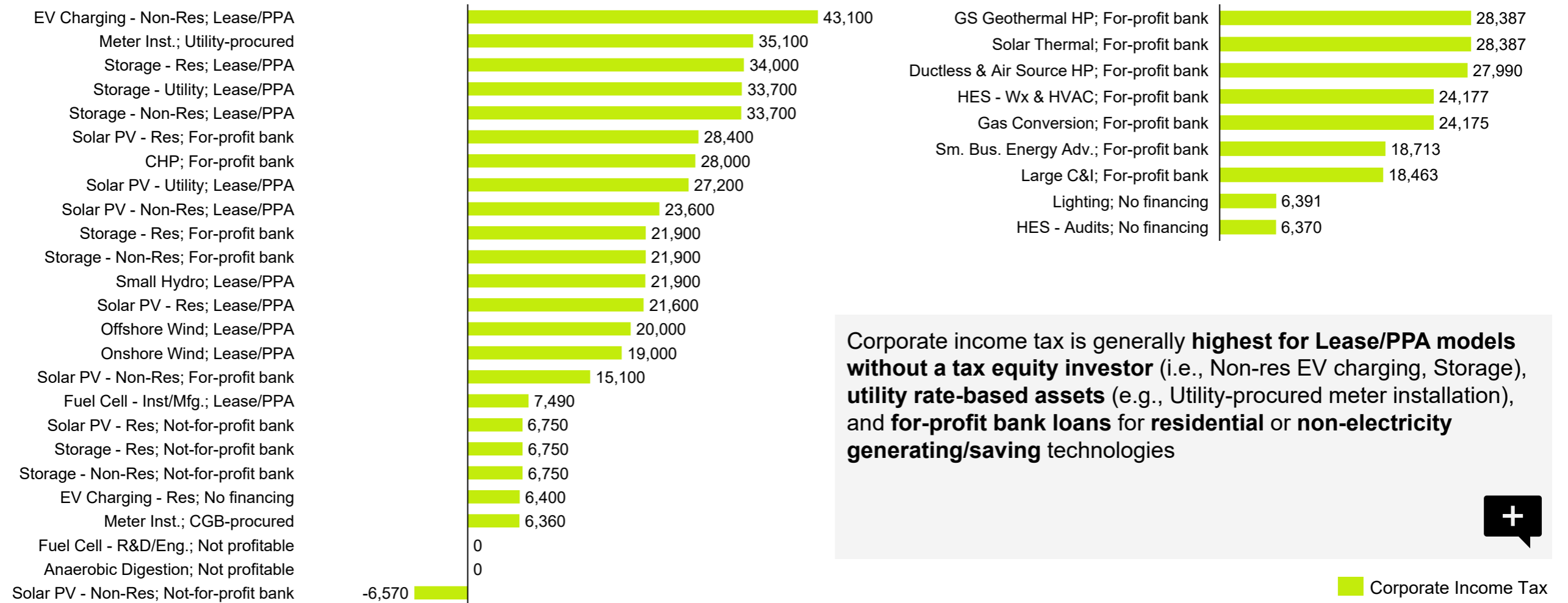


■ Property Tax ■ Corporate Income Tax
■ Sales and Use Tax ■ Individual Income Tax

Individual income tax is highest for technologies generating most job years and relatively higher-paying jobs



Corporate income tax varies significantly based on industry profitability and business model

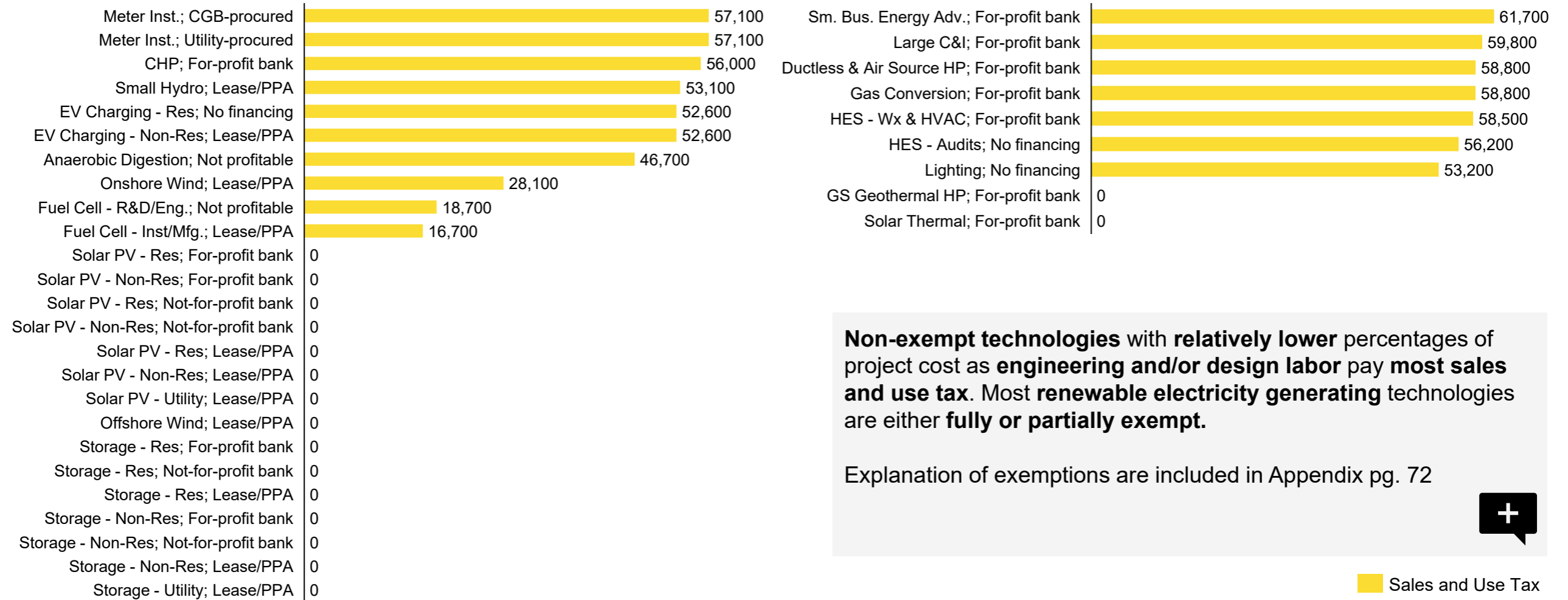


Corporate income tax is generally **highest for Lease/PPA models without a tax equity investor** (i.e., Non-res EV charging, Storage), **utility rate-based assets** (e.g., Utility-procured meter installation), and **for-profit bank loans for residential or non-electricity generating/saving technologies**



Corporate Income Tax

Partial or full exemptions for **sales & use tax** create up to \$60,000 delta in taxes generated for \$1 million invest



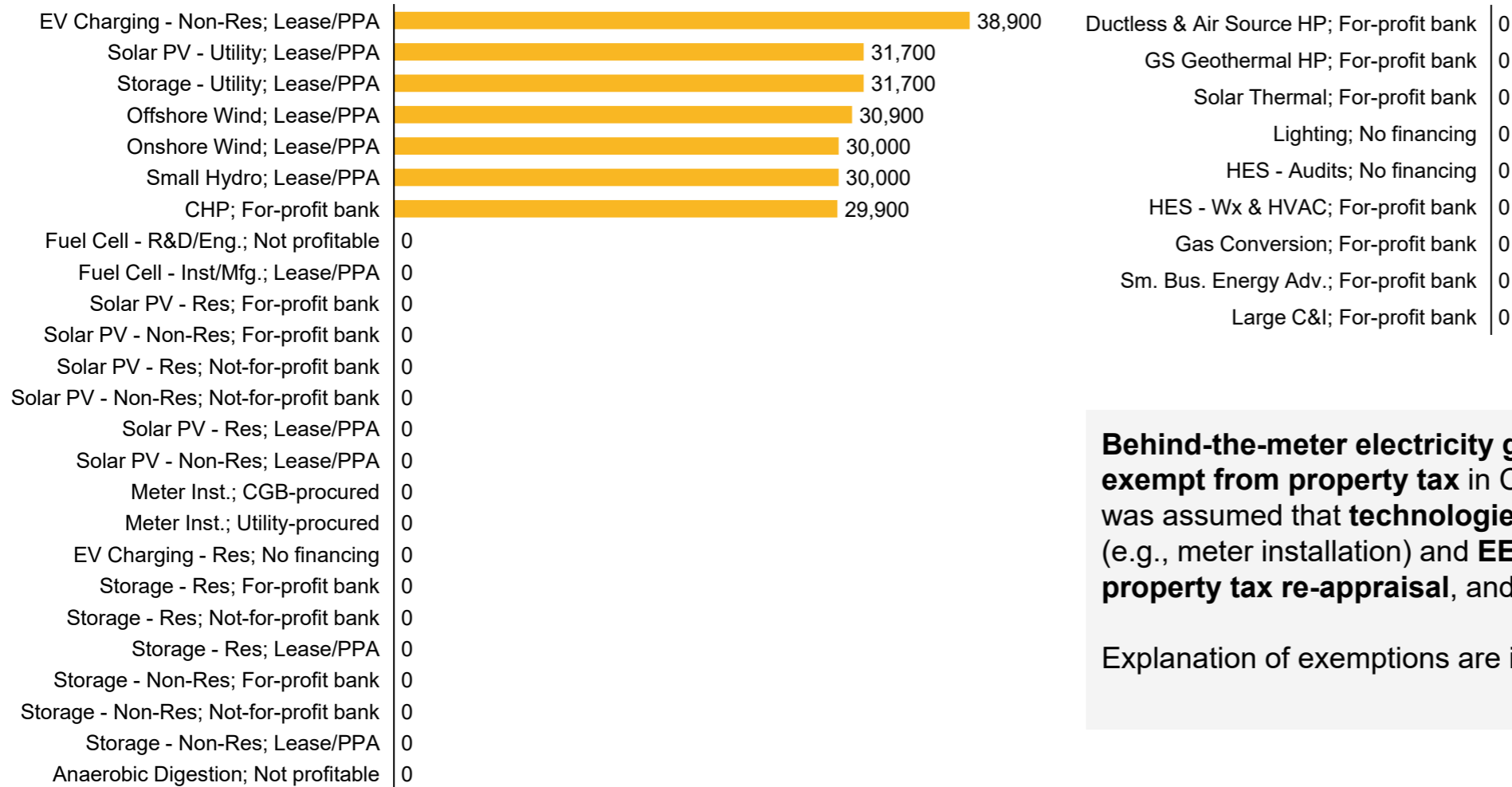
Non-exempt technologies with relatively lower percentages of project cost as engineering and/or design labor pay most sales and use tax. Most renewable electricity generating technologies are either fully or partially exempt.

Explanation of exemptions are included in Appendix pg. 72



■ Sales and Use Tax

Most tech surveyed are assumed not to pay **property tax**, due to exemptions or low likelihood of triggering re-appraisal



Behind-the-meter electricity generating technologies are largely exempt from property tax in CT. For the purposes of this study, it was assumed that **technologies with overall low per-asset cost** (e.g., meter installation) and **EE technologies** would **not trigger a property tax re-appraisal**, and thus generate no property tax

Explanation of exemptions are included in Appendix pg. 74



Property Tax

Taxes generated vary due to differences in tax treatment and project finance over technology sectors and business models

Renewable Energy	
Technology	Taxes as % of Invest
EV Charging Stations	8-15%
CHP	13%
Onshore Wind	11%
Hydro	11%
Meter Installation	8-11%
Offshore Wind	8%
Storage	2-8%
Anaerobic Digestion	7%
Fuel Cell	4-5%
Solar PV	1-7%

Energy Efficiency	
Technology	Taxes as % of Invest
Home Energy Solutions (HES) - Audits	10%
HES - Weatherization & HVAC	10%
Gas Conversion	10%
Small Business Energy Advantage	10%
Large Commercial and Industrial	10%
Ductless & Air Source Heat Pump	10%
Lighting	9%
Ground Source Geothermal Heat Pump	5%
Solar Thermal	5%

Note: Not all possible combinations of sectors and project finance were modeled; most common cases were modeled based on interview findings and CGB and Guidehouse experience

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Technology Dashboards

Solar PV

Residential Solar PV

For-Profit Bank Loan

Solar PV

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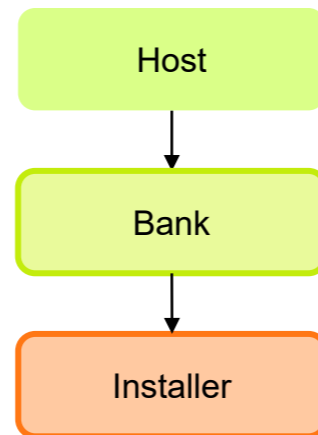
of 34 by total tax generated

Description

For projects where a residential host takes out a loan to install a solar PV project from a for-profit bank, the parties involved are the host, the bank, and the installer. The calculator assumes that the host takes out a loan for 100% of the project cost and the term is 15 years. The host benefits from not paying for power using their own panels, lowering their overall energy bills. Because the host doesn't pay corporate income tax, their taxes are not impacted as a result of lower energy bills. The cost per watt is based on interview data and is approximately 50% higher than for non-residential projects.

Inputs

Average Direct Wage	\$65,000
Labor % of Project Cost	30%
Project Lifetime	25 years
Average Project Cost	\$3.60/W
Capacity Factor	0.16
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax

→ = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$16,800
Corporate Income	\$28,400
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	5%

Non-Residential Solar PV For-Profit Bank Loan

Solar PV

30

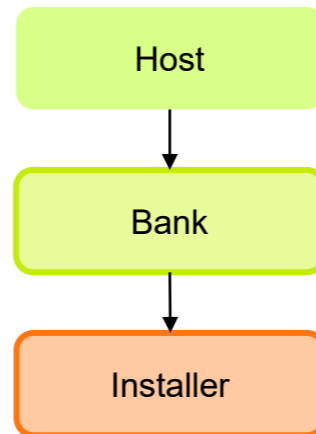
of 34 by total tax generated

Description

For projects where a non-residential host takes out a loan to install a solar PV project from a for-profit bank, the parties involved are the host, bank, and installer. The calculator assumes that the host takes out a loan for 100% of the project cost and the loan term is 15 years. The business benefits from lower overall energy bills, leading to lower operating costs and increasing their income. However, the host deducts the interest payments and depreciation of the panels from their increased income. Based on estimated non-residential electric rates, calculator models a net negative NPV of the decreased energy bills, interest payments, and depreciation for the host, lowering the host's net income taxes. Nonetheless, corporate income tax overall is positive due to tax paid by installer and on loan proceeds.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	25%
Project Lifetime	25 years
Average Project Cost	\$2.30/W
Capacity Factor	0.16
% by Tax Equity Investor	N/A
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$13,700
Corporate Income	\$15,100
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	3%

Residential Solar PV Not-For-Profit Bank Loan

Solar PV

31

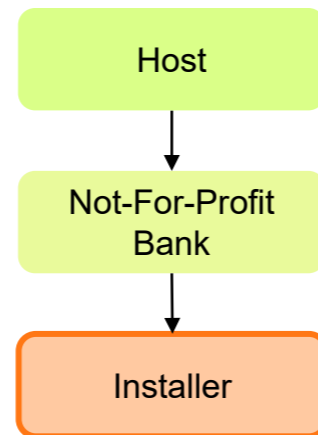
of 34 by total tax generated

Description

For projects where a residential host takes out a loan to install a solar PV project from a non-profit bank, the parties involved are the host, bank, and installer. The calculator assumes that the host takes out a loan for 100% of the project cost and the term is 15 years. The bank does not generate profit on the loan, and thus does not pay taxes on this income. The host benefits from not paying for power using their own panels, lowering their overall energy bills. Because the host doesn't pay corporate income tax, their taxes are not impacted as a result of lower energy bills. The cost per watt is based on interview data and is approximately 50% higher than for non-residential projects.

Inputs

Average Direct Wage	\$65,000
Labor % of Project Cost	30%
Project Lifetime	25 years
Average Project Cost	\$3.60/W
Capacity Factor	0.16
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$16,800
Corporate Income	\$6,750
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	2%

Non-Residential Solar PV

Not-For-Profit Bank Loan

Solar PV

34

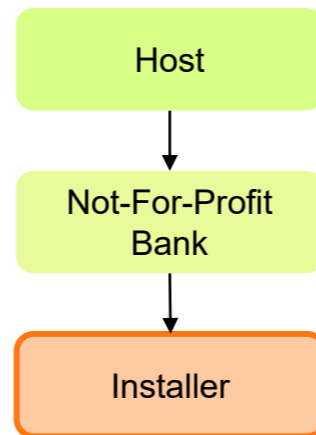
of 34 by total tax generated

Description

For projects where a non-residential host takes out a loan to install a solar PV project from a non-profit bank, the parties involved are the host, bank, and installer. The calculator assumes that the host takes out a loan for 100% of the project cost and the loan term is 15 years. The business benefits from lower overall energy bills, leading to lower operating costs and increasing their income. However, the host deducts the interest payments and depreciation of the panels from their increased income. Based on estimated non-residential electric rates, the calculator models a net negative NPV of the decreased energy bills, interest payments, and depreciation for the host, lowering the host's net income taxes. This leads to an overall decrease in total corporate income tax paid.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	25%
Project Lifetime	25 years
Average Project Cost	\$2.30/W
Capacity Factor	0.16
% by Tax Equity Investor	N/A
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$13,800
Corporate Income	-\$6,570
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	1%

Residential Solar PV Lease/PPA Program

Solar PV

26

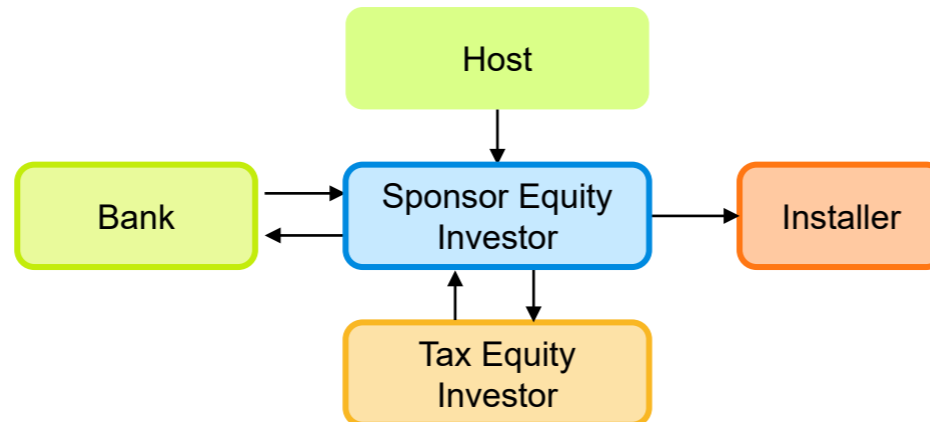
of 34 by total tax generated

Description

For a residential private lease/PPA solar PV project, the calculator assumes that there are five parties involved: an installer, sponsor equity investor, for-profit bank, tax equity investor, and host. The sponsor equity investor works with the installer to install the project and uses their own capital, tax equity and debt to finance the project. The sponsor equity investor sets PPA rates targeting an IRR of 10%. The tax equity investor is paid a 4% yearly return on the investment and is bought out at 10% of the investment in year 5. The residential host benefits from a lower energy price than if they purchased the power from the utility directly. However, since the host doesn't pay corporate income tax, their taxes are not impacted as a result of lower energy bills.

Inputs

Average Direct Wage	\$65,000
Labor % of Project Cost	30%
Project Lifetime	25 years
Average Project Cost	\$3.60/W
Capacity Factor	0.16
% by Tax Equity Investor	40%
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$16,800
Corporate Income	\$21,600
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	4%

Non-Residential Solar PV Lease/PPA Program

Solar PV

27

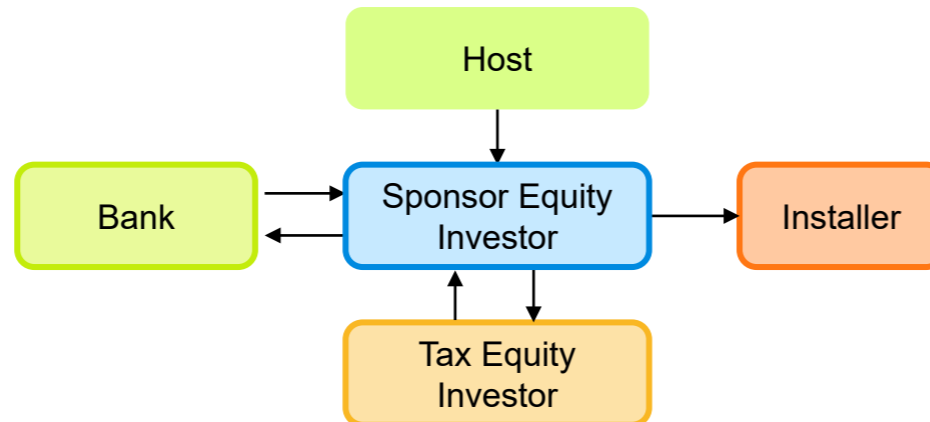
of 34 by total tax generated

Description

For a non-residential private lease/PPA solar PV project, the calculator assumes that there are five parties involved: an installer, sponsor equity investor, for-profit bank, tax equity investor, and host. The sponsor equity investor works with the installer to install the project and uses their own capital, tax equity and debt to finance the project. The sponsor equity investor sets PPA rates targeting an IRR of 10%. The tax equity investor is paid a 4% yearly return on the investment and is bought out at 10% of the investment in year 5. Based on estimated non-residential electric rates, calculator models a small net negative NPV of the energy bills and interest payments, lowering the host's net income taxes; however, corporate income tax overall is positive.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	25%
Project Lifetime	25 years
Average Project Cost	\$2.30/W
Capacity Factor	0.16
% by Tax Equity Investor	40%
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$13,700
Corporate Income	\$23,600
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	4%

Utility-Scale Solar PV Lease/PPA Program

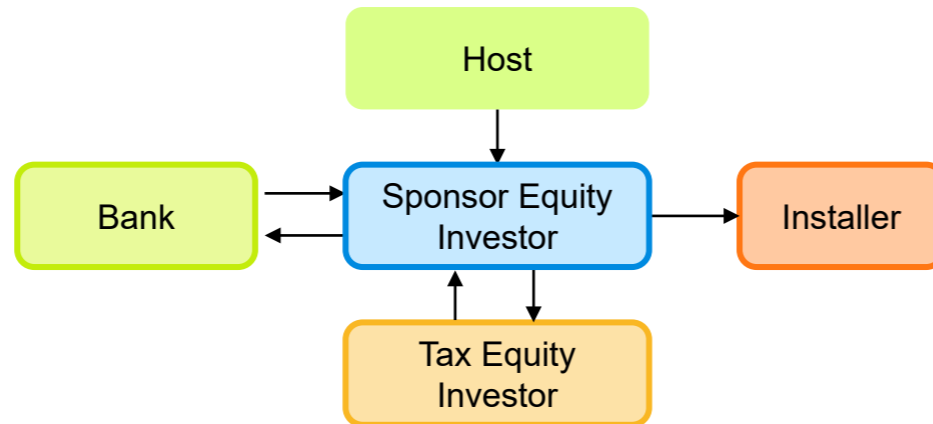
Solar PV
 18 of 34 by total tax generated

Description

For a utility-scale solar project, the calculator assumes that there are five parties involved: an installer, sponsor equity investor, for-profit bank, tax equity investor, and utility host. The sponsor equity investor works with the installer to get the project installed and uses their own capital, tax equity and debt to finance the project. The sponsor equity investor sets PPA rates targeting an IRR of 10%, with a 1.5% annual increase. The tax equity investor is paid a 4% yearly return on the investment and is bought out at 10% of the investment in year 5. The solar power is sold to the utility host. The cost of the power is assumed to be a pass-through cost to the utility customer and does not increase profit for the utility host.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	30%
Project Lifetime	25 years
Average Project Cost	\$1.70/W
Capacity Factor	0.27
% by Tax Equity Investor	40%
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$15,100
Corporate Income	\$27,200
Sales & Use	\$0
Property	\$31,700
Total as % of Project Cost	7%

Technology Dashboards

Battery
Storage

Residential Storage Installation

For-Profit Bank Loan

Battery Storage

28

of 34 by total tax generated

Description

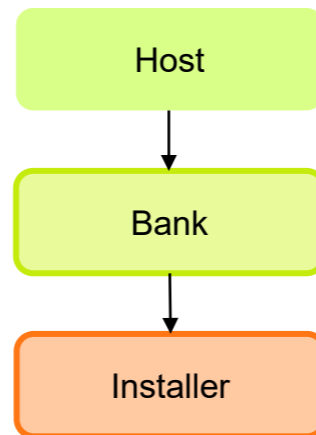
For projects where a residential host takes out a loan to install a storage project from a for-profit bank, the parties involved are the host, the bank, and the installer. The calculator assumes that the host takes out a loan for 100% of the project cost and the term is 10 years. Based on interview learnings, it is assumed that storage is deployed with solar, and thus exempt from property and sales and use tax. The cost per watt is based on interview data and is approximately 50% higher than for non-residential projects.

Inputs

Average Direct Wage	\$60,000
Labor % of Project Cost	25%
Project Lifetime	10 years
Average Project Cost	\$3.10/W ¹
Capacity Factor	0.17
% by Tax Equity Investor	N/A
Depreciation	5-Year MACRS

Generates income tax

→ = transaction



Drivers



Tax Generated (per \$1M invest)

Individual Income	\$14,600
Corporate Income	\$22,000
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	4%

¹Corresponds to ~\$15,000 for 5kW battery system

Residential Storage Installation

Not-For-Profit Bank Loan

Battery Storage

32

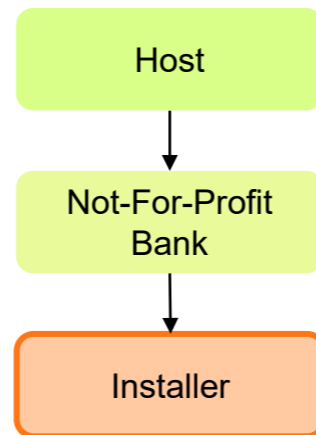
of 34 by total tax generated

Description

For projects where a residential host takes out a loan to install a solar PV project from a non-profit bank, the parties involved are the host, bank, and installer. The calculator assumes that the host takes out a loan for 100% of the project cost and the term is 10 years. The bank does not generate profit on the loan, and thus does not pay taxes on this income. Based on interview learnings, it is assumed that storage is deployed with solar, and thus exempt from property and sales and use tax. The cost per watt is based on interview data and is approximately 50% higher than for non-residential projects.

Inputs

Average Direct Wage	\$60,000
Labor % of Project Cost	25%
Project Lifetime	10 years
Average Project Cost	\$3.10/W
Capacity Factor	0.17
% by Tax Equity Investor	N/A
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$14,600
Corporate Income	\$6,750
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	2%

Residential Storage Installation Lease/PPA Program

Battery Storage

19

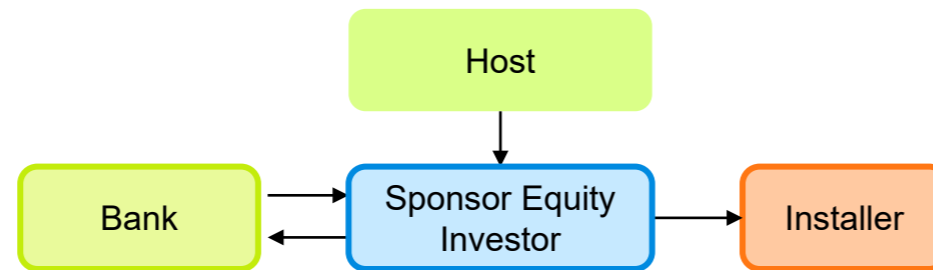
of 34 by total tax generated

Description

For a residential private lease/PPA solar PV project, the calculator assumes that there are four parties involved: an installer, sponsor equity investor, for-profit bank, and host. The sponsor equity investor works with the installer to install the project and uses their own capital and some debt to finance the project. The sponsor equity investor sets PPA rates targeting an IRR of 10%. A tax equity investor is not assumed to be part of this business model, thus there is no state tax offset. Based on interview learnings, it is assumed that storage is deployed with solar, and thus exempt from property and sales and use tax.

Inputs

Average Direct Wage	\$60,000
Labor % of Project Cost	25%
Project Lifetime	10 years
Average Project Cost	\$3.10/W
Capacity Factor	0.17
% by Tax Equity Investor	N/A
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$14,600
Corporate Income	\$34,000
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	5%

Non-Residential Storage Installation

For-Profit Bank Loan

Battery Storage

29

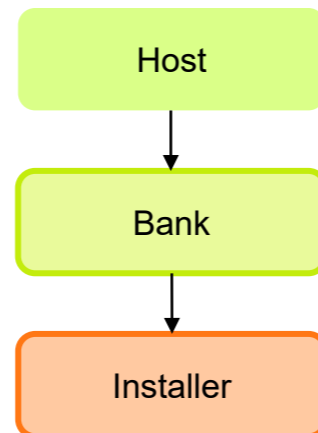
of 34 by total tax generated

Description

For projects where a non-residential business takes out a loan to install a solar PV project from a for-profit bank, the parties involved are the host, bank, and installer. The calculator assumes that the host takes out a loan for 100% of the project cost and the loan term is 10 years. Based on interview learnings, it is assumed that storage is deployed with solar, and thus exempt from property and sales and use tax.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	25%
Project Lifetime	10 years
Average Project Cost	\$1.90/W
Capacity Factor	0.17
% by Tax Equity Investor	N/A
Depreciation	5-Year MACRS



Generates income tax

→ = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$12,400
Corporate Income	\$21,900
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	3%

Non-Residential Storage Installation

Not-For-Profit Bank Loan

Battery Storage

33

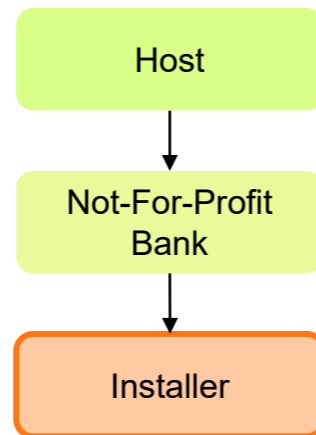
of 34 by total tax generated

Description

For projects where a non-residential business takes out a loan to install a solar PV project from a non-profit bank, the parties involved are the host, bank, and installer. The calculator assumes that the host takes out a loan for 100% of the project cost and the loan term is 10 years. The bank does not generate profit on the loan, and thus does not pay taxes on this income. Based on interview learnings, it is assumed that storage is deployed with solar, and thus exempt from property and sales and use tax.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	25%
Project Lifetime	10 years
Average Project Cost	\$1.90/W
Capacity Factor	0.17
% by Tax Equity Investor	N/A
Depreciation	5-Year MACRS



Generates income tax

→ = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$12,400
Corporate Income	\$6,750
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	2%

Non-Residential Storage Installation Lease/PPA Program

Battery Storage

22

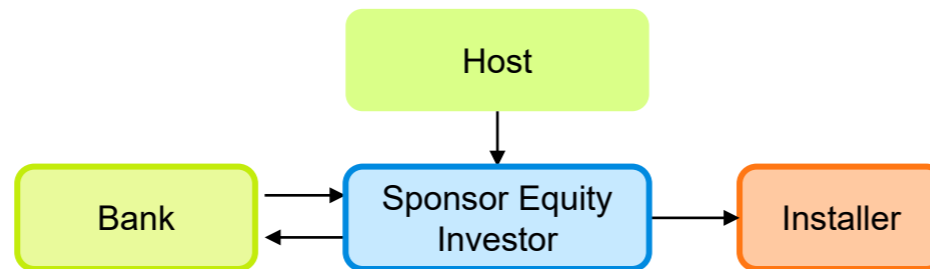
of 34 by total tax generated

Description

For projects where a non-residential private lease/PPA solar PV project, the calculator assumes that there are four parties involved: an installer, sponsor equity investor, for-profit bank, and host. The sponsor equity investor works with the installer to install the project and uses their own capital and debt to finance the project. The sponsor equity investor sets PPA rates targeting an IRR of 10%. A tax equity investor is not assumed to be part of this business model, thus there is no state tax offset. Based on interview learnings, it is assumed that storage is deployed with solar, and thus exempt from property and sales and use tax.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	25%
Project Lifetime	10 years
Average Project Cost	\$1.90/W
Capacity Factor	0.17
% by Tax Equity Investor	N/A
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$12,400
Corporate Income	\$33,700
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	5%

Utility-Scale Storage Installation Lease/PPA Program

Battery Storage

16

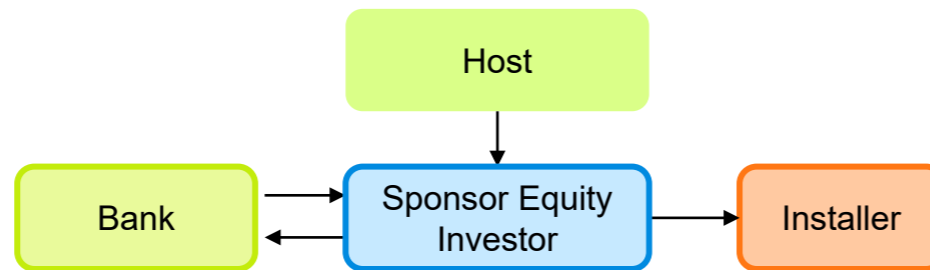
of 34 by total tax generated

Description

For projects where a utility scale storage installation project, the tax calculator assumes that there are four parties involved: an installer, sponsor equity investor, for-profit bank, and utility host. The sponsor equity investor works with the installer to install the project and uses their own capital and debt to finance the project. The sponsor equity investor sets PPA rates targeting an IRR of 10%. A tax equity investor is not assumed to be part of this business model, thus there is no state tax offset. The battery power is sold to the utility host. Based on interview learnings, it is assumed that storage is deployed with solar, and thus exempt from sales and use tax. Property tax is still paid because the system is not behind-the-meter.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	20%
Project Lifetime	10 years
Average Project Cost	\$1.40/W
Capacity Factor	0.17
% by Tax Equity Investor	N/A
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$11,000
Corporate Income	\$33,700
Sales & Use	\$0
Property	\$31,700
Total as % of Project Cost	8%

Technology Dashboards

Fuel Cell

Fuel Cell R&D/Engineering

Not Profitable

Fuel Cell

25

of 34 by total tax generated

Description

The calculator assumes that firms focusing on research and development or engineering work on fuel cells in CT are not yet profitable and are relying on investors for funding. As the fuel cell industry matures, fuel cell engineering or R&D firms may become profitable companies. These firms have a relatively high direct wage compared to other projects due to allocation towards higher paying job types.

Inputs

Average Direct Wage	\$100,000
Labor % of Project Cost	40%
Project Lifetime	N/A
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A

R&D/Engineering Firm

Generates income tax

→ = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$19,700
Corporate Income	\$0
Sales & Use	\$18,700
Property	\$0
Total as % of Project Cost	6%

Fuel Cell Installation/Manufacturing Lease/PPA Program

Fuel Cell

23

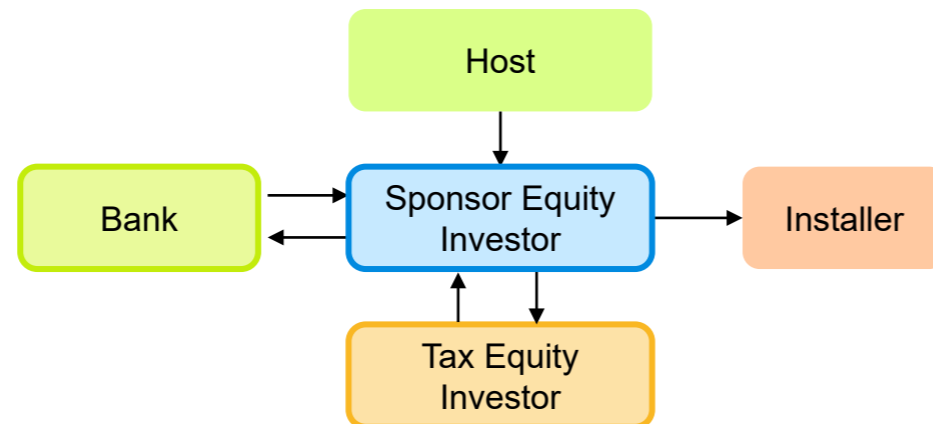
of 34 by total tax generated

Description

For fuel cell installation projects, the calculator assumes an installer, sponsor equity investor, for-profit bank, tax equity investor, and utility host. The sponsor equity investor works with the installer to install the project and uses their own capital, tax equity and debt to finance the project. The installer does not generate taxable income. The tax equity investor is paid 4% yearly return on the investment and is bought out at 10% in year 5. The sponsor equity investor sets PPA rates targeting an IRR of 10%. Power from the fuel cell is sold to the utility host. The cost of the power is a pass-through to the utility customer and does not increase profit for the utility host.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	40%
Project Lifetime	10 years
Average Project Cost	\$7.40/W
Capacity Factor	0.90
% by Tax Equity Investor	40%
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$22,200
Corporate Income	\$7,500
Sales & Use	\$16,700
Property	\$0
Total as % of Project Cost	7%

Technology Dashboards

Meter
Install

Meter Installation – Green Bank-Procured

No Financing

Meter Install

15

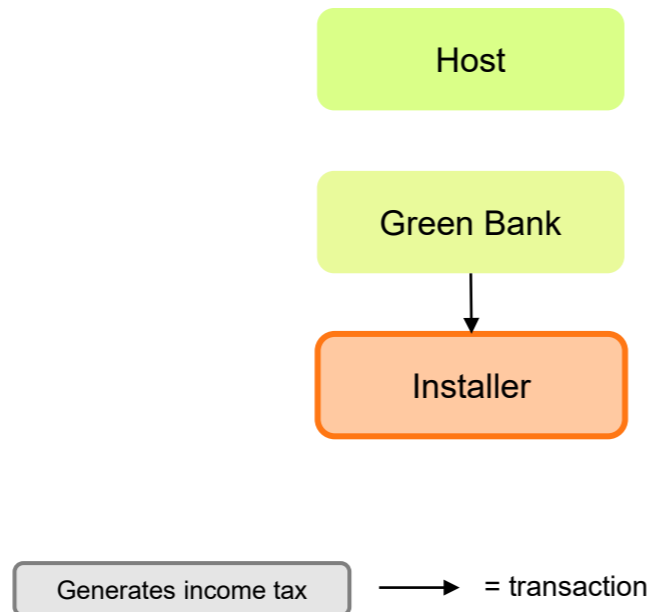
of 34 by total tax generated

Description

For Green Bank-procured solar meters, the calculator assumes that there are three parties involved: the installer, the host, and the Green Bank. The host does not pay the Green Bank interest on the meters, and the Green Bank does not generate profit. Thus, the only party generating profit in this scenario is the installer. Though meter installation is assumed not to trigger a property tax assessment due to small invest per project site, sales and use tax is paid on the meters.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	25%
Project Lifetime	15 years
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A



Drivers



Tax Generated (per \$1M invest)

Individual Income	\$13,100
Corporate Income	\$6,400
Sales & Use	\$57,100
Property	\$0
Total as % of Project Cost	8%

Meter Installation – Utility-Procured

No Financing

Meter Install

5

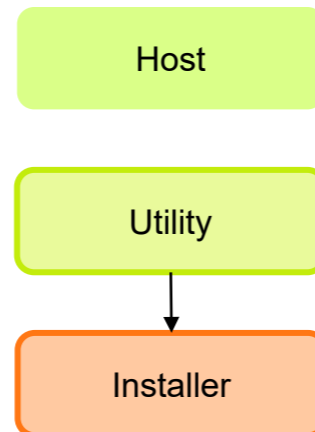
of 34 by total tax generated

Description

For utility-procured smart meters, the calculator assumes that there are three parties involved: the installer, the host, and the utility. The utility is assumed to finance the project approximately 50% through debt and 50% through equity, on which they will earn a 9% rate of return. The utility pays taxes on this return based on the utility-specific income tax rate. Though meter installation is assumed not to trigger a property tax assessment due to small invest per project site, sales and use tax is paid on the meters.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	25%
Project Lifetime	15 years
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	Straight line



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$13,100
Corporate Income	\$35,100
Sales & Use	\$57,100
Property	\$0
Total as % of Project Cost	11%

Technology Dashboards

EV Charging
Stations

Residential EV Charging Station

No financing

EV Charging Stations

14

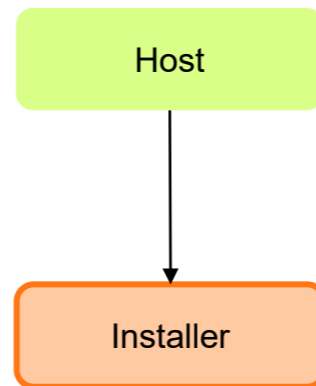
of 34 by total tax generated

Description

For a residential EV charging station installation project, the calculator assumes that the host will self-finance the project and there are only two parties involved: an installer and host that uses the charging station. Though residential charger installation is assumed not to trigger a property tax assessment due to small invest per project, sales and use tax is paid on the EV chargers.

Inputs

Average Direct Wage	\$75,000
Labor % of Project Cost	40%
Project Lifetime	20 years
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	7-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$20,000
Corporate Income	\$6,400
Sales & Use	\$52,600
Property	\$0
Total as % of Project Cost	8%

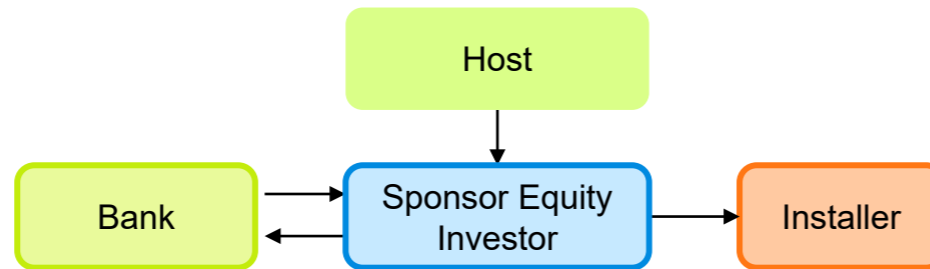
Non-Residential EV Charging Station Lease/PPA Program

Description

For a non-residential EV charging station installation project, the calculator assumes that there are four parties involved: the installer, the sponsor equity investor, the for-profit bank, and the host that uses the charging station. The sponsor equity investor sets PPA rates targeting an IRR of 10%. A tax equity investor is not assumed to be part of this business model, thus there is no state tax offset. Both sales and use tax and property tax are assumed to be paid on this technology.

Inputs

Average Direct Wage	\$75,000
Labor % of Project Cost	40%
Project Lifetime	20 years
Average Project Cost	\$1.20/W
Capacity Factor	0.25
% by Tax Equity Investor	N/A
Depreciation	7-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$20,000
Corporate Income	\$43,100
Sales & Use	\$52,600
Property	\$38,900
Total as % of Project Cost	15%

Technology Dashboards

Renewable
Thermal
Tech

Ductless Split/Air-Source Heat Pump For-Profit Bank Loan

Renew. Thermal Tech

6

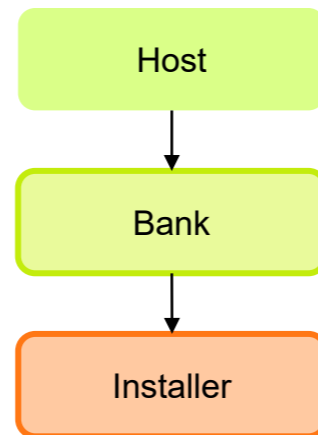
of 34 by total tax generated

Description

With the installation of a ductless or air source heat pump, only the host, installer, and for-profit bank are involved in the project. The calculator assumes that the host takes out a loan for 100% of the project and the loan term is 15 years. The host can be either a residential, nonprofit, or C&I host, as energy savings are not significant enough to lead to increased income taxes. However, for sales tax purposes, it is assumed these systems are installed for residential hosts. It is assumed that installation would not trigger property tax assessment.

Inputs

Average Direct Wage	\$75,000
Labor % of Project Cost	30%
Project Lifetime	15 years
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$16,400
Corporate Income	\$28,000
Sales & Use	\$58,800
Property	\$0
Total as % of Project Cost	10%

Geothermal Installation

For-Profit Bank Loan

Renew. Thermal Tech

20

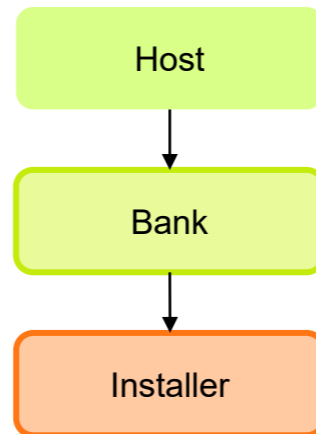
of 34 by total tax generated

Description

With the installation of a geothermal ground source heat pump, only the host, installer, and for-profit bank are involved in the project. The calculator assumes that the host takes out a loan for 100% of the project and the loan term is 15 years. The host can be either a residential, nonprofit, or C&I host, as energy savings are significant enough to lead to increased income taxes. Geothermal heat pumps are sales and use and property tax exempt.

Inputs

Average Direct Wage	\$85,000
Labor % of Project Cost	30%
Project Lifetime	25 years
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$18,900
Corporate Income	\$28,400
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	5%

Solar Thermal Installation

For-Profit Bank Loan

Renew. Thermal Tech

21

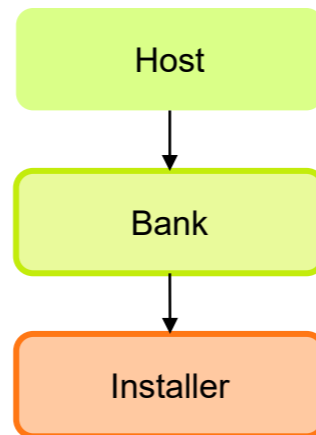
of 34 by total tax generated

Description

With the installation of a solar thermal system, only the host, installer, and for-profit bank are involved in the project. The calculator assumes that the host takes out a loan for 100% of the project and the loan term is 15 years. The host can be either a residential, nonprofit, or C&I host, as energy savings are significant enough to lead to increased income taxes. Solar thermal systems are sales and use and property tax exempt.

Inputs

Average Direct Wage	\$70,000
Labor % of Project Cost	30%
Project Lifetime	20 years
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax

→ = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$18,300
Corporate Income	\$28,400
Sales & Use	\$0
Property	\$0
Total as % of Project Cost	5%

Technology Dashboards

Renewable
Electricity

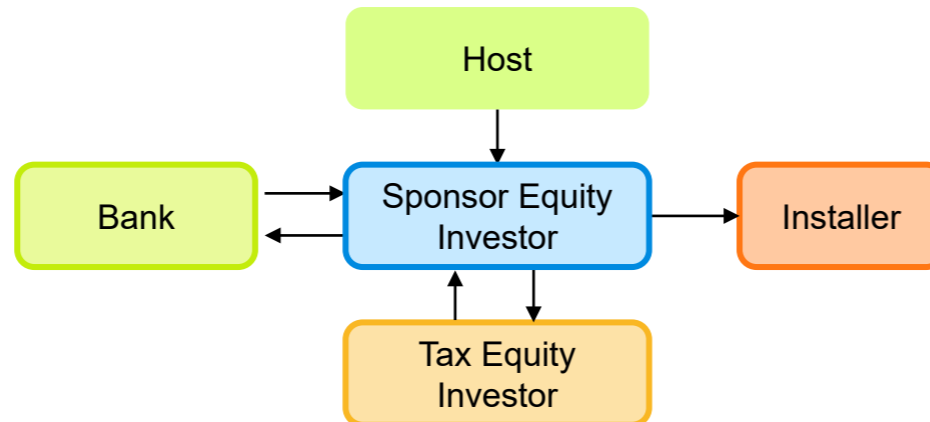
Offshore Wind Installation Lease/PPA Program

Description

For a utility-scale offshore wind project, the calculator assumes that there are five parties involved: an installer, sponsor equity investor, for-profit bank, tax equity investor, and utility host. The sponsor equity investor works with the installer to get the project installed and uses their own capital, tax equity and some debt to finance the project. The sponsor equity investor sets PPA rates targeting an IRR of 10%. The tax equity investor is paid a 4% yearly return on the investment and is bought out at 10% of the investment in year 5. The wind power is sold to the utility host. The cost of the power is assumed to be a pass-through cost to the utility customer and does not increase profit for the utility host. Note that CT development is currently all offshore wind.

Inputs

Average Direct Wage	\$115,000
Labor % of Project Cost	60%
Project Lifetime	20 years
Average Project Cost	\$6.40/W
Capacity Factor	0.35
% by Tax Equity Investor	40%
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$29,000
Corporate Income	\$20,000
Sales & Use	\$0
Property	\$30,900
Total as % of Project Cost	10%

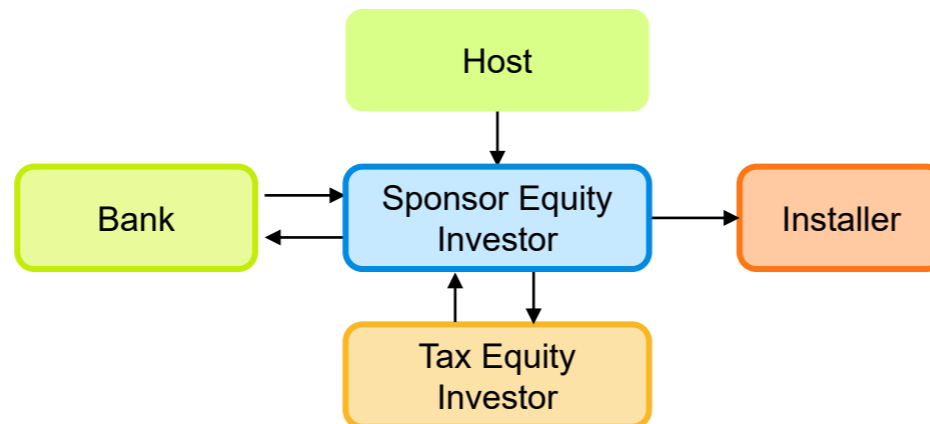
Onshore Wind Installation Lease/PPA Program

Description

For a utility-scale onshore wind project, the calculator assumes that there are five parties involved: an installer, sponsor equity investor, for-profit bank, tax equity investor, and utility host. The sponsor equity investor works with the installer to get the project installed and uses their own capital, tax equity and some debt to finance the project. The sponsor equity investor sets PPA rates targeting an IRR of 10%. The tax equity investor is paid a 4% yearly return on the investment and is bought out at 10% of the investment in year 5. The wind power is sold to the utility host. The cost of the power is assumed to be a pass-through cost to the utility customer and does not increase profit for the utility host. Note that there has not been a CT onshore wind project since the last study.

Inputs

Average Direct Wage	\$70,000
Labor % of Project Cost	60%
Project Lifetime	20 years
Average Project Cost	\$5.50/W
Capacity Factor	0.18
% by Tax Equity Investor	40%
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$32,800
Corporate Income	\$19,000
Sales & Use	\$28,100
Property	\$30,000
Total as % of Project Cost	11%

Small Hydro Installation Lease/PPA Program

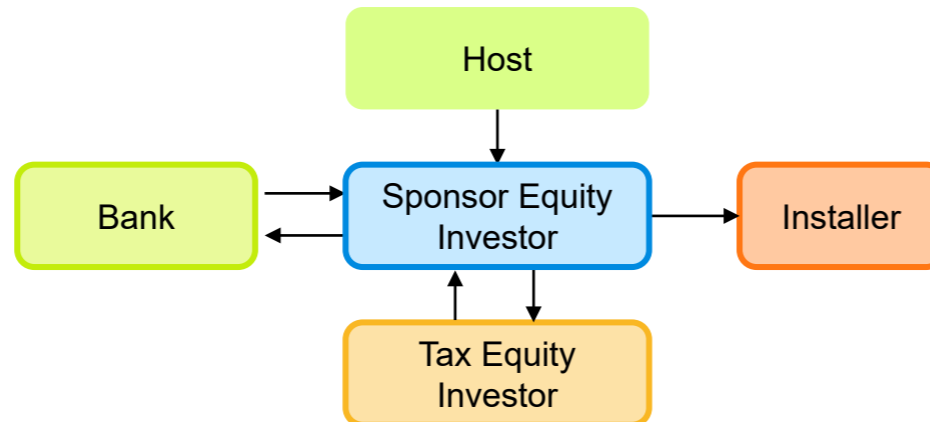
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Description

For a utility-scale hydro project, the calculator assumes that there are five parties involved: an installer, sponsor equity investor, for-profit bank, tax equity investor, and utility host. The sponsor equity investor works with the installer to get the project installed and uses their own capital, tax equity and some debt to finance the project. The sponsor equity investor sets PPA rates targeting an IRR of 10%. The tax equity investor is paid a 4% yearly return on the investment and is bought out at 10% of the investment in year 5. The hydropower is sold to the utility host. The cost of the power is assumed to be a pass-through cost to the utility customer and does not increase profit for the utility host.

Inputs

Average Direct Wage	\$80,000
Labor % of Project Cost	20%
Project Lifetime	20 years
Average Project Cost	\$1.80/W
Capacity Factor	0.49
% by Tax Equity Investor	40%
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$9,100
Corporate Income	\$21,900
Sales & Use	\$53,100
Property	\$30,000
Total as % of Project Cost	11%

Anaerobic Digestion

Not Profitable

Renewable Electricity

17

of 34 by total tax generated

Description

The calculator assumes that for anaerobic digestion projects, the only key player is the non-residential host of the anaerobic digestion project. This technology is currently assumed not profitable; thus, no corporate income tax is generated. As the anaerobic digestion industry matures, anaerobic digestion projects may become profitable. As technology is behind-the-meter renewable energy generation, it is property tax exempt but still subject to sales and use tax.

Inputs

Average Direct Wage	\$50,000
Labor % of Project Cost	45%
Project Lifetime	20 years
Average Project Cost	\$5.20/W
Capacity Factor	0.80
% by Tax Equity Investor	N/A
Depreciation	N/A

Host

Generates income tax

→ = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$27,800
Corporate Income	\$0
Sales & Use	\$46,700
Property	\$0
Total as % of Project Cost	7%

Combined Heat and Power (CHP)

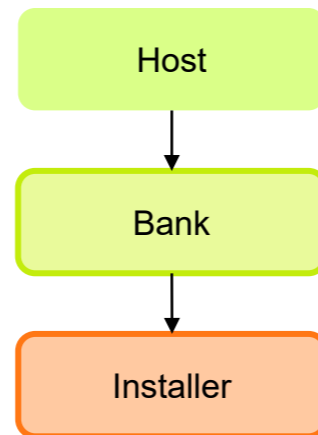
For-Profit Bank Loan

Description

The calculator assumes that the combined heat and power plant will be owned by a commercial entity or host and located on the host site. The other players are the for-profit bank and the installer. The calculator assumes that the host takes out a loan for 100% of the project and the loan term is 15 years. Energy savings are assumed to be not significant enough to increase or decrease the host's overall expenditures. This technology is subject to both property and sales and use tax.

Inputs

Average Direct Wage	\$70,000
Labor % of Project Cost	30%
Project Lifetime	15 years
Average Project Cost	\$2.90/W
Capacity Factor	0.80
% by Tax Equity Investor	N/A
Depreciation	5-Year MACRS



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$16,300
Corporate Income	\$28,000
Sales & Use	\$56,000
Property	\$29,900
Total as % of Project Cost	13%

Technology Dashboards

Energy
Efficiency

Residential Lighting

No Financing

Energy Efficiency

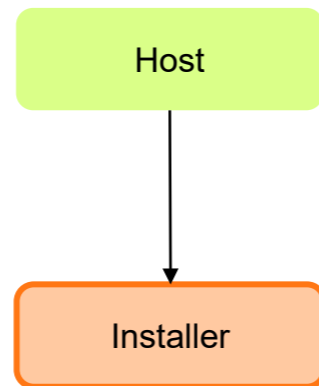
12 of 34 by total tax generated

Description

The jobs and corporate income generated from a residential energy efficiency lighting upgrade are only when the lighting is installed by someone besides the homeowner. Lighting upgrades are usually low-cost, and the calculator assumes that the residential host does not take out a loan to finance the upgrade. For this reason, only the installer pays corporate income tax. The technology generates sales and use tax but is assumed not to trigger a property tax assessment.

Inputs

Average Direct Wage	\$75,000
Labor % of Project Cost	50%
Project Lifetime	12 years
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$26,600
Corporate Income	\$6,400
Sales & Use	\$53,200
Property	\$0
Total as % of Project Cost	9%

Home Energy Solutions (HES) – Audits

Self Funded

Energy Efficiency

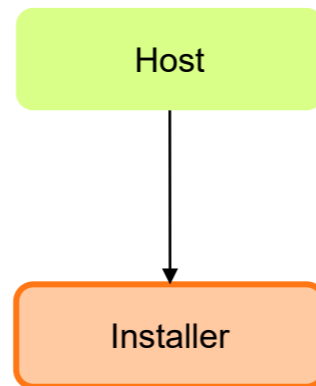
7 of 34 by total tax generated

Description

The jobs and corporate income generated from a residential energy efficiency audit are only when the audit is performed by someone besides the homeowner. Audits are usually low-cost, and it is assumed that the residential host does not take out a loan to finance the audit. For this reason, only the installer has increased taxes from these projects. The labor is not the full cost of the project due to the cost of the equipment needed to conduct the audit such as for a blower door test. The technology generates sales and use tax but is assumed not to trigger a property tax assessment.

Inputs

Average Direct Wage	\$55,000
Labor % of Project Cost	70%
Project Lifetime	0 years
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$40,000
Corporate Income	\$6,370
Sales & Use	\$56,200
Property	\$0
Total as % of Project Cost	10%

Residential Weatherization & HVAC For-Profit Bank Loan

Energy Efficiency

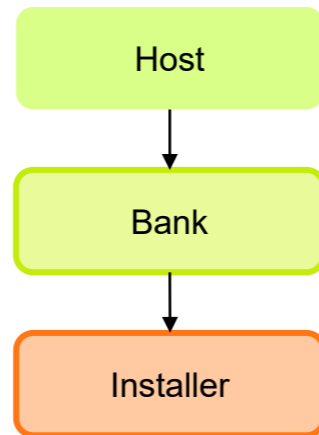
9 of 34 by total tax generated

Description

The jobs and corporate income generated from residential energy efficiency weatherization and HVAC upgrades are only when the work is performed by someone besides the homeowner. HVAC and weatherization upgrades can be more expensive; thus, it is assumed that the residential host takes out a loan to finance 100% of the upgrade. The three parties involved in the upgrade are the residential host, for-profit bank, and installer. The technology generates sales and use tax but is assumed not to trigger a property tax assessment.

Inputs

Average Direct Wage	\$70,000
Labor % of Project Cost	30%
Project Lifetime	12 years
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$16,800
Corporate Income	\$24,200
Sales & Use	\$58,500
Property	\$0
Total as % of Project Cost	10%

Residential Gas Conversion

For-Profit Bank Loan

Energy Efficiency

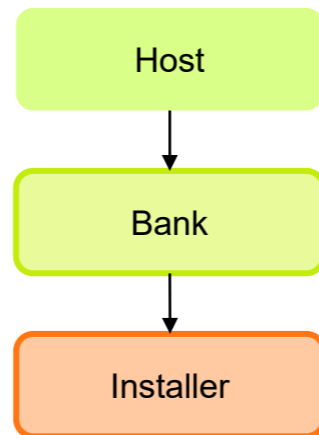
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Description

The jobs and corporate income generated from gas conversion from oil to gas are only when the work is performed by someone besides the homeowner. Fuel switching can be more expensive; thus, it is assumed that the residential host takes out a loan to finance 100% of the installation cost. The three parties involved in the upgrade are the residential host, for-profit bank, and installer. The technology generates sales and use tax but is assumed not to trigger a property tax assessment.

Inputs

Average Direct Wage	\$70,000
Labor % of Project Cost	30%
Project Lifetime	12 years
Average Project Cost	N/A
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$17,000
Corporate Income	\$24,200
Sales & Use	\$58,800
Property	\$0
Total as % of Project Cost	10%

Small Business Energy Advantage

For-Profit Bank Loan

Energy Efficiency

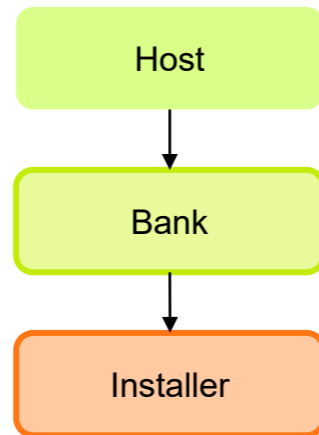
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Description

For commercial energy efficiency projects at small businesses, the calculator assumes that there are three parties involved: the small business host, for-profit bank, and installer. It is assumed that the small business takes out a loan to finance 100% of the energy efficiency upgrades. The upgrades will reduce overall energy costs for the small business and increase profit. However, based on estimated non-residential electric rates and project costs calculator models net negative NPV, lowering the host's net income taxes. Corporate income tax overall is still positive. The technology generates sales and use tax but is assumed not to trigger a property tax assessment.

Inputs

Average Direct Wage	\$70,000
Labor % of Project Cost	30%
Project Lifetime	12 years
Average Project Cost	\$5.60/kW
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$18,300
Corporate Income	\$18,700
Sales & Use	\$61,700
Property	\$0
Total as % of Project Cost	10%

Large Commercial and Industrial EE For-Profit Bank Loan

Energy Efficiency

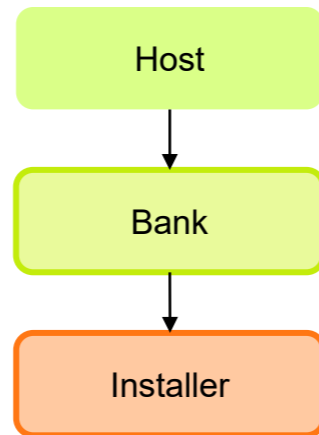
11 of 34 by total tax generated

Description

For commercial energy efficiency projects at large commercial and industrial sites, the calculator assumes that there are three parties involved: the large C&I host, the for-profit bank, and the installer. It is assumed that the C&I host takes out a loan to finance 100% of the energy efficiency upgrades. The energy efficiency upgrades will reduce overall energy costs for the C&I host and accordingly increase profit. However, based on estimated non-residential electric rates and project cost, calculator models net negative NPV, lowering the host's net income taxes. Corporate income tax overall is still positive. The technology generates sales and use tax but is assumed not to trigger a property tax assessment.

Inputs

Average Direct Wage	\$70,000
Labor % of Project Cost	30%
Project Lifetime	12 years
Average Project Cost	\$5.70/kW
Capacity Factor	N/A
% by Tax Equity Investor	N/A
Depreciation	N/A



Generates income tax → = transaction

Drivers



Tax Generated (per \$1M invest)

Individual Income	\$17,300
Corporate Income	\$18,500
Sales & Use	\$59,800
Property	\$0
Total as % of Project Cost	10%

Table of Contents



Background



Drivers of Tax Revenue



Methodology



Results



Technology Dashboards



Sources & Appendix

Overall Tax Calculator Assumptions

Numerical assumptions and sources are detailed in the tax calculator. Non-numerical assumptions are detailed in the following slides:

- Individual – pg. 70
- Sales and Use – pg. 71
- Property – pg. 72-74
- Corporate – pg. 75-76

Calculator-wide assumptions

- **Taxes are paid in CT** for companies and employees operating in CT
- Based on this research, for the purposes of modeling corporate income tax, Guidehouse assumed that **income before tax (or taxable income) was equal to 9% of revenue**
- **Indirect and induced job wages** are assumed to be **\$60,000 per year** consistent with the 2018 Tax Study plus inflation, which are based on an average reported wage across CT from BLS
- **Electricity rates** are specific to residential and non-residential hosts, and are a weighted average rate for CT based on **2020 EIA-861** data
- **Loan interest rates are 4.5%** for both for-profit and non-profit banks
- **Tax equity investors** earn **4% yearly return**, and are bought out in year 5 of the project at 10%
- NPV is calculated using a **5% discount rate**

Individual Income Tax – Non-Numerical Assumptions

The following general assumptions guide individual income tax modeling:

- Individual income tax is applicable to all technologies
- All jobs generate income tax in Connecticut
- Tax rates are based on the individual income tax calculator on Connecticut Department of Revenue website; all tax rates were calculated for rounded annual wages for single filers
- Direct and indirect job have same average wage across technologies and business models based on overall Connecticut BLS data

 For all assumptions and sources, see the Tax Calculator

Sales & Use Tax – Non-Numerical Assumptions

The following general assumptions guide sales and use tax modeling:

- All Engineering & Design work is sales & use tax exempt
- For non-Engineering & Design work, the following technology exemptions were considered:

Technology	Labor	Non-Labor	Source	Comment
Fuel Cell – R&D/Engineering	Exempt	50% exempt	CERT-108, CERT-109	Labor exemption based on Engineering & Design work exemption. 50% exemption based on R&D
Fuel Cell – Installation/Mfg.	Not exempt	Exempt	CGS 12-412 (13)	Some precedence for case-by-case exemptions
Solar PV	Exempt	Exempt	CERT-140	
Ground Source Geothermal HP	Exempt	Exempt	CERT-140	
Solar Thermal	Exempt	Exempt	CERT-140	
Wind	Not exempt	Exempt	CERT-142	“Clean Technologies” defined to include wind in CGS 12-412(117) B
Storage	Exempt	Exempt	CERT-140	Assumed to be deployed with solar. Exemption for storage with solar in 2007 Special Notice Legislation

Sales and use tax is not dependent on sector or business model.

 For all assumptions and sources, see the Tax Calculator

Property Tax – Non-Numerical Assumptions (1/2)

The following general assumptions guide property tax modeling:

- Property tax is generated if 1) an investment would trigger property tax, and 2) the technology is not otherwise exempt
- Total depreciated property value is approximation of “real market value”, of which only 70% is taxed based on CT property tax assessment legislation
- Investments that **would not** trigger property tax appraisal are assumed to be:
 - Energy efficiency upgrades, including heat pump installation, for residential and non-residential customers
 - Meter installation due to small per-site invest
 - Residential EV charger installation due to small per-site invest

 For all assumptions and sources, see the Tax Calculator

Property Tax – Non-Numerical Assumptions (1/2)

The following technology and business model combinations are assumed property tax exempt under CT legislation:

Technology	Property Tax	Source	Comment
Fuel Cell – R&D/Engineering	Exempt	PA 13-61 (C), CGS 16-1 (20)	Class I Renewable, behind the meter C&I
Fuel Cell – Installation/Mfg.	Exempt	PA 13-61 (C), CGS 16-1 (20)	Class I Renewable, behind the meter C&I
Solar PV – Residential	Exempt	PA 13-61 (A), CGS 16-1 (20)	Class I Renewable, behind the meter residential
Solar PV – Non-Residential	Exempt	PA 13-61 (C), CGS 16-1 (20)	Class I Renewable, behind the meter C&I
Ground Source Geothermal HP	Exempt	PA 13-61 (A), CGS 16-1 (20)	Class I Renewable, behind the meter residential
Solar Thermal	Exempt	PA 13-61 (A), CGS 12-57 (20)	Class I Renewable, behind the meter residential
Storage – Residential	Exempt	Reg of State Agencies 16a-14-4, 16a-14-102	Assume deployed with solar
Storage – Non-Residential	Exempt	Reg of State Agencies 16a-14-4, 16a-14-102	Assume deployed with solar
Anaerobic Digestion	Exempt	PA 13-61 (C), CGS 16-1 (20)	Class I Renewable, behind the meter residential

Do clean energy technologies increase property taxes?

Literature review suggests that solar systems may increase home value...

Value	Source
Buyers in CA are willing to pay extra \$6/W , decreasing \$2,500/year over system life	Berkeley National Lab "Exploring California PV Home Premiums", 2013
Having solar panels increases home value by average of 4.1% US-wide	Zillow, "Homes with Solar Panels Sell for 4.1% More", 2019
Homes in CA are capitalized at 3.5% premium for solar	European Economic Review, Understanding the Solar Home price premium: Electricity generation and "Green" social status, 2012

...and that people are willing to pay for lower energy bills

Value	Source
In Austin, homes with LEED certification have 8% higher resale value	USGBC, Green Homes in Austin-Round Rock Add \$25,000 Resale Value, 2017
Homes are valued at incremental \$10-\$25 for every \$1 reduction in annual fuel bills	The Appraisal Journal, Evidence of Rational Market Valuations for Energy Efficiency, 1998



However, the literature did not reveal Connecticut-specific studies, or a definite link between installation of clean energy technologies and property tax paid

Corporate Income Tax – Non-Numerical Assumptions (1/2)

The following general assumptions guide corporate income tax modeling:

- The corporate tax streams modeled were considered applicable to technologies and business models as follows:
 - Installer profit tax is applicable to any profitable business model
 - Sponsor equity investor income tax is applicable to any lease/PPA business model
 - Sponsor equity investors were assumed to target an IRR of 10%, and the PPA rate was set based on this assumption
 - Depreciation (and investment tax credit) is claimed by the sponsor equity investor if no tax equity investor is involved
 - For-profit loan income tax applies to any business model that involves a for-profit loan; non-profit banks are assumed not to pay this tax
 - Change in host income tax is applicable to any business model that involves a C&I loan or lease/PPA and generates electricity that is used by the C&I host
 - Change in tax equity state tax applies to any business model that involves a tax equity investor
 - Tax on utility revenue only applies to utility-procured meters
- All parties are taxed at the same corporate tax rate, with the exception of tax on utility revenue, which is subject to a different state tax rate

 For all assumptions and sources, see the Tax Calculator

Corporate Income Tax – Non-Numerical Assumptions (2/2)

The following general assumptions guide corporate income tax modeling:

- Investors and banks are in Connecticut and pay Connecticut taxes
- Loan terms are consistent across all business models, including if the loan is from a for-profit or non-profit bank
- Tax equity investor terms are consistent for all business models
- Depreciation schedules were assumed as follows:
 - Solar (PV and thermal), fuel cells, storage, wind, hydropower, and CHP use a 5-year MACRS depreciation schedule up to 85% of the full system cost
 - EV charging stations and anaerobic digestion use a 7-year MACRS depreciation schedule up to 85% of the full system cost
 - Utility-procured meters use a straight-line depreciation schedule over 10 years
- The investment tax credit (ITC) was assumed to be business model-agnostic and applied as follows:
 - Solar (PV and thermal), fuel cells, storage (assumed charged 75% or more by solar), and wind applied an ITC of 26%
 - Ductless split & air source heat pumps, geothermal heat pumps, CHP, and weatherization & HVAC technologies applied an ITC of 10%
 - Hydro and EV chargers applied an ITC of 30%

Contact

Steven Tobias

Director

steven.tobias@guidehouse.com

(781) 270-8438

Nicole Reed Fry

Associate Director

nicole.reed.fry@guidehouse.com

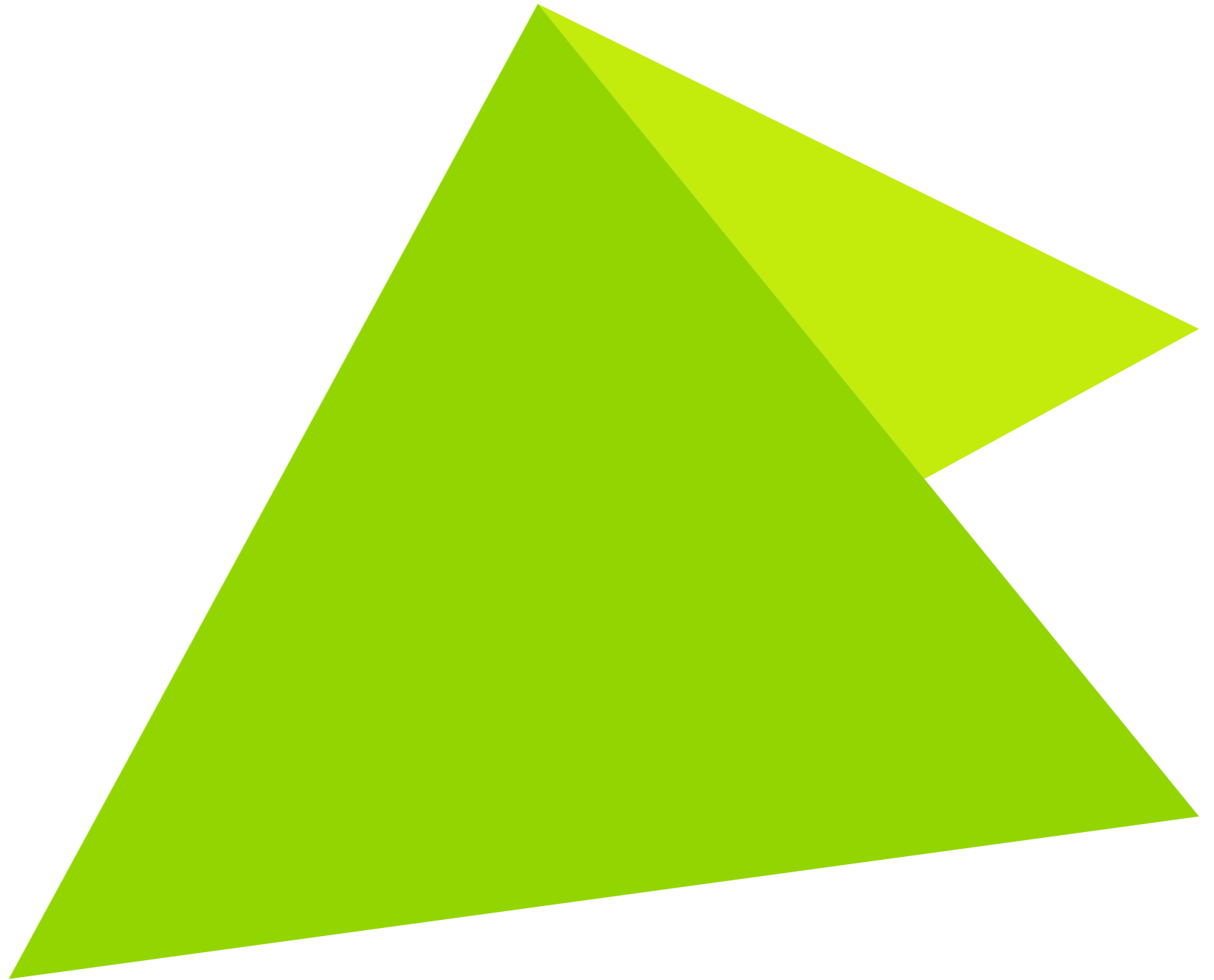
(301) 728-2526

Jennifer Castor

Managing Consultant

jcastor@guidehouse.com

(484) 883-3300





Connecticut Municipal Electric Energy Cooperative (CMEEC) & US Naval Submarine Base – Groton, CT Fuel Cell Project

A Fuel Cell Debt Financing Strategic Selection
Green Bank Term Loan Facility Extension Request
October 14, 2022



Document Purpose: This document contains background information and due diligence on a proposed credit facility for the FuelCell Energy, Inc. (“FCE” and NASDAQ: FCEL) fuel cell project under a power purchase agreement between FCE and the Connecticut Municipal Electric Energy Cooperative (“CMEEC”) and located at the US Naval Submarine Base – Groton, CT. The information herein is provided to the Connecticut Green Bank Board of Directors for the purposes of reviewing and approving recommendations made by the staff of the Connecticut Green Bank.

In some cases, this package may contain, among other things, trade secrets and commercial or financial information given to the Connecticut Green Bank in confidence and should be excluded under C.G.S. §1-210(b) and §16-245n(D) from any public disclosure under the Connecticut Freedom of Information Act. If such information is included in this package, it will be noted as confidential.

Strategic Selection Financing Extension Memo

To: Connecticut Green Bank Board of Directors
From: Bert Hunter, EVP & CIO
Cc: Bryan Garcia, President & CEO; Brian Farnen, General Counsel & CLO; Sergio Carrillo, Director, Incentive Programs; Jane Murphy, EVP of Finance and Administration
Date: October 14, 2022
Re: FuelCell Energy / US Navy / CMEEC / Groton Fuel Cell Project
Term Loan Facility Update & Extension Request

At the June 2022 meeting of the Connecticut Green Bank (“Green Bank”) Board of Directors (the “Board”), the Board approved an extension to complete the financing for a term loan facility to finance the 7.4 megawatt FuelCell Energy, Inc. (“FCE”) fuel cell at the US Naval Submarine Base, Groton, CT (the “Navy Project”) in partnership with and subordinated to loans (the “Senior Loans” and together with Green Bank’s loan, the “Term Loans”) from two bank lenders: Liberty Bank and Amalgamated Bank (the “Senior Lenders” and together with Green Bank, the “Lenders”).

The senior lenders and FCE have previously entered into a commitment for the financing, subject to finalization of diligence and credit approval, both of which are in progress.

On September 8, FCE filed its quarterly report with the Securities and Exchange Commission, including an update regarding the progress with the Groton Project as follows:

The Groton Project. In July 2021, the Company achieved mechanical completion, executed the interconnect agreement, and commenced the process of commissioning the 7.4 MW platform at the U.S. Navy Submarine Base in Groton, CT (the “Groton Project”). On September 14, 2021, the Company disclosed that the process of commissioning the Groton Project was temporarily suspended due to a needed repair. Following the completion of that repair, the Company resumed commissioning of the Groton Project. During the resumed commissioning process, the Company observed operating parameter data from one of the two fuel cell platforms installed at the project site that indicated a mechanical component was not performing according to engineered specifications. The Company subsequently determined that component should be removed from the project site to facilitate the necessary repair and upgrade. On April 7, 2022, the Company announced that it had completed the necessary repairs and upgrades to the mechanical component, reinstalled the mechanical component at the project site, and restarted the process of commissioning. During the restarted commissioning process, the Company encountered performance anomalies primarily in the mixer eductor oxidizer (“MEO”) which is a sophisticated piece of equipment specific to the Groton Project designed to optimize fuel and air flows. The Company is considering operating the project at a reduced output of 3 MW per platform at the start of commercial operations in order to optimize performance of each of the two MEO units. Over a period of approximately one year, the Company anticipates implementing upgrades to each of the two MEO units in order to bring the platform to its rated capacity of 7.4 MW. Under extensions previously received from the U.S. Navy, the deadline by which commercial operations are to

be achieved is September 30, 2022. We expect that the Groton Project could be commercially operational by September 30, 2022 at a reduced power output of approximately 6 MW. However, commencement of operations at a reduced output of approximately 6 MW requires approval by the Connecticut Municipal Electric Energy Cooperative (“CMEEC”) and the U.S. Navy. Although the Company is in discussions with CMEEC and the U.S. Navy, no assurance can be given that CMEEC and the U.S. Navy will provide such approval.

This platform is expected to highlight the ability of FuelCell Energy’s platforms to perform at high efficiencies and provide low CO₂ to MWh output. Incorporation of the platform into a microgrid is expected to demonstrate the capacity of FuelCell Energy’s platforms to increase grid stability and resilience while supporting the U.S. military’s efforts to fortify base energy supply and demonstrate the U.S. Navy’s commitment to clean, reliable power with microgrid capabilities.

The project financing is now expected to close by year end and legal meetings between the lenders are well underway – and the banks are refreshing their credit approvals which have “timed out” (neither lender has expressed any concerns about renewing credit approvals for the project). Accordingly, staff requests the original approval “execute by date” be extended to 743 days from its original approval date (to bring the extension to December 31, 2022). Staff is setting this extension to the end of December to avoid any issues with an unanticipated delay between now and the next meeting of the Board in December.

Resolutions

WHEREAS, in accordance with (1) the statutory mandate of the Connecticut Green Bank (“Green Bank”) to foster the growth, development, and deployment of clean energy sources that serve end-use customers in the State of Connecticut, (2) the State’s Comprehensive Energy Strategy (“CES”) and Integrated Resources Plan (“IRP”), and (3) Green Bank’s Comprehensive Plan (the “Comprehensive Plan”) in reference to the CES and IRP, Green Bank continuously aims to develop financing tools to further drive private capital investment into clean energy projects;

WHEREAS, FuelCell Energy, Inc., of Danbury, Connecticut (“FCE”) has used previously committed funding (the “Bridgeport Loan”) from Green Bank to successfully develop a 15 megawatt fuel cell facility in Bridgeport, Connecticut (the “Bridgeport Project”), and FCE has operated and maintained the Bridgeport Project without material incident, is current on payments under the Bridgeport Loan;

WHEREAS, FCE has requested financing support from the Green Bank to develop a 7.4 megawatt fuel cell project in Groton, Connecticut located on the U.S. Navy submarine base and supported by a power purchase agreement (“PPA”) with the Connecticut Municipal Electric Energy Cooperative (“CMEEC”) (the “Navy Project”);

WHEREAS, staff has considered the merits of the Navy Project and the ability of FCE to construct, operate and maintain the facility, support the obligations under the Loan throughout its 20-year term, and as set forth in the due diligence memorandum (the “Board Memo”) dated December 18, 2020, recommended this support be in the form of a term loan not to exceed \$8,000,000, secured by the developer’s equity in the project company (which controls all project assets, contracts and revenues) as well as a pledge of revenues from an unencumbered project as explained in the Board Memo (the “Credit Facility”);

WHEREAS, on the basis of that recommendation, the Green Bank Board of Directors (“Board”) approved of the Credit Facility, in an amount not to exceed \$8,000,000 with the provision that the Credit Facility be executed no later than 315 days from the date of authorization by the Board (June 16, 2021), which was further extended by the Board on a number of occasions, including in July 2022 to October 31, 2022;

WHEREAS, Green Bank staff has further advised the Board that the closing for the Credit Facility is expected to close by December 31, 2022 and to accommodate the additional time that might be needed to execute the Credit Facility requests the permitted time to execute the credit facility be increased from not later than 682 days from the original date of authorization by the Board (i.e., not later than October 31, 2022) to not later than 743 days from the date of authorization by the Board (i.e., not later than December 31, 2022);

NOW, therefore be it:

RESOLVED, that the Green Bank Board hereby approves the extension of time for the execution of the Credit Facility to not later than 743 days from the original date of authorization by the Board (i.e., not later than December 31, 2022); and

RESOLVED, that the proper Green Bank officers are authorized and empowered to do all other acts and execute and deliver all other documents and instruments as they shall deem necessary and desirable to effect the Term Loan and participation as set forth in the Memorandum.

Submitted by: Bryan Garcia, President and CEO; Bert Hunter, EVP and CIO;

75 Charter Oak Avenue, Hartford, Connecticut 06106
T: 860.563.0015
www.ctgreenbank.com



PosiGen

Working Capital Line and Term Loan Modification Request

October 14, 2022



Document Purpose: This document contains background information and due diligence for the creation of a working capital line for the purchase of battery energy storage systems and associated term loan for PosiGen Inc. (“PosiGen”) backed by the future incentive payments PosiGen will earn from the deployment and operation of these storage systems with low-income residents and residents of Distressed Communities in Connecticut. The information herein is provided to the Connecticut Green Bank Board of Directors for the purposes of reviewing and approving recommendations made by the staff of the Connecticut Green Bank.

In some cases, this package may contain, among other things, trade secrets and commercial or financial information given to the Connecticut Green Bank in confidence and should be excluded under C.G.S. §1-210(b) and §16-245n(D) from any public disclosure under the Connecticut Freedom of Information Act. If such information is included in this package, it will be noted as confidential.

Investment Memo

To: Connecticut Green Bank Board of Directors
CC: Bryan Garcia, President and CEO; Jane Murphy, Executive Vice President of Accounting and Financial Reporting; Brian Farnen, General Counsel and CLO; Eric Shrago, Managing Director of Operations; Sergio Carrillo, Director of Incentive Programs
From: Bert Hunter, EVP and CIO
Date: October 14, 2022
Re: PosiGen BESS Working Capital and Term Loan Facility Modification Request

Background

The Energy Storage Solutions Program, ordered by the Connecticut Public Utilities Regulatory Authority (“PURA”) in July of 2021, is designed to expand the development of battery energy storage systems across the state. Amongst the goals for the initiative that PURA identified in its decision, the program must prioritize delivering resilience benefits to low-income customers and customers in distressed communities – with a focus of no less than 40 percent of installations being installed in such communities. PosiGen, Inc. and its subsidiaries (collectively, “PosiGen”), are currently launching an affordable storage offering targeting these traditionally underserved customers.

In April 2022, to support PosiGen in providing an affordable storage offering, staff recommended and the Board of Directors (the “Board”) approved that the Connecticut Green Bank (“Green Bank”) provide a working capital line and term loan to the company. That facility closed in two stages, with the working capital line closing on September 30 (with a draw of just less than the full \$2 million availability) and the term loan facility closing in October (no advances expected for a few months as customer leases are closed).

Prior to closing the two facilities, staff successfully negotiated with PosiGen to improve their lease offering for low-income customers such that the monthly rental would be, at most, \$10 (a significant savings of at least 50%). PosiGen will also use good faith efforts to reduce lease rates further by using all available tax credits they can apply under the newly passed Inflation Reduction Act (e.g., low-income, energy community adders).

In return, the Green Bank negotiated a lower concessional interest rate against this low-income portfolio of leases, reducing the interest rate on the term loan facility for these qualifying leases to 2% from the 4% original offer. The interest rate for non-qualifying leases remains unchanged at 5%.

A summary of the term loan terms follows below:

- \$6 million term loan facility that provides 100% advance against the present value (at 4.5%) of the Generac guaranteed payments and any customer payments
 - Generac is the credit counterparty, and the guaranteed payments limit PosiGen’s exposure to performance risk
 - Customer payments are expected to be a nominal portion of the revenues if PosiGen decides to charge a lease fee at all. Most, if not all, of the revenues will come from Generac

- The loan at this size is anticipated to cover an estimated 1,000 installations over a targeted 2-year period
- Amortizes fully over 10 years, which is tied to the life of the underlying asset, with an option for an Interest Only period (to be approved by Green Bank in Green Bank’s sole discretion, but in any event not to exceed 12 months from date of the corresponding conversion to term status)
- Fixed interest rate per annum as follows:
 - **LMI / Distressed Communities Portion (up to \$6,000,000): 2% (previously 4%)**
 - Non-LMI / Distressed Communities Portion (not to exceed lesser of (a) \$2,400,000 or (b) \$6,000,000 less LMI Portion advanced): 5%
- Projects to be owned by various PosiGen-managed tax equity funds, with this new structure running through the company’s existing master back-leverage facility
 - The collateral approach will mirror the Green Bank’s existing 1st lien credit facility against PBI cash flows where such PBI cash flows (in this case – the BESS cash flows) are “carved out” from the collateral pool which benefits the 1st and 2nd lien lenders. Using the PURA approved direct payment structure, the utilities make active dispatch incentive payments directly to PosiGen’s solar fund structure (the owners of the BESS assets).

Recommendation

The Green Bank’s ongoing partnership with PosiGen has brought the benefits of solar and energy efficiency to low-income customers and residents of Distressed Communities across the state. By providing a working capital line and a term loan to support PosiGen’s new battery storage offering, the Green Bank can expand on this successful investment and bring resiliency benefits to these underserved communities, as well. Furthermore, the Green Bank’s exposure to performance risk is limited through the direct payment arrangement by the utilities to PosiGen’s solar fund structure, our secured collateral position, and PosiGen’s guaranteed revenue agreement with Generac, a very substantial New York Stock Exchange-listed enterprise (ticker: GNRC) with nearly \$4 billion in annual sales and in excess of \$2 billion in stockholders’ equity. PosiGen’s willingness to substantially reduce its standard lease rates by at least 50% is worthy of a concessional rate of 2% for Green Bank’s term loan facility. For these reasons, staff recommends Board approval of the modification of the investment as outlined herein.

Resolutions

WHEREAS, the Connecticut Green Bank (“Green Bank”) has an existing partnership with PosiGen, Inc. (together with its affiliates and subsidiaries, “PosiGen”) to support PosiGen in delivering a solar lease and energy efficiency financing offering to LMI households in Connecticut;

WHEREAS, PosiGen is planning to expand its offerings to LMI households in Connecticut to include an affordable battery energy storage system (“BESS”) option that will provide the customer backup power during a power outage and will reduce peak demand on the electric distribution system, as more fully explained in a memorandum dated April 15, 2022 to the Green Bank Board of Directors (the “Board Memo”);



WHEREAS, PosiGen and Green Bank have agreed to substantially reduced lease rates to apply to low income customers in return for a concessional interest rate as more fully explained in a memorandum dated October 14, 2022 to the Green Bank Board of Directors (the “Modification Memo”);

NOW, therefore be it:

RESOLVED, that the Green Bank may permit a concessional interest rate for term loans as more fully explained in the Modification Memo to apply to advances up to \$6 million to PosiGen on terms substantially similar to those described in the Modification Memo; and

RESOLVED, that the proper Green Bank officers are authorized and empowered to do all other acts and negotiate and deliver all other documents and instruments as they shall deem necessary and desirable to effect the above-mentioned legal instruments.

Submitted by: Bert Hunter, EVP and CIO

APPENDIX A Spec Sheet, p1



GENERAC[®]

PWRCELL

OUTDOOR RATED BATTERY

PWRcell Outdoor Rated Battery Cabinet (Ordering SKU: APRE00028)
 3.0kWh PWRcell DCB Battery Module
 Model #: BJ-DCB052R6G (Ordering SKU: G0080040)
 3.0kWh PWRcell EX Battery Module
 Model #: G0080001, G0080003



The PWRcell™ Outdoor Rated (OR) Battery Cabinet is a Type 3R smart battery enclosure that allows for a range of storage configurations to suit any need. DC-couple to Generac PWRzone solar, PWRgenerator, or AC-couple to a third party PV array. No other smart battery offers the power and flexibility of PWRcell.

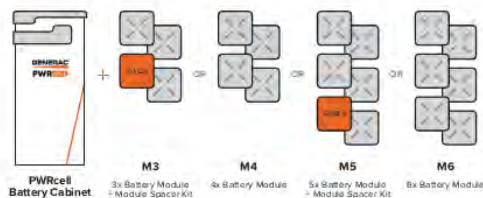
PWRcell BATTERY CABINET DESIGN

The PWRcell Battery Cabinet allows system owners the flexibility to scale from an economical 9kWh to a massive 18kWh by installing additional battery modules to the PWRcell Battery Cabinet. An existing PWRcell Battery Cabinet can be upgraded with additional modules. Use the graphic below and the chart on the back of this sheet to understand what components you need for your chosen PWRcell configuration.

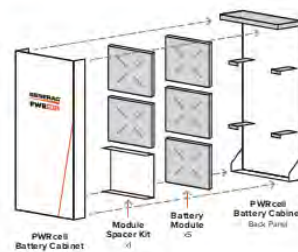
FEATURES & BENEFITS

- Best-in-class battery backup power
 - AC-couple to third party solar array
- Connect 2 PWRcell Battery Cabinets to a single PWRcell Inverter for up to 36kWh of usable storage
- Plug-and-play with all PWRcell products
- Time-of-use (TOU) and zero-export ready
- 3R cabinet for outdoor and indoor installations
- Floor standing or wall-mounted design

BATTERY CONFIGURATION GUIDE



BATTERY CABINET ASSEMBLY



APPENDIX A Spec Sheet, p2

Specifications

PWRcell™ BATTERY CONFIGURATIONS	M3	M4	M5	M6
BATTERY MODULES:	3	4	5	6
USABLE ENERGY ¹ :	9 kWh	12 kWh	15 kWh	18 kWh
NOMINAL CONT. AC POWER ^{1,2} :	3.4 kW	4.5 kW	5.6 kW	6.7 kW
MAX. AC POWER ^{1,2} :	4.5 kW	6 kW	7.5 kW	9 kW
NOMINAL CONT. DC (CHARGE/DISCHARGE) - A:	11.6	15.5	19.4	23.3
PEAK MOTOR STARTING CURRENT (2 SEC) - A, RMS:	25	33	42	50
COMPATIBLE BATTERY MODULES ⁴ :	Generac PWRcell EX 3.0 kWh, Generac PWRcell DCB 3.0 kWh, Generac PWRcell DCB 2.85 kWh			
REbus™ VOLTAGE - INPUT/OUTPUT:	360-420 VDC			
NOMINAL VOLTAGE:	380 VDC			
DC-DC ROUND-TRIP EFFICIENCY:	96.5%			
MAXIMUM AMBIENT OPERATING TEMPERATURE:	14 TO 122 °F (-10 TO 50 °C)			
OPTIMAL AMBIENT OPERATING TEMPERATURE:	41 to 104 °F (5 to 40 °C)			
MAXIMUM INSTALLATION ALTITUDE - FT (M):	6560 (2000)			
DIMENSIONS, L x W x H - IN (MM):	22" x 10" x 68" (559 x 254 x 1727)			
WEIGHT, ENCLOSURE - LB (KG):	115 (52)			
WEIGHT, INSTALLED W/ DCB MODULES - LB (KG):	280 (127)	335 (152)	390 (177)	445 (202)
WEIGHT, INSTALLED W/ EX MODULES - LB (KG):	287 (130)	344 (156)	401 (182)	459 (208)
WEIGHT, ACCESSORY MOUNTING HARDWARE - LB (KG):	21 (10)			
ENCLOSURE TYPE:	Type 3R			
WARRANTY - LI-ION MODULES:	10 Years, (7.56MWh)			
WARRANTY - ELECTRONICS AND ENCLOSURE:	10 Years			
COMMUNICATION PROTOCOL:	REbus™ DC Nanogrid™			
SEISMIC RATING:	IEEE 693-2018 (HIGH)			
COMPLIANCE:	UL 9540, UL 9540A ³ , UL 1973, UL 1642, CSA 22.2 #107.1			

¹Assumes use of 3.0kWh battery module. ²Average AC power over a complete discharge cycle. ³Values provided for 40°C (104°F). ⁴All PWRcell battery models used in a PWRcell Battery Cabinet must be the same model. Do NOT combine module SKUs in a single battery cabinet. ⁵Meets residential indoor requirement as per UL9540A ed 4 in PWRcell OR M* DCB configuration.

Note: Charge/discharge rate may be reduced at temperature extremes

PWRcell ACCESSORIES

Inside of the PWRcell Battery Cabinet, battery modules are stacked two deep on three levels, allowing for up to six modules to be connected in series. You can upgrade an existing PWRcell Battery Cabinet by adding Battery Modules and a Module Spacer (APKE00008). A Module Spacer is only required for battery configurations with an odd number of modules (i.e. 3 or 5).

Generac offers a convenient PWRcell Battery Upgrade Kit (APKE00009) to help replace lost or misplaced hardware.

Note: When adding modules, be sure all modules within a cabinet are the same model (i.e., EX or DCB). Instructions are provided in product manual.

PWRcell MODEL BUILDER



Sample Model Name: PWRcell OR M6 DCB

Generac Power Systems, Inc.
545 W29290 Hwy. 59, Waukesha, WI 53189
www.Generac.com | 888-GENERAC (436-3722)

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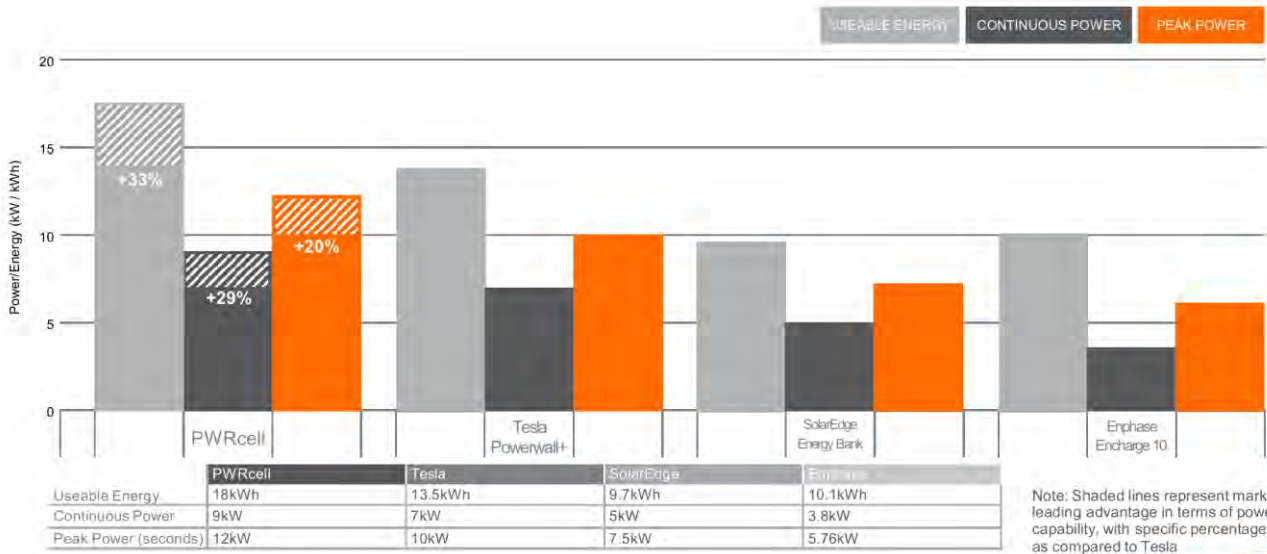
©2021 Generac Power Systems. All rights reserved.
Specifications are subject to change without notice.



APPENDIX A Spec Sheet, p2

PWRCELL® WHOLE HOME POWER COMPARISON

GENERAC®



APPENDIX B
Generac Overview, p1

GENERAC
BY THE NUMBERS



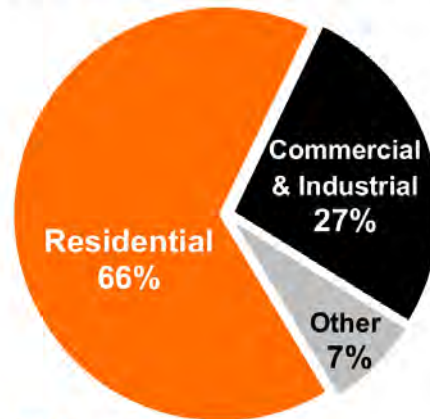
Residential

Home Standby, Clean Energy, Portables, Chore Products



2021 Net Sales

Domestic 85% | International 15%



Other

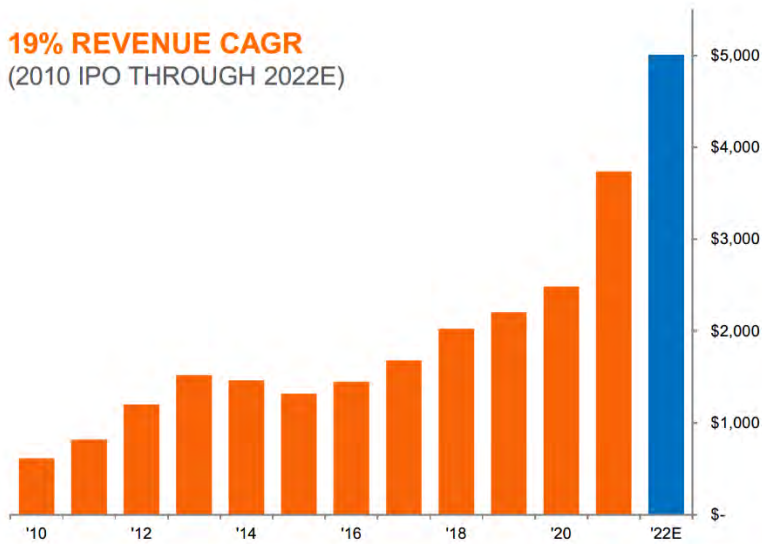
Aftermarket Parts, Product Accessories, Extended Warranty, Grid Services, Remote Monitoring



APPENDIX B
Generac Overview, p2

TRACK RECORD OF GROWTH

19% REVENUE CAGR
(2010 IPO THROUGH 2022E)



Note: \$ amounts in millions. Represents gross sales excluding freight revenue. Figures include results from acquisitions completed during 2011-present. CAGR measures 2010-2022.

STRATEGIC GROWTH THEMES

- Power Quality Issues Continue to Increase
- Home Standby Penetration Opportunity is Massive
- **Solar, Storage & Monitoring Markets Developing Quickly**
- Grid Services & Energy-as-a-Service Open New Revenue Streams
- Natural Gas Generators Driving Superior Growth
- Rollout of 5G Will Require Improved Network Quality



APPENDIX B
Generac Overview, p3

**INDUSTRY LEADING
HARDWARE SOLUTIONS**



**Several million grid
edge assets**

**INTEGRATED DELIVERY
& CUSTOMER SERVICE**



**Over 10,000
Dealers & Distributors**

**INDUSTRY-LEADING
SOFTWARE TECHNOLOGY**



**Control millions of end
points in real-time**

**INTEGRATED
SERVICES & SUPPORT**



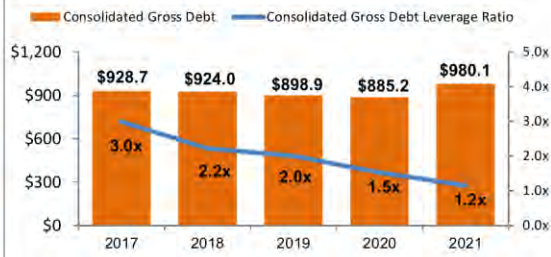
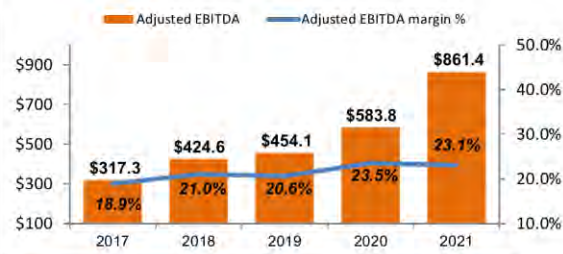
**24/7 Operations
and Customer Care**

APPENDIX B Generac Overview, p4

FINANCIAL SUMMARY

GENERAC

(\$'S IN MILLIONS)



Generac Holdings Inc. Consolidated Balance Sheets *(U.S. Dollars in Thousands, Except Share and Per Share Data)*

	December 31,	
	2021	2020
Assets		
Current assets:		
Cash and cash equivalents	\$ 147,339	\$ 655,128
Accounts receivable, less allowance for credit losses of \$12,025 and \$12,001 at December 31, 2021 and 2020, respectively	546,466	374,906
Inventories	1,089,705	603,317
Prepaid expenses and other assets	64,954	36,382
Total current assets	1,848,464	1,669,733
Property and equipment, net	440,852	343,936
Customer lists, net	238,722	49,205
Patents and technology, net	492,473	86,727
Other intangible assets, net	66,436	9,932
Tradenames, net	243,531	146,159
Goodwill	1,409,674	855,228
Deferred income taxes	15,740	1,497
Operating lease and other assets	121,888	73,006
Total assets	\$ 4,877,780	\$ 3,235,423

APPENDIX B
Generac Overview, p5

Liabilities and stockholders' equity			
Current liabilities:			
Short-term borrowings	\$	72,035	\$ 39,282
Accounts payable		674,208	330,247
Accrued wages and employee benefits		72,060	63,036
Other accrued liabilities		331,674	204,812
Current portion of long-term borrowings and finance lease obligations		5,930	4,147
Total current liabilities		<u>1,155,907</u>	<u>641,524</u>
Long-term borrowings and finance lease obligations		902,091	841,764
Deferred income taxes		205,964	115,769
Operating lease and other long-term liabilities		341,681	179,955
Total liabilities		<u>2,605,643</u>	<u>1,779,012</u>
Redeemable noncontrolling interest		58,050	66,207
Stockholders' equity:			
Common stock, par value \$0.01, 500,000,000 shares authorized, 72,386,017 and 72,024,329 shares issued at December 31, 2021 and 2020, respectively			
		725	721
Additional paid-in capital		952,939	525,541
Treasury stock, at cost, 8,667,031 and 9,173,731 shares at December 31, 2021 and 2020, respectively		(448,976)	(332,164)
Excess purchase price over predecessor basis		(202,116)	(202,116)
Retained earnings		1,965,957	1,432,565
Accumulated other comprehensive loss		(54,755)	(34,254)
Stockholders' equity attributable to Generac Holdings Inc.		<u>2,213,774</u>	<u>1,390,293</u>
Noncontrolling interests		313	(89)
Total stockholders' equity		<u>2,214,087</u>	<u>1,390,204</u>
Total liabilities and stockholders' equity	\$	<u>4,877,780</u>	\$ <u>3,235,423</u>



Memo

To: Connecticut Green Bank (“Green Bank”) Board of Directors (the “Board”)

From: Bert Hunter, EVP & Chief Investment Officer

CC: Bryan Garcia, President and CEO; Brian Farnen, General Counsel and CLO; Jane Murphy, EVP of Finance & Administration

Date: October 18, 2022

Re: Modification Request - Capital 4 Change (“C4C”) for \$4.5M Medium Term Revolving Loan (secured & subordinated) to CEEFCo (100%-owned subsidiary of C4C) for Funding CEEFCo’s investment in Energy Efficiency Loans (including Smart-E Loans) in partnership with Amalgamated Bank

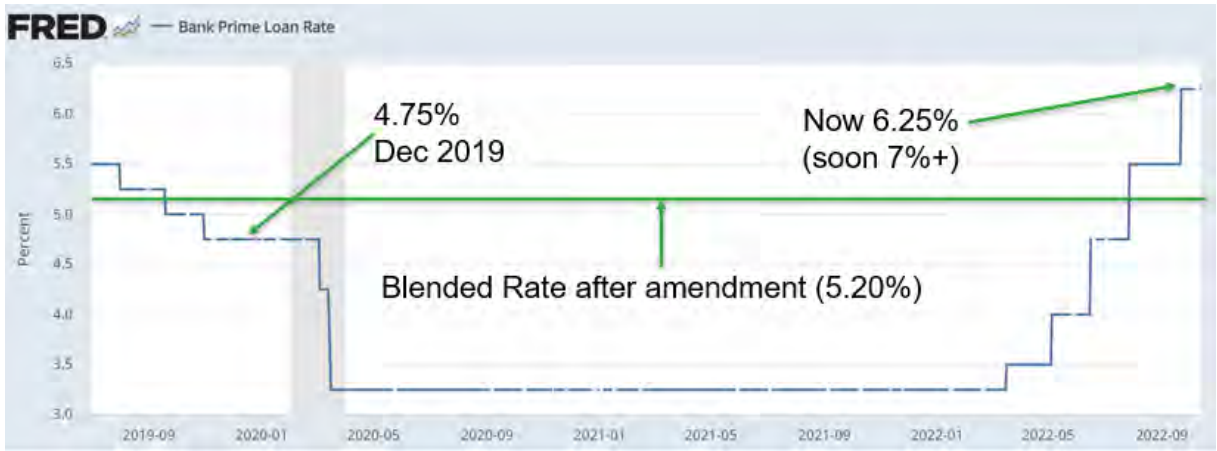
Background & Summary of Request for Approval

At the September 12, 2019 meeting of the Connecticut Green Bank (the “Green Bank”) Board of Directors (the “Board”), the Board approved \$4.5M for a Medium Term Revolving Loan (secured & subordinated) to CEEFCo (a 100%-owned subsidiary of Capital for Change (“C4C”)) for Funding CEEFCo’s investment in Energy Efficiency Loans (including Smart-E Loans) in partnership with a private capital source. The private capital source, Amalgamated Bank (presently providing up to \$22.5 million in funding as explained later), and CEEFCo / C4C closed that transaction in December 2019 and the facility has functioned as intended – affording CEEFCo with a flexible facility to draw and repay funding associated with its energy efficiency loans. This was of particular importance during the initial months of COVID when the portfolio was contracting. This was followed by an expansionary phase as contractors resumed their work. As of September 30, Green Bank advances total approximately \$2.6 million (17% of the facility) and Amalgamated’s advances total approximately \$13.2 million (83%). CEEFCo has maintained a flawless interest payment and principal repayment record.

As a refresher, Capital for Change (formerly, the Connecticut Housing Investment Fund) (“C4C”), in partnership with the Green Bank, provides loans to Connecticut single family property owners seeking to finance solar PV and other renewable energy systems and energy efficiency upgrades under Green Bank’s Smart-E loan program.¹ C4C is Green Bank’s largest and most active Smart-E lender with nearly 3,800 loans with an original originated amount of nearly \$47 million (remaining balance \$29 million).

¹ Pursuant to the Green Bank Sustainability Plan passed by the Board in December 2017 and to a Professional Services Agreement, beginning August 3, 2018, certain aspects of the Smart-E Loan program are being managed by Inclusive Prosperity Capital, Inc. (“IPC”)

When the parties closed the funding facility in December 2019, the rate base (the Prime Rate or “Prime”) was stabilizing at 4.75%. This soon changed when the COVID pandemic caused the Federal Reserve (the “Fed”) to drop the Federal Funds rate to 0% which lowered Prime to 3.25% where it remained for two years until March of this year when the Fed commenced its tightening process at the fastest rate in history. Today, Prime is 6.25% will most assuredly rise as further increases in interest rates have been promised by the Fed (0.75% expected at its next announcement on November 3, with a further increase expected for December 15 with an increase of between 0.50% and 0.75% being most likely). These increases in interest rates by the Fed are expected to push Prime to 7.50 – 7.75% by the end of 2022. These increases are captured on the chart below.



The impact of these interest rate increases on C4C has not been lost on the Green Bank and Amalgamated – as we have been in discussions since July about an approach to fix interest rates at a level that will enable C4C / CEEFCo to continue the superior deployment of Smart-E loan in the state. Smart-E loans are from 4.99% to 6.99% but most lending by CEEFCo is at the 5.99% level. Unlike other Smart-E lenders, CEEFCo / C4C does not have depository account relationships. Other lenders are still benefitting from core deposits on which they pay their depositors anywhere from 0% to 0.50% for regular checking balances and barely more than this level for savings balances. While roughly 50% of the CEEFCo portfolio is funded via equity, servicing costs erode this “zero cost” funding benefit over time – which is why Amalgamated, Green Bank and C4C have now reached a structure which for a three year period would stabilize CEEFCo’s cost of funds at about 5.2%. This would be accomplished with the following adjustment in lending levels and interest rate charges by Amalgamated and Green Bank:

Original Loan Facility Dec 2019

- **Amalgamated Bank 83.3% \$22.5M**
 - Prime Rate +0.0%
 - Full Revolver
- **Green Bank 16.7% \$4.5M**
 - Prime Rate +0.5%
 - Full Revolver

Revised Facility

- 60% \$15M**
Fixed 6%
1 yr draw + 2 yr term loan
- 40% \$10M**
Fixed 4%
Full Revolver

The change is accomplished by Amalgamated agreeing to fix its interest rate on the facility at 6% for a three year period with the first year being the “draw period” and the last two years being an interest only period (or a repayment period if justified by lower portfolio / collateral levels). Amalgamated would also reduce its advance rate from 83.3% to a maximum of 60% - which would reduce its outstanding loans from about \$13.2 million to \$9.5 million. At the same time, Green Bank would agree to a concessional 4% rate for this period and would lend at least 40% of the portfolio value, up from 16.7% under the existing facility% - which would increase its outstanding loans from about \$2.6 million to \$6.4 million. If, during the last two years of the three year facility when Amalgamated is no longer making advances, Green Bank would make additional advances provided Green Bank’s total advances didn’t exceed \$10 million. These changes result in a blended cost of funds to CEEFCo of 5.2%.

C4C Financial Condition

C4C is in good financial health. Represented below is the parent-level company on a consolidated basis. CEEFCo loan quality is good with approximately 1.6% of loans outstanding in the >90 days past due category – roughly in line with energy efficiency loans more generally. These delinquencies are more than supported by the level of CEEFCo equity (approximately \$15 million).

CAPITAL FOR CHANGE, INC. AND AFFILIATES

Combined Statement of Financial Position
March 31, 2022

Assets

Current Assets:	
Cash	\$ 3,001,296
Accounts receivable, net	1,541,191
Interest receivable	462,592
Current portion of loans receivable	11,155,243
Other current assets	94,863
Total current assets	<u>16,255,185</u>
Other Assets:	
Restricted cash	13,332,088
Investments	1,151,275
Loans receivable, net	66,725,638
Total other assets	<u>81,209,001</u>
Property and Equipment	
Land	241,686
Building and improvements	3,297,153
Furniture and equipment	1,449,340
	<u>4,988,179</u>
Less - accumulated depreciation	1,453,602
Net property and equipment	<u>3,534,577</u>
Total assets	<u>\$ 100,998,763</u>

CAPITAL FOR CHANGE, INC. AND AFFILIATES

Combined Statement of Financial Position
March 31, 2022

Liabilities and Net Assets

Current Liabilities:	
Current portion of notes payable	\$ 19,932,741
Current portion of equity equivalent notes payable	2,300,000
Accounts payable and accrued expenses	763,223
Accrued interest payable	235,333
Total current liabilities	<u>23,231,297</u>
Long-Term Liabilities:	
Conditional advances	5,082,920
Loan escrows liability	3,303,972
Funds held for others	962,566
Deferred interest revenue	1,852,487
Notes payable, net	29,116,518
Equity equivalent notes payable, net	3,800,000
Total long-term liabilities	<u>44,118,463</u>
Total liabilities	<u>67,349,760</u>
Net Assets:	
Without donor restrictions:	
Operating	10,814,185
Equity in property and equipment	2,075,437
Board designated	1,077,563
Total without donor restrictions	<u>13,967,185</u>
With donor restrictions	<u>19,681,818</u>
Total net assets	<u>33,649,003</u>
Total liabilities and net assets	<u>\$ 100,998,763</u>

Loans receivable in each lending area were as follows as of March 31, 2022:

<u>Loans Receivable</u>	<u>C4C</u>	<u>CEEFCo</u>	<u>Total</u>
Residential Loans:			
Permanent	\$ 19,556,185	\$ -	\$ 19,556,185
Predevelopment/acquisition	1,764,394	-	1,764,394
Bridge	1,535,441	-	1,535,441
Construction	12,568,347	-	12,568,347
Consumer housing	376,303	-	376,303
Total residential loans	<u>35,800,670</u>	<u>-</u>	<u>35,800,670</u>
Commercial Loans:			
Commercial real estate	5,661,712	-	5,661,712
Commercial lines of credit	1,609,069	-	1,609,069
Total commercial loans	<u>7,270,781</u>	<u>-</u>	<u>7,270,781</u>
Energy Efficiency Loans:			
Commercial lending	9,766,096	-	9,766,096
Consumer lending	-	29,890,897	29,890,897
Total energy efficiency loans	<u>9,766,096</u>	<u>29,890,897</u>	<u>39,656,993</u>
Gross loans receivable	52,837,547	29,890,897	82,728,444
Less - allowance for loan losses	<u>(4,259,846)</u>	<u>(587,717)</u>	<u>(4,847,563)</u>
Sub-total	48,577,701	29,303,180	77,880,881
Less - current portion	<u>(10,829,363)</u>	<u>(325,880)</u>	<u>(11,155,243)</u>
	<u>\$ 37,748,338</u>	<u>\$ 28,977,300</u>	<u>\$ 66,725,638</u>

Revenues:	
Earned revenue:	
Financial revenue:	
Interest on loans	\$ 3,924,269
Investment return	(27,177)
Less - net loan loss provision	(1,068,188)
Less - interest expense	<u>(1,750,576)</u>
Net financial revenue	1,078,328
Loan servicing fees	1,417,508
Loan origination and other fees	<u>1,005,996</u>
Total earned revenue	<u>3,501,832</u>
Public support:	
Government grants and contracts	4,637,566
Grants and contributions	133,995
Net assets released from purpose restrictions	<u>534,826</u>
Total public support	<u>5,306,387</u>
Total revenues	<u>8,808,219</u>
Expenses:	
Program	5,059,197
General and administrative	895,602
Fundraising	<u>251,722</u>
Total expenses	<u>6,206,521</u>
Changes in net assets without donor restrictions	<u>\$ 2,601,698</u>

Request

Green Bank staff requests:

Approval for up to a \$10 million secured and subordinated medium term revolving loan to CEEFCo in partnership with Amalgamated Bank (with Green Bank funding not less than 40% of advances and Amalgamated funding not more than 60% of advances) which will satisfy C4C/CEEFCo's funding needs for energy efficiency and Smart-E loans booked by CEEFCo ("CEEFCo Revolving Loan"). The CEEFCo Revolving Loan will be a 3 year medium term revolving loan facility. As at present, the sole source of repayment for the CEEFCo Revolving Loan will be the proceeds from consumer loan payments of the CEEFCo loan portfolio and CEEFCo equity. Pricing is to be 4% as explained above. (see the draft proposal in Appendix 1).

Green Bank Financial Statements

How is the project investment accounted for on the balance sheet?

Green Bank's advances lead to a reduction in cash and cash equivalents on the asset side of the Green Bank's balance sheet and a concomitant increase in short-term loans.

Resolutions

WHEREAS, the Connecticut Green Bank (“Green Bank”) entered into a Smart-E Loan program financing agreement with Capital for Change (“C4C”);

WHEREAS, C4C is the largest Smart-E lender on the Green Bank Smart-E platform;

WHEREAS, C4C, Amalgamated Bank and Green Bank have substantially completed negotiations for modification to the medium term loan facility to fund C4C’s Smart-E Loan and other residential energy efficiency loan portfolio growth on revised terms as explained in the memorandum dated October 18 to the Connecticut Green Bank (“Green Bank”) Board of Directors (the “Board”) (the “Modification Memo”); and

WHEREAS, Green Bank staff recommends approval by the Board for an amended secured and subordinated medium term revolving loan facility for CEEFCo (the “Amended CEEFCo Revolving Loan”) in order to fund CEEFCo’s residential energy efficiency and Smart-E Loan portfolio in partnership with Amalgamated Bank.

NOW, therefore be it:

RESOLVED, that the Board approves the Amended CEEFCo Revolving Loan in an amount of up to \$10 million in capital from the Green Bank balance sheet in support of energy efficiency and Smart-E Loans in partnership with Amalgamated Bank generally consistent with the Modification Memo;

RESOLVED, that the President of the Green Bank; and any other duly authorized officer of the Green Bank, is authorized to execute and deliver, any contract or other legal instrument necessary to effect the CEEFCo Revolving Loan on such terms and conditions as are materially consistent with the Modification Memo; and

RESOLVED, that the proper Green Bank officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instrument.

Submitted by: Bryan Garcia, President and CEO and Bert Hunter, EVP and CIO

October 14, 2022

PRELIMINARY TERM SHEET

Indicative Summary of Terms and Conditions concerning a proposed Facility for Ct Energy Efficiency Finance company (“CEEFCo”)

For Discussion Purposes Only – Confidential – This is Not a Commitment

This Indicative Summary of Terms and Conditions or Preliminary Term Sheet describes certain of the principal terms and conditions of the proposed Loan described below, is for discussion purposes only and is not to be construed in any way as a commitment or undertaking of Amalgamated Bank, or any of its subsidiaries or affiliates, to provide the Loan or any other type of financing. This Preliminary Term Sheet supersedes any and all prior correspondence, written and oral, concerning a proposed loan with regard to the aforementioned real property. The actual terms and conditions under which Amalgamated Bank may be willing to provide the Loan to the Borrower shall be subject to, inter alia, satisfactory completion by Amalgamated Bank of its due diligence process, obtaining necessary internal credit approvals and the negotiation, execution and delivery of definitive documentation. The pricing and terms included in this Preliminary Term Sheet are based on market conditions on the date hereof and are subject to change.

Borrower	CEEFCo
Senior Lender	Amalgamated Bank
Subordinate Lender	Connecticut Green Bank
Facility	\$25,000,000 Credit Facility consisting of a 1) Senior \$15,000,000 Delayed Draw Term Loan (“Senior”) with a one-year draw period and two-year (2) term loan and a 2) Subordinated \$10,000,000 Revolving three-year loan. For the Senior loan all proceeds must be drawn by the end of the one-year period (“Senior”)
Security	Secured by all assets of the Borrower
Senior Loan Amount	\$15,000,000 reduced from \$22,500,000
Subordinate Loan Amount	\$10,000,000 increased from \$4,500,000
Senior Loan Interest Rate	The Senior loan will bear interest at 6% (original rate - Prime Rate, with a floor of 3.00%).
Prepayment Penalty	Borrower may prepay up-to 15% of the Term Loan per annum with no prepayment penalty with the ability to carryover any unpaid amount each year. This may be done quarterly. For any prepayment more than a cumulative payment of 15% of the Term Loan per annum, the Borrower shall pay a prepayment penalty equal to the following percentage of the amount of the prepayment more than 15%: Year 1 – 2%; Years 2 – 1%
Senior Loan Origination Fee	0.50% of the purchase price paid at the time of closing
Subordinate Interest Rate	The loan will bear interest at 4% (original rate - Prime Rate + 50 bps

Borrowing Base	<p>Availability under the Senior loan and the Subordinate Line of Credit shall be subject to a borrowing base formula equal to ninety percent (90%) of Eligible Accounts (the “Borrowing Base”), of which the Senior Lender will advance a maximum of 60% down from 83.3% of the Borrowing Base and the Subordinate lender will advance a maximum of 40% up from 16.7% of the Borrowing Base.</p> <p>Collateral eligibility and final advance rates are subject to revision following completion of a due diligence audit by AB. “Eligible Accounts” shall include all SMART-E loans and HES loans which are outstanding not more than ninety (90) days from their original invoice date, excluding any account deemed ineligible by the Bank in its sole discretion. In the event the outstanding balance on the Line of Credit exceeds the Borrowing Base, Borrower will immediately pay the Line of Credit down to an amount at least equal to the Borrowing Base</p>
Blocked Account	<p>Payments for all Borrowing Base loans shall flow into a blocked account at AB, from which debt service payments will be deducted.</p>
Interest Reserve	<p>6-month interest reserve</p>
Covenants	<ol style="list-style-type: none"> 1. Collateral portfolio must maintain a charge-off rate of less than 5%. 2. DSCR, defined as Borrowing Base cash flows divided by senior loan debt service, must remain above 2.00x, tested quarterly and accompanied by a compliance certificate. 3. Borrower must maintain minimum permanently restricted assets of no less than \$5mm, tested quarterly and accompanied by a compliance certificate.
Underwriting Requirements	<p>All loans underwritten under this agreement must adhere to the following underwriting standards. The borrower:</p> <ul style="list-style-type: none"> • Must have a FICO score of at least 640 for loans over \$25m and 580 for loans under \$25m. • The weighted average FICO score must remain above 675 • Loans must have a maximum original balance of \$50,000 and a maximum term of 12 years. This amount has been increased from

	<p>\$40,000 previously approved. Increase of maximum SmartE loan size to \$50,000 includes the creation of additional guidelines to go along with the increase including a full income review (no DTI waiver for higher scores), and a higher minimum credit score for the higher amount, etc. Good for full house upgrades (insulation, windows, HVAC, etc.) and solar/geothermal projects.</p> <p>Guidelines to be approved by Amalgamated Bank.</p> <ul style="list-style-type: none"> • SmartE will be expanded to include health/safety projects (beyond energy efficiency) including <ul style="list-style-type: none"> • 1) Roofing • 2) Septic/Sewer • 3) Water/Plumbing <p>SmartE originations will substitute a pay stub instead of verification of employment (VOE).</p>
<p>Servicing Requirements</p>	<p>The Servicer must:</p> <ul style="list-style-type: none"> • Invoice borrowers • Send monthly loan statements that detail the amount due for that month as well as any past due amount • Track all customer repayments, delinquencies, and prepayments through its own system • Prepare a monthly aging report • Contact any customer that is 30 days delinquent • If after 30 days from phone call, there is no payment made, send a delinquent letter, and initiate the collections process by engaging a third-party collection agency • On a monthly basis remit all loan funds received, minus any late fees, to the Lenders
<p>Advances</p>	<p>Once per quarter the Borrower may draw upon the facility, subject to the Borrowing Base formula. Requests for advances must be accompanied by a completed borrowing base certificate executed by an authorized officer of the Borrower and a detailed listing of the collateral loans.</p>
<p>Eversource Grants</p>	<p>Once per quarter, Eversource will make available to the Borrower \$250,000 up to \$1,000,000 per year for a total of \$3,000,000 per year to be used for the purposes of paying debt service, and to offset other expenses of the portfolio.</p>

Financial Reporting	<ol style="list-style-type: none"> 1. Annual audited financials for C4C, including CPA management letter, prepared by a CPA acceptable to Bank within one hundred twenty (120) days of fiscal year end. 2. Quarterly and annual financial statements, internally prepared and attested to by chief financial officer of the CEEFCo, the Borrower, within forty-five (45) days of quarter end 3. Monthly servicing reports for the SMART-E portfolio
Portfolio Review	Upon Request of Amalgamated Bank
Conditions Precedent to Closing	<p>Review by legal counsel of all loan documentation, including an intercreditor agreement between AB and CGB</p> <p>Receipt and review of a) updated borrowing base portfolio metrics as of 10/30/22; b) interim 9/30/22 financial results of C4C</p>
Governing Law	New York

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75 Charter Oak Avenue, Hartford, Connecticut 06106
T: 860.563.0015
www.ctgreenbank.com



Capital Solutions RFP

A Working Capital Funding Facility for Budderfly, Inc.

Subordinated Secured Term Loan Facility

In Partnership with Berkshire Bank

October 18, 2022



Document Purpose: This document contains background information and due diligence on a proposed \$5.0 million co-funding facility for Budderfly, Inc. created through the Connecticut Green Bank's Capital Solutions Open RFP program. The information herein is provided to the Connecticut Green Bank Board of Directors for the purposes of reviewing and approving recommendations made by the staff of the Connecticut Green Bank.

In some cases, this package may contain, among other things, trade secrets and commercial or financial information given to the Connecticut Green Bank in confidence and should be excluded under C.G.S. §1-210(b) and §16-245n(D) from any public disclosure under the Connecticut Freedom of Information Act. If such information is included in this package, it will be noted as confidential.



Memo

To: Connecticut Green Bank Board of Directors

From: Bert Hunter, EVP and CIO; Desiree Miller, Senior Manager, Clean Energy Finance

Cc: Bryan Garcia, President and CEO; Brian Farnen, General Counsel and CLO; Mackey Dykes, VP Financing Programs and Officer; Jane Murphy, EVP Finance & Administration

Date: October 18, 2022

Re: Budderfly, Inc. Capital Solutions RFP Proposal – \$5 million Working Capital Facility Participation - Co-funding Proposal with Berkshire Bank (\$20 million Working Capital Facility)

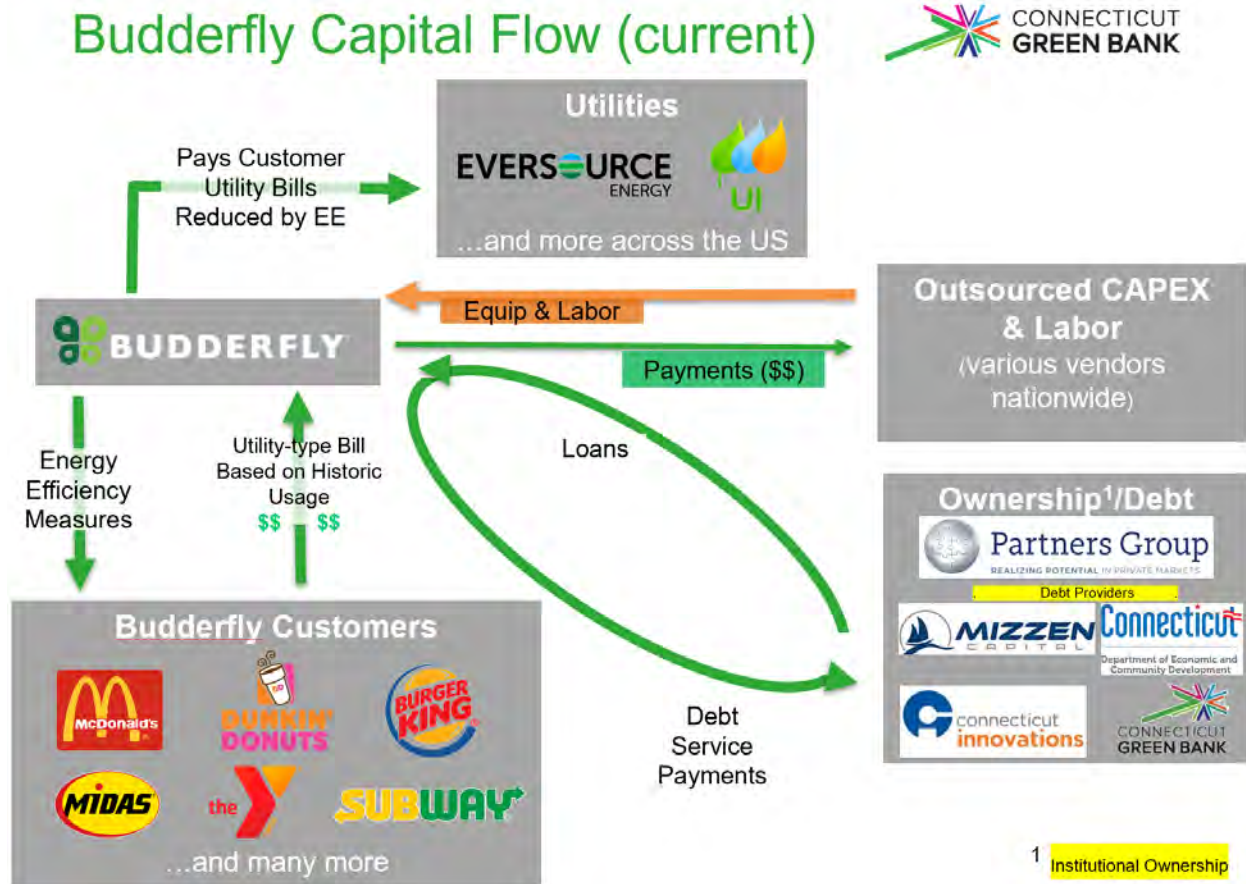
Summary

At the April 22, 2022 meeting of the Connecticut Green Bank (the “Green Bank”) Board of Directors (the “Board”), the Board approved \$5 million for a Medium Term Loan (secured & subordinated) to Budderfly, Inc., a Connecticut based company (“Budderfly”), which submitted a request for funding through the Green Bank’s Capital Solutions Open RFP (approved by the Board in July 2021). That transaction successfully closed at the end of May and was fully funded in the amount of \$5 million at the closing. The funding was essential to Budderfly in affording it the necessary time to secure a new strategic partner and majority owner. Budderfly successfully sold a majority equity stake to Partners Group – a leading global private markets investment firm with \$131 billion in assets under management. Partners Group has committed further growth capital totaling more than USD 500 million. Its aim is to transform Budderfly into a multi-billion-dollar infrastructure platform by investing to expand its customer base and solutions offering. Budderfly’s experienced management team has invested and partnered alongside Partners Group to capture this large market opportunity.

The investment by Green Bank and followed by the Partners Group acquisition is the financing roadmap sequence outlined to the Board in April. Budderfly’s long term customer payments create a revenue stream that will repay the existing lenders (including Green Bank). With Budderfly’s growth, Green Bank recommended a follow-on “two-stage” approach. First – a \$20 million working capital / aggregation facility to use more cost-efficient commercial bank funding (rather than private equity capital) to fund work in progress at their various customer sites. This facility is being brought forth by Berkshire Bank – in strategic partnership with the Green Bank. Second, Green Bank commenced over the summer discussions with a club of banks to provide a \$100 million master term funding facility (essentially a private securitization, similar in structure to the SBEA facility we arranged for Eversource). The master term funding facility would replenish the proposed Berkshire

working capital facility. The excellent collections experience of the portfolio combined with the highly efficient operational model and exceptional data analytics platform shown below makes the Budderfly business model a prime candidate for efficient securitization.

The funding and overall structure of the Budderfly business model is represented below:



Company Background

As noted to the Board in April, Budderfly offers energy as a service (“EaaS”) solutions for the measurement, reduction, and management of energy demand and consumption. This involves designing, integrating, installing, and fully funding a comprehensive portfolio of energy efficiency technology upgrades for customers, as well as managing and monitoring their energy usage. Budderfly’s solutions include automated controls, proprietary software, metering, and a patented utility billing interface and billing system that currently supports over 400 utility companies in North America. Budderfly enters into long-term (10-year) contracts with customers and earns revenues through a share of the energy cost savings generated by efficiency upgrades and the management and monitoring of energy use and demand. With more than 2,750 customer sites across 49 states, Budderfly is a leading EaaS provider for customers operating multiple sites with repeatable footprints, such as restaurant chains, assisted living facilities, and retail franchises. Approximately 15% of Budderfly’s business and 100% of its operations are in Shelton CT.

Budderfly has seen its revenues more than double each year for the last handful of years and Partners Group aims to accelerate the Company’s future growth through a number of key transformational value creation initiatives, including expanding sales capacity and execution on

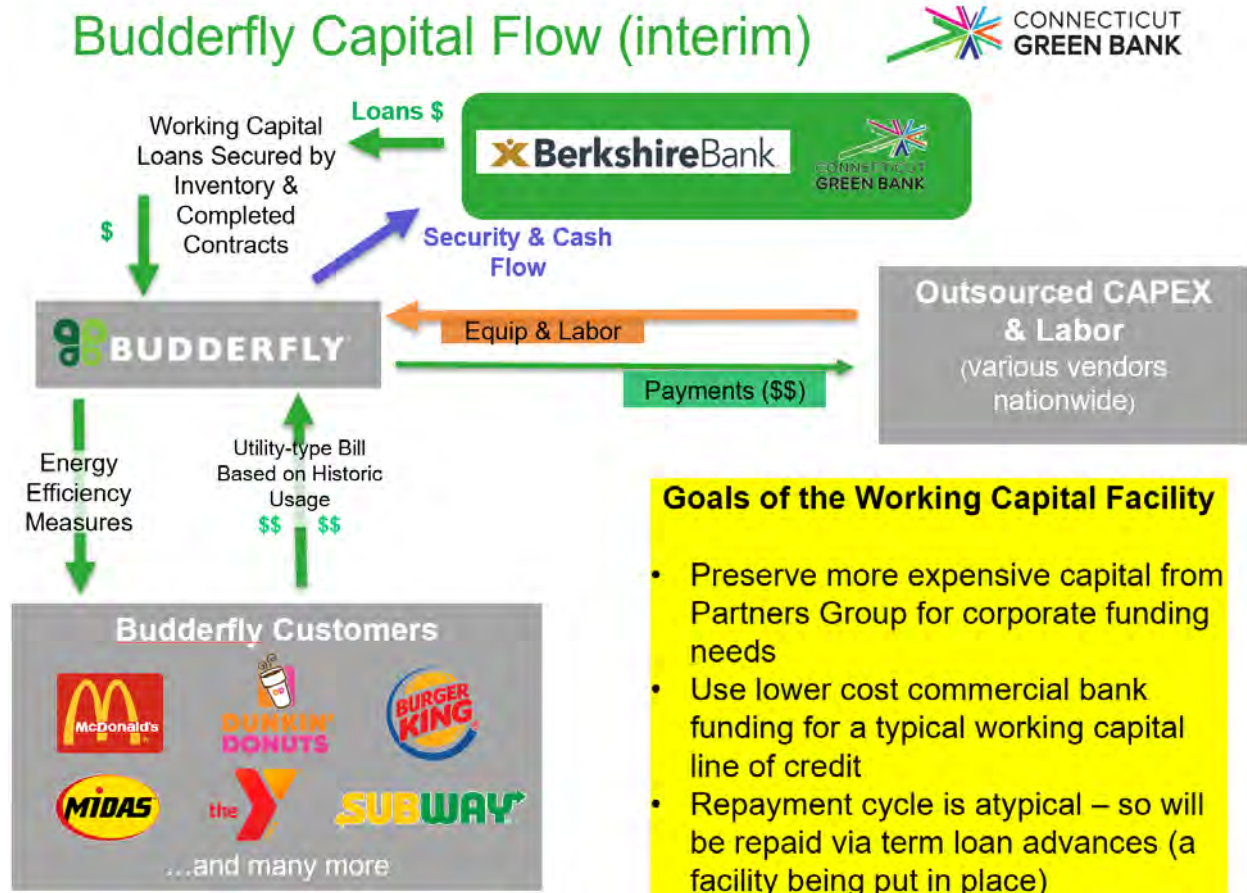
new site installations, broadening customer offerings, investing in software, analytics and network technologies, and making strategic acquisitions that deliver additional synergies. One Partners Group executive observed: “Budderfly is disrupting the energy efficiency market by providing a holistic solution to underserved commercial and industrial customers, and offering additional services such as component-level data monitoring, that are becoming increasingly important for sustainability reporting. Budderfly’s business model has strong infrastructure characteristics, with a sizeable and growing customer base served under long-term contracts that provide recurring revenues. A key part of [Partners Group’s] value creation plan will be expanding these service offerings and broadening Budderfly’s customer base.”

Budderfly, with its corporate headquarters and central operations in Shelton CT, was founded in September 2017 with the goal to revolutionize how the commercial and industrial sector acquires, implements and manages energy efficiency solutions, energy efficient lighting and other services to lower their consumption of energy, realize savings with no upfront investment, and manage their energy use through a user-friendly and proprietary cloud-based technology platform. Budderfly’s Energy as a Service (EaaS) offering (meaning that Budderfly is the installer, owner, operator and manager of the labor and capital expenditures (CAPEX) required for the EaaS benefits) incorporates a variety of solutions including patented Budderfly devices to reduce energy use. The Internet of Things (IoT) devices include ultra-smart light switches and outlets which micrometer energy use, sub-panel meters and site power management equipment. Budderfly’s Energy Management Systems (EMS) software provides comprehensive automation, visibility, management and control. Budderfly’s technology-enabled platform leverages its patented and proprietary hardware and software to monitor and analyze energy use and provide solutions that enables its clients (the overwhelming majority of which are small franchise operators in the quick serve restaurant industry) to understand their energy usage, reduce their energy consumption, lower their operating and maintenance costs, and realize economic and environmental benefits. The company is growing rapidly, with more than 3,000 contracts in 49 states from Connecticut to California, and recurring revenue growth of 165% so far in 2022 with a 36% increase in new customer locations. Since the beginning of 2022, the company has onboarded nearly 900 new locations and significantly expanding brand partnerships with Burger King, Wendy’s, McDonald’s, KFC, IHOP, Dunkin’ and Jersey Mike’s to name a few. Prior to the acquisition by Partners Group, the company had benefitted from more than \$90 million in funding from such notable investors as Balance Point Capital (domiciled in Connecticut), Edison Ventures, Mizzen Capital (a CT-based woman-owned SBIC), CT Innovations, DECD and its own executive management (which remains invested in the company).

Summary Financing Proposal

Berkshire Bank is considering a \$20 million line of credit (“LOC”) where the Green Bank would participate with a \$5 million share of the facility. While Berkshire and Green Bank would be pari-passu as far as the perfections of collateral, cash proceeds would first flow to Berkshire and secondly to Green Bank in the event of default or liquidation of collateral. The LOC would be available to fund CapEx for EaaS contracts. The facility would be secured by a first lien all business assets, including EaaS contracts, working assets and equipment. As Budderfly is currently not cash flow positive, the lenders will be relying on the liquidity from the equity sponsor (Partners Group). As such, the lenders would envision as part of any proposal Budderfly maintains its banking and deposit relationship with Berkshire and that would include a minimum liquidity threshold (defined as cash + short-term investments) until such time that cash flow is sufficient to repay debt. Once the larger master term loan facility is in place, the loans under the Berkshire LOC would be repaid with sales of EaaS contracts into the master facility structure on a periodic / quarterly basis. Pricing and fees are yet to be determined. The Green Bank would share in any

fees or interest on a pro-rata basis. Berkshire Bank is in the process of finalizing a screening memo and present the loan structure to Berkshire’s senior management and credit teams for their feedback. Green Bank staff is requesting approval “in principle” to enable the overall process to move forward in a manner that would facilitate a closing of the facility prior to year end. The high level structure is represented by the following diagram:

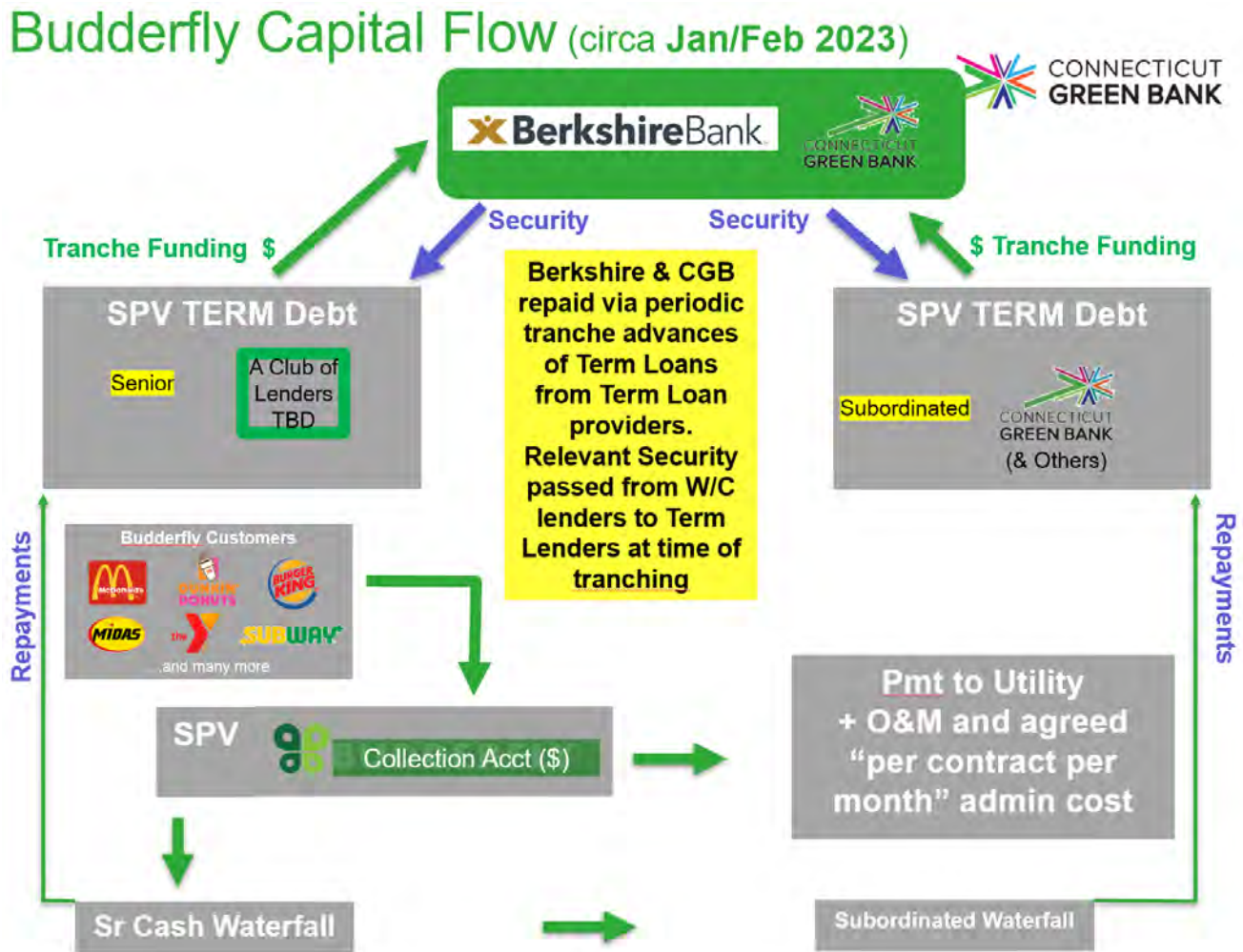


The summary terms of the working capital facility are below:

- Senior Debt – Berkshire Bank (\$15 million)
- Subordinated Debt – CT Green Bank (\$5 million)
 - Pro Rata Advances
 - Pro Rata & Pari Passu “non default”
 - CGB subordinated in default and “term out” if required
 - Term Loan Takeout Failure
 - Lack of Cure by Budderfly / Partners Group
 - Repayment via “term out
 - Repayment via liquidation by collection
 - Advances 75% / 25%
 - Advance Rate: TBD
 - Interest Rates: TBD

- Facility Fee: TBD
 - Unutilized Fee: TBD
 - Budderfly pays legal costs
- Repayment via refinancing through Master Term Loan Facility
 - OR Repayment via by Budderfly / Partners Group
 - OR In default / term out – Berkshire gets 100% of cash flow until repaid followed by Green Bank

Once the Master Loan Facility is in place, the overall capital flows would be as follows:



The Berkshire working capital facility would be structured around existing facilities below:

Name	Facility Type	Maximum	Outstanding 3/31
DECD	First Lien Senior Secured	\$3.3 million	\$1.7 million
Mizzen Capital	Second Lien Secured Creditor	\$5.0 million	\$5.0 million plus accrued interest
CT Innovations	Second Lien Secured Creditor	\$3.0 million	\$3.0 million plus accrued interest

Financial Statement Review

Budderfly, Inc.		
Balance Sheet		
Period Ended July 31, 2022	Jul-22	Dec-21
Current Assets		
Cash	\$51,459,882	\$5,092,940
Accounts Receivable	1,991,173	399,314
Inventory	6,524,768	5,590,289
Prepays	2,804,992	1,844,642
Total Current Assets	62,780,816	12,927,186
Fixed Assets		
Property and Equipment, net	575,291	565,695
Outsourced Equipment, net	30,320,610	21,808,574
Total Fixed Assets	30,895,901	22,374,269
Other Assets		
Promissory Note Receivable	394,702	433,850
Due from Related Party	593,777	593,777
TOTAL ASSETS	\$94,665,196	\$36,329,082
Current Liabilities		
Accounts Payable	\$5,446,604	\$5,389,810
Other Current Liabilities	3,229,897	1,444,539
Warrant Liabilities, net	-	8,963
Deferred Rent	170,929	209,620
Vendor Financing	833,753	793,148
Short term portion of Debt	350,864	385,780
Total Current Liabilities	10,032,047	8,231,859
Long Term Liabilities		
Vendor Debt	829,081	1,056,242
Note Payables	14,656,380	46,122,791
Total LIABILITIES	25,517,507	55,410,892
Common Stock	-	294
Preferred Stock	-	2,996
Additional Paid in Captial	143,616,164	34,588,473
Other Comprehensive Loss	(19,343)	(18,203)
Retained Earnings (Deficit)	(74,449,133)	(53,655,370)
Total Equity	69,147,689	(19,081,810)
TOTAL LIABILITIES & EQUITY	\$94,665,196	\$36,329,082

Budderfly's balance sheet has been strengthened significantly by the Partners Group investment. With approximately \$50 million in cash on hand, Budderfly could use its own resources to fund capex for its customers' installations. However, this would be an inefficient use of precious capital resources when a bank working capital facility and private securitization can take on this burden at a lower cost and with greater scale.

On the profit and loss statement, the net loss below reflects the corporate overhead required to build up the contract revenue streams. Gross and net revenue margins as well as EBITDA¹ margins have demonstrated steady improvement with the net revenue margin turning meaningfully positive in 2021. EBITDA is expected to reach breakeven in Q3 or Q4-2023 using projections which are consistent with the recent growth of the company, its penetration to date in the quick serve restaurant market, and a very robust pipeline of contracted and uncontracted opportunities, and expanding gross margins.

	2021	2020
Revenues:		
Energy management outsourcing revenue	\$ 31,560,294	\$ 22,465,330
Incentives and other revenue	1,273,689	845,356
Total revenues, net	32,833,983	23,310,686
Cost of revenues	30,614,113	24,788,514
Gross gain or (loss)	2,219,870	(1,477,828)
Operating expenses:		
General and administrative	7,393,156	6,012,542
Research and development	3,041,494	2,302,306
Selling and marketing	3,821,631	2,105,391
Total operating expenses	14,256,281	10,420,239
Loss from operations	(12,036,411)	(11,898,067)
Other expense:		
PPP Loan forgiveness and other credits	(3,574,422)	-
Interest expense	5,256,374	3,258,552
Total other expense	1,681,952	3,258,552
Loss before income taxes	(13,718,363)	(15,156,619)
Income taxes	-	-
Net loss	\$ (13,718,363)	\$ (15,156,619)

Conclusion

This proposal from Berkshire Bank offers a logical follow-on opportunity for the Green Bank to continue to dramatically increase our ability to scale energy efficiency in a sector in the state that, thus far, has proven elusive to market penetration efforts due to the idiosyncratic nature of small quick serve restaurant operations. This facility fits well with our overall proposals for Budderfly to enter into a master term loan facility to enable additional growth by reducing Budderfly's cost of capital – achieving market transformation and enabling Budderfly to expand and scale its model in CT as well as beyond CT's borders which would accrue to the benefit of job growth at the central operations center in Shelton, CT. While there is a degree of refinancing (if the master facility not come together as anticipated), Green Bank staff is encouraged by the robust cash position of Budderfly (\$50 million) and the robust support of the Partners Group private equity firm.

Staff requests in principle approval for its participation in and support of the Berkshire Bank facility as explained herein.

¹ EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization

Resolutions

RESOLVED, that the Connecticut Green Bank (“Green Bank”) is authorized in principle to enter into negotiations and documentation for co-investment in a \$20,000,000 working capital facility being considered by Berkshire Bank for Budderfly Inc. in a participation amount for Green Bank not to exceed \$5,000,000 as more fully explained in the memorandum to the Green Bank Board of Directors (the “Board”) dated October 18, 2022; provided, however, that authorization to enter into definitive documentation is pending further diligence by staff and approval by the Board at a future meeting.

Submitted by: Bert Hunter, EVP and CIO & Desiree Miller, Senior Manager, Clean Energy Finance



Memo

To: Connecticut Green Bank Board of Directors

From: Mariana Trief, Consultant, Clean Energy Finance and Bert Hunter, EVP & CIO

CC: Bryan Garcia, President and CEO; Brian Farnen, General Counsel and CLO; Jane Murphy, EVP Finance and Administration

Date: October 14, 2022

Re: Request for Approval to

Background and Project Description

Connecticut Green Bank's ("Green Bank") Board of Directors ("Board") approved on October 26, 2018 a not-to-exceed \$1.2 million subordinate loan ("Loan") and \$500,000 limited guaranty from the Green Bank to finance through construction and operation a 1 MW hydroelectric facility located at the Upper Collinsville Dam ("Dam"), on the Farmington River, in Canton, Connecticut (the "Project"). The Loan closed on May 17, 2019 and was leveraged by a ~\$2.8 million term loan from Provident ("Provident Loan"), as well as an approximately \$1.9 million note supported by the US Small Business Administration ("SBA") 504 program ("SBA Loan") that a local community development lender will fund upon construction completion (jointly, the "Senior Loans"). There is also a \$650,000 bridge loan and \$300,000 in-kind contribution from equipment supplier and turnkey provider WWS Wasserkraft GmbH ("Wasserkraft"), along with \$675,000 in equity from Canton Hydro LLC, the project's developers (the "Developer").

Project Update

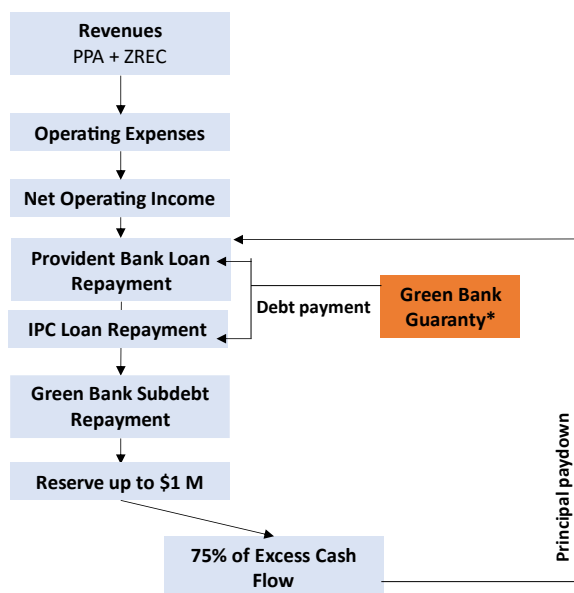
The Project successfully obtained approval to energize from Eversource on March 15, 2021 but required additional work to finalize construction before it could begin to continuously generate electricity. In mid-December 2021, the Project was substantially completed to the point of allowing water to flow through the turbine to generate electricity. Since then, the Project has generated approximately 2.2 MWhs and has received monetary compensation for energy generation, from both sale of electricity through the Virtual Net Metering program to State of Connecticut owned buildings through the Department of Energy and Environmental Protection ("DEEP") and renewable energy credits associated with the 15-year Zero Emission Renewable Energy Credits ("ZREC") Contract with Eversource. The Project has also continued to make interest only payments to the lenders.

Crest gates were installed on July 25, 2022 during the low flow season; these allow the flow of the water to be directed in such a way that improves the efficiency and output of the turbine by 10-20%. The Project will be inspected for completion by the Green Bank and Senior Lender's engineer on October 24, 2022.

The Developers are disagreeing with the plant’s strategy for operations and equity distribution (after debt payments) to Wasserkraft as a result of the additional cost incurred by them to complete the project. As such, one of the Developers is considering selling their equity participation. Inclusive Prosperity Capital (“IPC”) has potential interest in the equity participation, either by directly acquiring it or facilitating a partner in doing so. The \$1.9M loan supported by the SBA program requires a personal guaranty of any majority equity participant, which IPC (given its structure) would be unable to provide. Therefore, for IPC (or a partner) to take out the equity participation of one of the Developers, the \$1.9M SBA loan would have to be repaid. Ahead of making an equity play, IPC is offering to repay/refinance the \$1.9M SBA loan to avoid the SBA eligibility issues to enable them (or a partner) to become a majority equity participant in the Project. The terms of IPC’s \$1.9 M loan (“IPC Loan”) are presented in the term sheet hereto as Exhibit A. The Project waterfall would remain unchanged from the original Green Bank Board approvals; IPC’s loan would simply replace the SBA Loan. The Provident Loan would be in first position, IPC Loan second position and Green Bank’s loan would remain subordinate to both (but not subordinate to any IPC or any other equity).

Green Bank’s unfunded balance sheet Guaranty is currently approved so that it can be called upon in the event there is not enough cash flow or Reserves to pay debt service on the Senior Loans. The Guaranty obligation decreases as the Reserve is built up. Green Bank charges a fee for the Guaranty. If the Guaranty is ever called upon, it effectively becomes capitalized into the Green Bank loan. IPC has requested that the Green Bank provide the same Guaranty it had provided to Provident Bank and SBA. For further clarity, a schematic of the waterfall is presented below.

Project’s Waterfall



* Guaranty called upon if there are insufficient reserves to make Senior Loan payments

The IPC Loan has a shorter term (20 years instead of 25 years) and slightly different interest rate (7% vs. 7.25% if SBA rate were locked in today). From a repayment perspective, the impact of the IPC

Loan to the updated Project model¹ do not negatively affect the Green Bank Loan. Based on the annual average expected production figures², using the current interest rate for the Provident loan that has been locked in at 3.43% and an expected 6.5% interest rate in 2025, Provident Bank's debt would be repaid in year 10. Once Provident Bank's loan is repaid, unused funds in the Reserve account would be used to be pay back Green Bank, which we expect would retire the Loan by the end of year 11, with an average debt service coverage ratio ("DSCR") of 4.16x. The financial model has been stressed under worst case scenario (that is, using the worst series of water flow years) and debt service is met with the debt also repaid by year 11. This is consistent with the projections shared previously with the board. The original and revised cash flow projections, along with DSCR are provided in Exhibit B (being updated).

From a risk perspective, the transaction holds a lower risk as when it was originally approved (risks identified have been included in Exhibit C) as the Project's construction has been completed with only final sign off from the Bank's engineer and performance testing pending to be completed. The Bank's engineer is scheduled to complete his final site visit on October 24, 2022 and provide sign off shortly thereafter. Green Bank, along with stakeholders intend to have a ribbon cutting in Spring of 2023 when the fish passage associated with the Project is being used. Appropriate signage and media coverage to share and publicize the success of the Project will be an integral part of the event.

Given the foregoing, staff recommends approval by the Board to amend the current documentation to accommodate the IPC Loan, including extending the Project's Construction Completion date and providing the Guaranty previously approved to Senior Lenders.

¹ Project model has been updated to reflect updated VNM rates and expected operating expenses. It assumes a \$35,000 PILOT payment to the Town, which is currently being negotiated.

² Average annual, net (after turbine, generator, speed increaser, transformer efficiencies and 5 days downtime) electrical energy production is based on a power production analysis from a third-party independent engineer based on river flow data from 1997 to 2017.

Resolutions

WHEREAS, Canton Hydro, LLC (“Developer”) was awarded exclusivity by the Town of Canton to redevelop a 1 MW hydroelectric facility located at the Upper Collinsville Dam (“Dam”), on the Farmington River, in Canton, Connecticut (the “Project”) and the Connecticut Green Bank (“Green Bank”) Board approved approve subordinate debt financing in an amount to exceed \$1,200,000 (the “Loan”) along with an unfunded guaranty, in an amount not to exceed \$500,000 to support the Project (“Guaranty”);

WHEREAS, Green Bank’s debt was leveraged by a term loan from Provident (“Provident Loan”), as well as loan supported by the US Small Business Administration (“SBA”) 504 program (“SBA Loan”).

WHEREAS, the Project Developers are seeking to replace the SBA Loan with a new loan from Inclusive Prosperity Capital (“IPC Loan”) and are seeking Green Bank’s approval to extend the Guaranty to the new IPC Loan, with such Guaranty to be on the same terms with IPC as lender as apply to the current SBA Loan.

WHEREAS, to complete the change in lenders the Developer is requesting to extend the Project’s completion of construction date until December 31, 2022;

NOW, therefore be it:

RESOLVED, that the Green Bank Board of Directors hereby authorize staff to execute an amendment of the Loan agreement materially based on the terms and conditions set forth in this board memo dated October 14, 2022;

RESOLVED, that the proper Green Bank officers are authorized and empowered to do all other acts and execute and deliver all other documents and instruments as they shall deem necessary and desirable to affect the above-mentioned legal instruments.

Submitted by: Bryan Garcia, President and CEO; Bert Hunter, EVP and CIO.

Exhibit B – Original and Revised Cash Flow, Assumptions and Debt Service Coverage Ratio

Revised Cash Flow, Assumption and DSCR – October 2022

Assumptions											
	Original	Outstanding	Term	Amort.							
Lender	Loan Amt.	Balance	(years)	(years)	Int. Rate	Int Rate after amort period	CMLTD (P&I)	Excess Cash Flow Sweep	Rate Adjustment Date	adjusted Int rate	adjusted P&I
Provident	\$2,770,318	\$2,770,318	15	20	3.45%		\$194,042	75%	8/1/2025	6.50%	\$251,424
SBA/IPC	\$1,939,221	\$1,939,221	20	20	7.00%		\$183,049		N/A		
CT Green Bank Mezz Debt	\$704,827	\$704,827	15	15	8.00%	10.00%	\$82,345				
CGB Guaranty		\$500,000									
	Amount	Years									
ZREC	\$80	12.00									
VNMC	\$100	13.00									

CGB Financing	
Average DSCR	4.16
Minimum DSCR	3.59
Repayment Year	11

Year	Year	Electricity Production in KWH	Total Revenue (NEM, ZREC)	Total Operating Expenses	NOI	TPB Debt Service (P&I)	TPB Debt Service (I)	TPB Debt Service (P)	TPB Debt Service from excess cash flow	TPB Debt Service from Reserves	TPB Loan balance	SBA/IPC Debt Service (P&I)	SBA/IPC Debt Service (I)	SBA/IPC Debt Service (P)	SBA/IPC Loan balance	NOI post senior lender	Senior Lender DSCR	CGB Debt Service (P&I) Actual	CGB Debt Service (I)	Additional CGB Interest Payment	CGB Debt Service (P)	CGB DSCR	CGB Past Due P&I Payments	CGB Loan from Reserve	CGB Loan balance	Excess / (Shortfall) Cash flow	
0																											
1	2022	4,282,966	1,018,622	378,040	640,582	\$194,042	\$95,576	\$98,466	\$0	\$0	\$2,671,852	\$183,049	\$135,745	\$47,303	\$1,891,918	263,492	1.70	\$56,386	\$56,386	\$0	\$0	4.67	\$0	\$0	\$704,827	207,105	
2	2023	4,282,966	973,295	207,831	765,464	\$194,042	\$92,179	\$101,863	\$0	\$0	\$2,569,989	\$183,049	\$132,434	\$50,615	\$1,841,303	388,373	2.03	\$82,345	\$56,386	\$0	\$25,958	4.72	\$0	\$0	\$678,869	306,028	
3	2024	4,282,966	931,012	200,656	730,376	\$194,042	\$88,665	\$106,377	\$0	\$0	\$2,464,612	\$183,049	\$128,891	\$54,158	\$1,787,146	353,286	1.94	\$82,345	\$54,309	\$0	\$28,035	4.29	\$0	\$0	\$650,833	270,941	
4	2025	4,282,966	936,060	217,626	718,434	\$194,042	\$85,029	\$109,013	\$0	\$0	\$2,355,600	\$183,049	\$125,100	\$57,949	\$1,729,197	341,344	1.91	\$82,345	\$52,067	\$0	\$30,278	4.15	\$0	\$0	\$620,555	258,999	
5	2026	4,282,966	941,139	210,745	730,394	\$251,424	\$81,268	\$170,156	\$32,306	\$0	\$2,153,138	\$183,049	\$121,044	\$62,005	\$1,667,192	295,921	1.68	\$82,345	\$49,644	\$0	\$32,700	3.59	\$0	\$0	\$587,855	213,577	
6	2027	4,282,966	949,374	216,017	733,357	\$251,424	\$74,283	\$177,141	\$160,183	\$0	\$1,815,815	\$183,049	\$116,703	\$66,345	\$1,600,847	298,884	1.69	\$82,345	\$47,028	\$0	\$35,316	3.63	\$0	\$0	\$552,539	216,539	
7	2028	4,282,966	954,554	221,447	733,107	\$251,424	\$62,646	\$188,778	\$162,405	\$0	\$1,464,632	\$183,049	\$112,059	\$70,989	\$1,529,857	298,634	1.69	\$82,345	\$44,203	\$0	\$38,141	3.63	\$0	\$0	\$514,398	216,289	
8	2029	4,282,966	959,787	227,041	732,746	\$251,424	\$50,530	\$200,894	\$162,217	\$0	\$1,101,520	\$183,049	\$107,090	\$75,959	\$1,453,899	298,273	1.69	\$82,345	\$41,152	\$0	\$41,193	3.62	\$0	\$0	\$473,205	215,928	
9	2030	4,282,966	968,270	232,802	735,468	\$251,424	\$38,002	\$213,422	\$161,946	\$0	\$726,153	\$183,049	\$101,773	\$81,276	\$1,372,623	300,995	1.69	\$82,345	\$37,856	\$0	\$44,488	3.66	\$0	\$0	\$428,717	218,651	
10	2031	4,282,966	973,608	238,736	734,871	\$251,424	\$25,052	\$226,372	\$163,988	\$335,793	\$0	\$183,049	\$96,084	\$86,965	\$1,285,658	300,399	1.69	\$82,345	\$34,297	\$0	\$48,047	3.65	\$0	\$0	\$380,669	218,054	
11	2032	4,282,966	978,998	244,848	734,150	\$0	\$0	\$0	\$0	\$0	\$0	\$183,049	\$89,996	\$93,053	\$1,192,605	551,101	4.01	\$82,345	\$30,454	\$0	\$51,891	6.69	\$0	\$328,778	\$0	468,757	
12	2033	4,282,966	987,738	251,144	736,594	\$0	\$0	\$0	\$0	\$0	\$0	\$183,049	\$83,482	\$99,566	\$1,093,039	553,246	4.02	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53,546	
13	2034	4,282,966	988,546	257,626	410,918	\$0	\$0	\$0	\$0	\$0	\$0	\$183,049	\$76,513	\$106,536	\$986,503	227,869	2.24	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27,869	
14	2035	4,282,966	974,100	264,307	409,793	\$0	\$0	\$0	\$0	\$0	\$0	\$183,049	\$69,055	\$113,994	\$872,509	226,744	2.24	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$26,744	
15	2036	4,282,966	983,103	271,186	411,917	\$0	\$0	\$0	\$0	\$0	\$0	\$183,049	\$61,076	\$121,973	\$750,536	228,869	2.25	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$28,869	
16	2037	4,282,966	988,769	278,272	410,498	\$0	\$0	\$0	\$0	\$0	\$0	\$183,049	\$52,538	\$130,511	\$620,025	227,449	2.24	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27,449	
17	2038	4,282,966	994,492	285,570	408,922	\$0	\$0	\$0	\$0	\$0	\$0	\$183,049	\$43,402	\$139,647	\$480,378	225,873	2.23	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,873	
18	2039	4,282,966	703,767	293,087	410,680	\$0	\$0	\$0	\$0	\$0	\$0	\$183,049	\$33,626	\$149,422	\$330,955	227,631	2.24	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27,631	
19	2040	4,282,966	709,605	300,829	408,775	\$0	\$0	\$0	\$0	\$0	\$0	\$183,049	\$23,167	\$159,882	\$171,074	225,726	2.23	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,726	
20	2041	4,282,966	715,500	308,804	406,696	\$0	\$0	\$0	\$0	\$0	\$0	\$183,049	\$11,975	\$171,074	\$0	223,647	2.22	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,647	
21	2042	4,282,966	721,455	317,018	404,437	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	404,437	0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	404,437
22	2043	4,282,966	727,470	325,479	401,991	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	401,991	0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	401,991
23	2044	4,282,966	733,544	334,193	399,351	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	399,351	0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	399,351
24	2045	4,282,966	739,679	343,169	396,510	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	396,510	0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	396,510
25	2046	4,282,966	745,876	352,414	393,462	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	393,462	0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	393,462

*VNMC Assumptions based on current rates and expected increases/step down per VNMC Program

Revised Cash Flow, Assumption and DSCR – January 2022

Assumptions						
Lender	Loan Amt.	Amort. (years)	Pricing (Index & Margin)	In Rate after amort period	CMLTD (P&I)	Excess Cash Flow Sweep
Provident Term	\$2,770,318	25	N/A		\$182,050	75%
Provident Time Note	\$1,939,221	25	N/A		\$127,435	
CT Green Bank Mezz Debt	\$704,827	15		10.00%	\$82,345	
CGB Guaranty	\$500,000	15				
	Amount	Years				
ZREC	\$80	13.0				
VNMC	100%	30.0				

CGB Financing	
Average DSCR	3.57
Minimum DSCR	2.38
Repayment Year	13

*VNMC Assumptions based on current rates and expected increases/step down per VNMC program

Year	Electricity Production in KWH	VNM Revenue	ZREC Income	Total Revenue (VNM, ZREC & Capacity Payments)	Expenses	NOI	TPB Debt Service (P&I)	TPB Debt Service (I)	TPB Debt Service (P)	TPB Debt Service from excess cash flow	TPB Debt Service from Reserves	TPB Loan balance	SBA Debt Service (P&I)	SBA Debt Service (I)	SBA Debt Service (P)	SBA Loan balance	NOI post senior leader	Senior Leader DSCR	CGB Debt Service (P&I) Actual	CGB Debt Service (I)	Additional CGB Interest Payment	CGB Debt Service (P)	CGB Post Due P&I Payments	CGB Loan from Reserve	CGB Loan balance	CGB DSCR	Excess / (Shortfall) Cash flow
0																											
1	4,282,966	625,613	324,692	950,304	257,476	692,828	\$182,050	\$117,739	\$64,312	\$0	\$2,706,006	\$127,435	\$82,417	\$45,018	\$1,894,203	383,343	2.24	\$82,345	\$56,386	\$25,958	\$0	\$0	\$678,869	4.66	\$00,999		
2	4,282,966	572,812	324,692	897,504	271,448	626,056	\$182,050	\$115,005	\$67,045	\$0	\$2,638,962	\$127,435	\$80,504	\$46,931	\$1,847,272	316,571	2.02	\$82,345	\$54,309	\$0	\$28,035	\$0	\$620,833	3.84	\$24,226		
3	4,282,966	520,051	324,692	844,743	270,905	573,838	\$182,050	\$112,156	\$69,894	\$0	\$2,569,067	\$127,435	\$78,509	\$48,926	\$1,798,346	264,353	1.85	\$82,345	\$52,067	\$0	\$30,278	\$0	\$620,555	3.21	\$182,008		
4	4,282,966	524,112	324,692	848,803	260,517	588,286	\$182,050	\$109,185	\$72,865	\$0	\$2,496,203	\$127,435	\$76,430	\$51,005	\$1,747,340	278,801	1.90	\$82,345	\$49,644	\$0	\$32,700	\$0	\$587,855	3.39	\$198,456		
5	4,282,966	521,754	324,692	846,446	256,154	590,292	\$182,050	\$106,089	\$75,962	\$0	\$2,420,241	\$127,435	\$74,262	\$53,173	\$1,694,167	280,807	1.91	\$82,345	\$47,028	\$0	\$35,316	\$0	\$552,539	3.41	\$198,462		
6	4,282,966	529,263	324,692	853,955	256,890	597,065	\$182,050	\$102,860	\$79,190	\$84,113	\$2,256,938	\$127,435	\$72,002	\$55,433	\$1,638,734	287,580	1.91	\$82,345	\$44,203	\$0	\$38,141	\$0	\$514,398	3.49	\$205,235		
7	4,282,966	533,376	324,692	858,067	262,700	595,367	\$182,050	\$95,920	\$86,130	\$153,926	\$0	\$2,016,881	\$127,435	\$69,646	\$57,789	\$1,580,946	285,882	1.92	\$82,345	\$41,152	\$0	\$41,193	\$0	\$473,205	3.47	\$203,538	
8	4,282,966	537,529	324,692	862,221	259,462	602,759	\$182,050	\$85,717	\$96,333	\$152,653	\$0	\$1,767,895	\$127,435	\$67,190	\$60,245	\$1,520,701	293,274	1.95	\$82,345	\$37,856	\$0	\$44,488	\$0	\$428,717	3.56	\$210,929	
9	4,282,966	545,265	324,692	869,956	261,257	608,699	\$182,050	\$75,136	\$106,915	\$158,197	\$0	\$1,502,784	\$127,435	\$64,630	\$62,805	\$1,457,896	299,214	1.97	\$82,345	\$34,297	\$0	\$48,047	\$0	\$380,669	3.63	\$216,870	
10	4,282,966	549,502	324,692	874,194	292,067	582,127	\$182,050	\$63,868	\$118,182	\$162,652	\$0	\$1,221,950	\$127,435	\$61,961	\$65,474	\$1,392,421	272,641	1.88	\$82,345	\$30,454	\$0	\$51,891	\$0	\$328,778	3.31	\$190,297	
11	4,282,966	553,781	324,692	878,473	373,271	505,202	\$182,050	\$51,933	\$130,117	\$142,723	\$0	\$949,110	\$127,435	\$59,178	\$68,257	\$1,324,164	195,717	1.63	\$82,345	\$26,302	\$0	\$56,042	\$0	\$272,736	2.38	\$113,372	
12	4,282,966	561,750	324,692	886,442	379,000	507,442	\$182,050	\$40,337	\$141,713	\$85,029	\$722,368	\$0	\$127,435	\$56,277	\$74,158	\$1,253,006	197,957	1.64	\$82,345	\$21,819	\$0	\$60,526	\$0	\$212,210	2.40	\$115,612	
13	4,282,966	566,116	324,692	890,807	298,044	592,763	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$53,253	\$74,182	\$1,178,824	465,328	4.65	\$82,345	\$16,977	\$0	\$65,368	\$146,842	\$0	5.65	\$82,984	
14	4,282,966	570,525	0	570,525	304,005	266,520	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$50,100	\$73,335	\$1,101,489	139,085	2.09	\$0	\$0	\$0	\$0	\$0	\$0	\$0	139,085	
15	4,282,966	578,734	0	578,734	310,085	268,649	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$46,813	\$80,622	\$1,020,867	141,214	2.11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	141,214	
16	4,282,966	583,232	0	583,232	316,287	266,945	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$43,387	\$84,048	\$936,819	139,510	2.09	\$0	\$0	\$0	\$0	\$0	\$0	\$0	139,510	
17	4,282,966	587,775	0	587,775	322,613	265,162	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$39,815	\$87,620	\$849,199	137,727	2.08	\$0	\$0	\$0	\$0	\$0	\$0	\$0	137,727	
18	4,282,966	596,232	0	596,232	329,065	267,167	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$36,091	\$91,344	\$757,855	139,732	2.10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	139,732	
19	4,282,966	600,866	0	600,866	335,646	265,220	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$32,209	\$95,226	\$662,629	137,785	2.08	\$0	\$0	\$0	\$0	\$0	\$0	\$0	137,785	
20	4,282,966	605,546	0	605,546	342,359	263,187	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$28,162	\$99,273	\$563,356	135,752	2.07	\$0	\$0	\$0	\$0	\$0	\$0	\$0	135,752	
21	4,282,966	610,273	0	610,273	349,207	261,066	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$23,943	\$103,492	\$459,863	133,631	2.05	\$0	\$0	\$0	\$0	\$0	\$0	\$0	133,631	
22	4,282,966	615,048	0	615,048	356,191	258,857	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$19,544	\$107,891	\$351,972	131,422	2.03	\$0	\$0	\$0	\$0	\$0	\$0	\$0	131,422	
23	4,282,966	619,870	0	619,870	363,315	256,555	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$14,959	\$112,476	\$239,496	129,120	2.01	\$0	\$0	\$0	\$0	\$0	\$0	\$0	129,120	
24	4,282,966	624,741	0	624,741	370,581	254,160	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$10,179	\$117,256	\$122,240	126,725	1.99	\$0	\$0	\$0	\$0	\$0	\$0	\$0	126,725	
25	4,282,966	629,660	0	629,660	377,992	251,668	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$5,195	\$122,240	\$0	124,233	1.97	\$0	\$0	\$0	\$0	\$0	\$0	\$0	124,233	

Revised Cash Flow, Assumption and DSCR – June 2020

Assumptions						
Lender	Loan Amt.	Amort. (years)	Pricing (Index & Margin)	Int. Rate	Int Rate after amort period	Cash CMLTD (P&I)
Provident Term	\$2,770,318	25	N/A	4.25%		\$182,050
Provident Time Note	\$1,939,221	25	N/A	4.25%		\$127,435
CT Green Bank Mezz Debt	\$704,827	15		8.00%	10.00%	\$82,345
CGB Guaranty	\$500,000	15				
	Amount	Years				
ZREC	\$80	13.0				
VNMC	100%	30.0				

*VNMC Assumptions based on current rates and expected increases/step down per VNMC program

CGB Financing	
Average DSCR	3.57
Minimum DSCR	2.38
Repayment Year	13

Year	Electricity Production in KWH	Total Revenue (VNMC ZREC & Capacity Payments)	Expenses	NOI	TPB Debt Service (P&I)	TPB Debt Service (I)	TPB Debt Service (P)	TPB Debt Service from excess cash flow	TPB Debt Service from Reserves	TPB Loan balance	SBA Debt Service (P&I)	SBA Debt Service (I)	SBA Debt Service (P)	SBA Loan balance	NOI post senior lender	Senior Lender DSCR	CGB Debt Service (P&I) Actual	CGB Debt Service (I)	Additional CGB Interest Payment	CGB Debt Service (P)	CGB Past Due P&I Payments	CGB Loan from Reserve	CGB Loan balance	CGB DSCR	Excess / (Shortfall) Cash flow
0																									
1	4,282,966	950,304	257,476	692,828	\$182,050	\$117,739	\$64,312	\$0	\$0	\$2,706,006	\$127,435	\$82,417	\$45,018	\$1,894,203	383,343	2.24	\$82,345	\$56,386	\$0	\$25,958	\$0	\$0	\$678,869	4.66	300,999
2	4,282,966	897,504	271,448	626,056	\$182,050	\$115,005	\$67,045	\$0	\$0	\$2,638,962	\$127,435	\$80,504	\$46,931	\$1,847,272	316,571	2.02	\$82,345	\$54,309	\$0	\$28,035	\$0	\$0	\$650,833	3.84	234,226
3	4,282,966	844,743	270,905	573,838	\$182,050	\$112,156	\$69,894	\$0	\$0	\$2,569,067	\$127,435	\$78,509	\$48,926	\$1,798,346	264,353	1.85	\$82,345	\$52,067	\$0	\$30,278	\$0	\$0	\$620,555	3.21	182,008
4	4,282,966	848,803	260,517	588,286	\$182,050	\$109,185	\$72,865	\$0	\$0	\$2,496,203	\$127,435	\$76,430	\$51,005	\$1,747,340	278,801	1.90	\$82,345	\$49,644	\$0	\$32,700	\$0	\$0	\$587,855	3.39	196,456
5	4,282,966	846,446	256,154	590,292	\$182,050	\$106,089	\$75,962	\$0	\$0	\$2,420,241	\$127,435	\$74,262	\$53,173	\$1,694,167	280,807	1.91	\$82,345	\$47,028	\$0	\$35,316	\$0	\$0	\$552,539	3.41	198,462
6	4,282,966	853,955	256,890	597,065	\$182,050	\$102,860	\$79,190	\$84,113	\$0	\$2,256,938	\$127,435	\$72,002	\$55,433	\$1,638,734	287,580	1.93	\$82,345	\$44,203	\$0	\$38,141	\$0	\$0	\$514,398	3.49	205,235
7	4,282,966	858,067	262,700	595,367	\$182,050	\$95,920	\$86,130	\$153,926	\$0	\$2,016,881	\$127,435	\$69,646	\$57,789	\$1,580,946	285,882	1.92	\$82,345	\$41,152	\$0	\$41,193	\$0	\$0	\$473,205	3.47	203,538
8	4,282,966	862,221	259,462	602,759	\$182,050	\$85,717	\$96,333	\$152,653	\$0	\$1,767,895	\$127,435	\$67,190	\$60,245	\$1,520,701	293,274	1.95	\$82,345	\$37,856	\$0	\$44,488	\$0	\$0	\$428,717	3.56	210,929
9	4,282,966	869,956	261,257	608,699	\$182,050	\$75,136	\$106,915	\$158,197	\$0	\$1,502,784	\$127,435	\$64,630	\$62,805	\$1,457,896	299,214	1.97	\$82,345	\$34,297	\$0	\$48,047	\$0	\$0	\$380,669	3.63	216,870
10	4,282,966	874,194	292,067	582,127	\$182,050	\$63,868	\$118,182	\$162,652	\$0	\$1,221,950	\$127,435	\$61,961	\$65,474	\$1,392,421	272,641	1.88	\$82,345	\$30,454	\$0	\$51,891	\$0	\$0	\$328,778	3.31	190,297
11	4,282,966	878,473	373,271	505,202	\$182,050	\$51,933	\$130,117	\$142,723	\$0	\$949,110	\$127,435	\$59,178	\$68,257	\$1,324,164	195,717	1.63	\$82,345	\$26,302	\$0	\$56,042	\$0	\$0	\$272,736	2.38	113,372
12	4,282,966	886,442	379,000	507,442	\$182,050	\$40,337	\$141,713	\$85,029	\$722,368	\$0	\$127,435	\$56,277	\$71,158	\$1,253,006	197,957	1.64	\$82,345	\$21,819	\$0	\$60,526	\$0	\$0	\$212,210	2.40	115,612
13	4,282,966	890,807	298,044	592,763	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$53,253	\$74,182	\$1,178,824	465,328	4.65	\$82,345	\$16,977	\$0	\$65,368	\$0	\$146,842	\$0	5.65	382,984
14	4,282,966	570,525	304,005	266,520	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$50,100	\$77,335	\$1,101,489	139,085	2.09	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	139,085
15	4,282,966	578,734	310,085	268,649	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$46,813	\$80,622	\$1,020,867	141,214	2.11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	141,214
16	4,282,966	583,232	316,287	266,945	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$43,387	\$84,048	\$936,819	139,510	2.09	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	139,510
17	4,282,966	587,775	322,613	265,162	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$39,815	\$87,620	\$849,199	137,727	2.08	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	137,727
18	4,282,966	596,232	329,065	267,167	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$36,091	\$91,344	\$757,855	139,732	2.10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	139,732
19	4,282,966	600,866	335,646	265,220	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$32,209	\$95,226	\$662,629	137,785	2.08	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	137,785
20	4,282,966	605,546	342,359	263,187	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$28,162	\$99,273	\$563,356	135,752	2.07	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	135,752
21	4,282,966	610,273	349,207	261,066	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$23,943	\$103,492	\$459,863	133,631	2.05	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	133,631
22	4,282,966	615,048	356,191	258,857	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$19,544	\$107,891	\$351,972	131,422	2.03	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	131,422
23	4,282,966	619,870	363,315	256,555	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$14,959	\$112,476	\$239,496	129,120	2.01	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	129,120
24	4,282,966	624,741	370,581	254,160	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$10,179	\$117,256	\$122,240	126,725	1.99	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	126,725
25	4,282,966	629,660	377,992	251,668	\$0	\$0	\$0	\$0	\$0	\$0	\$127,435	\$5,195	\$122,240	\$0	124,233	1.97	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	124,233

Original Cash Flow, Assumption and DSCR (October 2018)

Assumptions					Excess Cash
Lender	Loan Amt.	Term (Amort)	Int. Rate	Annual P&I	flow Sweep
Provident - Term	\$2,770,318	25	6.23%	\$221,472	75%
Provident Time Note	\$1,939,221	25	6.00%	\$151,699	
CT Green Bank Mezz Debt	\$800,000	15	8.00%	\$93,464	
CGB Guaranty	\$500,000	15			
	Amount	Years			
ZREC	\$80	15			
VNMC	100%	30			

CGB Financing	
Average DSCR	2.63
Minimum DSCR	1.59
Repayment Year	15

*VNMC assumptions based on current credit rates and expected increases/step down per VNMC Program

Year	Electricity Production in KWH	Total Revenue (VNM, ZREC)	Expenses	NOI	TPB Debt Service (P&I)	TPB Debt Service (I)	TPB Debt Service (P)	TPB Debt Service from excess cash flow	TPB Debt Service from Reserves	TPB Loan balance	SBA Debt Service (P&I)	SBA Debt Service (I)	SBA Debt Service (P)	SBA Loan balance	NOI post senior lender	Senior Lender DSCR	CGB Debt Service (P&I) Actual	CGB Debt Service (I)	Additional CGB Interest Payment	CGB Debt Service (P)	CGB Loan balance	CGB DSCR	Cumulative Reserve
1	4,282,966	950,304	257,476	\$692,828	\$221,472	\$172,591	\$48,881	\$0	\$0	\$2,721,437	\$151,699	\$116,353	\$35,346	1,903,875	319,658	1.86	\$82,345	\$56,386	-	\$25,958	678,869	3.88	237,313
2	4,282,966	897,504	271,448	\$626,056	\$221,472	\$169,546	\$51,926	\$0	\$0	\$2,669,511	\$151,699	\$114,233	\$37,466	1,866,409	252,885	1.68	\$82,345	\$54,309	-	\$28,035	650,833	3.07	407,854
3	4,282,966	844,743	270,905	\$573,838	\$221,472	\$166,311	\$55,161	\$0	\$0	\$2,614,350	\$151,699	\$111,985	\$39,714	1,826,695	200,667	1.54	\$82,345	\$52,067	-	\$30,278	620,555	2.44	526,176
4	4,282,966	848,803	260,517	\$588,286	\$221,472	\$162,874	\$58,598	\$0	\$0	\$2,555,752	\$151,699	\$109,602	\$42,097	1,784,597	215,116	1.58	\$82,345	\$49,644	-	\$32,700	587,855	2.61	658,947
5	4,282,966	852,904	256,154	\$596,750	\$221,472	\$159,223	\$62,248	\$0	\$0	\$2,493,504	\$151,699	\$107,076	\$44,623	1,739,974	223,580	1.60	\$82,345	\$47,028	-	\$35,316	552,539	2.72	800,183
6	4,282,966	857,047	256,890	\$600,157	\$221,472	\$155,345	\$66,126	\$0	\$0	\$2,427,378	\$151,699	\$104,398	\$47,300	1,692,674	226,986	1.61	\$82,345	\$44,203	-	\$38,141	514,398	2.76	944,824
7	4,282,966	861,230	262,700	\$598,530	\$221,472	\$151,226	\$70,246	\$0	\$0	\$2,357,132	\$151,699	\$101,560	\$50,138	1,642,535	225,360	1.60	\$82,345	\$41,152	-	\$41,193	473,205	2.74	1,000,000
8	4,282,966	865,456	259,462	\$605,994	\$221,472	\$146,849	\$74,622	\$65,879	\$0	\$2,216,630	\$151,699	\$98,552	\$53,147	1,589,389	232,823	1.62	\$82,345	\$37,856	-	\$44,488	428,717	2.83	1,000,000
9	4,282,966	869,723	261,257	\$608,466	\$221,472	\$138,096	\$83,376	\$112,859	\$0	\$2,020,395	\$151,699	\$95,363	\$56,336	1,533,053	235,296	1.63	\$82,345	\$34,297	-	\$48,047	380,669	2.86	1,000,000
10	4,282,966	874,034	292,067	\$581,967	\$221,472	\$125,871	\$95,601	\$114,713	\$0	\$1,810,081	\$151,699	\$91,983	\$59,716	1,473,337	208,796	1.56	\$82,345	\$30,454	-	\$51,891	328,778	2.54	1,000,000
11	4,282,966	878,387	373,271	\$505,116	\$221,472	\$112,768	\$108,704	\$94,839	\$0	\$1,606,539	\$151,699	\$88,400	\$63,299	1,410,039	131,946	1.35	\$82,345	\$26,302	-	\$56,042	272,736	1.60	1,000,000
12	4,282,966	882,784	379,000	\$503,784	\$221,472	\$100,087	\$121,384	\$37,201	\$0	\$1,447,953	\$151,699	\$84,602	\$67,097	1,342,942	130,614	1.35	\$82,345	\$21,819	-	\$60,526	212,210	1.59	1,000,000
13	4,282,966	887,225	298,044	\$589,181	\$221,472	\$90,207	\$131,264	\$36,202	\$0	\$1,280,487	\$151,699	\$80,577	\$71,122	1,271,820	216,011	1.58	\$82,345	\$16,977	-	\$65,368	146,842	2.62	1,000,000
14	4,282,966	891,711	304,005	\$587,706	\$221,472	\$79,774	\$141,697	\$100,250	\$0	\$1,038,540	\$151,699	\$76,309	\$75,390	1,196,430	214,535	1.57	\$82,345	\$11,747	-	\$70,597	76,245	2.61	1,000,000
15	4,282,966	896,241	310,085	\$586,156	\$221,472	\$64,701	\$156,771	\$99,143	\$0	\$782,627	\$151,699	\$71,786	\$79,913	1,116,517	212,986	1.57	\$82,345	\$6,100	-	\$76,245	-	2.59	1,000,000
16	4,282,966	576,125	316,287	\$259,838	\$221,472	\$48,758	\$172,714	\$97,981	\$511,932	\$0	\$151,699	\$66,991	\$84,708	1,031,809	(113,332)	0.70	\$0	\$0	-	\$0	-	0.00	886,668
17	4,282,966	580,746	322,613	\$258,133	\$0	\$0	\$0	\$0	\$0	\$0	\$151,699	\$61,909	\$89,790	942,019	106,435	1.70	\$0	\$0	-	\$0	-	0.00	481,170
18	4,282,966	585,414	329,065	\$256,349	\$0	\$0	\$0	\$0	\$0	\$0	\$151,699	\$56,521	\$95,178	846,841	104,650	1.69	\$0	\$0	-	\$0	-	0.00	585,820
19	4,282,966	590,128	335,646	\$254,482	\$0	\$0	\$0	\$0	\$0	\$0	\$151,699	\$50,810	\$100,888	745,953	102,783	1.68	\$0	\$0	-	\$0	-	0.00	688,604
20	4,282,966	594,890	342,359	\$252,531	\$0	\$0	\$0	\$0	\$0	\$0	\$151,699	\$44,757	\$106,942	639,011	100,832	1.66	\$0	\$0	-	\$0	-	0.00	789,435
21	4,282,966	599,699	349,207	\$250,492	\$0	\$0	\$0	\$0	\$0	\$0	\$151,699	\$38,341	\$113,358	525,653	98,793	1.65	\$0	\$0	-	\$0	-	0.00	888,228
22	4,282,966	604,556	356,191	\$248,365	\$0	\$0	\$0	\$0	\$0	\$0	\$151,699	\$31,539	\$120,160	405,493	96,666	1.64	\$0	\$0	-	\$0	-	0.00	984,894
23	4,282,966	609,461	363,315	\$246,146	\$0	\$0	\$0	\$0	\$0	\$0	\$151,699	\$24,330	\$127,369	278,124	94,447	1.62	\$0	\$0	-	\$0	-	0.00	1,000,000
24	4,282,966	614,416	370,581	\$243,835	\$0	\$0	\$0	\$0	\$0	\$0	\$151,699	\$16,687	\$135,011	143,112	92,136	1.61	\$0	\$0	-	\$0	-	0.00	1,000,000

Exhibit C – Risks and Mitigants

As presented in the October 26, 2018 memo approved by the Board

Risk	Risk Level	Mitigating Factor
Construction and Performance Risk	Medium	As described in greater detail in the “Project Partners” section, the parties involved in the Project include accomplished engineers, developers, project managers and owners of hydro facilities who, between them, have experience with hydro projects locally and internationally.
Operational Risk	Medium	The Developer will have a long-term operations and maintenance contract with Wasserkraft, which has already been negotiated. It includes daily remote inspection, weekly onsite supervision, trash rake cleaning and annual service. Green Bank will also require Developers to have appropriate property, commercial liability and umbrella insurance.
Generation Risk	Low	Generation estimates used in the financial model are based on 31 years of water flow data at the Farmington River. The financial model has been stressed under worst case scenario (that is, using the worst series of water flow years) and debt service coverage is still met. Under the ZREC and VNMCA contracts, the Developer does not have any obligations or penalties if there is a shortfall in the amount of electricity generated.
Offtaker risk	Low	The Project’s off-taker is the State of Connecticut under the VNMCA and Eversource under the ZREC, both investment grade entities.
Change in VNM Regulations	Low	The VNMCA includes provisions so that if there were to be a change in VNM regulations, which staff believes a low risk, especially for existing projects, the parties will agree to use best efforts to restore the economic benefits of the VNMCA as originally intended.
Equipment Malfunction	Medium	Wasserkraft is providing a 5-year warranty on the equipment and a 2-year workmanship warranty. Spare parts for items that have most wear and tear will be stored locally in Collinsville near the plant.



Memo

To: Connecticut Green Bank Board of Directors
From: Mackey Dykes, VP of Financing Programs; Catherine Duncan, Financing Programs; Alex Kovtunenکو, Associate General Counsel, Financing Programs
Date: October 14, 2022
Re: C-PACE Program Guidelines Update – EV Chargers

Conn. Gen. Stat. Section 16a-40g (the “Statute”) authorizes what has come to be known as the Commercial Property Assessed Clean Energy Program (“C-PACE”) and designates the Connecticut Green Bank (“Green Bank”) as the state-wide administrator of the program. The Green Bank established program guidelines (“Program Guidelines”) for the C-PACE program. The Statute was updated in the most recent legislative session (Public Act No. 22-6, effective October 1, 2022) to include zero-emission vehicle refueling infrastructure and resilience improvements on qualifying commercial real property as eligible measures under the program. Both newly eligible measures are exempted from the Savings-to-Investment Ratio (“SIR”) calculation. “Zero-emission vehicle” is defined in statute as a battery electric vehicle, hybrid electric vehicle, range-extended electric vehicle and any vehicle that is certified by the executive officer of the California Air Resources Board to produce zero emissions of any criteria pollutant under all operational modes and conditions (Conn. Gen. Stat. Section 4a-67d). “Resilience” is defined in statute as the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from deliberate attacks, accidents or naturally occurring threats or incidents, including, but not limited to, threats or incidents associated with the impacts of climate change (Conn. Gen. Stat. Section 16-244aa).

Green Bank staff provided the Board a draft of proposed edits to the Program Guidelines which address the inclusion of zero-emission vehicle refueling infrastructure at the July 22, 2022 meeting. Other non-substantive clean-ups were included as well. After receiving Board input, the Program Guidelines went through a public comment period. No public comments were received. Staff is therefore requesting approval of the updated Program Guidelines, attached to this memo, as previously presented in July.

Staff is still working on drafting edits to address the inclusion of resiliency and expects to come back to the Board with further updates early next year.

Resolution

WHEREAS, Conn. Gen. Stat. Section 16a-40g (the “Authorizing Statute”) authorizes the Commercial Property Assessed Clean Energy Program (“C-PACE”) program and designates the Connecticut Green Bank (“Green Bank”) as the state-wide administrator of the program responsible for, among other things, establishing program guidelines for

the C-PACE program; and

WHEREAS, the Green Bank staff have recently updated the C-PACE program guidelines (the “Program Guidelines”), which draft guidelines then went through a thirty-day public comment period in accordance with Conn. Gen. Stat. Section 1-120 et seq., during which time no comments were received.

NOW, therefore be it:

RESOLVED, the Green Bank Board of Directors (the “Board”) approves the updated Program Guidelines, substantially in the form of attached to that certain memo to the Board dated October 14, 2022 and authorizes the Green Bank staff to implement the updated Program Guidelines.

RESOLVED, that the proper Green Bank officers are authorized and empowered to do all other acts and execute and deliver all other documents and instruments as they shall deem necessary and desirable to effect the above-mentioned Program Guidelines.



SPARKED BY
CONNECTICUT GREEN BANK

C-PACE PROGRAM GUIDELINES

Version Date: ~~March 30~~ **July 19, 2022**

Connecticut Green Bank

75 Charter Oak Ave, Suite 1 – 103

Hartford, CT 06106

Tel: (860) 563-0015

www.ctgreenbank.com

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Article I. INTRODUCTION

Capitalized terms used below which are not otherwise defined shall have the meaning ascribed to them in Article VI hereof.

~~VI hereof.~~

~~In 2012, the Connecticut legislature passed the~~

The C-PACE Legislation (defined below), which authorized the commercial sustainable energy program more commonly known as the Commercial & Industrial Property Assessed Clean Energy Program (“C-PACE”). C-PACE is a financing program that allows Connecticut building owners to access cleaner, cheaper, and more reliable energy, as well as financing for resiliency and zero-emission vehicle refueling infrastructure. The C-PACE Legislation authorized Connecticut Green Bank, a Connecticut quasi-public agency (“Green Bank”), to administer C-PACE and establish program guidelines for the implementation of the program. **NOTE: Guidelines specific to resiliency will be developed later this fiscal year.**

C-PACE allows qualifying commercial real property owners to access financing to undertake qualifying energy efficiency and clean eligible energy improvements on their buildings or build greener and more efficient new buildings and repay the investment through an additional charge/assessment, similar to ~~their~~ real property tax, sewer, or water bill. Similar to a sewer assessment, projects financed through C-PACE are secured by a benefit assessment lien on the improved real property, which lien is repaid over time. Like other benefit assessments, C-PACE is a non-accelerating, senior lien secured by the property, and repaid over time. The repayment obligation transfers automatically to the next owner if the property is sold and in the event of default, only the payments in arrears come due. This arrangement spreads the cost of clean eligible energy improvements – such as energy efficient boilers, upgraded insulation, new windows, ~~or~~ solar PV installations, or EV chargers – over the expected life of the measure. Because the payment is secured by a senior lien, C-PACE projects are seen as less risky than typical loans, and low interest capital can be raised from the private sector with little or no government financing required.

Benefit assessments are a familiar tool ~~which~~ that municipalities levy on real estate parcels to finance projects including street paving, water and sewer systems, and street lighting. C-PACE builds on a long history of using such benefit assessments and serves a public purpose through reducing energy costs, stimulating the economy, improving property valuation, reducing greenhouse gas emissions, and creating jobs. C-PACE is a proven and effective tool to attract private capital into the clean energy and energy efficiency market. The Connecticut Green Bank, as program administrator, bills and collects the scheduled payments for all benefit assessment liens in the manner of property taxes in the Participating Municipality.

This document sets forth the program guidelines established by Green Bank for the implementation of C-PACE (as may be updated, supplement, amended or otherwise modified by Green Bank, the “Program Guidelines”), which Program Guidelines govern all C-PACE participants.

All Appendixes attached hereto are supplemental program documents used by Green Bank in implementation of the Program Guidelines and may be modified or amended by Green Bank, in its sole discretion, from time to time. Current versions of all Appendixes may be found at www.cpace.com/guidelines.

Article II. OUTLINE OF C-PACE BENEFITS

PACE offers multiple benefits to a broad range of stakeholders, including but not limited to: building owners, municipalities, mortgage holders, lenders, and energy efficiency/renewable energy contractors.

Section 1. ———For Building Owners:

C-PACE helps minimize the up-front investment, installation, and performance risk of energy upgrades, while helping owners lower their operating costs, improve the value and market competitiveness of their asset, and comply with energy mandates. C-PACE does this in several ways:

- ~~Many owners lack capital to implement energy improvements.~~ C-PACE provides up to 100% ~~up-front,~~ long-term financing to property owners for qualified energy upgrades. Audits, construction costs, commissioning and post-construction performance measurement and verification (M&V) can be wrapped into C-PACE financing.
- ~~Owners often want to sell the building before an energy upgrade loan is repaid.~~ The C-PACE assessment obligation is attached to the property and can transfer to the new owner. Payments do not accelerate in case of default.
- ~~Many owners feel energy improvements do not yield an adequate return on investment.~~ The C-PACE program requires that the estimated energy savings from an efficiency retrofit or renewable energy project exceed the up-front investment and financing costs, leading the expected cash flow to be positive over the useful life of the equipment. Moreover, C-PACE requires an independent third-party technical review of the project energy savings estimates, thereby ensuring confidence in the projected energy savings. Deeper energy upgrades and savings are possible because assessments match the useful life of equipment, which for certain improvements can extend up to 25 years.
- ~~Other owners are uncertain that energy savings will perform as advertised.~~ C-PACE helps building owners understand their future energy savings by requiring that an energy audit and/or feasibility study be conducted to estimate energy savings and commissioning to ensure that equipment is installed correctly. Buildings owners are encouraged to develop an equateAn audit for a refueling installation assesses the impact of a charging station on a building's energy profile. Buildings owners should consider developing a measurement & verification plan to track energy consumption or production over time.
- ~~Owners need tenants to share in the costs of energy upgrades.~~ As a benefit assessment, C-PACE payments – as well as energy savings – may, if permitted by the lease agreement, be passed along to tenants.

Section 2. For Energy Auditors and Contractors:

The biggest barrier to converting leads to deals for energy upgrades is the lack of access to acceptable finance terms from traditional lenders. C-PACE solves this. By allowing a property owner to access up ~~to 100% up-front~~ to 100% financing for up to 25 years, deeper energy efficiency and clean energy improvements are now affordable. The Green Bank also provides energy auditors and contractors access to training, support services, market research, and marketing materials.

Section 3. For Municipalities:

C-PACE is an economic development tool for municipalities. Energy upgrades create a more competitive environment for retaining and attracting new businesses by lowering energy costs. Energy upgrades also create jobs and reduce greenhouse gases and other pollutants. The Green Bank facilitates municipal outreach and coordination coordinates with municipalities, ~~and their legislative bodies,~~ interested in entering into the Participation Agreement (as defined below) and facilitates municipal outreach to commercial property owners.

Section 4. For ~~Third Party~~ Capital Providers:

C-PACE ~~has created~~ is a very secure, clean energy financing product for ~~Third Party~~ Capital Providers (~~TPCP~~). The security comes from its position similar to a tax lien on a property. The lien, like other public benefit assessments, sits in a senior position to other encumbrances on the property, including mortgage debt and liens other than municipal real property tax liens. ~~Repayment is managed by the~~ The Green Bank bills, collects, and remits funds in its role as program administrator.

~~Finally, the~~

The C-PACE Legislation requires C-PACE approved projects, other than zero-emission vehicle refueling infrastructure upgrades, to have a “Savings to Investment Ratio” (SIR) greater than one, meaning that projected lifetime savings from the measures must exceed the total investment, inclusive of financing costs, over the lifetime of the measures. Connecticut streamlined the C-PACE program by establishing a single statewide C-PACE program administered by the Green Bank. Connecticut’s C- PACE program maintains an open market approach, encouraging private capital to be the primary financier of these assessments and supporting building owners who wish to source their own C-PACE lender (see Article V below). Additionally, the Green Bank currently has dedicated capital to invest in C-PACE projects. ~~At certain intervals through the year, the Green Bank may periodically “sell-down” its portfolio of C-PACE transactions to TPCP(s) (as defined herein) who desire to be the secondary financiers of these assessments. The sell-down process replenishes the Green Bank’s capital, enabling a sustainable source of funding for C-PACE projects.~~

Section 5. For Mortgage Holders:

The ~~structure of~~ C-PACE ~~allows participating building owners to pay~~ for improvements to their property out of the savings the project creates. Connecticut statutes require C-PACE approved projects to have an SIR greater than 1, meaning that projected lifetime savings from the energy measures must exceed the total investment, inclusive of financing costs, over the lifetime of the measures. The Green Bank has instituted technical underwriting standards for C-PACE that provides a robust framework for measuring the estimated SIR (Appendix D), which all efficiency and renewable energy C-PACE Projects must meet. Under the C-PACE financing structure, the building should experience increased net operating income, often an immediate return on investment, and therefore becomes more attractive to current and potential tenants and future buyers. Additionally, C-PACE Assessments do not accelerate. In the event of a foreclosure of the property for any reason, only the amount of the C-PACE assessment currently due and/or in arrears, a relatively small proportion of the entire C-PACE assessment, would come due. In the event of a property sale, C-PACE assessments ~~can~~ automatically transfer to the new property owner unless the buyer or seller decides to prepay the assessment. Finally, the C-PACE Legislation requires that property owners receive the written consent of their existing mortgage holder before being eligible for C-PACE financing (Appendix C). Mortgage lenders will be at the table helping to determine whether a property can undertake this voluntary assessment.

Article III. C-PACE STATUTORY AND PROGRAMMATIC REQUIREMENTS

This section outlines certain requirements set forth in the C-PACE Legislation as well as additional programmatic requirements established by the Green Bank.

Section 1. Mortgage Lender Consent

~~A.~~

A. Pursuant to the C-PACE Legislation, Benefited Property Owners must:

~~i.~~ Provide written notice to any existing mortgage holder of the Qualifying Property (as defined

a. below), at least thirty days before the recording of a benefit assessment lien on such property, of the property owner's intent to finance a project through C-PACE, and

~~ii.~~ Obtain the written consent to the C-PACE financing from any existing mortgage holder of the

b. Qualifying Property.

~~B.~~ Green Bank's model mortgage holder notice and consent is attached as Appendix C. C-PACE participants may

B. elect to use a different agreement to evidencing mortgage holder notice and consent, however any other such agreement will be subject to review and approval by Green Bank in its sole discretion.

~~C.~~ In accordance with the U.S. Department of Housing and Urban Development ("HUD") Notice H2017-01

C. dated January 11, 2017, as may be modified, amended or superseded, in the event that the mortgage holder is HUD, the mortgage holder notice and consent as well as the Financing Agreement associated with such consent shall provide, in the event of a default on the associated Benefit Assessment Lien payment, for notice and a reasonable opportunity for the mortgage holder to cure any such non-payment.

Section 2. Real Property Eligibility

To be considered a "Qualifying Property" eligible for C-PACE Financing, a Qualifying Commercial Real Property (as defined below) must meet the following requirements:

~~A.~~

A. Must be located within a Participating Municipality (as defined below), or multiple abutting Participating ~~Municipalities.~~

~~Municipalities.~~

~~B.~~ Must be owned by a Benefited Property Owner (as defined below), who is not a state, municipality, or

B. any political subdivision thereof.

~~C.~~ Must not be a Residential Dwelling (as defined below) of four units or less. Multifamily properties of

C. five units or more are eligible. Mixed-use, not-for-profit, and agricultural properties may also be eligible. If the eligibility of a certain property is not clear, Green Bank may determine property eligibility in its reasonable discretion based on site specific considerations including, but not limited to, zoning designation and current/past/future land use. Multiple abutting parcels may be included in the legal description of one Benefit Assessment Lien (as defined below) if (1) each parcel, by itself, is a Qualifying Property (2) each parcel is owned by the same Benefited Property Owner, and (3) each parcel benefits from the same Qualifying Project.

~~D.~~—Must not be subject to any mortgage, deed of trust or other equivalent consensual security interest
_securing a loan primarily for personal, family or household use in a Residential Dwelling of four units or

~~-4-~~

- D. Less or on land on which a person intends to construct a Residential Dwelling of four units or less.

Section 3. Project Eligibility

To be considered a “Qualifying Project” eligible for C-PACE Financing, an ~~energy improvement~~ Energy Improvement project must meet

the following requirements:

~~A.~~

- A. Contain at least one Energy Improvement (as defined below).

~~B.~~ All costs associated with the Energy Improvement and the financing thereof (e.g., closing/lender fees,

- B. consultant/development fees, soft costs, or other associated project costs, each being an “Associated Cost”) may, subject to Green Bank approval, be included in the Financed Amount.

- C. ~~C.~~ Obtain an energy audit or feasibility study for the proposed Energy Improvement(s).

~~D.~~ The term of the Benefit Assessment associated with the Qualifying Project may not exceed the weighted

- D. average effective useful life (“EUL”) of the Energy Improvement(s), except in the context of Restructuring, in which case the term of the Benefit Assessment may be extended beyond the weighted average EUL of the Energy Improvement(s). EUL is determined through the energy audit, based on industry best practice, and is subject to approval by (1) either the Technical Administrator or a Technical Reviewer, and (2) the Green Bank. Regardless of a Project’s EUL, the term of the Benefit Assessment may not exceed 25 years unless approved by Green Bank, in its sole discretion.

~~E.~~ For all Energy Improvements other than Zero-emission Vehicle Refueling Infrastructure, Projected Total Cost Savings must exceed the Projected Financing Cost. In other words, the savings-to-

- E. investment ratio (“SIR”) of the project must be greater than one. To demonstrate that the SIR requirement has been satisfied the project must be either (1) reviewed and approved by the Technical Administrator, (2) reviewed and approved by a Technical Reviewer, (3) be certified as Investor Confidence Project “an Investor Ready Energy Efficiency”² project by the Investor Confidence Project (as defined by the Investor Confidence Project, see <http://www.eepformance.org>) or (4), for certain projects which include third party-owned renewable energy system(s), reviewed and approved by Green Bank, or certified by a Qualified Approved Capital Provider, as applicable and more particularly described in Appendix L. For the avoidance of doubt, the SIR calculation for the project must meet the requirements set forth in Article IV below and shall not be applicable for Zero-emission Vehicle Refueling Infrastructure.

- F. ~~F.~~ All Projects require the written approval of the Green Bank, as the statewide administrator of the C-PACE Program.

~~PACE Program.~~

- G. ~~G.~~ All Benefited Property Owner(s) associated with the project must sign a Disclosure of Risk Form.

~~H.~~ If the Energy Improvement(s) are wholly owned by any party or parties which is/are not the Benefited

- H. Property Owner(s), then such project must meet the requirements set forth in Appendix L.

Section 4. Restrictions on completed Qualifying Projects and consolidated Qualifying Projects

Qualifying Project improvements which have already been made to a Qualifying Property may be eligible for financing if such Qualifying Project was -completed less than a calendar year prior to the complete submission of documents necessary for Green Bank approval (See Appendix F) of such Qualifying Project. Additionally, subsequent Energy Improvement(s) made to a Qualifying Property which has previously received C-PACE financing for a previous Qualifying Project, made within one calendar year from the close of C-PACE financing for the initial Qualifying Project, may be considered as one Qualifying Project for the purposes herein.

Section 5. Restrictions on Refinancing within the C-PACE Program

Qualifying Projects which closed on C-PACE financing ~~may~~ are not ~~be~~ eligible for Refinancing through the C-PACE Program. For the avoidance of doubt, nothing in the Program Guidelines is intended to prohibit Restructuring, at any time during the term of the applicable Benefit Assessment, through the C-PACE Program.
~~C-PACE Program.~~

Section 6. Billing and Collection

Benefit Assessment Liens are billed in the same manner as real property taxes. As such, any payment schedule associated with any Benefit Assessment Liens will follow the billing cycle and due dates for real property taxes in the applicable Participating Municipality. Billing and collection of recorded Benefit Assessment Liens are conducted in accordance with the applicable Participation Agreement, as may be amended. ~~In the event that~~ if such Participation Agreement provides for Green Bank to conduct the billing and collection of Benefit Assessment Liens in such Participating Municipality then Green Bank will conduct such billing and collection in accordance with Appendix M.

Article IV. TECHNICAL STANDARDS OVERVIEW

~~The Green Bank requires a third-party review of the proposed project to demonstrate that the SIR requirement has been met.~~

The following provides a summary of the technical review process. Please refer to the Technical Standards (Appendix D) for a full description of audit requirements, technical review methodology and standards, and eligible and ineligible measures. Technical review may be completed by the Green Bank's selected Technical Administrator or an Approved Technical Reviewer, in accordance with the Technical Standards. As an alternative to this process, the Green Bank will also accept Investor Confidence Project-certified Investor Ready Energy Efficiency Projects (as defined by the Investor Confidence Project, see <http://www.eepperformance.org>) that demonstrate the SIR is greater than one. Additionally, Green Bank may, in its sole discretion, perform technical review for projects which include third party-owned renewable energy system(s), as more particularly described in Appendix L.

Section 1. Defining a Scope of Work

Benefited Property Owners should work with a qualified energy auditor and/or contractor with demonstrated experience to define a scope of work for their proposed project. This scope can range from installation of a single Energy Improvement, such as a new high efficiency boiler or a renewable energy system, to a whole building energy upgrade involving multiple, interactive Energy Improvements. A general list of eligible Energy Improvements and their typical energy saving characteristics can be found in the Technical Standards. The scope of work for the proposed project ~~must be~~ prepared and submitted by a Qualified Contractor or Registered Contractor. Projects require the applicant to conduct an energy audit or renewable energy feasibility study. For all projects involving the installation of Energy Improvements, depending on project type, size and complexity, the energy audit may range from a simple walkthrough of the building to an investment grade audit.²¹ The Qualified Contractor or Registered Contractor will determine the minimum required energy audit level consistent with the Technical Standards (Appendix D). The audit should identify the building's representative baseline energy use, (except for in the case of zero-emission vehicle refueling), identify and recommend Energy Improvements, estimate the useful life of each Energy Improvement, determine total project capital cost and the projected energy savings that can be confidently achieved, and evaluate key financial metrics, ~~and provide an energy savings equipment commissioning plan.~~ All projects involving a renewable energy system are required to complete a feasibility study.⁷ Green Bank recommends that any feasible study follow the guidelines set forth in Technical Standards (Appendix D).

Section 2. Standard SIR Technical Review

~~The~~

~~. For projects with an SIR requirement, the~~ Technical Administrator ~~and/or~~ Technical Reviewer will conduct a technical review, the purpose of which is to validate the reasonableness of project costs and energy savings projections. The Technical Administrator ~~and/or~~ Technical Reviewer will also confirm the projected SIR of the project is greater than one.

¹ Connecticut utilities may provide what can be considered an ASHRAE Level I audit at no cost to applicants. The Green Bank can provide applicants referrals to qualified energy auditors to do higher level audits, the costs of which may be included in C-PACE financing.

~~²Connecticut utilities may provide what can be considered an ASHRAE Level I audit at no cost to applicants. The Green Bank can provide applicants referrals to qualified energy auditors to do higher level audits, the costs of which may be included in C-PACE financing.~~

In addition, the methodology for tracking energy savings over an agreed upon term will be reviewed, thereby verifying for project stakeholders the extent to which projected energy savings are being achieved in an ongoing fashion.

Technical Review consists of three tasks:

- ~~A. A.~~ Verify that the building's baseline energy consumption is representative and reasonable, e.g., weather normalized ~~B.~~
- ~~A. B.~~ Validate the reasonableness of projected energy savings; and
- ~~C. C.~~ Confirm that an adequate commissioning plan exists.

The first two tasks are necessary to determine the SIR on the project and verify that it is greater than one. The third task ensures a property owner and the contractor have planned to confirm the correct installation and operational performance of the installed measures.

The Green Bank has developed a methodology for this technical review process, which relies upon two established industry protocols:

- A. **Baseline Energy Use:** ASTM E2797-15, Building Energy Performance Assessment (BEPA) Standard directed at data collection and baseline calculations for the energy audit;
- B. **Energy Improvement & Energy Savings:** ASHRAE Level I, Level II and Level III Energy Audit Guidelines;

The Technical Administrator or a Technical Reviewer will qualify the proposed Energy Improvement(s) and validate the projected energy savings are consistent with these protocols and, in conjunction with the applicant, will confirm a baseline financing scenario that meets the SIR criteria.

Section 3. Commissioning; Measurement and Verification

~~In order to~~

~~To~~ verify that the project was installed according to the evaluated scope, ~~all project applications~~ projects are required to include a commissioning plan ~~and subsequent report.~~ A ~~report~~ commissioning plan by a Qualified Contractor, Registered Contractor, Technical Reviewer, or the Technical Administrator ~~that confirms~~ can confirm the measures were properly installed and that the project is operating as intended ~~must be submitted to the Green Bank once project construction is complete.~~

Additionally, ~~in order~~ to (i) evaluate the energy savings effectiveness of the measures after they have been installed, and (ii) to collect energy consumption and/or clean energy production data, property owners are encouraged to ~~work with their contractor(s) to implement an adequate measurement and verification plan.~~ The International Performance Measurement and Verification Protocol (IPMVP) provides guidance for measurement and verification of the energy savings, for additional information see the Technical Standards.

The Green Bank may elect to facilitate M&V for projects submitted to the Green Bank for financing, and may elect to offer the same services to ~~TPCP~~ third-party financed projects, at Green Bank's discretion and subject to additional costs/fees. M&V activities may be financed as an Associated Cost of any Qualifying Project.

Section 4. Alternative to Standard SIR Technical Review Process

As an alternative to the Standard SIR Technical Review process (described in Section 2 and the Technical Standards), Green Bank will also consider projects ~~which that~~ meet one of the following requirements as having met the technical review requirement of this Article:

- A. ~~A.~~—Projects ~~which that~~ demonstrate a receipt of an Investor Ready Energy Efficiency certification from the Investor Confidence Project (“ICP”) and provide a letter from the ICP Quality Assurance Provider stating that the SIR for the project is greater than one; or
~~SIR for the project is greater than one; or~~
- ~~B.~~—Certain projects which include third party-owned renewable energy system(s), reviewed, and approved by
- B. Green Bank, as more particularly described in Appendix L.

Section 5. —New Construction, Repositioning, and Gut Rehabilitation

Given the lack of a pre-improvement energy baseline against which to measure energy savings and the difficulty of isolating and assigning portions of new construction, repositioning, and gut rehabilitation project costs to ~~particulars specific~~ Energy Improvements, the Standard SIR Technical Review process (described in Section 2 and the Technical Standards) is not applicable. ~~For new construction, repositioning or gut rehabilitation Qualifying Projects, an~~ alternate methodology will apply ~~for determining~~. ~~For these Qualifying Projects, the amount of~~ allowable C-PACE financing is based upon the design level of energy performance, above exceeding the applicable building energy code, ~~the Qualifying Property is designed to reach, as set forth in~~. See Appendix N attached hereto.

The Green Bank’s Technical Administrator will evaluate the base line and design levels of energy modeling submitted by Qualified Projects and determine the percentage by which the design exceeds the base line. The Green Bank will determine the Total Eligible Construction Costs (TECC) and identify the total C-PACE funding available. See Appendix F for costs and details.

Section 6. Technical Review Auditing

Green Bank may select and retain a Technical Review Auditor or Technical Review Auditors to conduct periodic reviews of the technical review work performed by any Technical Reviewer, the Technical Administrator, or the Green Bank to evaluate compliance with the Program Guidelines and Technical Standards.

Article V. C-PACE OPEN MARKET AND ELIGIBILITY CRITERIA FOR C-PACE CAPITAL

PROVIDERS

Section 1. Concept of 'Open Market'

Connecticut maintains an "open market" approach to its C-PACE program, encouraging capital providers to be the primary ~~financier~~financiers of Qualifying Projects and supporting Benefited Property Owners who wish to source their own capital provider. For capital providers wishing to directly offer C-PACE financing, thereby becoming an "Approved ~~Third-Party~~ Capital Provider" or "ATPCPACP", the Green Bank has created terms and conditions, attached hereto as Appendix F (the "Third-Party Capital Provider Terms and Conditions"), which outline the requirements and process for Third-Party Approved Capital Provider to directly offer C-PACE financing to Benefited Property Owners and interact with Green Bank, as the program administrator.

Additionally, the Green Bank currently maintains dedicated capital to finance C-PACE projects. Benefited Property Owners looking to finance any Qualifying Project with Green Bank sourced capital may apply directly to Green Bank and follow the process outlined in Appendix F. ~~From time to time and through the RFP process, the Green Bank may "sell-down" portfolios of its C-PACE transactions to Qualifying Capital Providers (s) or partner with Qualifying Capital Providers for the purpose of originating transactions, which Qualifying Capital Providers desire to be the secondary or co-financiers of these assessments. The "sell-down" process replenishes or leverages the Green Bank's capital, enabling a sustainable source of funding for C-PACE projects.~~

The 'open market' program offers multiple financing options to Benefited Property Owners, enabling the Green Bank to achieve its mission of making financing accessible and affordable.

Section 2. Qualified Capital Provider

~~Any capital provider or other entity interested in purchasing C-PACE transactions from the Green Bank or offering C-PACE financing directly to borrowers must become a qualified Capital Provider through the C-PACE Program. The process for becoming a "Qualified Capital Provider" is as follows:~~

- ~~1. The interested capital provider must respond to the open CGB Request for Qualifications from Interested Capital Providers.~~
- ~~2. Green Bank shall review the submission and may approve the capital provider. Upon approval, the capital provider will be considered a "Qualified Capital Provider". Qualified Capital Providers are listed on Green Bank's C-PACE website and receive information from the Green Bank regarding financing opportunities as well as pertinent information about C-PACE. Qualified Capital Providers wishing to directly offer C-PACE financing must acknowledge and agree to the Third-Party Capital Provider Terms and Conditions.~~

~~Section 3.~~ C-PACE Approved Third-Party Capital Providers

~~ONLY~~ Qualified

~~A Capital Provider which anticipate directly offering Provider must be approved by the C-PACE Program to offer financing to Benefited Property Owners directly to building owners in Connecticut need to acknowledge and agree to the Third Party Capital Provider Terms and Conditions. A Request for Qualifications (RFQ) can be found at <https://www.cpace.com/Capital-Provider/Get-Started>. The Third Party Capital Provider Terms and Conditions outline the requirements and process for Third Party Capital~~

~~Provider to directly offer C-PACE financing to Benefited Property Owners and interact with the Green Bank, as the program administrator. In summary, the process for project origination, funding, and administration is as follows. Please review Appendix F, Third-Party Capital Provider Term Sheet for further details.~~

~~A.~~

The ~~ATPCPACP~~ or Benefited Property Owners may submit a completed C-PACE application and all associated documents necessary to demonstrate any project's compliance with the Program Guidelines and any other applicable requirements set forth in the Third-Party Capital Provider Terms and Conditions.

~~B.~~—Green Bank shall review such documents for compliance with the Program Guidelines and Third-Party Capital Provider Terms and Conditions, and, in its sole discretion, provide its approval of the Qualifying Project (thereby becoming an "Approved Project").

~~C.~~—The ~~ATPCPACP~~ may then enter into a Financing Agreement with Benefited Property Owner for such Approved Project (thereby becoming a "Closed Project").

~~D.~~—Concurrently or shortly thereafter, the ~~ATPCPACP~~ shall enter into an Administration Agreement with the Green Bank for such Closed Project.

~~E.~~—Green Bank will facilitate the filing and assignment to the ~~ATPCPACP~~ of a Benefit Assessment Lien, pursuant

~~E.~~ to the Administration Agreement.

~~F.~~—Green Bank will work with the ~~ATPCPACP~~ to collect any payments received pursuant the Benefit Assessment Lien and remit such payments to the ~~ATPCPACP~~, pursuant to the

~~F.~~ Administration Agreement.

The ~~ATPCPACP~~ shall maintain its own financial underwriting criteria and financing terms and conditions for a C-PACE transaction, subject to the requirements set forth in the Program Guidelines.

Article VI. DEFINED TERMS

"Approved ~~Third Party Capital Provider~~" or "ATPCPACP" shall mean a Third-party Capital Provider, ~~which that~~ (1) has been approved by Green Bank as a **Qualifying Capital Provider**, ~~(2) has acknowledged (and agreed to Third Party Capital Provider Terms and Conditions, and (3)(2)~~ is in good standing with the Green Bank.

"Associated Cost" shall have the meaning ascribed to it in Article III Section 3(B).

"Benefit Assessment" shall mean an assessment authorized by the C-PACE Legislation. In an event of a conflict between this definition and that which is ascribed in the C-PACE Legislation, the C-PACE Legislation shall govern.

"Benefit Assessment Lien" shall mean a lien which evidences a Benefit Assessment and is recorded by a Participating Municipality on the land records against a Qualifying Property at Green Bank's direction pursuant to the Participation Agreement. The form of such Benefit Assessment Lien is attached hereto as Appendix K, as may be modified or amended from time to time by Green Bank, in its sole discretion.

"Benefited Property Owner" shall mean an owner of Qualifying Commercial Real Property who desires to install Energy Improvements and provides free and willing consent to the Benefit Assessment against the Qualifying Commercial Real Property. In an event of a conflict between this definition and that which is ascribed in the C-PACE Legislation, the C-PACE Legislation shall govern.

"C-PACE" shall have the meaning ascribed to it in Article I.

"C-PACE Legislation" shall mean Section 16a-40g of the Connecticut General Statutes, as may be amended, attached hereto as Appendix A.

"Commercial or Industrial Property" shall mean any real property other than a Residential Dwelling containing less than five dwelling units. In an event of a conflict between this definition and that which is set forth in the C-PACE Legislation, the C-PACE Legislation shall govern.

"Disclosure of Risk Form" shall mean the disclosure of risk form associated with C-PACE, attached hereto as Appendix H, as may be modified or amended from time to time by Green Bank, in its sole discretion.

"District Heating and Cooling System" shall mean a local system consisting of a pipeline or network providing hot water, chilled water or steam from one or more sources to multiple buildings. In an event of a conflict between this definition and that which is ascribed in the C-PACE Legislation, the C-PACE Legislation shall govern.

"Energy Engineer" shall mean a professional or entity who/which meets one of the following: (1) holds a Certified Energy Manager or Certified Energy Auditor accreditation, (2) is a Professional Engineer with demonstrated relevant energy experience, or (3) a contractor with relevant demonstrated experience as determined by the Technical Administrator.

"Energy Improvement" shall mean (A) participation in a District Heating and Cooling System by Qualifying Commercial Real Property, (B) participation in a microgrid, as defined in Section 16-243y of the Connecticut

_General Statutes, including any related infrastructure for such microgrid, by Qualifying Commercial Real Property, provided such microgrid and any related infrastructure incorporate clean energy, as defined in Section

~~-12-~~

_16-245n of the Connecticut General Statutes, (C) any improvement, renovation or retrofitting of Qualifying Commercial Real Property to reduce energy consumption or improve energy efficiency, (D) installation of a renewable energy system to service qualifying commercial real property, or (E) installation of a solar thermal or geothermal system to service qualifying commercial real property, or (F) installation of refueling infrastructure for zero-emission vehicles to a Qualifying Commercial Real Property, or (G) installation of resilience improvements to a Qualifying Commercial Real Property, provided such renovation, retrofit or installation described in subparagraph (C), ~~(D) or (E)~~ to (G), inclusive, is permanently fixed to such Qualifying Commercial Real Property. In an event of a conflict between this definition and that which is ascribed in the C-PACE Legislation, the C-PACE Legislation shall govern.

“EUL” shall have the meaning ascribed to it in Article III Section 3(E).

“Financed Amount” means the combined costs of the Energy Improvement(s) and Associated Cost(s) which has been or will be financed though C-PACE for any Qualifying Project.

“Financing Agreement” shall mean a written agreement between a Benefited Property Owner and either ~~a Third-Party~~ an Approved Capital Provider or the Green Bank, or any of its subsidiaries, for the financing, leasing, or purchasing power from ~~of Energy Improvement(s), a Qualifying Project.~~ Such financing agreement shall contain, among other things, a provision which allows the Benefited Property Owner to rescind the agreement not later than three business days from the date of such agreement.

“Green Bank” shall have the meaning ascribed to it in Article I.

“Participating Municipality” shall mean a municipality, as defined in Section 7-369 of the Connecticut General Statutes, that has entered into a Participation Agreement. In an event of a conflict between this definition and that which is ascribed in the C-PACE Legislation, the C-PACE Legislation shall govern.

“Participation Agreement” shall mean a written agreement between Green Bank and a Participating Municipality, as approved by its legislative body, pursuant to which the municipality has agreed to assess and assign, Benefit Assessments to Green Bank in return for Energy Improvements for Benefited Property Owners within such municipality and costs reasonably incurred in performing such duties. The template participation agreement is attached hereto as Appendix B, as may be modified or amended from time to time by Green Bank, in its sole discretion.

“Professional Engineer” shall mean an individual, or company which employees such individual, who is licensed as a professional engineer and in good standing with the relevant licensing authorities in the State of Connecticut.

“Program Guidelines” shall have the meaning ascribed to it in Article I.

“Projected Associated Savings” shall mean non-energy savings ~~which~~ that have a close nexus to the Energy Improvement(s) ~~which~~ that are part of a Project. Examples include, but are not limited to, federal tax credits, depreciation, and revenues from the sale of environmental attributes. Green Bank, in its sole discretion, may determine which types of savings may be considered to fall under this definition.

“Projected Energy Savings” shall mean the estimated energy savings, calculated in accordance with the Technical Standards, from any Energy Improvement(s) over the EUL of such improvements.

“Projected Financing Cost” shall mean the total projected debt service associated with the Financed Amount for a Qualifying Project including, but not limited to, all principal, interest, and any fees over the term of the financing. This does not include any potential capitalized interest during constructions, late fees or penalties.

“Projected Total Cost Savings” shall mean the combined value of the Projected Energy Savings and the Projected Associated Savings for any Qualifying Project.

“Qualified Contractor” shall mean an individual or entity who/~~which~~that meets one of the following: (1) holds a Certified Energy Manager or Certified Energy Auditor accreditation, (2) is a Professional Engineer with demonstrated relevant energy experience, or (3) a contractor with relevant demonstrated experience.

~~“Qualifying Capital Provider” or “QCP” shall have the meaning ascribed to it in Article V Section 2.~~

“Qualifying Commercial Real Property” shall mean any Commercial or Industrial Property, regardless of ownership, that meets the qualifications established for the C-PACE program. In an event of a conflict between this definition and that which is provided in the C-PACE Legislation shall govern.

“Qualifying Project” shall mean an energy improvement project which meets all the requirements set forth in Article III Section 3.

“Qualifying Property” shall mean a Qualifying Commercial Real Property which meets all the requirements set forth in Article III Section 2.

“Refinancing” means, in the context of any existing Financing Agreement, ~~a~~ Benefited Property Owner entering into a new Financing Agreement with any C-PACE ~~capital provider~~ACP other than the capital provider (or its successors or assigns) who is a party to the applicable existing Financing Agreement for the purpose of repaying or refinancing the existing Financing Agreement and Benefit Assessment, including but not limited to, filing of a new Benefit Assessment associated with the same Qualifying Project.

“Registered Contractor” shall mean a contractor who has registered with Green Bank, via the contractor registration process (<https://www.cpace.com/Contractor/Get-Started/Contractor-Sign-Up>), and remains in good standing with Green Bank.

“Residential Dwelling” shall mean a structure used or occupied, or intended to be used or occupied, in whole or in part, as the home or residence of one or more persons. Residential dwelling shall not include any structure which is:

- A. ~~1-~~A home or residence which is part of public or private institution, if such residence is incidental to provision of medical, geriatric, educational, counseling, religious, or similar services;~~2~~
- B. ~~2-~~A campground, hotel, motel, extended stay facility, vacation residential facility, boardinghouse, fraternal or social organization, or similar lodgings;~~2~~ and
- C. 3. Primarily used for business, commercial, charitable, not-for-profit, or agricultural purposes.

“Restructuring” means, in the context of any existing Financing Agreement, a Benefited Property Owner

entering into a new Financing Agreement or any modification of the existing Financing Agreement with the C-PACE ~~capital provider~~ ACP (or its successors or assigns) who is a party to the applicable existing Financing Agreement for the purpose of restructuring, amending, restating, or otherwise modifying the existing Financing Agreement and Benefit Assessment, including but not limited to, releasing the existing Benefit Assessment and entering into a new Financing Agreement and filing of a new Benefit Assessment associated with the same Qualifying Project, subject to all other applicable program requirements.

“SIR” shall have the meaning ascribed to it in Article III Section 3(G).

“**Technical Administrator**” shall mean the entity, selected by Green Bank pursuant to an RFP process, which may conduct technical review as well as provide Green Bank with guidance and consultation in the development and implementation of the Technical Standards and Program Guidelines. The Technical Administrator may also work with contractors to help them develop a building’s baseline energy consumption and energy savings estimates for projects.

“**Technical Reviewer**” shall mean an entity which has been approved by and in good standing with Green Bank in accordance with the standard set forth in Appendix J. Technical reviewers may be proposed to Green Bank for approval by ~~Third Party Capital Providers~~ ACP. For a list of Technical Reviewers ~~which that~~ are currently approved and in good standing with Green Bank, please visit www.cpace.com/technicalreviewers. ~~www.cpace.com/technicalreviewers.~~

“**Technical Review Auditor**” shall mean an entity or entities, selected by Green Bank pursuant to an RFP process, which may conduct periodic reviews of the technical review work performed by any Technical Reviewer, the Technical Administrator or the Green Bank to evaluate compliance with the Program Guidelines and Technical Standards.

“**Technical Standards**” shall mean the complete description of energy audit requirements, technical review methodology and standards, and eligible and ineligible measures for C-PACE, attached hereto as Appendix D, as may be amended or modified from time to time by Green Bank in its sole discretion.

~~Third Party~~

“**Approved Capital Provider**” means an entity, other than the Green Bank or any of its subsidiaries, that enters into one or more Financing Agreement(s). In an event of a conflict between this definition and that which is ascribed in the C-PACE Legislation, the C-PACE Legislation shall govern.

~~15-~~ “**Zero-emission Vehicle Refueling Infrastructure**” means infrastructure used to refuel Zero-emission Vehicles.

“**Zero-emission Vehicle**” shall mean a battery electric vehicle, hybrid electric vehicle, range-extended electric vehicle and any vehicle that is certified by the executive officer of the California Air Resources Board to produce zero emissions of any criteria pollutant under all operational modes and conditions. In an event of a conflict between this definition and that which is ascribed in the C-PACE Legislation, the C-PACE Legislation shall govern.

KBRA Removes Watch Developing Status and Affirms Ratings on SHREC ABS 1 LLC, Series 2019-1

NEW YORK (September 21, 2022) – KBRA affirms the ratings on the Class A Notes and Class B Notes for SHREC ABS 1 LLC, Series 2019-1, a solar renewable energy credit (SREC) ABS securitization. On the September 15, 2022, payment date the issuer made a \$10.2 million voluntary prepayment on the note which has resulted in additional credit enhancement for the Class A and Class B Notes. KBRA analysis, taking into consideration the application of this prepayment, indicated that existing credit enhancement for the notes is sufficient to support the affirmed ratings. The notes are current on interest and scheduled principal payments.

The transaction is backed by the proceeds from the sale of solar renewable energy credits, generated under Connecticut **Green Bank's Solar Home Renewable Energy Credit ("SHREC") program**. Connecticut Green Bank aggregates these SHRECs into annual tranches and sells the tranches to the Utilities at a fixed, predetermined price over a 15-year period.

Click [here](#) to view the report. To access ratings and relevant documents, click [here](#).

Related Publications

- [ABS: SHREC ABS 1 LLC, Series 2019-1 Surveillance Report July 2022](#)
- [ABS: SHREC ABS 1 LLC, Series 2019-1 Surveillance Report April 2022](#)
- [ABS: SHREC ABS 1 LLC, Series 2019-1 New Issue Report](#)
- [ABS: General Rating Methodology for Asset-Backed Securities](#)
- [Global Structured Finance Counterparty Methodology](#)

Analytical Contacts

Kenneth Martens, Senior Director (Lead Analyst)
+1 (646) 731-3373
kenneth.martens@kbra.com

Ali Pasha, Associate
+1 (646) 731-1299
ali.pasha@kbra.com

Xilun Chen, CFA, Managing Director (Rating Committee Chair)
+1 (646) 731-2431
xilun.chen@kbra.com

Business Development Contact

Ted Burbage, Managing Director
+1 (646) 731-3325
ted.burbage@kbra.com

Disclosures

Further information on key credit considerations, sensitivity analyses that consider what factors can affect these credit ratings and how they could lead to an upgrade or a downgrade, and [ESG factors](#) (where they are a key driver behind the change to the credit rating or rating outlook) can be found in the full rating report referenced above.

A description of all substantially material sources that were used to prepare the credit rating and information on the methodology(ies) (inclusive of any material models and sensitivity analyses of the relevant key rating assumptions, as applicable) used in determining the credit rating is available in the Information Disclosure Form(s) located [here](#).

Information on the meaning of each rating category can be located [here](#).

Further disclosures relating to this rating action are available in the Information Disclosure Form(s) referenced above. Additional information regarding KBRA policies, methodologies, rating scales and disclosures are available at www.kbra.com.



About KBRA

Kroll Bond Rating Agency, LLC (KBRA) is a full-service credit rating agency registered with the U.S. Securities and Exchange Commission as an NRSRO. Kroll Bond Rating Agency Europe Limited is registered as a CRA with the European Securities and Markets Authority. Kroll Bond Rating Agency UK Limited is registered as a CRA with the UK Financial Conduct Authority pursuant to the Temporary Registration Regime. In addition, KBRA is designated as a designated rating organization by the Ontario Securities Commission for issuers of asset-backed securities to file a short form prospectus or shelf prospectus. KBRA is also recognized by the National Association of Insurance Commissioners as a Credit Rating Provider.

SHREC ABS 1 LLC, Series 2019-1

Transaction		Transaction Parties	
Issuer	SHREC ABS 1 LLC	Manager / Parent	Connecticut Green Bank
Closing	April 2, 2019	Trustee	The Bank of New York Mellon Trust Company, N.A.
Latest Action Review	July 13, 2022		
Payment Frequency	Quarterly		
Months Seasoned	53		

Rating Action Summary

Kroll Bond Rating Agency (KBRA) affirms the ratings on the Class A Notes and Class B Notes for SHREC ABS 1 LLC, Series 2019-1, a solar renewable energy credit (SREC) ABS securitization. On the September 15, 2022, payment date the issuer made a \$10.2 million voluntary prepayment on the note which has resulted in additional credit enhancement for the Class A and Class B Notes. KBRA analysis, taking into consideration the application of this prepayment, indicated that existing credit enhancement for the notes is sufficient to support the affirmed ratings. The data used for this review is as of the September 2022 payment date. As of the date of this report, the notes are current on interest and scheduled principal payments.

The table below displays the current capital structure for the SHREC ABS 1 LLC, Series 2019-1 transaction. This review used information obtained from the transaction parties through the September 2022 distribution period.

Class	Balance ('000s)		Note		Advance Rate*		KBRA Ratings			
	At Closing	Current	Factor	Coupon	At Closing	Current	At Closing	From	To	Action
A	\$36,800	\$20,358	55.3%	5.09%	60.2%	41.9%	A- (sf)	A- (sf) / Watch Developing	A- (sf)	Affirmed
B	\$1,800	\$998	55.4%	7.04%	63.1%	43.9%	BBB- (sf)	BBB- (sf) / Watch Developing	BBB- (sf)	Affirmed
Total	\$38,600	\$21,356								

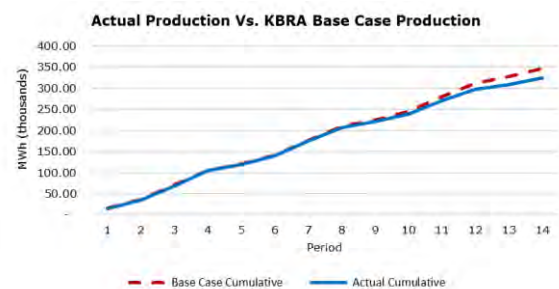
* the advance rate is calculated using the SREC projected revenues using a P90 production factor

Transaction Summary and Update

The transaction is backed by the proceeds from the sale of SRECs, generated under Connecticut Green Bank's Solar Home Renewable Energy Credit ("SHREC") program, by the Parent to Connecticut's two investor-owned utility companies (Utilities), The Connecticut Light and Power Company, d/b/a Eversource Energy and United Illuminating Company, under two Master Purchase Agreements ("MPA"), statutorily required by Connecticut General Statutes § 16-245gg. The SRECs are generated from solar photovoltaic systems ("PV Systems") participating in the Parent's residential solar investment program. The Parent aggregates these SRECs into annual tranches (each a "Tranche") and sells the tranches to the Utilities at a fixed, predetermined price over a 15-year period.

The SHRECs in this transaction are generated from 6,788 PV Systems in Tranche 1 and 7,250 PV Systems in Tranche 2. Under the two MPAs, Eversource is required to purchase 80% of the SHRECs created within each tranche and United Illuminating is required to purchase the remaining 20%. The SHREC Tranche Purchase Price for Tranche 1 and Tranche 2 are \$50.00 per SHREC and \$49.00 per SHREC, respectively. The transaction features a liquidity reserve equal to two quarters worth of interest.

Production performance data is reported on a two-quarter lag to the distribution date. Cumulative production performance is still lower than KBRA's base case production performance.

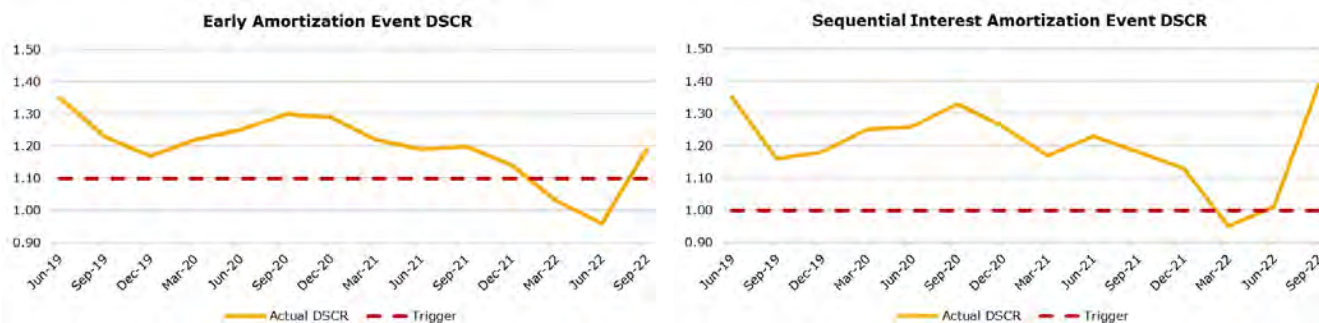


During the last review in June 2022, KBRA maintained the Watch Developing status on the notes due to performance issues related to power outages following Hurricane Henri and Hurricane Ida. Both the Early Amortization Event DSCR (based on collections from the current and previous period) and the Sequential Interest Amortization Event DSCR (based on collections from the current period) had decreased as these hurricanes hit Connecticut in late August 2021 and early September 2021. The hurricanes caused both lower irradiance and part of the power grid to be inoperative for a number of days, which meant that energy credits were not able to be generated by the systems (since they shut off automatically for safety reasons) and sold to the Utilities and consequently resulted in a decrease in collections. As of September 2022, and show in the charts below, the Early Amortization Event DSCR is 1.16x and is now above the trigger level of 1.10x, while the Sequential Interest Amortization Event DSCR is 1.39x and is above the trigger level of 1.00x. As of the September payments transaction's Early Amortization Trigger is no longer in effect. Both classes of notes are current on their principal and interest payments.

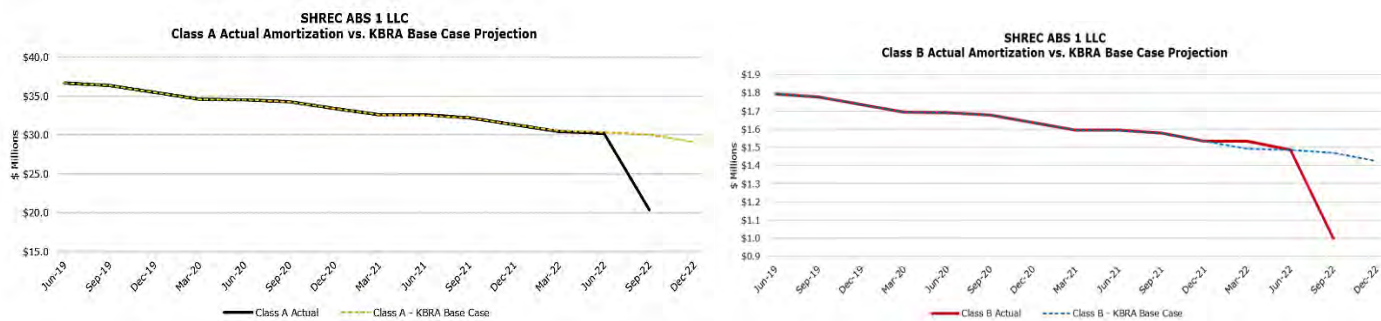


The Early Amortization Event DSCR is calculated as the ratio of (A) the sum of the available funds for the current and preceding payment date, less the sum of senior fees and expenses for the current and preceding payment date to (B) the sum of the accrued interest and scheduled principal payments (based on the beginning balance of the notes) that the Issuer is required to pay for the current payment date and preceding payment date. The Sequential Interest Amortization Event DSCR is calculated as the ratio of (A) the available funds for the current payment date, less senior fees and expenses for the current payment date to (B) the sum of the accrued interest and scheduled principal payments (based on the beginning balance of the notes) that the Issuer is required to pay on the current payment date.

It should be noted that the New England Power Pool Generation Information System had a reporting error for Q4 2021 production, leading to an incorrect DSCR for that period. **This reporting error did not impact KBRA's analysis or rating assessment.** The corrected DSCR is shown in the graph below.



The charts below show the actual amortization of the Class A and Class B Notes compared to KBRA's initial base case projections.





Analytical Contacts

Kenneth Martens, Senior Director
+1 (646) 731-3373
kenneth.martens@kbra.com

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- [ESG Global Rating Methodology](#)

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environmental infrastructure primer

land conservation



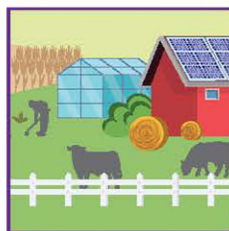
Environmental Markets



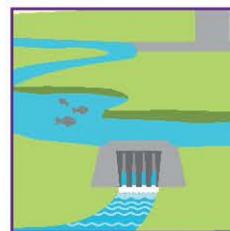
Land Conservation



Parks and Recreation



Agriculture



Water
(Coming soon in 2023)



Waste and Recycling
(Coming soon in 2024)



Land Conservation

Primer

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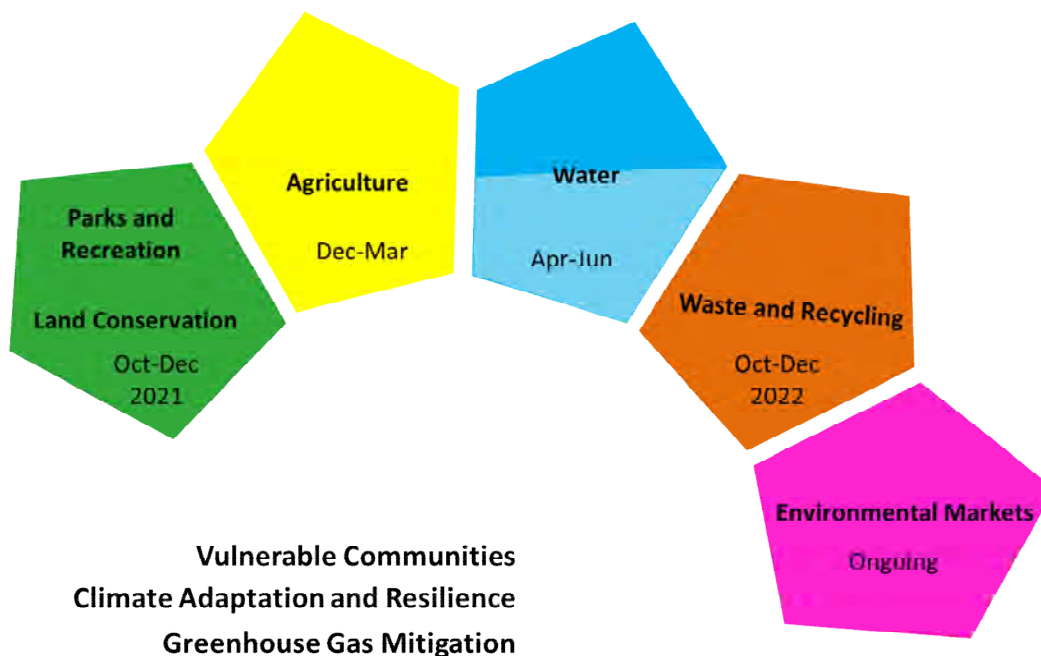
LAND CONSERVATION

PRIMER

1. Introduction

In October of 2021, the Connecticut Green Bank (“Green Bank”) developed a plan upon which it was going to engage stakeholders to understand the various components of “environmental infrastructure” – see Figure 1. With its mission to “confront climate change by increasing and accelerating investment into Connecticut’s green economy to create more resilient, healthier, and equitable communities,” within each component of “environmental infrastructure,” the cross-cutting issues of reducing greenhouse gas emissions (“GHG”), increasing climate adaptation and resilience, and enabling investment in vulnerable communities was explored.

Figure 1. Process to Understand Components of Environmental Infrastructure



This primer reflects the observations, findings, and initial recommendations from the conversations with stakeholders and research conducted on land conservation.

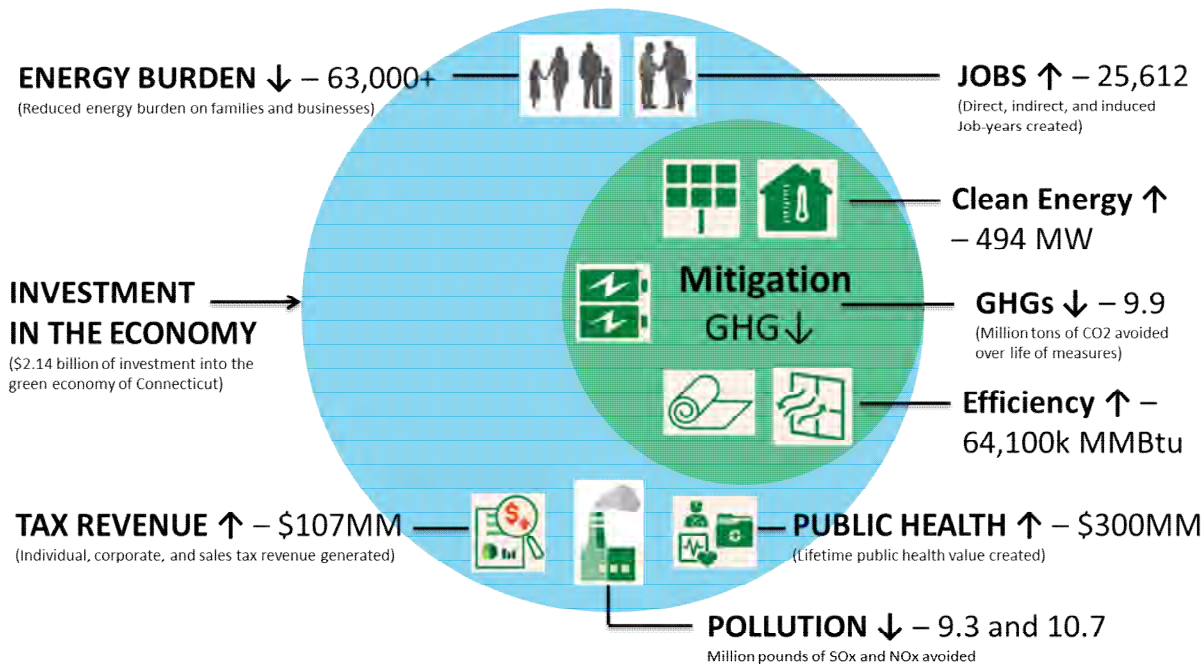
2. Overview

On July 6, 2021, Governor Ned Lamont signed Public Act 21-115 “An Act Concerning Climate Change Adaptation” (“the Act”) into law. The bipartisan-supported public policy was among the sixty-one (61) recommendations made by the Governor’s Council on Climate Change (“GC3”), including a recommendation to expand the scope of the Green Bank beyond “clean energy” to include “environmental infrastructure” (i.e., Recommendation #57).

Since its founding over a decade ago, the Green Bank has focused its efforts on using a limited amount of public resources to mobilize multiples of private investment in Connecticut to

increase and accelerate the deployment of “clean energy” to deliver social and environmental impact – see Figure 2.¹

Figure 2. Decennial Impact of the Green Bank with focus on “Clean Energy” Deployment and Mitigation of GHG Emissions



Given its mission, the Green Bank helps the State of Connecticut achieve its ambitious public policy objectives (e.g., GHG emission reductions targets, renewable portfolio standards). In so doing, by 2025, no less than 40 percent of investment and benefits from its programs are to be directed to vulnerable communities.²

The Act, expands the scope of the Green Bank beyond “clean energy” to include “environmental infrastructure,” and includes the following key provisions:

- **Definition** – “environmental infrastructure” means structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to, carbon offsets and ecosystem services;
- **Comprehensive Plan** – requirement for the Green Bank to develop a Comprehensive Plan³ prior to implementing any programs or initiatives related to “environmental infrastructure”;

¹ <https://www.ctgreenbank.com/wp-content/uploads/2021/12/FY12-FY21-CGB-ImpactReport-web.pdf>

² “Vulnerable communities” means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, low and moderate income communities, environmental justice communities pursuant to section 22a-20a, communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, populations with increased risk and limited means to adapt to the effects of climate change, or as further defined by DEEP in consultation with community representatives.

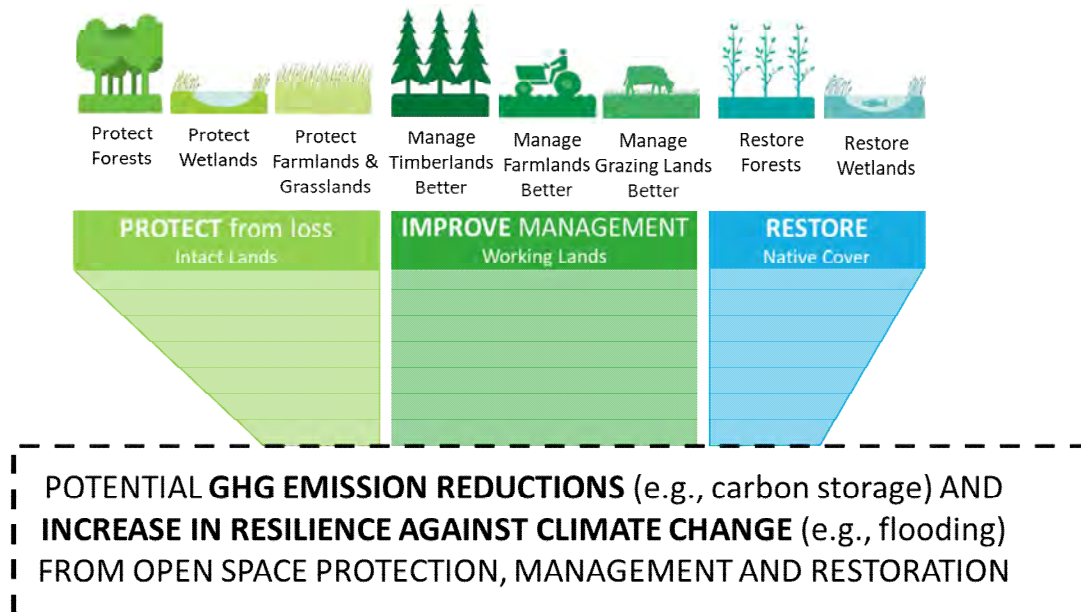
³ https://www.ctgreenbank.com/wp-content/uploads/2021/07/3_Comprehensive-Plan_FY-2020-and-Beyond_Final.pdf

- **Reporting** – inclusion of the Banks Committee and the Environment Committee, alongside the Energy and Technology Committee and Commerce Committee in terms of reporting; and
- **Bonding** – the ability to issue 25-year bonds for “clean energy” and 50-year bonds for “environmental infrastructure” (i.e., no more than the useful life of the projects), supported by the Special Capital Reserve Fund (“SCRF”), for up to 25 years to improve the rating of the bonds issued.

This document attempts to summarize the findings from the research and outreach efforts conducted by the Green Bank⁴ on “land conservation” from October 2021 through January of 2022 and includes the following sections: (A) overview, (B) key public policies, (C) market potential, (D) target, (E) funding and financing programs, (F) other programs, (G) stakeholder outreach, (H) findings, (I) opportunities, (J) history of leadership and innovation, (K) references, and (L) definitions.

Nature-based solutions (e.g., land conservation) such as protecting intact lands from loss (e.g., forests), improving the management of working lands (e.g., sustainably certified timberlands), and restoring native land cover, including coastlines, can support the Green Bank’s mission by both mitigating the GHG emissions that cause climate change (e.g., forest carbon sequestration) and increasing resilience against the impacts of climate change (e.g., flood protection) – see Figure 3.

Figure 3. Nature Based Solutions to Confront Climate Change - Mitigation and Resilience



⁴ Led by Bryan Garcia (President and CEO) and Ashley Stewart (Consultant)

3. Key Public Policies

The following are key public policies that advance “land conservation” in Connecticut, including, but not limited to:

1. **State Plan of Conservation and Development** (CGS 16a-24) – is an overarching statement of state policy in matters pertaining to land and water resource conservation and development. The Office of Policy and Management (“OPM”) prepares revisions to the State Conservation and Development Plan (“State C&D Plan”) on a recurring 5-year cycle and submits it for adoption by the Connecticut General Assembly (“CGA”). Once adopted, the State C&D Plan is then implemented by state agencies whenever they undertake certain actions.⁵ The current State C&D Plan (i.e., for 2018-2023), includes the relevant “clean energy” and “environmental infrastructure” items, including, but not limited to:
 - A. **Greenhouse Gas Mitigation** – reducing carbon dioxide emissions in the state consistent with the recommendations of the Connecticut Climate Change Preparedness Plan (i.e., 5.10);
 - B. **Climate Adaptation and Resilience** – including developing and deploying innovative energy technologies, and promoting distributed generation and microgrids to provide reliable electrical power or energy-dependent community services during outages and peak demand periods (i.e., 1.12) and minimizing the potential risks and impacts from natural hazards by considering potential impacts of climate change on existing and future development (i.e., 1.13); and
 - C. **Land Conservation** – protecting permanently preserved open space areas, Connecticut Heritage Areas, and archaeological areas of regional and statewide significance (i.e., 4.1), limiting improvements to permanently protected open space areas to those that are consistent with long-term preservation of the natural resource and open space values of the site (i.e., 4.2), expanding the state’s open space and greenway network through the acquisition and maintenance of important multi-functional land and other priorities identified in the state’s open space plan (i.e., 4.3), encouraging collaborative ventures with municipalities, private non-profit land conservation organizations and other entities to provide a system of appropriately preserved and managed natural areas and resources that allow for a diversity of well-functioning habitats and the sustainable use of resources (i.e., 4.5), and promoting innovative land conservation and banking practices that further local, regional, and state conservation and development objectives, and minimize the need to expand infrastructure to support new development in rural areas (i.e., 4.18).
2. **Open Space Target** (CGS 23-8)⁶ – establishes a mandate to conserve 21% (i.e., 673,210 acres) of state land area as held by open space land, with 10% from the state (e.g., forests, parks) and not less than 11% from partners (e.g., municipalities, water companies, or non-profit land conservation organizations). The Comprehensive Open

⁵ Quasi-publics are not subject to this requirement

⁶ <https://law.justia.com/codes/connecticut/2012/title-23/chapter-447/section-23-8/>

Space Acquisition Strategy (or “Green Plan”)⁷ is the comprehensive strategy for achieving the state goal by 2023, which includes priorities for strategic acquisitions of open space for climate change resiliency and preserving open space in perpetuity for state lands with high conservation value.

It should be noted that Connecticut’s 2020 Forest Action Plan⁸ includes several relevant desired future conditions, including:

- Connecticut will increase the amount of forest protected from development following priority criteria based on core forest areas, connection, Forest Legacy potential, and vulnerability;
 - People of Connecticut will understand and value the urban forests as essential parts of healthy urban ecosystems;
 - Connecticut forests will support a viable forest products industry that provides marketable products from renewable and diverse forest resources; and
 - Management of Connecticut’s forests will use the best available scientific information and the best available data as the basis for sound conservation and management decisions.
3. **Community Investment Act** (Public Act 05-228)⁹ – “An Act Concerning Farm Land Preservation, Land Protection, Affordable Housing and Historic Preservation,” also known as the Community Investment Act (“CIA”), CIA provides a dedicated and consistent source of funding for state preservation of open space (Department of Energy and Environmental Protection or “DEEP”), farmland (Department of Agriculture or “DoAg”), historic sites (Department of Economic and Community Development or “DECD”), and affordable housing (Connecticut Housing Finance Authority or “CHFA”). Through a \$40 surcharge on local land recordings (i.e., \$1 to Town Clerk, \$3 to local government, \$10 supplemental income to dairy farmers, and \$26 to State Treasurer), about \$22 MM is raised each year, which is equally distributed in four (4) parts to the priority funding areas.
4. **Use Value Assessment Law** (Public Act 490 or CGS 12-107a-f)¹⁰ – passed by the CGA in 1963, allows farm, forest, or open space land to be assessed at its use value rather than its fair market or highest and best use value (as determined by the property’s most recent “fair market value” revaluation) for purposes of local property taxation. Without the lower use value assessment, most landowners would have to sell the land because they would not be able to afford the property taxes on farm, forest, or open space land. It must be noted that Public Act 490 allows farmers to continue to farm, and other landowners to continue to own forest and open space land without being forced to sell it to pay the local property taxes. When the legislature passed Public Act 490 in 1963, it included in the law’s wording that “it was in the public interest to encourage the

⁷ <https://portal.ct.gov/DEEP/Open-Space/The-Green-Plan>

⁸ <https://portal.ct.gov/-/media/DEEP/forestry/2020-Approved-CT-Forest-Action-Plan.pdf>

⁹ <https://www.cga.ct.gov/2005/ACT/Pa/pdf/2005PA-00228-R00SB-00410-PA.pdf>

¹⁰ https://www.cga.ct.gov/current/pub/chap_203.htm#sec_12-107a

preservation of farm, forest, and open space land." Studies done across the nation have conclusively proven that property tax revenues generated by farm, forest, or open space land, are far greater than the expenditures by the town to service that land. For example, under the current structure, the residential sector costs a town more to service than the amount of property tax generated from that sector. Thus, farm, forest, and open space land can actually help control and maintain reasonable rates of property taxation for all of a town's taxpayers.

5. **Ten Mill Program** (CGS 12-96) – Ten Mill Program was developed in 1913 and required forest landowners to make a 100-year commitment to maintaining land as forest land in exchange for municipalities holding the property at a 10-mill rate and the valuation of the land at evaluation for 50 years after. The Ten Mill program has not added new properties since the 1970's, however, both programs provide support to landowners that encourages conservation and open space.
6. **Executive Order 21-3** – On December 16, 2021, Governor Ned Lamont signed Executive Order 21-3 which calls for 23 actions supporting more than thirty recommendations from the Governor's Council on Climate Change, including several recommendations on working lands:¹¹
 - A. **Forest Climate Resilience and Mitigation Potential** – DEEP engagement of stakeholders to ensure Connecticut's forests continue to be resilient against the impacts of climate change and to maximize forest potential to sequester and store carbon in support of Connecticut's GHG emission reduction goals.
 - B. **Agriculture Climate Resilience and Mitigation Potential** – DoAg engagement of stakeholders to ensure Connecticut's working lands and soils continue to be resilient against the impacts of climate change and to maximize forest potential to sequester and store carbon in support of Connecticut's GHG emission reduction goals.
 - C. **Climate Resilience Using Nature-Based Solutions on State Properties** – DEEP and Department of Administrative Services ("DAS") to develop guidance for state agencies to use nature-based solutions for flood and erosion control and stormwater management, integrate coastal marsh migration in state projects in coastal areas, and utilize low impact development and green infrastructure in new state construction and state-funded construction or redevelopment.

In order to identify opportunities to mobilize private investment, it is important to understand the public policy context in which "land conservation" operates. With the focus on the Green Bank's mission (i.e., confront climate change), public policy provides a mechanism to catalyze private investment.

4. Market Potential

¹¹ It should be noted that Connecticut is a member of the United States Climate Alliance, and one of the original signatories to the Natural and Working Lands Challenge in 2018 – <http://www.usclimatealliance.org/nwlchallenge>

The following is the market potential for “land conservation” from the perspective of forest land – see Table 1.

Table 1. Market Potential for Land Conservation in Connecticut based on Forest Land

3,205,762 Acres Land in Connecticut				
1,869,761 Acres Forest Land			1,336,001 Acres Non-Forest Land	
298,994 Acres Protected Core Forests	568,857 Acres Unprotected Core Forest	1,001,910 Acres Non-Core Forest	1,130,000 Acres Urban Area	206,001 Acres Other Non- Urban and Non- Forest

Connecticut’s forest products industry contributes at least \$2.1 billion to the state’s economy, while forest-based recreation generates approximately \$1.2 billion per year – forest-based employment accounts for 8,200 jobs in Connecticut.¹²

It should be noted that New England is the most forested region in the United States.¹³ Approximately 56-61% of Connecticut is forested with approximately two (2) people for every acre of forest land. 191 MMT of carbon is stored in Connecticut’s forests, which has increased by 9 MMT over the last decade¹⁴ – approximately 33 MMTCO₂ or 3.3 MMTCO₂ per year (or nearly 8 percent of annual GHG emissions in Connecticut).¹⁵¹⁶ The urban area of Connecticut includes nearly 90% of the population and trees store about 23 MMT of carbon and continue to sequester at the rate of about 750,000 tons per year. If estimates are accurate of carbon sequestered and stored in forests and related soils, then there are about a decade’s worth of emission reductions equivalent to 20% of total emissions – see Figure 4.

¹² North East State Foresters Association, *The Economic Importance of CT’s Forest Based Economy 2015*.

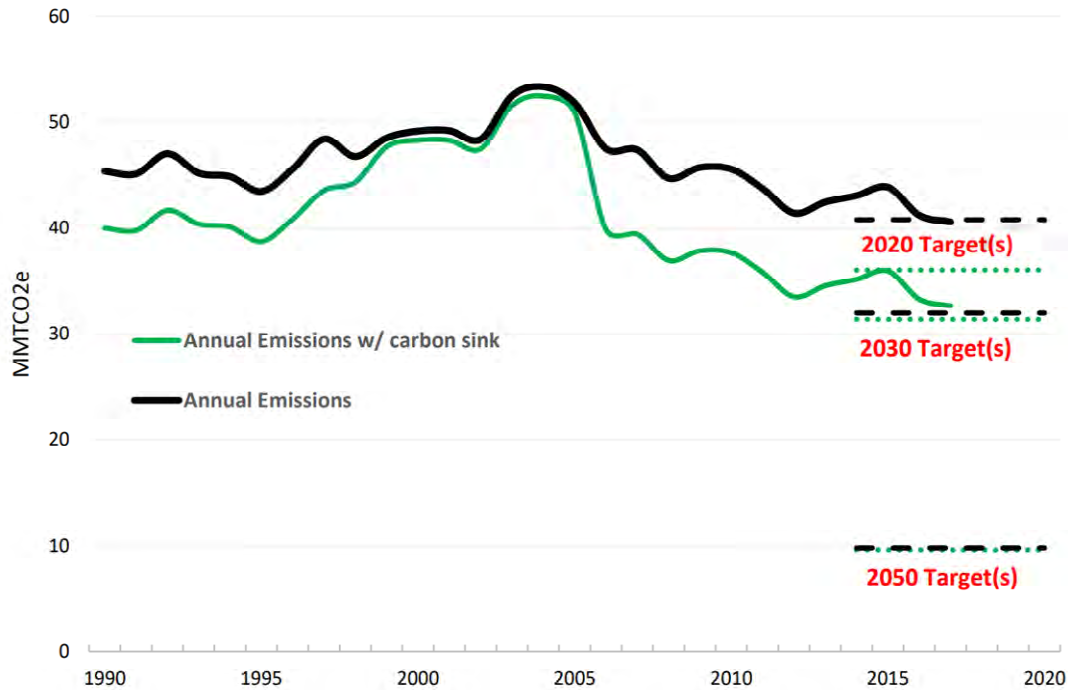
¹³ New England Forest Foundation

¹⁴ “Forests Sub-Group Final Report 2020” of the Working & Natural Lands Working Group of the Governor’s Council in Climate Change (p. 6)

¹⁵ Atomic weight of carbon is 12 atomic mass units versus carbon dioxide at 44 because 2 oxygen atoms each weigh 16 atomic units, therefore 1 ton of carbon equals 3.7 tons of CO₂ or 1 metric ton of carbon equals 4.1 metric tons of CO₂

¹⁶ Press Release issued by DEEP on September 7, 2021 entitled “CT Not on Track to Meet Statutory Emissions Targets, New Greenhouse Gas Inventory Finds”

Figure 4. Connecticut Sector-Wide GHG Emissions and Future Emissions Targets, including Carbon Sink Accounting



To retain the multiple benefits that forests provide such as carbon storage, biodiversity, clean water, clean air, resiliency, public health, wood products for human use, and green infrastructure, there is a “no net loss of forest” goal. Of Connecticut’s forest lands, 71% is owned by private individuals, corporate landholders (e.g., water companies), and nonprofit land trusts, with 17%, 11% and 1% of the remaining forest land owned by the state, municipalities, and federal government, respectively.

From the perspective of wetlands, there are approximately 220,000 acres in Connecticut representing about 7% of land within the state, which includes tidal and inland wetlands. Of the 91 miles of coastline, tidal wetlands are the most vulnerable natural resource in the face of climate change and rising sea levels.¹⁷ These resources are among the most biologically productive resources in the world, provide habitat for wildlife, improve water quality by trapping sediments and filtering contaminants, protect shorelines, and are a source of carbon sinks. Inland wetlands, including the 5,800 miles of rivers and 65,000 acres of lakes,¹⁸ are key resources in terms of stormwater retention and rivers and ponds provide water retention to mitigate flooding, and they are essential to surface and underground fresh water, provide critical habitat to wildlife, and are a source of carbon sinks. As noted above, wetlands provide a number of ecosystem services, including provision services (e.g., food, water), regulating services (e.g., carbon sequestration, moderation of extreme storms), support services (e.g., habitat, biodiversity), and cultural services (e.g., recreation, tourism, physical and mental health).

¹⁷ “Wetlands Sub-Group Report 2020” of the Working & Natural Lands Working Group of the Governor’s Council on Climate Change (p. 6)

¹⁸ “Rivers Sub-Group Report 2020” of the Working & Natural Lands Working Group of the Governor’s Council on Climate Change (p. 4)

5. Target

The following is a breakdown of the “land conservation” target outlined in the CGS 23-8 – see Table 2.

Table 2. Progress Towards the Open Space Land Target in Connecticut

3,205,762 Acres Land in Connecticut								
320,576 Acres State Goal (@10%)				352,634 Acres Partner Goal (@≥11%)				2,532,552 Acres No Land Conservation (@79%)
175,000 Acres State Forests ¹⁹	36,000 Acres State Parks ²⁰	46,000 Acres Wildlife Area and Other ²¹	63,500 Acres left to achieve target	84,000 Acres Cities and Towns	99,000 Acres Water Companies	66,000 Acres Non- Profit Land Trusts	104,000 Acres left to achieve target	

Of the open space goal of 21% by 2023 (i.e., 673,210 acres), approximately 510,249 acres are conserved (as of December 31, 2019), or 76% of the open space goal comprising 261,806 acres of state (i.e., 82% of the 10% state target) and 248,953 acres of partner (i.e., 71% of the partner target) – leaving an estimated 162,451 acres of open space left to achieve.

If the average land acquisition cost is \$9,000 per acre, then approximately \$1.5 billion of public and private investment in land conservation would be needed to acquire and protect over 160,000 acres of open space in order to achieve the 21% target.²²

6. Funding and Financing Programs

The following is an alphabetical breakdown of the current funding (i.e., grants) programs in support of “land conservation” in Connecticut, including, but not limited to:

- **Agriculture Conservation Easement Program** (“ACEP”) – protects the agriculture viability and related conservation values of eligible land through agricultural land easements that help private and tribal landowners, land trusts, and other entities such as state and local governments protect croplands and grasslands on working farms and ranches by limiting non-agricultural uses of the land through conservation easements. Under the Land Easement component, the Natural Resources Conservation Service (“NRCS”) of the USDA, may contribute up to 50 percent of the fair market value of the agricultural land easement, and up to 75 percent where NRCS determines that grasslands and special environmental significance will be protected. Projects must have non-federal matching funds in hand.

¹⁹ 33 locations

²⁰ 107 locations

²¹ Including wildlife management areas, fish hatcheries, flood control, natural area preserve, water access, wildlife sanctuaries, and other

²² It should be noted that although the definition of Open Space Land under CGS 12-107(b)(3) includes “...and not excluding farmland...”, that farmland was not included in the progress towards the open space target analysis above. If it were to be included, then it would demonstrate more progress towards the protected land goal bringing the state closer to the 21% goal, but still short of the goal. The use of “open space land” refers to public recreational use when farmlands aren’t generally accessible to the public.

- **Charter Oak Open Space Trust Account** – a defunct program for several years now, which included two accounts to fund new open space purchase programs, including 40% to the Charter Oak State Parks and Forest Account for state acquisition of open space and watershed land, and 60% to the Charter Oak Open Space Grant Program to provide grants to municipalities and nonprofit land conservation organizations to acquire open space or watershed protection land.
- **Community Forest Program** (“CFP”) – is a competitive grant program through the US Forest Service that provides financial assistance to tribal entities, local governments, and qualified conservation non-profit organizations to acquire and establish community forests that provide community benefits. Community benefits include economic benefits through active forest management, clean water, wildlife habitat, educational opportunities, and public access for recreation.
- **Connecticut Farmland Preservation Program** (CGS 7-131d) – administered by DoAg to leverage state, local, and private funds to permanently protect farms. Initiated in 1998, is funded by state bonding and the CIA, and has four (4) public policy priorities – open space (i.e., DEEP), agriculture preservation (i.e., DoAg), historic preservation (i.e., DECD), and affordable housing (i.e., CHFA).

Since 1978, DoAg has permanently protected 386 farms on 46,142 acres by awarding \$128 MM in Farmland Preservation Program grant funds (or \$2,778/acre).²³ Current law allows the Commissioner the ability to pay up to \$20,000 per acre, subject to appraisal.

- **Connecticut Open Space and Watershed Land Acquisition Grant Program** (“OSWA”) (CGS 7-131d) – a matching grants program to provide financial assistance to municipalities, land trusts, and water companies to acquire open space and watershed lands. Initiated in 1998, is funded by state bonding and the CIA, provides financial assistance to municipalities and nonprofit land conservation organizations to acquire land for open space, and to water companies to acquire land to be classified as Class I or Class II water supply property, and is administered by DEEP to leverage state, local, and private funds to create a cooperative open space acquisition program.

Since 1998, DEEP has awarded over \$150 MM in open space grant funds to protect over 41,000 acres (or \$3,659/acre).

- **Connecticut Wetland Mitigation and In Lieu Fee Program** (“ILF”)²⁴ – Per the [Clean Water Act \(CWA\)](#)—landmark environmental protection legislation passed in 1972 that applies to all waters of the United States—parties seeking to construct projects (“permittees”) that will have an impact on wetlands must take all reasonable measures to avoid such impacts, to minimize unavoidable impacts, and to provide mitigation for the remaining unavoidable impacts. On the one hand, permittees could themselves be held responsible for taking on wetland and/or stream mitigation projects, but studies have shown that many mitigation sites in southern New England have a high

²³ Status of State PACE Programs by the American Farmland Trust and USDA’s Farmland Information Center

²⁴ <https://ct.audubon.org/conservation/in-lieu-fee-program>

failure rate because they fail to meet performance standards (Minkin and Ladd, 2003). For this reason, the National Audubon Society, Inc., through its state office, Audubon Connecticut, became the “sponsor” of a Connecticut “In Lieu Fee” program as of 2013. The program allows permittees to pay a fee *in lieu of* taking on mitigation themselves. Instead, local organizations like land trusts, and other environmental nonprofits, are given the opportunity to apply for and receive grant funding to protect and enhance wetlands.

- **Forest Legacy Program** (“FLP”) – DEEP partners with the US Forest Service (“USFS”) to implement the FLP. The FLP helps to identify and conserve environmentally important forests. The program protects working forests, those forests that protect water quality and provide habitat, forest products, opportunities for recreation and other public benefits. The program encourages and supports acquisition of conservation easements. Conservation easements are legally binding agreements transferring a negotiated set of property rights from one party to another, without transferring property ownership. Most FLP conservation easements restrict development, require sustainable forestry practices, and protect various environmental values. There are also limited instances under the program where properties are purchased outright for their conservation values. In both instances, the federal government may fund up to 75% of program costs, with at least 25% coming from private, state or local sources.
- **Land and Water Conservation Fund** (“LWCF”) – LWCF is a federal program that was established by an Act of Congress in 1965 to provide funds and matching grants to federal, state and local governments for the acquisition of land and water, and easements on land and water, for the benefit of all Americans. The main emphases of the fund are recreation and the protection of national natural treasures in the forms of parks and protected forest and wildlife areas. In August 2020, the President Trump signed the Great American Outdoors Act into law, which requires that the LWCF be funded at \$900 million yearly, a significant increase from previous funding levels.
- **Long Island Sound Futures Fund** – National Fish and Wildlife Foundation (“NFWF”) and the Long Island Sounds Study’s (“LISS”) Long Island Sound Futures Fund (“LISFF”) provides grant funding for projects that support the restoration and improvement of the health of the Sound. Since 2005, the LISFF has invested \$32 MM in projects (i.e., grants ranging from \$50,000 to \$1 MM) to improve water quality, restore the natural environment, and engage and inform communities about the importance of a healthy Long Island Sound.
- **Recreation and Natural Heritage Trust Program** (“RNHT”) – administered by DEEP, is the main program to purchase or conserve state lands for conservation and public use or benefit.

Since 1998, the State Bond Commission has approved \$177 MM to go towards the RNHTP to protect over 49,000 acres (or \$3,612/acre).

- **Regional Greenhouse Gas Initiative** (“RGGI”) – funded primarily by the proceeds from the sale of RGGI allowance proceeds by energy producers, RGGI funds have been used at times to support forest conservation. In 2020, DEEP invested nearly \$1 MM of

RGGI funds to support grant programs through the CT Urban Forest Council, UConn, and DEEP's Urban Forestry program to support urban tree planting, improving the management and maintenance of existing trees and/or wooded areas, local educational, outreach or planning efforts, and community organization capacity-building that will lead to improvements in local tree canopy cover with an emphasis on environmental justice communities and tangible climate change benefits.²⁵

The following is a breakdown of the current financing (i.e., loans) programs that could support land conservation in Connecticut:

- **State Revolving Fund** ("SRF") – since 1988, Connecticut has received over \$650 MM from the federal government through the Clean Water SRF, while providing cumulative assistance (i.e., including state investment) of \$2.8 billion of investment primarily in centralized wastewater treatment infrastructure (in comparison to stormwater, energy conservation, and water conservation infrastructure).²⁶ With the passage of the bipartisan supported "Investing in Infrastructure and Jobs Act" ("IIJA" or Bipartisan Infrastructure Law "BIL") in November of 2021, there were additional resources allocated to the SRF for water quality and drinking water (i.e., \$445 million).²⁷ SRF could be used to invest in green infrastructure projects (e.g., land conservation, nature-based solutions) for both mitigation and adaptation.

Accessing funding or financing resources for land conservation in Connecticut can be difficult, as evidenced by the unlikelihood of Connecticut achieving the open space land target (i.e., 21% by 2023). Identifying new mechanisms to access additional funding and financing resources, especially those that seek to unlock more private capital investment, could provide a catalyst to increase and accelerate investment in land conservation in Connecticut. The IIJA presents an opportunity to access funding and financing resources through formula or competitive grants for "land conservation".

7. Other Programs

The following are other items of note with respect to "land conservation":

- **No Child Left Inside** – launched in 2006, *No Child Left Inside*[®] is a promise to introduce children to the wonder of nature – for their own health and well-being, for the future of environmental conservation, and for the preservation of the beauty, character and communities of the state.
- **Passport to the Parks** – beginning in 2018, Connecticut offered all residents with Connecticut license plates on their vehicles free entry and parking at all state parks and beaches. Connecticut wants to make state parks, forests, trails, historic sites and beaches more available to residents so they can enjoy the many attractions and beauty they offer.

²⁵ "Policy on Resilient Forests for Connecticut's Future (PRFCT Future)" (December 14, 2021)

²⁶ Including Title II and VI funds – <https://www.epa.gov/sites/default/files/2021-02/documents/ct.pdf>

²⁷ https://www.whitehouse.gov/wp-content/uploads/2021/08/CONNECTICUT_The-Infrastructure-Investment-and-Jobs-Act-State-Fact-Sheet.pdf

- **State Natural Heritage, Open Space & Land Acquisition Review Board** – is an independent advisory group of volunteers appointed by the Governor and leadership within the CGA under CGS 7-131(e) to oversee OWSA and RNHT programs.
- **Land Registry** – Public Use and Benefit Land Registry (“Land Registry”) pilot portal allows users to browse state lands, determine property ownership, and research, view, and download copies of parcel information, including deeds, surveys, and land management plans. The Land Registry is valuable for many reasons. It provides a public record and notice of title, conservation purpose, funding amounts, and land management plans, when applicable. Furthermore, the Registry can potentially expand public access to open space lands purchased with State conservation funds by highlighting their locations across Connecticut.

8. Stakeholder Outreach

In an effort to understand the public policy and marketplace context for “land conservation” in Connecticut, the Green Bank met with many organizations.²⁸

These 24 organizations primarily represent non-profit organizations but include public and for-profit organizations as well.

The objectives of these one-hour conversations included:

- **Introductions** – to get a better understanding of the mission and initiatives of the various public, nonprofit, and for-profit stakeholders operating within the “land conservation” space, and to introduce the Green Bank;
- **Environmental Infrastructure** – inform the various stakeholders about the “environmental infrastructure” policy,²⁹ process the Green Bank is pursuing to develop a Comprehensive Plan, and to elicit discussion on the following areas:
 - **Relevance** – how relevant “environmental infrastructure” and its components (e.g., land conservation) are to the stakeholder’s mission and initiatives;
 - **Policies and Targets** – what local, state, and federal policies (e.g., Community Investment Act), including plans (e.g., Green Plan) are important from the stakeholder’s perspective, and what targets (e.g., 21% open space land by 2023) are they seeking to achieve;

²⁸ **Land Conservation** – American Forest Foundation, Audubon Connecticut, Connecticut Audubon, Connecticut Land Conservation Council, Conservation Finance Network, DEEP, Ecosystem Investment Partners, Goldman Sachs, Highstead, New England Forestry Foundation, New England Society of American Foresters, Quantified Ventures, Save the Sound, The Nature Conservancy, TNC’s Nature Vest Program, and Yale Forest School
Parks and Recreation – Connecticut Forest and Parks Association, Connecticut Greenways Council, Connecticut Recreation and Parks Association, DEEP, Green Eco Warriors, Keney Park Sustainability Project, Sierra Club, Trust for Public Lands, and Urban Resources Initiative.

²⁹ Public Act 21-115 – An Act Concerning Climate Change Adaptation”

- **Metrics** – what are the key metrics stakeholders believe are important in terms of monitoring and evaluating success from investments in “environmental infrastructure” improvements and “land conservation”;
- **Vulnerable Communities** – how does the stakeholder’s organization think about the impacts that must be addressed from climate change to build the resilience of vulnerable communities; and
- **Stakeholder Identification** – who else should the Green Bank meet with on the topic.

From these conversations, the Green Bank was able to develop a better understanding as to the role it might play in terms of financing “land conservation” from the perspective of its mission – to confront climate change.

9. Findings

Based on the various meetings with public, nonprofit, and private stakeholders, the following are key findings with respect to land conservation (it should be noted that additional findings have been generalized in the footnote):³⁰

- **Consistent with Mission to Confront Climate Change** – land conservation reduces GHG emissions (e.g., preventing forest conversion to development, better forest management practices, substituting wood for steel in building materials, and storing carbon in new construction) (see Table 3) and increases resilience (e.g., flood protection, stormwater management), and therefore is consistent with the Green Bank’s mission to “confront climate change” through the protection, management, and/or restoration of open space land (e.g., forests, wetlands, grasslands, farmlands, timberlands, grazing lands) – see Figure 5.

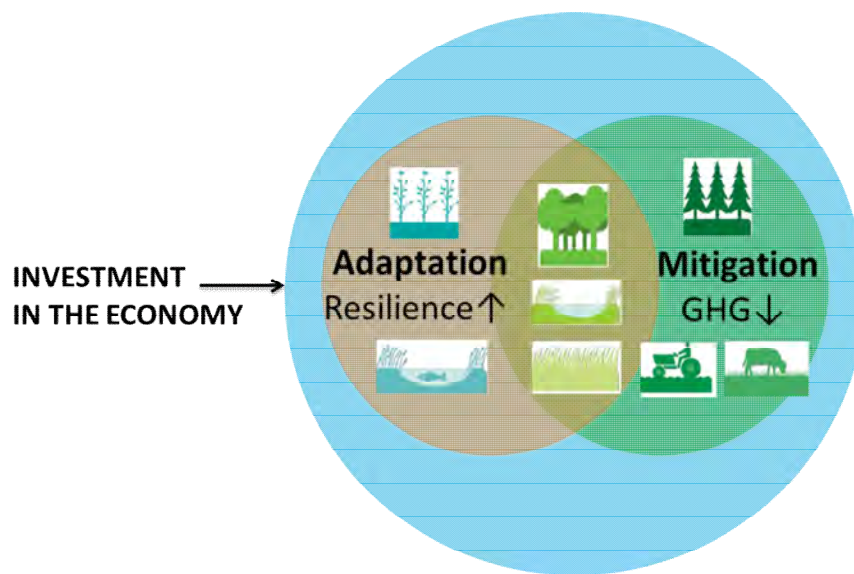
Table 3. Carbon Emissions, Foregone Sequestration, Total Opportunity from Avoided Deforestation (MMTCO₂e/Year/Acre)³¹

	Carbon Emissions		Foregone Sequestration		Total Opportunity	
	1990s	2000s	1990s	2000s	1990s	2000s
CT	0.35	0.42	0.08	0.09	0.43	0.51

³⁰ Additional findings – land conservation and nature-based solutions are infrastructure, adaptation is community-centered and important for community engagement, Connecticut is along important ecosystem migration routes for wildlife, Nature Vest is a “green bank,” policies are important for performance-based environmental outcomes (i.e., pay for performance) environmental markets requires lawyers (i.e., public policy) and scientists (i.e., pre and post project impacts)

³¹ Williams CA, Hasler N, Xi L (2021) “Avoided Deforestation: A Climate Mitigation Opportunity in New England and New York”, a report prepared for the United States Climate Alliance Natural and Working Lands Research Program, pp.1-42.

Figure 5. Impact of Investment in Land Conservation – Increase Resilience and Reduce GHG Emissions



- **Must Access Federal Resources** – leverage Green Bank assets to successfully access formula grant or competitive solicitations from federal sources that can be efficiently and effectively invested by state and local partners (e.g., land trusts, non-profits, etc.).

It should be noted that although the Green Bank can't access the SRF,³² that \$445 million of additional SRF resources will be received by Connecticut over five years through the IIJA – and SRF resources can be directed towards green infrastructure projects (e.g., land conservation, nature-based solutions) as demonstrated by TNC and Nature Vest.³³

- **Money is Not Always the Problem** – as important as local, state, federal, and private funding and financing resources are, sometimes not having enough people, having onerous processes, an inability to speak to or monetize co-benefits (e.g., job creation, resilience), or lack of understanding of important tools (e.g., conservation finance) can substantially inhibit progress towards increasing investment in land conservation. There is also an opportunity to prioritize and engage with a broader representation of Connecticut communities in addressing environmental infrastructure that has multiple benefits – it will be important to identify opportunities that enable investment in projects that provide numerous outcomes.
- **Need Mechanisms to Monetize Environmental Markets** – stakeholders recognize that environmental markets (e.g., carbon offsets, ecosystem services, resource certification) may be able to provide additional sources of revenue (e.g., from compliance, voluntary, and/or other markets) to finance projects (e.g., proceeds from revenue bonds). For example, carbon stocks are generally higher in older forests, while

³² Per Public Act 21-115

³³ Cumberland Forest Project conserving 253,000 acres of conservation easement along Central Appalachia from Kentucky to Virginia. <https://www.nature.org/en-us/magazine/magazine-articles/cumberland-forest-project/>

the amount of carbon stock added in a given year is higher in younger forests.³⁴ In Connecticut, the cost of climate mitigation from avoided deforestation is between \$10 (i.e., in parts of Litchfield County) to over \$500 (i.e., in all of Fairfield County) per MTCO₂e.³⁵ Successful projects require public recognition of environmental commodities (i.e., through public policy and compliance markets, procurement, or other means), significant potential (i.e., private landowners of forests with strong GHG mitigation and/or resilience potential), credible partners (e.g., science-based nonprofit conservation organizations, credit-worthy long-term purchasers of carbon offsets), and reliable monitoring and evaluation.

- **Impact Metrics** – the following is a “high level” breakdown of the types of metrics appropriate for land conservation – see Table 4.

Table 4. Relevant Metrics Identified by Stakeholders on Land Conservation

Inputs	Outputs	Outcomes
<ul style="list-style-type: none"> ○ Investment in projects ○ Sources of public (e.g., local, state, federal) and private funds ○ Leverage (i.e., public vs. private funds) ○ Individual investment (e.g., Community Match Fund, Green Liberty Bonds and Notes) ○ Funding (i.e., grants) vs. financing (i.e., loans) ○ Technical assistance (e.g., climate-smart practices) ○ Protected lands (e.g., conservation easements) supporting local needs ○ Access to land 	<ul style="list-style-type: none"> ○ # of projects ○ Location of projects ○ Quantity of land conserved (e.g., acres, restrictions, use, easements) ○ Quality of land conserved (e.g., ecosystem services) ○ Reduction in land loss to development ○ Urban tree canopy cover ○ Renewable energy (e.g., solar PV, wind) on forestland ○ Increased engagement of BIPOC community to land conservation ○ Sustainably managed lands ○ Better and easier access to information ○ Increase in cash flow to property owners 	<ul style="list-style-type: none"> ○ GHG emissions reduced or sequestered ○ Resilience improvement (e.g., # people at reduced risk of flooding, heat exposure) ○ Comparative benefits between project types (e.g., coastal wetlands vs. inland wetlands) ○ Water quality improvement (e.g., stormwater management, nitrogen sediment in streams) ○ Jobs created ○ Land use and zoning (e.g., housing vs. land conservation vs. renewable energy siting) ○ Greater public access ○ Leadership of BIPOC communities in building resilience for their own communities ○ Advancements in public policy to recognize the value of land conservation (e.g., tax credits, carbon offsets, ecosystem services, urban conservation, rural development, pay for performance)

³⁴ Williams CA, Hasler N, Xi L (2021) “Avoided Deforestation: A Climate Mitigation Opportunity in New England and New York”, a report prepared for the United States Climate Alliance Natural and Working Lands Research Program, pp.1-42.

³⁵ Ibid (21)

		<ul style="list-style-type: none"> ○ Strengthened municipal plans that prioritize “no net loss of core forests” ○ Increased investments in land conservation and greenspace development viewed as a community necessity and essential component of sustainable community ○ Health benefits ○ Wildlife habitat ○ Timber for building or wood products that store carbon for decades
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It is important to note that effective measurement of data on the benefits of environmental commodities (e.g., carbon offsets, ecosystem services) is vital to supporting compliance, voluntary, and other markets (e.g., FSC certification, Connecticut Grown, climate-smart practices).

- **Vulnerable Communities** – not enough nature-based solutions and green spaces in urban communities, which results in investments in gray infrastructure (e.g., wastewater treatment plants) vs. green infrastructure (e.g., nature-based solutions, urban tree canopy cover, parks) thereby increasing, for example, energy usage, urban heat island effects, and air pollution which disproportionately impacts vulnerable communities as a result of climate change. Inequitable access to the benefits of open space results in compounded challenges in vulnerable communities. Benefits include improved health, better air and water quality, and increase in quality of life connected to open space and natural spaces. Increase in development, especially poorly planned development, leads to greater demand on gray infrastructure, which adversely impacts vulnerable communities (e.g., flooding, pollution).

These are the key findings from the stakeholders on land conservation.

10. Opportunities

The following is a list of opportunities for consideration by the Green Bank given the broad categories of information and data, environmental markets and conservation finance, funding and financing sources, and other potential opportunities:

1. **Information and Data** – as a foundation, access to high quality information is important from which to base investment decisions. Stimulating further investment in land conservation may require the Green Bank supporting research (e.g., economic value of land conservation) to identify opportunities that advance public policy to create investment opportunities that support target outcomes (e.g. nature-based solutions, urban climate mitigation and resilience) through community-led initiatives. The following is a breakdown of opportunities for consideration with respect to information and data:

- A. **Climate Change Vulnerability Index** (“CCVI”)³⁶ – including Social Vulnerability (“SV”) mapping created for Resilient Connecticut,³⁷ is an index-based spatial model assembled by the Connecticut Institute for Resilience and Climate Adaptation (“CIRCA”) that identifies community vulnerability to flood, wind, and heat-related impacts of climate change. The CCVI characterizes areas based on an equation using sensitivity³⁸ plus exposure³⁹ minus adaptive capacity.⁴⁰ The CCVI can be used to assist with resiliency planning and to make educated decisions about future development and green infrastructure investment. The Green Bank should consider adopting the CCVI, and/or SV mapping, as a component of the “vulnerable communities” definition to (1) identify areas of investment with respect to land conservation, and (2) assess risk from existing investments in infrastructure.
- B. **Pipeline Assessment** – work with CIRCA and DEEP to continuously build and assess the pipeline of potential GHG emission mitigation and climate change adaptation and resilience projects (e.g., type, size, scope, estimated impact, location) related to land conservation and nature-based solutions (e.g., coastal wetlands, forests).
- C. **Yale School of the Environment** – Yale School of the Environment, and its work supporting conservation finance (e.g., partnership with the Conservation Finance Network, Tools for Engaging Landowners Effectively or “TELE”)⁴¹ presents a unique opportunity to continuously inform and develop conservation finance practitioners in Connecticut. The Green Bank should consider providing local stakeholders with access to information (e.g., promoting Conservation Finance Network) and professional development opportunities (e.g., sponsorship of bootcamps on conservation finance) to accelerate the advancement and practice of conservation finance in Connecticut.
- D. **Land Value, Carbon and Ecosystem Services Potential** – knowing the average cost of acquiring land (i.e., \$ per acre), including those open space lands that are inland, as well as along coasts and rivers, and the carbon storage and sequestration and ecosystem service value and potential of such lands, will help the Green Bank determine how the investment of Green Bank funds while mobilizing private investment can maximize GHG emissions reduced, and resiliency against climate change increased. The Green Bank should consider supporting or conducting such a study to understand the baseline potential for nature-based solutions to confront climate change in Connecticut.

³⁶ <https://resilientconnecticut.uconn.edu/wp-content/uploads/sites/2761/2021/10/CCVI-Fact-Sheet-2.pdf>

³⁷ <https://resilientconnecticut.uconn.edu/resources/>

³⁸ The degree to which a built, natural, or human system will be impacted by changes in climate conditions.

³⁹ The degree of the stress that certain asset is going through with climate variability. This includes changes such as the magnitude and frequency of extreme events.

⁴⁰ The ability of a system to adjust to changes, manage damages, take advantage of opportunities, or cope with consequences.

⁴¹ <https://www.engaginglandowners.org/> - TELE is a project of the Sustaining Family Forests Initiative, which is a collaboration between the [Family Forest Research Center](#), the [U.S. Forest Service](#), the [Center for Nonprofit Strategies](#), and the [Yale School of the Environment](#), aimed at gaining and disseminating comprehensive knowledge about family forest owners throughout the United States.

- E. **Global Warming Solutions Act** – as recommended by the Policy on Resilient Forests for Connecticut’s Future (“PRFCT”), support advocacy efforts to amend Public Act 08-98 to include definitions for “carbon sink” and “negative emissions”, and annual monitoring and reporting of CO2 sequestered, and carbon stored through biological processes alongside the data reported on the transportation, electricity, and other sectors.
2. **Environmental Markets and Conservation Finance** – in terms of identifying potential carbon offset and/or ecosystem services revenue streams within compliance and voluntary markets that can support financing of land conservation projects, the following is a breakdown of opportunities for consideration with respect to environmental markets and conservation finance. It should be noted that there is an important role for public policy and government to encourage the creation of environmental value through measurable outcomes-based performance.
- A. **Performance-Based Land Conservation** – whether it be forest carbon markets within compliance (e.g., California cap-and-trade program)⁴² or voluntary (e.g., Amazon purchasing offset credits) markets, or ecosystem services markets for “pay for performance” restoration projects (e.g., reducing nitrogen discharge in rivers in Maryland), producing and selling measurable benefits can generate revenues to support private investment in land conservation projects.
- B. **Conservation Finance Policy** – modelled after clean energy policy in Connecticut,⁴³ or passed Senate Bill 348 (i.e., “Conservation Finance Act” in Maryland), consider “pay for performance” conservation finance policies in Connecticut that reward private investment in green and blue infrastructure projects that deliver measurable and verified environmental outcomes (e.g., carbon offsets, ecosystem services). It is important to put value on the land (e.g., forest carbon, forest certification) instead of always taking it off the land (e.g., timber) by implementing floor prices, guarantees, and hosting auctions for the sale of ecosystem services, allocating public funds for development of investment ready nature-based solutions for land and sea, providing catalytic capital for blended finance.

For example, research conducted by Earth Economics for Audubon Connecticut, calculated the ecosystem services value of the East River Marsh as the following – see Table 5.⁴⁴

Table 5. Annual, per Acre Benefits from the East River Marsh

Benefit	Low Marsh	High Marsh
<i>Resilience</i>		

⁴² <https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program/arb-offset-credit-issuance>

⁴³ Zero and low emission renewable energy credit programs (i.e., “ZREC” and “LREC”) provided performance-based incentives per MWh of Class I renewable energy produced to support Connecticut’s implementation of its renewable portfolio standard (“RPS”).

⁴⁴ East River Marsh – Preserving March Resilience for Coastal Communities by Earth Economics for Audubon (2021)

Flood Protection	\$506	\$506
Storm Protection	\$5,872	\$14,680
<i>Environment</i>		
Carbon Sequestration	\$2,203	\$4,047
Existence Value ⁴⁵	-	\$1,748
Habitat Value	\$1,232	\$1,232
Water Quality	\$2,803	\$2,803
<i>Community</i>		
Aesthetic Value	\$952	\$952
Recreation	\$382	\$382
Annual Total	\$13,951	\$26,350

- C. Forest Carbon Market Partnerships** – partner with land conservation non-profit organizations (e.g., American Forest Foundation, TNC-Nature Vest, New England Forestry Foundation, NCx) to invest Green Bank capital (i.e., debt and/or equity) into structures (e.g., Family Forest Carbon Program, Exemplary Forestry Investment Fund) that support small landowner participation in forest carbon markets and other ecosystem services in Connecticut (e.g., Pawcatuck Borderlands, Quabbin Corridor, and Berkshire Wildlife Linkage).^{46,47,48} Consider adopting or developing a Verra standard for forest carbon offsets.⁴⁹
- 3. Funding and Financing Sources** – identifying additional funding (i.e., grants) and financing (e.g., loans) that can increase and accelerate investment, the following is a breakdown of opportunities for consideration with respect to funding and financing of land conservation:
- A. Green Liberty Bonds** – leverage the strength of the Green Bank balance sheet, with the award-winning climate bond structure of the Green Liberty Bonds modelled after the War Bonds of the 1940’s, to support investments in land conservation:
- i. Pilot Revolving Loan Fund for Buy-Protect-Sell** – modelling the Conservation Fund’s successful \$150 MM green bond issuance in 2019 (i.e., 10-year rated A3 by Moody’s), which created the Working Forest Fund,⁵⁰ working with DEEP, DoAg, and nonprofit land conservation

⁴⁵ Existence value is the value that people place on knowing certain ecosystems or species exist, even if they never plan to use or benefit from those ecosystems or species in any direct way.

⁴⁶ <https://www.forestfoundation.org/what-we-do/increase-carbon-storage/family-forest-carbon-program/>

⁴⁷ <https://newenglandforestry.org/learn/initiatives/efif/>

⁴⁸ “A Safe Harbor for Nature: New England’s Resilient and Connected Network of Lands” by TNC.

⁴⁹ <https://verra.org/worlds-most-widely-used-standard-for-carbon-offset-credits-strengthened-to-advance-forest-preservation-and-restoration/>

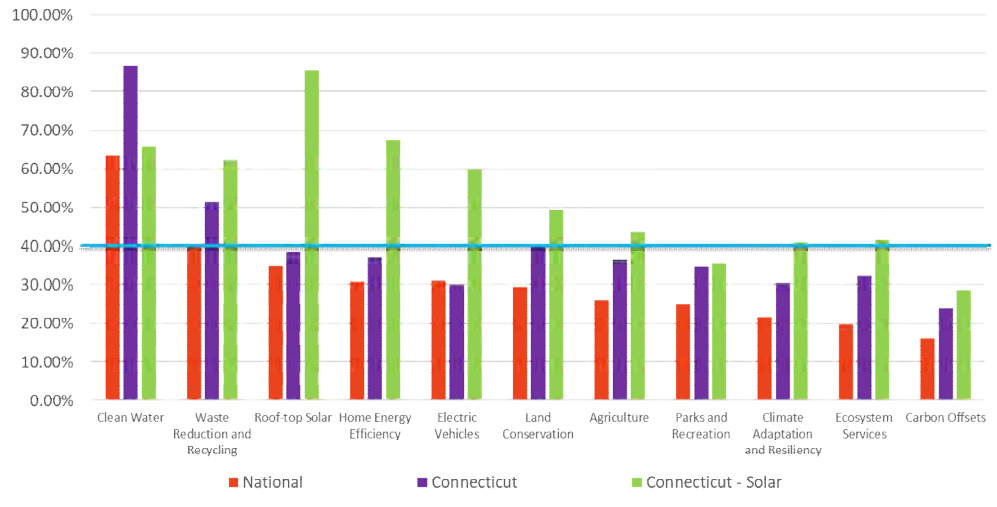
⁵⁰ The Working Forest Fund invests green bond proceeds to buy the most at-risk private forests. Once it owns the forest, it protects the land (i.e., easement), develops sustainable harvesting, wildlife, and habitat restoration plans, and then resells the land to private or public buyers to repay the loan. This fund has permanently conserved 500,000 acres, permanently storing over 210 MMTCO₂e.

organizations, provide loans to land trust to help them move quickly to permanently protect critical open space from development.

- ii. **Infrastructure Modernization** – working with DOAg, to identify opportunities to invest in forestry industry infrastructure modernization projects (e.g., portable mills) that would support climate-smart practices and products to develop and grow in the Connecticut marketplace.

From research conducted by the Green Bank, it can be seen that retail investors in bonds are interested in land conservation, including citizens who are also interested in investing in rooftop solar and home energy efficiency – see Figure 6.

Figure 6. Retail Investor Use of Proceed Interest in Clean Energy and Environmental Infrastructure



B. Partnership for Climate-Smart Commodities – working with UCONN and DoAg, UCONN submitted a \$50 MM proposal, that would have been matched by a \$25 MM Green Liberty Bond, through the \$1 billion competitive solicitation of the United States Department of Agriculture’s (“USDA”) Commodity Credit Corporation (i.e., USDA-NRCS-COMM-22-NOFO0001139) in response to the climate crisis by supporting actions within the agriculture sector to produce climate-smart commodities.⁵¹ As the lead primary applicant, UCONN would support producers adopt and sustainably implement climate-smart practices, and as the co-lead, the Green Bank, with its expertise from the Residential Solar Investment Program (see Figure 9), would adapt the clean energy model to climate-smart agriculture (see Figure 10). Included with the proposal is \$5 MM for performance-based incentives based on certified and verified carbon offsets. The project submitted by UCONN, in the end, wasn’t supported by the USDA. However, DoAg subsequently released a \$14 MM grant program in support of climate smart agriculture in Connecticut.

⁵¹ Defined as an agricultural commodity that is produced using agriculture (i.e., farming, ranching, or forestry) practices that reduce greenhouse gas emissions or sequester carbon.

Figure 7. Residential Solar Investment Program – From SHRECs to Green Liberty Bonds

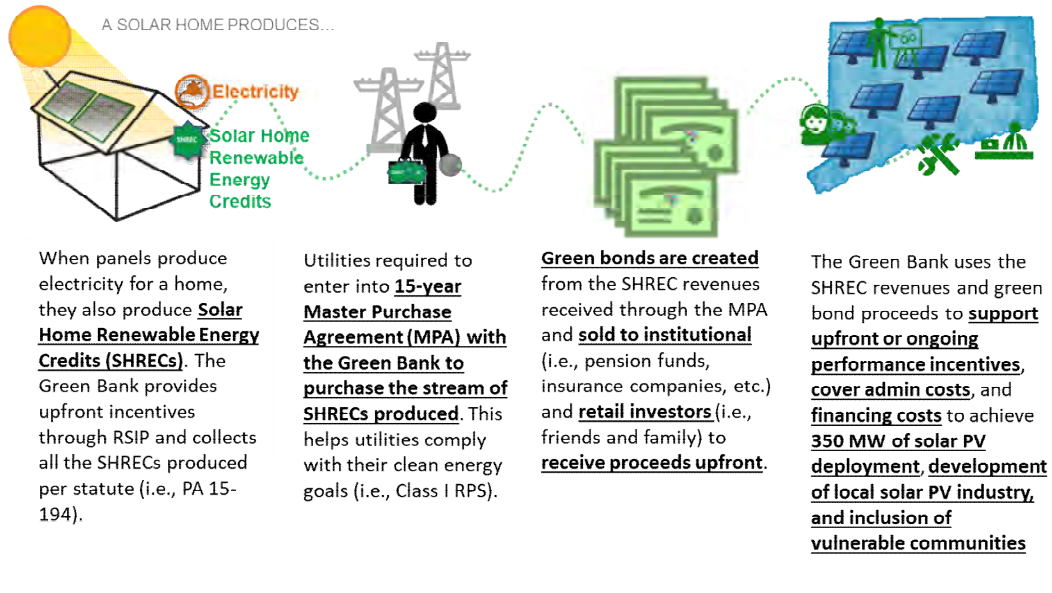
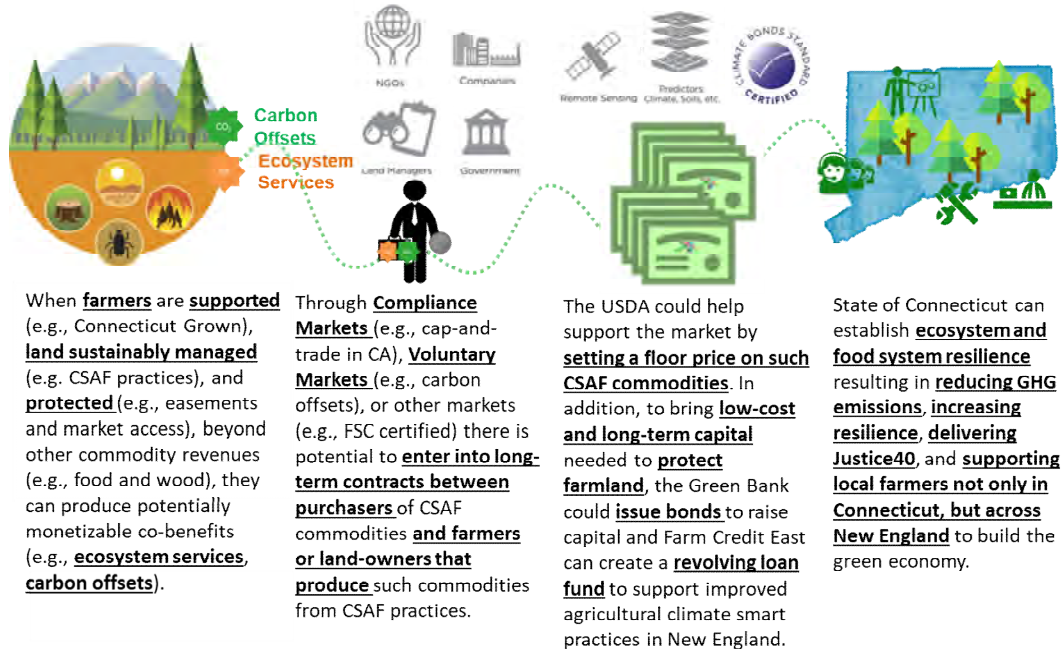


Figure 8. Climate Smart Controlled Environment Agriculture (CEA) for Tribes and Small Farms in New England: Building Profitable, Sustainable and Resilient Farms



C. **Community Match Fund** (“CMF”) – a program of Sustainable CT, the Community Match Fund provides fast, flexible funding, and support for community engagement on a wide-range of sustainability projects. This societal value uses an innovative, online tool to connect grant contributions from the

“crowd,” which are matched by various donor interests, including, but not limited to individuals, foundations, and the State of Connecticut. As of January 1, 2022, the Fund has raised \$1.3 MM from nearly 10,000 individual contributors, which was matched by \$1.1 MM from various sponsors, and supported 195 projects. The Green Bank could consider working with entities like Sustainable CT, with tools like the CMF, to enable funding for land conservation to be matched by the crowd, while also ensuring that equity and vulnerable communities are front and center in receiving the benefits of such investment.

- D. **State Revolving Funds** – although not a Green Bank resource, existing and additional SRF resources could be used by the state to provide low-cost and long-term capital to finance green infrastructure projects (e.g., land conservation) in Connecticut, or in partnership with other states across the Northeast region. The Green Bank could recommend to its state colleagues that a portion of the SRF be used for green infrastructure projects in Connecticut as is being done by other states. For example, the Rhode Island Infrastructure Bank requires municipal borrowers to identify green infrastructure projects for 10% of the value of their clean water loans; the Commonwealth of Virginia invested \$20 MM of its SRF in a \$130 MM transaction to protect 253,000 acres across three-states to acquire land in Central Appalachia. Regional collaboration on the SRF and land conservation could target focal landscapes in the Berkshire Wildlife Linkage (i.e., 1,579,566 acres in the landscape with 31% protected including lands in MA, NY, and VT), Quabbin Corridor (i.e., 475,864 acres in the landscape with 37% protected including lands in MA and NH), and/or Pawcatuck Borderlands (i.e., 473,397 acres in the landscape with 23% protected including lands in MA and RI) – see Figure 9.⁵²

Figure 9. Regional Opportunity for the State Revolving Fund and Nature-Based Solutions to Climate Change



⁵² “A Safe Harbor for Nature – New England’s Resilient and Connected Network of Land” by The Nature Conservancy

4. **Other Potential Opportunities** – there are a number of other potential opportunities that can support land conservation and the advancement of conservation finance, including:
- A. **Clean Energy and Sustainability Accelerator** – within the climate change programs proposed as part of the Build Back Better Act (“BBBA”) is the Clean Energy and Sustainability Accelerator (“CESA”). Modelled after the Connecticut Green Bank, the \$29 billion allocated under CESA would provide state and local government with access to capital to finance projects that reduce GHG emissions and increase resilience, including nature-based solutions.
 - B. **Climate Conservation Corps** – within the climate change programs proposed as part of the BBBA is the Climate Conservation Corps. Modelled after the Civilian Conservation Corps under President Franklin Roosevelt, the climate program centered around equity and environmental justice, could hire hundreds of thousands of young people to help restore forests and wetlands. The Green Bank could include within its investment activity, the requirement for developers to include Climate Conservation Corps members. If Climate Conservation Corps is passed through the BBBA, then Connecticut should prioritize the involvement of BIPOC⁵³ populations and hire a leader from the BIPOC community to run it.
 - C. **30% by 2030 Goal** – to continue to increase the role land conservation has on mitigating GHG emissions and making Connecticut more resilient to the impacts of climate change, consideration could be given to increase the open space land target policy from 21% by 2023 to 30% by 2030, which would include farmland within the overall open space land target. Supporting the “no net loss of forest” goal and related goals such as increasing urban tree canopy are also important.

These are a few of the opportunities identified by the Green Bank to support its mission and advance land conservation and conservation finance in Connecticut.

Developing a method for prioritizing what opportunities under consideration are ultimately pursued, given the limited human and financial resources, and organizational structure of the Green Bank, is an activity for a later date.

11. References

In addition to the conversations with stakeholders, the Green Bank reviewed the following documents to support its findings and opportunities:

- **Green Plan** – Comprehensive Open Space Acquisition Strategy (2016-2020 Green Plan)
- **Forest Action Plan** – Connecticut’s 2020 Forest Action Plan
- **Governor’s Council on Climate Change** – Taking Action on Climate Change and Building a More Resilient Connecticut for All (January 2021)

⁵³ Black, Indigenous, or People of Color

- **Working and Natural Lands Working Group** – reports by Forests, Rivers, and Wetlands Subgroups of the Governor’s Council on Climate Change (November 2020)
- **WAP** – 2015 Connecticut Wildlife Action Plan

12. Definitions

The following are important definitions when it comes to land conservation in Connecticut:

- **Conservation Easement** – is a deed restriction or deed covenant that landowners voluntarily place on part or all of their land. The easement limits development in order to protect the land’s natural resources.
- **Conservation Restriction** (CGS 47-42a)⁵⁴ – conservation restriction means a limitation, whether or not stated in the form of a restriction, easement, covenant or condition, in any deed, will or other instrument executed by or on behalf of the owner of the land described therein, including, but not limited to, the state or any political subdivision of the state, or in any order of taking such land whose purpose is to retain land or water areas predominantly in their natural, scenic or open condition or in agricultural, farming, forest or open space use.
- **Core Forest** – forests that are at least 300 feet from non-forest development (e.g., roads, bridges, farms), and are classified as core forests.⁵⁵ Small, medium and large core forests are patches that are 250 acres, 250-500 acres, and 500+ acres respectively.
- **Environmental Infrastructure** – means structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to, carbon offsets and ecosystem services.
- **Forest Land** (CGS 12-107(b)(3))⁵⁶ – forest land means any tract or tracts of land aggregating twenty-five acres or more in area bearing tree growth that conforms to the forest stocking, distribution and condition standards established by the State Forester pursuant to subsection (a) of section 12-107d, and consisting of (A) one tract of land of twenty-five or more contiguous acres, which acres may be in contiguous municipalities, (B) two or more tracts of land aggregating twenty-five acres or more in which no single component tract shall consist of less than ten acres, or (C) any tract of land which is contiguous to a tract owned by the same owner and has been classified as forest land pursuant to this section.
- **Open Space Land** (CGS 12-107(b)(3))⁵⁷ – open space land means any area of land, including forest land, land designated as wetland under section 22a-30 and not excluding farm land, the preservation or restriction of the use of which would (A) maintain and enhance the conservation of natural or scenic resources, (B) protect

⁵⁴ https://www.cga.ct.gov/current/pub/chap_822.htm

⁵⁵ http://clear.uconn.edu/projects/landscape/v2/forestfrag/measuring/core_explained.htm

⁵⁶ https://www.cga.ct.gov/current/pub/chap_203.htm#sec_12-107b

⁵⁷ https://www.cga.ct.gov/current/pub/chap_203.htm#sec_12-107b

natural streams or water supply, (C) promote conservation of soils, wetlands, beaches or tidal marshes, (D) enhance the value to the public of abutting or neighboring parks, forests, wildlife preserves, nature reservations or sanctuaries or other open spaces, (E) enhance public recreation opportunities, (F) preserve historic sites, or (G) promote orderly urban or suburban development.

- **Preservation Restriction** (CGS 47-42a)⁵⁸ – preservation restriction means a limitation, whether or not stated in the form of a restriction, easement, covenant or condition, in any deed, will or other instrument executed by or on behalf of the owner of land, including, but not limited to, the state or any political subdivision of the state, or in any order of taking of such land whose purpose is to preserve historically significant structures or sites.
- **Preserved Open Space** – any area of land that has been acquired and is used for open space purposes, including DEEP’s State Parks, State Forests, Wildlife Areas, and Class I and II watershed lands.
- **Protected Open Space** – any area of land with a restriction that would limit its use to open space, including lands subject to conservation restrictions, deed restrictions, or certain reserved rights.
- **Resilience** – means the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from deliberate attacks, accidents or naturally occurring threats or incidents, including, but not limited to, threats or incidents associated with the impacts of climate change.
- **Vulnerable Communities** – means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, (1) low and moderate income communities, (2) environmental justice communities pursuant to section 22a-20a, (3) communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, (4) populations with increased risk and limited means to adapt to the effects of climate change, or (5) as further defined by the Department of Energy and Environmental Protection in consultation with community representatives.

⁵⁸ https://www.cga.ct.gov/current/pub/chap_822.htm



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9/22

environmental infrastructure primer

parks and recreation



Environmental Markets



Land Conservation



Parks and Recreation



Agriculture



Water
(Coming soon in 2023)



Waste and Recycling

(Coming soon in 2024)



Parks and Recreation

Primer

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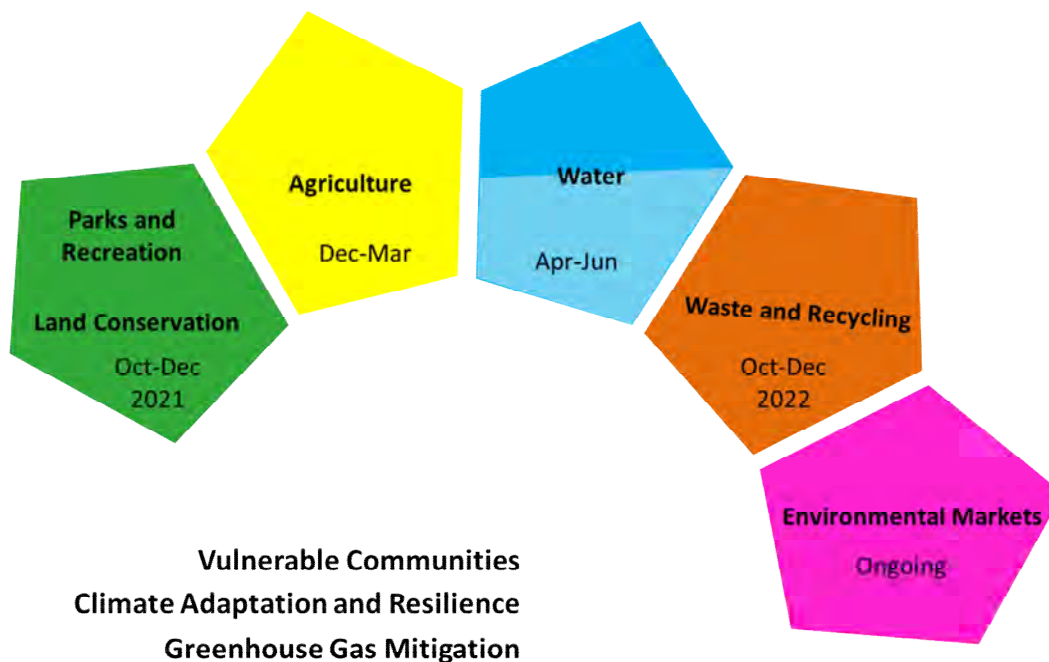
PARKS AND RECREATION

RESEARCH ON ENVIRONMENTAL INFRASTRUCTURE

1. Introduction

In October of 2021, the Connecticut Green Bank (“Green Bank”) developed a plan upon which it was going to engage stakeholders to understand the various components of “environmental infrastructure” – see Figure 1. With its mission to “confront climate change by increasing and accelerating investment into Connecticut’s green economy to create more resilient, healthier, and equitable communities,” within each component of “environmental infrastructure,” the cross-cutting issues of reducing greenhouse gas emissions (“GHG”), increasing climate adaptation and resilience, and enabling investment in vulnerable communities was explored.

Figure 1. Process to Understand Components of Environmental Infrastructure



This primer reflects the observations, findings, and initial recommendations from the conversations with stakeholders and research conducted on parks and recreation.

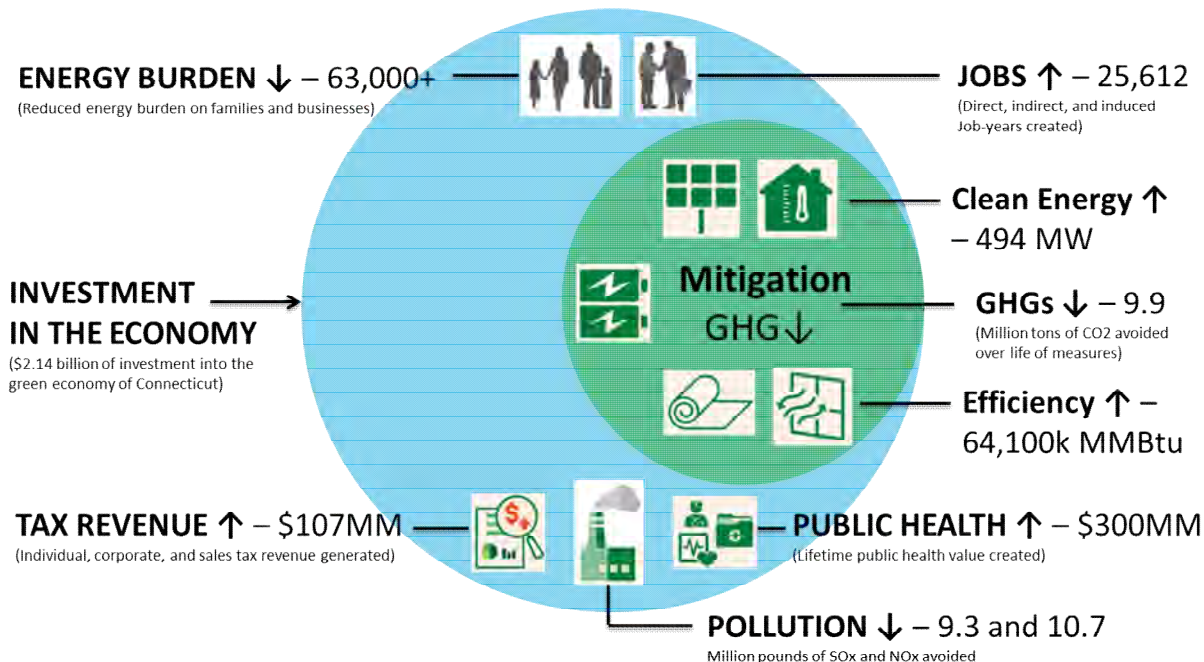
2. Overview

On July 6, 2021, Governor Ned Lamont signed Public Act 21-115 “An Act Concerning Climate Change Adaptation” (“the Act”) into law. The bipartisan-supported public policy was among the sixty-one (61) recommendations made by the Governor’s Council on Climate Change (“GC3”), including a recommendation to expand the scope of the Green Bank beyond “clean energy” to include “environmental infrastructure” (i.e., Recommendation #57).

Since its founding over a decade ago, the Green Bank has focused its efforts on using a limited amount of public resources to mobilize multiples of private investment in Connecticut to

increase and accelerate the deployment of “clean energy” to deliver social and environmental impact – see Figure 2.

Figure 2. Decennial Impact of the Green Bank with focus on “Clean Energy” Deployment and Mitigation of GHG Emissions



Given its mission, the Green Bank helps the State of Connecticut achieve its ambitious public policy objectives (e.g., GHG emission reductions targets, renewable portfolio standards). In so doing, by 2025, no less than 40 percent of investment and benefits from its programs are to be directed to vulnerable communities.¹

The Act, expands the scope of the Green Bank beyond “clean energy” to include “environmental infrastructure,” and includes the following key provisions:

- **Definition** – “environmental infrastructure” means structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to, carbon offsets and ecosystem services;
- **Comprehensive Plan** – requirement for the Green Bank to develop a Comprehensive Plan² prior to implementing any programs or initiatives related to “environmental infrastructure”;

¹ “Vulnerable communities” means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, low and moderate income communities, environmental justice communities pursuant to section 22a-20a, communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, populations with increased risk and limited means to adapt to the effects of climate change, or as further defined by DEEP in consultation with community representatives.

² https://www.ctgreenbank.com/wp-content/uploads/2021/07/3_Comprehensive-Plan_FY-2020-and-Beyond_Final.pdf

- **Reporting** – inclusion of the Banks Committee and the Environment Committee, alongside the Energy and Technology Committee and Commerce Committee in terms of reporting; and
- **Bonding** – the ability to issue 25-year bonds for “clean energy” and 50-year bonds for “environmental infrastructure” (i.e., no more than the useful life of the projects), supported by the Special Capital Reserve Fund (“SCRF”), for up to 25 years to improve the rating of the bonds issued.

This document attempts to summarize the findings from the research and outreach efforts conducted by the Green Bank³ on “parks and recreation” from October 2021 through January of 2022 and includes the following sections: (A) overview, (B) key public policies, (C) market potential, (D) target, (E) funding and financing programs, (F) other programs, (G) stakeholder outreach, (H) findings, (I) opportunities, (J) history of leadership and innovation, (K) references, and (L) definitions.

Infrastructure investments in “parks and recreation” can support the Green Bank’s mission by both mitigating the GHG emissions that cause climate change (e.g., carbon sinks from urban tree canopy cover) and increasing resilience against the impacts of climate change (e.g., stormwater management through urban parks).

3. Key Public Policies

The following are key public policies that advance “parks and recreation” in Connecticut, including, but not limited to:

1. **State Plan of Conservation and Development** (CGS 16a-24) – is an overarching statement of state policy in matters pertaining to land and water resource conservation and development. The Office of Policy and Management (“OPM”) prepares revisions to the State Conservation and Development Plan (“State C&D Plan”) on a recurring 5-year cycle and submits it for adoption by the Connecticut General Assembly (“CGA”). Once adopted, the State C&D Plan is then implemented by state agencies whenever they undertake certain actions.⁴ The current State C&D Plan (i.e., for 2018-2023), includes the relevant “clean energy” and “environmental infrastructure” items, including, but not limited to:
 - A. **Greenhouse Gas Mitigation** – reducing carbon dioxide emissions in the state consistent with the recommendations of the Connecticut Climate Change Preparedness Plan (i.e., 5.10);
 - B. **Climate Adaptation and Resilience** – including developing and deploying innovative energy technologies, and promoting distributed generation and microgrids to provide reliable electrical power or energy-dependent community services during outages and peak demand periods (i.e., 1.12) and minimizing the potential risks and impacts from natural hazards by considering potential impacts of climate change on existing and future development (i.e., 1.13); and

³ Led by Bryan Garcia (President and CEO) and Ashley Stewart (Consultant)

⁴ Quasi-publics are not subject to this requirement

- C. **Parks and Recreation** – encouraging and promoting access to parks and recreational opportunities, including trails, greenways, community gardens, and mixed-income housing (i.e., 2.8) and protecting the ecological, scenic, and recreational value of lakes, rivers, and streams by promoting compatible land uses and management practices in accordance with adopted plans.
2. **Open Space Target** (CGS 23-8)⁵ – establishes a mandate to conserve 21% (i.e., 673,210 acres) of state land area as held by open space land, with 10% from the state (e.g., forests, parks) and not less than 11% from partners (e.g., municipalities, water companies, or non-profit land conservation organizations). The Comprehensive Open Space Acquisition Strategy (or “Green Plan”)⁶ is the comprehensive strategy for achieving the state goal by 2023, which includes priorities for strategic acquisitions of open space for climate change resiliency and preserving open space in perpetuity for state lands with high conservation value.
 3. **Community Investment Act** (Public Act 05-228)⁷ – “An Act Concerning Farm Land Preservation, Land Protection, Affordable Housing and Historic Preservation,” also known as the Community Investment Act (“CIA”), CIA provides a dedicated and consistent source of funding for state preservation of open space (Department of Energy and Environmental Protection or “DEEP”), farmland (Department of Agriculture or “DoAg”), historic sites (Department of Economic and Community Development or “DECD”), and affordable housing (Connecticut Housing Finance Authority or “CHFA”). Through a \$40 surcharge on local land recordings (i.e., \$1 to Town Clerk, \$3 to local government, \$10 supplemental income to dairy farmers, and \$26 to State Treasurer), about \$22 MM is raised each year, which is equally distributed in four (4) parts to the priority funding areas.
 4. **Passport to the Parks** – beginning in 2018, Connecticut offered all residents with Connecticut license plates on their vehicles free entry and parking at all state parks and beaches. Connecticut wants to make state parks, forests, trails, historic sites and beaches more available to residents so they can enjoy the many attractions and beauty they offer. Passports to the Parks raises \$20 MM per year for park operations and maintenance through a \$5/year/vehicle motor vehicle registration fee. This policy supports parks and removes historic cost barriers to enter them.
 5. **Great American Outdoors Act** (“GAOA”) – permanently funds the Land and Water Conservation Fund (“LWCF”) at \$900 MM a year, a significant source of resources from the United States Government (“USG”) for open space and parks. GAOA also provides \$9.5 billion over five years to address longstanding maintenance backlogs in our national parks, forests, and other public lands.

In order to identify opportunities to mobilize private investment, it is important to understand the public policy context in which “parks and recreation” operates. With the focus on the Green

⁵ <https://law.justia.com/codes/connecticut/2012/title-23/chapter-447/section-23-8/>

⁶ <https://portal.ct.gov/DEEP/Open-Space/The-Green-Plan>

⁷ <https://www.cga.ct.gov/2005/ACT/Pa/pdf/2005PA-00228-R00SB-00410-PA.pdf>

Bank’s mission (i.e., confront climate change), public policy provides a mechanism to catalyze private investment.

4. Market Potential

The following is a breakdown of the market potential for “parks and recreation” from the perspective of active⁸ and passive⁹ outdoor recreation facilities, and on “land” or “water” based activities from the Statewide Comprehensive Outdoor Recreation Plan (“SCORP”) – see Table 1.

Table 1. Outdoor Recreation Facilities in Connecticut (2005)

Outdoor Recreation Type	# of Facilities	DIRPS ¹⁰ per 10,000 Residents	Ownership		
			Statewide Average	Municipal Average	Other Average
Active – Land	4,788	1.4	4%	77%	20%
Active – Water	137	0.4	2%	69%	30%
Passive – Land	1,957	1.0	27%	46%	27%
Passive – Water	1,130	1.1	22%	45%	33%
Total	8,012	1.2	14%	62%	24%

Despite the age of the data, several general observations can be made with respect to active and passive outdoor recreation, including:

- **Active Recreation** – in a state with the headquarters of the Entertainment Sports Programming Network (“ESPN”), municipalities are the dominant stakeholder when it comes to active outdoor recreation facilities, with the highest use frequency index for swimming;
- **Passive Recreation** – when it comes to passive outdoor recreation facilities, the ownership between stakeholders is dominated by:
 - **Statewide** – hunting;
 - **Municipalities** – beach, boating, fishing, gardens, historic, picnic areas, and trails with the highest use frequency index for hiking on both public and private lands;¹¹
 - **Other** – camping.

⁸ Active outdoor recreation facilities based on 2005 data (X – #) and 2017 use frequency index data, if available (# – Y), include fields, courts, and courses for baseball and softball (984 – 16.0), basketball (645 – 23.0), football (154 – 10.0), golf (125 – 13.6), multi-use (624), soccer (495 – 14.6), tennis (384 – 11.2), and volleyball (74 – 23.0), as well as playgrounds (1,065), swimming pools (137 – 60.9), and winter sports (238 – 9.3)

⁹ Passive outdoor recreation facilities based on 2005 data (X – #) and 2017 use frequency index data, if available (# – Y) include access to sites for beaches (176 – 60.1), boating (285 – 10.9), camping (88 – 13.5), fishing (669 – 19.0), gardens (109), historic landmarks (99 – 35.9), hunting (88 – 3.5), picnics (677), and trails (896 – 102.8)

¹⁰ Discrete Identifiable Recreation Places

¹¹ Managed by the Connecticut Forest and Parks Association, the Blue-Blazed Hiking System includes more than 825 miles of hiking to explore the woodlands, remote ridges, and wild places of Connecticut.

- **Access Prevention** – in terms of what is preventing access to recreation, surveys indicate that 88% and 56% of citizens get to facilities by automobile or walking, respectively, and 20% to 23% of survey respondents indicate that fees are too high and facilities are too far.

The “No Child Left Inside” and “Passport to the Parks” programs, promote Connecticut citizens enjoying active and passive outdoor recreation facilities on land or water-based activities.

The Trust for Public Land’s (“TPL”) ParkScore Index is a comprehensive rating system to measure how cities are meeting the needs for parks.¹² In an effort to assess ParkScore, the following data are for Connecticut’s “Top 10” most populated municipalities – see Table 2.

Table 2. “Top 10” Most Populated Municipalities in Connecticut and ParkScore

City	Population	Acres	% Land as Parks	Acres of Land as Parks	Acres of Parks per 10,000 Residents	# of Parks	Parks per 10,000 Residents	10-Minute Walk
Hartford	121,203	11,136	9%	1,002	83	218	18.0	99%
New Haven	130,764	11,968	12%	1,436	110	128	9.8	96%
West Hartford	63,063	13,952	20%	2,790	442	48	7.6	82%
Stamford	129,302	24,064	5%	1,203	93	54	4.2	74%
New Britain	72,303	8,576	7%	600	83	23	3.2	73%
Bridgeport	143,653	10,304	7%	721	50	35	2.4	73%
Waterbury	106,458	18,240	6%	1,094	103	30	2.8	60%
Norwalk	88,326	14,656	3%	440	50	45	5.1	55%
Bristol	59,639	16,896	4%	676	113	20	3.4	51%
Danbury	84,732	26,880	5%	1,344	159	17	2.0	37%

ParkScore provides excellent quantitative data in which to make general observations about the state of parks within a municipality in comparison to the national average. For example, the national average for the percentage of residents with a 10-minute walk to parks and the median percentage of municipal lands as parks is 55% and 15%, respectively. For example, 99% of citizens residing in Hartford have a 10-minute walk to a park, which is high compared to the national average, yet only 9% of land in Hartford is parks, which is low compared to the national average.

The quality of parks is difficult to discern. To better understand the quality of parks, TPL partnered with the Urban Resources Institute (“URI”) to compare New Haven against the

¹² The “% of Land as Parks,” “# of Parks,” and “10-Minute Walk” data were used from TPL’s ParkScore data set.

nation’s most populous cities on five (5) categories reflective of an excellent city park system: Acreage,¹³ Access,¹⁴ Investment,¹⁵ Amenities,¹⁶ and Equity¹⁷ – see Table 3.¹⁸

Table 3. TPL and URI Analysis of New Haven Compared to Other Cities

City	Overall	Acreage	Access	Investment	Amenities	Equity
New Haven, CT	60	36	95	35	71	65
Boston, MA	-	47	100	79	65	79
Baltimore, MD	-	25	81	68	40	83
Buffalo, NY	-	25	85	47	61	64

The TPL-URI research also delves deeper into the twenty (20) neighborhoods of New Haven to collect data with respect to population, acres of parks, and acres per 1,000 population, as well as demographic data including income and people of color. Based on data from TPL from 14,000 cities, parks that serve low-income households are four (4) times as crowded as parks that serve high-income households, and parks that serve people of color are five (5) times as crowded as parks that serve majority-white populations.¹⁹ Such analyses in municipalities across Connecticut could elucidate opportunities for areas of improvement, including improving the public health of residents with access to parks and the economic development impact of property values within proximity to parks.

Although Connecticut has the highest urban tree cover in the United States at 62%,²⁰ there are opportunities to improve urban tree canopy cover to reduce heat island effects in urban neighborhoods across the state that lack the shading benefits that tree canopies provide to reduce heat and improve air quality while supporting better public health.²¹ For example, Bridgeport, Hartford, and New Haven’s tree canopy cover is 27%,²² 25%,²³ and 38%²⁴ respectively.

¹³ Acreage score indicates the relative abundance of large ‘destination’ parks, which include large natural areas that provide critical mental health as well as climate and conservation benefits.

¹⁴ Access score indicates the percentage of the city’s residents that live within a walkable half-mile of a park – the average distance that most people are willing to walk to reach a destination.

¹⁵ Investment score indicates the relative financial health of a city’s park system, which is essential to ensuring parks are maintained at a high level for all to enjoy.

¹⁶ Amenities score indicates the relative abundance of six park activities popular among a multi-generational cross-section of user groups (i.e., playgrounds, basketball courts, dog parks, senior and recreation center, splashpads, and permanent restrooms).

¹⁷ Equity score indicates how fairly parks and park space are distributed within a city, including percentage of people of color and low-income households within a 10-minute walk of a park, and comparison of the amount of park space between neighborhoods by race and income.

¹⁸ For example, a score of 90 means that the municipality is within the top 90 percent across the country.

¹⁹ “The Heat is On” by The Trust for Public Lands

²⁰ Connecticut’s 2020 Forest Action Plan (p. 7)

²¹ “Tree Canopy Assessment – Southern Connecticut Region” by the Southern Connecticut Regional Council of Governments and the University of Vermont Spatial Analysis Laboratory.

²² A Report on the City of Bridgeport’s Existing and Possible Urban Tree Canopy

²³ Hartford Connecticut’s Tree Canopy Action Plan 2020

²⁴ A Report on the City of New Haven’s Existing and Possible Urban Tree Canopy

5. Target

There is no public policy target for “parks and recreation” in Connecticut beyond the open space land target outlined in CGS 23-8 and Green Plan, respectively (i.e., 21% by 2023) – see the “land conservation” document for quantitative details. It is the expectation that the open space land policy and goal would provide public recreation opportunities on state, municipal, private, and water utility lands.

Beyond a target the U.S. Bureau of Economic Analysis conducts research on special topics, including the outdoor recreation economy. The Outdoor Recreation Satellite Account measures the economic activity as well as the sales or receipts generated by outdoor recreational activities. These statistics measure each industry’s production of outdoor goods and services – see Table 4.

Table 4. Connecticut GSP and Employment for 2020 – Comparison for Outdoor Recreation²⁵ vs. Clean Energy²⁶

Economic Activity	GSP (\$MM's)	Percent of GSP	Employment	% of Employment
Outdoor Recreation	\$3,298	1.2	41,721	2.6
Clean Energy	\$6,640	2.4	41,488	2.6

Expenditures in the outdoor recreation economy in Connecticut includes – see Table 5.

Table 5. Expenditures in the Outdoor Recreation Economy in Connecticut

Conventional Outdoor Recreation Activities²⁷ (\$MM's)	Other Outdoor Recreation Activities²⁸ (\$MM's)	All Other Supporting Outdoor Recreation (\$MM's)	Government Expenditures (\$MM's)	Total Outdoor Recreation Activities (\$MM's)
\$1,411	\$572	\$1,158	\$156	\$3,298

6. Funding and Financing Programs

The following is an alphabetical breakdown of the current funding (i.e., grants) programs in support of “parks and recreation” in Connecticut, including, but not limited to:

- **Brownfield Remediation Program** – the Infrastructure Investment and Jobs Act (“IIJA” or Bipartisan Infrastructure Law – “BIL”) provides \$1.5 billion in supplemental funding to the EPA for brownfield remediation programs – \$1.2 billion of funds are set aside for competitive grants for site assessment and remediation projects. Funding can be accessed by quasi-public entities.
- **Charter Oak Open Space Trust Account** – a defunct program for several years now, which included two accounts to fund new open space purchase programs, including 40% to the Charter Oak State Parks and Forest Account for state acquisition of open

²⁵ “Outdoor Recreation Satellite Account, US and States, 2020” by the Bureau of Economic Analysis (November 9, 2021)

²⁶ “Connecticut Clean Energy Industry Report” (September 2021)

²⁷ Boating, fishing, RV’ing, and snow activities

²⁸ Amusement parks, water parks, festivals, sporting events, concerts, game areas (e.g., golf, tennis)

space and watershed land, and 60% to the Charter Oak Open Space Grant Program to provide grants to municipalities and nonprofit land conservation organizations to acquire open space or watershed protection land.

- **Connecticut Open Space and Watershed Land Acquisition Grant Program** (“OSWA”) (CGS 7-131d) – a matching grants program to provide financial assistance to municipalities, land trusts, and water companies to acquire open space and watershed lands. Initiated in 1998, is funded by state bonding and the CIA, provides financial assistance to municipalities and nonprofit land conservation organizations to acquire land for open space, and to water companies to acquire land to be classified as Class I or Class II water supply property, and is administered by DEEP to leverage state, local, and private funds to create a cooperative open space acquisition program.

Since 1998, DEEP has awarded over \$150 MM in open space grant funds to protect over 41,000 acres (or \$3,659/acre).

- **Hazardous Substance Superfund Remediation** – the IIJA provides \$3.5 billion in supplemental funding to the EPA Superfund Program to support cleanup of large sites contaminated by commercial or industrial pollution that poses risks to people’s health and the environment. This program is administered in partnership with states.
- **Land and Water Conservation Fund** (“LWCF”) – LWCF is a federal program that was established by an Act of Congress in 1965 to provide funds and matching grants to federal, state and local governments for the acquisition of land and water, and easements on land and water, for the benefit of all Americans. The main emphases of the fund are recreation and the protection of national natural treasures in the forms of parks and protected forest and wildlife areas. In August 2020, the President Trump signed the Great American Outdoors Act into law, which requires that the LWCF be funded at \$900 million yearly, a significant increase from previous funding levels.
- **National Park Service – Rivers, Trails and Conservation Assistance Program** (“NPS-RTCA”) – NPS-RTCA’s technical assistance program supports locally-led conservation and outdoor recreation projects. The program assists communities and land managers in evolving climate resiliency strategies, developing or restoring parks, conservation areas, rivers, and wildlife habitats, as well as creating outdoor recreation opportunities and programs that engage future generations in the outdoors.
- **Recreation and Natural Heritage Trust Program** (“RNHT”) – administered by DEEP, is the main program to purchase or conserve lands for conservation and public use or benefit.

Since 1998, the State Bond Commission has approved \$177 MM to go towards the RNHTP to protect over 49,000 acres (or \$3,611/acre).

- **Sustainability and Equity (Raise) Grant Program** – the IIJA provides \$7.5 billion in supplemental funding to the DOT for bikeway, trail, and pedestrian projects.

The following is a breakdown of the current financing (i.e., loans) programs that could support parks and recreation in Connecticut:

- **State Revolving Fund** (“SRF”) – since 1988, Connecticut has received over \$650 MM from the federal government through the Clean Water SRF, while providing cumulative assistance (i.e., including state investment) of \$2.8 billion of investment primarily in centralized wastewater treatment infrastructure (in comparison to stormwater, energy conservation, and water conservation infrastructure).²⁹ With the passage of the bipartisan supported “Investing in Infrastructure and Jobs Act” (“IIJA” or Bipartisan Infrastructure Law “BIL”) in November of 2021, there were additional resources allocated to the SRF for water quality and drinking water (i.e., \$445 million).³⁰ SRF could be used to invest in green infrastructure projects (e.g., land conservation, nature-based solutions) for both mitigation and adaptation.

Accessing funding or financing resources for “parks and recreation” in Connecticut can be difficult. Identifying new mechanisms to access additional funding and financing resources, especially those that seek to unlock more private capital investment, could provide a catalyst to increase and accelerate investment in parks and recreation in Connecticut. The IIJA presents an opportunity to access funding and financing resources through formula or competitive grants for “parks and recreation”.

7. Other Programs

The following are other items of note with respect to “parks and recreation”:

- **Greenways** – it should be emphasized, that greenways are an integral part of the parks and recreation system as “linear parks” and provide active economic development (i.e., tourism), public health, and transportation opportunities. There is and/or will be 195 miles of greenway in Connecticut, that is frequently visited by millions of users a year, especially during COVID, who use the greenways for walking, jogging, and cycling on the trails for exercise, recreation, and relaxation.
- **No Child Left Inside** – launched in 2006, *No Child Left Inside*[®] is a promise to introduce children to the wonder of nature – for their own health and well-being, for the future of environmental conservation, and for the preservation of the beauty, character and communities of the state.
- **State Natural Heritage, Open Space & Land Aquisition Review Board** – is an independent advisory group of volunteers appointed by the Governor and leadership within the CGA under CGS 7-131(e) to oversee OWSA and RNHT programs.

²⁹ Including Title II and VI funds – <https://www.epa.gov/sites/default/files/2021-02/documents/ct.pdf>

³⁰ <https://www.whitehouse.gov/wp-content/uploads/2021/08/CONNECTICUT-The-Infrastructure-Investment-and-Jobs-Act-State-Fact-Sheet.pdf>

8. Stakeholder Outreach

In an effort to understand the public policy and marketplace context for “parks and recreation” in Connecticut, the Green Bank met with many organizations.³¹

These 24 organizations primarily represent non-profit organizations but include public and for-profit organizations as well.

The objectives of these one-hour conversations included:

- **Introductions** – to get a better understanding of the mission and initiatives of the various public, nonprofit, and for-profit stakeholders operating within the “parks and recreation” space, and to introduce the Green Bank;
- **Environmental Infrastructure** – inform the various stakeholders about the “environmental infrastructure” policy,³² process the Green Bank is pursuing to develop a Comprehensive Plan, and to elicit discussion on the following areas:
 - **Relevance** – how relevant “environmental infrastructure” and its components (e.g., parks and recreation) are to the stakeholder’s mission and initiatives;
 - **Policies and Targets** – what local, state, and federal policies (e.g., Community Investment Act), including plans (e.g., Green Plan) are important from the stakeholder’s perspective, and what targets (e.g., 21% open space land by 2023) are they seeking to achieve;
 - **Metrics** – what are the key metrics stakeholders believe are important in terms of monitoring and evaluating success from investments in “environmental infrastructure” improvements and “parks and recreation”;
 - **Vulnerable Communities** – how does the stakeholder’s organization think about the impacts that must be addressed from climate change to build the resilience of vulnerable communities; and
 - **Stakeholder Identification** – who else should the Green Bank meet with on the topic.

From these conversations, the Green Bank was able to develop a better understanding as to the role it might play in terms of financing “parks and recreation” from the perspective of its mission – to confront climate change.

³¹ **Land Conservation** – American Forest Foundation, Audubon Connecticut, Connecticut Audubon, Connecticut Land Conservation Council, Conservation Finance Network, DEEP, Ecosystem Investment Partners, Goldman Sachs, Highstead, New England Forestry Foundation, New England Society of American Foresters, Quantified Ventures, Save the Sound, The Nature Conservancy, TNC’s Nature Vest Program, and Yale Forest School
Parks and Recreation – Connecticut Forest and Parks Association, Connecticut Greenways Council, Connecticut Recreation and Parks Association, DEEP, Green Eco Warriors, Keney Park Sustainability Project, Sierra Club, Trust for Public Lands, and Urban Resources Initiative.

³² Public Act 21-115 – An Act Concerning Climate Change Adaptation”

9. Findings

Based on the various meetings with public, nonprofit, and private stakeholders, the following are key findings with respect to parks and recreation (it should be noted that additional findings have been generalized in the footnote):³³

- **Consistent with Mission to Confront Climate Change** – “parks and recreation” reduces GHG emissions (e.g., carbon sequestration) and increases resilience (e.g., stormwater management, heat stress), and therefore is consistent with the Green Bank’s mission to “confront climate change”. Parks provide an excellent ability to address stormwater, bioswales, and mitigate flooding, and also sequester carbon through urban tree canopy cover.
- **Public Health Improvement** – although no research was provided nor cited, stakeholders continuously spoke to the ability of urban and rural parks to provide public health benefits,³⁴ including, but not limited to outdoor places as respite from being inside (e.g., managing through COVID), and reducing heat stress (e.g., shade from trees, cooling from splashpads and pavilions). In subsequent analyses by the Green Bank in reading the literature, there were various relevant references noted, including:
 - “A wealth of research indicates that escaping to a neighborhood park, hiking through the woods, or spending a weekend by the lake can lower a person’s stress levels, decrease blood pressure and reduce the risk of asthma, allergies, diabetes, and cardiovascular disease, while boosting mental health and increasing life expectancy.”³⁵
 - “Spending time and living near green spaces have been associated with various improved mental health outcomes, including less depression, anxiety, and stress. Several studies have demonstrated a dose-response relationship between more time spent in green spaces and lower depression rates. Therefore, green space may be a potential buffer between inequitable neighborhood conditions and poor medical health outcomes.”³⁶
 - “Neighborhoods with more socioeconomically disadvantaged residents and families of color tend to have fewer nearby residential parks, and financial and transportation limitations that prevent access to parks and wilderness outside of city limits...For these reasons, promoting nature contact and ensuring equitable access to green spaces could play a role in improving health outcomes and behaviors, and reducing health disparities.”³⁷

³³ Additional findings – opportunity to connect land trusts to hiking trails, BIPOC communities prioritize basic needs, municipalities shy away from open space investment because no staff to maintain, municipalities are giving up on federal grant programs because they are too onerous (e.g., reporting requirements), nonprofit membership groups have access to practitioners and contractors.

³⁴ “Reconnecting people to the healing value of nature,” as noted by Herb Virgo from the Keney Park Sustainability Project, a 693-acre park located in Bloomfield, Hartford, and Windsor

³⁵ *How Much Nature is Enough? 120 Minutes a Week, Doctors Say* as reported by Knvul Sheikh of the New York Times (June 13, 2019)

³⁶ *Effect of Greening Vacant Land on Mental Health of Community-Dwelling Adults* by Eugenia C. South, et al. *Jama Network Open* (July 20, 2018)

³⁷ *Nature and Children’s Health: A Systematic Review* by Amber L. Fyfe-Johnson, et al. *Pediatrics* (October 2021)

- "...a one-hundred dollar increase, in 2010 dollars, in per capita parks and recreation operational expenditures was associated with a decrease in mortality of 3.9 to 3.4 deaths per 100,000,...While a conceptual linkage between parks funding, use, availability, programming and health could be made, our analysis provides robust empirical evidence linking funding and health. When considering the topic of healthcare spending, we view parks and recreation as an indirect form of healthcare spending. Evidence suggests that many individuals view parks and recreation as an essential component of the healthcare system."³⁸
- **Inadequate Investment in Economic Development** – parks serve as public places to support the economic development of a community. Municipal budgets often cut financial and human resources to parks first because they are not a public works priority. Park programs have to be self-sufficient (e.g., fees for services) like small businesses to survive. The availability of funding resources to support parks and recreation is inadequate. Investment in parks is an investment in the infrastructure supporting economic development, housing, public health, and transportation – which goes beyond DEEP, and is inclusive of other state agencies, including DECD, DOH, DPH, and DOT, respectively.
- **Money is Not Always the Problem** – as important as local, state, federal, and private funding and financing resources are, sometimes not having enough people (including lack of diversity), having onerous or inappropriate processes (e.g., urban tree removal for powerline protection), an inability to speak to co-benefits (e.g., job creation, resilience, wellness), or lack of engagement of local communities can substantially inhibit progress towards increasing investment in parks and recreation.
- **Impact Metrics** – the following is a “high level” breakdown of the types of metrics appropriate for parks and recreation – see Table 6.

Table 6. Relevant Metrics Identified by Stakeholders on Parks and Recreation

Inputs	Outputs	Outcomes
<ul style="list-style-type: none"> ○ Investment in parks ○ Investment in projects ○ Sources of public (e.g., local, state, federal) and private funds ○ Leverage (i.e., public vs. private funds) ○ Individual investment (e.g., Community Match Fund, Green Liberty Bonds and Notes) ○ Funding (i.e., grants) vs. financing (i.e., loans) 	<ul style="list-style-type: none"> ○ # and types of amenities ○ Location of projects ○ Acres conserved (including donations vs. purchases) ○ # of users or visitors ○ Annual accessibility ○ Park revenues ○ # of closures ○ Tree density/linear street mile ○ Distance to a park ○ Acres/population ○ Acres/income 	<ul style="list-style-type: none"> ○ GHG emissions reduced or sequestered ○ Resilience improvement (e.g., # people at reduced risk of flooding, heat exposure) ○ Water quality improvement (e.g., stormwater management, bioswales) ○ Jobs created ○ Address and quantify social determinants of health (i.e., wellness)

³⁸ “The relationship between parks and recreation per capita spending and mortality from 1980 to 2010: A fixed effects model” in Preventative Medicine Reports by J. Tom Mueller, et al (January 2019)

	<ul style="list-style-type: none"> o Increased engagement of BIPOC community to parks and recreation 	<ul style="list-style-type: none"> o Leadership of BIPOC communities in building resilience for their own communities o Local property value o Tax revenue to state and local government from park tourism o Advancements in public policy to recognize the value of parks and recreation (e.g., municipal budgets)
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- **Vulnerable Communities** – are being disproportionately impacted by the impacts of climate change (i.e., those who have contributed the least are being impacted the most). Structural racism is evidenced in vulnerable communities by applications for assistance (e.g., government grants) not being conducive to funding BIPOC communities and leaders (e.g., lack of trust), lack of inclusion of and inability for vulnerable populations to participate in regulatory processes (e.g., compensation for time), lack of workforce development opportunities, including accessible locations for training, and more.

These are the key findings from the stakeholders on parks and recreation.

10. Opportunities

The following is a list of opportunities for consideration by the Green Bank given the broad categories of information and data, environmental markets and conservation finance, funding and financing sources, and other potential opportunities:

1. **Information and Data** – as a foundation, access to high quality information is important from which to base decisions. The following is a breakdown of opportunities for consideration with respect to information and data:
 - A. **ParkScore** – support the expansion of the TPL-URI ParkScore tool assessing the five (5) areas of quality parks beyond New Haven, and apply to the “Top 5” most populated cities in Connecticut. Explore the possibility of Sustainable CT including within its points-based system, as well as raising funds through the Community Match Fund.
 - B. **Pipeline Assessment** – work with CIRCA and DEEP to continuously build and assess the pipeline of potential GHG emission mitigation and climate change adaptation and resilience projects (e.g., type, size, scope, and estimated impact) related to parks and recreation (e.g., Meriden Green).³⁹
 - C. **Data Collection and Research** – support data collection and research that attempts to quantify the carbon offset, ecosystem services, public health, and

³⁹ <https://www.meridenct.gov/city-services/parks-and-recreation/meriden-green/>

economic development values of urban and rural parks. The research should seek to answer the question of “how does investment in parks result in co-benefits to climate change” with a focus on resilience and public health.

2. **Environmental Markets and Conservation Finance** – in terms of identifying potential carbon offset and/or ecosystem services revenue streams within compliance and voluntary markets that can support financing of parks and recreation, the following is a breakdown of opportunities for consideration with respect to environmental markets and conservation finance:

- A. **Conserve Urban Lands as Parks** – improving access to parks and recreation in vulnerable communities, can restore brownfields and abandoned lots, reduce GHG emissions, increase resilience against the impacts of climate change (e.g., flooding, stormwater management), and improve health wellness. Finding ways to support the growth and development of urban parks (e.g., Remington Woods in Bridgeport,⁴⁰ Olin Power Farm in Hamden, Keney Park in Hartford, CT) and greening abandoned lots through public-private partnerships that can improve the local economy, improve public health, and confront climate change. Identifying mechanisms, including stormwater management, to raise funds for capital improvements and/or investments in new assets (e.g., urban ecology wellness and/or sustainability centers) to modernize parks in vulnerable and BIPOC communities and make them more accessible will improve opportunities for economic development and public health.
- B. **Urban Tree Canopy** – support municipal efforts to increase urban tree canopy cover. When planted properly, a tree can save homeowners up to 20 percent on their energy costs, while simultaneously reducing stormwater runoff, improving air quality, reducing urban heat island effects, absorbing carbon, and increasing property value through curb appeal. Hartford has an aggressive tree planting program to grow from 25% (i.e., approximately 568,000 trees) to 35% (i.e., an additional 150,000 trees) tree canopy cover by 2070.⁴¹ Headquartered within the Hartford community, the Green Bank should support neighborhood tree planting, with a focus on the priority area of the Sheldon-Charter Oak neighborhood. Consideration could be given to exploring city forest credits for tree planting, with the Green Bank purchasing carbon offsets.⁴²
- C. **Park Prescriptions (ParkRx)**– as the birthplace of renown park designer and landscape architect Frederick Law Olmstead, and the self-proclaimed “Insurance Capital of the World,” Hartford is the epicenter to where “park prescriptions” (or “ParkRx”) should be developed, researched, practiced, and disseminated. ParkRx advantages include low-cost relative to conventional medical interventions, safety, practicality, not requiring dispensing by highly trained

⁴⁰ 420 acres (i.e., 350 acres in Bridgeport and 70 acres in Stratford), including a 40 acre lake sitting on an old Remington arms testing site and now brownfield owned by Corteva. Corteva currently undergoing site remediation which will require 3-4 years to complete and approximately \$80 million of remediation costs.

⁴¹ Hartford Connecticut’s Tree Canopy Action Plan 2020.

⁴² <https://www.cityforestcredits.org/>

professionals, and multiple co-benefits⁴³ – including a number of benefits that nature provides, including psychological, cognitive, physiological, social, spiritual, and tangible well-being.⁴⁴ The Green Bank could initiate public-private partnerships (e.g., collaboration with Aetna, a subsidiary of CVS Health and managed health care company) that results in ParkRx being used to prevent and treat chronic disease and promote health wellness, while investing in and continuously maintaining urban and rural parks and recreation infrastructure, especially by increasing access to such infrastructure by vulnerable communities. Work with the Department of Insurance, AccessHealthCT, Aetna, and the City of Hartford to develop ParkRx to enable increased investment in parks and recreation that will not only confront climate change but improve public health.

3. Funding and Financing Sources – in terms of identifying additional funding (i.e., grants) and financing (e.g., loans) that can increase and accelerate investment, the following is a breakdown of opportunities for consideration with respect to funding and financing of parks and recreation:

A. Green Liberty Bonds – leverage the strength of the Green Bank balance sheet, with the award-winning climate bond structure of the Green Liberty Bonds modelled after the War Bonds of the 1940's, to support investments in parks and recreation:

- i. Pilot Revolving Loan Fund for Buy-Protect-Sell** – modelling the Conservation Fund's successful \$150 MM green bond issuance in 2019 (i.e., 10-year rated A3 by Moody's), which created the Working Forest Fund,⁴⁵ and the Farmland Protection and Affordability Investment ("Farmland PAI") program of Washington State,⁴⁶ purchase land, including urban lots and potential linear greenways (e.g., abandoned railway lines), and work with appropriate stakeholder partners (e.g., community based organizations) to develop them into parks, community gardens, urban farms, and greenways and connect to ParkRx.
- ii. Passport to Parks Bonds** – work with DEEP to issue Green Liberty Bonds to raise capital from individual and institutional investors today for capital improvements and additional recreational assets needed at state parks backed by the expected revenues from Passport to Parks (i.e., generates approximately \$20 MM a year). Focus the use of proceeds from such bonds on parks located within proximity to vulnerable communities to increase access to the co-benefits of such investments (e.g., resilience, public health).

⁴³ "Nature Contact and Human Health: A Research Agenda" in Environmental Health Perspectives by Frumkin, Howard et al (July 2017)

⁴⁴ "What are the Benefits of Interacting with Nature?" in the International Journal of Environmental Reserahc and Public Health by Keniger, Lucy, et al (2013)

⁴⁵ The Working Forest Fund invests green bond proceeds to buy the most at-risk private forests. Once it owns the forest, it protects the land (i.e., easement), develops sustainable harvesting, wildlife, and habitat restoration plans, and then resells the land to private or public buyers to repay the loan. This fund has permanently conserved 500,000 acres, permanently storing over 210 MMTCO_{2e}.

⁴⁶ <http://www.wshfc.org/farmranch/FarmPAISlides.pdf>

iii. **Municipal Resilience or Stormwater Bonds** – work with local governments to develop a program to regularly issue Green Liberty Bonds and/or Green Liberty Notes to raise capital from individual and institutional investors today for capital improvements (e.g., bioswales) and additional recreational assets (e.g., trailways) at municipal places that improve resilience (e.g., coastal wetlands) backed by conveyance fees or reserve funds.⁴⁷

B. **Community Match Fund** (“CMF”) – a program of Sustainable CT, the Community Match Fund provides fast, flexible funding, and support for community engagement on a wide-range of sustainability projects. It uses an innovative, online tool to connect grant contributions from the “crowd,” which are matched by various donor interests. As of January 1, 2022, the Fund has raised \$1.3 MM from nearly 10,000 individual contributors, which was matched by \$1.1 MM from various sponsors, and supported 195 projects. Work with Sustainable CT to enable the CMF to work for parks and recreation (e.g., ParkScore), as well as expand opportunities for points within the sustainability certification program.

C. **State Revolving Funds** – although not a Green Bank resource, existing and additional SRF resources could be used by the state to provide low-cost and long-term capital to finance green infrastructure projects (e.g., parks and recreation) in Connecticut. The Green Bank could recommend to its state colleagues that a portion of the SRF be used for green infrastructure projects in Connecticut as is being done by other states. Under the new guidelines for SRF resources, 49% of federal funds can be used as grants or forgivable loans for vulnerable communities. Consideration could be given to protecting parks, especially urban parks, where such loan forgiveness or grants in vulnerable communities could support such opportunities for improving green spaces and access to parks.

D. **Infrastructure Investment and Jobs Act** – there are a number of competitive grant programs that can be accessed to provide resources to cleanup brownfields. Exploring whether or not these funds can be accessed to cleanup former industrial property and convert them to urban parks (e.g., Bridgeport, Hamden) should be considered. In addition to clean-up programs, there are other programs for park planning, mobility, and other programs relevant to increasing and improving parks and recreation. The Green Bank could consider leveraging the strength of its financial position as a source of resources to hire grant writer(s), and/or serve as matching funds to improve success in competing for and winning federal resources through the IIJA.

4. **Other Potential Opportunities** – there are a number of other potential opportunities that can support financing of parks and recreation, including:

⁴⁷ Public Act 19-77 “An Act Authorizing Municipal Climate Change and Coastal Resiliency Reserve Funds”

- A. **Clean Energy and Sustainability Accelerator** – within the climate change programs proposed as part of the Build Back Better Act (“BBBA”) is the Clean Energy and Sustainability Accelerator (“CESA”). Modelled after the Green Bank, the \$29 billion allocated under CESA would provide state and local government with access to capital to finance projects that reduce GHG emissions, including nature-based solutions (e.g., parks and recreation).
- B. **Climate Conservation Corps** – within the climate change programs proposed as part of the BBBA is the Climate Conservation Corps. Modelled after the Civilian Conservation Corps under President Franklin Roosevelt, the climate program centered around equity and environmental justice, could hire hundreds of thousands of young people to help restore and support parks. The Green Bank could include within its investment activity, the requirement for developers to include Climate Conservation Corps members. If Climate Conservation Corps is passed through the BBBA, then Connecticut should prioritize the involvement of BIPOC⁴⁸ populations and hire a leader from the BIPOC community to run it.
- C. **Olmstead 200** – The acclaimed landscape architect Frederick Law Olmstead was born in Hartford, CT. In honor of the 200th anniversary of his birth in 1822, consideration could be given to initiating an urban parks design contest.⁴⁹ For example, the Green Bank could put up a prize money to the best design of an urban park in Connecticut with a focus on Keney Park (Bloomfield, Hartford, and Windsor), Olin Power Farm (Hamden), and Remington Woods (Bridgeport and Stratford). Connecting Olmstead’s birthplace with the “Insurance Capital of the World” as noted above, is an opportunity for ParkRx to support public health wellness.
- D. **Host Federal Official** – through the Intergovernmental Personnel Act (“IPA”),⁵⁰ the Green Bank could temporarily host a professionally skilled federal official from the Environmental Protection Agency, National Park Service, Health and Human Services, or other relevant agency to facilitate cooperation between the federal government and the Green Bank. Such an assignment would need to ensure that it is for sound public purposes and furthers the goals and objectives of the participating organizations.

These are a few of the opportunities identified by the Green Bank to support its mission and advance parks and recreation in Connecticut. Developing a method for prioritizing what opportunities under consideration are ultimately pursued, given the limited human and financial resources, and organizational structure of the Green Bank, is an activity for a later date.

11. References

In addition to the conversations with stakeholders, the Green Bank reviewed the following documents to support its findings and opportunities:

⁴⁸ Black, Indigenous, or People of Color

⁴⁹ <https://olmsted200.org/>

⁵⁰ [https://www.usgs.gov/human-capital/intergovernmental-personnel-act-ipa-mobility-program-guidance#:~:text=The%20Intergovernmental%20Personnel%20Act%20\(IPA,and%20the%20non%2DFederal%20entity](https://www.usgs.gov/human-capital/intergovernmental-personnel-act-ipa-mobility-program-guidance#:~:text=The%20Intergovernmental%20Personnel%20Act%20(IPA,and%20the%20non%2DFederal%20entity)

- **Green Plan** – Comprehensive Open Space Acquisition Strategy (2016-2020 Green Plan)
- **Going Outside in Connecticut** – Statewide Comprehensive Outdoor and Recreation Plan (SCORP) for 2017-2022

12. Definitions

The following are important definitions when it comes to “parks and recreation” in Connecticut:

- **Ecosystem Services** – there are four types of ecosystem services, including:
 - **Provisioning Services** – provide goods to people including food, water, and materials;
 - **Regulating Services** – refer to benefits gained by natural control of ecosystem processes (e.g., clean air, filter water, bacteria decompose waste, flood control);
 - **Cultural Services** – provide humans meaningful interaction with nature; and
 - **Supporting Services** – provide indirect benefits through provision of habitat, biodiversity, and support for all other ecosystem services.
- **Environmental Infrastructure** – means structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to, carbon offsets and ecosystem services.
- **Greenway** (CGS 23-100) – means a corridor of open space that (1) may protect natural resources, preserve scenic landscapes and historical resources or offer opportunities for recreation or nonmotorized transportation, (2) may connect existing protected areas and provide access to the outdoors, (3) may be located along a defining natural feature, such as a waterway, along a man-made corridor, including an unused right-of-way, traditional trail routes or historic barge canals or (4) may be a greenspace along a highway or around a village.
- **Open Space Land** (CGS 12-107(b)(3))⁵¹ – open space land means any area of land, including forest land, land designated as wetland under section 22a-30 and not excluding farm land, the preservation or restriction of the use of which would (A) maintain and enhance the conservation of natural or scenic resources, (B) protect natural streams or water supply, (C) promote conservation of soils, wetlands, beaches or tidal marshes, (D) enhance the value to the public of abutting or neighboring parks, forests, wildlife preserves, nature reservations or sanctuaries or other open spaces, (E) enhance public recreation opportunities, (F) preserve historic sites, or (G) promote orderly urban or suburban development.

⁵¹ https://www.cga.ct.gov/current/pub/chap_203.htm#sec_12-107b

- **Parks and Recreation** – parks and recreation are resources and services provided for the purposes of leisure, entertainment, and recreational pursuits. Resources may be public spaces and facilities like parks, nature preserves, open space areas, greenways, trails, and built structures for sport, recreation, or arts programs. Examples of services include recreation activity programs, athletic leagues, special events, arts programs, and environmental education programs. The field of parks and recreation also encompasses resources and services offered by sector, though they are only delivered to members or paying visitors. Examples include YMCAs, health and fitness centers, resorts, and guide services. There are also quasi-public providers like power companies, land trusts, and other authorities that manage resources that may be used for recreation purposes. An example in Connecticut is the MDC reservoir trail.⁵²

- **Resilience** – means the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from deliberate attacks, accidents or naturally occurring threats or incidents, including, but not limited to, threats or incidents associated with the impacts of climate change.

- **Vulnerable Communities** – means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, (1) low and moderate income communities, (2) environmental justice communities pursuant to section 22a-20a, (3) communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, (4) populations with increased risk and limited means to adapt to the effects of climate change, or (5) as further defined by the Department of Energy and Environmental Protection in consultation with community representatives.

⁵² As defined by the Connecticut Recreation and Parks Association



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environmental infrastructure primer

agriculture



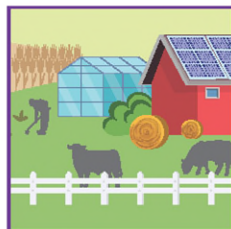
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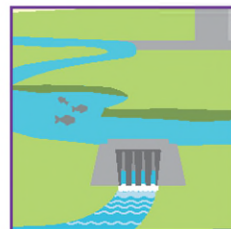
**Land
Conservation**



**Parks and
Recreation**



Agriculture



Water
(Coming soon in 2023)



**Waste and
Recycling**
(Coming soon in 2024)



Agriculture

Primer

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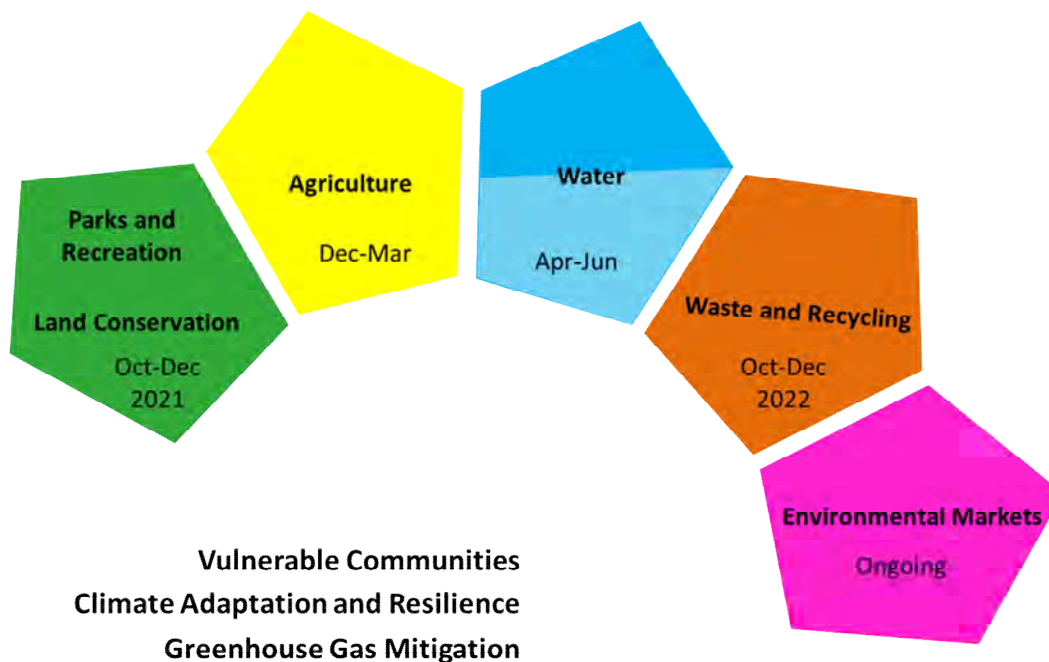
AGRICULTURE

PRIMER

1. Introduction

In October of 2021, the Connecticut Green Bank (“Green Bank”) developed a plan upon which it was going to engage stakeholders to understand the various components of “environmental infrastructure” – see Figure 1. With its mission to “confront climate change by increasing and accelerating investment into Connecticut’s green economy to create more resilient, healthier, and equitable communities,” within each component of “environmental infrastructure,” the cross-cutting issues of reducing greenhouse gas emissions (“GHG”), increasing climate adaptation and resilience, and enabling investment in vulnerable communities was explored.

Figure 1. Process to Understand Components of Environmental Infrastructure



This primer reflects the observations, findings, and initial recommendations from the conversations with stakeholders and research conducted on agriculture.

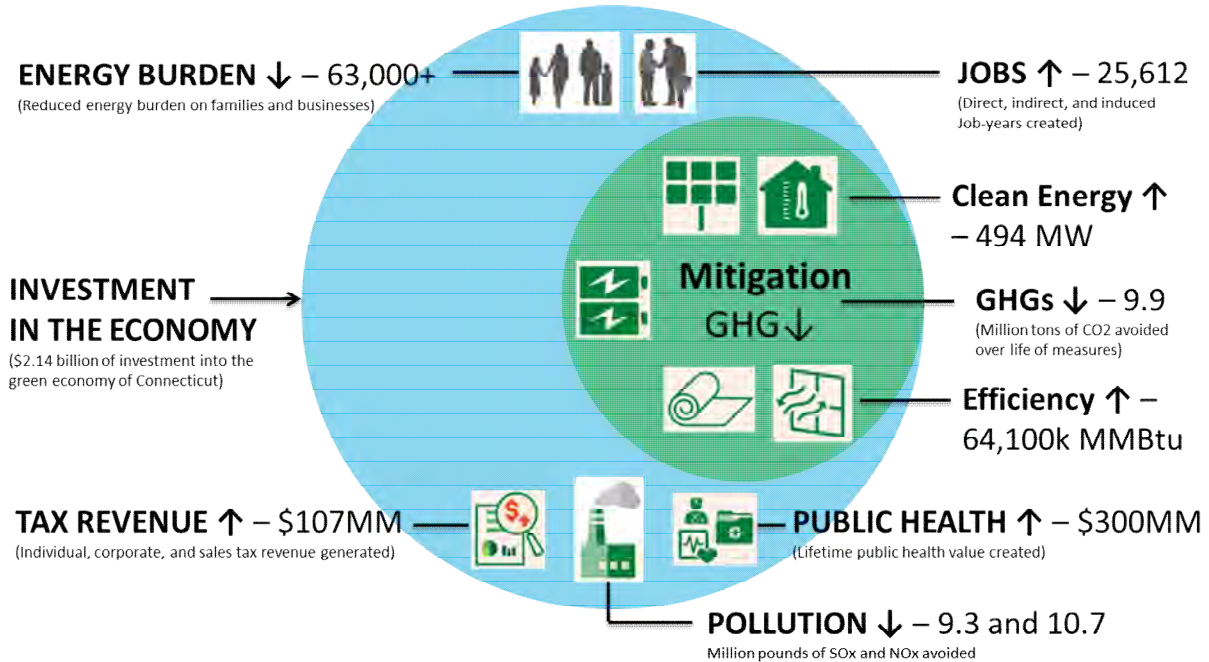
2. Overview

On July 6, 2021, Governor Ned Lamont signed Public Act 21-115 “An Act Concerning Climate Change Adaptation” (“the Act”) into law. The bipartisan-supported public policy was among the sixty-one (61) recommendations made by the Governor’s Council on Climate Change (“GC3”), including a recommendation to expand the scope of the Green Bank beyond “clean energy” to include “environmental infrastructure” (i.e., Recommendation #57).

Since its founding over a decade ago, the Green Bank has focused its efforts on using a limited amount of public resources to mobilize multiples of private investment in Connecticut to

increase and accelerate the deployment of “clean energy” to deliver social and environmental impact – see Figure 2.

Figure 2. Decennial Impact of the Green Bank with focus on “Clean Energy” Deployment and Mitigation of GHG Emissions



Given its mission, the Green Bank helps the State of Connecticut achieve its ambitious public policy objectives (e.g., GHG emission reductions targets, renewable portfolio standards). In so doing, by 2025, no less than 40 percent of investment and benefits from its programs are to be directed to vulnerable communities.¹

The Act, expands the scope of the Green Bank beyond “clean energy” to include “environmental infrastructure,” and includes the following key provisions:

- **Definition** – “environmental infrastructure” means structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to, carbon offsets and ecosystem services;
- **Comprehensive Plan** – requirement for the Green Bank to develop a Comprehensive Plan² prior to implementing any programs or initiatives related to “environmental infrastructure”;

¹ “Vulnerable communities” means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, low and moderate income communities, environmental justice communities pursuant to section 22a-20a, communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, populations with increased risk and limited means to adapt to the effects of climate change, or as further defined by DEEP in consultation with community representatives.

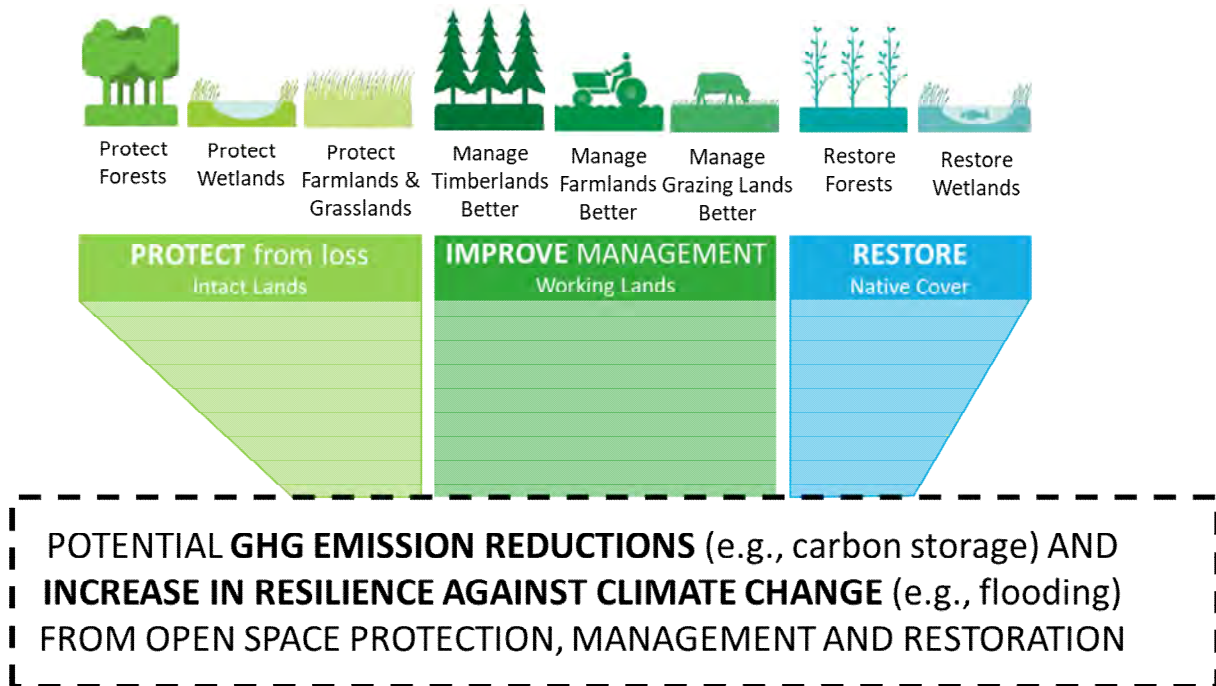
² https://www.ctgreenbank.com/wp-content/uploads/2021/07/3_Comprehensive-Plan_FY-2020-and-Beyond_Final.pdf

- **Reporting** – inclusion of the Banks Committee and the Environment Committee, alongside the Energy and Technology Committee and Commerce Committee in terms of reporting; and
- **Bonding** – the ability to issue 25-year bonds for “clean energy” and 50-year bonds for “environmental infrastructure” (i.e., no more than the useful life of the projects), supported by the Special Capital Reserve Fund (“SCRF”), for up to 25 years to improve the rating of the bonds issued.

This document attempts to summarize the findings from the research and outreach efforts conducted by the Green Bank³ on “agriculture” from December 2021 through March of 2022 and includes the following sections: (A) overview, (B) key public policies, (C) market potential, (D) target, (E) funding and financing programs, (F) other programs, (G) stakeholder outreach, (H) findings, (I) opportunities, (J) history of leadership and innovation, (K) references, and (L) definitions.

Nature-based solutions (e.g., agriculture) such as protecting farmlands from loss and improving farming practices, can support the Green Bank’s mission by both mitigating the GHG emissions that cause climate change (e.g., climate smart agriculture) and increasing resilience against the impacts of climate change (e.g., flood protection) – see Figure 3.

Figure 3. Nature Based Solutions to Confront Climate Change - Mitigation and Resilience



3. Key Public Policies

The following are key public policies that advance “agriculture” in Connecticut, including, but not limited to:

³ Led by Bryan Garcia (President and CEO) and Ashley Stewart (Consultant)

1. **State Plan of Conservation and Development** (CGS 16a-24) – is an overarching statement of state policy in matters pertaining to land and water resource conservation and development. The Office of Policy and Management (“OPM”) prepares revisions to the State Conservation and Development Plan (“State C&D Plan”) on a recurring 5-year cycle and submits it for adoption by the Connecticut General Assembly (“CGA”). Once adopted, the State C&D Plan is then implemented by state agencies whenever they undertake certain actions.⁴ The current State C&D Plan (i.e., for 2018-2023), includes the relevant “clean energy” and “environmental infrastructure” items, including, but not limited to:

- A. **Greenhouse Gas Mitigation** – reducing carbon dioxide emissions in the state consistent with the recommendations of the Connecticut Climate Change Preparedness Plan (i.e., 5.10);
- B. **Climate Adaptation and Resilience** – utilizing the state’s renewable power generation potential to the extent compatible with the state goals for environmental protection, and minimize potential impacts to rural and suburban character and agricultural and scenic resources when siting new power generation facilities and/or transmission infrastructure (i.e., 4.8); and
- C. **Agriculture** – supporting community-based agriculture, historic preservation, and access to urban green spaces and waterways (i.e., 1.11), encouraging and promoting access to parks and recreational opportunities, including trails, greenways, community gardens, and mixed-income housing (i.e., 2.8), promoting agricultural businesses and supportive industries that are vital to the regional economy, preserve prime farmland through the acquisition of development rights, and when avoidance of such lands is not practical, minimize the loss of or conversion of agricultural lands by state-sponsored development actions (i.e., 4.10), promoting Connecticut’s commercial and recreational fishing and aquaculture industries (i.e., 4.11), preserving and maintaining traditional working lands for the production of food, fiber, horticultural plant production, and supporting niche agricultural operations that enhance community food security throughout Connecticut (i.e., 5.8).

2. **Executive Order 21-3** – On December 16, 2021, Governor Ned Lamont signed Executive Order 21-3 which calls for 23 actions supporting more than thirty recommendations from the Governor’s Council on Climate Change, including several recommendations on working lands.⁵

- A. **Forest Climate Resilience and Mitigation Potential** – DEEP engagement of stakeholders to ensure Connecticut’s forests continue to be resilient against the impacts of climate change and to maximize forest potential to sequester and store carbon in support of Connecticut’s GHG emission reduction goals.

⁴ Quasi-publics are not subject to this requirement

⁵ It should be noted that Connecticut is a member of the United States Climate Alliance, and one of the original signatories to the Natural and Working Lands Challenge in 2018 – <http://www.usclimatealliance.org/nwlchallenge>

- B. Agriculture Climate Resilience and Mitigation Potential** – DoAg engagement of stakeholders to ensure Connecticut’s working lands and soils continue to be resilient against the impacts of climate change and to maximize forest potential to sequester and store carbon in support of Connecticut’s GHG emission reduction goals.
- C. Climate Resilience Using Nature-Based Solutions on State Properties** – DEEP and Department of Administrative Services (“DAS”) to develop guidance for state agencies to use nature-based solutions for flood and erosion control and stormwater management, integrate coastal marsh migration in state projects in coastal areas, and utilize low impact development and green infrastructure in new state construction and state-funded construction or redevelopment.
3. **Use Value Assessment Law** (Public Act 490 or CGS 12-107a-f)⁶ – passed by the CGA in 1963, it allows a farm, forest, or open space land to be assessed at its use value rather than its fair market or highest and best use value (as determined by the property’s most recent “fair market value” revaluation) for purposes of local property taxation. Without the lower use value assessment, most landowners would have to sell the land because they would not be able to afford the property taxes on farm, forest, or open space land. It must be noted that Public Act 490 allows farmers to continue to farm, and other landowners to continue to own forest and open space land without being forced to sell it to pay the local property taxes. When the legislature passed Public Act 490 in 1963, it included in the law’s wording that “it was in the public interest to encourage the preservation of farm, forest, and open space land.” Studies done across the nation have conclusively proven that property tax revenues generated by farm, forest, or open space land, are far greater than the expenditures by the town to service that land. For example, under the current structure, the residential sector costs a town more to service than the amount of property tax generated from that sector. Thus, farm, forest, and open space land can actually help control and maintain reasonable rates of property taxation for all of a town’s taxpayers.
4. **Ten Mill Program** (CGS 12-96) – Ten Mill Program was developed in 1913 and required forest landowners to make a 100-year commitment to maintaining land as forest land in exchange for municipalities holding the property at a 10-mill rate and the valuation of the land at evaluation for 50 years after. The Ten Mill program has not added new properties since the 1970’s, however, both programs provide support to landowners that encourages conservation and open space.
5. **Property Tax Exemptions** (CGS 12-81) – including farming tools (38), farm products, including produce and animals (39-42), and temporary structures (73). In addition to PA 490, a municipality may also vote to abate up to 50 percent of the property taxes of various farms (e.g., dairy, fruit, nursery) if the farm employs nontraditional cultivation methods (i.e., CGS 12-81m). And farm machinery (except motor vehicles) and building (per building) up to \$100,000 in value is already exempt from local property taxes, and a municipality may vote to provide an additional \$100,000 exemption for machinery and/or buildings (e.g., housing for seasonal employees).

⁶ https://www.cga.ct.gov/current/pub/chap_203.htm#sec_12-107a

6. **Open Space Target** (CGS 23-8)⁷ – establishes a 21% (i.e., 673,210 acres) of state land area by 2023 held by open space land, with 10% from the state (e.g., forests, parks) and not less than 11% from partners (e.g., municipalities, water companies, or non-profit land conservation organizations). The Comprehensive Open Space Acquisition Strategy (or “Green Plan”)⁸ is the comprehensive strategy for achieving the state goal, which includes priorities for strategic acquisitions of open space for climate change resiliency and preserving open space in perpetuity for state lands with high conservation value.
7. **Community Investment Act** (Public Act 05-228)⁹ – “An Act Concerning Farm Land Preservation, Land Protection, Affordable Housing and Historic Preservation,” also known as the Community Investment Act (“CIA”), CIA provides a dedicated and consistent source of funding for state preservation of open space (Department of Energy and Environmental Protection or “DEEP”), farmland (Department of Agriculture or “DoAg”), historic sites (Department of Economic and Community Development or “DECD”), and affordable housing (Connecticut Housing Finance Authority or “CHFA”). Through a \$40 surcharge on local land recordings (i.e., \$1 to Town Clerk, \$3 to local government, \$10 supplemental income to dairy farmers, and \$26 to State Treasurer), about \$22 MM is raised each year, which is equally distributed in four (4) parts to the priority funding areas. DoAg is required to distribute CIA funds as follows: \$100,000 for the “Connecticut Grown” program, \$75,000 for Connecticut Farm Link Program, and \$1 million for the Agriculture Viability Grants Program. CIA also funds DoAg’s Farmland Preservation Programs and supports the Connecticut Food Policy Council, Connecticut Seafood Advisory Council, and Connecticut Farm Wine Development Council.
8. **Forest Management Act** (CGS 23-20(b))¹⁰ – makes several changes in the Public Act 490 tax relief program for owners of eligible forest land and authorizes the Commissioner of DEEP to apply for certification or licensure of publicly owned woodlands and products from those woodlands under at least one of nine specified sustainable forest programs.¹¹ The 490 program provides farm, forest, and open-space landowners with tax relief to reduce the financial pressure to convert their property to other uses. Forest landowners whose property meets certain criteria may apply to the state forester for the relief.
9. **Climate Smart Agricultural Practices** – as part of the passage of the budget by the Connecticut General Assembly within the 2022 legislative session, “An Act Concerning Climate Smart Agricultural Practices” was passed. Beyond providing \$14 MM in funding resources to support farmers through the policy, the DoAg may pay or reimburse nonprofit organizations, soil and water conservation districts, UCONN Extension Services, or municipalities for providing technical assistance, distributing grant funds to producers,

⁷ <https://law.justia.com/codes/connecticut/2012/title-23/chapter-447/section-23-8/>

⁸ <https://portal.ct.gov/DEEP/Open-Space/The-Green-Plan>

⁹ <https://www.cga.ct.gov/2005/ACT/Pa/pdf/2005PA-00228-R00SB-00410-PA.pdf>

¹⁰ Kingdon Woodland Assurance Scheme, or Smart Wood Program

¹¹ Sustainable Forestry Initiative Program, American Tree Farm System, Canadian Standards Association’s Sustainable Management System Standards, Finnish Standard, Forest Stewardship Council, Pan-European Forest Certification Program, Swedish Standards, United Kingdom Woodland Assurance Scheme, or Smart Wood Program

and other activities that will increase the number of farmers who are implementing climate-smart agriculture and forestry practices.

In order to identify opportunities to mobilize private investment, it is important to understand the public policy context in which “agriculture” operates. With the focus on the Green Bank’s mission (i.e., confront climate change), public policy provides a mechanism to catalyze private investment.

4. Market Potential

Land Cover

The following is a breakdown of the markets potential for “agriculture” (i.e., farmland), including other natural forms of land cover (i.e., forestland and wetlands) – see Table 1.

Table 1. Land Cover in Connecticut (2015)¹²

3,179,253 Acres Land and Water in Connecticut				
921,827 Acres Developed Land ¹³ 29%	233,847 Acres Farmland 7%	1,873,471 Forestland ¹⁴ 59%	129,153 Wetlands ¹⁵ 4%	20,955 Other Lands ¹⁶ 1%

More than 70% of Connecticut’s land is farmland, forestland, or wetland – see Figure 4.

It should be noted that CGS 23-20(b) allows DEEP to apply for sustainable forest management status for its 175,000 acres of state forests at 33 locations. State forests achieving such certification status may create opportunities to sell sustainably harvested timber or other wood products from state-owned forestlands.

¹² UCONN CLEAR Project – 2015 Land Cover

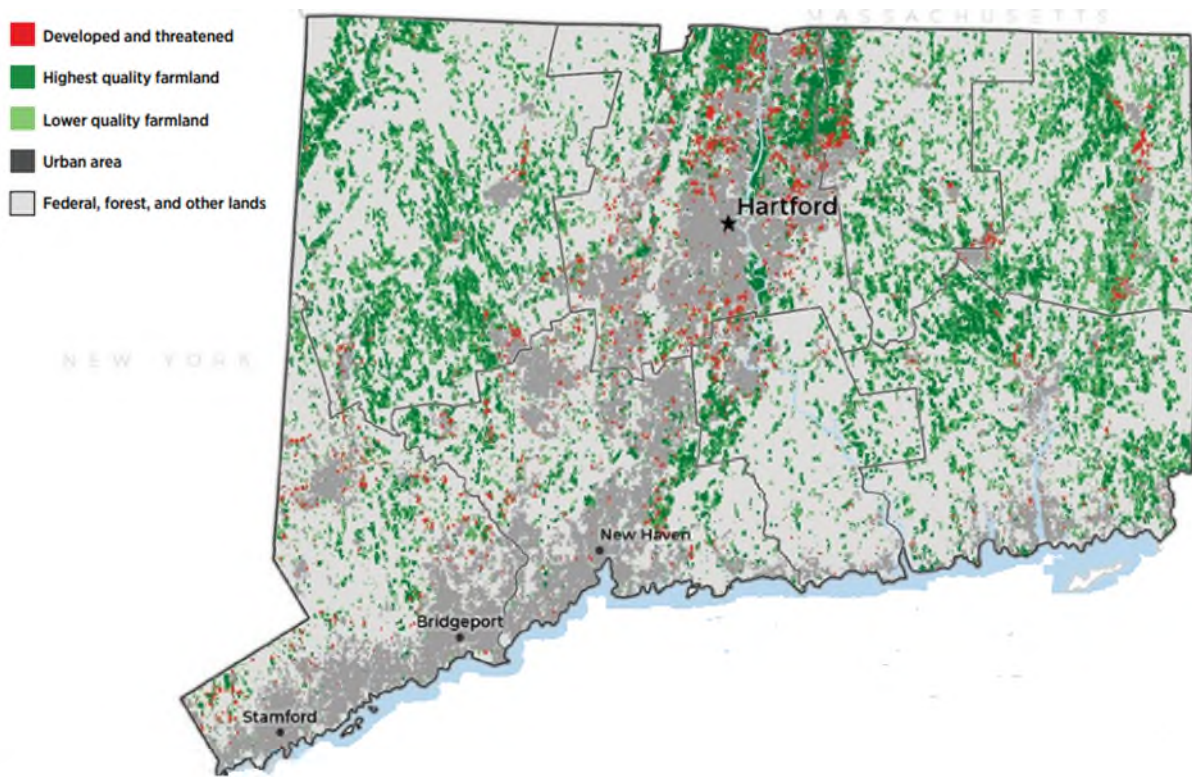
¹³ Includes “Developed,” “Turf & Grass,” and “Other Grasses” classifications

¹⁴ Includes “Deciduous Forest,” “Coniferous Forest,” “Forested Wetland,” and “Utility-Rights-of-Way (Forest)” classifications

¹⁵ Includes “Water,” “Non-Forested Wetlands,” and “Tidal Wetlands” classifications

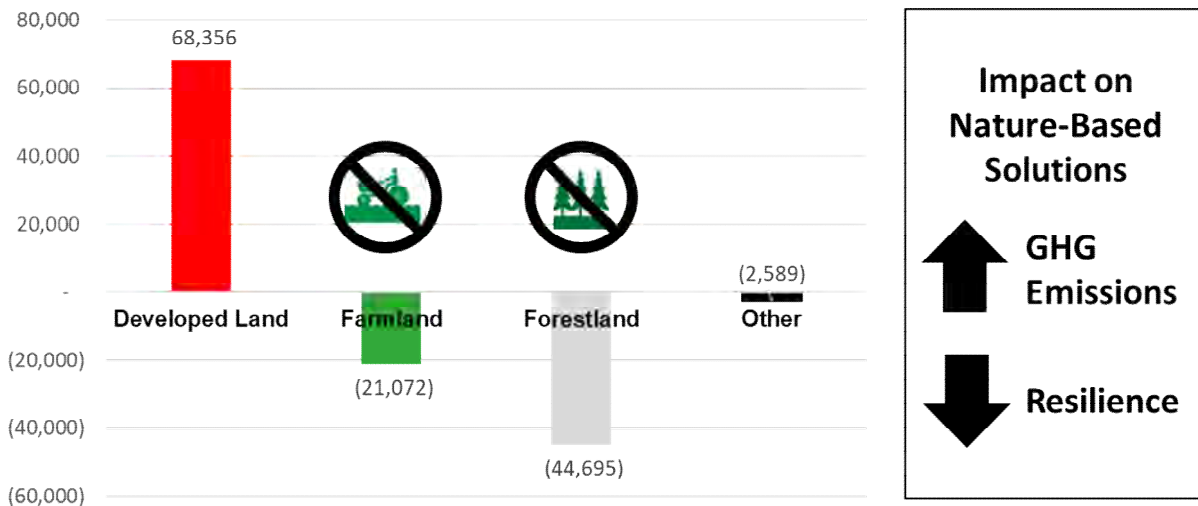
¹⁶ Includes “Barren” classification

Figure 4. Statewide Land Cover Map of Connecticut



Over the past twenty years, farmland and forestland have been lost to development – see Figure 5.

Figure 5. Statewide Land Cover Change (Acres) from 1995-2015



From 2001 through 2016, approximately 6% of the state's farmland was converted to urban or low-density residential development – placing the state in the top three nationally in percent of

farmland lost to development.¹⁷ This loss of farmland and forestland, results in an increase in GHG emissions and a reduction in resilience as a result of development. Therefore a “no net loss of farmlands and forestlands” policy is important when it comes to confronting climate change in Connecticut.¹⁸

Use Value and Local Property Taxes

Recognizing the many public benefits nature provides the residents and businesses of the state, it is a policy in Connecticut that owners of farms, forests, and open space NOT experience burden through excessive property tax assessments that do not represent or align with the owner’s current land-use. Public Act 490, known as the current-use law, allows farms, woodlots, or open space to be assessed at its use value, rather than its fair market or highest and best use value for purposes of local property taxation – see Table 2.

Table 2. 2020 Recommended Land Use Values per Acre per Public Act 490 (Effective October 1, 2020)

Category	State-Wide	River Valley
Tillable A	\$1,880	\$2,530
Tillable B	\$1,280	\$1,810
Tillable C	\$1,110	\$1,690
Tillable D	\$850	\$1,170
Orchard E	\$990	\$990
Pasture F	\$280	\$280
Swamp, Ledge, Scrub G	\$40	\$40
Woodland, Forestland	\$390	\$390

Assessed property tax is calculated at the town mill rate times the number of acres times the value of the land – in case of Public Act 490 land, the value is use value per the table above.

The following is a breakdown of natural lands (i.e., farmland, forestland, and wetlands, including open space land) in Connecticut served by the use value for property taxes under Public Act 490 – see Table 3.

Table 3. Natural Lands in Connecticut Served by Public Act 490

2,236,471 Acres Natural Lands 70%		921,827 Acres Developed Land (including Other) 30%
856,385¹⁹ Acres Natural Lands Served by Public Act 490 38%	1,380,086 Acres	

¹⁷ “Planning for Agriculture – A Guide for Connecticut Municipalities: Emerging Agricultural Trends” by the American Farmland Trust and Connecticut Department of Agriculture (2020 Edition) (Page 19)

¹⁸ It should be noted that Connecticut is a signatory to the Natural and Working Lands Challenge of the United States Climate Alliance where there is an action to support an Alliance-wide goal to maintain natural and working lands as a net sink of carbon and protect and increase carbon storage capacity, while balancing near and long-term sequestration objectives.

¹⁹ As of September 15, 2021 with 83% of towns reporting – <https://portal.ct.gov/DEEP/Forestry/Forest-Land-Taxation/Classification-of-Land-as-Forest-Land>

233,895 Acres Farmland 27%	465,774 Acres Forestland 54%	149,942 Acres Open Space Land 18%	6,774 Acres Other Land 1%	Natural Lands <u>not</u> Served by Public Act 490 62%	
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Farmers pay an estimated \$34.5 MM per year in property taxes.²⁰

Economic Development and Other Factors

The agriculture industry in Connecticut is worth \$5.2 billion,²¹ supports 29,163 jobs, 5,521 farms totaling approximately 381,539 acres, including from cropland (i.e., 148,609 acres), pastureland (i.e., 31,923 acres), and woodlands (i.e., 201,007 acres) and 69% of farms are less than 50 acres, including:

- **Ownership** – 72% are owned and operated vs. leased from others, 6.5% of farms and 10% of farmland is operated by tenant farmers who own none of the land they farm; and
- **Demographics** – 31% of producers are 65 or older, over 40% of producers are woman, and less than 2% of producers are BIPOC (compared to 37% BIPOC population in Connecticut).²²
- **Example Products** – from land and sea farms, including, but not limited to:
 - **Dairy Farms** – there are 90 licensed dairy farms that produce 428 million pounds of milk in 2019 (i.e., enough to satisfy about 86% of the milk consumed by Connecticut residents), and nearly \$80 million in dairy products in 2020;
 - **Poultry Farms** – there are 1265 egg-laying and 159 meat producing chicken farms, with \$260 million in poultry and poultry product sales in 2020; and
 - **Shellfish Farms** – 300 licensed farmers, 75,000 acres of shellfish farms are available for cultivation in Connecticut's coastal waters, producing 450,000 bushels of hard clams and 200,000 bushels of oysters, and \$30 million in shellfish products per year, the fastest growing agriculture sector in the state.

It is estimated that for every \$1 million of expenditures in agriculture, that between 20 to 40 jobs are created (e.g., 5, 8, and 35 jobs per \$1 million of expenditures from poultry and egg production, dairy cattle and milk production, and commercial fishing, respectively).²³

Farms require on average 35 cents in Cost of Community Services (“COCS”) for each dollar of property tax paid, in comparison to 25 cents for commercial and industrial, and \$1.12 for residential.

²⁰ 2017 Census of Agriculture – Connecticut (14)

²¹ \$4.8 billion value of land and buildings and \$0.3 billion value of machinery and equipment

²² US Census Bureau, 2020

²³ “Climate 21 Project” transition memo for the US Department of Agriculture

5. Target

There are two potential targets for agriculture in Connecticut – Farmland Preservation Program for Connecticut or Forestland and Farmland Protection in New England.

Farmland Preservation Program in Connecticut – 130,000 Acres

The long-term goal of the Farmland Preservation Program, which was set back in the 1980's, is to preserve 130,000 acres of farmland – see Table 4.

Table 4. Progress Towards the Farmland Preservation Program Target in Connecticut

3,205,762 Acres Land in Connecticut				
381,539 Acres²⁴ Farmland				2,824,223 Acres Non-Farmland
148,609 Acres Farmland	113,355 Acres Woodland	31,923 Acres Pastureland	87,652 Acres Other ²⁵	
130,000 Acres Preserved Farmland Goal				
48,744 Preserved		81,256 Acres Not Preserved		

As of October 2020, the Farmland Preservation Program has protected nearly 49,000 acres on 418 farms with agricultural conservation easements – leaving 81,000 acres of farmland left to preserve.²⁶ If the average real estate value of an acre of farmland in Connecticut in 2019 was \$12,200, and Purchasing Development Rights (“PDR”) is 30-50% of value, then between \$300 to \$500 MM of public investment (e.g., through DoAg and/or USDA-NRCS) would be needed to protect 81,000 acres of farmland to achieve the 130,000 acres of farmland preserved target.

If 100% of Connecticut farms incorporated better management practices that had the potential to remove carbon from the atmosphere, including non-till, legume cover cropping, and spreading more compost, it would remove 94,902 MTCO₂e from the atmosphere each year²⁷ – the equivalent of 150 MW of residential solar PV.²⁸ USDA expects to reduce net emissions and enhance carbon sequestration by more than 120 million MTCO₂e per year by 2025.

Wildlands and Woodlands Vision for New England – 70 and 7 by 2060

The Wildlands and Woodlands vision calls for retaining and permanently protecting (e.g., conservation easements) at least 70 percent of the landscape in forestland (i.e., 90% woodlands and 10% wildlands) and another 7 percent in farmland by 2060 – see Figures 6 and 7.

²⁴ USDA Economic Research Service – 2017 data

²⁵ Land in house lots, ponds, roads, wasteland, etc.

²⁶ Connecticut Department of Agriculture, Farmland Preservation Programs Report (January 2022)

²⁷ “Planning for Agriculture – A Guide for Connecticut Municipalities: Emerging Agricultural Trends” by the American Farmland Trust and Connecticut Department of Agriculture (2020 Edition) (Page 17)

²⁸ Based on Connecticut Green Bank analysis – see Annual Comprehensive Finance Report for FY21 (p. 218-241)

Figure 6. Wildlands and Woodlands Vision for New England in 2060

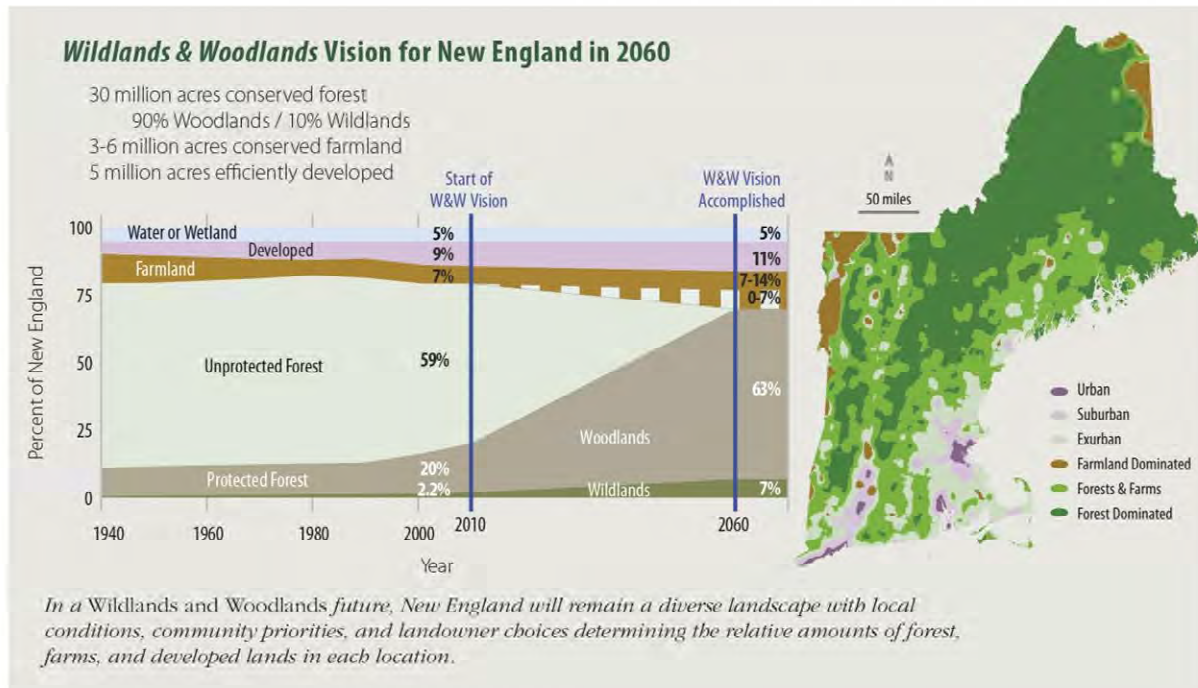


Figure 7. Protected Forestland and Farmland in New England



The single greatest challenge for achieving this goal is funding for the purchase of land and especially of easements on private lands to ensure that they remain undeveloped in perpetuity.

Forestland

Currently, in Connecticut, 59% of land is forestland (i.e., 1,873,471 acres) – of which, approximately 33% of forestland is protected by Public Act 490 (i.e., 622,490 acres).²⁹ Not only would a “no net loss of forestland” policy have to be pursued, but an additional 222,853 acres of developed land (i.e., excluding wetlands or 7% of additional land cover) would have to be converted to forestland to achieve the 70 percent of landscape as forestland target (i.e., about 6,400 acres per year). This would require growing smarter in cities and suburbs by encouraging efficient land use and smart growth, and redeveloping built landscape such as former industrial mills on recovering rivers and commercial brownfields. A significant effort would have to be initiated to permanently protect the 2,225,477 acres (i.e., 70% of land) as forestland through property tax benefits, conservation easements, and/or other mechanisms.

Farmland

Currently, in Connecticut, 7% of total land is farmland (i.e., 233,847 acres) – of which, about 46,000 acres or 20% is protected by agriculture conservation easements.³⁰ A “no net loss of farmland” policy would have to be pursued, and continued efforts to permanently protect farmland would require going beyond property tax benefits towards securing agriculture easements.

6. Funding and Financing Programs

The following is an alphabetic breakdown of the current funding (i.e., grants) programs in support of “agriculture” in Connecticut, including, but not limited to:

- **Agriculture Conservation Easement Program** (“ACEP”) – USDA-NRCS’s ACEP protects the agriculture viability and related conservation values of eligible land through agricultural land easements that help private and tribal landowners, land trusts, and other entities such as state and local governments protect croplands and grasslands on working farms and ranches by limiting non-agricultural uses of the land through conservation easements. Under the Land Easement component, the Natural Resources Conservation Service (“NRCS”) of the USDA, may contribute up to 50 percent of the fair market value of the agricultural land easement (i.e., matching resources for DoAg Purchase of Development Rights (“PDR”) program), and up to 75 percent where NRCS determines that grasslands and special environmental significance will be protected. Projects must have non-federal matching funds in hand.
- **Connecticut Farmland Preservation Program** (CGS 7-131d) – administered by DoAg to leverage state, local, and private funds to permanently protect farms. Initiated in 1978, is funded by state bonding and the CIA, and has four (4) public policy priorities – open space (i.e., DEEP), agriculture preservation (i.e., DoAg), historic preservation (i.e., DECD), and affordable housing (i.e., CHFA).

Since 1978, DoAg has permanently protected 386 farms on 46,142 acres (i.e., about a third of the total acreage goal) by awarding \$128 MM in Farmland Preservation Program

²⁹ Including forestland, open space land, and other lands

³⁰ These are DoAg supported easements, and does not include easements through DEEP’s OSWA program (i.e., see Land Conservation), nor USDS-NRCS programs.

grant funds (or \$2,778/acre).³¹ Current law allows the Commissioner the ability to pay up to \$20,000 per acre, subject to appraisal.

It should be noted that USDA NRCS contributes \$2-\$4 million per year to the program as partners.

- **Connecticut Open Space and Watershed Land Acquisition Grant Program** (“OSWA”) (CGS 7-131d) – a matching grants program to provide financial assistance to municipalities, land trusts, and water companies to acquire open space and watershed lands, including the Urban Green and Community Garden Program for vulnerable communities. Initiated in 1998, is funded by state bonding and the CIA, provides financial assistance to municipalities and nonprofit land conservation organizations to acquire land for open space, and to water companies to acquire land to be classified as Class I or Class II water supply property, and is administered by DEEP to leverage state, local, and private funds to create a cooperative open space acquisition program.

Since 1998, DEEP has awarded over \$150 MM in open space grant funds to protect over 41,000 acres (or \$3,659/acre).

- **Connecticut Agriculture Viability Grants Program** – for matching grants up to \$50,000 to plan and implement local farmland preservation strategies, to institute agriculture-friendly land use regulations, or to develop marketing initiatives to support local farm businesses.
- **Conservation Stewardship Program** (“CSP”) – for producers who practice conservation and environmental stewardship, by providing them technical and financial assistance through the USDA-NRCS to help them advance their efforts adopting additional conservation activities and maintaining their baseline level of conservation.
- **Emergency Watershed Protection Program** – program administered by NRCS to respond to floods, fires, windstorms, and other natural disasters. The program funds removing debris, protecting eroded banks, correcting damaged drainage facilities, repairing levees, and purchasing flood plain easements. For construction activities, it provides up to 75% of the project costs.
- **Environmental Quality Incentives Program** (“EQIP”) – cost-share assistance program that provides up to 75 percent (90 percent for historically underserved producers) of the cost to implement certain structural and management practices on eligible agricultural land, including the following management practices: conservation tillage, cover cropping, nutrient management, and integrated pest management. EQIP payments are capped at \$450,000 in aggregate payments over five years.
- **Farmland Restoration Grant Program** – a component of the climate-smart agricultural practices bill that passed the Connecticut General Assembly 2022 session, will provide farmers with resources to implement climate-smart practices.

³¹ Status of State PACE Programs by the American Farmland Trust and USDA’s Farmland Information Center

The following is a breakdown of the current financing (i.e., loans, tax credits) programs that could support agriculture in Connecticut:

- **Business and Industry Loan Guarantee Program** – through the USDA's Rural Development programs, this program provides a loan guarantee that allows businesses to work with commercial lenders who might not otherwise extend credit. A borrower may be a cooperative organization or a number of other forms, including individuals and land trusts. Loans can be used for preventing a business from closing, expand or convert a business, or purchase land, machinery, or equipment. The total loan amount may not exceed \$10 MM.
- **Municipal Loan Program** (CGS 22-26mm) – the Commissioner of Agriculture shall administer a program providing eligible municipalities with a loan for purchasing or agricultural lands, through the “municipal purchasing of agricultural land account” within the General Fund. Such loan shall be for a period not to exceed five years and shall not be subject to interest. Municipalities shall be eligible for such loan if they provide not less than twenty percent of the purchase price of such lands and may apply for such loan on a form prescribed by the Commissioner.
- **Rural Energy Savings Program** (“RESP”) – RESP provides loans to rural utilities and other companies who provide energy efficiency loans to qualified consumers to implement durable cost-effective energy efficiency measures. The terms of the RESP loans are up to 20 years at 0% interest rate, up to 5% interest rate for relending to end-use customers for up to 10 years, and up to 4% of the loan may be used for start-up costs. Funds may be used for the purpose of implementing energy efficiency measures to decrease energy use or costs for rural families and small business. On September 20, 2020, the Green Bank submitted an application into the USDA's Rural Utilities Service's RESP to borrow \$10 MM for the purpose of financing clean energy projects in rural communities throughout Connecticut. The proceeds from the RESP would be used as capital to finance projects through the Green Bank Solar PPA, Capital Solutions, and C-PACE programs, along with Shared Clean Energy Facilities projects. As of June 1, 2022, the USDA has not yet made a determination on the Green Bank application.
- **Tax Considerations** – per Internal Revenue Code section 170(h) criteria, donations of agricultural conservation easements generally qualifies as a tax-deductible charitable gift. This means that a landowner can claim the value of the easement as a federal income tax deduction. The value of an agricultural conservation easement is the difference between the property's fair market value (the “before” value) and its value as restricted by the easement (the “after” value) as determined by a qualified appraiser. Landowners may claim a federal tax deduction for a donated portion of a sale (i.e., difference between easement appraised value and its actual sales price). The federal tax code in 2006 established an enhanced tax deduction for conservation easements that allows landowners to claim a deduction of up to 50 percent of their adjusted gross income in any given year and to spread those deductions over a period of 15 years – corporations are limited to 10 percent deductions.

Accessing funding or financing resources for agriculture in Connecticut can be difficult. Identifying new mechanisms to access additional funding and financing resources, especially those that seek to unlock more private capital investment, could provide a catalyst to increase and accelerate investment in agriculture in Connecticut. The Infrastructure Investment and Jobs Act (“IIJA”) presents an opportunity to access funding and financing resources through formula or competitive grants for “agriculture”.

7. Other Programs

The following are other items of note with respect to “agriculture”:

- **Connecticut Farm Link Program** – established by DoAg in 2007, and funded by CIA, it connects farmers seeking land with farmland owners looking to sell or lease acreage. CT Farmlink provides resource information and some technical assistance about farm leasing, farm transfer, farm succession planning, family farm estate planning, and farm transfer strategies. www.ctfarmlink.org
- **COMET Farm** – is a farm and ranch carbon and greenhouse gas accounting system developed by the USDA-NRCS. The tool guides farmers through describing how their farm and ranch management practices compare the carbon changes and greenhouse gas emissions between current and future scenarios. <https://comet-farm.com/Home>
- **Center for Land-Use Education and Research (“CLEAR”)** – within the College of Agriculture, Health, and Natural Resources at the UCONN, CLEAR’s mission is to provide information and assistance to land-use decision-makers and other audiences in support of better land-use decisions, healthier natural resources, and more resilient communities. <http://clear.uconn.edu/projects/landscape/CT/landcoverviewer.htm#top>
- **Open Space Review Board** – is an independent advisory group of volunteers appointed by the Governor and leadership within the CGA under CGS 7-131(e) to oversee OWSA and RNHT programs.
- **Various Other Boards and Councils** – including, but not limited to Connecticut Farm Wine Development Council, Connecticut Food Policy Council, Connecticut Seafood Development Council, Farmland Preservation Advisory Board, and DEI in Connecticut Agriculture Working Group.³²

8. Stakeholder Outreach

In an effort to understand the public policy and marketplace context for “agriculture” in Connecticut, the Green Bank met with many organizations.³³

³² <https://portal.ct.gov/DOAG/Boards/Boards-Boards-Councils-and-Commissions>

³³ **Agriculture** – American Farmland Trust, Berkshire Agriculture Ventures, City Seed, Connecticut Farm Bureau Association, Connecticut Farmland Trust, Connecticut Resource and Conservation Development, Dirt Capital Partners, DoAg, Gather New Haven, Green Wave, The Last Green Valley, Natural Resources Conservation Service, UCONN, Washington State Housing Finance Commission, Working Lands Alliance, and Yale Forest School

Land Conservation – American Forest Foundation, Audubon Connecticut, Connecticut Audubon, Connecticut Land Conservation Council, Conservation Finance Network, DEEP, Ecosystem Investment Partners, Goldman Sachs, Highstead, New

These 16 agriculture-related organizations primarily represent non-profit organizations but included public and for-profit organizations as well.

The objectives of these one-hour conversations included:

- **Introductions** – to get a better understanding of the mission and initiatives of the various public, nonprofit, and for-profit stakeholders operating within the “agriculture” space, and to introduce the Green Bank;
- **Environmental Infrastructure** – inform the various stakeholders about the “environmental infrastructure” policy,³⁴ process the Green Bank is pursuing to develop a Comprehensive Plan, and to elicit discussion on the following areas:
 - **Relevance** – how relevant “environmental infrastructure” and its components (e.g., agriculture) are to the stakeholder’s mission and initiatives;
 - **Policies and Targets** – what local, state, and federal policies (e.g., Community Investment Act), including plans (e.g., Green Plan) are important from the stakeholder’s perspective, and what targets (e.g., 130,000 acres of preserved farmland) are they seeking to achieve;
 - **Metrics** – what are the key metrics stakeholders believe are important in terms of monitoring and evaluating success from investments in “environmental infrastructure” improvements and “agriculture”;
 - **Vulnerable Communities** – how does the stakeholder’s organization think about the impacts that must be addressed from climate change to build the resilience of vulnerable communities;³⁵ and
 - **Stakeholder Identification** – who else should the Green Bank meet with on the topic.

From these conversations, the Green Bank was able to develop a better understanding as to the role it might play in terms of financing “agriculture” from the perspective of its mission – to confront climate change.

England Forestry Foundation, New England Society of American Foresters, Quantified Ventures, Save the Sound, The Nature Conservancy, TNC’s Nature Vest Program, and Yale Forest School
Parks and Recreation – Connecticut Forest and Parks Association, Connecticut Greenways Council, Connecticut Recreation and Parks Association, DEEP, Green Eco Warriors, Keney Park Sustainability Project, Sierra Club, Trust for Public Lands, and Urban Resources Initiative.

³⁴ Public Act 21-115 – An Act Concerning Climate Change Adaptation”

³⁵ As defined by Public Act 20-05

9. Findings

Based on the various meetings with public, nonprofit, and private stakeholders, the following are key findings with respect to agriculture (it should be noted that additional findings have been generalized in the footnote):³⁶

- **Consistent with Mission to Confront Climate Change** – “agriculture,” including its lands and a range of stewardship practices by farmers, ranchers, and forest landowners, sequester carbon and reduce GHG emissions, while also improving resilience to extreme weather (e.g., flood control), and therefore is consistent with the Green Bank’s mission to “confront climate change”. As the impacts of climate change are outpacing the ability for gray infrastructure (e.g., stormwater systems) to manage it, green infrastructure (e.g., agriculture) provides an excellent ability to mitigate flooding, and sequester carbon through climate smart practices and resilience through production of commodities (e.g., carbon offsets, ecosystem services).
- **Agricultural Land is an Endangered Species** – there is a need to slowdown the loss of farmland in Connecticut from development, and protect it to provide benefits (e.g., food security,³⁷ public health, local and regional economic development, housing) to citizens and communities of Connecticut – if we lose it, it is gone forever. The cost of community services (“COCS”) versus the potential for local property tax revenues³⁸ come into conflict for land-use planners when faced with decisions to support agriculture versus development. It is important to not only protect marginal farmlands, but to specifically protect prime farmland because maintaining and continuously improving soil quality is vital for delivering the full benefits agriculture industry can provide across the state. Clean energy development (e.g., large solar fields or large scale solar) is adversely impacting farmlands, especially when sited on prime farmland. Dual-use solar on land (e.g., agrivoltaics) that has not been designated prime farmland by DoAg, nor important by USDA-NRCS could be explored.
- **Business is Difficult but Necessary** – the \$580 MM agriculture industry in Connecticut³⁹ bears significant expenses. Primary amongst the cost of farming in Connecticut is labor (i.e., \$170 MM), equipment and supplies (\$49 MM), energy (i.e., \$44 MM),⁴⁰ and interest from debt (\$14 MM). In managing profits and expenses, farmers, generally, resist debt because loans create challenges to profit margins. With the everchanging climate, weather patterns are creating challenges to growing seasons and there is a need to invest in the modernization of infrastructure for the agriculture industry in Connecticut (e.g., urban agriculture, smart farms, livestock processing,

³⁶ Additional findings – there are a number of additional funding sources for agriculture assistance (e.g., Supplemental Nutrition Assistance Program or “SNAP”, Women, Infants, and Children or “WIC”), eel grass is for water as lichen is for air, kelp starts to deteriorate in 24 hours, can sink kelp to store carbon, farms must be places for food production and not a living space for the rich, role of local land-use boards determining battlegrounds for agriculture, value of volunteer time for federal resource match is \$33 per hour, need for crop insurance as filing for losses is cumbersome and not currently being practiced, PFAS contamination, manure management problems from phosphorus, culverts being undersized, stream bank erosion, dam removal (i.e., \$800,000 cost) vs. improvement (i.e., \$9 MM cost last for 50-100 years), from seeds to soils.

³⁷ It should be noted that based on data from the Bureau of Economic Analysis, 11.8% of households in Connecticut experience food insecurity – with 4.9% as very low food secure households.

³⁸ And the impacts of Public Act 490 on use value for local property taxation

³⁹ 2017 Census of Agriculture – Connecticut (7)

⁴⁰ Other major expenses include seeds, plants, vines, and trees (i.e., \$60 MM), feed (i.e., \$52 MM), and depreciation (\$33 MM)

distribution networks) to make the state more resilient to such dramatic changes.⁴¹ Crop insurance – of which about 74% or 290 million acres in 2016 and \$8 billion from the federal government in 2019 subsidizing the crop insurance system – protects farmers against large financial loss caused by crop failures or market fluctuations (e.g., commodity price fluctuations).⁴²

- **Money is Not Always the Problem** – as important as local, state, federal, and private funding and financing resources are, sometimes not having enough people in government (e.g., streamlining farmland protection efforts), shortage of farm labor, having onerous processes (i.e., “red tape”), an inability to speak to co-benefits (e.g., job creation, resilience), or lack of understanding of important tools (e.g., conservation finance) can substantially inhibit progress towards increasing investment in agriculture.
- **Need Mechanisms to Monetize Environmental Markets** – stakeholders recognize that environmental markets (e.g., carbon offsets, ecosystem services) may be able to provide additional sources of revenue from “climate-smart practices”^{43,44} to support the growth and development of the agriculture industry in Connecticut. Successful projects require public and/or private recognition of environmental commodity value, involvement of producers (i.e., farmers, including those who are working farmlands, pasturelands, and forestlands) adopting “climate-smart practices,” engagement of scientists and conservation organizations providing technical assistance, credit-worthy long-term purchasers of such commodities, and reliable certifiers and verifiers.
- **Blue Agriculture Potential** – regenerative ocean farming of seaweed and shellfish (i.e., Integrated Multi-Tropic Agriculture or “IMTA” or “3D-Ocean Farming”) is a Connecticut innovation.⁴⁵ Connecticut’s blue agriculture industry is not an offshore fisheries industry, but instead a \$30 MM shellfish industry in the estuary waters of Connecticut and New York’s Long Island Sound. Farmers can bid for 5 to 15-year leases (i.e., 75,000 acres) and request permits to farm (i.e., currently 25,000 acres of active production) for seaweed and shellfish to produce 10 to 30 tubs of seaweed and 250,000 shellfish per acre, which as a bio-remediator absorbs nitrogen and phosphorus from non-point source pollution (e.g., stormwater and combined sewage overflow from Connecticut, air pollution from the west) and store carbon,⁴⁶ generate \$300,000 in revenue per farm, and provide 2 to 3 fulltime jobs and 7 to 10 seasonal jobs.⁴⁷ Seaweed can also produce bioplastics, bioenergy, and other consumer products.

⁴¹ As highlighted by the public health impact of COVID, there are only 3 days of perishable food available this side of the Hudson.

⁴² “The Case for Crop Insurance Reform” by Cortney Ahern Renton and Claire Huntley Lafave in the Conservation Finance Forum (April 8, 2020)

⁴³ Native Energy produced carbon offsets (certified by the Voluntary Carbon Standard) from the 275-acre Laurel Brook Farm in East Canaan from over 800 cows producing 2,000 TCO₂ offsets per year

⁴⁴ Various agricultural and forestry practices (e.g., replacing synthetic nitrogen over time, soil health shares) within the COMET planner and 2017 NASS AgCensus data within the United States Climate Alliance Report

⁴⁵ <https://www.youtube.com/watch?v=6GchLfXTgII>

⁴⁶ Through the Kelp Climate Fund, Green Wave provides farmers \$0.10/pound of kelp farmed - <https://www.greenwave.org/kelp-climate-fund>

⁴⁷ Seaweed is 25% carbon and about 2-3% nitrogen according to Green Wave

- **Impact Metrics** – the following is a “high level” breakdown of the types of metrics appropriate for agriculture – see Table 5.

Table 5. Relevant Metrics Identified by Stakeholders on Agriculture

Inputs	Outputs	Outcomes
<ul style="list-style-type: none"> ○ # of Farmers ○ Diversity of Farmers ○ # of Farms ○ Types of farms (farmlands, pasturelands, forestlands, oceanlands) ○ Acres of Farms ○ New farmlands (e.g., community gardens, controlled environment agriculture) ○ New practices (e.g., climate-smart) ○ Infrastructure Investment ○ Agricultural Conservation Easements ○ Programs for BIPOC farmers ○ Municipal land-use boards support of agriculture ○ Location of farms (e.g., urban farms) 	<ul style="list-style-type: none"> ○ Produce ○ Types of Produce ○ Culturally relevant crops ○ Agriculture revenues and expenses (including per acre) ○ Wholesale and retail price ○ Infrastructure (e.g., housing, production, processing, distribution, energy costs) ○ Cost to transport ○ Community Supported Agriculture subscriptions ○ Protected farmland 	<ul style="list-style-type: none"> ○ Profitable Connecticut Grown producers ○ Increased ownership of farms by BIPOC farmers ○ Connecticut Grown consumers ○ Climate smart commodities (e.g., carbon offsets) including total, price, and term ○ Ecosystem services (e.g., resilience, public health, water quality, soil quality) ○ Jobs ○ Food security (e.g., reduced food imports) ○ Fewer crop losses (e.g., crop insurance claims)

- **Vulnerable Communities** – even though BIPOC represent nearly one-quarter of the U.S. population, they operate less than 5% of farms, and cultivate less than 1% of farmland – in Connecticut, approximately 1.4% of farmers are BIPOC, compared to the BIPOC population being nearly 37% in the state.⁴⁸ About 6.5% of farms and 10.0% of farmland is operated by tenant farmers who own none of their land. Increasing BIPOC access to farming and ownership of farms by BIPOC entrepreneurs is needed.

These are the key findings from the stakeholders on agriculture.

10. Opportunities

The following is a list of opportunities for consideration by the Green Bank given the broad categories of information and data, environmental markets and conservation finance, funding and financing sources, and other potential opportunities:

1. **Information and Data** – as a foundation, access to high quality information is important from which to base decisions. The following is a breakdown of opportunities for consideration with respect to information and data:

⁴⁸ “Farmland Needed – How Connecticut Can Help Farmers Access the Land They Need to Succeed” by the American Farmland Trust and Connecticut Department of Agriculture (January 2021)

- A. **Connecticut Grown** – is the marketing brand for promoting products made in Connecticut and sold to consumers. Continuing to increase the awareness of the logo by and the purchasing of products from consumers is an important demand-side approach for fostering the sustained orderly development of the local agriculture industry. Considering community-based marketing approaches such as Solarize,⁴⁹ into an agriculture-focused community-based campaign for CSA's, farmers markets, food waste collection, etc. can increase consumer demand for Connecticut Grown products.
 - B. **Connecticut Farm Link** – to improve the capabilities of connecting farmland owners to farmland seekers and producers, support for improving the Connecticut Farm Link technology may be necessary. Currently, there are more farmland seekers than owners, and farmland owners rely on traditional realtor sites like Zillow and Realtor.com to list their properties.
 - C. **Land Grant and Sea Grant Universities** – Connecticut has robust land grant (i.e., UCONN – Storrs) and sea grant (i.e., UCONN – Avery Point) universities, and the Yale School of the Environment's Forestry School, which owns nearly 8,000 acres of managed forestland in Connecticut. Utilizing these resources for research, education, and outreach to confront climate change through agriculture is necessary.
 - D. **Yale School of the Environment** – Yale School of the Environment, and its work supporting conservation finance (e.g., partnership with the Conservation Finance Network) presents a unique opportunity to continuously inform and develop conservation finance practitioners in Connecticut. The Green Bank should consider providing local stakeholders with access to information (e.g., promoting Conservation Finance Network) and professional development opportunities (e.g., sponsorship of bootcamps on conservation finance) to accelerate the advancement and practice of conservation finance in Connecticut.
 - E. **Land Trusts** – included within the data warehouse the inventory of land trusts across the state where there are easements held.
2. **Environmental Markets and Conservation Finance** – in terms of identifying potential carbon offset and/or ecosystem services revenue streams within compliance and voluntary markets that can support financing of agriculture, the following is a breakdown of opportunities for consideration with respect to environmental markets and conservation finance:
- A. **Partnership for Climate-Smart Commodities** – see below under "Funding and Financing" section.
 - B. **Procurement** – similar to power purchase agreements for clean energy, assisting producers connect with consumers of climate-smart products and

⁴⁹ <https://cbey.yale.edu/research/solarize-your-community-an-evidence-based-guide-for-accelerating-the-adoption-of>

commodities through guaranteed offtake agreements,⁵⁰ including community-supported agriculture.

3. **Funding and Financing Sources** – in terms of identifying additional funding (i.e., grants) and financing (e.g., loans) that can increase and accelerate investment, the following is a breakdown of opportunities for consideration with respect to funding and financing of agriculture:

- A. **Green Liberty Bonds** – issue a \$25 MM bond⁵¹ to raise proceeds to support investments in agriculture, including, but not limited to:

- i. **Pilot Revolving Loan Fund for Buy-Protect-Sell (or Lease to Own)**

– modelling the Farmland Protection and Affordability Investment (“Farmland PAI”) Program of Washington State, working in collaboration with DoAg and nonprofit agricultural conservation organizations, provide loans to land trusts to help them move quickly to permanently protect critical farmland from development. A \$25 MM pilot revolving loan fund⁵² would offer low interest rates and better terms to support land trusts buy land now for later protection and management (i.e., working land easements), and sale (or lease), including priority for BIPOC farmers and farm ownership. The Green Bank needs to understand if it can pursue this approach as a foundational strategy for agriculture (and land conservation). A growing number of states also offer loan programs to assist beginning farmers and ranchers with eligible purchases of farmland, equipment, buildings, and livestock through Aggie Bonds.⁵³ Food systems are ripe for the attention that state and municipal clean energy bond finance has received over the last decade from philanthropy and green banks providing credit enhancements to strengthen credit ratings of municipal bonds.⁵⁴

- ii. **Infrastructure Modernization** – working with DoAg, to identify opportunities to invest in critical agriculture industry infrastructure modernization projects (e.g., production, processing, and distribution facilities, resource hubs, cooperative farming models) that would support climate-smart practices and products to develop and grow in the Connecticut marketplace.⁵⁵ This would also include financing physical infrastructure such as food and farm-waste to energy projects, food banks, regional markets, equipment, and industrial kitchens – and technological and promotional infrastructure such as Connecticut Farm

⁵⁰ <https://www.conservationfinancenetwork.org/2019/07/24/how-guaranteed-offtake-can-drive-sustainable-agriculture>

⁵¹ Amount is for discussion purposes only, and set at an amount to match a Connecticut proposal into the USDA’s Commodity Credit Corporation’s “Partnership for Climate Smart Commodities” funding opportunity announcement.

⁵² Assuming the average price for agriculture land is \$12,200 per acre, this fund could support over 2,000 acres of farmland, revolving on average every 5 years.

⁵³ <https://www.cdfa.net/cdfa/cdfaweb.nsf/0/3515CC91CAB651C1882579360059F5E7>

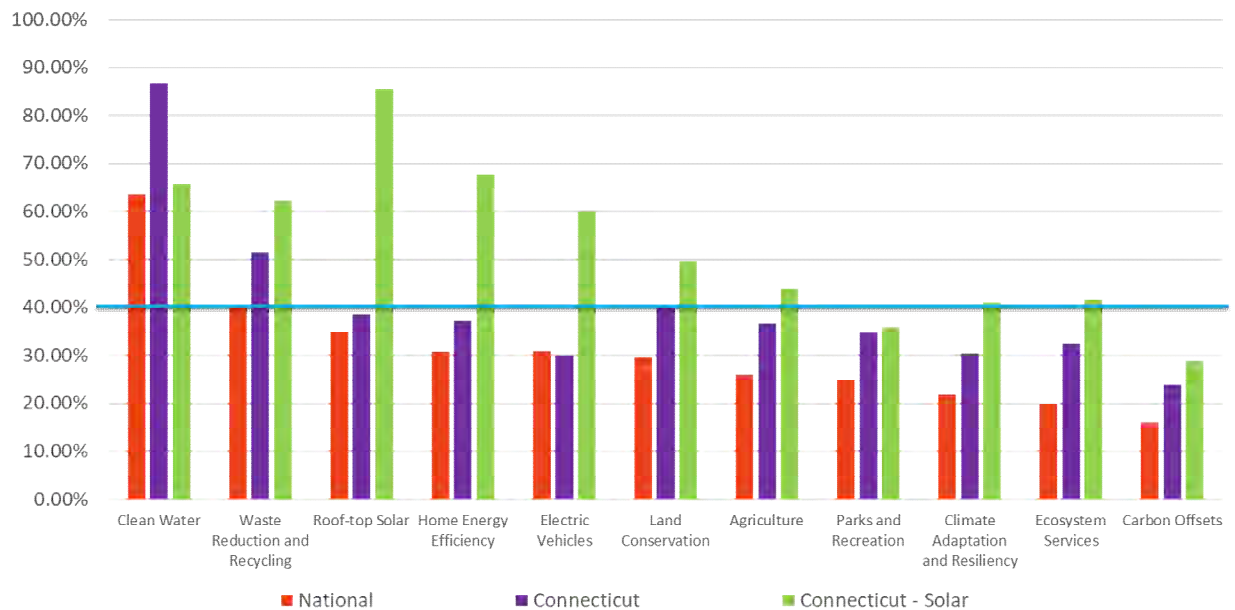
⁵⁴ “Soil Wealth: Investing in Regenerative Agriculture across Asset Classes” by Croatan Institute, Delta Institute, and Organic Agriculture Revitalization Strategy (July 2019)

⁵⁵ For example, providing financing to the redevelopment of Connecticut’s Regional Agriculture Market in Hartford in collaboration with DoAg and CRDA

Link, “Connecticut Grown – Climate Smart,” and direct delivery of community supported agriculture memberships. Low cost and long-term financing for clean energy (e.g. dual-use solar, battery storage, combined heat and power, fuel cells) to lower energy costs and meet qualifications for forage and crop yield should be considered.

From research conducted by the Green Bank, it can be seen that retail investors in bonds are interested in agriculture, including Connecticut citizens who are also interested in investing in rooftop solar and home energy efficiency – see Figure 8.

Figure 8. Retail Investor Use of Proceed Interest in Clean Energy and Environmental Infrastructure



- B. Partnership for Climate-Smart Commodities** – working with UCONN and DoAg, UCONN submitted a \$50 MM proposal, that would have been matched by a \$25 MM Green Liberty Bond, through the \$1 billion competitive solicitation of the United States Department of Agriculture’s (“USDA”) Commodity Credit Corporation (i.e., USDA-NRCS-COMM-22-NOFO0001139) in response to the climate crisis by supporting actions within the agriculture sector to produce climate-smart commodities.⁵⁶ As the lead primary applicant, UCONN would support producers adopt and sustainably implement climate-smart practices, and as the co-lead, the Green Bank, with its expertise from the Residential Solar Investment Program (see Figure 9), would adapt the clean energy model to climate-smart agriculture (see Figure 10). Included with the proposal is \$5 MM for performance-based incentives based on certified and verified carbon offsets. The project submitted by UCONN, in the end, wasn’t supported by the USDA.

⁵⁶ Defined as an agricultural commodity that is produced using agriculture (i.e., farming, ranching, or forestry) practices that reduce greenhouse gas emissions or sequester carbon.

However, DoAg subsequently released a \$14 MM grant program in support of climate smart agriculture in Connecticut.

Figure 9. Residential Solar Investment Program – From SHRECs to Green Liberty Bonds

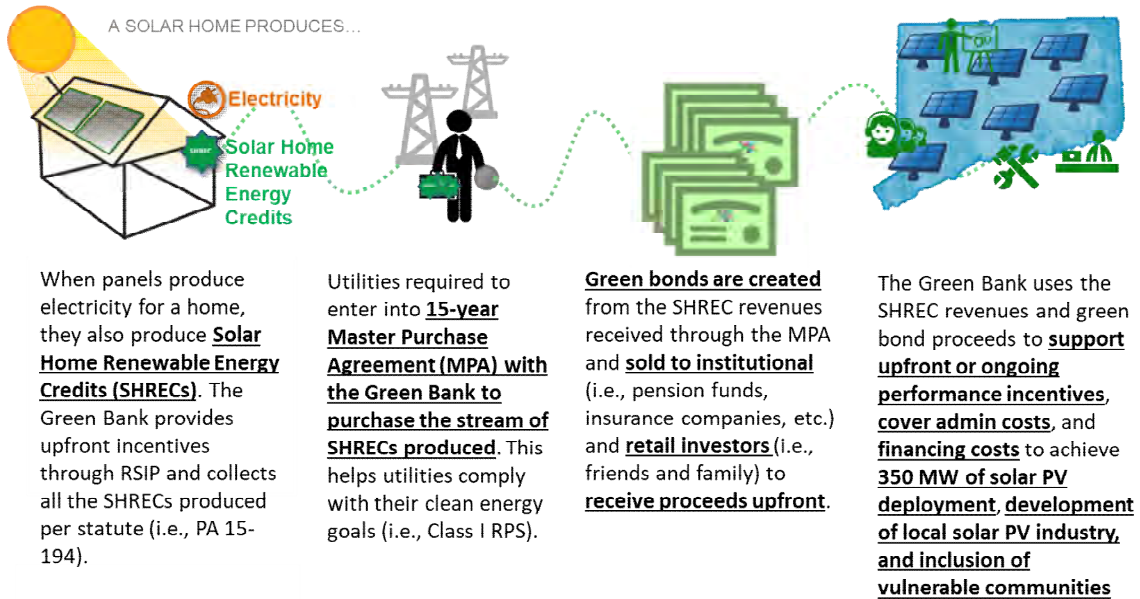
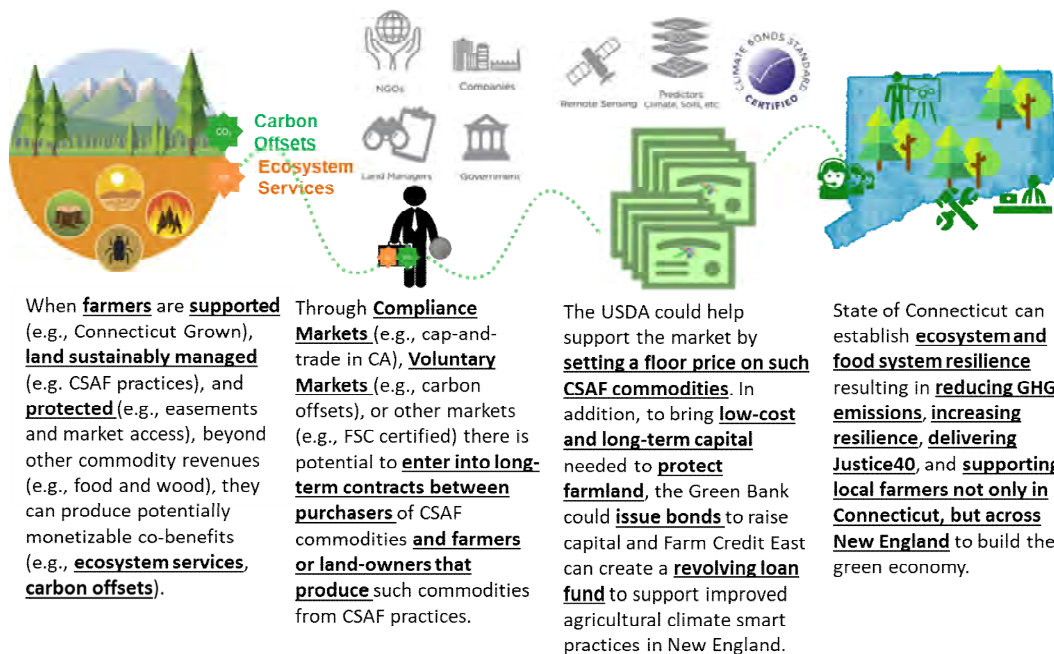


Figure 10. Climate Smart Controlled Environment Agriculture (CEA) for Tribes and Small Farms in New England: Building Profitable, Sustainable and Resilient Farms



C. **Community Match Fund** (“CMF”) – a program of Sustainable CT, the Community Match Fund provides fast, flexible funding, and support for community engagement on a wide-range of sustainability projects. This societal

value uses an innovative, online tool to connect grant contributions from the “crowd,” which are matched by various donor interests, including, but not limited to individuals, foundations, and the State of Connecticut. As of January 1, 2022, the Fund has raised \$1.3 MM from nearly 10,000 individual contributors, which was matched by \$1.1 MM from various sponsors, and supported 195 projects. The Green Bank could consider working with entities like Sustainable CT, with tools like the CMF, to enable funding for agriculture to be matched by the crowd, while also ensuring that equity and vulnerable communities are front and center in receiving the benefits of such investment.

4. Other Potential Opportunities – there are a number of other potential opportunities that can support financing of agriculture, including:

A. Public Policy – working with DoAg, consider public policies to advance farmland protection in Connecticut with the goal of “no net loss of farmlands and forestlands to development,” including, but not limited to:

i. Establishing Statutory Goals – similar to the Open Space goal (i.e., 22% by 2023, which may include agriculture), renewable energy goal (i.e., RPS), and GHG emission reduction goal (i.e., Global Warming Solutions Act), establish targets for farmland protection as the foundation to goal setting, including bringing new farmers into the agriculture industry.

ii. Negative Emissions – as proposed by the Connecticut Forest and Parks Association with respect to Senate Bill 10, add a “negative emissions” definition,⁵⁷ require “negative emissions” in GHG emissions inventory, and recognize the importance of nature-based solutions within the Global Warming Solutions Act.

iii. Conservation Finance Act – consider public policies that provide incentives for performance-based outcomes modelled after proposed Senate Bill 348 “Conservation Finance Act” in Maryland,⁵⁸ which would enable more private investment in nature-based solutions that result in measurable improvements to ecosystems, including carbon offsets and ecosystem services.

B. Sustainable CT – commits municipalities to take on a variety of tasks to promote sustainability and earn points for community designation, including “Developing Agriculture-Friendly Practices,” including:

i. 4.3.1. – adopt land use policies and regulations that allow and support active agricultural uses;

⁵⁷ “Negative emissions” means greenhouse gases that are removed from the atmosphere through nature-based solutions such as soils, forests, wetlands, and other working or natural lands, or through negative emissions technologies.

⁵⁸ <https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/SB0348>

- ii. **4.3.2.** – allow active agriculture use of municipal land or provide outreach on CT Farmlink (linking available municipal or private lands to farmers looking for land to farm).
- iii. **4.3.3.** – develop a Transfer or Purchase of Development Rights program.
- iv. **4.3.4.** – hold a farmer forum to identify critical needs or issues for agriculture in the community.

Promote the existing areas noted above while exploring the possibility of additional points to advance agriculture in Connecticut.

- C. **Commitment to Prime Farmland** – given their inefficiency⁵⁹ and footprint, and given the importance of quality soil for agriculture and food security, the Green Bank should consider never providing capital to finance solar PV projects on prime farmland unless dual-use solar (e.g., agrivoltaics). It should be noted that the Green Bank has financed clean energy projects on farmland (i.e., farm waste to energy – AD and CHP)⁶⁰ and forestland (i.e., wind power).⁶¹

These are a few of the opportunities identified by the Green Bank to support its mission and advance agriculture in Connecticut. Developing a method for prioritizing what opportunities under consideration are ultimately pursued, given the limited human and financial resources, and organizational structure of the Green Bank, is an activity for a later date.

11. References

In addition to the conversations with stakeholders, the Green Bank reviewed the following documents to support its findings and opportunities:

- **Building Blocks for Climate Smart Agriculture and Forestry** – A USDA resource, including Implementation Plan and Progress Report (May 2016)
- **Conservation Options for Connecticut Farmland** – A Guide for Landowners, Land Trusts, and Municipalities (2020 Edition) by the American Farmland Trust
- **Climate 21 Project** – Biden-Harris Transition Memo for the Department of Agriculture
- **Economic Impacts of Connecticut’s Agricultural Industry** – by the UCONN College of Agriculture, Health and Natural Resources: Report No. 6 (September 2017)
- **Planning for Agriculture** – A Guide for Connecticut Municipalities: Emerging Agricultural Trends (2020 Edition) by the American Farmland Trust and Connecticut Department of Agriculture

⁵⁹ Solar PV has capacity factor of 15% versus wind of 35%, hydro of 35%, AD of 30-80%, and fuel cells of 90%.

⁶⁰ <https://aggridenergy.com/fort-hill-ag-grid-digester/>

⁶¹ https://www.thewindpower.net/windfarm_en_22885_colebrook-south.php

- **Wildlands and Woodlands – Farmlands and Communities: Broadening the Vision for New England** – by The Harvard Forest, Highstead Foundation, and New England Forestry Foundation (2017)

12. Definitions

The following are important definitions when it comes to “agriculture” in Connecticut:

- **Agriculture** (CGS 1-1(q)) – shall include cultivation of the soil, dairying, forestry, raising or harvesting any agricultural or horticultural commodity, including the raising, shearing, feeding, caring for, training and management of livestock, including horses, bees, the production of honey, poultry, fur-bearing animals and wildlife, and the raising or harvesting of oysters, clams, mussels, other molluscan shellfish or fish; the operation, management, conservation, improvement or maintenance of a farm and its buildings, tools and equipment, or salvaging timber or cleared land of brush or other debris left by a storm, as an incident to such farming operations; the production or harvesting of maple syrup or maple sugar, or any agricultural commodity, including lumber, as an incident to ordinary farming operations or the harvesting of mushrooms, the hatching of poultry, or the construction, operation or maintenance of ditches, canals, reservoirs or waterways used exclusively for farming purposes; handling, planting, drying, packing, packaging, processing, freezing, grading, storing or delivering to storage or to market, or to a carrier for transportation to market, or for direct sale any agricultural or horticultural commodity as an incident to ordinary farming operations, or, in the case of fruits and vegetables, as an incident to the preparation of such fruits or vegetables for market or for direct sale.
- **Agriculture Conservation Easement** – is an easement specifically designed for agricultural land. It is a deed restriction or deed covenant that landowners donate or are paid to place on their property.
- **Aquaculture** (CGS 1-1(q)) – means the farming of the waters of the state and tidal wetlands and the production of protein food, including fish, oysters, clams, mussels and other molluscan shellfish, on leased, franchised and public underwater farmlands.
- **Community Supported Agriculture (“CSA”)** – is a food production and distribution system that directly connects farmers and consumers with Connecticut grown products. Consumers purchase shares of a farm’s harvest in advance and then receive a portion of the crops as they are harvested.
- **Conservation Easement** – is a deed restriction or deed covenant that landowners voluntarily place on part or all of their land. The easement limits development in order to protect the land’s natural resources.
- **Environmental Infrastructure** – means structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to, carbon offsets and ecosystem services.

- **Farm** (CGS 1-1(q)) – includes farm buildings, and accessory buildings thereto, nurseries, orchards, ranges, greenhouses, hoopouses and other temporary structures or other structures used primarily for the raising and, as an incident to ordinary farming operations, the sale of agricultural or horticultural commodities.
- **Farm Land** (CGS 12-107b) – means any tract or tracts of land, including woodland and wasteland, constituting a farm unit.
- **Open Space Land** (CGS 12-107(b)(3))⁶² – open space land means any area of land, including forest land, land designated as wetland under section 22a-30 and not excluding farm land, the preservation or restriction of the use of which would (A) maintain and enhance the conservation of natural or scenic resources, (B) protect natural streams or water supply, (C) promote conservation of soils, wetlands, beaches or tidal marshes, (D) enhance the value to the public of abutting or neighboring parks, forests, wildlife preserves, nature reservations or sanctuaries or other open spaces, (E) enhance public recreation opportunities, (F) preserve historic sites, or (G) promote orderly urban or suburban development.
- **Option to Purchase at Agriculture Value (“OPAV”)** – is a voluntary legal agreement that restricts the sale of land to only certain farmers or to family members, and restricts the sale price to agricultural value (versus the higher fair market value). An OPAV is placed when the landowner sells or donates an OPAV to a land trust or government agency. Once land has an OPAV, its value is usually lowered (because the land is no longer able to be sold to all willing buyers and must be sold for agricultural value). This decreased value can make land with an OPAV more affordable for buyers, including farmers who may want to purchase the land.
- **Prime Farmland** – based on Natural Resources Conservation Service (“NRCS”) criteria, “prime” farmland is land with soils that have the best combination of physical and chemical characteristics for producing crops.
- **Purchase of Development Rights (“PDR”)** – also referred to as the Purchase of an Agricultural Conservation Easement (“PACE”) in other states, PDR is process by which an entity, usually a town or state government, purchase the development rights from a willing landowner, restricting future use of the land. Typically a conservation easement restricts residential and non-farm commercial development of the property in perpetuity, while allowing continued use of the land for farming. The landowner retains ownership of the land and may sell it or pass land on to heirs. The current, and all future owners, must abide by the terms of the easement. Easements are held by state, local government, and/or land conservation organization, and the entity that holds the easement is responsible for ensuring that the terms of the easement are upheld. Land under an agricultural conservation easement may be permanently assessed at its use value.
- **Resilience** – means the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from deliberate attacks, accidents or naturally occurring

⁶² https://www.cga.ct.gov/current/pub/chap_203.htm#sec_12-107b

threats or incidents, including, but not limited to, threats or incidents associated with the impacts of climate change.

- **Vulnerable Communities** – means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, (1) low and moderate income communities, (2) environmental justice communities pursuant to section 22a-20a, (3) communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, (4) populations with increased risk and limited means to adapt to the effects of climate change, or (5) as further defined by the Department of Energy and Environmental Protection in consultation with community representatives.
- **Working Lands Easement** – help private and tribal landowners, land trusts, and other entities such as state and local governments protect croplands and grasslands on working farms and ranches by limiting non-agricultural uses of the land through conservation easements.



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9/22



STATE OF CONNECTICUT
DEPARTMENT OF BANKING

260 CONSTITUTION PLAZA – HARTFORD, CT 06103-1800



Jorge L. Perez
Commissioner

August 9, 2022

Ann E. Misback
Secretary, Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue, NW
Washington, DC 20551

Chief Counsel's Office
Attention: Comment Processing
Office of the Comptroller of the Currency
400 7th Street, SW
Suite 3E-218
Washington, DC 20219

James P. Sheesley
Assistant Executive Secretary, Federal Deposit Insurance Corporation
Attention: Comments RIN 3064-AF81
550 17th Street, NW
Washington, DC 20429

**Re: Connecticut Department of Banking Comments on Proposed Rule –
Community Reinvestment Act Regulations (RIN 7100-AG29; OCC Docket ID
OCC-2022-0002; RIN 3064-AF81)**

To whom it may concern:

The Connecticut Department of Banking (the “Department”)¹ submits the following

¹ We note that the Department is an agency accredited by both the Conference of State Bank Supervisors (CSBS) and National Association of State Credit Union Supervisors (NASCUS). The accreditations issued by CSBS and NASCUS afford the Department with the ability to conduct alternating and joint examinations with our federal agency counterparts, signaling a recognition of the Department’s strong examination program. The

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Website: <http://www.ct.gov/dob>

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comments in response to the Board of Governors of the Federal Reserve’s, the Office of the Comptroller of the Currency’s, and the Federal Deposit Insurance Corporation’s (collectively, the “Agencies”) request for comments on proposed changes to the Agencies’ Community Reinvestment Act (“CRA”) regulations.

We applaud the Agencies’ attempts to clarify CRA compliance requirements through the proposed rule. We are also encouraged by the coordinated rulemaking approach of the Agencies so that a uniform CRA standard is developed applicable to all banks. We also urge the Agencies to consider broadening the scope of CRA coverage to include certain socially beneficial activities that may not have a direct connection to low- and moderate-income (“LMI”) communities, but would indirectly benefit those communities. Finally, the Agencies should broaden the carve-out in CRA regulations to allow state banking regulators to continue to independently examine and evaluate state-chartered institutions for CRA compliance and should develop a formal mechanism for the identification of CRA eligible loans and activities agreed jointly by the relevant state and federal supervisory authorities.

Coordinated Agency rulemaking helps promote fairness by establishing a uniform CRA standard.

We believe any modernization of CRA standards should be conducted through a coordinated effort of the Agencies so that a uniform standard is created. To that end, we are encouraged that the Agencies have now issued this proposed rulemaking jointly with the aim to establish a uniform standard. Absent such a uniform standard, there is increased likelihood of disparate bank CRA evaluation. We believe such a piecemeal approach does a disservice to all supervised institutions and creates more confusion in the industry. CRA reform should create more certainty for industry and regulators alike. The Agencies’ coordinated approach to this rulemaking should hopefully provide needed clarity for the industry and further CRA’s goal of having a positive impact on LMI communities.

Publishing a non-exhaustive list of qualifying activities and confirming that an activity qualifies for CRA credit will provide clarification and ease compliance burdens.

The Agencies’ proposal to clarify what types of activities qualify for CRA credit is a positive aspect of the proposed rule and will ease CRA-related compliance burdens for financial institutions, particularly community banks. We support efforts to more clearly delineate the CRA treatment of certain activities. Of particular significance, we believe that requiring the Agencies to periodically publish a non-exhaustive list of examples of qualifying activities and establishing a process for banks to seek confirmation that an activity is a qualifying activity will provide much-needed relief and guidance for financial institutions. The list of examples of qualifying activities should be created in consultation and coordination with the Agencies’ state regulatory counterparts. State input will help ensure consistent application of CRA standards.

Department’s examiners’ and managers’ significant regulatory experience also includes the supervision of systemically important financial institutions.

These changes will remove much of the guess work that financial institutions must currently undertake to figure out whether an activity would qualify for CRA credit. Reducing this uncertainty will ease compliance burdens on financial institutions and allow them to focus more resources on actually engaging in CRA-qualifying activities.

Socially beneficial activities, particularly efforts to address climate change, should also count as CRA-qualifying activities.

In order to more fully achieve CRA's fundamental purpose of encouraging banks to serve LMI communities, we believe the scope of CRA-qualifying activities should be modernized and expanded to include those activities that are still socially beneficial for LMI communities even if such transactions do not directly involve a LMI party.

At present, certain investments by banks in broad environmental initiatives or green technology do not qualify for CRA credit. However, such socially beneficial investments could have a significant impact on LMI communities, which are particularly vulnerable to the adverse effects of climate change, and higher energy costs.² States continue to adopt innovative programs that leverage private investment to combat climate change.³ We support efforts that afford CRA credit to financial institutions who invest in such state programs.

We believe this is yet another opportunity for the Agencies to coordinate with their state regulatory counterparts. Such collaboration will allow states to provide useful input regarding the types of socially beneficial activities that should qualify for CRA credit. This will also allow for more consistent application of CRA standards.

We encourage the Agencies to consider such socially and environmentally beneficial activities within the scope of activities for which financial institutions receive CRA credit. Including such activities within the scope of those considered for CRA credit will allow for financial institutions to more holistically serve LMI communities.

State ability to independently examine and evaluate CRA performance should be preserved and coordination between state and federal regulators should be improved.

At present, Connecticut is one of a handful of states that also retains the authority to examine and evaluate state-chartered financial institutions for CRA compliance.⁴ The Department has decades

² See Fourth National Climate Assessment, *available at* <https://nca2018.globalchange.gov/>. ("Impacts [of climate change] within and across regions will not be distributed equally. People who are already vulnerable, including lower-income and other marginalized communities, have lower capacity to prepare for and cope with extreme weather and climate-related events and are expected to experience greater impacts. Prioritizing adaptation actions for the most vulnerable populations would contribute to a more equitable future within and across communities.")

³ In Connecticut, for example, the legislature created the Green Bank, which is a quasi-public entity that works with private financial institutions to ensure, among others, that vulnerable communities have access to capital in order to benefit from a so-called "green economy."

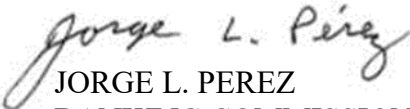
⁴ Conn. Gen. Stat. §§ 36a-30 through 36a-37e. Moreover, Connecticut's CRA authority also includes

of experience evaluating the CRA performance of state-chartered financial institutions.⁵ We believe that our ability to continue to independently evaluate state-chartered institutions' CRA activities strengthens financial institution commitment to the underlying principles of CRA and has a positive impact on LMI communities in Connecticut. Accordingly, any changes to the CRA regulations should preserve states' ability to independently examine and evaluate the CRA performance of state-chartered financial institutions.

Additionally, we believe additional coordination between federal and state regulators can be achieved to further the mission of CRA. A joint body comprised of representatives from both federal and state agencies should be established to vet and accept activities that qualify for CRA credit to ensure consistency throughout exam cycles. It is also worth exploring the possibility of state and federal agreement to an alternating CRA examination schedule similar to that used for coordination of safety and soundness examinations. Under such an alternating examination schedule, federal agencies would accept state ratings and vice versa, similar to the current state of affairs regarding safety and soundness examinations. This coordinated approach will provide greater clarity to regulated institutions and allow for efficiencies that will reduce regulatory burden.

We thank you for the opportunity to comment on the Agencies' proposed rule-making and are available to answer any questions and work with the Agencies in modernizing CRA regulations.

Sincerely,


JORGE L. PEREZ
BANKING COMMISSIONER

cc: The Honorable Richard Blumenthal, U.S. Senate
The Honorable Christopher Murphy, U.S. Senate
The Honorable John Larson, U.S. House of Representatives
The Honorable Joseph Courtney, U.S. House of Representatives
The Honorable Rosa DeLauro, U.S. House of Representatives
The Honorable Jim Himes, U.S. House of Representatives
The Honorable Jahana Hayes, U.S. House of Representatives
Dan DeSimone, Director of the Governor's Washington D.C. Office

examinations and evaluations of state-chartered credit unions for CRA compliance.

⁵ We note that state CRA examinations are conducted concurrently with federal CRA examinations and involve collection of similar data from the financial institutions, effectively resulting in no additional regulatory burden on state-chartered financial institutions.



August 5, 2022

Ann E. Misback
Secretary
Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue NW
Washington, DC 20551

Chief Counsel's Office
Office of the Comptroller of the Currency
400 7th Street SW, Suite 3E-218
Washington, DC 20219

James P. Sheesley
Assistant Executive Secretary
Federal Deposit Insurance Corporation
550 17th Street NW
Washington, DC 20429

SUBJECT: Community Reinvestment Act
Federal Reserve Board: Docket No. R-1769, RIN 7100-AG29
OCC: Docket ID OCC-2022-0002
FDIC: RIN 3064-AF81

To Whom it May Concern:

The Connecticut Green Bank ("Green Bank") appreciates the Board of Governors of the Federal Reserve System, the Department of the Treasury, Office of the Comptroller of the Currency, and the Federal Deposit Insurance Corporation (i.e., the "Agencies") for the opportunity to comment on the proposed revisions to the implementing regulations for the Community Reinvestment Act ("CRA").

The Green Bank would like to comment on the following three (3) areas:

1. Proposed definition for "disaster preparedness and climate resiliency" ("DPCR"), including comparisons with definitions for "resilience" and "vulnerable communities";¹

¹ Connecticut Public Act 20-05 "AN ACT CONCERNING EMERGENCY RESPONSE BY ELECTRIC DISTRIBUTION COMPANIES, THE REGULATION OF OTHER PUBLIC UTILITIES AND NEXUS PROVISIONS FOR CERTAIN DISASTER-RELATED OR EMERGENCY-RELATED WORK PERFORMED IN THE STATE."

2. Historically filed written comments of April 8, 2020 to the Agencies (less the Federal Reserve System) regarding the role of local and state government; and
 3. Recently filed written comments of July 1, 2022 to the U.S. Department of Energy (“DOE”) regarding proposed changes to the Title XVII Innovative Technologies Loan Guaranty Program (“Title XVII”) of the Loan Program Office (“LPO”).
-

DEFINITIONS

The Green Bank supports the Agencies’ proposal to (1) add DPCR activities as a new category in community development activities eligible for CRA credit, and (2) include the three (3) criteria to qualify for CRA credit.² Benefitting a specific geographic area that includes targeted census tracts should also include Justice 40 Initiative³ disadvantaged communities identified by the DOE.⁴ The proposed rule defines DPCR activities as “activities that assist individuals and communities prepare for, adapt to, and withstand natural disasters, weather-related disasters, or climate-related risks.”

In Connecticut, the following are statutory definitions for “resilience” and “vulnerable communities”:

- **Resilience** – means the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from deliberate attacks, accidents or naturally occurring threats or incidents, including, but not limited to, threats or incidents associated with the impacts of climate change; and
- **Vulnerable Communities** – means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, low and moderate income communities, environmental justice communities pursuant to section 22a-20a [of the Connecticut General Statutes (“CGS”)], **communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time** [emphasis added], populations with increased risk and limited means to adapt to the effects of climate change, or as further defined by the Department of Energy and Environmental Protection in consultation with community representatives.

It should be noted that the Green Bank reports investments and benefits in CRA-eligible communities within the impact sections of its Annual Comprehensive Financial Report.⁵ It should also be noted that the Green Bank reports investments by ethnicity in Metropolitan Statistical Area (“MSA”).⁶

The Green Bank supports the Agencies’ proposed definition of DPCR, however, would encourage the Agencies’ consider relevant policies at the state level to also be included within CRA so as to be mutually inclusive and reinforcing.

² (1) the activities must “benefit or serve residents, including low- or moderate-income residents, in one or more of the targeted census tracts”; (2) the activities must “not displace or exclude low- or moderate-income residents in the targeted census tracts”; and (3) the activities must “be conducted in conjunction with a federal, state, local, or tribal government plan, program or initiative focused on disaster preparedness or climate resiliency that includes an explicit focus on benefitting a geographic area that includes the targeted census tracts.”

³ <https://www.energy.gov/diversity/justice40-initiative>

⁴ <https://energyjustice.egs.anl.gov/>

⁵ <https://www.ctgreenbank.com/wp-content/uploads/2021/11/FY21-CGB-ACFR-Final-11.08.21.pdf> (for example, see Table 157 on Page 270)

⁶ Ibid (Table 161 on Page 274)

ROLE OF LOCAL AND STATE GOVERNMENT

Specifically, with respect to the role of states, the Green Bank would like to acknowledge that alongside the Agencies, there are state regulators that implement CRA for state-chartered banks and community credit unions. Since states better understand the needs of their local economies, including the need to enable investments in DPCR, they should have a role in assisting with and offering their perspective towards federal CRA implementation (e.g., local determination of national qualifying activities).

State and local government should play a role in receiving, assessing, and determining what activities qualify for CRA credit locally, with those determinations then being accepted regionally, or nationally through an appropriate process. For example, the Green Bank enables private investment in “clean energy”⁷ and “environmental infrastructure”⁸ to support the public policy objectives of the State of Connecticut, including, but not limited to, community benefit agreements⁹ and neighborhood-based projects like microgrids, district heating and cooling loops, green spaces (e.g., parks and recreation), and resilience.¹⁰ Those determinations would then be included in the Federal Register on an annual basis.

Local and state government have a role to play in determining federal qualifying activities for CRA.

TITLE XVII LOAN GUARANTY PROGRAM

To implement provisions from the Energy Act of 2020 and the Infrastructure Investments and Jobs Act of 2021, on June 1, 2022, the DOE LPO sought public comments with respect to Title XVII. In an effort to encourage Title XVII to enable investment in CRA-eligible communities, the Green Bank provided the following comments:

1. **Redefine Commercial Technologies** – to increase access to commercial technologies for vulnerable communities, the Green Bank proposed “...including communities eligible for the Community Reinvestment Act of 1977...” with the definition of commercial technologies.
2. **Including CRA Definition** – just as the Title XVII Rules include provisions for the Davis Bacon Act of 1931 to acknowledge the importance of paying the local prevailing wage on public works projects, the Green Bank proposed that CRA also be included within Title XVII to

⁷ Clean energy means solar photovoltaic energy, solar thermal, geothermal energy, wind, ocean thermal energy, wave or tidal energy, fuel cells, landfill gas, hydropower that meets the low-impact standards of the Low-Impact Hydropower Institute, hydrogen production and hydrogen conversion technologies, low emission advanced biomass conversion technologies, alternative fuels, used for electricity generation including ethanol, biodiesel or other fuel produced in Connecticut and derived from agricultural produce, food waste or waste vegetable oil, provided the Commissioner of Energy and Environmental Protection determines that such fuels provide net reductions in GHG emissions and fossil fuel consumption, usable electricity from combined heat and power systems with waste heat recovery systems, thermal storage systems, other energy resources and emerging technologies which have significant potential for commercialization and which do not involve the combustion of coal, petroleum or petroleum products, municipal solid waste or nuclear fission, financing of energy efficiency projects, projects that seek to deploy electric, electric hybrid, natural gas or alternative fuel vehicles and associated infrastructure, any related storage, distribution, manufacturing technologies or facilities and any Class I renewable energy source, as defined in section 16-1.

⁸ Environmental infrastructure means structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to carbon offsets²² and ecosystem services.

⁹ Connecticut Public Act 21-43 “AN ACT CONCERNING A JUST TRANSITION TO CLIMATE PROTECTIVE ENERGY PRODUCTION AND COMMUNITY INVESTMENT”

¹⁰ Commercial Property Assessed Clean Energy

acknowledge the importance of enabling private investment in projects in vulnerable communities (i.e., environmental justice communities);

3. **Including CRA-Eligible Projects** – to enable CRA eligible projects to be considered under Title XVII, the Green Bank proposed to include communities eligible for CRA within the eligible project definition to acknowledge the importance of enabling private investment in projects in vulnerable communities; and
4. **National Loan Loss Reserve** – in an effort to enable across government solutions (i.e., between DOE and the Agencies), the Green Bank proposed that the LPO create a national loan loss reserve program in collaboration with “state energy financing institutions” (e.g., green banks, CDFIs, CUs) to enable private investment in CRA-eligible projects.

With the current public comment process on the proposed revisions to CRA, together with the recent public comment process on proposed revisions to Title XVII, the Green Bank puts forth a set of recommendations between the Agencies and the DOE to enable increased private investment and coordination in solutions to confront climate change.

The Green Bank appreciates the Agencies’ efforts to solicit public comment on the proposed changes to CRA. We look forward to seeing how the Agencies, working across government with the DOE, can enable increased investment in qualifying activities and eligible projects, respectively.

Sincerely,

Bryan Garcia
Bryan Garcia
President and CEO

Bert Hunter
Bert Hunter
Chief Investment Officer

About the Connecticut Green Bank

As the nation's first state-level green bank, the Connecticut Green Bank leverages the limited public resources it receives to attract multiples of private investment to scale up clean energy deployment. Since its inception, the Green Bank has mobilized \$2.14 billion of investment into Connecticut's clean energy economy at a 7.4 to 1 leverage ratio of private to public funds, supported the creation of 25,612 direct, indirect and induced jobs, reduced the energy burden on over 63,000 families and businesses, deployed over 494 MW of clean renewable energy, helped avoid 9.9 million tons of CO₂ emissions over the life of the projects, and generated \$107.4 million in individual income, corporate, and sales tax revenues to the State of Connecticut.

Attachments

Green Bank – Fact Sheet

Decennial Societal Impact Report – Fact Sheet

The Impact of Federal Funds in Connecticut – Fact Sheet

Comments from the Green Bank submitted to the Agencies (less the Federal Reserve System) on April 8, 2020

Comments from the Green Bank submitted to the DOE LPO on July 1, 2022