CONNECTICUT GREEN BANK

Board of Directors

Meeting Date

June 28, 2019

845 Brook Street, Rocky Hill, CT 06067
T 860.563.0015
ctgreenbank.com

CONNECTICUT
GREEN BANK

June 21, 2019

Dear Connecticut Green Bank Board of Directors:

We have a regularly scheduled meeting of the Board of Directors scheduled on **Friday, June 28, 2019 from 9:00 to 11:00 a.m.** in the Colonel Albert Pope Board Room of the Connecticut Green Bank at 845 Brook Street, Rocky Hill, CT 06067.

On the agenda we have the following items:

- **Consent Agenda** – review and approval of prior meeting minutes for April 26, 2019 and extension of previously approved C-PACE transactions. Also, included is a report-out for Q1 through Q3 of our Loan Loss Framework.

- **Committee Recommendations** – the Budget & Operations Committee will be recommending the review and approval of the FY 2020 targets and budget for the Green Bank. We have provided a memo summarizing the key elements of the targets and budget, along with a cash flow analysis (coming June 25th). You will also see a memo that summarizes the progress made on our Sustainability Plan from the organizational restructuring that ensued following the "sweeps" in December 2017. And we will also propose an adjustment to the FY 2019 budget so that the budget to actuals better reflect the situation.

- **Financing Programs** –renamed from "Investment Business," we have a C-PACE transaction, C-PACE financing facility with Amalgamated Bank, and an expansion of the SBEA program in partnership with Eversource Energy to support state and municipal facilities that we are seeking your review and approval on. These materials are coming on June 25th.

- **Other Business** – I would like to provide you an overview of our Comprehensive Plan – Fiscal Year 2020 & Beyond for review and approval on July 18, 2019. Take a look at the draft work in progress (coming on June 25th) for the Comprehensive Plan (and a presentation) included in your materials – thank you all for your feedback! And lastly, we will provide you with an update on the 2019 legislative session and if we have time share other business.

If you have any questions, comments or concerns, please feel free to contact me at any time.

Until then, enjoy the Travelers Tournament this weekend!

Sincerely,

Bryan Garcia
President and CEO

AGENDA (REVISED)

Board of Directors of the
Connecticut Green Bank
845 Brook Street
Rocky Hill, CT 06067

Friday, June 28, 2019
9:00-11:00 a.m.

Staff Invited: Craig Connolly, Mackey Dykes, Brian Farnen, Bryan Garcia, Bert Hunter, Jane Murphy, Selya Price, Eric Shrago, and Kim Stevenson

1. Call to order

2. Public Comments – 5 minutes

3. Consent Agenda – 5 minutes

    a. Meeting Minutes from April 26, 2019
    b. C-PACE – Prior Approval Extensions
    c. Approval of Loan Losses Below $100,000 and No More in Aggregate than $500,000

4. Committee Recommendations and Updates – 45 minutes

    a. Budget & Operations Committee – 45 minutes

        i. Proposed Adjustment to FY 2019 Budget
        ii. Approval of FY 2020 Budget and Targets

5. Financing Programs Updates and Recommendations – 10 minutes

    a. C-PACE Transaction – Ivoryton

6. Other Business – 30 minutes

    a. Comprehensive Plan – FY 2020 and Beyond
    b. 2019 Legislative Session Update
    c. Other Business

7. Adjourn

Join the meeting online at https://global.gotomeeting.com/join/146922829

Or call in using your telephone:

Dial (872) 240-3311
Access Code: 146-922-829

Next Regular Meeting: Thursday, July 18, 2019 from 9:00-11:00 a.m.
Connecticut Green Bank, 845 Brook Street, Rocky Hill, CT

RESOLUTIONS

Board of Directors of the
Connecticut Green Bank
845 Brook Street
Rocky Hill, CT 06067

Friday, June 28, 2019
9:00-11:00 a.m.

Staff Invited: Craig Connolly, Mackey Dykes, Brian Farnen, Bryan Garcia, Bert Hunter, Jane Murphy, Selya Price, Eric Shrago, and Kim Stevenson

1. Call to order

2. Public Comments – 5 minutes

3. Consent Agenda – 5 minutes

   a. Meeting Minutes from April 26, 2019

Resolution #1
Motion to approve the meeting minutes of the Board of Directors for April 26, 2019

   b. C-PACE – Prior Approval Extensions

Resolution #2

WHEREAS, pursuant to Conn. Gen. Stat. 16a-40g (the "Act") the Connecticut Green Bank ("Green Bank") is directed to, amongst other things, establish a commercial sustainable energy program for Connecticut, known as Commercial Property Assessed Clean Energy ("C-PACE");

WHEREAS, pursuant to the C-PACE program, the Green Bank Board of Directors (the "Board") had previously approved and authorized the President of the Green Bank to execute financing agreements for the C-PACE projects described in the Memo submitted to the Board on June 28, 2019 (the "Finance Agreements");

WHEREAS, the Finance Agreements were authorized to be consistent with the terms, conditions, and memorandums submitted to the Board and executed no later than 120 days from the date of Board approval; and

WHEREAS, due to delays in fulfilling pre-closing requirements the Green Bank will need more time to execute the Finance Agreements.

NOW, therefore be it:

RESOLVED, that the Board extends authorization of the Finance Agreements to no later than 120 days from June 28, 2019 and consistent in every other manner with the original Board authorization for the Finance Agreement.

c. Approval of Loan Losses Below $100,000 and No More in Aggregate than $500,000

4. Committee Recommendations and Updates – 45 minutes

a. Budget & Operations Committee – 45 minutes

i. Proposed Adjustment to FY 2019 Budget

Resolution #3

WHEREAS, the Connecticut Green Bank (Green Bank) staff has assessed financial performance, as well as use of resources year to date,

WHEREAS, the net impact of the proposed adjustments to the budget are minimal and reflect a clearer picture of the activities over FY 2019,

NOW, therefore be it:

RESOLVED, the Green Bank Board of Directors (Board) approves the adjustments to the Fiscal Year 2019 budget as outlined in the memorandum to the Board dated June 28, 2019.

ii. Approval of FY 2020 Budget and Targets

Resolution #4

WHEREAS, on June 12, 2019 the Connecticut Green Bank (Green Bank) Budget and Operations (B&O) Committee recommended that the Green Bank Board of Directors (Board) approve the Fiscal Year 2020 Targets and Budget; and

WHEREAS, the members of the B&O Committee recommends that the Board authorizes Green Bank staff to enter into or extend the professional services agreements (PSAs) currently in place with the following, contingent upon a competitive bid process having occurred in the last three years (except Cortland Capital Services and Inclusive Prosperity Capital):

I. Adnet Technologies, LLC
II. Clean Power Research, LLC
III. Cortland Capital Services
IV. CSW, LLC
V. Inclusive Prosperity Capital
VI. Locus Energy LLC
VII. ReCurve Analytics, Inc.
VIII. Sustainable Real Estate Solutions, Inc.

For fiscal year 2020 with the amounts of each PSA not to exceed the applicable approved budget line item.

NOW, therefore be it:

RESOLVED, that the Green Bank Board hereby approves: (1) the FY 2020 Targets and Budget, and (2) the PSAs with the 8 strategic partners listed above.

5. Financing Programs Updates and Recommendations – 10 minutes

a. C-PACE Transaction – Ivoryton

Resolution #5

WHEREAS, pursuant to Section 157 of Public Act No. 12-2 of the June 12, 2012 Special Session of the Connecticut General Assembly and as amended (the "Act"), the Connecticut Green Bank (Green Bank) is directed to, amongst other things, establish a commercial sustainable energy program for Connecticut, known as Commercial Property Assessed Clean Energy ("C-PACE");

WHEREAS, the Green Bank Board of Directors (the "Board") has approved a $40,000,000 C-PACE construction and term loan program;

WHEREAS, the Green Bank seeks to provide a $1,135,301 construction and (potentially) term loan under the C-PACE program to The L.C. Doane Company, the building owner of 110 Pond Meadow Rd., Ivorytown, Connecticut (the "Loan"), to finance the construction of specified clean energy measures in line with the State's Comprehensive Energy Strategy and the Green Bank's Strategic Plan; and

WHEREAS, the Green Bank may also provide a short-term unsecured loan (the "Feasibility Study Loan") from a portion of the Loan amount, to finance the feasibility study or energy audit required by the C-PACE authorizing statute, and such Feasibility Study Loan would become part of the Loan and be repaid to the Green Bank upon the execution of the Loan documents.

NOW, therefore be it:

RESOLVED, that the President of the Green Bank and any other duly authorized officer of the Green Bank is authorized to execute and deliver the Loan and, if applicable, a Feasibility Study Loan in an amount not to be greater than one hundred ten percent of the Loan amount with terms and conditions consistent with the memorandum submitted to the Board of Directors dated June 25, 2019, and as he or she shall deem to be in the interests of the Green Bank and the ratepayers no later than 120 days from the date of authorization by the Board of Directors;

RESOLVED, that before executing the Loan, the President of the Green Bank and any other duly authorized officer of the Green Bank shall receive confirmation that the C-PACE transaction meets the statutory obligations of the Act, including but not limited to the savings to investment ratio and lender consent requirements; and

RESOLVED, that the proper the 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 legal instruments.

6. Other Business – 30 minutes

   a. Comprehensive Plan – FY 2020 and Beyond
   b. 2019 Legislative Session Update
   c. Other Business

7. Adjourn

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Next Regular Meeting: Thursday, July 18, 2019 from 9:00-11:00 a.m.
Connecticut Green Bank, 845 Brook Street, Rocky Hill, CT

Board of Directors Meeting

June 28, 2019

Colonel Albert Pope Board Room

Board of Directors

Agenda Item #1

Call to Order

Board of Directors

Agenda Item #2

Public Comments

Board of Directors

Agenda Item #3

Consent Agenda

Consent Agenda
Resolutions 1 and 2

1. **Meeting Minutes** – approval of the meeting minutes of April 26, 2019

2. **Approval Extension** – approval of extension to prior approved resolution for various C-PACE projects

- **Loan Losses Update** – quarterly report out on Loan Loss Decision Framework of below $100,000 and No More in Aggregate than $500,000

Board of Directors

Agenda Item #4ai

Budget & Operations Committee

Proposed Adjustment to FY 2019 Budget

FY2019 Budget
Adjustments

1. **<u>Revenue Adjustments</u>** – Reflect Grant Revenue actually received by the Green Bank
   - Reduce Grant Income – Private Foundations by $100,000
   - Increase Grant Income – DEEP by $6.5 million

2. **<u>Incentives Adjustments</u>** – Reflect the Grant from DEEP that flowed through CGB to IPC
   - Increase Financial Incentives – CGB Grants by $6,480,000.

3. **<u>Net change to budget: $20,000</u>**

FY2019 Budget
Resolution 3

WHEREAS, the Connecticut Green Bank (Green Bank) staff has assessed financial performance, as well as use of resources year to date,

WHEREAS, the net impact of the proposed adjustments to the budget are minimal and reflect a clearer picture of the activities over FY 2019,

NOW, therefore be it:

RESOLVED, the Green Bank Board of Directors (Board) approves the adjustments to the Fiscal Year 2019 budget as outlined in the memorandum to the Board dated June 28, 2019.

CONNECTICUT GREEN BANK

Board of Directors

Agenda Item #4aii

Budget & Operations Committee

FY 2020 Budget and Targets

Sustainability Plan Update

Connecticut Green Bank

- **Incentive Programs** – sustainable business unit whereby the SHREC revenues cover the RSIP expenses (i.e., incentive, administrative and financing) – successfully securitized $38.2 million of SHREC revenues;

- **Financing Programs** – Revenues > OpEx over time…successfully reduced OpEx from FY 2018 to FY 2019 by at least $5.0 MM… successfully invested $42.2 million in transactions in FY 2019 achieving the return (i.e., 6.7%) and maturity (i.e., 8 years) targets; and

- **Nonprofit Organization** – successfully assisted in the co-creation of a 501(c)3 nonprofit organization (i.e., Inclusive Prosperity Capital) with former members of the Green Bank staff…executed PSA's and MOU's to administer programs (i.e., CGB) and funds (DEEP) – successfully implemented targets in FY 2019…attracting other mission-related investors in underserved markets

Successfully executed FY 2018 and FY 2019 Sustainability Plan – looking ahead with **CEF and RGGI funds not swept**

Connecticut Green Bank
Budget Process

- **<u>May 15</u>** – review and discussion on targets (i.e., projects, investment, and deployment) and revenues with the B&O Committee.
- **<u>June 12</u>** – update on targets and revenues, review and discussion of expenses, and discussion of Investments with B&O Committee.
- **<u>June 28</u>** – the B&O Committee recommends to Board of Directors approval of FY 2020 targets and budget for the Green Bank.

FY20 Budget
Goals and Targets

Segment	Product	Channel	Targets: Number of Projects	Targets: Total Capital Deployed	Targets: Capacity Installed
Investment Business	CPACE	*Total CGB CPACE*	30	$ 9,000,000	3.0
		Total 3rd Party CPACE	26	$ 13,000,000	2.6
		Total CPACE	56	$ 22,000,000	5.6
	PPA	PPA Total	34	$ 28,125,000	12.7
	SBEA		1000	$ 20,000,000	
	SMART-E	Smart-E Total	540	$ 7,182,000	0.5
	Low Income Loans/Leases (PosiGen)		615	$ 17,202,165	4.2
	Multi-Family Pre-Dev		2	$ 140,000	
	Multi-Family Term	Multi-Family Term Total	9	$ 1,493,000	0.3
	Multi-Family Health and Safety Total		2	$ 110,000	
	Strategic Investments	Strategic Investments Total	2	$ 7,500,000.00	
	Financing Programs Total		2240	$ 98,427,165	21.0

Segment	Program	Targets: Number of Projects	Targets: Total Capital Deployed	Targets: Capacity Installed
Incentive Business	Residential Solar	7059	$ 214,200,000	60.0
	EEPP-Battery Storage	500	$ 5,500,000	2.0
	Incentive Programs Total	7559	$ 219,700,000	60.0

Segment	Targets: Business Segment	Targets: Number of Projects	Targets: Total Capital Deployed	Targets: Capacity Installed
CGB	Financing Programs Total	2240	$ 98,427,165	21.0
	Incentive Programs Total	7559	$ 219,700,000	60.0
	Green Bank Total	9130	$ 299,575,000	76.3

FY20 Budget

Revenues

Connecticut Green Bank
FY 2020 Operating and Program Budget - DRAFT
Revenue Detail

	FY20 Budget	FY19 Revised Budget	$ Increase / (Decrease)	FY19 Apr YTD Actuals
Revenues				
Utility customer assessments	$ 25,986,400	$ 25,969,100	$ 17,300	$ 20,062,827
Utility customer assessments - Sweep	-	(14,000,000)	14,000,000	-
RGGI auction proceeds - renewables	4,031,800	3,050,700	981,100	3,204,185
RGGI auction proceeds - renewables - Sweep	-	(2,300,000)	2,300,000	(2,300,000)
Interest Income - Cash Intercompany	64,712	64,544	168	48,446
Interest Income - Cash deposits	240,900	195,424	45,476	272,080
Interest Income - Delinquent CPACE payments	-	-	-	4,001
Interest Income - Capitalized construction interest	367,018	358,288	251	358,171
Interest Income - CPACE Warehouse, benefit assessments	1,905,176	1,271,250	633,926	961,380
Interest Income - Loan portfolio, other programs	1,928,185	1,395,651	532,534	1,137,589
Interest Income - CPACE Selldown Bonds	177,219	180,187	(2,968)	135,573
Interest Income - HA CPACE Promissory Notes	-	171,405	(171,405)	127,712
Interest Income - Solar lease I promissory notes, net	78,000	78,000	-	67,912
CPACE closing fees	135,000	135,000	-	88,894
Grant income (federal programs)	30,000	98,507	(68,507)	14,000
Grant income (DEEP)	-	-	-	6,500,000
Grant income (private foundations)	-	200,000	(200,000)	-
REC sales	955,296	256,852	698,444	-
REC sales to utilities under SHREC program	7,131,030	4,777,124	2,353,905	4,916,117
Other income - Programs	337,000	93,770	243,230	220,295
Other income - General	200,000	200,000	-	542,635
Total Sources of revenue:	$ 43,567,735	$ 22,195,801	$ 21,363,454	$ 36,361,816

REFERENCE
Note that YTD Actuals are through 6/10/19. Books are still open and there can be revisions.

FY20 Budget

Expenses

	GenOps Fiscal Year 06/30/2020 Budget	Programs Fiscal Year 06/30/2020 Budget	Fiscal Year 06/30/2020 Budget	Fiscal Year 06/30/2019 Budget	Variance	Percentage	Fiscal YTD As of Today Actual
Operating Expenses							
Compensation and Benefits							
Employee Compensation	986,737	3,565,393	4,552,130	4,268,927	283,203	7 %	4,036,720
Employee Benefits	879,963	3,045,781	3,925,744	3,797,892	127,852	3 %	3,654,667
Total Compensation and Benefits	1,866,700	6,611,174	8,477,874	8,066,819	411,055	5 %	7,691,387
Program Development & Administration	0	2,858,928	2,858,929	4,257,594	(1,398,666)	(33) %	2,750,441
Program Administration-IPC Fee	0	1,297,957	1,297,956	0	1,297,957	0 %	0
Marketing Expense	317,055	539,000	856,055	746,500	109,555	15 %	311,510
E M & V	145,000	380,000	525,000	485,000	40,000	8 %	376,644
Commitment Fees	0	0	0	0	0	0 %	45,764
Consulting and Professional Fees							
Consulting/Advisory Fees	113,500	347,400	460,900	313,000	147,900	47 %	334,409
Accounting and Auditing Fees	248,750	0	248,750	159,950	88,800	56 %	48,998
Legal Fees & Related Expenses	50,000	234,499	284,499	267,500	16,999	6 %	322,048
Bond Issuance Costs	0	330,000	330,000	88,889	241,111	271 %	0
Total Consulting and Professional Fees	412,250	911,899	1,324,149	829,339	494,810	60 %	705,455
Research and Development	290,000	0	290,000	40,000	250,000	625 %	38,246
Rent and Location Related Expenses	174,542	608,889	783,431	467,166	316,265	68 %	351,824
Office, Computer & Other Expenses	353,598	597,035	950,633	824,606	126,027	15 %	662,453
Total Operating Expenses	**3,559,145**	**13,804,882**	**17,364,027**	**15,717,024**	**1,647,003**	**10 %**	**12,933,724**
Program Incentives and Grants							
Financial Incentives-CGB Grants	0	100,000	100,000	100,000	0	0 %	6,480,000
Program Expenditures-Federal Grants	0	30,000	30,000	98,507	(68,507)	(70) %	14,589
EPBB/PBI/HOPBI Incentives	0	15,505,131	15,505,131	13,746,354	1,758,777	13 %	12,239,878
Incr/(Decr) in Reserve for RSIP Payments	0	0	0	0	0	0 %	3,182,780
Interest Rate Buydowns-CGB	0	0	0	125,000	(125,000)	(100) %	125,309
Total Program Incentives and Grants	**$ 0**	**$ 15,635,131**	**$ 15,635,131**	**$ 14,069,861**	**1,565,270**	**11 %**	**$ 22,042,557**
Operating Income/(Loss)	**$ 26,951,767**	**$ (16,383,191)**	**$ 10,568,576**	**$ (7,591,083)**	**18,159,659**	**(239) %**	**$ 5,563,024**
Non-Operating Expenses							
Interest Expense	0	2,636,672	2,636,672	428,218	2,208,454	516 %	460,592
Realized (Gain) Loss	0	0	0	0	0	0 %	104,465
Provision for Loan Loss	0	2,965,625	2,965,625	2,923,674	41,951	1 %	2,757,067
Interest Rate Buydowns-ARRA	0	1,800,000	1,800,000	25,000	1,775,000	7,100 %	897,428
Total Non-Operating Expenses	**$ 0**	**$ 7,402,297**	**$ 7,402,297**	**$ 3,376,892**	**4,025,405**	**119 %**	**$ 4,219,552**
Net Revenues Over (Under) Expenses	**$ 26,951,767**	**$ (23,785,488)**	**$ 3,166,279**	**$ (10,967,975)**	**14,134,254**	**(129) %**	**$ 1,343,472**

REFERENCE

Note that YTD Actuals are through 6/10/19. Books are still open and there can be revisions.

FY20 Budget
Investments

Investment	CGB Capital Deployed	Term	%
CPACE (CGB Projects)	$ 4,500,000	15.6	5.8
3rd Party CPACE RFP	$ 5,000,000	5.0	5.3
PPA Fund Debt	$ 16,875,000	15.0	5.5
SBEA	$ 2,000,000	4.0	4.8
Smart-E Total	$ 596,106	Loan Loss Reserve	
Multi-Family Lime Recapitalization	$ 2,000,000	10	3.0
Strategic Investments	$ 7,500,000	10	5.0
RSIP	$ 15,416,149	Cost Recovered through SHREC	
Battery Storage	$ 2,000,000	Cost Recovered through EEPP	
Total	**$ 55,775,205**	**6.8**	**5.2**

Total Interest Income (Term):	$14,646,349
Discount Rate (%):	5.23%
PV of Interest Income:	$11,432,493

Investment portfolio supports strategy to get the Sustainability Plan to breakeven faster.

REFERENCE
In the sustainability plan, the staff have used a 10 year term and 5% return as the benchmark for investment and capital planning.

FY20 Budget
Staffing

Staffing

- Increase of 2.69 FTE
- New positions to handle additional volume and to support new bonding activity:
  - Asset Manager (Revenue Optimization)
  - Addition to Finance Team (Bonding support)
  - Addition to CI&I team (Origination)
  - Durational addition to RSIP team (manage increased volume)

- 1 fulltime position transfers from the CT Green Bank to the Inclusive Prosperity Capital per the Sustainability Plan

FY20 Budget
Core Partners Review

Connecticut Green Bank						
FY 2020 General Operations Budget - DRAFT						
Strategic Partners						
Partner	**Department**	**RFP**	**Year of RFP**	**Work Performed**	**FY20 Budget**	**FY19 Budget**
Adnet Technologies, LLC	General Operations	Y	2017	IT Outsourcing	$ 420,000	$ 400,000
Clean Power Research, LLC	Infrastructure	Y	2016	PowerClerk Software	448,895	430,000
Cortland Capital Services	CI&I	Y	2013	CPACE - Loan Servicing	130,000	84,860
CSW, LLC.	CI&I	Y	2019	PPA/Municipal Project Management	177,000	-
Inclusive Prosperity Capital	multiple	N		Program Execution and Investment Management	1,297,956	1,265,710
Locus Energy LLC	Infrastructure	Y	2016	Monitoring Platform, Active Monitoring, RGM replacement	830,000	570,000
ReCurve Analytics	CI&I	Y	2018	CPACE EM&V	135,000	50,000
Sustainable Real Estate Solutions, Inc.	CI&I	Y	2018	CPACE Third Party Administrator	200,000	619,750
					$ 3,638,851	$ 3,420,320

Strategic partners support the CT Green Bank's operations and programs – and were competitively selected.

FY20 Budget and Targets
Resolution 4

WHEREAS, on June 12, 2019 the Connecticut Green Bank (Green Bank) Budget and Operations (B&O) Committee recommended that the Green Bank Board of Directors (Board) approve the Fiscal Year 2020 Targets and Budget; and

WHEREAS, the members of the B&O Committee recommends that the Board authorizes Green Bank staff to enter into or extend the professional services agreements (PSAs) currently in place with the following, contingent upon a competitive bid process having occurred in the last three years (except Cortland Capital Services and Inclusive Prosperity Capital):

- Adnet Technologies, LLC
- Clean Power Research, LLC
- Cortland Capital Services
- CSW, LLC
- Inclusive Prosperity Capital
- Locus Energy LLC, an AlsoEnergy Company
- ReCurve Analytics, Inc.
- Sustainable Real Estate Solutions, Inc.

For fiscal year 2020 with the amounts of each PSA not to exceed the applicable approved budget line item.

NOW, therefore be it:

RESOLVED, that the Green Bank Board hereby approves: (1) the FY 2020 Targets and Budget, and (2) the PSAs with the 8 strategic partners listed above.

Board of Directors

Agenda Item #5a

Financing Programs

C-PACE Transaction

Ivoryton

110 Pond Meadow Rd, Ivoryton

CONNECTICUT GREEN BANK

Ratepayer Payback

- **$1,135,301** for a 142.5kW roof mounted solar PV system, addition of 59.4kW to an existing roof-mounted solar system & roof
- Projected savings are 18,483 **MMBtu** versus **$ 1,135,301** of ratepayer funds at risk.

REDACTED

- Ratepayer funds will be paid back in one of the following ways
  - ❑ (a) through a take-out by a private capital provider at the end of construction (project completion);
  - ❑ (b) subsequently, when the loan is sold down to a private capital provider; or
  - ❑ (c) through receipt of funds from the Village of Ivoryton (part of Municipality of Essex) as it collects the C-PACE benefit assessment from the property owner.

110 Pond Meadow Rd, Ivoryton

Terms and Conditions

- **$1,135,301** construction loan at 5% and term loan set at a fixed 5.50% over the 10-year term
- **$1,135,301** loan against the property
  - Property valued at **REDACTED**
  - Loan-to-value ratio equals **REDACTED**; Lien-to-value ratio equals **REDACTED**
- DSCR > **REDACTED**

110 Pond Meadow Rd, Ivoryton

The Five W's

- **What?** Receive approval for a $1,135,301 construction and (potentially) term loans under the C-PACE program to The L.C. Doane Company to finance the construction of specified energy upgrade
- **When?** Project to commence 2019
- **Why?** Allow Green Bank to finance this C-PACE transaction, continue to build momentum in the market, and potentially provide term financing for this project until Green Bank sells it along with its other loan positions in C-PACE transactions.
- **Who?** The L.C. Doane Company, the property owner of 110 Pond Meadow Road, Ivoryton, CT
- **Where?** 110 Pond Meadow Road, Ivoryton, CT

110 Pond Meadow Rd, Ivoryton

Project Tear Sheet

CONNECTICUT GREEN BANK

REDACTED

110 Pond Meadow Rd, Ivoryton

Key Financial Metrics

REDACTED

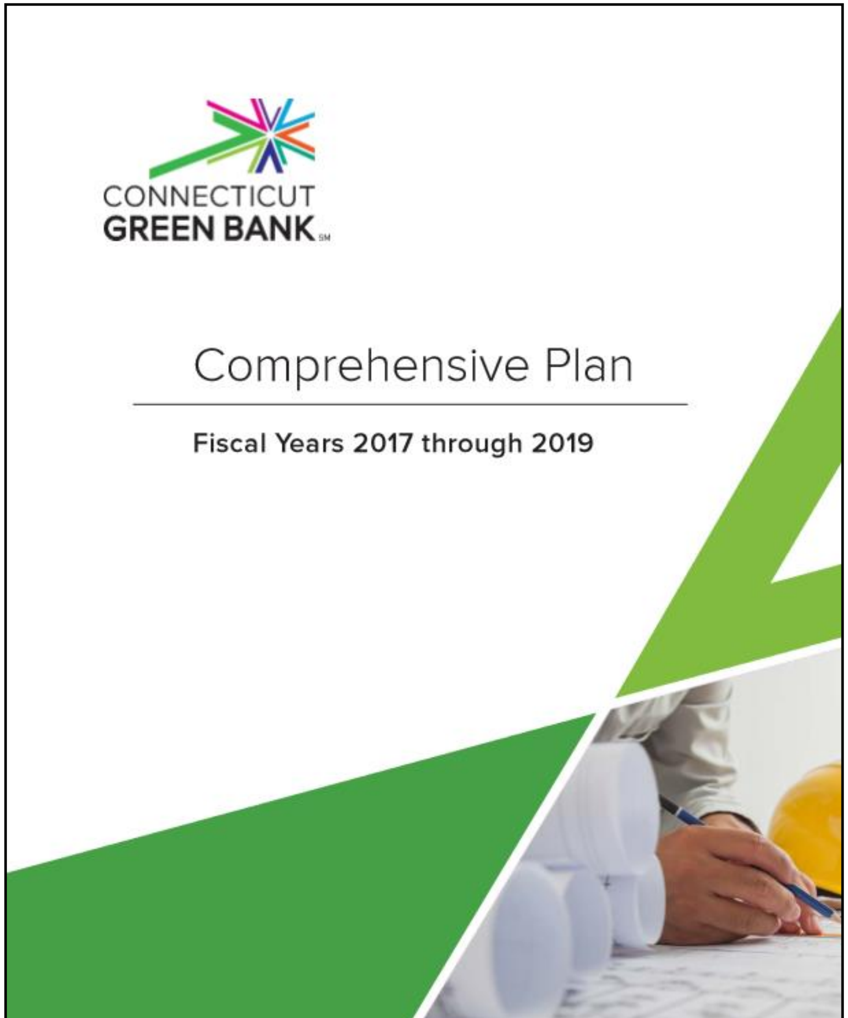
Board of Directors

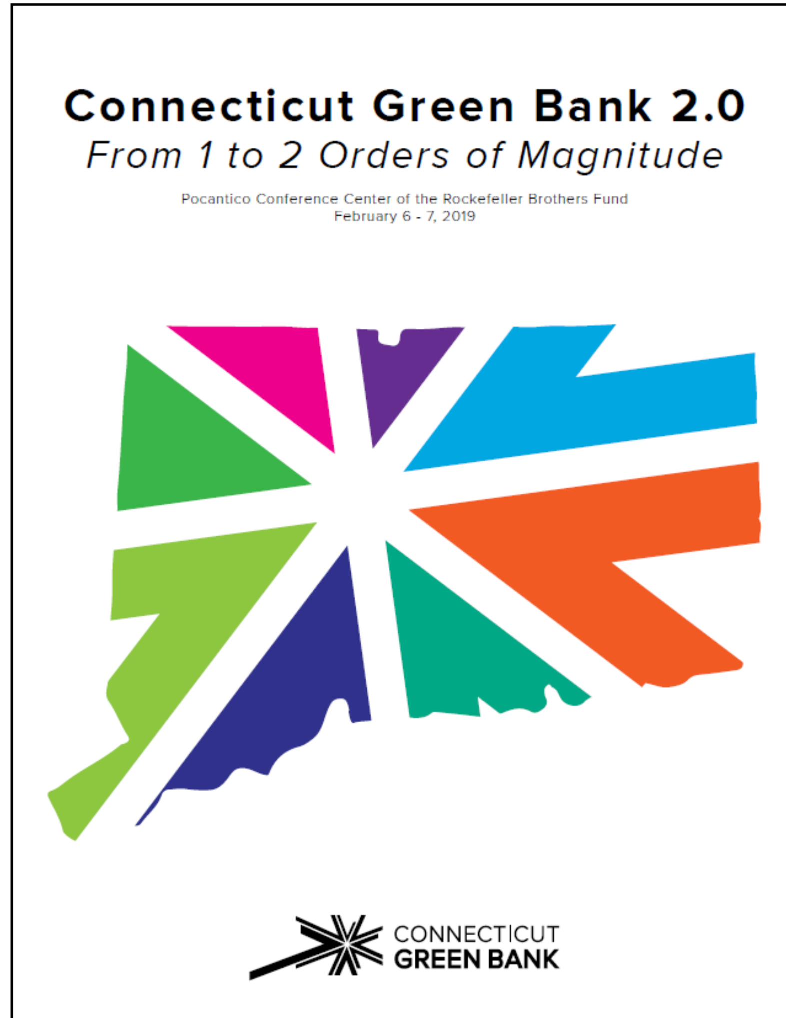
Agenda Item #6a

Other Business

Comprehensive Plan – FY 2020 and Beyond

Board of Directors
Feedback Focus





Board of Directors
Overview of Feedback

	Betsy	Bettina	Binu	Eric	John	Kevin	Mary	Matt	Tom
Climate Change		X			X		X	X	
Community Engagement	X	X	X		X				X
Financial Sustainability	X		X	X		X		X	X
Governance			X	X	X	X		X	X
Increase Investment (Bonds)	X	X		X	X			X	X
Leadership				X	X		X	X	
Structure					X				
Underserved Markets	X						X	X	

- **Financial Sustainability** – continue organizational efforts to implement Sustainability Plan and achieve breakeven;
- **Climate Change** – urgency to address, continue leadership (e.g., US Green Bank Act), and need to increase and accelerate our efforts in Connecticut; and
- **Green Bonds and Community Engagement** – utilize bonding capability to increase access to low-cost capital and "scale-up" impact, especially through the engagement of citizens (i.e., mini green bonds).

Connecticut Green Bank

Mission Statement and Goals

Increase and accelerate the flow of capital into markets that energize the green economy to provide society a healthier and more prosperous future.

- Leverage limited public resources to scale-up and mobilize private capital investment in the green economy of Connecticut.
- Strengthen Connecticut's communities by making the benefits of the green economy inclusive and accessible to all individuals, families, and businesses.
- Pursue investment strategies that advance market transformation in green investing while supporting the organization's pursuit of financial sustainability.

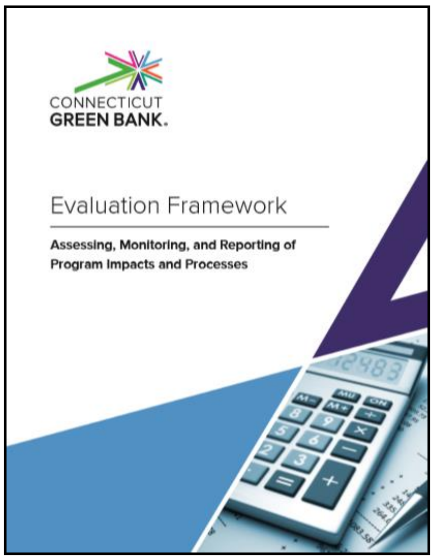
Connecticut Green Bank
Vision Statement

…a world empowered
by the renewable energy
of community

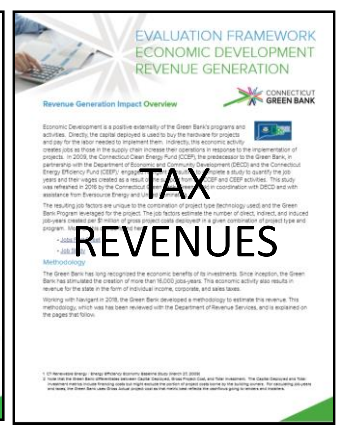
REFERENCES
Vision Statement inspired by the Innovations in American Government Awards at the Ash Center of Harvard University's Kennedy School of Government, Maya Angelou's "On the Pulse of Morning," and the powerful words of Mary Evelyn Tucker on "inclusive capitalism".

Impact Investment
Measuring Results

Evaluation Framework

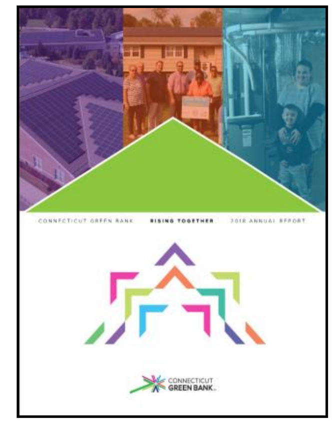


Impact Methodologies



Comprehensive Annual Financial Report

Annual Report / Fact Sheet



Citizen Engagement

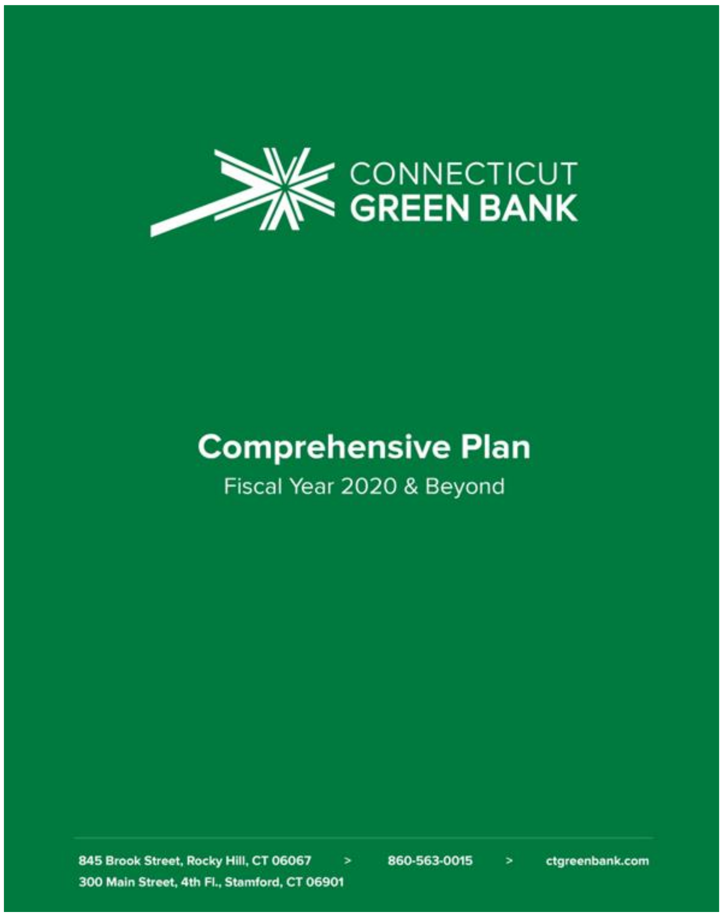
Green Bonds US® and Sustainable CT

CONNECTICUT GREEN BANK

Comprehensive Plan Contents

FY 2020 and Beyond (Draft)

Document



Presentation

Board of Directors

Agenda Item #6b

Other Business

2019 Legislative Session Update

2019 Legislative Session Update

CONNECTICUT GREEN BANK

1. **State Budget** (PA 19-117)
   - No fund sweeps, but no fund put-backs (C&LM) nor fund protection language (CEF)
   - Rejuvenates Lead By Example for state buildings and motor fleet, along with EO1
   - CHEAPR program for alt. fuel vehicle rebates made permanent
2. **Green Economy & Environmental Protection** (PA 19-35)
   - Net metering extended through Dec. 31, 2021, tariff to begin Jan. 1, 2022
   - RSIP target cap increased from 300 MW to 350 MW
   - Monthly netting added to netting interval options for residential successor tariff
   - LREC/ZREC extension adds year 9 and year 10 solicitations before commercial tariff
   - Value of distributed generation study, by July 1, 2020
   - VNM annual credits increased from $10mm to $20mm
   - 10 MW DEEP anaerobic digester procurement; lighter permitting on farm digesters
   - Electric distribution companies are permitted to own energy storage
3. **Proposals not passed regarding the Green Bank**
   - SB 960 - Technical fixes to BOD language; affirms intent to access USDA capital
   - SB 927 – Scope of investment broadened to “environmental infrastructure”
   - SB 70 – Proposed a new infrastructure quasi with ties administratively to CGB

Board of Directors

Agenda Item #6c

Other Business

Green Bond Team

Connecticut Green Bank

- **Green Bank Team** – Mackey Dykes, Brian Farnen, Bryan Garcia (Facilitator), Bert Hunter (Lead), and Eric Shrago
- **Board Member Advisor** – Office of the Treasurer (i.e., Bettina Bronisz)
- **Financial Advisor** – Lamont Financial (i.e., Bob Lamb)
- **Legal Advisor** – Shipman & Goodwin (i.e., Bruce Chudwick)
- **Other TBD Parties** – underwriter(s), trustee, rating agency(ies), and green bond certifier

Farewell and New Beginnings

Staff

Anthony Clark

Kim Stevenson

Board of Directors

Agenda Item #7

Adjourn

Board of Directors of the
Connecticut Green Bank
Meeting Minutes

Friday, April 26, 2019
3:00 – 5:00 p.m.

A meeting of the Board of Directors of the **Connecticut Green Bank (the "Green Bank")** was held on Friday, April 26, 2019 at the office of the Connecticut Green Bank, 845 Brook Street, Rocky Hill, CT, in the Colonel Albert Pope Board Room.

Note – In the absence of a new Chairperson yet to be assigned by Governor Lamont, and with the consent of the members of the Board, Mr. Garcia, President & CEO, acted as Chair for today's meeting.

1. Call to order

Mr. Garcia called the meeting to order at 3:06 p.m.

Board members participating: Bettina Bronisz, Binu Chandy (by phone), John Harrity (by phone), Mary Sotos, Matt Ranelli (by phone)

Members Absent: Eric Brown, Betsy Crum, Thomas M. Flynn, Kevin Walsh

Staff Attending: Mackey Dykes (by phone), Brian Farnen, Bryan Garcia, Bert Hunter, Alex Kovtunenko, Jane Murphy, Selya Price, Cheryl Samuels, Eric Shrago (by phone), Kim Stevenson

Others Attending: Henry Link from University of Hartford; Guy West from Clean Water Fund

2. Public Comments

None

While awaiting all Board members, Mr. Garcia asked to begin meeting with agenda item 5a, the IPC update.

5. Other Business

a. Inclusive Prosperity Capital - Update

Kerry O'Neill, CEO, presented the contents of a memo to the CT Green Bank ("Green Bank") which included items supporting the IPC update and funding for the split from the Green Bank.

Ms. O'Neill presented progress to targets; Smart-E, Multifamily and LMI Single Family on track to meet or exceed targets however commercial solar PPA (jointly owned with Green Bank) is lagging as the overall commercial solar market is soft. In November, 2018 $4.1M of a $5M capital grant was deployed into a PosiGen transaction alongside the Green Bank. Another $1.5M Health & Safety Revolving Loan Fund was assigned in November 2018 and a $165K loan to Success Village in Bridgeport was approved. Ms. O'Neill paused to ask if there were any questions regarding this information but there were none.

Ms. O'Neill went on to provide a review of Inclusive Prosperity Capital since August 2018 where she related that team may have underestimated the development effort associated with a "de novo" non-profit organization. However she also went on to explain all the progress that has been made in setting up the non-profit corporate infrastructure; submitted non-profit application to IRS and received 501c3 designation, established bank accounts, obtained proper insurance for organization, closed $10M Kresge guaranty and $300K-3 year operating grant, closed on $250K Hewlett grant and in due diligence for obtaining $35-$40M of capital with 4 different funding providers including the MacArthur and McKnight Foundations. There is a closing scheduled for May/June 2019 on a $25M facility with capital raised from several sources. Ms. O'Neill stated that there are very strong pipelines and sources of funding. She further related that IPC has engaged the expertise of former Green Bank employee George Bellas to assist with these new transactions and IPC team is grateful for his experience and advice with ongoing and upcoming projects.

Mr. Garcia asked if there were any questions to which there were none. All Board members required for quorum were now in attendance and meeting moved on from beginning of agenda items.

3. Consent Agenda

a. Meeting Minutes from February 22, 2019 and March 29, 2019
b. Extension of Resolution – FuelCell Energy Triangle Project

Resolution #1

Motion to approve the meeting minutes of the Board of Directors for February 22, 2019 and March 29, 2019.

Resolution #2

WHEREAS, the Connecticut Green Bank Board of Directors ("Board") has previously approved a loan to support FuelCell Energy, Inc.'s ("FCE") development of a 3.7 megawatt high efficiency fuel cell project in Danbury, Connecticut (the "Term Loan"), as recommended and requested in the due diligence memorandum dated March 10, 2017 with terms and conditions for the Term Loan contained in the draft term sheet which accompanied the memorandum (the "Term Sheet") and

WHEREAS, staff set forth in the project qualification memo dated January 26, 2018 a request for the Board to approve, and the Board as of that date did approve, updates to the previously approved Term Sheet, to set a new deadline for advance of May 1, 2018, and the ability to sell off all, or a portion, of the Term Loan to 3rd party investors and the ability to guaranty all (for a fee or additional consideration), or a portion, of the amount of the Term Loan sold subject to subsequent Board approval on the terms and conditions thereof;

WHEREAS, staff set forth in the project qualification memo dated April 27, 2019 a request for the Board to approve, and the Board as of that date did approve, a request for an additional extension of the deadline for advance from May 1, 2018 to December 31, 2018; and

WHEREAS, staff has set forth in the project qualification memo dated April 23, 2019 a further request for the Board to approve an additional extension of the deadline for advance from December 31, 2018 to September 30, 2019.

NOW, therefore be it:

RESOLVED, that the Green Bank Board of Directors hereby approves the new deadline for advance of the Term Loan be extended to September 30, 2019.

Upon a motion made by Bettina Bronisz and seconded by Mary Sotos, the Board voted to approve Resolution 1 and Resolution 2. Matt Ranelli abstained from this vote.

- **Statement of Financial Interest ("SFI") – Presented by Brian Farnen**
  Mr. Farnen reminded attendees that all 2018 SFI filings with the Office of State Ethics are due by April 30, 2019. He provided the website address and a hyperlink in the slides to the site where filings must be submitted. Mr. Farnen also provided his mobile number for anyone who has questions regarding this requirement.

4. Investment Business Updates and Recommendations

a. Small Business Energy Advantage ("SBEA") – Presented by Anthony Clark
   Regarding financing facility with Eversource and Amalgamated Bank, Mr. Clark related that staff had provided an update in March to the Deployment Committee with an update on the "growing pains" of this endeavor. The issues identified are now near resolution.

   Mr. Clark stated the key amendments to the Master Purchase & Servicing Agreement are; i) allow for qualifying SBEA loans to public sector customers to aggregate to a maximum of $1M (increased from $500K), ii) Permit the Green Bank to manage any deficiencies in repayments from Eversource to ensure Amalgamated Bank is paid not less than 100% of the amounts the Parties expected Amalgamated Bank to be paid. Green Bank will continue to receive timely reimbursement from the Connecticut Energy Efficiency Fund ("CEEF") with Eversource operating as agent for the CEEF and, iii) Make non-material amendments to the Agreement to resolve operational issues related to purchases of loans and payments.

One of the issues the finance and accounting teams have been dealing with is the Eversource billing system which is not geared for finance planning/loan administration. Team has been working with Eversource on this issue and the system of tracking these loans is improving. Ms. Bronisz asked about what municipal customers are involved in these transactions. Mr. Clark responded there are a number of municipalities, towns and cities and that a list of customers (without loan values) may be provided to the Board. Mr. Hunter added that these loans are not uncommon in these instances as municipalities may not need town hall approval for capital expenditures as these transaction expenses may be considered as operating expenses or utility payments. Mr. Clark added that although late fees were part of the original agreement, Eversource billing system is not able to track them. An evaluation determined that these late fees would not be a substantial amount and so were not worth the expense of updating billing system further and were removed from agreement. Ms. Sotos asked if this financing facility applied only for Eversource customers? Mr. Clark replied that the facility is currently only for customers in Eversource territory and Eversource and UI have slightly different criteria for SBEA program customers. Regarding loan limits, Mr. Clark stated customers make a separate payment for these loan payments which are noted as a line item on their Eversource bill and when one project is paid down, customer can then do another. Mr. Clark related that Catherine Duncan, Loan Administrator, and the new Green Bank Controller Shawne Cartelli worked with Eversource for the necessary loan data. The next steps are to continue to receive repayment on initial loan portfolio purchase and close on second loan portfolio purchase in calendar Q2 2019. The expected level of purchase will be $5M in loans each quarter of which 10% will be Green Bank's responsibility. There is a meeting with Eversource next week to move forward with plans.

Mr. Garcia asked if there were any further questions regarding this issue/resolution to which there were none.

Resolution #3

WHEREAS, pursuant to Conn. Gen. Stat. Section 16-24n the Connecticut Green Bank ("Green Bank") has a mandate to develop programs to finance clean energy investment for small business, industrial, and municipal customers in the State;

WHEREAS, recapitalizing the Small Business Energy Advantage ("SBEA") program with private sector capital is a recognized priority in the Green Bank's Comprehensive Plan and is a goal of the CT Energy Efficiency Board and Green Bank Joint Committee;

WHEREAS, The Connecticut Light and Power Company d/b/a Eversource Energy and The United Illuminated Company (together, the "Utilities") have requested the Green Bank's assistance sourcing low cost private sector capital;

WHEREAS, the Green Bank released a Request for Proposals for Small Business Energy Advantage Program Alternative Financing Solutions (the "RFP") on May 2, 2018.

WHEREAS, Amalgamated Bank responded to the RFP with a comprehensive and flexible solution offering the lowest cost capital to recapitalize the SBEA program;

WHEREAS, Green Bank staff, together with Utility staff and the EEF, selected Amalgamated's proposal to recapitalize the SBEA program and the Green Bank's Board of

Directors (the "Board") approved at its October 26, 2018 meeting Green Bank's $5,000,000 participation as a subordinated lender in a Master Purchase and Servicing Agreement (the "Master Agreement") and entered into by Green Bank, AB, each as a purchaser, and The Connecticut Light and Power Company ("CL&P"), as seller on December 20, 2018; and

WHEREAS, staff recommends the Board approve an amendment of the Master Agreement (the "Amendment") substantially in the form attached hereto as Exhibit A in order to bring the Master Agreement in line with the mutual expectations and understandings of Green Bank, AB and CL&P;

NOW, therefore be it:

RESOLVED, that the President of the Green Bank and any other duly authorized officer of the Green Bank, is authorized to execute and deliver the Amendment materially consistent within the memorandum submitted to the Board dated April 18, 2019 and as she shall deem to be in the interests of the Green Bank and the ratepayers no later than 270 days from the date of authorization by the Board, 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 above-mentioned legal instruments.

Upon a motion made by Bettina Bronisz and seconded by John Harrity, the Board voted unanimously to approve Resolution 3.

b. Capital for Change – Capitalization – Presented by Bert Hunter
Mr. Hunter began with the Connecticut Housing Investment Fund ("CHIF") a Community Development Financial Institution ("CDFI") which he stated has been established for around 50 years and well known to the Green Bank, DEEP and the CEEF. CHIF merged with two other CDFIs to form Capital for Change or "C4C". C4C works on multi-and-single-family projects. In summary, Finance is bringing forward two facilities. First, there is a $1.5M Bridge Loan (unsecured) to Capital for Change ("C4C"). The request to the Board is for full approval of this loan for Smart-E loans only, to be repaid via larger capitalization of their current CEEFCo funding. This loan is structured as a 6-month bridge loan. Second, a $4.5M Medium Term Revolving Loan (secured and subordinated) to Connecticut Energy Efficiency Finance Company ("CEEFCo") (a 100%-owned subsidiary of C4C) staff requests Board for "Approval in Principle". The facility would be a part of a larger recapitalization of funding for CEEFCo with private capital to fund Smart-E as well as CEEF Energy Efficiency loans under the utility Conservation & Load Management Plan ("C&LM Plan"). This larger facility has an expected closing in July or August 2019.

C4C joined Smart-E in late 2016 and is the largest Smart-E lender with loan growth exceeding expectations and a good dispersion of credits as C4C as a CDFI attracts more low-and-moderate income households. Credit losses are reasonable at approximately 1.75%--in line with the national average. Green Bank is again working with Amalgamated Bank for funding as the current Line of Credit with Webster Bank is amortizing (5yrs versus 10yrs for program loans). Consequently, the program loan growth (for Smart-E and C&LM loans) are draining CEEFCo's liquidity and stressing resources. Mr. Hunter stated if this issue is not addressed, C4C would need to stop originating loans until a refinancing could be achieved. Ms. Bronisz questioned the Webster Bank loan to which Mr. Hunter noted that C4C advised that Webster has been unwilling to change the current loan terms – and in fact the loan terms have become more stringent over time.

Refinancing would be comprised of CEEFCo as providing the underlying equity base, then Green Bank as subordinated lender and with Amalgamated Bank as senior lender. With a $30-$40M facility, C4C would be able to do more Smart-E loans for 2 to 3 years. Ms. Bronisz asked about IPC doing Smart-E loans? Mr. Hunter advised that the IPC's role is completing more administrative work but not actually providing funding for projects. Mr. Hunter reviewed the pie chart in the slide that denotes the C4C as the largest lender for Smart-E loans. An interest rate buy-down program was suspended in December 2017. Since then, loan volume for C4C in Smart-E has ranged (depending on seasonality) from $500K-$1M, ith an average more recently of $500k per month. The Finance Team's position is that with a 6-month bridge facility, security is not essential but when the medium-term facility is structured, at the CEEFCo level for issuing energy efficiency loans, security will be obtained in the pool of loans and supported by CEEFCo equity. CEEFCo equity is $14M.. Ms. Bronisz asked about LIBOR going away and Mr. Hunter said that it is common nowadays for this to be noted in the documentation with a substitute interest rate basis. Ms. Bronisz asked about the $4.5M Medium Term loan—is it part of the $30-$40M? Mr. Hunter stated "yes" that approximately 80% of funding will be provided by Amalgamated Bank, 10% of funding will be provided by Green Bank and 10% of funding will be provided by CEEFCo. Mr. Hunter indicated that staff want to be in a position to move forward now but will come back to the Board with the final plans/agreements. Ms. Sotos asked about the loan security and is there blanket security interest? Mr. Hunter specified that no other lender other than Webster has access to those pools of loans and that the current lender already has secured its financing facility with the loans in the pool.

Mr. Garcia asked if there were any further questions regarding this issue/resolution to which there were none.

Resolution #4

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 and fastest growing Smart-E lender on the Green Bank Smart-E platform;

WHEREAS, C4C and Green Bank are negotiating with private third party capital to fund C4C's Smart-E Loan portfolio growth;

WHEREAS, Green Banks staff recommend a short term bridge loan facility (the "C4C Bridge Loan") in order to fund C4C's Smart-E Loan growth which C4C and Green Bank complete negotiations and documentation for a loan facility to fund C4C's Smart-E loan portfolio on a longer term basis; and

WHEREAS, Green Bank staff recommend "in principle approval" by the Green Bank Board of Directors (the "Board") for a medium term revolving loan facility for CEEFCo (the

"CEEFCo Revolving Loan") in order to fund CEEFCo's energy efficiency and Smart-E Loan portfolio in partnership with private capital.

NOW, therefore be it:

RESOLVED, that the Board approves the C4C Bridge Loan in an amount of up to $1.5 million in capital from the Green Bank balance sheet in support of Smart-E Loans to be originated by C4C from and after March 31, 2019;

RESOLVED, that the Board approves "in principle" the CEEFCo Revolving Loan in an amount of up to $4.5 million in capital from the Green Bank balance sheet in support of energy efficiency and Smart-E Loans in partnership with private capital generally consistent with the memorandum submitted to the Board on April 23, 2019 and directs staff to submit the CEEFCo Revolving Loan for Final approval once major terms and conditions have been agreed;

RESOLVED, that the President of the Green Bank; and any other duly authorized officer of the Green Bank, is authorized to execute and deliver, and contract or other legal instrument necessary to effect the C4C Bridge Loan on such terms and conditions as are materially consistent with the memorandum submitted to the Board on April 23, 2019; 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.

Upon a motion made by Bettina Bronisz and seconded by Binu Chandy, the Board voted unanimously to approve Resolution 4.

c. Loan Loss Decision Framework – Transactions
Mr. Garcia reviewed the Loan Loss Decision Framework as to type of loss anticipated, amount of principal outstanding and then whether staff, Board Committee or Board of Directors has the authority to approve. Staff is bringing a project for such review to the Board today rather than waiting for the next Deployment Committee meeting.

    i. OSDG Program (Building Integrated Solar PV) – Naugatuck High School
    Original Grant Agreement was dated January 6, 2009 between Connecticut Innovations, Inc., acting as the administrator of the Connecticut Clean Energy Fund (CCEF), and the Borough of Naugatuck. A $926,655 grant was issued for a 385.4 kW-STC solar PV system to be installed at Naugatuck High School, 543 Rubber Avenue, Naugatuck, CT through the former On-Site Distributed Generation (OSDG) Program. There were 518 amorphous silicon thin-film panels, provided by Solar Integrated Technologies, Inc. ("SIT"), integrated into the roof of the building. SIT went out of business in 2012.

    Ms. Selya Price summarized the current problem; this project is a 10-year old installation of a large solar PV system supported by a legacy grant program from the CT Clean Energy Fund. It was noted that the Borough of Naugatuck owns this project. Ms. Price stated that this project utilized solar PV thin film technology from a manufacturer which went out of business in 2012 and that these are not the most commonly used solar PV technology used today which is crystalline silicon technology. Ms. Price further explained that this was an unusual project as the solar energy system was integrated into the roof electrically and with the solar panels laminated onto the roof. The level of technology risk was not clear at the time since both thin film solar PV technology and building integrated solar PV design were both relatively new to the market. There have been some major problems with the equipment over time; the solar panels were delaminating from the roof, allowing water into the electrical junction boxes in the roof and causing small fires and damage to the system and roof. Due to these ongoing equipment failures and a shut-down of the entire system in October 2018 when a solar PV inspector determined that the system was no longer repairable and had become a safety hazard, it was decided that the current solar system needs to be removed.

At this time the Borough of Naugatuck is requesting a waiver of any potential defaults under the Agreement so that they may move forward with removal of the system. The Borough is exploring financing for the installation of a new solar PV system.

Ms. Bronisz asked why this is important to the Green Bank and Board? Ms. Price advised that there is a written contract with the Green Bank for a 15 year term so that the Borough of Naugatuck could be in default if they are not operating the said solar PV system throughout the term of the contract. The Borough of Naugatuck requested a waiver of any potential defaults based on the circumstances.

Note – since Mr. Ranelli was not certain if his firm represents the Borough of Naugatuck, he will abstain from the vote on this Resolution.

Mr. Farnen said it is not the intention of the Green Bank, due to the circumstances of this project, to call the Borough of Naugatuck in default of original agreement. Discussion continued as to whether or not to provide a waiver in writing. Ms. Price read a letter dated April 10, 2019 from the Borough of Naugatuck requesting a ‘no-default’ letter although Mr. Farnen stated the Green Bank is under no obligation to send them such a letter. Ms. Bronisz asked if any part of equipment can be reused—Ms. Price answered that the inverter may be salvageable but not the solar panels. Mr. Garcia gave an example of a write-off decision which had a finding by an auditor who recommended a process for write-off approvals and this situation meets that criteria. So agreed by staff and Board.

Resolution #5

WHEREAS, the Connecticut Green Bank (“Green Bank”) is the successor to the Connecticut Clean Energy Fund (CCEF);

WHEREAS, Connecticut Innovations, Incorporated, acting solely as the administrator of the CCEF, entered into a Standard Financial Assistance Agreement (“Agreement”) dated January 6, 2009 with The Borough of Naugatuck (“Naugatuck”), to provide Naugatuck with a grant for the deployment of a building-integrated solar PV system based on amorphous silicon, thin-film technology, located at 543 Rubber Avenue, Naugatuck, Connecticut, which is the Naugatuck High School;

WHEREAS, on June 13, 2018 the Green Bank Board of Directors ("Board") approved the Loan Loss Decision Framework and Process, set forth in that certain memo to the Board dated June 13, 2018 (the "Loss Process"), which established the process of dealing with provisional loss reserves, restructurings, and write-offs for assets on Green Bank's balance sheet; and

WHEREAS, through the established Loss Process, Green Bank staff seeks the Green Bank Board of Directors' ("Board") approval to waive any potential defaults under the Agreement.

NOW, therefore be it:

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.

Upon a motion made by John Harrity and seconded by Binu Chandy, the Board voted to approve Resolution 5. Matt Ranelli abstained from this vote.

5. **Other Business**

b. **Progress to Targets – Presented by Mackey Dykes, Kim Stevenson and Selya Price**

Mr. Dykes related that new projects are slightly behind target and commercial solar PPA is behind but that collaborations with CT energy utilities are growing deployment and helping Green Bank reach new customer segments. Early demand for C-PACE new construction projects under development is encouraging. There are great deals in the pipeline now and staff is working proactively with building owners and municipalities to move projects along. Ms. Chandy had a question regarding the Leverage Ratio to which Mr. Dykes stated is due to Green Bank funding.

Ms. Stevenson provided an update on multifamily residential projects beginning with a health & safety loan to Success Village which has 1,000 units and straddles Stratford and Bridgeport—an area some banks may not be comfortable working within. Systems, like heating units, are in great disarray in these types of multi-family residences and the Green Bank is more willing and able to work these projects. Ms. Stevenson shared there is another project in Meriden in the works; Passive House. Projects are meant to keep energy costs low with programs supporting owners with the installation of solar, roof repairs/replacements, high efficiency heating and cooling systems as well as other energy and health and safety improvements in order for lower income and/or multi-family housing to obtain tax credits. Developers now have to compete for those tax credits as well. Also focusing on Transit Oriented Designs for accessible access for these multi-family dwellings in more urban environments and updating the Solar Power Purchase Agreement with the Connecticut Housing and Finance Authority.

Ms. Price provided a brief update on Infrastructure Sector progress which consists of RSIP. There is $167 million in total capital deployed in RSIP projects and about $12.5 million of incentives, resulting in a 13:1 leverage ratio. RSIP will most likely meet the 300 MW target in the 3rd quarter 2019. The latest version of House Bill 7251 includes a 50 MW extension for RSIP, an extension of net metering to the end of 2021, and a value of distributed generation study.

Mr. Garcia thanked all for these positive progress reports and feels good about meeting goals for FY 2019.

c. Comprehensive Plan – FY 2020 and Beyond

Mr. Garcia began with a review of the Strategic Planning timeline 2019. Team will come back in June 2019 to discuss progress on the Sustainability Plan approved by the Board of Directors in December of 2017. In the meantime Mr. Garcia will ask Senior Management to review prior goals set at the off-site retreat to bring all the pieces together for the Board in June for the Comprehensive Plan for FY 2020.

The Comprehensive Plan is likely to include; an Executive Summary, Vision and Mission Statements, Goals, Governance and Organizational Structure, Community Engagement and Climate Change Mitigation and Adaptation, Business Lines – Incentive Business, Investment Business, Research & Development, Targets and Budget and References.

Mr. Garcia went on to share that a UN report highlights the need for $90 trillion of investment in the global economy to support the sustainable development goals. Given these targets, the Green Bank would need to "scale up" its investment ratio in Connecticut to $850/person per year from current investment of $80/person per year, which is up from $8/person/year under the Connecticut Clean Energy Fund. In order to increase growth the Green Bank must set goals, objectives and create a structure to meet those goals and objectives. Some examples are getting in touch with communities, stating Green Bank objectives of lowering carbon footprint with renewable heating/cooling for commercial buildings, coastal resiliency (recovery from storms), electric vehicles and portfolio returns. Mr. Garcia asked staff to review how the Green Bank should drive more investment and projects and continue to innovate and how to move forward into another level of magnitude.

Mr. Harrity mentioned the work at the retreat and that the scale of efforts needs to increase and with some sense of urgency. He also mentioned "transportation" and that there are so many political issues within the state to be considered. Mr. Garcia stated there will be more to come on the Comprehensive Plan next month.

d. Electric Efficiency Partners Program

Mr. Garcia began with a review of the chart showing a typical solar PV production and consumption curve. He noted that the team will be continuing its efforts to develop battery storage in combination with residential solar PV. Ms. Price stated that the Technology Application submitted to PURA and that the program requires that the utility cost test have a benefit to cost ratio of 2:1 and an incentive that is no more than 50% of the technology cost The original proposed program design would provide an up-front incentive that would also be based on the battery size and output, the PV system size, and a maximum incentive amount of $7K. This is the initial proposal and team is thinking of making changes to the incentive to possibly include both an upfront as well as performance-based incentive. Mr. Hunter asked if this plan is for residential? Yes. He further asked if there would be control and dispatch of the batteries? Ms. Price stated that this is being considered so as to better assure and potentially increase the benefits of the batteries. Mr. Hunter stated that if the battery is charged from the grid, it would disallow use of the federal investment tax credit. Per Mr. Garcia, the Partner Application (under the EEP Program) has been approved, the Technology Application was filed with PURA in December 2018 and—if Tech App is approved by July 2019—Program Launch will be January 1, 2020.

e. Aspen Institute International MBA Case Study Competition

Per Mr. Garcia this is the 10th anniversary of this international MBA case competition program and this year featured the Green Bank as the case study. The Aspen Institute works with colleges around the world and this year 23 campuses participated including; University of Denver, Villanova Business, The George Washington University and NYU Stern. Mr. Hunter had the honor of being part of the judging this year. There were 5 team finalists who met in lower Manhattan this week with 10 people judging. The project was to advise the Green Bank on how to grow and expand business. The teams came up with; expanding C-PACE for 5% returns, new ideas around transportation, utilizing the non-profit IPC as an environmental educational tool as well. The 2019 Aspen Winner was the Boston University Team! Mr. Hunter shared that the teams were very smart, that they came up with amazing ideas in the 72 hours (3 days) they had to review the case study and create ideas/plans. This case study is now open for business schools to teach in whole or in part. Mr. Garcia noted that Governor Ned Lamont provided the keynote at the address and that his comment on not supporting sweeps of the Connecticut Green Bank in a state budget drew a loud applause from the crowd.

f. Other

Ms. Sotos presented the first Executive Order from Governor Lamont. It includes a 'lead by example' program with statutory goals to meet with greenhouse gases, waste and water. A new governance or Steering Committee will be established to set agency specific goals to meet the overall "green" goals of the State of CT. There will be a finance model to meet these goals and state will work with the Green Bank regarding financing, contracting agreements, Power Purchase Agreements to make projects move forward expeditiously. Ms. Sotos asked that Green Bank pick a few projects to move forward toward these goals.

Mr. Garcia reminded all that it was the 50th anniversary of Earth Day! It is great excitement and this foundation to work from and on.

6. Adjourn

Upon a motion made by Bettina Bronisz, and seconded by John Harrity, the meeting was adjourned at 4:43p.m.

Respectfully submitted,

Matthew Ranelli, Secretary

DRAFT

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CONNECTICUT GREEN BANK

Memo

To: The Connecticut Green Bank Board of Directors

From: Mackey Dykes, Vice President, Commercial, Industrial and Institutional Programs; Alex Kovtunenko, Senior Counsel, Commercial, Industrial and Institutional Programs; Nicholas Zuba, Senior Manager, Commercial, Industrial and Institutional Programs

CC: Bryan Garcia, President and CEO; Bert Hunter, EVP and CIO; Brian Farnen, General Counsel and CLO

Date: June 21, 2019

Re: Extending timeline for closing certain C-PACE transactions

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Summary

The Connecticut Green Bank Board of Directors (the "Board" or "BOD") has previously approved and authorized C-PACE financing for the following properties:

Project Address	Approved	Expired	Project Amount
6 Shaws Cove, New London, CT 06320	1/26/18 by Board	5/29/19	$1,042,884
99 Powder Hill Road, Middlefield, CT 06455	1/26/18 by Board	5/29/19	$2,006,822

The financing agreement was authorized to be consistent with the terms, conditions, and memorandums submitted to the Board and made no later than 120 days from the date of Board approval.

Due to delays in fulfilling pre-closing requirements, including lender consent, for these transactions, the C-PACE program staff requests more time from the Board to close this transaction and execute the financing agreement. The staff requests an additional 120 days from the date of this Board meeting to execute the financing agreement for the transaction listed above.

Resolutions

WHEREAS, pursuant to Conn. Gen. Stat. 16a-40g (the “Act”) the Connecticut Green Bank (“Green Bank”) is directed to, amongst other things, establish a commercial sustainable energy program for Connecticut, known as Commercial Property Assessed Clean Energy (“C-PACE”);

WHEREAS, pursuant to the C-PACE program, the Green Bank Board of Directors (the “Board”) had previously approved and authorized the President of the Green Bank to execute financing agreements for the C-PACE projects described in the Memo submitted to the Board on June 28, 2019 (the “Finance Agreements”);

WHEREAS, the Finance Agreements were authorized to be consistent with the terms, conditions, and memorandums submitted to the Board and executed no later than 120 days from the date of Board approval; and

WHEREAS, due to delays in fulfilling pre-closing requirements the Green Bank will need more time to execute the Finance Agreements.

NOW, therefore be it:

RESOLVED, that the Board extends authorization of the Finance Agreements to no later than 120 days from June 28, 2019 and consistent in every other manner with the original Board authorization for the Finance Agreement.

Submitted by: Bryan Garcia, President and CEO, Bert Hunter, EVP and CIO, Mackey Dykes, Vice President, Commercial, Industrial and Institutional Programs, Brian Farnen, General Counsel and CLO

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CONNECTICUT GREEN BANK

Memo

To: Board of Directors of the Connecticut Green Bank – Deployment Committee of the Connecticut Green Bank

From: Bryan Garcia (President and CEO), Jane Murphy (VP of Finance), Eric Shrago (Managing Director of Operations)

Date: June 28, 2019

Deleted: May 22

Re: Staff Loan Loss Approval Policy for Transactions Under $100,000 – Q3 FY 2019 Report

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At the June 13, 2018 Board of Directors (BOD) meeting of the Connecticut Green Bank ("Green Bank") it was resolved that the BOD approves the authorization of Green Bank staff to evaluate and approve loan loss restructurings or write-offs for transactions less than $100,000 which are pursuant to an established formal approval process in an aggregate amount not to exceed $500,000 from the date of the last Deployment Committee meeting. This memo provides an update on loan losses below $100,000 that were evaluated and approved in Q3 of FY 2019.

Within the FY 2019 budget, a "Provision for Loan Loss" of $2,923,674 was included as a "Non-Operating Expense" item. This memo will track loan losses against this FY 2019 budget expense.

During this period, 0 projects were evaluated and approved for loan loss restructurings and write-offs in an aggregate amount of approximately $0. There was one project in FY 2019 Q2 where the Deployment Committee forgave $19,066 in accrued construction interest – reported out to the Deployment Committee on March 27, 2019.

If members of the Board would be interested in the internal documentation of the review and approval process Green Bank staff and officers go through, please let us know and we would be happy to provide.

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CONNECTICUT GREEN BANK

Memo

To: Board of Directors of the Connecticut Green Bank

From: Jane Murphy (Vice President of Finance and Administration) and Eric Shrago (Managing Director of Operations)

CC: Bryan Garcia (President and CEO)

Date: June 28, 2019

Re: Proposed revision to FY2019 Budget

Summary

At this point in the year, as can be seen in the budget materials provided to the Board of Directors, it can be noted that the organization is, overall, within its budget for the fiscal year.

However, there are a few specific flows of capital into and out of the Green Bank that staff would like to reflect in the budget as they presently highlight large variances when comparing the budget to actual financials, and therefore don't truly reflect the total picture of activities over the year.

The changes are:

- Reduce Grant Income-Private Foundations by a $100,000 that represents the removal of the grant funding for the Green and Healthy Homes Initiative that occurred but went directly to Inclusive Prosperity Capital (IPC) ($200,000) and the addition of $100,000 in revenue from the Harvard Ash Award Grant that we expect will arrive before the end of FY2019.

- Increase Grant Income-DEEP by $6,500,000 to reflect the grants made by DEEP for IPC.

- These two changes increase the organization's revenue by $6,400,000.

- Increase Financial Incentives – CGB Grants by $6,480,000 million to show the DEEP funds flowing from CGB to IPC. This increases expenses by $6,380,000.

- This means, overall, there is a net $20,000 change in the budget for the year with the DEEP grant now more accurately accounted for in the FY2019 budget presenting a clearer picture of activities over the year.

The changes are visible in the following table.

Table 1. Statement of Revenues and Expenses for FY2019.

Connecticut Green Bank FY 2019 Operations and Program Budget - DRAFT Statement of Revenues and General Operations and Program Expenses	Fiscal Year 06/30/2019 Budget	Fiscal YTD As of 06/19/19 Actual	Budget vs Actual Variance	Proposed new budget for FY 06/30/2019 Budget	Proposed new budget vs existing budget Variance
Revenue					
Operating Income					
Utility Customer Assessments	25,969,100	23,851,952	(2,117,148)	25,969,100	0
Payments to State of Connecticut	(14,000,000)	0	14,000,000	(14,000,000)	0
RGGI Auction Proceeds-Renewables	750,700	2,130,254	1,379,554	750,700	0
CPACE Closing Fees	135,000	88,894	(46,106)	135,000	0
REC Sales	5,033,976	5,336,117	302,141	5,033,976	0
Grant Income-Federal Programs	98,507	14,589	(83,918)	98,507	0
Grant Income-Private Foundations	200,000	0	(200,000)	100,000	(100,000)
Grant Income-DEEP	0	6,500,000	6,500,000	6,500,000	6,500,000
PPA Income	41,000	204,954	163,954	41,000	0
LREC/ZREC Income	16,170	16,170	0	16,170	0
Total Operating Income	18,244,453	38,142,930	19,898,477	24,644,453	6,400,000
Interest Income	3,356,461	3,095,890	(260,571)	3,356,461	0
Interest Income, Capitalized	358,287	247,271	(111,016)	358,287	0
Other Income	236,600	609,319	372,718	236,600	0
Total Revenue	**$ 22,195,801**	**$ 42,095,410**	**$ 19,899,608**	**$ 28,595,801**	**$ 6,400,000**
Operating Expenses					
Compensation and Benefits					
Employee Compensation	4,268,927	4,036,720	(232,207)	4,268,927	0
Employee Benefits	3,797,892	3,656,722	(141,171)	3,797,892	0
Total Compensation and Benefits	8,066,819	7,693,442	(373,378)	8,066,819	0
Program Development & Administration	3,077,650	1,937,606	(1,140,043)	3,077,650	0
Program Administration-IPC Fee	1,179,944	1,018,468	(161,477)	1,179,944	0
Marketing Expense	746,500	406,212	(340,288)	746,500	0
E M & V	485,000	384,676	(100,324)	485,000	0
Commitment Fees	0	45,763	45,764	0	0
Consulting and Professional Fees					
Consulting/Advisory Fees	313,000	338,513	25,512	313,000	0
Accounting and Auditing Fees	159,950	48,998	(110,951)	159,950	0
Legal Fees & Related Expenses	267,500	338,816	71,316	267,500	0
Bond Issuance Costs	88,889	0	(88,889)	88,889	0
Total Consulting and Professional Fees	829,339	726,327	(103,012)	829,339	0
Research and Development	40,000	38,247	(1,754)	40,000	0
Rent and Location Related Expenses					
Rent/Utilities/Maintenance	300,000	261,343	(38,656)	300,000	0
Telephone/Communication	99,760	81,130	(18,630)	99,760	0
Depreciation & Amortization	67,406	37,599	(29,807)	67,406	0
Total-Rent and Location Related Expenses	467,166	380,072	(87,093)	467,166	0
Office, Computer & Other Expenses	824,606	678,546	(146,060)	824,606	0
Total Operating Expenses	**$ 15,717,024**	**$ 13,309,359**	**$ (2,407,665)**	**$ 15,717,024**	**$ 0**
Program Incentives and Grants					
Financial Incentives-CGB Grants	100,000	6,480,000	6,380,000	6,480,000	6,380,000
Program Expenditures-Federal Grants	98,507	15,779	(82,728)	98,507	0
EPBB/PBI/HOPBI Incentives	13,746,354	12,776,700	(969,654)	13,746,354	0
Incr/(Decr) in Reserve for RSIP Payments	0	3,182,780	3,182,780	0	0
Interest Rate Buydowns-CGB	125,000	125,309	309	125,000	0
Total Program Incentives and Grants	**$ 14,069,861**	**$ 22,580,569**	**$ 8,510,708**	**$ 20,449,861**	**$ 6,380,000**
Operating Income/(Loss)	**$ (7,591,084)**	**$ 6,205,482**	**$ 13,796,565**	**$ (7,571,084)**	**$ 20,000**
Non-Operating Expenses					
Interest Expense	428,218	460,592	32,374	428,218	0
Realized (Gain) Loss	0	104,465	104,465	0	0
Provision for Loan Loss	2,923,674	2,808,067	(115,607)	2,923,674	0
Interest Rate Buydowns-ARRA	25,000	897,428	872,428	25,000	0
Total Non-Operating Expenses	**$ 3,376,892**	**$ 4,270,552**	**$ 893,660**	**$ 3,376,892**	**$ 0**
Net Revenues Over (Under) Expenses	**$ (10,967,976)**	**$ 1,934,930**	**$ 12,902,905**	**$ (10,947,976)**	**$ 20,000**

Resolution

WHEREAS, the Connecticut Green Bank (Green Bank) staff has assessed financial performance, as well as use of resources year to date,

WHEREAS, the net impact of the proposed adjustments to the budget are minimal and reflect a clearer picture of the activities over FY 2019,

NOW, therefore be it:

RESOLVED, the Green Bank Board of Directors (Board) approves the adjustments to the Fiscal Year 2019 budget as outlined in the memorandum to the Board dated June 28, 2019.

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Memo

To: Board of Directors of the Connecticut Green Bank

From: Jane Murphy (Vice President of Finance and Administration) and Eric Shrago (Managing Director of Operations)

CC: Bryan Garcia (President and CEO)

Date: June 28, 2019

Re: Proposed FY2020 Targets and Budget

Introduction

In accordance with Section V of the Connecticut Green Bank ("Green Bank") Operating Procedures, enclosed is the Fiscal Year 2020 Annual Operating Budget (including Cash Flows) – see the attached.

The Budget & Operations Committee met on May 15, 2019 and June 12, 2019 to review the staff proposed targets and budget (i.e., revenues, expenses, and investments). This memo outlines key recommendations from the Budget & Operations Committee members with regards to targets and budget.

As the Green Bank continues to implement the Sustainability Plan,[1] the proposed FY 2020 Budget also includes a breakdown of the Investment (Financing Programs) and Incentive (Incentive Programs) Business Units, as well as the expenses associated with covering the services being provided by the Nonprofit in support of the Green Bank's mission. The proposed FY 2020 Budget is consistent with the Sustainability Plan approved by the Board of Directors on December 15, 2017, and if successfully implemented, this budget will result in less time and resources to get the Green Bank to breakeven.

Targets

The senior management team of the Green Bank proposed, and the Budget & Operations Committee reviewed the approval of the following targets for FY 2020 (see Tables 1 through 4):

Table 1. Financing Programs FY2020 Targets

Program/Product	Channel	Targets		
		Number of Projects	Total Capital Deployed	Capacity Installed
CPACE	*CGB*	15	$ 4,500,000	1.0
	MultiFamily	0	$ -	
	CPACE backed PPA	15	$ 4,500,000	2.0
	Total CGB CPACE	30	$ 9,000,000	3.0
	Total 3rd Party CPACE	26	$ 13,000,000	2.6
	Total CPACE	56	$ 22,000,000	5.6
PPA	*State and Muni*	14	$ 22,800,000	10.4
	MultiFamily	5	$ 825,000	0.3
	Other Originated PPA's	15	$ 4,500,000	2.0
	PPA Total	34	$ 28,125,000	12.7
SBEA		1000	$ 20,000,000	
SMART-E	*Other*	486	$ 5,832,000	
	Solar	54	$ 1,350,000	0.5
	Smart-E Total	540	$ 7,182,000	0.5
Low Income Loans/Leases (PosiGen)		615	$ 17,202,165	4.2
Multi-Family Pre-Dev		2	$ 140,000	
Multi-Family Term	*Multifamily PPA*	5	$ 825,000	0.3
	CPACE	0		
	Kresge	0		
	LIME	4	$ 668,000	
	Multi-Family Term Total	9	$ 1,493,000	0.3
Multi-Family Health and Safety Total		2	$ 110,000	
Strategic Investments	*Transportation and ESA's*	2	$ 7,500,000	
	Strategic Investments Total	2	$ 7,500,000.00	
Financing Programs Total		**2240**	**$ 98,427,165**	**21.0**

Table 2. Incentive Programs FY2020 Targets[1]

Program/Product	Targets		
	Number of Projects	Total Capital Deployed	Capacity Installed
Residential Solar	7059	$ 214,200,000	60.0
EEPP-Battery Storage	500	$ 5,500,000	2.0
Incentive Programs Total	**7559**	**$ 219,700,000**	**60.0**

[1] These targets include targets for a Battery Storage Incentive Program which would be cost recovered through the Electric Efficiency Partners Program (EEPP) and are contingent upon its approval by the Public Utilities Regulatory Authority (PURA).

Table 3. Green Bank FY2020 Targets[2]

Targets				
Business Segment	**Number of Projects**	**Total Capital Deployed**		**Capacity Installed**
Financing Programs Total	2240	$	98,427,165	21.0
Incentive Programs Total	7559	$	219,700,000	60.0
Green Bank Total	9130	$	299,575,000	76.3

The key take-away messages for the targets for FY 2020 include:

- **Nonprofit Program Management** – The Nonprofit will continue to manage scopes of work for the Smart-E Loan, LMI-PosiGen, Solar PPA, and Multifamily Loan Programs on behalf of the Green Bank and deliver on the above targets to the Green Bank.
- **Solar Market Transition** – The Connecticut General Assembly recently increased the cap of for the RSIP to 350 MW as part of the transition from net metering to a tariff structure. We expect demand to continue to be robust as we approach that target and are working on other offerings to support the market in that transition such as a new battery storage program aimed at existing RSIP customers. The details of this incentive are still under development by the Green Bank and the Department of Energy and Environmental Protection and are subject to approval by the Public Utilities Regulatory Authority (PURA). Therefore, the Battery Storage portion of these targets are contingent upon the successful approval of the program by PURA.
- **Increased Deployment through financing programs** – The Green Bank will continue to deploy its own capital in the market through its programs including C-PACE, , Posigen, and the PPA as well as through supporting other market participants initiatives such as SBEA and Capital for Change's administration of the LIME loan. The organization also sees strategic opportunities related to transportation and fuel cell projects. These all are done with the aim to continue deployment and build the Green Bank's balance sheet.

The Green Bank reaching 9,130 projects, mobilizing nearly $300 million in investment, and deploying over 76 MW of renewable energy, balances our commitment to leverage public funds to attract private investment leading to the deployment of clean energy with our focus on organizational sustainability (i.e., ensuring the breakeven of the Investment Business no later than 7 years).

Revenues

The Green Bank anticipates revenues of $43.5 million in FY 2020 including the restoration of the CEF and the RGGI auction proceeds. This restoration alone represents a 73% increase

[2] Ibid.

in revenue, year-on-year. CEF and RGGI revenues are [$X] million while revenues from other sources such as interest income, RECs, fees, and other sources represents [$X] million.

In the attached budget, for revenues, see the following pages:

- P1 – Projected Revenues and Expenses FYE June 30, 2030
  - Total Green Bank
  - Investment Business
  - Incentive Business
    - P1a – Revenue Detail
- P2 – Projected Utility Remittances
- P3 – Projected RGGI Auction Proceeds
- P4 – Projected REC Revenue

The key take-away messages of the revenue budget for FY 2020 include:

- **Financing Programs** – the restoration of revenues from the Clean Energy Fund and RGGI represent the largest year-on-year change in revenues. Interest income, closing fees, and grants provide $5.5 million in revenues to support the Investment Business in FY 2020. It is important to highlight that there is an increase of over $1 million in interest income due to investments made in FY19 including the HACPACE repurchase.

- **REC Income in the Incentive Programs** – $7.9 million in revenues from SHREC and non-SHREC projects will be generated in FY 2020 from the Incentive Business. It should be noted that through a Master Purchas Agreement ("MPA") between the Green Bank and the Electric Distribution Companies ("EDC"), that future SHREC revenues will continue to be securitized to provide resources to support the administration of the RSIP and its cost recovery to the Green Bank (Tranches 1 & 2 were securitized in FY2019 and Tranche 3 will be securitized in FY2020).

These revenues allow the Green Bank to advance along its path toward breakeven through its Sustainability Plan.

Expenses

The Green Bank has budgeted $17.4 million in operating expenses. This represents a 10% increase year on year but approximately 20% below the FY2018 budget prior to the implementation of the sustainability plan. In addition to the operating expenses, the Green Bank has budgeted $15.6 million in financial incentives (e.g., RSIP recovered through the SHRECs) and $7.4 million in non-operating expenses (e.g., provision for loan losses).

In the attached budget, for expenses, see the following pages:

- P1 – Projected Revenues and Expenses FYE June 30, 2020

    - Total Green Bank
    - Investment Business
    - Incentive Business
- P5 – Employee Staffing Plan
- S5 – Capital Expenditures

The key take-away messages of the expense budget for FY 2020 include:

- **Financing Programs** – $12.7 million in expenses in the Investment Business have been increased by 12% or $1.4 million from the FY 2019 to FY 2020 budget. Increases stem from additional professional fees (auditing and consulting), additional staff, increased marketing expenses, resumption of product research and development, and depreciation of solar systems installed.

- **Incentive Programs** – $4.6 million in expenses in the Incentive Business is an increase of 6% or $0.2 million from the FY 2019 to FY 2020 budget. New expenses in the Incentive Programs are primarily focused on the Green Bank's efforts around the transitioning residential market and how battery storage is part of that transition. The Green Bank is working with DEEP to design a new program that would incentivize battery storage for existing RSIP customers and would be cost recovered, if approved, through the Public Utility Regulatory Authority's Electric Efficiency Partners Program (EEPP). The Green Bank is proposing $400,000 be spent on developing this market but $180,000 (excluding the incentives) would be recoverable through EEPP.

- **Nonprofit** – as identified in the Sustainability Plan, seven (7) personnel were transferred from the Green Bank to the Inclusive Prosperity Capital in FY2019. An additional staff member will transition this fiscal year to IPC leading to additional savings to the Green Bank.

- **Staffing Plan** – Staff propose 3.5 additional headcount in FY2020. These additions are to support the Green Bank's bonding efforts, to optimize revenue and assess risk in investments, increase origination efforts and to expedite the increase in applications presently being seen in the RSIP. This budget represents a merit pool of 3% where staff can earn 0-5% increases and a promotion pool of 1.5%.

The Green Bank Staff successfully implemented the Sustainability Plan details of which can be found in the accompanying memo.

Cash Flow

As the FY2017-2019 sweeps put increased pressure on the Green Bank's operations, programs, and investments requiring additional diligence in the management of its financial resources, staff are more actively monitoring cash and have included a monthly cash flow projection with this budget.

The key take-away message of the cash flow projections for FY 2020 include:

- **Incentive Programs** – The Green Bank once again manage its cash using the tools employed in FY19: a SHREC Warehouse (i.e., credit facility) and Securitization. There is a warehouse in place secured by the SHRECs with Liberty and Webster Banks that will be drawn upon until Tranche 3 is securitized. Staff aims for the securitization to be complete by autumn 2019.

- **Financing Programs** – Staff plans on accessing the new Amalgamated Bank C-PACE Warehouse facility as means of managing our cash flow this year. Not included in these transactions is the planned "green bond" issuance by the Green Bank that will be used to pay off this credit facility and to fund other investments.

- **Financial Sustainability** – Staff has reviewed this cash projection with the sustainability model. The restoration of the CEF and RGGI, the repurchase of the HAC-PACE loans, and the projected increased investment by organization have brought forward the breakeven for the Financing Programs segment from FY2022 to FY 2021.

Investments

In FY 2020, the Green Bank proposes to invest $55.8 million – see Table 7.

Table 7. Proposed FY 2019 Investments of the Green Bank

Investment	CGB Capital Deployed	Term	%
CPACE (CGB Projects)	$ 4,500,000	15.6	5.8
3rd Party CPACE RFP	$ 5,000,000	5.0	5.3
PPA Fund Debt	$ 16,875,000	15.0	5.5
SBEA	$ 2,000,000	4.0	4.8
Smart-E Total	$ 596,106	Loan Loss Reserve	
Multi-Family Lime Recapitalization	$ 2,000,000	10	3.0
Strategic Investments	$ 7,500,000	10	5.0
RSIP	$ 15,416,149	Incentive	
Battery Storage	$ 2,000,000	Incentive	
Total	**$ 55,775,205**	**6.8**	**5.2**

As modeled in the Sustainability Plan, to increase cash flow from investments, the Financing Programs are to generate a rate of return target of 5.0% from a portfolio of investments averaging a 10-year maturity. The proposed investment portfolio supports the strategy to get the Sustainability Plan to breakeven faster by generating a return above 5%, bringing $14.6 million to the Green Bank over the life of the investments.

In the attached budget, for investments, see the following pages:

- S1 – Program Loans and Working Capital Advances
- S2 – Credit Enhancements

- S3 – Program Grants and Incentives

The key take-away messages on investments for FY 2020 include:

- **C-PACE** – The Green Bank has built (and continues to build) a healthy pipeline of C-PACE projects. The Green Bank expects to close on approximately $4.5 million in FY 2020 in C-PACE projects. In addition, the Green Bank has recently issued a Request for Proposal for private CPACE capital providers looking for funding. The Green Bank expects to close on an additional $5 million in financing to support 3rd Party C-PACE capital providers coming out of this RFP.

- **Solar PPA Fund** – The Green Bank continues to originate new PPA projects and has hired IPC to establish a new fund to purchase these projects. These projects include several state/municipal solar projects. The Green Bank expects to invest debt to support Connecticut projects that are sold into this fund. The structure of the fund and the details of the relationship with IPC regarding these projects are still under discussion.

- **Small Business Energy Advantage** – The Green Bank will continue its 90/10 partnership with Amalgamated Bank and will continue its regular purchases of SBEA loans from Eversource.

- **Smart -E** – The Green Bank expects new loans will require the commitment of $600,000 in new loan loss reserves for the program. In addition, the Green Bank is expecting to spend $1.8 million in Interest Rate Buydowns for the product to support the transition from the existing lending platform to a new one and to encourage the market for renewable heating and cooling (i.e., ground source heat pumps). The money for the Interest Rate Buydowns is funding that comes from Connecticut's allotment of American Recovery and Reinvestment Act (ARRA) funds.

- **Capital for Change (C4C) Recapitalization** – The Green Bank is looking to recapitalize the Low-Income Energy (LIME) Loan program managed by Capital for Change. The Green Bank intends to lend C4C $2 million that will then be relent to customers participating in the LIME program.

- **Strategic Investments** – The Green Bank sees potential opportunities to close transactions that further the deployment of alternative fuel vehicles and infrastructure and fuel cells. We expect to close projects where the Green Bank lends $7.5 million in FY2020.

- **Incentives** – To support the residential solar market's march to 350 MW, staff expect the Green Bank to commit to $15.4 million in RSIP incentives. Additionally, as previously mentioned, the Green Bank is developing a new residential battery storage incentive and hopes, once approved, to commit to $2 million in battery storage incentives.

Strategic Partners

Enclosed with the budget materials is a list of Strategic Partners for review, discussion, and reauthorization. These external partners have been reviewed and approved by the Budget & Operations Committee and are being recommended by the Budget & Operations Committee for Approval by the Board of Directors.

In the attached budget, for strategic partners, see the following page:

- S6 – Strategic Partners

These partners are key to the operations of the Green Bank and are well integrated in to our processes.

Conclusion

In the wake of the Sweeps of the Green Bank over the past two years, the organization has evolved into one that is nimbler and seeks to build its own balance sheet. The proposed budget and targets for FY2020 is in line with this direction.

The restoration of the organization's funding is reflected in a 96% increase in revenues while expenses rise only by 10% in FY2020. The organization will continue to support its targets by investing over $55 million in FY2020, including $38 million that builds the organization's balance sheet. The Green Bank will access capital markets and raise funding through bonding to support these investments.

The increase in revenue, the management of expenses, and the prudent investments made by the organization are reflected in the forecast positive net income for the Green Bank, the first since FY2016.

Resolution

WHEREAS, on June 12, 2019 the Connecticut Green Bank (Green Bank) Budget and Operations (B&O) Committee recommended that the Green Bank Board of Directors (Board) approve the Fiscal Year 2020 Targets and Budget; and

WHEREAS, the members of the B&O Committee recommends that the Board authorizes Green Bank staff to enter into or extend the professional services agreements (PSAs) currently in place with the following, contingent upon a competitive bid process having occurred in the last three years (except Cortland Capital Services and Inclusive Prosperity Capital):

I. Adnet Technologies, LLC
II. Clean Power Research, LLC

III. Cortland Capital Services
IV. CSW, LLC
V. Inclusive Prosperity Capital
VI. Locus Energy LLC
VII. ReCurve Analytics, Inc.
VIII. Sustainable Real Estate Solutions, Inc.

For fiscal year 2020 with the amounts of each PSA not to exceed the applicable approved budget line item.

NOW, therefore be it:

RESOLVED, that the Green Bank Board hereby approves: (1) the FY 2020 Targets and Budget, and (2) the PSAs with the 8 strategic partners listed above.

Connecticut Green Bank
FY 2020 Operating and Program Budget - DRAFT
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Presented to Board of Directors on June 28, 2019

Presented to B&O Committee on June 12, 2019

Connecticut Green Bank
FY 2020 Operations and Program Budget - DRAFT
Statement of Revenues and General Operations and Program Expenses

	GenOps Fiscal Year 06/30/2020 Budget	Programs Fiscal Year 06/30/2020 Budget	Total Fiscal Year 06/30/2020 Budget	Fiscal Year 06/30/2019 Budget	YOY Budget $ Variance	YOY Budget % Variance	Fiscal YTD As of 06/19/19 Actual	Budget vs Actual Variance
Revenue								
Operating Income								
Utility Customer Assessments	25,986,400	0	25,986,400	25,969,100	17,300	0 %	23,851,952	(2,117,148)
Payments to State of Connecticut	0	0	0	(14,000,000)	14,000,000	(100) %	0	14,000,000
RGGI Auction Proceeds-Renewables	4,031,800	0	4,031,800	750,700	3,281,100	437 %	2,130,254	1,379,554
CPACE Closing Fees	0	135,000	135,000	135,000	0	0 %	88,894	(46,106)
REC Sales	0	8,086,325	8,086,325	5,033,976	3,052,350	61 %	5,336,117	302,141
Grant Income-Federal Programs	0	30,000	30,000	98,507	(68,507)	(70) %	14,589	(83,918)
Grant Income-Private Foundations	0	0	0	200,000	(200,000)	(100) %	0	(200,000)
Grant Income-DEEP	0	0	0	0	0	0 %	6,500,000	6,500,000
PPA Income	0	252,000	252,000	41,000	211,000	515 %	204,954	163,954
LREC/ZREC Income	0	50,000	50,000	16,170	33,830	209 %	16,170	0
Total Operating Income	30,018,200	8,553,325	38,571,525	18,244,453	20,327,073	111 %	38,142,930	19,898,477
Interest Income	292,712	4,101,480	4,394,192	3,356,461	1,037,730	31 %	3,095,890	(260,571)
Interest Income, Capitalized	0	367,018	367,018	358,287	8,730	2 %	247,271	(111,016)
Other Income	100,000	35,000	135,000	236,600	(101,600)	(43) %	609,319	372,718
Total Revenue	**$ 30,410,912**	**$ 13,056,823**	**$ 43,467,735**	**$ 22,195,801**	**21,271,933**	**96 %**	**$ 42,095,410**	**$ 19,899,608**
Operating Expenses								
Compensation and Benefits								
Employee Compensation	986,737	3,565,393	4,552,130	4,268,927	283,203	7 %	4,036,720	(232,207)
Employee Benefits	879,963	3,045,781	3,925,744	3,797,892	127,852	3 %	3,656,722	(141,171)
Total Compensation and Benefits	1,866,700	6,611,174	8,477,874	8,066,819	411,055	5 %	7,693,442	(373,378)
Program Development & Administration	0	2,858,928	2,858,929	3,077,650	(218,722)	(7) %	1,937,606	(1,140,043)
Program Administration-IPC Fee	0	1,297,957	1,297,956	1,179,944	118,013	10 %	1,018,468	(161,477)
Marketing Expense	317,055	539,000	856,055	746,500	109,555	15 %	406,212	(340,288)
E M & V	145,000	380,000	525,000	485,000	40,000	8 %	384,676	(100,324)
Commitment Fees	0	0	0	0	0	0 %	45,763	45,764
Consulting and Professional Fees								
Consulting/Advisory Fees	113,500	347,400	460,900	313,000	147,900	47 %	338,513	25,512
Accounting and Auditing Fees	248,750	0	248,750	159,950	88,800	56 %	48,998	(110,951)
Legal Fees & Related Expenses	50,000	234,499	284,499	267,500	16,999	6 %	338,816	71,316
Bond Issuance Costs	0	330,000	330,000	88,889	241,111	271 %	0	(88,889)
Total Consulting and Professional Fees	412,250	911,899	1,324,149	829,339	494,810	60 %	726,327	(103,012)
Research and Development	290,000	0	290,000	40,000	250,000	625 %	38,247	(1,754)
Rent and Location Related Expenses								
Rent/Utilities/Maintenance	69,065	240,934	309,999	300,000	9,998	3 %	261,343	(38,656)
Telephone/Communication	27,760	96,839	124,598	99,760	24,839	25 %	81,130	(18,630)
Depreciation & Amortization	77,717	271,116	348,834	67,406	281,428	418 %	37,599	(29,807)
Total-Rent and Location Related Expenses	174,542	608,889	783,431	467,166	316,265	68 %	380,072	(87,093)
Office, Computer & Other Expenses	353,598	597,035	950,633	824,606	126,027	15 %	678,546	(146,060)
Total Operating Expenses	**$ 3,559,145**	**$ 13,804,882**	**$ 17,364,027**	**$ 15,717,024**	**1,647,003**	**10 %**	**$ 13,309,359**	**$ (2,407,665)**
Program Incentives and Grants								
Financial Incentives-CGB Grants	0	100,000	100,000	100,000	0	0 %	6,480,000	6,380,000
Program Expenditures-Federal Grants	0	30,000	30,000	98,507	(68,507)	(70) %	15,779	(82,728)
EPBB/PBI/HOPBI Incentives	0	15,505,131	15,505,131	13,746,354	1,758,777	13 %	12,776,700	(969,654)
Incr/(Decr) in Reserve for RSIP Payments	0	0	0	0	0	0 %	3,182,780	3,182,780
Interest Rate Buydowns-CGB	0	0	0	125,000	(125,000)	(100) %	125,309	309
Total Program Incentives and Grants	**$ 0**	**$ 15,635,131**	**$ 15,635,131**	**$ 14,069,861**	**1,565,270**	**11 %**	**$ 22,580,569**	**$ 8,510,708**
Operating Income/(Loss)	**$ 26,851,767**	**$ (16,383,191)**	**$ 10,468,576**	**$ (7,591,083)**	**18,059,659**	**(238) %**	**$ 6,205,482**	**$ 13,796,565**
Non-Operating Expenses								
Interest Expense	0	2,636,672	2,636,672	428,218	2,208,454	516 %	460,592	32,374
Realized (Gain) Loss	0	0	0	0	0	0 %	104,465	104,465
Provision for Loan Loss	0	2,965,625	2,965,625	2,923,674	41,951	1 %	2,808,067	(115,607)
Interest Rate Buydowns-ARRA	0	1,800,000	1,800,000	25,000	1,775,000	7,100 %	897,428	872,428
Total Non-Operating Expenses	**$ 0**	**$ 7,402,297**	**$ 7,402,297**	**$ 3,376,892**	**4,025,405**	**119 %**	**$ 4,270,552**	**$ 893,660**
Net Revenues Over (Under) Expenses	**$ 26,851,767**	**$ (23,785,488)**	**$ 3,066,279**	**$ (10,967,975)**	**14,034,254**	**(128) %**	**$ 1,934,930**	**$ 12,902,905**

Connecticut Green Bank
FY 2020 Operations and Program Budget - DRAFT
Statement of Revenues and General Operations and Program Expenses - INCENTIVE PROGRAMS

	Res Solar PV Invest Prgm Fiscal Year 06/30/2020	Battery Storage Fiscal Year 06/30/2020	Battery Storage EEP Fiscal Year 06/30/2020	Incentive Programs Fiscal Year 06/30/2020	Incentive Programs Fiscal Year 06/30/2019	YOY Budget		Incentive Programs Fiscal YTD As of 06/19/19	Budget vs Actual
	Budget	Budget	Budget	Budget	Budget	$ Variance	% Variance	Actual	Variance
Revenue									
Operating Income									
REC Sales	7,875,545	0	0	7,875,545	4,974,976	2,900,570	58 %	4,916,117	58,859
Total Operating Income	7,875,545	0	0	7,875,545	4,974,976	2,900,570	58 %	4,916,117	58,859
Interest Income	78,000	0	0	78,000	78,000	0	0 %	67,238	10,761
Other Income	0	0	0	0	0	0	0 %	1,300	(1,300)
Total Revenue	**$ 7,953,545**	**$ 0**	**$ 0**	**$ 7,953,545**	**$ 5,052,976**	**2,900,570**	**57 %**	**$ 4,984,655**	**$ 68,320**
Operating Expenses									
Compensation and Benefits									
Employee Compensation	990,802	103,008	60,125	1,153,935	1,090,389	63,547	6 %	1,067,775	22,614
Employee Benefits	827,562	92,707	0	920,270	970,390	(50,121)	(5) %	919,600	50,789
Total Compensation and Benefits	1,818,364	195,715	60,125	2,074,205	2,060,779	13,426	1 %	1,987,375	73,403
Program Development & Administration	1,594,895	0	20,000	1,614,895	1,685,000	(70,105)	(4) %	1,025,445	659,556
Marketing Expense	46,900	0	0	46,900	95,000	(48,100)	(51) %	44,152	50,847
E M & V	100,000	0	100,000	199,999	100,000	100,000	100 %	102,884	(2,883)
Commitment Fees	0	0	0	0	0	0	0 %	25,764	(25,764)
Consulting and Professional Fees									
Consulting/Advisory Fees	132,400	0	0	132,400	92,500	39,900	43 %	138,457	(45,957)
Legal Fees & Related Expenses	20,000	0	0	20,000	15,000	5,000	33 %	58,904	(43,904)
Bond Issuance Costs	180,000	0	0	180,000	88,889	91,111	102 %	0	88,889
Total Consulting and Professional Fees	332,400	0	0	332,400	196,389	136,011	69 %	197,361	(972)
Rent and Location Related Expenses									
Rent/Utilities/Maintenance	65,580	7,277	0	72,856	78,579	(5,723)	(7) %	61,408	17,170
Telephone/Communication	26,359	2,924	0	29,284	26,130	3,153	12 %	17,928	8,203
Depreciation & Amortization	73,795	8,188	0	81,983	17,656	64,328	364 %	8,963	8,693
Total-Rent and Location Related Expenses	165,734	18,389	0	184,123	122,365	61,758	50 %	88,299	34,066
Office, Computer & Other Expenses	196,867	11,967	0	208,834	145,188	63,646	44 %	108,242	36,946
Total Operating Expenses	**$ 4,255,160**	**$ 226,071**	**$ 180,125**	**$ 4,661,356**	**$ 4,404,721**	**256,636**	**6 %**	**$ 3,579,522**	**$ 825,199**
Program Incentives and Grants									
EPBB/PBI/HOPBI Incentives	15,505,131	0	0	15,505,131	13,746,354	1,758,777	13 %	12,776,701	969,653
Incr/(Decr) in Reserve for RSIP Payments	0	0	0	0	0	0	0 %	3,182,780	(3,182,780)
Total Program Incentives and Grants	**$ 15,505,131**	**$ 0**	**$ 0**	**$ 15,505,131**	**$ 13,746,354**	**1,758,777**	**13 %**	**$ 15,959,481**	**$ (2,213,127)**
Operating Income/(Loss)	**$ (11,806,746)**	**$ (226,071)**	**$ (180,125)**	**$ (12,212,942)**	**$ (13,098,099)**	**885,156**	**(7) %**	**$ (14,554,347)**	**$ 1,456,248**
Non-Operating Expenses									
Interest Expense	2,209,161	0	0	2,209,161	333,750	1,875,411	562 %	351,582	(17,832)
Provision for Loan Loss	0	0	0	0	0	0	0 %	22,892	(22,892)
Total Non-Operating Expenses	**$ 2,209,161**	**$ 0**	**$ 0**	**$ 2,209,161**	**$ 333,750**	**1,875,411**	**562 %**	**$ 374,474**	**$ (40,724)**
Net Revenues Over (Under) Expenses	**$ (14,015,907)**	**$ (226,071)**	**$ (180,125)**	**$ (14,422,103)**	**$ (13,431,849)**	**(990,255)**	**7 %**	**$ (14,928,821)**	**$ 1,496,972**

Connecticut Green Bank

FY 2020 Operations and Program Budget - DRAFT

Statement of Revenues and General Operations and Program Expenses - FINANCING PROGRAMS

	GenOps Fiscal Year 06/30/2020 Budget	Programs Fiscal Year 06/30/2020 Budget	Financing Programs Fiscal Year 06/30/2020 Budget	Financing Programs Fiscal Year 06/30/2019 Budget	YOY Budget $ Variance	YOY Budget % Variance	Financing Programs Fiscal YTD As of 06/19/19 Actual	Budget vs Actual Variance
Revenue								
Operating Income								
Utility Customer Assessments	25,986,400	0	25,986,400	25,969,100	17,300	0 %	23,851,952	(2,117,148)
Payments to State of Connecticut	0	0	0	(14,000,000)	14,000,000	(100) %	0	14,000,000
RGGI Auction Proceeds-Renewables	4,031,800	0	4,031,800	750,700	3,281,100	437 %	2,130,254	1,379,554
CPACE Closing Fees	0	135,000	135,000	135,000	0	0 %	88,894	(46,106)
REC Sales	0	210,780	210,780	59,000	151,780	257 %	420,000	361,000
Grant Income-Federal Programs	0	30,000	30,000	98,507	(68,507)	(70) %	14,589	(83,918)
Grant Income-Private Foundations	0	0	0	200,000	(200,000)	(100) %	0	(200,000)
Grant Income-DEEP	0	0	0	0	0	0 %	6,500,000	6,500,000
PPA Income	0	252,000	252,000	41,000	211,000	515 %	204,954	163,954
LREC/ZREC Income	0	50,000	50,000	16,170	33,830	209 %	16,170	0
Total Operating Income	30,018,200	677,780	30,695,980	13,269,477	17,426,503	131 %	33,226,813	19,957,336
Interest Income	292,712	4,023,480	4,316,192	3,278,461	1,037,731	32 %	3,028,651	(249,810)
Interest Income, Capitalized	0	367,017	367,017	358,288	8,730	2 %	247,272	(111,016)
Other Income	100,000	35,000	135,000	236,600	(101,600)	(43) %	608,018	371,418
Total Revenue	**$ 30,410,912**	**$ 5,103,277**	**$ 35,514,189**	**$ 17,142,826**	**18,371,364**	**107 %**	**$ 37,110,754**	**$ 19,967,928**
Operating Expenses								
Compensation and Benefits								
Employee Compensation	986,737	2,411,458	3,398,195	3,178,539	219,656	7 %	2,968,945	(209,593)
Employee Benefits	879,963	2,125,511	3,005,475	2,827,502	177,973	6 %	2,737,121	(90,381)
Total Compensation and Benefits	1,866,700	4,536,969	6,403,670	6,006,041	397,629	7 %	5,706,066	(299,974)
Program Development & Administration	0	1,244,034	1,244,033	1,392,650	(148,616)	(11) %	912,162	(480,489)
Program Administration-IPC Fee	0	1,297,956	1,297,957	1,179,944	118,012	10 %	1,018,467	(161,476)
Marketing Expense	317,055	492,100	809,155	651,500	157,655	24 %	362,060	(289,440)
E M & V	145,000	180,000	325,000	385,000	(60,000)	(16) %	281,793	(103,208)
Commitment Fees	0	0	0	0	0	0 %	20,000	20,000
Consulting and Professional Fees								
Consulting/Advisory Fees	113,500	215,000	328,499	220,500	108,000	49 %	200,055	(20,444)
Accounting and Auditing Fees	248,750	0	248,750	159,950	88,800	56 %	48,998	(110,952)
Legal Fees & Related Expenses	50,000	214,499	264,499	252,500	11,999	5 %	279,912	27,412
Bond Issuance Costs	0	150,000	150,000	0	150,000	0 %	0	0
Total Consulting and Professional Fees	412,250	579,499	991,748	632,950	358,799	57 %	528,965	(103,984)
Research and Development	290,000	0	290,000	40,000	250,000	625 %	38,246	(1,754)
Rent and Location Related Expenses								
Rent/Utilities/Maintenance	69,065	168,078	237,143	221,421	15,722	7 %	199,936	(21,486)
Telephone/Communication	27,760	67,556	95,316	73,629	21,685	29 %	63,202	(10,427)
Depreciation & Amortization	77,717	189,133	266,850	49,751	217,100	436 %	28,636	(21,114)
Total-Rent and Location Related Expenses	174,542	424,767	599,309	344,801	254,507	74 %	291,774	(53,027)
Office, Computer & Other Expenses	353,598	388,200	741,798	679,417	62,381	9 %	570,304	(109,114)
Total Operating Expenses	**$ 3,559,145**	**$ 9,143,525**	**$ 12,702,670**	**$ 11,312,303**	**1,390,367**	**12 %**	**$ 9,729,837**	**$ (1,582,466)**
Program Incentives and Grants								
Financial Incentives-CGB Grants	0	100,000	100,000	100,000	0	0 %	6,480,000	6,380,000
Program Expenditures-Federal Grants	0	30,000	30,000	98,507	(68,507)	(70) %	15,779	(82,728)
Interest Rate Buydowns-CGB	0	0	0	125,000	(125,000)	(100) %	125,309	309
Total Program Incentives and Grants	**$ 0**	**$ 130,000**	**$ 130,000**	**$ 323,507**	**(193,507)**	**(60) %**	**$ 6,621,088**	**$ 6,297,581**
Operating Income/(Loss)	**$ 26,851,767**	**$ (4,170,248)**	**$ 22,681,519**	**$ 5,507,016**	**17,174,503**	**312 %**	**$ 20,759,829**	**$ 15,252,813**
Non-Operating Expenses								
Interest Expense	0	427,511	427,511	94,468	333,043	353 %	109,010	14,542
Realized (Gain) Loss	0	0	0	0	0	0 %	104,465	104,465
Provision for Loan Loss	0	2,965,625	2,965,625	2,923,674	41,951	1 %	2,785,174	(138,500)
Interest Rate Buydowns-ARRA	0	1,800,000	1,800,000	25,000	1,775,000	7,100 %	897,429	872,429
Total Non-Operating Expenses	**$ 0**	**$ 5,193,136**	**$ 5,193,136**	**$ 3,043,142**	**2,149,994**	**71 %**	**$ 3,896,078**	**$ 852,936**
Net Revenues Over (Under) Expenses	**$ 26,851,767**	**$ (9,363,384)**	**$ 17,488,383**	**$ 2,463,874**	**15,024,509**	**610 %**	**$ 16,863,751**	**$ 14,399,877**

Connecticut Green Bank
FY 2020 Operating and Program Budget - DRAFT
Revenue Detail

	FY20 Budget	FY19 Revised Budget	$ Increase / (Decrease)	FY19 Actuals As of 06/19/19
Revenues				
Utility customer assessments	$ 25,986,400	$ 25,969,100	$ 17,300	$ 23,851,952
Utility customer assessments - Sweep	-	(14,000,000)	14,000,000	-
RGGI auction proceeds - renewables	4,031,800	3,050,700	981,100	4,430,254
RGGI auction proceeds - renewables - Sweep	-	(2,300,000)	2,300,000	(2,300,000)
Interest Income - Cash Intercompany	64,712	64,544	168	59,231
Interest Income - Cash deposits	240,900	195,424	45,476	300,163
Interest Income - Delinquent CPACE payments	-	-	-	5,903
Interest Income - Capitalized construction interest	367,018	358,288	251	247,271
Interest Income - CPACE Warehouse, benefit assessments	1,905,176	1,271,250	633,926	1,012,364
Interest Income - Loan portfolio, other programs	1,928,185	1,395,651	532,534	1,358,479
Interest Income - CPACE Selldown Bonds	177,219	180,187	(2,968)	165,075
Interest Income - HA CPACE Promissory Notes	-	171,405	(171,405)	127,712
Interest Income - Solar lease I promissory notes, net	78,000	78,000	-	66,963
CPACE closing fees	135,000	135,000	-	88,894
Grant income (federal programs)	30,000	98,507	(68,507)	14,589
Grant income (DEEP)	-	-	-	6,500,000
Grant income (private foundations)	-	200,000	(200,000)	-
REC sales	955,296	256,852	698,444	-
REC sales to utilities under SHREC program	7,131,030	4,777,124	2,353,905	5,336,117
Other income - Programs	337,000	93,770	243,230	221,124
Other income - General	100,000	200,000	(100,000)	609,319
Total Sources of revenue:	$ 43,467,735	$ 22,195,801	$ 21,263,454	$ 42,095,410

Connecticut Green Bank
FY 2020 General Operations Budget - DRAFT
Utility Customer Assessment Projections

	FY20 Budget	FY19 Budget	FY19 Actual / Estimate	FY20 Budget Incr / (Decr) FY19 Budget	FY20 Budget Incr / (Decr) FY19 Projected
July	$ 2,433,800	$ 2,423,700	$ 2,478,916	$ 10,100	$ (45,116)
August	2,632,100	2,591,800	2,739,979	40,300	(107,879)
September	2,388,400	2,349,100	2,491,816	39,300	(103,416)
October	1,951,600	1,960,500	1,953,417	(8,900)	(1,817)
November	1,914,300	1,907,200	1,947,686	7,100	(33,386)
December	2,164,600	2,155,600	2,204,779	9,000	(40,179)
January	2,360,600	2,432,800	2,238,262	(72,200)	122,338
February	2,193,600	2,149,200	2,305,525	44,400	(111,925)
March	2,073,100	2,065,700	2,121,445	7,400	(48,345)
April	2,007,600	1,995,600	1,918,794	12,000	88,806
May	1,791,000	1,786,300	1,800,099	4,700	(9,099)
June	2,075,700	2,151,600	2,151,600	(75,900)	(75,900)
Total assessments:	$ 25,986,400	$ 25,969,100	$ 26,352,317	$ 17,300	$ (365,917)
				0.1%	-1.4%

Connecticut Green Bank
FY 2020 General Operations Budget - DRAFT
RGGI Auction Receipts

	Price	Allowances	FY20 Budget	FY19 Budget	FY19 Actual	FY20 Budget Incr / (Decr) FY19 Budget	FY20 Budget Incr / (Decr) FY19 Projected
September Auction #45	$ 5.06	901,684	$ 1,049,400	$ 776,800	$ 965,091	$ 272,600	$ 188,291
December Auction #46	$ 4.96	901,684	1,028,600	761,800	1,147,386	266,800	385,586
March Auction #47	$ 4.86	870,052	972,500	721,500	1,091,708	251,000	370,208
June Auction #48	$ 4.76	896,361	981,300	790,600	1,226,070	190,700	435,470
September Sweep			-	(776,800)	(965,091)	776,800	(188,291)
December Sweep			-	(761,800)	(1,147,386)	761,800	(385,586)
March Sweep			-	(721,500)	(187,523)	721,500	533,977
June Sweep			-	(39,900)	-	39,900	39,900
	Total auction receipts:		$ 4,031,800	$ 750,700	$ 2,130,255	$ 3,281,100	$ 1,379,555
						0.0%	0.0%

Auction Proceeds		$ 4,031,800	$ 3,050,700	$ 4,430,255	$ 981,100	$ 1,379,555
Sweep		-	(2,300,000)	(2,300,000)	2,300,000	-
	Total auction receipts:	$ 4,031,800	$ 750,700	$ 2,130,255	$ 3,281,100	$ 1,379,555

Connecticut Green Bank
FY 2020 RSIP Budget - DRAFT
REC Revenue

Tranche	Description	FY20 Budget - DRAFT Fiscal Q1 2020	Fiscal Q2 2020	Fiscal Q3 2020	Fiscal Q4 2020	Total Fiscal 2020	FY19 Budget-Revised	Increase / (Decrease)	FY19 Apr YTD Actuals
	Generation Month	**Calendar Q1 2019**	**Calendar Q2 2019**	**Calendar Q3 2019**	**Calendar Q4 2019**	**Total Calendar 2019**	**Total Calendar 2018**	**Total Calendar**	
SHREC T1	P90 Generation (mWh)	8,800.6	15,219.1	14,686.8	6,681.5	45,388.0	43,634.4	1,753.6	
SHREC T1	Revenue @ $50 / mWh	$ 440,030	$ 760,957	$ 734,341	$ 334,073	$ 2,269,401	$ 2,181,719	$ 87,681	
SHREC T2	P90 Generation (mWh)	11,165.4	18,935.6	18,318.1	8,513.1	56,932.1	52,967.4	3,964.6	
SHREC T2	Revenue @ $49 / mWh	$ 547,103	$ 927,842	$ 897,585	$ 417,142	$ 2,789,672	$ 2,595,405	$ 194,268	
SHREC T3	P90 Generation (mWh)	8,890.0	13,804.4	13,421.4	7,050.0	43,165.8	-	43,165.8	
SHREC T3	Revenue @ $48 / mWh	$ 426,720	$ 662,611	$ 644,226	$ 338,400	$ 2,071,957	$ -	$ 2,071,957	
	Total SHREC Revenue	$ 1,413,853	$ 2,351,411	$ 2,276,152	$ 1,089,614	$ 7,131,030	$ 4,777,124	$ 2,353,905	$ 4,916,117
	Generation Month	**Calendar Q1 2019**	**Calendar Q2 2019**	**Calendar Q3 2019**	**Calendar Q4 2019**	**Total Calendar 2019**	**Total Calendar 2018**	**Total Calendar**	
Non-SHREC Residential	Residential P90 Generation (mWh)	9,669.0	15,392.2	15,023.1	7,518.9	47,603.3	39,570.3	8,033.0	
Non-SHREC Residential	YTD Residential P90 Generation (mWh)	9,669.0	25,061.2	40,084.4	47,603.3	47,603.3	39,570.3	8,033.0	
Non-SHREC Residential	Revenue @ $15.64* / mWh	$ -	$ -	$ -	$ 744,516	$ 744,516	$ 197,852	$ 546,664	
Non-SHREC Commercial	Commercial P90 Generation (mWh)	-	-	-	14,500.0	14,500.0	15,000.0	(500.0)	
Non-SHREC Commercial	YTD Commercial P90 Generation (mWh)	-	-	-	14,500.0	14,500.0	15,000.0	(500.0)	
Non-SHREC Commercial	Revenue @ $15.64* / mWh	$ -	$ -	$ -	$ 226,780	$ 226,780	$ 75,000	$ 151,780	
	Commission Expense	-	-	-	(16,000)	(16,000)	(16,000)	-	
	Total Non-SHREC Revenue	$ -	$ -	$ -	$ 955,296	$ 955,296	$ 256,852	$ 698,444	$ 420,000
	Total REC Revenue	$ 1,413,853	$ 2,351,411	$ 2,276,152	$ 2,044,910	$ 8,086,325	$ 5,033,976	$ 3,052,350	$ 5,336,117

Notes:

*The Green Bank manages its price risk by selling its RECS in advance to buyers. To date we have sold 15,000 @ $24.25/REC, 15,000 @ $12.50/REC, and 10,000 @ $8.00 per REC. $15.64 is the Weighted average price of all contracts entered into by the Green Bank for vintage 2019 RECS and it is used for all budget estimates.

Connecticut Green Bank
FY 2020 Operations and Program Budget - DRAFT
Staffing Plan

Position / Department	Name	FY20 Staffing Budget Hours	FY19 Staffing Budget Hours
Associate, Residential Programs	Basham, Emily	2,080	2,080
VP, Finance and Administration	Bellas, George	-	1,360
Controller	Cartelli, Shawne	2,080	800
Senior Manager of Resources and Impact Assessment	Charpentier, Lucy	2,080	2,080
Associate Director, Commercial & Industrial Programs	Clark, Anthony	2,080	2,080
Senior Manager, Statutory & Infrastructure Programs	Colonis, Bill	2,080	2,080
Managing Director of Marketing	Connolly, Craig	2,080	2,080
Senior Loan Investment Administrator	Duncan, Catherine	2,080	2,080
VP Commercial & Industrial Programs and Officer	Dykes, Mackey	2,080	2,080
General Counsel & Chief Legal Officer	Farnen, Brian	2,080	2,080
Senior Manager, Clean Energy Finance	Fidao, Laura	-	693
Senior Contracts Administrator	French, Loyola	2,080	2,080
President & Chief Executive Officer	Garcia, Bryan	2,080	2,080
Manager, Statutory & Infrastructure Programs	Hazlewood, Isabelle	2,080	2,080
Managing Director, Statutory & Infrastructure Programs	Hedman, Dale	-	1,040
Executive Vice President and Chief Investment Officer	Hunter, Bert	2,080	2,080
Manager, Marketing	Janecko, Andrea	2,080	2,080
Administrative Coordinator	Johnson, Barbara	2,080	2,080
Senior Manager & Senior Counsel, Commercial and Industrial Programs	Kovtunenko, Alex	2,080	2,080
Associate Manager, Statutory & Infrastructure Programs	Kranich, Ed	2,080	2,080
Senior Accountant (P/T)	Landry, Joe	1,560	1,560
Manager, Commercial & Industrial Programs	Lembo-Buzzelli, Alysse	2,080	2,080
Senior Assistant, Statutory & Infrastructure Programs	Lewis, Lynne	2,080	2,080
Legislative Liaison & Associate Director, Marketing	Macunas, Matt	2,080	2,080
Senior Manager, Clean Energy Finance	Miller, Desiree	2,080	1,387
VP, Finance and Administration	Murphy, Jane	2,080	2,080
Director, Statutory & Infrastructure Programs	Price, Selya	2,080	2,080
Associate Manager, Statutory & Infrastructure Programs	Pyne, Sara	2,080	2,080
Executive Assistant	Samuels, Cheryl	2,080	2,080
Manager, Marketing	Schmitt, Robert	2,080	2,080
Managing Director of Operations	Shrago, Eric	2,080	2,080
Senior Accountant	Soares, Natalia	2,080	2,080
Director, Multifamily Housing Programs	Stevenson, Kim	320	2,080
Manager, Clean Energy Finance	Stewart, Fiona	2,080	2,080
Senior Manager, Marketing	Sturk, Rudy	2,080	2,080
Staff Accountant/Contracts Administrator (CI)	Turker, Irene	2,080	2,080
Senior Manager, Clean Energy Finance (Durational)	Venables, Louise	2,080	2,080
Senior Assistant, Statutory & Infrastructure Programs	Vigil, Marycruz	2,080	2,080
Associate Director, Marketing	Waters, Barbara	2,080	2,080
Director, Clean Energy Finance	Yu, Mike	2,080	2,080
Senior Manager, Commercial & Industrial Programs	Zuba, Nick	2,080	2,080
New - Senior Accountant	Open	2,080	800
	Subtotal:	78,840	80,440

Connecticut Green Bank
FY 2020 Operations and Program Budget - DRAFT
Staffing Plan

Position / Department	Name	FY20 Staffing Budget Hours	FY19 Staffing Budget Hours	
New Hires and Interns				
New - Senior Manager, Clean Energy Finance		1,600	-	
New - Senior Associate/Asset Manager		2,080	-	
New - Senior Manager Commercial, Industrial, & Institutional Programs		1,600	-	
New - Associate, Statutory and Infrastructure Programs (Durational)		2,080	-	
Intern - Finance 1		480	-	
Intern - CI&I 1		480	-	
Intern - SI 1		480	-	
	Total Hours:	87,640	80,440	
	FTEs:			
	Employees	41.44	38.67	2.77
	Interns	0.69	-	0.69
	Total	42.13	38.67	3.46
	Dollars:			YOY Incr / (Decr)
	CGB Employees	$ 4,172,750	$ 3,969,163	$ 203,587
	(1) Merit Pool	120,794	119,046	1,748
	(2) Promotion Pool	65,061	59,523	5,538
	(3) Delay in Movement of IPC Employees	-	121,196	(121,196)
	Intern Pool-CGB	30,000	-	30,000
	Total:	$ 4,388,605	$ 4,268,927	$ 119,678

Notes:

(1) FY20 and FY19 Merit Pool is 3%.

(2) FY20 and FY19 Promotion Pool is 1.5%.

(3) During FY19 employees did not move to IPC until 08/03/18, four pay periods.

Connecticut Green Bank
FY 2020 Program Budget - DRAFT
Program Loans

Program Type - CGB portfolio loan (Asset) advances

Dept	Prg Code	Prg Name	Description		Interest Rate	Term in Years	FY20 Budget Q1	Q2	Q3	Q4	Total	FY19 Budget Recast	FY19 YTD Actuals
MultiFamily	52250	MF Programs	Recapitalization of C4C Lime		3.0%	10	$ 2,000,000	$ -	$ -	$ -	$ 2,000,000		
MultiFamily	52250						-	-	-	-	-		
				Total MultiFamily Program Loans:			***$ 2,000,000***	***$ -***	***$ -***	***$ -***	***$ 2,000,000***	***$ 180,000***	
				Total Resi 1-4 Program Loans:			***$ -***	***$ -***	***$ -***	***$ -***	***$ -***	***$ 2,500,000***	
CI&I	51800	CPACE	CGB Portfolio	Current & Future Pipeline	5.83%	16	$ 1,125,000	$ 1,125,000	$ 1,125,000	$ 1,125,000	$ 4,500,000		
CI&I	51800	CPACE	3rd party lending RFP	Projects to be determined	5.3%	5	500,000	1,500,000	1,500,000	1,500,000	5,000,000		
CI&I	51810	New Product Dev.	ESA with State	Projects to be determined	5.0%	10	-	-	3,750,000	3,750,000	7,500,000		
CI&I	53002	CGB SBEA LLC	Regular Loan Purchases		4.75%	4	500,000	500,000	500,000	500,000	2,000,000		
				Total CI&I Program Loans:			***$ 2,125,000***	***$ 3,125,000***	***$ 6,875,000***	***$ 6,875,000***	***$ 19,000,000***	***$ 26,690,279***	
Finance	52200	CE Finance Prg	PPA Sub Debt into fund SL4	Debt financing	5.5%	15	$ 4,218,750	$ 4,218,750	$ 4,218,750	$ 4,218,750	$ 16,875,000		
Finance	52200	CE Finance Prg					-	-	-	-	-		
				Total CE Finance Program Loans:			***$ 4,218,750***	***$ 4,218,750***	***$ 4,218,750***	***$ 4,218,750***	***$ 16,875,000***	***$ 6,500,000***	
				Total of all Program Loans:			***$ 8,343,750***	***$ 7,343,750***	***$ 11,093,750***	***$ 11,093,750***	***$ 37,875,000***	***$ 35,870,279***	

Program Type - CGB Loans: Provisions for Loan Losses

	Prob.	Ratio	FY20 Budget Q1	Q2	Q3	Q4	Total	FY19 Budget Recast	FY19 YTD Actuals
Total MultiFamily Program Loans:	85%	15%	$ 255,000	$ -	$ -	$ -	$ 255,000	$ 180,000	$ 9,000
Total Resi 1-4 Program Loans:	100%	10%	-	-	-	-	$ -	250,000	-
Total CI&I Program Loans-CPACE:	85%	10%	138,125	223,125	223,125	223,125	807,500	1,996,674	1,962,674
Total CI&I Program Loans-Other CI&I Pgms:	85%	10%	-	-	318,750	318,750	637,500	272,000	436,916
Total CE Finance Program Loans:	75%	10%	316,406	316,406	316,406	316,407	1,265,625	225,000	357,477
Total Provision for Loan Losses:			***$ 709,531***	***$ 539,531***	***$ 858,281***	***$ 858,282***	***$ 2,965,625***	***$ 2,923,674***	***$ 2,766,066***

Program Type - Interest Expense

Dept	Prg	Prg Name	Description	Interest	Term	FY20 Budget Q1	Q2	Q3	Q4	Total	FY19 Budget Recast	FY19 YTD Actuals
Multi	52251	Multifamily	HDF/MacArthur Interest Expense - $5.0m draw	1%	15	$ 12,500	$ 12,500	$ 12,500	12,500	$ 50,000	$ 50,000	$ 50,000
SI	51100	RSIP	Interest Expense-SHREC ABS - Class A	5%	15	467,058	462,731	451,813	440,603	1,822,205	-	-
SI	51100	RSIP	Interest Expense-SHREC ABS - Class B	7%	15	31,592	31,310	30,571	29,814	123,287	-	-
SI	51100	RSIP	Liberty/Webster SHREC Warehouse - Tranche 3	5%	1	20,445	51,111	80,890	111,223	263,669	333,750	351,582
Finance	52200	CE Finance Prg	Amalgamated LOC	4%	1	52,389	52,389	51,820	51,819	208,417	-	-
Finance	52302	Clean Renewable Energy Bonds	New England Hydro CREBs net of Treasury Subsidy	5%	20	-	152,559	-	-	152,559	28,968	59,010
Finance	52302	Clean Renewable Energy Bonds	CSCU CREBs net of Treasury Subsidy	5%	20	-	16,535	-	-	16,535	-	-
						$ 583,984	$ 779,135	$ 627,594	$ 645,959	$ 2,636,672	$ 412,718	$ 460,592

Connecticut Green Bank
FY 2020 Program Budget - DRAFT
Credit Enhancements

Credit Enhancements - Loan Loss Reserves - ARRA Funds

Dept	Prg Code	Prg Name	Description	FY20 Budget Q1	FY20 Budget Q2	FY20 Budget Q3	FY20 Budget Q4	FY20 Budget Total	FY19 Budget	FY19 Actual
				$ -	$ -	$ -	$ -	$ -	$ -	$ -
				-	-	-	-	-	-	-
				$ -	$ -	$ -	$ -	$ -	$ -	$ -

Credit Enhancements - Loan Loss Reserves - DEEP Funds

Dept	Prg Code	Prg Name	Description	FY20 Budget Q1	FY20 Budget Q2	FY20 Budget Q3	FY20 Budget Q4	FY20 Budget Total	FY19 Budget	FY19 Actual
				$ -	$ -	$ -	$ -	$ -	$ 500,000	$ -
				$ -	$ -	$ -	$ -	$ -	$ 500,000	$ -

Credit Enhancements - Loan Loss Reserves - CGB Funds

Dept	Prg Code	Prg Name	Description	FY20 Budget Q1	FY20 Budget Q2	FY20 Budget Q3	FY20 Budget Q4	FY20 Budget Total	FY19 Budget	FY19 Actual
Resi	52210	SmartE	CGB/Smart E loans	$ 149,027	$ 149,027	$ 149,027	$ 149,027	$ 596,106	$ 850,000	$ -
Multi	52230	CHIF PEL	CHIF/MPEL product	-	-	-	-	-	120,000	-
				$ 149,027	$ 149,027	$ 149,027	$ 149,027	$ 596,106	$ 970,000	$ -

Credit Enhancements - Interest rate Buydowns - ARRA Funds

Dept	Prg Code	Prg Name	Description	FY20 Budget Q1	FY20 Budget Q2	FY20 Budget Q3	FY20 Budget Q4	FY20 Budget Total	FY19 Budget	FY19 Actual
Resi	52210	SmartE	CGB/Smart-E loans	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 1,000,000	$ 1,570,800	$ -
Resi	52210	SmartE	Smart-E for Ground Source Heat Pumps	200,000	200,000	200,000	200,000	800,000	-	-
				$ 450,000	$ 450,000	$ 450,000	$ 450,000	$ 1,800,000	$ 1,570,800	$ -

Credit Enhancements - Interest rate Buydowns - CGB Funds

Dept	Prg Code	Prg Name	Description	FY20 Budget Q1	FY20 Budget Q2	FY20 Budget Q3	FY20 Budget Q4	FY20 Budget Total	FY19 Budget	FY19 Actual
Resi	52210	SmartE	CGB/Smart-E EV Loans	-	-	-	-	-	125,000	-
				$ -	$ -	$ -	$ -	$ -	$ 125,000	$ -

Connecticut Green Bank
FY 2020 Program Budget - DRAFT
Financial Incentives - Grants and Rebates

Program Name	Description	FY20 Budget Q1	FY20 Budget Q2	FY20 Budget Q3	FY20 Budget Q4	FY20 Budget Total	FY19 Budget (Recast)	FY19 Actuals As of 06/19/19
RSIP	PBI Incentives	$ 3,183,771	$ 1,558,301	$ 2,089,750	$ 3,660,884	$ 10,492,705	$ 9,546,354	$ 8,612,291
RSIP	EPBB Incentives	1,308,207	1,667,225	1,041,487	995,507	5,012,426	4,200,000	4,166,209
RSIP	HOPBI Incentives	-	-	-	-	-	-	(1,799)
Pre-FY2013 Programs	Legacy projects	25,000	25,000	25,000	25,000	100,000	100,000	-
		$ 4,516,979	$ 3,250,526	$ 3,156,236	$ 4,681,391	$ 15,605,131	$ 13,846,354	$ 12,776,701

Connecticut Green Bank
FY 2020 General Operations Budget - DRAFT
Research and Development Expenditures

Project	Purpose	FY20 Budget	FY19 Budget Recast	FY19 Actuals As of 06/19/19
Renewable Thermal Technology	RH&C	$ 15,000	$ 25,000	$ 38,246
LMI	Solar Pathways (value proposition in LMI space)	-	15,000	-
Community Engagement	Sustainable CT	100,000	-	-
GHHI	Completion of Phase 2	45,000	-	-
LMI	Energy Burden in Transportation Study	50,000	-	-
Community Solar	Identify opportunities for investment (e.g., brownfields)	50,000	-	-
EMV	Joint Jobs Study with EEB	10,000	-	-
EMV	ESA	20,000	-	-
		$ 290,000	$ 40,000	$ 38,246

Connecticut Green Bank
FY 2020 General Operations Budget - DRAFT
Capital Expenditure Budget

	FY20 Budget	FY19 Budget	FY19 Actuals As of 06/19/19
IT Hardware & Software			
New/Replacement Desktops & Laptops	$ 30,000	$ 30,000	$ 12,718
Phones	15,000	15,000	-
Firewalls and Traffic Analyzer	-	-	-
Other Capitalized IT Hardware	-	-	-
	$ 45,000	$ 45,000	$ 12,718
Office Furniture & Equipment			
Rocky Hill-Cubicles/Furniture	$ -	$ -	$ -
Rocky Hill	-	-	-
	$ -	$ -	$ -
Leasehold Improvements			
Rocky Hill-Leasehold Improvements	$ -	$ -	$ -
Stamford-Leasehold Improvements	-	-	-
	$ -	$ -	$ -
Total Capital Expenditures	$ 45,000	$ 45,000	$ 12,718

Connecticut Green Bank
FY 2020 General Operations Budget - DRAFT
Strategic Partners

Partner	Department	RFP	Year of RFP	Work Performed	FY20 Budget	FY19 Budget
Adnet Technologies, LLC	General Operations	Y	2017	IT Outsourcing	$ 420,000	$ 400,000
Clean Power Research, LLC	Infrastructure	Y	2016	PowerClerk Software	448,895	430,000
Cortland Capital Services	CI&I	Y	2013	CPACE - Loan Servicing	130,000	84,860
CSW, LLC.	CI&I	Y	2019	PPA/Municipal Project Management	177,000	-
Inclusive Prosperity Capital	multiple	N		Program Execution and Investment Management	1,297,956	1,265,710
Locus Energy LLC	Infrastructure	Y	2016	Monitoring Platform, Active Monitoring, RGM replacement	830,000	570,000
ReCurve Analytics	CI&I	Y	2018	CPACE EM&V	135,000	50,000
Sustainable Real Estate Solutions, Inc.	CI&I	Y	2018	CPACE Third Party Administrator	200,000	619,750
					$ 3,638,851	$ 3,420,320

Inclusive Prosperity Capital Breakdown

PSA	Human Capital Component	Administrative Component	Total FY20 Budget	Total FY19 Budget
Solar PPA	$ 271,077	$ 3,695	$ 274,772	$ 160,006
LMI	215,675	11,690	227,365	270,687
Smart-E	282,802	13,855	296,656	399,950
Multifamily	477,652	21,511	499,163	349,301
	$ 1,247,206	$ 50,750	$ 1,297,956	$ 1,179,944

Investment and Incentive Segments Com

Cash on hand at end of Year (000's):	Projected FY19	Projected FY20	Projected FY21	Projected FY22	Projected FY23	Projected FY24	Projected FY25	Projected FY26	Projected FY27	Projected FY28	Projected FY29
Investment Segment	$ 6,884.2	$ 4,270.4	$ 4,000.0	$ 4,000.0	$ 4,000.0	$ 4,000.0	$ 4,000.0	$ 4,000.0	$ 4,000.0	$ 4,000.0	$ 4,000.0
Incentive Segment	$ 4,319.3	$ 3,088.0	$ 3,999.4	$ 3,326.1	$ 111.9	$ 149.1	$ 120.2	$ 210.1	$ 924.3	$ 513.0	$ 831.9
Required $4 million cash											
Combined	$ 11,203.5	$ 7,358.3	$ 7,999.4	$ 7,326.1	$ 4,111.9	$ 4,149.1	$ 4,120.2	$ 4,210.1	$ 4,924.3	$ 4,513.0	$ 4,831.9

PROJECTED CASH FLOWS FOR THE INVESTMENT (CORE) SEGMENT

Connecticut Green Bank -Investment Business

	Projection Assumptions	Projected Jun-19	Summary July 2018 to Jun 2019	x FY 2020	- Current Law (if yes, then "x") FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	TOTAL
1. Cash On Hand														
[Beginning of month]		$16,048.3	$16,495.0	$6,884.2	$4,270.4	$4,000.0	$4,000.0	$4,000.0	$4,000.0	$4,000.0	$4,000.0	$4,000.0	$4,000.0	
2. Cash Receipts														
Receipts based on investments thru FY19	0.10%	189.4	$ 7,462.5	$ 9,108.9	$ 9,118.0	$ 9,127.2	$ 9,136.3	$ 9,145.4	$ 9,154.6	$ 9,163.7	$ 9,172.9	$ 9,182.1	$ 9,191.2	$98,962.8
Third party capital provider funds		-	-	-	-	-	-	-	-	-	-	-	-	
CGB Meriden Hydro receipts		-	447		-	-	-	-	-	-	-	-	-	
REC Sales - Commercial		-	404	211	-	-	-	-	-	-	-	-	-	
RGGI Proceeds and ACP payments		750.7	1,289.0	4,276.6	3,000.0	3,000.0	3,000.0	3,000.0	3,000.0	3,000.0	3,000.0	3,000.0	3,000.0	$32,565.5
Receipts (P&I) on investmentsmade in FY20 and forward	5.00%	-	-		5,239.3	8,806.7	13,092.8	17,598.7	22,049.4	26,711.7	33,093.2	40,395.3	49,060.3	$216,047.2
Payment Amortization (Years)	10.00													
SBC, net of sweep		(4,848.4)	12,577.8	25,986.4	25,986.4	25,986.4	25,986.4	25,986.4	25,986.4	25,986.4	25,986.4	25,986.4	25,986.4	$272,441.8
Growth rate for SBC	0.00%													
Repayment of WC Loans		-	-	-	-	-	-	-	-	-	-	-	-	$0.0
Kresge Loan		-	1,000.0	-	-	-	-	-	-	-	-	-	-	$1,000.0
Release of restricted cash back to unrestricted cash		-	2,893.70	-	-	-	-	-	-	-	-	-	-	$2,893.7
Repayment of Posigen Loan - Restructuring		-	3,383.88	-	-	-	-	-	-	-	-	-	-	$3,383.9
(Disbursements to) repayments from CPACE timeliness reserve		-	399.12	-	-	-	-	-	-	-	-	-	-	$399.1
Proceeds from revolving credit facility		-	-	-	-	-	-	-	-	-	-	-	-	$0.0
Grant Income - Private Foundations		-		-	-	-	-	-	-	-	-	-	-	$0.0
Proceeds - LOC (Amalgamated/C-PACE)		-		17,000.0	-	-	-	-	-	-	-	-	-	$17,000.0
Other Income		-	0.6	572.0	-	-	-	-	-	-	-	-	-	$572.6
DEEP Grant for Low Income and Multifamily		-	2,668.4	-	-	-	-	-	-	-	-	-	-	$2,668.4
Repayment of RSIP expenses paid by CORE		2,000.0	17,000.0		-	-	-	-	-	-	1,000.0	3,000.0	2,300.0	$23,300.0
3. Total Cash Receipts		**$ (1,908.3)**	**$ 49,525.7**	**$ 57,154.7**	**$ 43,343.7**	**$ 46,920.2**	**$ 51,215.5**	**$ 55,730.5**	**$ 60,190.4**	**$ 64,861.8**	**$ 72,252.4**	**$ 81,563.7**	**$ 89,537.9**	**$672,296.5**
4. Total Cash Available	**$0.00**	**$ 14,140.0**	**$ 66,020.6**	**$ 64,038.8**	**$ 47,614.1**	**$ 50,920.2**	**$ 55,215.5**	**$ 59,730.5**	**$ 64,190.4**	**$ 68,861.8**	**$ 76,252.4**	**$ 85,563.7**	**$ 93,537.9**	
5. Cash Paid Out														
Compensation and Benefits	2.00%	430.2	6,173.0	6,404	6,532	6,662	6,796	6,932	7,070	7,212	7,356	7,503	7,653	$76,291.4
Interest Expense		8.2	22.5	428	-	-	-	-	-	-	-	-	-	$450.0
Other administrative expenses	2.00%	353.4	4,240.6	6,104	6,226	6,351	6,478	6,607	6,739	6,874	7,012	7,152	7,295	$71,079.1
Financial Incentives - non RSIP		16.2	194.3	100	-	-	-	-	-	-	-	-	-	$294.3
Investments per Year		1,500.0	35,408.1	41,890	27,546	33,097	34,793	37,943	44,881	49,276	56,385	66,909	74,590	$502,717.5
Investments visa vis IPC		-	4,098.4	-	-	-	-	-	-	-	-	-	-	$4,098.4
Repayment of Revolving Credit Facility		-	-	-	-	-	-	-	-	-	-	-	-	$0.0
IPC Fee - Program Expense Component		-		-	-	-	-	-	-	-	-	-	-	$0.0
IPC Fee - Human Capital Component		125.8	1,509.0	1,298	1,298	649	649	649	-	-	-	-	-	$6,052.0
Subtotal		**$ 2,433.7**	**$ 51,646.0**	**$ 56,223.5**	**$ 41,602.4**	**$ 46,758.7**	**$ 48,715.5**	**$ 52,130.5**	**$ 58,690.4**	**$ 63,361.8**	**$ 70,752.4**	**$ 81,563.7**	**$ 89,537.9**	**$660,982.8**
Loan Principal Payment (Kresge)		-	-	-	-	-	-	-	-	1,500.0	1,500.0	-	-	$3,000.00
Capital Purchases		-		-	-	-	-	-	-	-	-	-	-	$45.00
Advances to CREBS trustee to make bond payment (return of advances by trustee)		-	433.0	250.0	-	-	-	-	-	-	-	-	-	$871.07
CGB Meriden Hydro (receipts) expenditures,net		-	585.2	300.0	-	-	-	-	-	-	-	-	-	$942.48
WC advances net of (repayments)		-	748.4	-	-	-	-	-	-	-	-	-	-	$898.39
Transfer to Restricted Cash - SCRF for CSCU CREBS		-	-	-	-	-	-	-	-	-	-	-	-	$962.16
Transfer to Restricted Cash - LLRs		212.5	2,204.6	-	-	-	-	-	-	-	-	-	-	$4,379.91
Transfer to Incentive Reserves				-	-	-	2,500.0	3,600.0	1,500.0	-	-	-	-	$7,600.00
SBC for Non-SHREC PBIs net of REC recovery		3,519.3	3,519.3	2,995.0	2,011.7	161.6	-	-	-	-	-	-	-	$12,206.82
6. Total Cash Paid Out		**$6,165.5**	**$ 59,136.5**	**$ 59,768.5**	**$ 43,614.1**	**$ 46,920.2**	**$ 51,215.5**	**$ 55,730.5**	**$ 60,190.4**	**$ 64,861.8**	**$ 72,252.4**	**$ 81,563.7**	**$ 89,537.9**	**$774,328.55**
7. Cash Position		**$ 7,974.52**	**$ 6,884.17**	**$ 4,270.4**	**$ 4,000.0**	**$ 4,000.0**	**$ 4,000.0**	**$ 4,000.0**	**$ 4,000.0**	**$ 4,000.0**	**$ 4,000.0**	**$ 4,000.0**	**$ 4,000.0**	
CORE BUSINESS NET		**$ (594.21)**	**$ (3,609.4)**	**$ (4,486.1)**	**$ 301.4**	**$ 4,271.7**	**$ 8,306.7**	**$ 12,556.3**	**$ 17,394.4**	**$ 21,789.6**	**$ 27,898.5**	**$ 34,922.4**	**$ 43,303.5**	

PROJECTED ANNUAL CASH FLOW FROM INCENTIVE SEGMENT

Connecticut Green Bank - Incentive Business

		Summary July 2018 to June 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	TOTAL
1. Cash On Hand													
[Beginning of month]		$ (5,484.90)	$4,319.31	$3,087.97	$ 3,999.38	$ 3,326.05	$ 111.93	$ 149.07	$ 120.22	$ 210.08	$ 924.26	$ 513.00	
2. Cash Receipts													
REC Sales - Non-SHREC		$ -	$ 744.5	$ 805.3	$ 801.2	$ 797.2	$ 793.2	$ 789.3	$ 785.3	$ 781.4	$ 777.5	$ 773.6	$ 7,849
REC Sales - SHREC (not securitized)		$ 4,199.2	$ 426.7	$ 426.7	$ 200.0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,253
SHREC T1/T2 Residual & Expense Reimb		210.4	$ 1,264.6	$ 1,324.2	$ 1,268.5	$ 1,264.6	$ 1,302.4	$ 1,254.5	$ 1,217.2	$ 1,188.3	$ 1,143.9	$ 1,105.5	$ 12,544
SHREC T3 Residual & Expense Reimb			$ -	$ 567.5	$ 543.6	$ 542.0	$ 558.2	$ 537.6	$ 521.7	$ 509.3	$ 490.2	$ 473.8	$ 4,744
SHREC T4 Residual & Expense Reimb			$ -	$ -	$ 543.6	$ 542.0	$ 558.2	$ 537.6	$ 521.7	$ 509.3	$ 490.2	$ 473.8	$ 4,176
SHREC T5 Residual & Expense Reimb			$ -	$ -		$ 406.5	$ 418.6	$ 403.2	$ 391.2	$ 382.0	$ 367.7	$ 355.3	$ 2,725
Proceeds - SHREC securitization		38,527.5	$ 15,000.0	$ 15,000.0	$ 11,250.0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 79,778
Proceeds - RBC SHREC term Loan												$ -	$ -
Proceeds - Webster/Liberty SHREC warehouse		$ 15,000.0	$ 5,000.0	$ 5,000.0	$ 5,000.0								$ 30,000
Release of restricted cash to unrestricted cash		$ 178.3											$ 178
Transfer from Financing Programs						$ 2,500.0	$ 3,600.0	$ 1,500.0	$ -	$ -	$ -	$ -	$ 7,600
SBC for Non-SHREC PBIs net of REC recovery		$ 4,588.8	$ 2,972.0	$ 2,011.7	$ 161.6	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 9,734
3. Total Cash Receipts		**$ 62,704.2**	**$ 25,407.8**	**$ 25,135.3**	**$ 19,768.5**	**$ 6,052.2**	**$ 7,230.6**	**$ 5,022.2**	**$ 3,437.1**	**$ 3,370.3**	**$ 3,269.5**	**$ 3,182.0**	$ 164,580
4. Total Cash Available		**$ 57,219.3**	**$ 29,727.2**	**$ 28,223.2**	**$ 23,767.9**	**$ 9,378.2**	**$ 7,342.5**	**$ 5,171.2**	**$ 3,557.3**	**$ 3,580.3**	**$ 4,193.7**	**$ 3,695.0**	
5. Cash Paid Out													
Compensation and Benefits	2 % inflation	$ 2,089.2	$ 2,074.2	$ 2,115.7	$ 2,158.0	$ 350.0	$ 357.0	$ 364.1	$ 371.4	$ 378.9	$ 386.4	$ 394.2	$ 11,039
Interest		$ 351.6	$ 263.7	$ 263.7	$ 263.7	$ 263.7	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,406
Closing Costs - SHREC WH		$ 26.7	$ 85.0										
Commitment Fees - SHREC WH		$ 25.8	$ 8.0										
Bond issuance costs		$ 1,998.1	$ 1,000.0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,998
Liquidity/Expense/Other Reserves (to restricted Cash)		$ 1,249.0	$ 600.0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,849
Interest expense-warehouse		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other administrative expenses	2 % inflation	$ 1,329.5	$ 2,103.2	$ 2,145.3	$ 2,188.2	$ 150.0	$ 153.0	$ 156.1	$ 159.2	$ 162.4	$ 165.6	$ 168.9	$ 8,881
Total Administrative Expenses		$ 7,069.9	$ 6,134.1	$ 4,524.6	$ 4,609.8	$ 763.7	$ 510.0	$ 520.2	$ 530.6	$ 541.2	$ 552.0	$ 563.1	$ 26,174
Financial Incentives PBI SHREC		$ 4,069.3	$ 6,776.2	$ 9,900.6	$ 9,869.2	$ 8,424.7	$ 6,683.5	$ 4,530.8	$ 2,816.7	$ 1,114.9	$ 128.7	$ -	$ 54,315
Financial Incentives PBI NON SHREC		$ 4,588.8	$ 3,716.5	$ 2,816.9	$ 962.8	$ 77.9	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,163
Financial Incentives EPBB		$ 4,172.0	$ 5,012.4	$ 1,981.8	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,166
Total Incentives		$ 12,830.1	$ 15,505.1	$ 14,699.2	$ 10,832.0	$ 8,502.6	$ 6,683.5	$ 4,530.8	$ 2,816.7	$ 1,114.9	$ 128.7	$ -	$ 77,644
Subtotal		**$ 19,900.0**	**$ 21,639.2**	**$ 19,223.8**	**$ 15,441.8**	**$ 9,266.3**	**$ 7,193.5**	**$ 5,051.0**	**$ 3,347.3**	**$ 1,656.1**	**$ 680.8**	**$ 563.1**	$ 103,963
Reimburse CORE for RSIP expenses paid		$ 17,000.0	$ -			$ -	$ -	$ -	$ -	$ 1,000.0	$ 3,000.0	$ 2,300.0	$ 23,300
Repayment of Webster/Liberty SHREC warehouse		$ 16,000.0	$ 5,000.0	$ 5,000.0	$ 5,000.0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 31,000
6. Total Cash Paid Out		**52,900.0**	**26,639.2**	**24,223.8**	**20,441.8**	**9,266.3**	**7,193.5**	**5,051.0**	**3,347.3**	**2,656.1**	**3,680.8**	**2,863.1**	$ 158,263
7. Net Cash Position		**$ 4,319.3**	**$ 3,088.0**	**$ 3,999.4**	**$ 3,326.1**	**$ 111.9**	**$ 149.1**	**$ 120.2**	**$ 210.1**	**$ 924.3**	**$ 513.0**	**$ 831.9**	

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Memo

To: Connecticut Green Bank Budget & Operations Committee and Board of Directors

From: Bryan Garcia (President and CEO)

CC: Mackey Dykes (VP of CI&I and Officer), Brian Farnen (General Counsel and CLO), Bert Hunter (EVP and CIO), Jane Murphy (VP of Finance), and Eric Shrago (Managing Director of Operations)

Date: June 12, 2019

Re: Sustainability Plan – Status Update from Original Restructuring Plan

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On December 15, 2017, in response to legislative sweeps by the Connecticut General Assembly ("CGA"),[1] the Board of Directors of the Connecticut Green Bank ("the Green Bank") approved of a financial Sustainability Pathway ("Sustainability Plan") to enable the organization to manage through the sweeps while continuing to deliver on its mission and purpose. The Sustainability Plan would pivot the Green Bank away from an investment strategy since inception geared towards maximizing leverage of private capital towards one focused on retaining more investments on the Green Bank's own balance sheet that collectively earn a rate of return that generate sufficient revenues to make the Green Bank financially sustainable over time.[2]

The Sustainability Plan includes the following key elements:

- **<u>Business Units</u>** – separating the financial performance of two (2) distinct business units – Incentive Business and Investment Business – with a focus on each business unit pursuing breakeven or financial sustainability;

    - **<u>Incentive Business</u>** – managing the cash flow demands on the Green Bank as a result of administering the statutorily required Residential Solar Investment Program ("RSIP"),[3] by successfully securitizing Solar Home Renewable Energy Credits ("SHRECs"). This would enable the Incentive Business to fully cost recover its expenses, including incentives, administration, financing, and other costs associated with the RSIP administration through the sale of SHRECs and 15-year Master Purchase Agreements ("MPAs") between the Green Bank and the Electric Distribution Companies ("EDCs");

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[1] For each of the fiscal years 2018 and 2019, the legislative sweeps from the Green Bank to the General Fund included $2.3 million from the Regional Greenhouse Gas Initiative allowance proceeds (i.e., 23% of $10.0 million swept from RGGI) and $14.0 million from the Clean Energy Fund (i.e., over 50% of the annual funds received by the Green Bank).

[2] "Financially Wounded, Pioneering CT Green Bank Has a Path Forward" by Matt Pilon of the Hartford Business Journal (January 8, 2018)

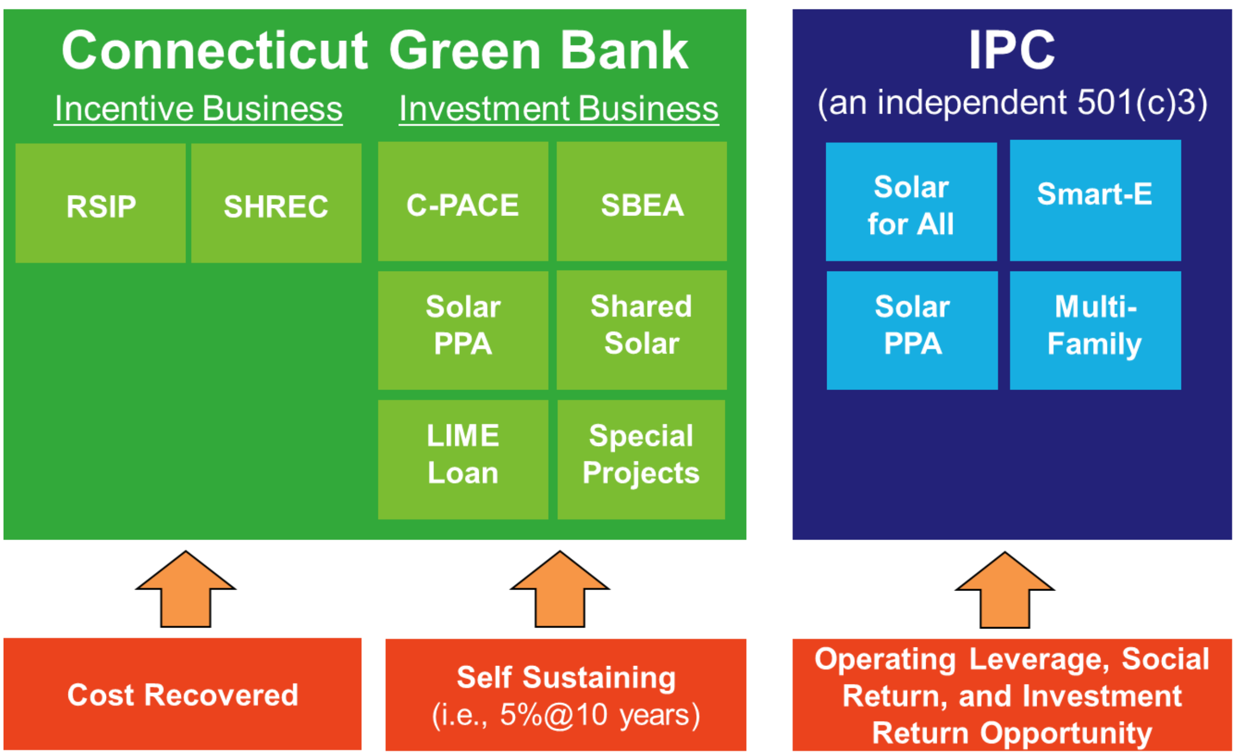
[3] CGS 16-245ff

- **Investment Business** –reducing the operating expenses of the Investment Business by 27% (i.e., $4.6 million) from FY 2018 (i.e., $16.3 million) to FY 2019 (i.e., $11.3 million), and implementing an investment strategy that generates cash flow (i.e., returns of principal and interest) from a portfolio of investments (e.g., Commercial Property Assessed Clean Energy – "C-PACE") that delivers an average 5% return over a 10-year term, would enable the Investment Business to breakeven in 4 to 7 years; and

- **Nonprofit Organization** – creating a mission-aligned independent 501(c)3 nonprofit organization (i.e., Inclusive Prosperity Capital – "IPC") to efficiently deliver capital to underserved segments of the market in Connecticut and beyond, while transitioning certain staff at the Green Bank to become employees of this nonprofit organization and helping the Green Bank reduce its operating expenses over time as it pursues financial sustainability.

The diagram below provides an overview of the Sustainability Plan, including where various products and programs reside – see Figure 1.

Figure 1. Sustainability Plan of the Connecticut Green Bank – Incentive Business, Investment Business, and an Independent 501(c)3 Nonprofit Organization

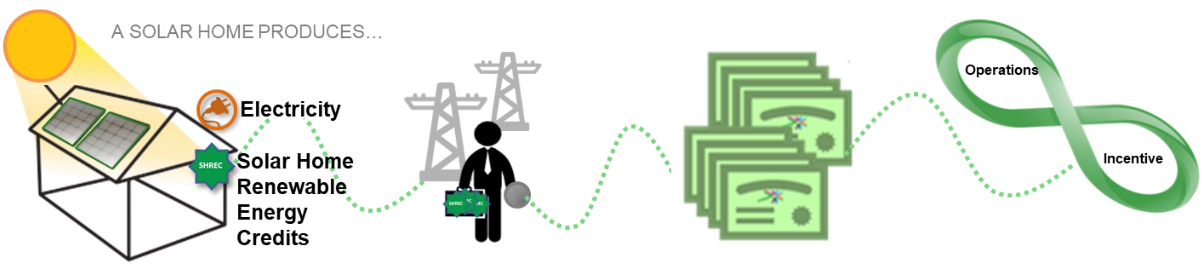


This memo provides a status update on the implementation of the Sustainability Plan (i.e., since December 15, 2017) following on the legislative sweeps of FY 2018 and FY 2019, including descriptions of each of the business units above (e.g., Incentive Business and Investment Business) and outsourcing specific programs and targets to Inclusive Prosperity Capital.

Incentive Business

One of the key elements of the Sustainability Plan is to ensure that the Green Bank can manage its operational cash flow needs, while implementing a statutorily required incentive program that requires a substantial amount of upfront resources. By aligning the upfront cash flow needs of the RSIP (e.g., incentives, administrative costs, financing costs, etc.) with the revenues generated through the MPAs with the EDCs and from a successful SHREC securitization, the Green Bank is able to continue supporting the residential solar PV market without disruptions resulting from the legislative sweeps – see Figure 2.[4]

Figure 2. Incentive Business – Overview of Sustainability Plan for RSIP Continuity, Program Cost Recovery, and Cash Flow Management



When panels produce electricity for a home, they will also produce **Solar Home Renewable Energy Credits (SHRECs)**. The Green Bank provides upfront incentives through RSIP and collects all the SHRECs produced per statute.

Utilities required to enter into **15-year contracts with the Green Bank to purchase the stream of SHRECs produced**. This helps utilities comply with their clean energy goals (i.e., Class I RPS).

Green bonds are created from the 15-year SHREC revenues and **sold to institutional investors**

The Green Bank would then use the revenues from the 15-year fixed price contracts and green bonds to support the RSIP incentives (i.e., PBI and EPBB), cover admin costs, and financing costs (i.e., **business model that covers cost of the program**)

In order to continue efforts to meet a target of 350 MW and support the sustained orderly development of the residential solar PV market in Connecticut, the following FY 2019 RSIP targets were established and achieved to date – see Table 1.

Table 1. Residential Solar Investment Program (RSIP) – Budget to Actual Targets for FY 2019 (as of June 4, 2019)

FY 2019	Projects	Installed Capacity (kW)	Investment
Original Targets (of 06-28-18)	6,000	48,000	$168,000,000
Revised Targets (of 12-14-18)	7,250	58,000	$203,000,000

[4] For more details, see "Connecticut's Residential Solar Program" Case Study by the Yale Center for Business and the Environment by Kristofer Holz and Milagros De Camps.

Actual (of 06-04-19)	7,014	59,500	$210,600,000

As of June 1, 2019, 231 MW of the 300 MW public policy target under the RSIP has been installed from 267 MW of approved projects.

In order to manage cash flow to support the Green Bank, and its administration of the RSIP, a SHREC securitization was required. To support its securitization of SHRECs, the Green Bank issued various Requests for Proposals ("RFP"), and hired the following contractors:

- **Royal Bank of Canada Capital Markets** ("RBC") – as the underwriter for the transaction;
- **DNV-GL** – as the independent engineer providing a third-party assessment of the projects composing Tranches 1 and 2 of the securitization that are producing SHRECs over the terms of the MPAs;
- **Kestrel Verifiers** – in collaboration with Climate Action Reserve, the "green bond" certifier for the transaction in conformation with the Climate Bonds Initiative standard; and
- **Kroll Bond Rating Agency** – as the bond rating agency for the transaction.

The SHREC securitization is comprised of two (2) tranches of projects – Tranche 1 (i.e., 6,788 systems, 49.1 MW_{DC}, and $50 SHREC price) and Tranche 2 (i.e., 7,250 systems, 59.7 MW_{DC}, and $49 SHREC price) – with 14,038 residential solar PV systems providing 108.8 MW_{DC} of clean renewable energy. The estimated total asset value of the SHRECs produced from these tranches is $71.5 million in nominal value and $45.9 million in discounted value (i.e., 7% discount rate). In March of 2019, the Green Bank closed a $38.6 million securitization of SHRECs – see Table 2.[5]

Table 2. SHREC Securitization Details

Class	Initial Amount	Interest Rate (%) (Taxable)	Stated Maturity Date	Kroll Rating
A Notes	$36,800,000	5.153%	June 15, 2044	A-
B Notes	$1,800,000	7.153%	June 15, 2044	BBB-

This successful securitization of SHRECs will help the Green Bank better manage its organizational cash flow in order to continue to support the implementation of the RSIP, while at the same time managing through the legislative sweeps of FY 2018 and FY 2019.

☑ **Incentive Business** – the successful execution of the SHREC securitization provides the Green Bank with the cash flow necessary to maintain its statutory obligation to continue its administration of the RSIP, while also providing the necessary financial resources for the Green Bank to manage its organizational cash position.

[5] "Amid Cash Shortfall, CT Green Bank Engineers a Financial Lifeline" by Matt Pilon of the Hartford Business Journal (April 29, 2019)

Investment Business
The second key element of the Sustainability Plan was to reduce operating expenses and increase revenues for the Investment Business – the core business of clean energy financing for the Green Bank. The strategy of reducing operating expenses and increasing revenues would put the Green Bank's Investment Business on a pathway to sustainability, or breakeven where the operating expenses would be offset by revenues (e.g., principal and interest) from the investments.

Operating Expense Reductions
Reducing operating expenses for the Investment Business by no less than 27% from FY 2018 to FY 2019 is a reduction of $4.6 million – see Table 3.

Table 3. Performance in Reducing Operating Expenses for the Investment Business from FY 2018 to FY 2019

Operating Expenses	**FY 2018 Budget**	**FY 2019 Budget**	**FY 2019 YTD Actual** (June 1, 2019)
Personnel Related	$7,887,428	$6,006,041	$5,485,932
Non-Personnel Related	$8,442,801	$5,306,262	$3,668,800
Total	**$16,330,229**	**$11,312,303**	**$9,154,732**
Year-to-Year Reduction		$5,017,926	$7,175,497

The FY 2019 budget proposed an operating expense reduction of 31% (i.e., $5.0 million) from the FY 2018 budget. To date, the FY 2019 budget to actual is $9.2 million for operating expenses for the Investment Business, which is expected to be well below the FY 2019 budget of $11.3 million.

☑ **Investment Business** – the successful reduction of operating expenses by at least $5.0 million for the Investment Business from FY 2018 to FY 2019 will reduce the amount of time and investment needed for sustainability or breakeven.

Increasing Revenues through Investments
Increasing revenues from principal and interest for the Investment Business by pursuing a portfolio strategy targeting a 5% return over a 10-year term in FY 2019 and beyond, is another key aspect of the Sustainability Plan.

The investment target for program loans for FY 2019 was originally $35.9 million (of June 28, 2018) and then modified to $40.9 million (of December 14, 2018) – see Table 4. The total interest income over the term of this portfolio is estimated at $15.9 million nominal value, or $12.2 million discounted. If successful, and not assuming any loan losses, the present value of the interest income from the portfolio of projects would be greater than the operating expenses for the Investment Business in FY 2019.

Table 4. FY 2019 Investment Budget (Revised) – December 14, 2018

Investment	**Principal**	**Return**	**Term**
Multifamily – Predevelopment Loans	$180,000	0.00%	2.0
PosiGen – Solar for All	$2,500,000	5.00%	10.0
C-PACE – CGB Portfolio	$9,990,279	6.05%	18.0

C-PACE – Hannon Portfolio	$13,500,000	4.56%	15.0
Kresge – Battery Storage and Solar PV	$3,000,000	3.00%	10.0
ESA – Pilot	$200,000	5.00%	10.0
SBEA	$5,000,000	3.50%	4.0
Fuel Cell – Project Finance	$3,000,000	6.00%	15.0
Green Bank Solar PPA – IPC Fund	$3,500,000	5.00%	10.0
Total	**$40,870,279**	**5.05%**[6]	**7.6**[7]

The actual investments closed in FY 2019 include the following – see Table 5.

Table 5. Investments Closed by the Green Bank in FY 2019 (as of June 1, 2019)

Investment	Principal	Return	Term
C-PACE Portfolio	$1,384,358	5.8%	15.6
HAC-PACE Portfolio	$12,865,259	5.6%	15.0
PosiGen	$15,000,000	7.5%	3.0
FuelCell Energy – Bridgeport	$6,046,000	8.0%	7.0
Canton Hydro	$1,200,000	8.0%	15.0
FuelCell Energy – Bridgeport	$1,800,000	8.0%	10.5
Small Business Energy Advantage	$3,892,133	4.4%	4.0
Total	**$42,187,750**	**6.7%**	**8.0**

Between the revised investment budget target of $40.9 million of investment, in FY 2019, $42.2 million of closed investments were achieved with total interest income over the term of this portfolio estimated at $15.4 million nominal value, or $11.8 million discounted. The present value of the interest income from the portfolio of projects closed in FY 2019 (i.e., $11.8 million) is greater than the operating expenses for the Investment Business in FY 2019 (i.e., $11.3 million). As a result of these investments, interest income in FY 2020 will increase by $2.8 million.

☑ **Investment Business** – the successful investment of $42.2 million in transactions through the Investment Business keeps the Green Bank on the pathway to sustainability by generating revenues (i.e., principal and interest), that in time, will offset operating expenses.

Nonprofit Organization – Inclusive Prosperity Capital

The final element of the Sustainability Plan was to create an independent 501(c)3 nonprofit organization for the purposes of reducing operating expenses of the Green Bank, while seeking to continue to serve its mission by attracting mission-oriented investors in underserved market segments and providing investment opportunities for the Green Bank.[8]

The following is a shortlist of accomplishments for the nonprofit organization – Inclusive Prosperity Capital (“IPC”):

[6] Customer Portfolio Return – Benchmark Loan and Portfolio Calculator by Chris Magalhaes
[7] Custom Portfolio WAL – Benchmark Loan and Portfolio Calculator by Chris Magalhaes
[8] “CT Green Bank Takes Novel Approach to Preserve Clean Energy Mission” by Matt Pilon of the Hartford Business Journal (August 6, 2018)

- **PSAs and MOUs** – executed PSAs with the Green Bank, outlining the four (4) areas of support, including targets and funding, as well as joint venture funding from DEEP for underserved markets (i.e., $5.0 million grant) and health & safety in Connecticut (i.e., $1.5 million grant and revolving loan fund) through various capital grant agreements;

- **Operations** – seven (7) members of the Green Bank staff successfully transitioned to IPC,[9] stood up the organization including implementing employee benefits, IT systems, banking, and corporate policies and procedures;

- **Independent Nonprofit Status** – received a determination letter from Blum Shapiro (auditors of the Green Bank) that the nonprofit organization is not to be considered a component unit of the Green Bank, submitted the 1023 application to the IRS, and received independent 501(c)3 nonprofit status for IPC; and

- **Foundation Partnerships** – received a $50,000 seed grant from the Hampshire Foundation matched by the Green Bank to investigate the role of a nonprofit to help expand the impact of the Green Bank model in FY 2017, $250,000 competitive operating grant from the Hewlett Foundation to support the development of a Smart-E cloud-based program management systems in partnership with Michigan Saves in FY 2019, and a $10.0 million balance sheet guaranty from the Kresge Foundation to support a capital raise of up to $40.0 million in addition to a $300,000 three-year operating grant to support expansion outside Connecticut in FY 2019.

IPC, though its PSAs with the Green Bank, is delivering on the targets established – see Table 6.

Table 6. FY 2019 Targets and Actuals (as of June 1, 2019) for IPC

Product	**PSA**	**Project Targets**	**Project Actuals** (06-01-19)	**Investment Target** ($MM)	**Investment Actuals** ($MM) (06-01-19)	**Installed Capacity Target** (kW)	**Installed Capacity Actuals** (kW) (06-01-19)
Smart-E Loan	5410	540	595	$8.8	$7.6	600	700
Multifamily[10]	5411	19	18	$2.6	$2.8	300	260
Solar PPA	5412	25	18	$14.1	$12.5	6,300	3,900
Solar for All	5413	586	645	$15.6	$18.6	3,600	4,500
Total		**1,170**	**1,276**	**$41.1**	**$41.4**	**10,800**	**9,360**

In its first-year contract with the Green Bank, IPC has delivered measurable results supporting its mission to reach underserved market segments.

☑ **Nonprofit Organization** – the successful creation of Inclusive Prosperity Capital, led by its partners (DEEP, Kresge Foundation, and the Green Bank), has led to a reduction in operating expenses and an increase in investment opportunities for the Green Bank, while attracting other mission-related investors in underserved market segments.

[9] See State of Connecticut Office of State Ethics Advisory Opinion No. 2018-2 for details
[10] The total investment in multifamily projects is $35.4 million, of which energy comprises $2.8 million (including predevelopment loans) and $0.2 million in health and safety.

Conclusion
Given the significance of the FY 2018 and FY 2019 budget sweeps by the CGA, the Green Bank Board of Directors approved of a Sustainability Plan on December 15, 2017 for the staff of the Green Bank to implement over the subsequent years. The successful implementation of the Sustainability Plan required three (3) organizational parts and various strategies, including:

- **Incentive Business** – successfully securitizing the SHREC revenues through the MPAs with the EDCs, in order to better match the cash flow needs of the RSIP (e.g., incentives, administrative costs, financing costs, etc.) and maintaining the sustained orderly development of a local residential solar PV industry, while at the same time ensuring the viability of the organization as it manages its cash flow needs and focus on cost recovery;

- **Investment Business** – reducing the operating expenses by 27% and executing on an investment strategy that delivers a portfolio return of 5% over an average 10-year term, will put the Investment Business on track to be sustainable in 4 to 7 years; and

- **Nonprofit Organization** – creating an independent 501(c)3 nonprofit organization that will reduce the operating expenses of the Green Bank by transitioning no more than 8 staff members to IPC, enabling private investment into underserved market segments through IPC, and providing the Green Bank with investment opportunities through IPC.

The Green Bank has successfully implemented the Sustainability Plan for FY 2018 and FY 2019, and will continue to focus its efforts on organizational sustainability in FY 2020 and beyond.

It should be noted, that in November of 2018, elections were held in Connecticut and Ned Lamont became Governor. Governor Lamont has expressed his support of the Green Bank on numerous occasions, including:

- **Campaign Pledge** – "Ned's Plan for Connecticut," the campaign plan for Governor Lamont states "I will never support a budget that diverts money from our Energy Efficiency Fund, the Green Bank, and other dedicated funding sources. These programs are funded by ratepayers and make important investments in energy efficiency, conservation, and the development of new renewable energy markets. It is simply short-sighted to shortchange these programs since they are crucial to our state's response to climate change, and to our development of a renewable energy platform essential for the energy independence of our citizens."

- **Energy Policy Transition Committee** – Governor Lamont assembled experts in December of 2018 through an Energy Policy Transition Committee[11] to advise him on the key energy policy recommendations his administration should consider. In the proposed "Green New Deal," the second highest priority recommendation was "Protect Ratepayers," including preventing future diversions of ratepayer funds (i.e., C&LMF-CAM, CEF, and RGGI) for energy efficiency and renewable energy to the General Fund.

[11] Co-chaired by Representative Lonnie Reed (former Co-Chair of the Energy & Technology Committee) and Bryan Garcia (President and CEO of the Connecticut Green Bank).

- **Biennial Budget Address and Subsequent Budget** – in Governor Lamont's Biennial Budget Address in February 2019, he stated "I also support fully funding our clean energy and energy efficiency programs, which have been shortchanged over the last few years. These funds help bring down electricity costs for working families, and they further reduce our carbon footprint. I will make sure that we work with labor and vo-tech schools so that more of our citizens get the skills training they need for good paying, green collar jobs." This statement was received by a standing ovation from the members of the Connecticut General Assembly.[12] Subsequently, in June, the Connecticut General Assembly and the Governor passed a budget that does not include sweeps to the Green Bank, nor the Energy Efficiency Fund and RGGI.

As the Green Bank looks back on the past two years, it was indeed a difficult period of time. Through the successful implementation of the Sustainability Plan, the Green Bank can now begin to look ahead at its future, and how it will continue to mobilize more private investment in Connecticut's growing green economy helping create jobs in our communities, reducing the burden of energy costs on our families and businesses, and reducing the harmful pollution that causes global climate change.

[12] https://portal.ct.gov/Office-of-the-Governor/News/Speeches/Governor-Lamont-Fiscal-Year-2020-2021-Biennial-Budget-Address (25:20)

110 Pond Meadow Rd.: A C-PACE Project in Ivorytown, CT

Address	110 Pond Meadow Rd., Ivorytown, CT 06442	
Owner	The L.C. Doane Company	
Proposed Assessment	$1,135,301	
Term (*years*)	10	
Term Remaining (*months*)	Pending construction completion	
Annual Interest Rate	5.50%	
Annual C-PACE Assessment	$143,861	
Savings-to-Investment Ratio	1.05	
Average DSCR[1] over Term	[redacted]	
Lien-to-Value[2]	[redacted]	
Loan-to-Value[2]	[redacted]	
Projected Energy Savings (mmBTU)	Year 1	785
	Over 25 Year EUL	18,483
Estimated Cost Savings (incl. ZRECs and tax benefits)	Year 1	$178,963
	Over 25 Year EUL	$1,468,860
Objective Function	6.76 kBTU / ratepayer dollar at risk	
Location	Property straddles Essex and Westbrook, CT, official address is Ivorytown, CT, a village within Essex	
Type of Building	Light Industrial	
Year of Build	1956	
Building Size (*sf*)	128,547	
Year Acquired by Owner	2006	
As-Complete Appraised Value[3]	[redacted]	
Mortgage Outstanding	[redacted]	
Mortgage Lender Consent	[redacted]	
Proposed Project Description	New 142.5 kW rooftop solar PV system and add 59.4 kW of solar capacity to existing solar system and replace roof (partially financed). L.C. Doane is also removing and reinstalling its old solar system ($110,000), which is not included in the CPACE loan.	
Est. Date of Construction Completion	Pending closing	
Current Status	Awaiting Board of Directors Approval	
Energy Contractor	[redacted]	

[redacted]

Comprehensive Plan

Fiscal Year 2020 & Beyond

845 Brook Street, Rocky Hill, CT 06067 > 860-563-0015 > ctgreenbank.com
300 Main Street, 4th Fl., Stamford, CT 06901

CONNECTICUT GREEN BANK SM

Comprehensive Plan

July 2019

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1. Executive Summary

> *"The civilization of New England has been like a beacon lit upon a hill, which, after it has diffused its warmth around, tinges the distant horizon with its glow."*
> *Alexis de Tocqueville, Democracy in America*

Although Connecticut is one of the smallest states in the country, its decades of legislative leadership on climate change has had an influential impact across the country and around the world. One example of this was on July 1, 2011, when in a bipartisan manner, Public Act 11-80[1] was passed. Within Section 99 of that seminal act, the nation's first state-level green bank was formed. The Connecticut Green Bank ("the Green Bank") is a public policy innovation, a catalyst that helps mobilize greater local and global investment to address climate change.
Since its inception, the Green Bank has mobilized [$X] billion of investment into Connecticut's clean energy economy at a [X] to 1 leverage ratio of private to public funds, supported the creation of over [X] direct, indirect, and induced job-years, reduced the energy burden on over [X] families and businesses (in particular low-to-moderate income families), deployed nearly [X] MW of clean energy that will help reduce over [X] million tons of CO2 emissions over the life of the projects, and helped generate over [$X] million in individual income, corporate, and sales tax revenues to the State of Connecticut.[2]

Thanks to the Green Bank's success as an integral public policy tool addressing climate change in Connecticut, there has been growing national public policy interest at the federal[3] and local[4] levels to realize similar results. This green bank movement is about increasing and accelerating the flow of capital into markets that energize the green economy to provide society a healthier, more prosperous future. As the "spark" to the green bank movement, the Green Bank was awarded the prestigious 2017 Innovations in American Government Awards by the Ash Center at Harvard University's Kennedy School of Government[5].

At home and abroad, there is agreement that accelerating the flow of capital into sustained development of the green economy is one key to addressing the climate crisis. The Paris Agreement's third aim (beyond mitigation of greenhouse gas emissions and adaptation to climate change impacts) is making finance flows consistent with a pathway towards reduced emissions and increased climate resilient development. The Center for American Progress estimates that the U.S. needs at least $200 billion in renewable energy and energy efficiency investment a year for 20 years to reduce carbon

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[1] An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning for Connecticut's Energy Future.

[2] From July 1, 2011 through June 30, 2019

[3] US Green Bank Act of 2019 introduced by Senators Blumenthal (CT), Markey (MA), Murphy (CT), Van Hollen (MD), and Whitehouse (RI). Democratic Presidential Candidates Inslee and Bennet proposed $90 billion and $1 trillion "green bank" and "climate banks," respectively as part of their campaigns.

[4] American Green Bank Consortium – https://greenbankconsortium.org/ and the Green Bank Network – https://greenbanknetwork.org/

[5] https://ash.harvard.edu/news/connecticut-green-bank-awarded-harvards-2017-innovations-american-government-award

emissions and avert climate disaster.[6] In a similar vein, the United Nations estimates that $90 trillion of investment is needed over the next 15 years to advance sustainable development and confront the worst effects of climate change.[7]

To put these numbers into perspective, this is the equivalent of between $620 to $800 of investment per person per year for the next 15 years, respectively – or, the equivalent of nearly $3 billion a year of investment in Connecticut's green economy!

Faced with the magnitude of investment required to put society on a more sustainable path to confront climate change, the Green Bank convened a group of stakeholders at the Pocantico Conference Center of the Rockefeller Brothers Fund in February of 2019 for a two-day strategic retreat entitled "Connecticut Green Bank 2.0 – From 1 to 2 Orders of Magnitude". Having convened at the Pocantico Conference Center in November of 2011 to establish the Green Bank's first strategic plan (i.e., Green Bank 1.0), this new group of stakeholders met to reflect on the past seven years and then to envision an even bigger future for the Green Bank (i.e., Green Bank 2.0) consistent with the larger investment required.[8]

The retreat identified several key findings and recommendations for the Green Bank, including:

- **Commitment to Address Climate Change** – as the most urgent issue to address, the Green Bank needs to increase and accelerate the impact of its model to support the implementation of Connecticut's climate change plan;[9]
- **Scaling Up Investment and Impact in Connecticut and Beyond** – in order to achieve the climate change goals set forth, more investment from private capital sources leveraged by innovative public sector financing will be needed to scale-up and scale-out the green bank model's impact; and
- **Green Bonds to Increase Access to Capital** – with the ability to issue bonds, the Green Bank is able to increase its access to capital beyond the current sources of funding to scale-up its investment activity, while providing more opportunities to engage citizens in new ways to invest in the state's growing green economy, including through the issuance of "mini green bonds" that will engage citizens in making investments alongside the Green Bank.

Increasing and accelerating investment in the green economy by using limited public resources to attract and mobilize multiples of private capital investment is paramount to society's efforts to pursue sustainable development, while confronting climate change. More investment in the green economy creates more jobs in our communities, reduces the burden of energy costs on our families and businesses (especially the most vulnerable), and reduces fossil fuel pollution that causes local public

[6] "Green Growth: A U.S. Program for Controlling Climate Change and Expanding Job Opportunities" by the Center for American Progress (September 2014).
[7] "Financing Sustainable Development: Moving from Momentum to Transformation in a Time of Turmoil" by the UNEP (September 2016).
[8] "Connecticut Green Bank 2.0 – From 1 to 2 Orders of Magnitude" at the Pocantico Conference Center of the Rockefeller Brothers Fund (February 6-7, 2019)
[9] "Building a Low Carbon Future for Connecticut – Achieving a 45% GHG Reduction by 2030" recommendations from the Governor's Council on Climate Change (December 18, 2018)

health problems and global climate change. However, investment for the sake of investment is not enough unless we have an engaged citizenry that is active in communities across the state! By making clean energy more accessible and affordable to everyone, society will reap significant gains from moving forward in the same direction together – for we can't have environmentalism without humanitarianism.

2. Organizational Overview

The Green Bank[10] was established by Governor Malloy and Connecticut's General Assembly on July 1, 2011 through Public Act 11-80 as a quasi-public agency that supersedes the former Connecticut Clean Energy Fund ("CCEF"). As the nation's first state green Bank, the Green Bank leverages public and private funds to drive investment and scale-up clean energy deployment in Connecticut.

The Green Bank's statutory purposes are:

- To develop programs to finance and otherwise support clean energy investment in residential, municipal, small business and larger commercial projects and such other programs as the Green Bank may determine;
- To support financing or other expenditures that promote investment in clean energy sources to foster the growth, development and commercialization of clean energy sources and related enterprises; and
- To stimulate demand for clean energy and the deployment of clean energy sources within the state that serves end-use customers in the state.

The Green Bank's purposes are codified in Section 16-245n(d)(1) of the Connecticut General Statutes ("CGS") and restated in the Green Bank's Board approved Resolution of Purposes.

The Green Bank is a public policy innovation that exemplifies Connecticut's nearly two-decade history of bipartisan gubernatorial leadership on the issue of climate change. Other leadership highlights include:

- **Governor Rowland** – co-chaired the New England Governors and Eastern Canadian Premiers Conference, which established a regional commitment to reduce greenhouse gas emissions (i.e., 1990 levels by 2010, 10% below 1990 levels by 2020, and 80% below 2001 levels by 2050);[11]
- **Governor Rell** – supported Public Act 08-98[12] codifying the regional commitment into state law, appointing Gina McCarthy to be the Commissioner of the Department of Environmental Protection who would help lead the development of the Regional Greenhouse Gas Initiative and later become the EPA Administrator under President Obama leading the development of the Clean Power Plan and the U.S. participation in the Paris Agreement;

[10] Public Act 11-80 repurposed the Connecticut Clean Energy Fund (CCEF) administered by Connecticut Innovations, into a separate quasi-public organization called the Clean Energy Finance and Investment Authority (CEFIA). Per Public Act 14-94, CEFIA was renamed to the Connecticut Green Bank.
[11] NEG-ECP Resolution 26-4 adopting the "Climate Change Action Plan 2001" (August 2001 in Westbrook, CT)
[12] An Act Concerning Connecticut Global Warming Solutions

- **Governor Malloy** – led the passage of PA 11-80 establishing the Department of Energy and Environmental Protection ("DEEP"), creating the Green Bank, and other policies catalyzing the market for clean energy, as well as Public Acts 18-50[13] and 18-82[14] increasing the state's renewable portfolio standard to 40% by 2030 and establishing a midterm greenhouse gas emissions reduction target of 45% below 2001 levels by 2030, respectively; and
- **Governor Lamont** – his campaign plan for Connecticut[15] seeks to achieve carbon neutrality by 2050 and setting a 100% renewable portfolio standard by 2050 which would help the state realize green jobs in energy efficiency and clean energy (e.g., fuel cells, offshore wind, solar PV, etc.), while reducing energy costs.

The Connecticut General Assembly has worked hand-in-hand with these Governors and the citizens of the state over the years to devise and support public policies that promote clean energy and lead the movement on climate change action.

2.1 Vision

…a world empowered by the renewable energy of community.

2.2 Mission

Increase and accelerate the flow of capital into markets that energize the green economy to provide society a healthier and more prosperous future.

2.3 Goals

To achieve its vision and mission, the Green Bank has established the following three goals:

1. To leverage limited public resources to scale-up and mobilize private capital investment in the green economy of Connecticut.
2. To strengthen Connecticut's communities by making the benefits of the green economy inclusive and accessible to all individuals, families, and businesses.
3. To pursue investment strategies that advance market transformation in green investing while supporting the organization's pursuit of financial sustainability.

The vision, mission, and goals support the implementation of Connecticut's clean energy policies be they statutorily required (e.g., CGS 16-245ff), planning (e.g., Comprehensive Energy Strategy), or regulatory in nature.

2.4 Definition – Clean Energy

The Green Bank's investment focus is on "clean energy" as defined by CGS Section 16-245n:

- **Clean Energy** – 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

[13] An Act Concerning Connecticut's Energy Future
[14] An Act Concerning Climate Change Planning and Resiliency
[15] Ned's Plan for Connecticut – Addressing Climate Change & Expanding Renewable Energy

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.

3. Governance and Organizational Structure

The Green Bank is overseen by a governing Board of Directors comprised of ex officio and appointed members, while the organization of the Green Bank is administered by a professional staff overseeing two business units – Incentive Programs and Financing Programs.

3.1 Governance

Pursuant to Section 16-245n of the CGS, the powers of the Green Bank are vested in and exercised by a Board of Directors[16] that is comprised of eleven voting and one non-voting members each with knowledge and expertise in matters related to the purpose of the organization – see Table 1.[17]

Table 1. Board of Directors of the Connecticut Green Bank

Position	Status	Appointer	Voting
State Treasurer (or designee)	Ex Officio	Ex Officio	Yes
Commissioner of DEEP (or designee)	Ex Officio	Ex Officio	Yes
Commissioner of DECD (or designee)	Ex Officio	Ex Officio	Yes
Residential or Low-Income Group	Appointed	Speaker of the House	Yes
Investment Fund Management	Appointed	Minority Leader of the House	Yes
Environmental Organization	Appointed	President Pro Tempore of the Senate	Yes
Finance or Deployment of Renewable Energy	Appointed	Minority Leader of the Senate	Yes
Finance of Renewable Energy	Appointed	Governor	Yes
Finance of Renewable Energy	Appointed	Governor	Yes
Labor	Appointed	Governor	Yes
R&D or Manufacturing	Appointed	Governor	Yes
President of the Green Bank	Ex Officio	Ex Officio	No

There are four (4) committees of the Board of Directors of the Green Bank, including Audit, Compliance and Governance Committee, Budget and Operations Committee, Deployment Committee, and the Joint Committee of the Energy Efficiency Board ("EEB") and the Green Bank[18]

[16] https://www.ctgreenbank.com/about-us/governance/board-of-directors/
[17] https://www.ctgreenbank.com/about-us/governance/
[18] Pursuant to Section 16-245m(d)(2) of the Connecticut General Statutes

To support the Joint Committee of the EEB and the Green Bank, the following is a principal statement to guide its activities:

The EEB and the Green Bank have a shared goal to implement state energy policy throughout all sectors and populations of Connecticut with continuous innovation towards greater leveraging of ratepayer funds and a uniformly positive customer experience.

The Board of Directors of the Green Bank is governed through enabling legislation, as well as by an Ethics Statement and Ethical Conduct Policy, Resolutions of Purposes, Bylaws, Joint Committee Bylaws, and a Comprehensive Plan. All meetings, agendas, and materials of the Green Bank's Board of Directors and its Committees are publicly available on the organization's website.[19,20]

3.2 Organizational Structure

The organizational structure of the Green Bank is comprised of two (2) business units, including:

- **Incentive Programs** – the Governor and the Connecticut General Assembly from time-to-time may decide that there are certain incentive (or grant) programs that they seek to have the Green Bank administer (e.g., CGS 16-245ff). The Green Bank administers such programs with the goal of delivering on the public policy objectives, while at the same time ensuring that funds invested by the Green Bank are cost recoverable. For example, the Green Bank administers the Residential Solar Investment Program ("RSIP") whereby through a declining incentive block structure no more than 350 MW of new residential solar PV systems are deployed, while nurturing the sustained orderly development of a local state-based solar PV industry. Through the public policy creation of a Solar Home Renewable Energy Credit ("SHREC"), the Green Bank is able to recover its costs for administering the RSIP by selling such credits to the Electric Distribution Companies ("EDCs") through a Master Purchase Agreement ("MPA") to support their compliance under the Class I Renewable Portfolio Standard ("RPS"). Costs recovered from such mechanisms are expected to cover the operational expenses of the Incentive Programs business unit.
- **Financing Programs** – the Green Bank's core business is financing projects. The Green Bank's focus is to leverage limited public funds to attract and mobilize multiples of private capital investment to finance clean energy projects. In other words, the use of resources by the Green Bank are to be invested with the expectation of principal and interest being paid back over time. For example, the Green Bank administers the Commercial Property Assessed Clean Energy ("C-PACE") program. Through C-PACE, the Green Bank provides capital to building owners to make clean energy improvements on their properties that is paid back over time from a benefit assessment on the building owner's property tax bill. The interest from these types of investments, over time, is expected to cover the operational expenses of the Financing Programs business unit.

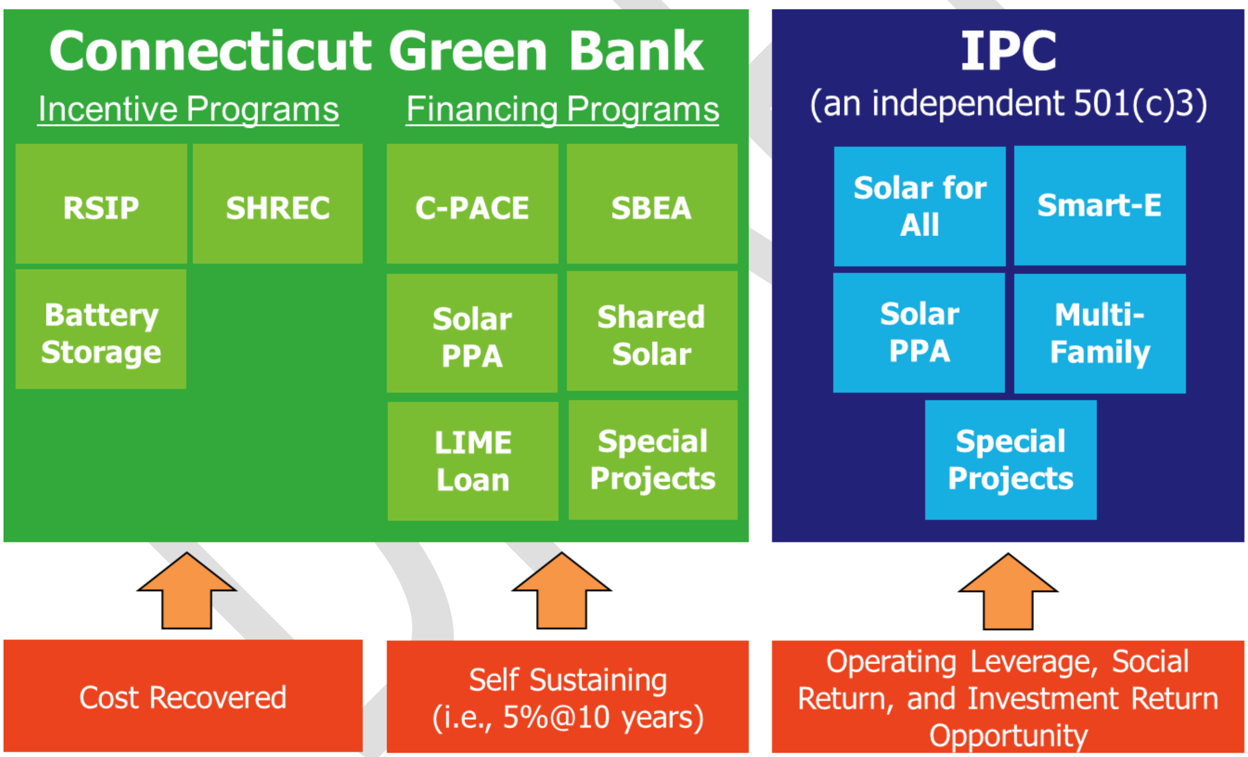
[19] http://www.ctgreenbank.com/about-us/board-member-resources/connecticut-grboard-meetings/
[20] http://www.ctgreenbank.com/about-us/board-member-resources/connecticut-grittee-meetings/

These two business units – Incentive Programs and Financing Programs – serve the purposes of the Green Bank. To support the business units and their investments, the Green Bank has administrative support from finance, legal, marketing and operations.

An Employee Handbook and [Operating Procedures](#) have 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.

In 2018, the Green Bank, in partnership with DEEP and the Kresge Foundation, formed a nonprofit organization called Inclusive Prosperity Capital ("IPC"). The mission of IPC is to attract mission-oriented investors in underserved clean energy market segments (e.g., low-to-moderate income single and multifamily properties) of the green economy. Although not an affiliate, nor a component unit of the Green Bank, IPC serves an important role supporting the goals of Connecticut public policy by administering programs on behalf of the Green Bank. For an overview of the organizational structure of the Green Bank, and its partnership with IPC – see Figure 1.

Figure 1. Organizational Structure of the Green Bank with Support from Inclusive Prosperity Capital



4. Incentive Programs

The Green Bank manages incentive programs. That is to say that it oversees grant or subsidy program(s) that deploy clean energy, while at the same time cost recovering the expenses associated with those programs within the business unit – including, but not limited to, incentives, administrative costs, and financing costs.

Per CGS 16-245ff, updated by Public Act 19-35[21], the Green Bank administers the RSIP that includes a declining incentive block structure to deploy no more than 350 megawatts of new residential solar PV systems on or before December 31, 2022, while ensuring the sustained orderly development of a local state-based solar PV industry. It should be noted that the Green Bank has also strategically sought to ensure that low-to-moderate income households have equal access to residential solar PV than non-low-to-moderate income households.[22]

As of June 30, 2019, 270.4 megawatts of residential solar PV systems have been approved through RSIP, supporting 34,222 projects across the state.[23]

To support the Green Bank's implementation of the RSIP, the EDCs are required to purchase the SHRECs to assist them in their compliance with the RPS. The SHREC price is established by the Green Bank to recover its costs for administering the RSIP through a 15-year MPA with the EDCs. The cash flow from the sale of current and future SHRECs produced by these systems can be sold as a "green bond"[24] to generate cash flow upfront to support the cost recovery of the program – see Figure 2.

In general, over the course of a year, a typical residential solar PV system produces, and the household simultaneously consumes, about fifty percent of the production from the system – meaning that about fifty percent of the system's production is being exported to the grid – see Figure 3.

In order to store the system's production that would have been exported to the grid for the purposes of later using it for (1) back-up power that would benefit the household, and/or (2) reducing demand, specifically peak demand, that would benefit all ratepayers, the Green Bank submitted an application into the Electric Efficiency Partners Program (EEPP).[25] If approved, the Green Bank could offer an incentive for adding battery storage to residential solar PV projects, thereby improving the overall value of the solar PV system to the household (e.g., emergency dispatch generation) as well as ratepayers (e.g., reducing peak demand).

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[21] An Act Concerning a Green Economy and Environmental Protection

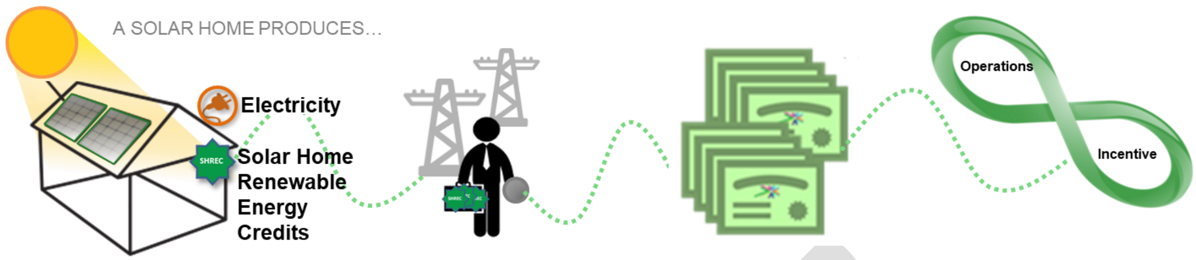
[22] Sharing Solar Benefits – Reaching Households in Underserved Communities of Color in Connecticut by the Connecticut Green Bank (May 2019) – click here.

[23] Prior to the RSIP, through incentives provided by the Connecticut Clean Energy Fund, the predecessor of the Green Bank, there are another 2,018 residential solar PV projects totaling 13.4 MW.

[24] https://www.ctgreenbank.com/cgb-enters-green-bond-market/

[25] Section 94 of Public Act 07-242

Figure 2. Incentive Program – Overview of the RSIP and the SHREC



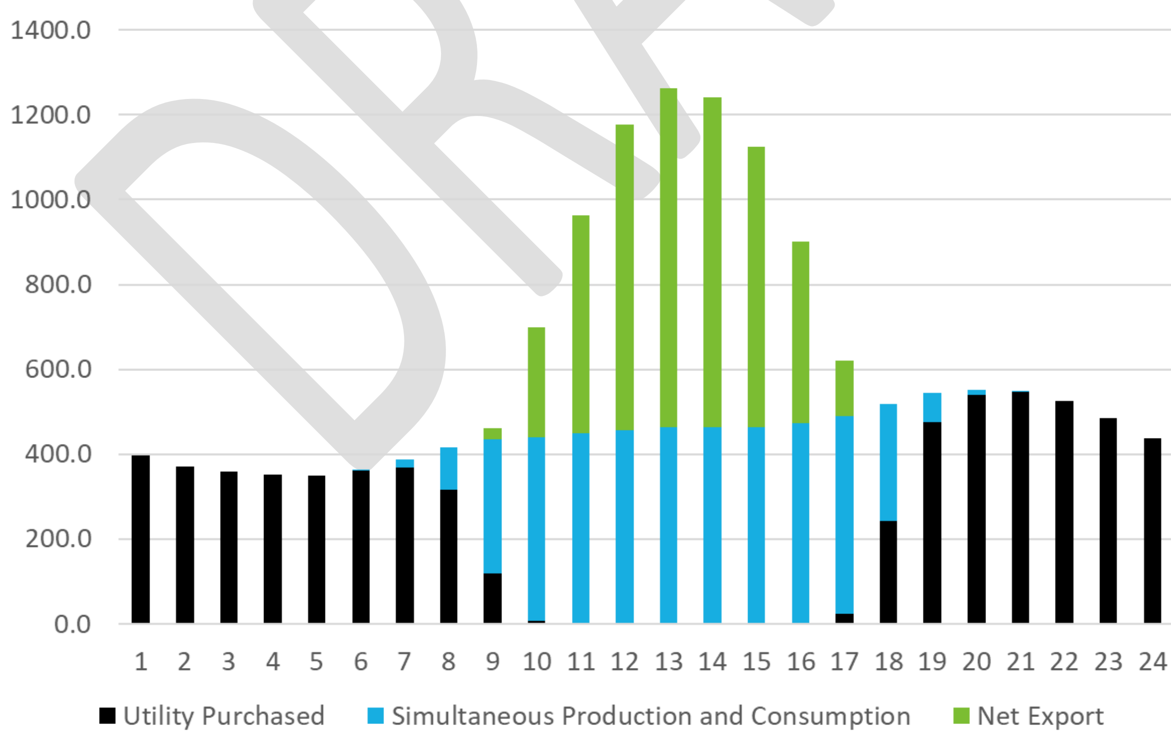
When panels produce electricity for a home, they will also produce **Solar Home Renewable Energy Credits (SHRECs)**. The Green Bank provides upfront incentives through RSIP and collects all the SHRECs produced per statute.

Utilities required to enter into **15-year contracts with the Green Bank to purchase the stream of SHRECs produced**. This helps utilities comply with their clean energy goals (i.e., Class I RPS).

Green bonds are created from the 15-year SHREC revenues and **sold to institutional investors**

The Green Bank would then use the revenues from the 15-year fixed price contracts and green bonds to support the RSIP incentives (i.e., PBI and EPBB), cover admin costs, and financing costs (i.e., **business model that covers cost of the program**)

Figure 3. Average Residential Consumption and Solar PV Production Over the Course of a Year by Hour of the Day



Between the RSIP and the EEPP, the Green Bank working in partnership with local contractors, capital providers, EDCs, DEEP (and PURA), and residential homeowners, the Green Bank will be able to support the implementation of PA 15-194 and PA 07-242, respectively. The Green Bank has set targets for its Incentive Programs business unit for FY 2020 in terms of the number of projects, total investment (i.e., public and private), and installed capacity – see Table 2.

As a result of successfully achieving these targets, the Green Bank will reduce the energy burden on Connecticut families (especially underserved low-to-moderate income households and communities of color), create jobs in our communities, raise tax revenues for the State of Connecticut, and reduce air pollution causing local public health problems and contributing to global climate change.

Table 2. Proposed FY 2020 Targets for the Incentive Programs Business Unit

Program / Product	Projects	Total Investment	Installed Capacity (kW)
Residential Solar Investment Program	7,059	$214,200,000	60,000
Electric Efficiency Partners Program[26]	500	$5,500,000	2,000
Total	**7,559**	**$219,700,000**	**62,000**

5. Financing Programs

The Green Bank manages financing programs. That is to say that it oversees financing program(s) that provide capital upfront to deploy clean energy, while at the same time returning principal and interest over time from the financing of projects, products, or programs to ensure the financial sustainability of the business unit.

The Green Bank has a number of clean energy financing products, including:

- **Commercial Property Assessed Clean Energy ("C-PACE")**[27] – enables building owners to pay for clean energy improvements over time through a voluntary benefit assessment on their property tax bills. This process makes it easier for building owners to secure low-interest capital to fund energy improvements and is structured so that energy savings more than offset the benefit assessment.
- **Green Bank Solar PPA** – third-party ownership structure to deploy solar PV systems for commercial end-user customers (e.g., businesses, nonprofits, municipal and state governments, etc.) that uses a multi-year Power Purchase Agreement ("PPA") to finance projects while reducing energy costs for the host customer.

[26] The Connecticut Green Bank has submitted a Technology Application (i.e., Docket No. 18-12-35) into PURA through the Electric Efficiency Partners Program in support of a residential battery storage incentive program in combination with the RSIP. Should PURA approve the application, then the Connecticut Green Bank will implement a battery storage incentive program for existing residential solar PV systems for the purposes of reducing demand, specifically peak demand.

[27] CGS 16a-40g

- **<u>Small Business Energy Advantage ("SBEA")</u>** – Eversource Energy administered on-bill commercial energy efficiency loan program for small businesses, in partnership with low-cost capital provided by Amalgamated Bank and the Green Bank.
- **<u>Smart-E Loan</u>** – residential loan program in partnership with local community banks and credit unions that provides easy access to affordable capital for homeowners to finance energy improvements on their properties through a partnership between local contractors and financial institutions, IPC, and the Green Bank.
- **<u>Solar for All</u>** – third-party ownership structure in partnership with PosiGen and IPC to deploy solar PV and energy efficiency for residential low-to-moderate income customers that uses a multi-year solar PV lease and energy efficiency Energy Savings Agreement ("ESA") to finance projects while reducing energy costs for the host customer.
- **<u>Multifamily Products</u>** – defined as buildings with 5 or more units, the Green Bank provides a suite of financing options through IPC that support property owners to assess, design, fund, and monitor high impact green energy and health & safety improvements for their properties.
- **<u>Strategic Investments</u>** – as opportunities present themselves, the Green Bank from time-to-time invests as part of a capital structure in various projects. These projects are selected based on the opportunity to expand the organization's experience with specific technologies, advance economic development in a specific locale, or to drive adoption of clean energy that would otherwise not occur, while also earning a rate of return.

The Green Bank has set targets for its Financing Programs business unit for FY 2020 in terms of the number of projects, total investment (i.e., public and private), and installed capacity – see Table 3.

Table 3. Proposed FY 2020 Targets for the Financing Programs Business Unit

Program / Product	Projects	Total Investment	Installed Capacity (kW)
Commercial PACE	56	$22,000,000	5,600
Green Bank Solar PPA	34	$28,125,000	12,700
Small Business Energy Advantage[28]	1,000	$20,000,000	-
Smart-E Loan	540	$7,182,000	500
Solar for All	615	$17,202,165	4,200
Multifamily Predevelopment Loan	2	$140,000	-
Multifamily Term Loan	9	$1,493,000	300
Multifamily Catalyst Loan	2	$110,000	-
Strategic Investments	2	$7,500,000	-
Total	**2,240**	**$98,427,165**	**21,000**

The capital provided by the Green Bank, which is a portion of the total investment, is expected to yield a return commensurate with the financial sustainability objectives of the organization and business unit.

[28] In partnership with Eversource Energy and Amalgamated Bank, the Connecticut Green Bank provides capital in support of the utility-administered Small Business Energy Advantage program to provide 0% on-bill financing up to 4-years for energy efficiency projects.

As a result of successfully achieving these targets, the Green Bank will contribute to its financial sustainability, while also reducing the energy burden on Connecticut families and businesses, create jobs in our communities, raise tax revenues for the State of Connecticut, and reduce air pollution that cause local public health problems and global climate change.

6. Impact Investment

The Green Bank pursues investment strategies that advance market transformation in green investing while supporting the organization's pursuit of financial sustainability. With the mission to increase and accelerate the flow of capital into markets that energize the green economy to provide society a healthier and more prosperous future, the Green Bank leverages limited public resources to scale-up and mobilize private capital investment in the green economy of Connecticut.

6.1 State Funds

The Green Bank receives public capital from a number of ratepayer and state sources that it leverages to scale-up and mobilize private capital investment in the green economy of Connecticut.

System Benefit Charge – Clean Energy Fund

As its primary source of public capital, the Green Bank through CGS 16-245n(b) receives a 1 mill surcharge called the Clean Energy Fund ("CEF") from ratepayers of Eversource Energy and Avangrid. The CEF has been in existence since Connecticut deregulated its electric industry in the late 1990's.[29] On average, households contribute between $7-$10 a year for the CEF, which the Green Bank leverages to attract multiples of private capital investment in the green economy of Connecticut.[30]

Regional Greenhouse Gas Emission Allowance Proceeds

As a secondary source of public capital, the Green Bank receives a portion (i.e., 23%) of Connecticut's Regional Greenhouse Gas Initiative ("RGGI") allowance proceeds through the Regulation of Connecticut State Agencies Section 22a-174(f)(6)(B). The Green Bank invests RGGI proceeds from the nation's first cap-and-trade program to finance clean energy improvements.

6.2 Federal Funds

The Green Bank receives public capital through a number of past, current, and future sources[31] of federal funds as well that it leverages to scale-up and mobilize private capital investment in the green economy of Connecticut.

American Recovery and Reinvestment Act

Through the American Recovery and Reinvestment Act ("ARRA") the CCEF received $20 million for its programs and initiatives. After nearly $12 million of those funds were invested as grants, the Green Bank invested the remaining $8.25 million in financing programs. With nearly $2 million of ARRA funds

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[29] Public Act 98-28 "An Act Concerning Electric Restructuring"

[30] The Clean Energy Fund should not be mistaken with the Conservation Adjustment Mechanism (or the Conservation and Loan Management Fund), which is administered by the EDCs

[31] There have been ongoing public policy proposals at the national level that the Connecticut Green Bank has been a part of to create a US Green Bank. If such a public policy were passed, then the Connecticut Green Bank would have access to significant federal funds to leverage to scale-up and mobilize private capital investment in the green economy of Connecticut.

left,[32] the Green Bank invested over $6.25 million of ARRA funds to attract and mobilize more than $110 million of public and private investment in residential clean energy financing programs.

United States Department of Agriculture

The Green Bank is seeking to apply to the United States Department of Agriculture ("USDA") to seek access to low-cost and long-term federal loan funds for the deployment of clean energy in rural communities.[33] The USDA has vast lending authority under the Rural Electrification Act of 1936, which enables direct loans, project financing and loan guarantees to a variety of borrowers.

6.3 Green Bonds

Green Banks have an essential role in leveraging limited public funds with private capital to drive investment in the green economy to achieve climate change goals, create jobs in our communities, and reduce the burden of energy costs on our families and businesses. CGS Section 16-245n(d)(1)(C) is the enabling statute that allows the Green Bank to issue revenues bonds to support its purposes. Green Bonds are bonds whose proceeds are used for projects or activities with environmental or climate benefits, most usually climate change mitigation and adaptation.

Connecticut's climate change plan[34] focuses on three mitigation wedges (see Figure 4), including:

- **Decarbonizing Electricity Generation** – representing 23% of Connecticut's economy-wide GHG emissions, electricity generation must be transitioned to zero-carbon renewable energy sources. Strategies include financing for in-state or regional utility-scale renewable energy resources (e.g., community solar, wind, run-of-the-river hydro, food-waste-to-energy, etc.) and financing and incentives for in-state distributed energy resources (e.g., behind the meter solar PV, battery storage, fuel cells, combined heat and power, etc.) that assist with the implementation of the Class I and III Renewable Portfolio Standard, Regional Greenhouse Gas Initiative, and other public policies. To ensure a sustainable downward trajectory to meet the State's 2050 target, electricity generation must be 66% and 84% carbon-free by 2030 and 2050, respectively.
- **Decarbonizing Transportation** – representing over 35% of Connecticut's economy-wide GHG emissions, the transportation sector is the largest source of statewide emissions and must be transitioned to zero- and low-carbon technologies. Strategies for zero- and low-carbon transportation include adopting innovative financing models for ZEV deployment (i.e., EVs and FCEVs) and ZEV charging infrastructure, ensuring equitable access to clean transportation options such as electric bus fleets and ride sharing or hailing services. Also important is supporting voluntary (e.g., carbon offset) and regulatory (e.g., Transportation Climate Initiative) markets for cleaner transportation that transitions us away from fossil fuel to

[32] As of July 1, 2019

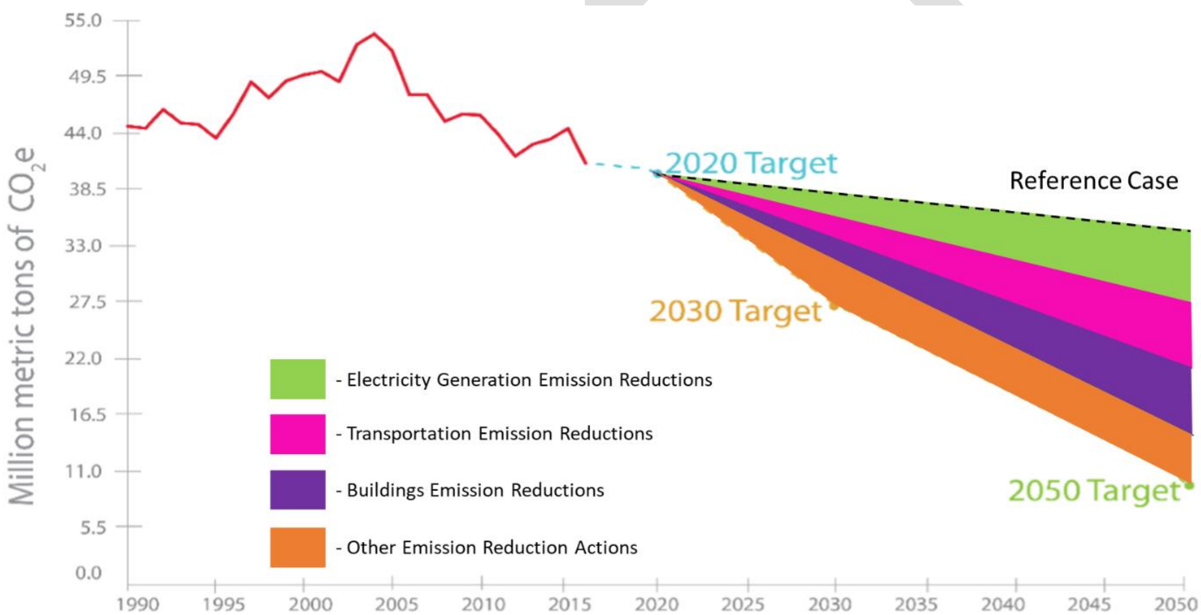
[33] "Rural" communities are defined by a population bound and the various limits depend on the program; at the broadest, "rural" may be considered a town that has a population not greater than 50,000 people. Despite its positioning in a mostly-developed corridor, we estimate Connecticut would have 69% of towns eligible at the 20,000-person limit and 89% of towns at the 50,000-person limit.

[34] "Building a Low Carbon Future for Connecticut – Achieving a 45% GHG Reduction by 2030" recommendations from the Governor's Council on Climate Change (December 18, 2018)

renewable energy. More specifically, to meet the 2030 target, 20% of the passenger fleet and 30% of the heavy duty fleet must be zero emission; and to meet the 2050 target, 95% of the passenger fleet and 80% of the heavy duty fleet must be zero emission.

- **Decarbonizing Buildings** – representing over 30% of Connecticut's economy-wide GHG emissions, residential, commercial, and industrial buildings are the second largest emitting sector that must transition away from fossil fuels to renewable thermal technology. Strategies for zero-carbon buildings include financing and incentives for energy efficiency (e.g., thermal insulation, appliances, etc.) and renewable heating and cooling (e.g., air source heat pumps, ground source heat pumps, heat pump water heaters, etc.). To meet the economy-wide 2030 and 2050 targets for Buildings, renewable heating and cooling technologies must be significantly deployed to 11% and 26% for residential, and 9% and 20% for commercial, by 2030 and 2050 respectively.

Figure 4. Example of Key GHG Emission Reduction Measures (i.e., Mitigation Wedges) for Connecticut to Achieve Targets



The size of investment required and long-term revenue streams from clean energy, lend themselves well to bond structures. Issuing green bonds can provide the Green Bank a lower-cost, longer-term source of capital, enabling the Green Bank to further leverage state and federal funds to increase its impact in Connecticut by attracting and mobilizing private investment in the state's green economy. The Green Bank has an important role to play in advancing green bonds in the U.S., especially given its expertise in developing impact methodologies and its thorough and transparent reporting framework.

7. Citizen Engagement

The Connecticut Green Bank, and its predecessor the Connecticut Clean Energy Fund (CCEF), have a long-standing history of citizen engagement within the communities of Connecticut. In 2002, the CCEF partnered with six private foundations[35] to co-found SmartPower – which launched the 20 percent by 2010 campaign and led the administration of the CCEF's EPA award-winning Connecticut Clean Energy Communities Program.[36] Then in 2013, the Green Bank launched a series of Solarize campaigns in communities across the state in partnership with SmartPower and the Yale Center for Business and the Environment,[37] while also advancing the SunShot Initiative of the U.S. Department of Energy (DOE) in partnership with the Clean Energy States Alliance through projects that reduce soft-costs for solar PV (i.e., customer acquisition, permitting, and financing) and provide better access to solar PV for low-to-moderate income households.

Engaging citizens has been in the DNA of the Green Bank since its inception.

7.1 Green Bonds US® Campaign

From markets to communities, the Green Bank has been bringing people together to energize the green economy and improve lives since its founding. Despite the benefits of "green" being well documented, our behaviors have yet to change at a rate and scale that could reverse the impact of climate change. To adequately address the situation at hand, we all need to recognize how we share a mutual interest in the protection of each other's personal health, safety and happiness.

"Green Bonds US" is a multimedia awareness campaign that is centered on the power of community. And as the name suggests, it carries a simple but critically important message; green brings us together, green bonds us. Through emotionally compelling copy and media, the campaign's aim is to personalize the global challenge of climate change and inspire action through community.

The "Green Bonds US" campaign is also being leveraged to promote the Green Bank's inaugural offering of mini green bonds. In keeping with the organization's drive to make "green" more accessible and affordable, the low denomination, or "mini" bonds present a greater opportunity for people to benefit from the growing green economy.

For more information on the Green Bonds US campaign, visit www.greenbondsus.com

7.2 Sustainable CT

Sustainable CT and the Green Bank are developing an engagement and investment platform to raise capital in support of local projects that provide individuals, families, and businesses with investment opportunities to make an impact on sustainability in their communities. The partnership between Sustainable CT and the Green Bank is focused on the following key priorities:

- Driving investment in projects in our communities, with a goal to accelerate over time;
- Community-level engagement, from project origination through financing, that is inclusive, diverse, and "knitted";

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[35] Emily Hall Tremaine Foundation, The John Merck Fund, Pew Charitable Trust, The Oak Foundation, Rockefeller Brothers Fund, and Surdna Foundation

[36] "Climate Policy and Voluntary Initiatives: An Evaluation of the Connecticut Clean Energy Communities Program," by Matthew Kotchen for the National Bureau of Economic Research (Working Paper 16117).

[37] "Solarize Your Community: An Evidence-Based Guide for Accelerating the Adoption of Residential Solar" by the Yale Center for Business and the Environment.

- Creating a structure that harnesses all types of capital for impact – from donations to investment;
- Developing a business model that covers the cost of the program; and
- Creating a measurable impact, both qualitative and quantitative.

Through a partnership between Sustainable CT and IOBY (In Our Backyard), an online crowdfunding platform will enable citizen leaders to have access to financial resources that they need for local sustainability projects.

For more information on Sustainable CT, visit www.sustainablect.com

8. Evaluation Framework and Impact Methodologies

The Green Bank's evaluation efforts seek to understand how the increase in investment and deployment of clean energy supported through the Green Bank, result in benefits to society. To that end, the Green Bank has devised an Evaluation Framework and impact methodologies for various societal benefits.

8.1 Evaluation Framework

The 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 energy savings and clean energy production and the resulting societal impacts or benefits arising from clean energy investment.[38] This framework focuses primarily on assessing the market transformation the Green Bank is enabling, including:

- **Supply of Capital** – including affordable interest rates, longer term maturity options, improved underwriting standards, etc.
- **Consumer Demand** – increasing the number of projects, increasing the comprehensiveness of projects, etc.
- **Financing Performance Data and Risk Profile** – making data publicly available to reduce perceived technology risks by current or potential private investors.
- **Societal Impact** – the benefits society receives from more investment and deployment of clean energy.

With the goal of pursuing investment strategies that advance market transformation in green investing, the Green Bank's evaluation framework provides the foundation for determining the impact it is supporting in Connecticut and beyond.

[38] https://ctgreenbank.com/wp-content/uploads/2017/02/CTGreenBank-Evaluation-Framework-July-2016.pdf

8.2 Impact Methodologies

To support the implementation of the Evaluation Framework, the Green Bank, working with various public sector organizations, has developed methodologies that estimate the impact from the investment, installation and operation of clean energy projects, including:

- **Jobs** – working in consultation with the Connecticut Department of Economic and Community Development ("DECD"), through the work of Navigant Consulting, the Green Bank devised a methodology that takes investment in clean energy to reasonably estimate the direct, indirect, and induced job-years resulting from clean energy deployment.[39]
- **Tax Revenues** – working in consultation with the Connecticut Department of Revenue Services ("DRS"), through the work of Navigant Consulting, the Green Bank devised a methodology that takes investment in clean energy to reasonably estimate the individual income, corporate, and sales tax revenues from clean energy deployment.[40]
- **Environmental Protection** – working in consultation with the United States Environmental Protection Agency ("EPA") and DEEP, the Green Bank devised a methodology that takes the reduction in consumption energy and increase in the production of clean energy to reasonably estimate the air emission reductions (i.e., CO_2, NO_x, SO_2, and $PM_{2.5}$) resulting from clean energy deployment.[41]
- **Public Health Improvement** – working in consultation with the EPA, DEEP, and the Connecticut Department of Public Health ("DPH"), the Green Bank devised a methodology that takes air emission reductions to reasonably estimate the public health benefits (e.g., reduced hospitalizations, reduced sick days, etc.) and associated savings to society resulting from clean energy deployment.[42]

Each year, the Green Bank develops additional methodologies that value the impact the Green Bank is helping create in Connecticut and all of society. For more information on the Green Bank's impact methodologies, visit the Impact page of the website.[43]

The Green Bank's efforts to increase investment in and deployment of clean energy projects – which result in increased benefits to Connecticut and all of society – can also be looked at through the lens of the United Nation's Sustainable Development Goals ("UNSDG's").[44] The UNSDG's include, but are not limited to – reducing poverty, improving health and well-being, cleaner water, making clean energy affordable, increasing economic development, reducing inequalities, supporting sustainable communities, increasing recycling, and confronting climate change – areas where the Green Bank is measuring (or will measure) the impacts of its investments.

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[39] https://www.ctgreenbank.com/wp-content/uploads/2018/03/CGB_DECD_Jobs-Study_Fact-Sheet.pdf
[40] https://www.ctgreenbank.com/wp-content/uploads/2018/09/CGB-Eval-Tax-Methodology-7-24-18.pdf
[41] https://www.ctgreenbank.com/wp-content/uploads/2018/01/CGB-Eval-IMPACT-091917-Bv2.pdf
[42] https://www.ctgreenbank.com/wp-content/uploads/2018/03/CGB-Eval-PUBLICHEALTH-1-25-18-new.pdf
[43] http://www.ctgreenbank.com/strategy-impact/impact/
[44] https://www.un.org/sustainabledevelopment/sustainable-development-goals/

9. Reporting and Transparency

The Green Bank has extensive reporting on its financial management and societal impact through various mechanisms. As an administrator of ratepayer (i.e., Clean Energy Fund) and taxpayer (e.g., Regional Greenhouse Gas Initiative) resources, the Green Bank believes that complete transparency is important to ensure the public's continued trust in its serving of its purpose.

9.1 Comprehensive Annual Financial Report (CAFR)

A Comprehensive Annual Financial Report (CAFR) is a set of government financing statements that includes the financial report of a state, municipal or other government entity that complies with the accounting requirements promulgated by the Governmental Accounting Standards Board (GASB). GASB provides standards for the content of a CAFR in its annually updated publication *Codification of Governmental Accounting and Financial Reporting Standards*. A CAFR is compiled by a public agency's accounting staff and audited by an external American Institute of Certified Public Accountants (AICPA) certified accounting firm utilizing GASB requirements. It is composed of three sections – Introductory, Financial, and Statistical. The independent audit of the CAFR is not intended to include an assessment of the financial health of participating governments, but rather to ensure that users of their financial statements have the information they need to make those assessments themselves.[45]

To date, the Green Bank has issued five CAFR's, including:

- Fiscal Year Ended June 30, 2014 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2015 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2016 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2017 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2018 (Certificate of Achievement)

As the "gold standard" in government reporting, the CAFR is the mechanism the Green Bank uses to report its fiscal year financial and investment performance – including societal benefits and impacts – to its stakeholders. For each of its five years filing the CAFR with the Government Finance Officers Association the Green Bank has received a Certificate of Achievement for Excellence in Financial Reporting.

9.2 Annual Report

Beyond the CAFR, the annual reports of the Green Bank are compiled by the marketing staff and include consolidated financial statement information and narratives of various program achievements in a condensed format that can be widely distributed.

To date, the Green Bank has issued seven annual reports, including:

[45] The Government Finance Officers Association (GFOA), founded in 1906, represents public finance officials throughout the United States and Canada. GFOA's mission is to enhance and promote the professional management of governmental financial resources by identifying, developing, and advancing fiscal strategies, policies, and practices for the public benefit. GFOA established the Certificate of Achievement for Excellent in Financial Reporting Program (CAFR Program) in 1945 to encourage and assist state and local governments to go beyond the minimum requirements of generally accepted accounting principles to prepare comprehensive annual financial reports that evidence the spirit of transparency and full disclosure and then to recognize individual governments that succeed in achieving that goal.

- Fiscal Year 2012 Annual Report
- Fiscal Year 2013 Annual Report
- Fiscal Year 2014 Annual Report
- Fiscal Year 2015 Annual Report
- Fiscal Year 2016 Annual Report
- Fiscal Year 2017 Annual Report
- Fiscal Year 2018 Annual Report

9.3 Auditors of Public Account

The office of the Auditors of Public Accounts (APA) is a legislative agency of the State of Connecticut whose primary mission is to conduct audits of all state agencies, including quasi-public agencies. Included in such audits is an annual Statewide Single Audit of the State of Connecticut to meet federal requirements. The office is under the direction of two state auditors appointed by the state legislature. The APA audited certain operations of the Connecticut Green Bank in fulfillment of its duties under Sections 1-122 and Section 2-90 of the Connecticut General Statutes.

To date, the APA has conducted two audits, including:

- Fiscal Years 2012 and 2013
- Fiscal Years 2014 and 2015

9.4 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 to that, the Comptroller's office requested that quasi-public agencies voluntarily provide checkbook-level vendor payment data for display on Open Connecticut. The Connecticut Green Bank, which was among the first quasi-public organizations to participate, has voluntarily submitted this information since the inception of Open Connecticut.[46]

9.5 Stakeholder Communications

The Green Bank holds quarterly stakeholder webinars to update the general public on the progress it is making with respect to its Comprehensive Plan and annual targets.[47] Through these webinars, the Green Bank staff invite questions from the audience. These webinars are announced through the Green Bank's list serve consisting of thousands of stakeholders as well as the events page of its website.[48]

The Green Bank also issues a monthly e-newsletter through its list serve that provides key topics in the news and important information on products, programs and services.[49]

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[46] https://www.osc.ct.gov/openCT/quasi.html
[47] https://www.ctgreenbank.com/news-events/webinars/
[48] https://www.ctgreenbank.com/news-events/events-calendar/
[49] https://www.ctgreenbank.com/newsletters/

10. Research and Product Development

As the Green Bank implements its Comprehensive Plan, there will be ongoing efforts to develop new market opportunities for future green investments. With the lessons being learned and best practices being discovered in the green economy, the Green Bank's ability to deliver more societal benefits requires understanding potential opportunities and the development of pilot programs and initiatives to increase impact, including, for example:

- **Shared Clean Energy Facilities** – to support the decarbonizing the electricity infrastructure climate change wedge, while reducing the burden of energy costs on Connecticut's families and businesses, the Green Bank will seek to apply its experience administering the RSIP to supporting and investing in shared clean energy facilities (or community solar projects) with a focus on low-to-moderate income families;
- **Energy Burden from Transportation** – as Operation Fuel has done an exceptional job quantifying the energy burden for electricity use and heating of homes, understanding the energy burden from transportation (i.e., gasoline to alternative fuel vehicles) will help the Green Bank and others (e.g., Department of Housing, Connecticut Housing and Finance Authority, Partnership for Strong Communities, etc.) understand its role in addressing the decarbonization of transportation emissions climate change wedge; and
- **Environmental Infrastructure** – if there were an expansion of scope for the Green Bank beyond "clean energy," the Green Bank could apply the green bank model to mobilize private investment in "environmental infrastructure".[50] Working with DEEP and other state agencies, local governments, nonprofit organization, academic institutions, and businesses, the Green Bank could, for example, identify new areas for increased investment in climate change adaptation and resiliency through the issuance of green bonds.[51]

The Green Bank's efforts are intended to open-up new market channels for private investment in Connecticut's green economy through studies, pilot projects, and other initiatives that have the potential for expanding the impact of the Green Bank.

[50] Proposed Senate Bill 927 in the 2019 Legislative Session

[51] Section 10.3 Sustainability of the Comprehensive Plan of the Connecticut Green Bank recognizes that other green banks invest beyond "clean energy" and include "environmental infrastructure".

11. Budgets and Investments

11.1 FY 2020 Budget and Investments

For the details on the FY 2020 budget and investments – click here. For an overview of the FY 2020 budget and investments, see Figures 5 through 7.

Figure 5. Sources of Revenues for FY 2020 ($MM's)

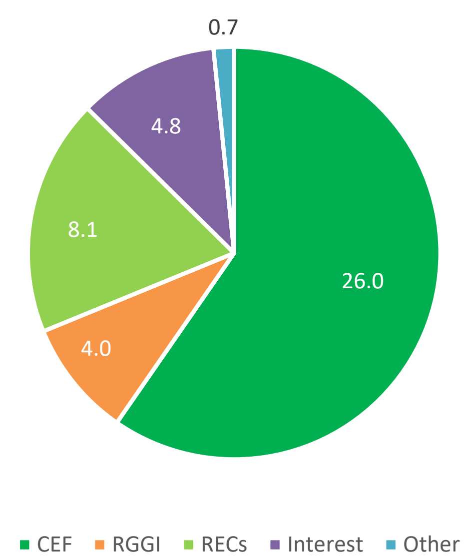


Figure 6. Sources of Expenses for FY 2020 ($MM's)

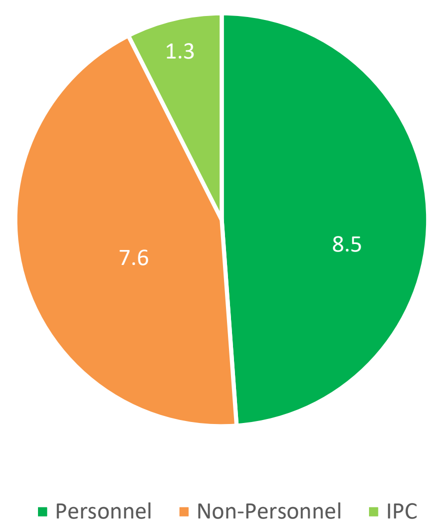
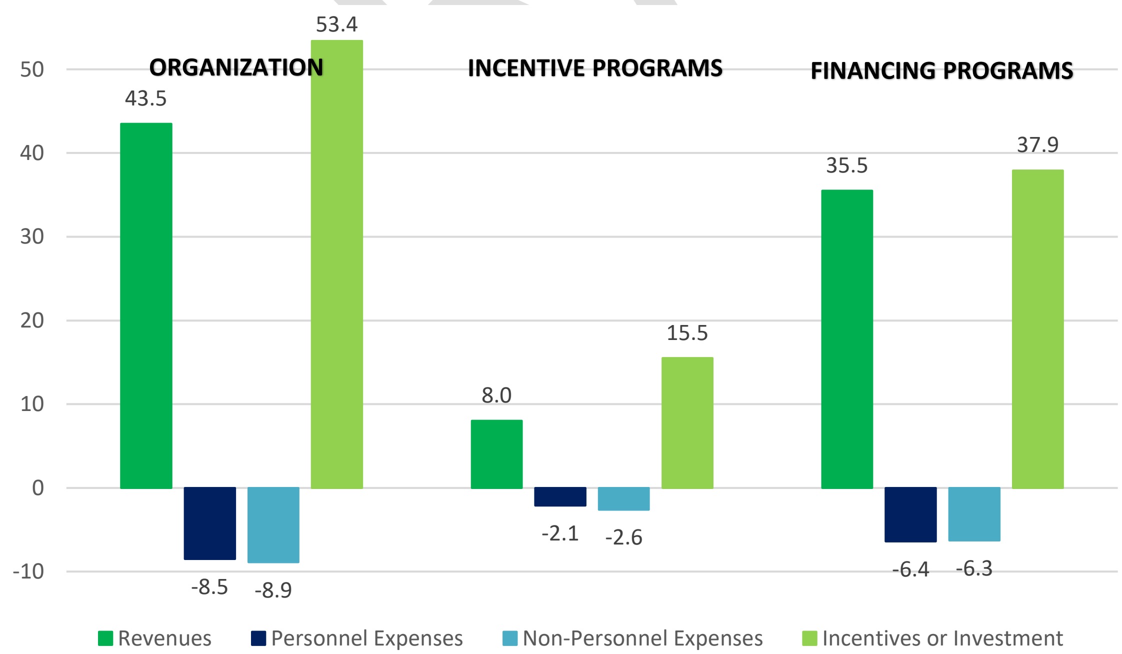


Figure 7. Revenues, Expenses, and Incentives or Investments for FY 2020 ($MM's) – Organization, Incentive Programs, and Financing Programs



INNOVATIONS IN AMERICAN GOVERNMENT AWARD

WINNER

HARVARD Kennedy School

ASH CENTER

for Democratic Governance and Innovation

Connecticut Green Bank

Comprehensive Plan

Fiscal Year 2020 & Beyond

July 2019

Overview

CONNECTICUT GREEN BANK

- **Who Are We** – who is the Connecticut Green Bank?
- **What Do We Do** – what sorts of programs does the Connecticut Green Bank oversee within its portfolio?
- **Why Do We Do It** – why does the Connecticut Green Bank focus on delivering inclusive prosperity through the climate economy?
- **Fiscal Year Investment** – the targets, budget, and estimated societal impact by fiscal year

Who Are We?

Connecticut Green Bank
About Us

- **Quasi-public organization** – Created by PA 11-80 (Section 99) and the successor to the Connecticut Clean Energy Fund
- **Focus** – Finance clean energy (e.g., renewable energy, energy efficiency, and alternative fuel vehicles and infrastructure) by leveraging public capital with multiples of private capital
- **Support** – from a variety of sources, including:
  - **State Support** – $0.001/kWh surcharge (i.e., Clean Energy Fund) on electric ratepayer bills (about $7-$10 per household per year ≈ $26 MM per year) and RGGI about $3-5 MM per year (for renewable energy)
  - **Federal Support** – competitive solicitations (e.g., SunShot, USDA, etc.) and non-competitive resources (e.g., ARRA-SEP)
  - **Other Support** – issue “green bonds,” interest income, private capital (e.g., SPV’s), and foundations (e.g., PRI’s)

Connecticut Green Bank

Mission Statement and Goals

Increase and accelerate the flow of capital into markets that energize the green economy to provide society a healthier and more prosperous future.

- Leverage limited public resources to scale-up and mobilize private capital investment in the green economy of Connecticut.
- Strengthen Connecticut's communities by making the benefits of the green economy inclusive and accessible to all individuals, families, and business.
- Pursue investment strategies that advance market transformation in green investing while supporting the organization's pursuit of financial sustainability.

Connecticut Green Bank

Delivering Results for Connecticut

- **Investment** – mobilized over **$1.3 billion** of investment into Connecticut's clean energy economy
- **Economic Development** – created nearly **16,000 total job-years** – 6,200 direct and 9,700 indirect and induced, while raising nearly **$65 million in tax revenues**
- **Energy Burden** – reducing the energy burden on over **30,000 families and businesses**, including **"beyond parity"** for LMI solar
- **Environmental Protection** – deployed more than **285 MW** of clean renewable energy helping to reduce over **4.6 $MTCO_2$** that cause climate change and **improving public health**

UPDATE

Private investment drives economic growth

Creates jobs, lowers energy costs, and reduces GHGs

REFERENCES

CT Green Bank data warehouse report from July 1, 2011 through June 30, 2019

Connecticut Green Bank

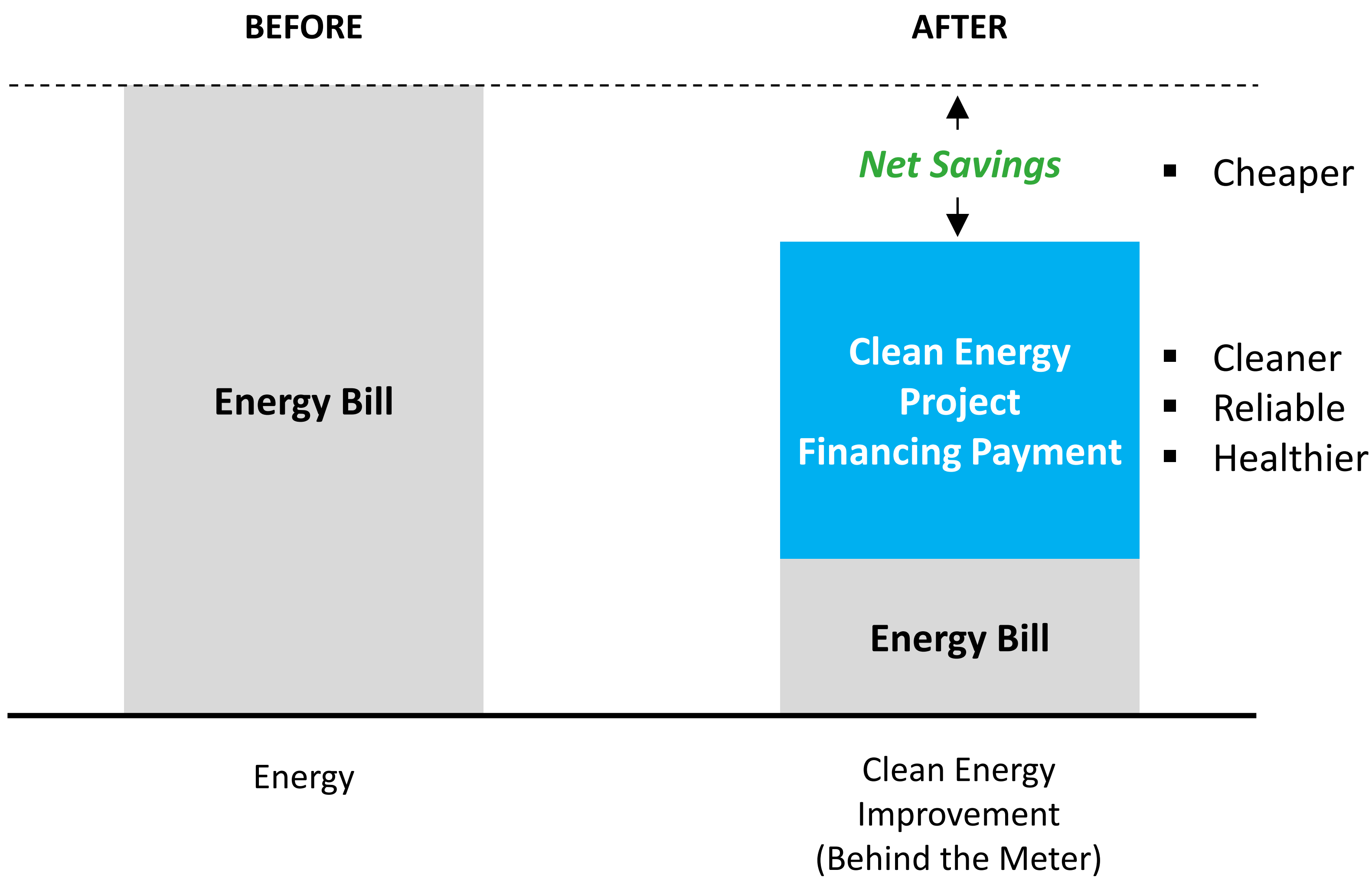
Sparking the Green Bank Movement

HARVARD Kennedy School
ASH CENTER
for Democratic Governance and Innovation

What Do We Do?

Connecticut Green Bank

Reduce Costs – Increase Customer Demand

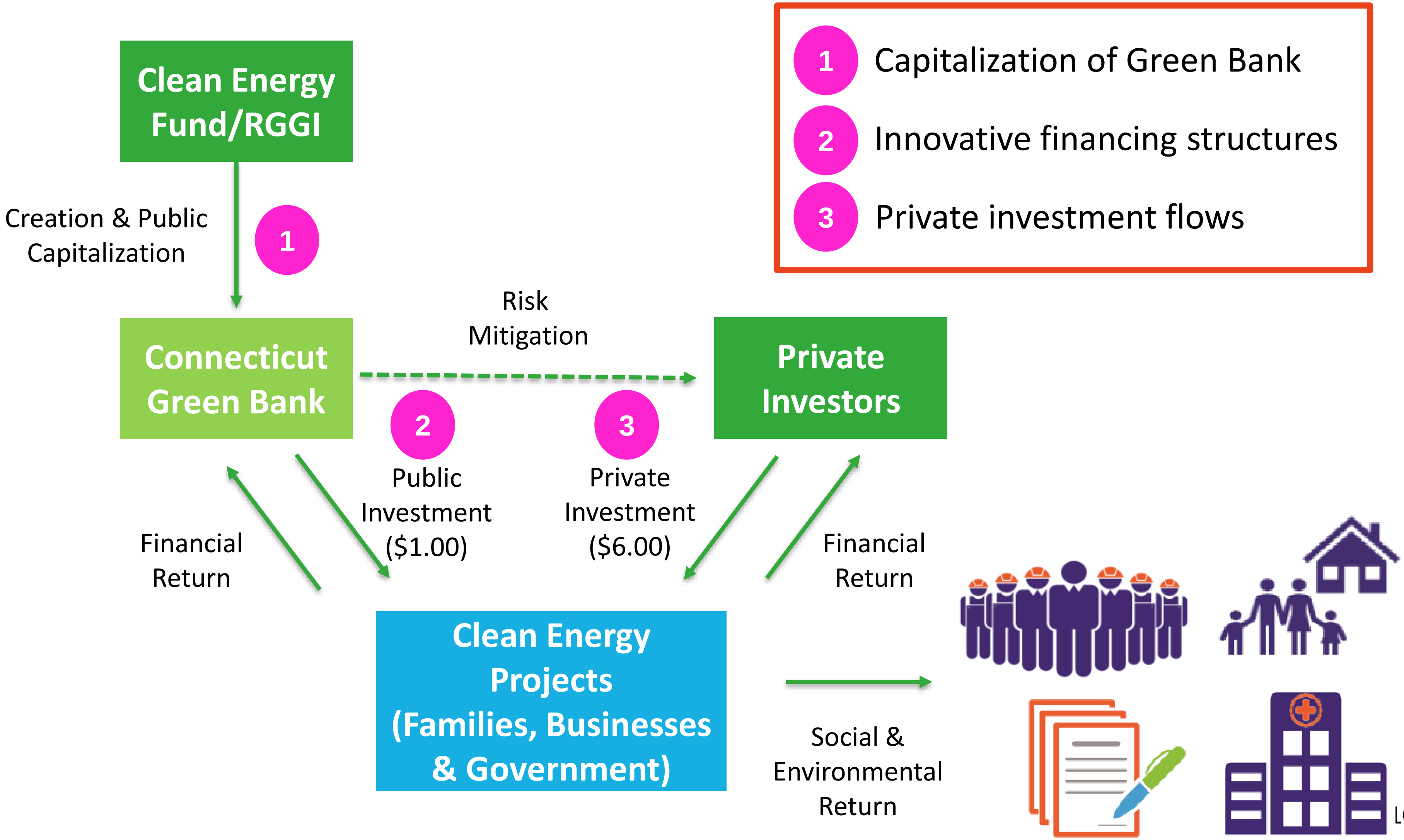


REFERENCE

Definition provided by the Coalition for Green Capital and adapted by the Connecticut Green Bank

Connecticut Green Bank

Reduce Risk – Increase Supply of Private Capital



Connecticut Green Bank

Organizational Structure

Connecticut Green Bank

Incentive Programs

- RSIP
- SHREC
- Battery Storage[1]

Financing Programs

- C-PACE
- SBEA
- Solar PPA
- Shared Solar
- LIME Loan
- Special Projects

→ **Cost Recovered** (Incentive Programs)

→ **Self Sustaining** (i.e., 5%@10 years) (Financing Programs)

IPC

(an independent 501(c)3)

- Solar for All
- Smart-E
- Solar PPA
- Multi-Family

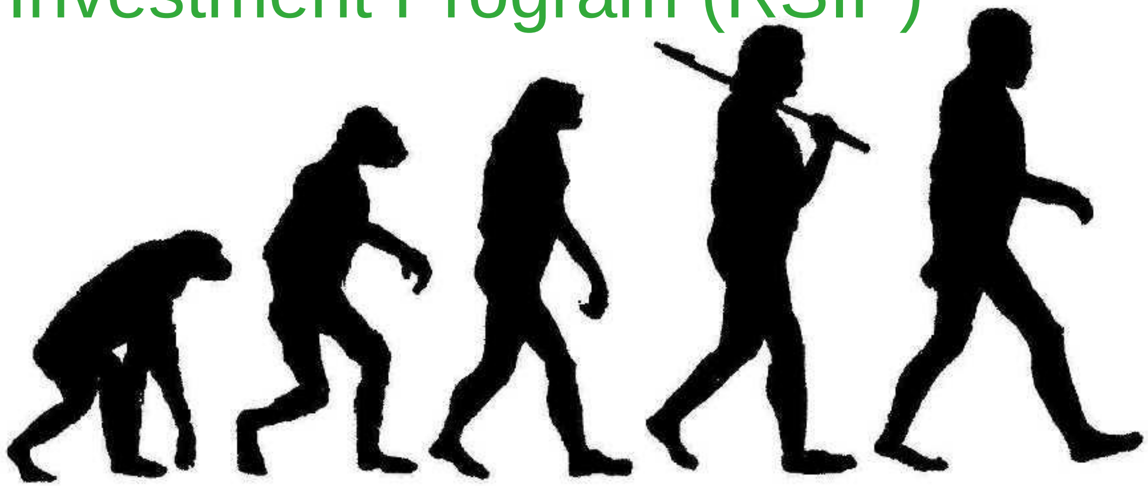
→ **Operating Leverage, Social Return, and Investment Return Opportunity**

REFERENCES

1. The Connecticut Green Bank has submitted a Technology Application (i.e., Docket No. 18-12-35) into PURA through the Electric Efficiency Partner Program in support of a residential battery storage incentive program in combination with the RSIP. Should PURA approve the application, then the Connecticut Green Bank will implement a battery storage incentive program for existing residential solar PV systems for the purposes of reducing demand, specifically peak demand.

Incentive Program

Residential Solar Investment Program (RSIP)



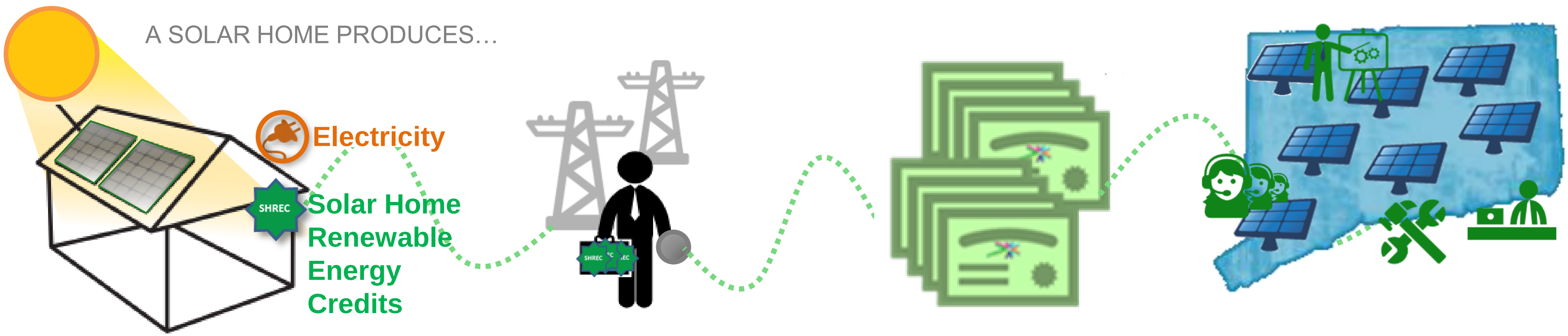
Policy Period	**2004-2007**	**2008-2011**	**2012-2014** (PA 11-80)	**2015-2019** (PA 15-194)	**Post-RSIP** (PA 18-50, 19-35)
Period of Time (years)	4.0	4.0	3.0	4.5	Sustained Orderly Development
Approved Capacity (MW)	2.0	11.2	49.3	221.2	
Approved Capacity per year (MW/yr)	0.5	2.8	16.4	49.2	
Investment per Year	$4.3 MM	$19.9 MM	$72.6 MM	$173.5 MM	
Installed Cost – EPBB ($/W)	$8.54	$6.85	$4.53	$3.82	
State Subsidy – EPBB ($/W)	$4.34	$3.06	$1.32	$0.42	
Customer Cost – EPBB ($/W)	$4.20	$3.79	$3.21	$3.40	
Retail Electric Rates ($/kWh)	$0.15	$0.19	$0.18	$0.21	

REFERENCES

RSIP data as of June 18, 2019 by calendar year for approved projects. 86% of approved projects are completed. Electricity rates from EIA

Incentive Program (cont'd)

Solar Home Renewable Energy Credits (SHRECs)



When panels produce electricity for a home, they also produce **Solar Home Renewable Energy Credits (SHRECs)**. The Green Bank provides upfront incentives through RSIP and collects all the SHRECs produced per statute (i.e., PA 15-194).

Utilities required to enter into **15-year Master Purchase Agreement (MPA) with the Green Bank to purchase the stream of SHRECs produced**. This helps utilities comply with their clean energy goals (i.e., Class I RPS).

Green bonds are created from the SHREC revenues received through the MPA and **sold to institutional** (i.e., pension funds, insurance companies, etc.) and **retail investors** (i.e., friends and family) to **receive proceeds upfront**.

The Green Bank uses the SHREC revenues and green bond proceeds to **support the RSIP incentives** (i.e., PBI and EPBB), **cover admin costs**, and **financing costs** to achieve **350 MW of solar PV deployment and development of local solar PV industry**

Financing Programs

Portfolio of Public-Private Partnerships

CONNECTICUT GREEN BANK

UPDATE

Credit Enhance	Warehousing	Tax Equity Finance		Project Finance	PRI	Tax Credit Bonds
$45 MM OPEN 20:1[1] smart-e loan energize CONNECTICUT CT Residential Energy	$50+ MM OPEN 9:1 HANNON ARMSTRONG FINANCING THE FUTURE OF ENERGY C-PACE	$75 MM CLOSED 7.5:1 usbank KeyBank Webster Bank Residential Solar Commercial Solar	$60+ MM OPEN 6:1[3] ONYX Green Ban[k] Solar PPA	$65 MM CLOSED 10:1 FuelCell Energy Dominion Grid-Tied	$5 MM OPEN 100%[2] MacArthur Foundation hdf Multifamily Energy	$9 MM CLOSED 9:1 CSCU Bank of America Green Bank Solar PPA
$6 MM CLOSED 6:1 Sungage Financial Residential Solar	$30 MM CLOSED 4:1 CLEAN FUND Commercial PACE Capital C-PACE	[?] MM OPEN 4:1 PosiGen Solar Solutions usbank EnhancedCapital Solar for All		$22 MM CLOSED 8:1 Colebrook Wind Webster Bank 5 MW Wind Project	$3 MM OPEN 100%[4] THE KRESGE FOUNDATION Residential and Commercial Storage	$3 MM CLOSED 3:1 City of Meriden CT Bank of America Archimedes Screw Hydroelectric Project

REFERENCES

1. LLR yields high leverage – and it is 2nd loss and thus with no to low defaults, we haven't used to date. IRB's not considered in the leverage ratio.
2. Foundation PRI is to HDF, guaranteed by the CGB in the case of MacArthur Foundation.
3. Onyx Partnership has no upper limit and CGB currently has authorization to commit up to $15mm.
4. Foundation PRI's are backed by CGB balance sheet
5. Data from Power BI through June 30, 2019

Financing Program
Energize CT Smart-E Loan

CONNECTICUT GREEN BANK

Market Segment	**Residential Single Family** (Credit Enhancement)
Product Summary	Partnership with eleven (11) local community banks and credit union to provide easy access to affordable financing for comprehensive clean energy measures, including H&S. 5-20 year terms at rates ranging from 4.99-6.99% for $500-$40,000 of borrowing.
Support Needed	▪ Provide 2nd Loan Loss Reserve (LLR) up to 7.5% of losses ▪ EV pilot
CT Results	3,431 projects for $54.6 MM financed (with $5.9 MM of IRB), 8.3 MW, 81% projects have EE

UPDATE

smart-e loan

energize CONNECTICUT CT

REFERENCES
Data from Power BI through 12/31/18

Financing Program

CONNECTICUT GREEN BANK

Solar for All – Solar PV Lease and EE ESA

UPDATE

Market Segment	**Residential Single Family LMI** (Co-Investment)
Product Summary	Solar lease + energy efficiency package (fixed 20 years) to reduce energy burden with alternative underwrite/no credit score using community based marketing approach
Support Needed	▪ Good solar economics including tiered LMI incentives ▪ Municipal, community and nonprofit introductions ▪ Subordinated debt capital – if available, but not required
CT Results	2,041 leases for $57.4 MM investment, 13.5 MW, 99.9% get EE (HES), 63% ESA, and reached 63% LMI

PosiGen Solar Solutions

REFERENCES

Data from Power BI through 12/31/18

Financing Products
Multifamily

CONNECTICUT GREEN BANK

UPDATE

Market Segment	Naturally occurring and subsidized/regulated affordable housing (5+ units) (Investment)
Product Summary	Pre-development and term financing products (including unsecured) for renewable, efficiency, storage, resiliency, health & safety and other building improvements
Support Needed	▪ Overview of utility and state affordable housing program/ incentive landscape ▪ Portfolio owner introductions ▪ Municipal, community and nonprofit introductions ▪ Subordinated debt capital – if available, but not required
CT Results	84 loans for $120.1MM investment in EE, RE, and H&S

REFERENCES
Data from Power BI through 12/31/18

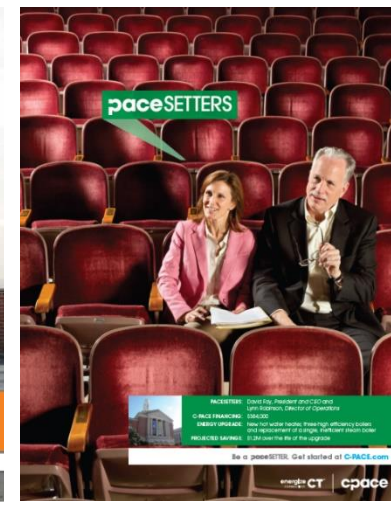
Financing Program
C-PACE

CONNECTICUT GREEN BANK

Market Segment	**Commercial, Industrial, Nonprofit and Multifamily** (Warehousing)
Product Summary	Commercial Property Assessed Clean Energy (C-PACE) applies a benefit assessment to a property to finance clean energy improvements with SIR>1
Support Needed	• Capital to finance clean energy improvements • Contractors to install clean energy improvements • Supportive municipality • Supportive mortgage lender
CT Results	254 projects for $147.8 MM investment, 31.9 MW of RE, 32% projects have EE

UPDATE





REFERENCES
Data from Power BI through 12/31/18

Financing Program
SBEA

Market Segment	**Commercial, Industrial, Nonprofit and Institutional** (Warehousing)
Product Summary	Small Business Energy Advantage (SBEA) in partnership with Eversource Energy (originator) and Amalgamated Bank (capital provider)
Support Needed	• CEEF partnership for incentives • OBR mechanism through EDC • Contractors to install EE improvements • Private capital provider
CT Results	[X] projects for [$X] MM investment, [X] MMBtu savings

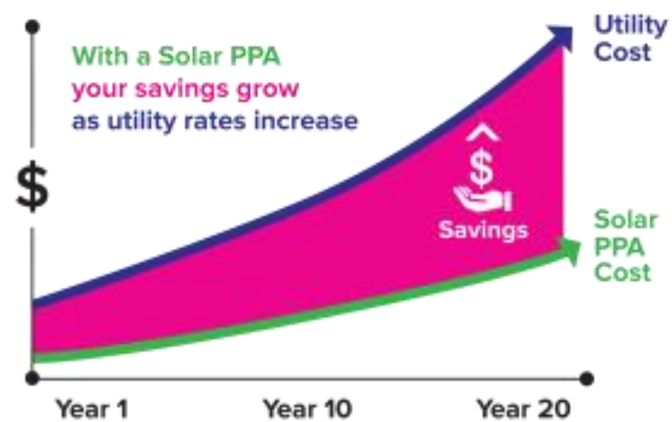
UPDATE

Financing Program
Green Bank Solar PPA

Market Segment	**Small/medium commercial, MUSH, affordable housing, nonprofits, community assets** (Co-Investment)
Product Summary	3rd party solar power purchase agreement, backed by C-PACE lien where possible
Support Needed	▪ Good solar economics for C&I ▪ Local solar installer & project developer introductions ▪ Municipal, community and nonprofit introductions ▪ Subordinated debt capital – if available, but not required
CT Results	114 PPAs closed/completed, $78.7 MM, and 31.5 MW

UPDATE

green bank solar ppa



REFERENCES
Data from Power BI through 12/31/18

Special Project

New England Hydropower

Market Segment	**Virtual Net Metering – Municipality** (Investment)
Project Summary	Long-term PPA (i.e., 30+ years) for behind the meter (VNM) for this run-of-the-river hydro facility in Meriden – first of its kind in the U.S.
Support Needed	▪ Project finance ▪ Support for start-up developer using European technology ▪ Working capital (Webster Bank), construction financing (Key Bank), and green bonds (BAML)
CT Results	$3 MM investment using federal CREBs and 193 kW hydro project

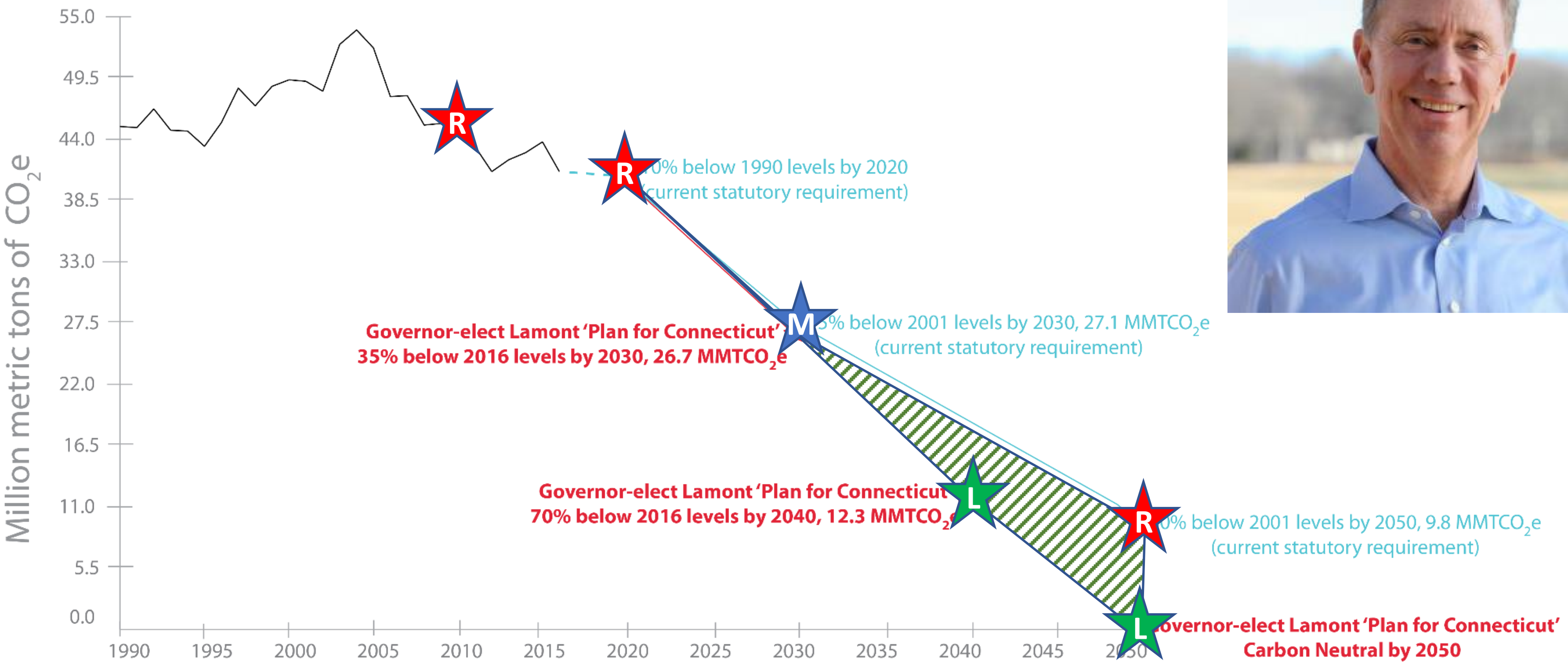
Special Project
Food Waste to Energy AD Project

Market Segment	**Project Finance** (Co-Investment)
Project Summary	Provided long-term subordinated debt (i.e., 15 years) at low interest rate (i.e., 2%) for 20% of the capital structure to finance the 1st AD project of its kind in CT
Support Needed	▪ Links to food waste collection policy (PA 11-127) ▪ Attracted local lender as a senior debt provider (i.e., Peoples Bank) along with equity and tax equity
CT Results	$10 MM project, 1 MW, diverts organic materials from waste stream while producing renewable energy

Why Do We Do It?

Gubernatorial Leadership

Confront Climate Change in Connecticut



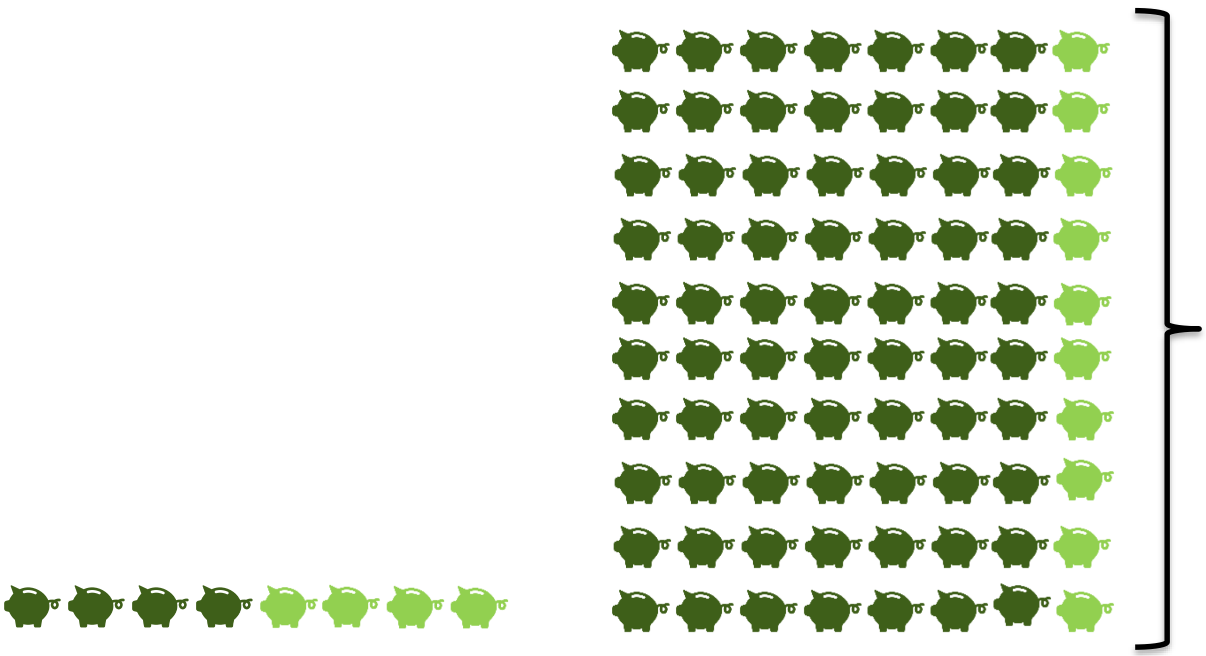
"These targets are ***tougher than required under the Paris Agreement****, but are achievable, measurable goals that will* ***guide our state's energy and environmental policy****."*

Increase Investment

From 1 to 2 Orders of Magnitude

= $1 in public investment in clean energy per person per year

= $1 in private investment in clean energy per person per year



x 10

Connecticut
Clean Energy Fund
$9/person/year

Connecticut
Green Bank
$80/person/year

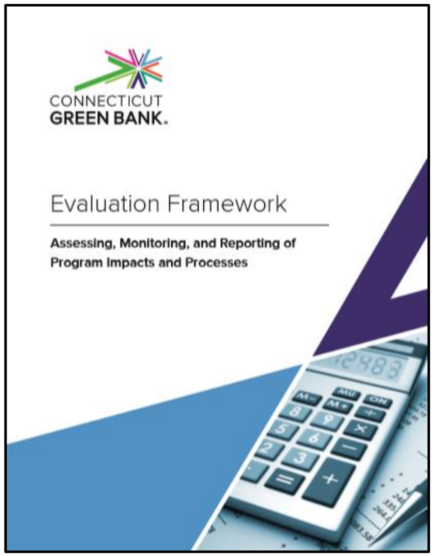
UN 2030 Agenda for
Sustainable Development
$800

REFERENCES

1. CT Population = 3,600,000. US Population = 321,400,000. World Population = 7,500,000,000.
2. CCEF Annual Investment = $32 MM (1:1). CGB Average Annual 4-Year Investment = $280 MM (6:1). UN Report = $6 T assuming $90 T over 15-years (i.e., since 2016).

Impact Investment
Measuring Results

Evaluation Framework	Impact Methodologies	Comprehensive Annual Financial Report	Annual Report / Fact Sheet



Impact Investment
Reporting and Transparency

- **Comprehensive Annual Financial Report (CAFR)** – government financing statements using GASB and audited by AICPA certified firm;
- **Annual Report** – consolidated financial statements with condensed narratives on various program achievements;
- **Auditors of Public Account** – APA is a legislative agency whose primary mission is to conduct audits of state agencies, including quasi-publics;
- **Open Connecticut** – a voluntary initiative of the Comptroller whereby agencies provide checkbook-level vendor payment data;
- **Board and Committee Meetings** – publicly accessible real-time and online access to deliberations and decisions; and
- **Stakeholder Communications** – quarterly online stakeholder webinars on progress to date and monthly e-newsletters on information on products, programs and services.

Increase Citizen Engagement

CONNECTICUT GREEN BANK

Green Bonds US ® Campaign

Brand and marketing campaign designed to engage stakeholders and position CGB as the face of Connecticut's green energy economy

Phase 1: Increase stakeholders awareness of CGB brand

- Theme: Children & "green" as symbols of hope and potential
  - We must invest in "green" as we do our children, both connect the present to the future
- Promotes simple but important message; green brings us together, green bonds us.

Phase 2: Promote inaugural issuance of CGB mini-green bonds

- Aligned with CGB's mission to make "green" benefits more accessible and affordable
- Marketing low denomination, or "mini" green bonds increases opportunities for people to benefit from the green economy

For promotional purposes only. No physical green bonds will be issued

Increase Citizen Engagement

Partnership with Sustainable CT

The partnership between the Sustainable CT and the Connecticut Green Bank is focused on the following key priorities:

- Driving investment in projects in our communities, with a goal to accelerate over time;
- Community-level engagement, from project origination through financing, that is inclusive, diverse and "knitted";
- Creating a structure that harnesses all types of capital for impact – from donations to investments;
- Developing a business model that covers the cost of the program; and
- Creating a measurable impact, both qualitative and quantitative.

Connecticut Green Bank

Vision Statement

…a world empowered

by the renewable energy

of community

REFERENCES

Vision Statement inspired by the Innovations in American Government Awards at the Ash Center of Harvard University's Kennedy School of Government, Maya Angelou's "On the Pulse of Morning," and the powerful words of Mary Evelyn Tucker on "inclusive capitalism".

Fiscal Year Investment FY 2020 Targets, Budget, and Estimated Societal Impact

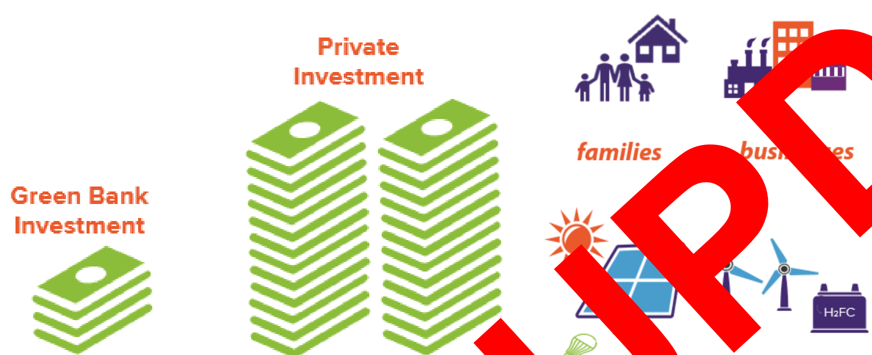
Connecticut Green Bank

FY 2020 Targets

UPDATE

Incentive Programs

Program / Product	Projects	Total Investment	Installed Capacity (kW)
RSIP	7,059	$214,200,000	60,000
EEP – Battery Storage[1]	500	$5,500,000	3,000
Total	**7,559**	**$219,700,000**	**63,000**



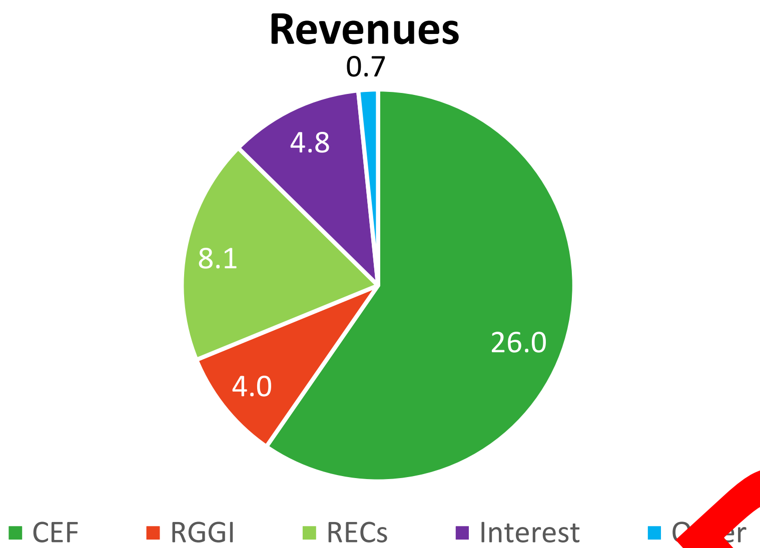
Financing Programs

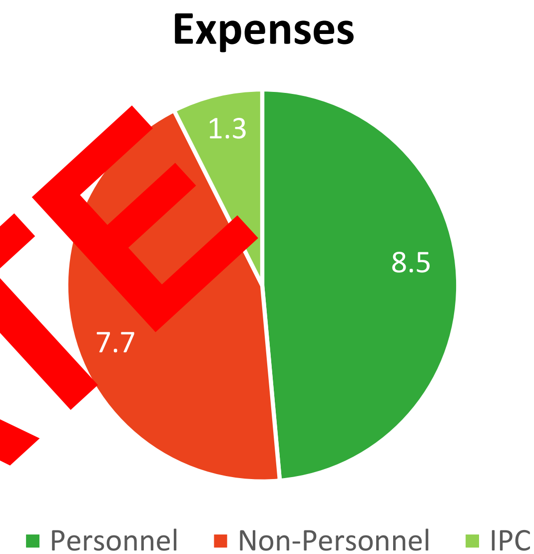
Products / Projects	Projects	Total Investment	Installed Capacity (kW)
C-PACE	56	$22,000,000	5,600
Green Bank Solar PPA	34	$28,125,000	12,700
SBEA	1,000	$20,000,000	-
Smart-E	540	$7,182,000	500
Solar for All	615	$17,202,165	4,200
Multifamily Predev	2	$140,000	-
Multifamily Term	9	$1,493,000	300
Multifamily Catalyst	2	$110,000	-
Strategic Investments	3	$10,000,000	-
Total	**2,241**	**$100,927,165**	**21,000**

In FY 2020, the Connecticut Green Bank will **invest $54.4 MM** in incentive and financing programs to **attract $245.2 MM in private investment** to **support over 9,000 projects** and **over 75 MW of clean energy** deployment

Connecticut Green Bank

FY 2020 Budget ($MM's)





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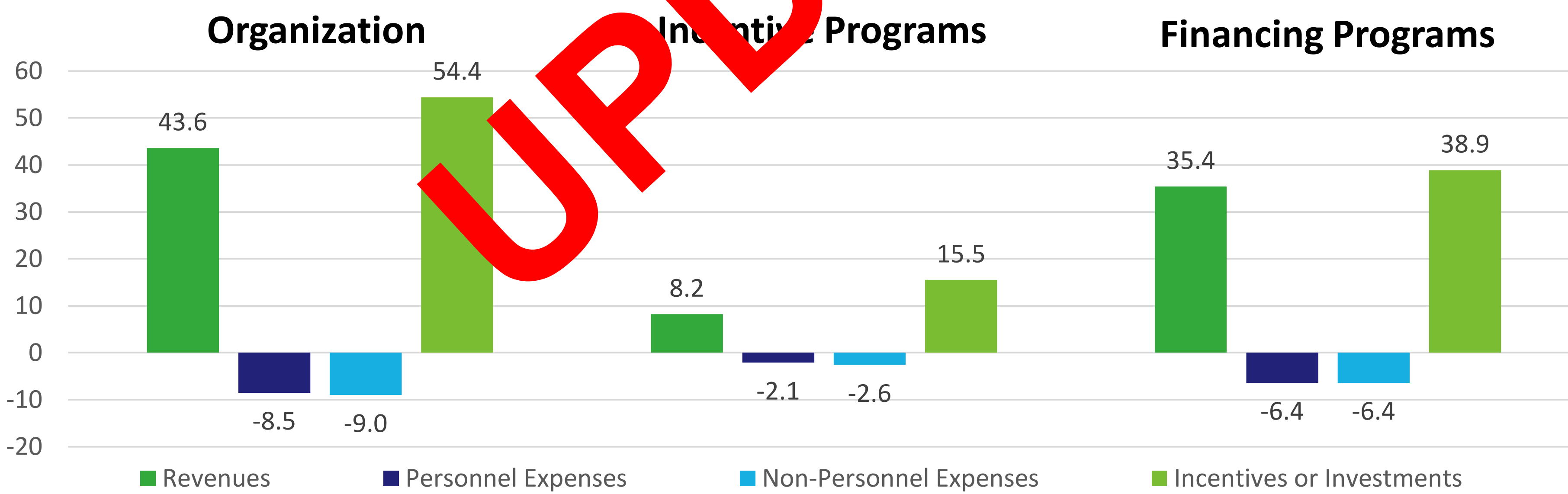

Connecticut Green Bank

CONNECTICUT GREEN BANK

FY 2020 Societal Impact from Investment

UPDATE

INVESTMENT

Green Bank Investment

$54.4 MM

Private Investment

$245.2 MM

[$X] MM
individual income tax

[$Y] MM
corporate taxes

[$Z] MM
sales taxes

ECONOMIC DEVELOPMENT

[X] direct, indirect and induced job-years

families
8,000

businesses
1,100

ENVIRONMENTAL PROTECTION

CO_2
SOx
NOx

[X]
million tons of CO_2
which equals

[X]
tree seedlings grown for 10 years

or

[X]
passenger vehicles driven for one year

[$X]-[$Y] million of public health value created

Thank You

Connecticut Green Bank
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300 Main Street, 4th Floor, Stamford
(860) 563-0015
www.ctgreenbank.com

Connecticut Green Bank 2.0

From 1 to 2 Orders of Magnitude

Pocantico Conference Center of the Rockefeller Brothers Fund
February 6 - 7, 2019

CONNECTICUT
GREEN BANK

Pocantico Center of the Rockefeller Brothers Fund

In Attendance

Mark Allegrini, Sustainable Connecticut
Jessica Bailey, Greenworks Lending
David Cantor, Liberty Bank
Claire Coleman, Connecticut Fund for the Environment
Stuart Decew, Yale Center for Business and the Environment
Mackey Dykes, Connecticut Green Bank
Monica Eager, Dpict (co-facilitator)
Brian Farnen, Connecticut Green Bank
Bryan Garcia, Connecticut Green Bank
John Harrity, Roundtable on Climate and Jobs
John Humphries, Roundtable on Climate and Jobs
Bert Hunter, Connecticut Green Bank
Alex Kovtunenko, Connecticut Green Bank
Bob Lamb, Lamont Financial
Pat McDonnell, Avangrid
Jane Murphy, Connecticut Green Bank
Kerry O'Neill, Inclusive Prosperity Capital
Selya Price, Connecticut Green Bank
Dr. Jonathan Raab, Raab Associates (facilitator)
Cheryl Samuels, Connecticut Green Bank
Robert Schmitt, Connecticut Green Bank
Eric Shrago, Connecticut Green Bank
Catherine Smith, Connecticut DECD
Mary Sotos, Connecticut DEEP
Kim Stevenson, Connecticut Green Bank
Mary Evelyn Tucker, Yale University
Brenda Watson, Operation Fuel

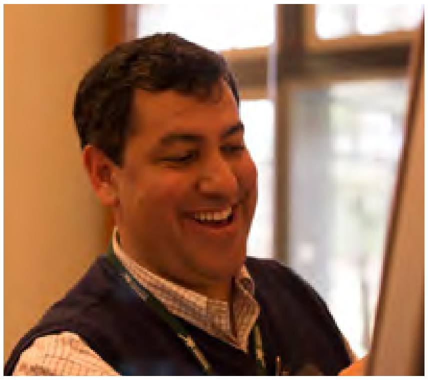
Connecticut Green Bank 2.0

From 1 to 2 Orders of Magnitude

The third aim of the Paris Agreement is "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development." With this in mind, the Connecticut Green Bank convened Connecticut leaders in February of 2019 to establish another ambitious strategy - for the Connecticut Green Bank to mobilize greater investment in Connecticut's green energy economy to combat climate change.

The conference was held with three objectives in mind:

1. Assessing progress achieved by Connecticut Green Bank to date;
2. Engaging staff, board members, and stakeholders in a facilitated dialogue to solicit insights and new ideas; and
3. Using key insights and ideas to help develop a framework for a multi-year comprehensive plan



Bryan Garcia, CT Green Bank

Through numerous "green storming" sessions, these leaders laid out a vision for an ideal sustainable future in Connecticut, exploring current and future products and programs and sources of funding, and identifying ways to "scale up" the Green Bank's impact. Their visions went beyond just growing the green energy economy, but encapsulated a better and more sustainable future for humanity. Together, we envisioned a future that not just recognizes the importance of green energy, but one that embraces the significance of inclusive prosperity.

In memorializing our discussions and outputs from this strategic retreat, we have the pieces needed to forge a clearer path forward to realize this future.

Bryan Garcia, President and CEO
Connecticut Green Bank


Participants in the main meeting room at the Pocantico Center of the Rockefeller Brothers Fund


Participants during the Welcome & Introductions session

Welcome & Introductions

Connecticut Green Bank staff and stakeholders first gathered at the Pocantico Center of the Rockefeller Brothers Fund in November 2011 to establish a vision for the Green Bank in 2020. More than seven years later, the Green Bank reconvened at the Pocantico Center to reflect on the past and envision an even bigger future. The Connecticut Green Bank 1.0 to 2.0 conference included stakeholders across a broad continuum, from senior staff and board members of the Green Bank, to leaders of financial service companies, utilities and state agencies, and other statewide leaders. Constant across this spectrum was a vision for a more sustainable future for Connecticut. Participants were asked what they saw as the most important ingredients for Connecticut to be on a glide path to a sustainable future by 2030 and the biggest potential impediments. While many themes emerged, the role the Green Bank can play in order to ensure such a future was woven throughout the conversation.

Ingredients for Success. Attendees identified a number of important ingredients for success including a sense of urgency, increased awareness and engagement, better access to capital and innovative financing, scalable and impactful ideas, smart transitions and more attractive markets for investors and innovators.

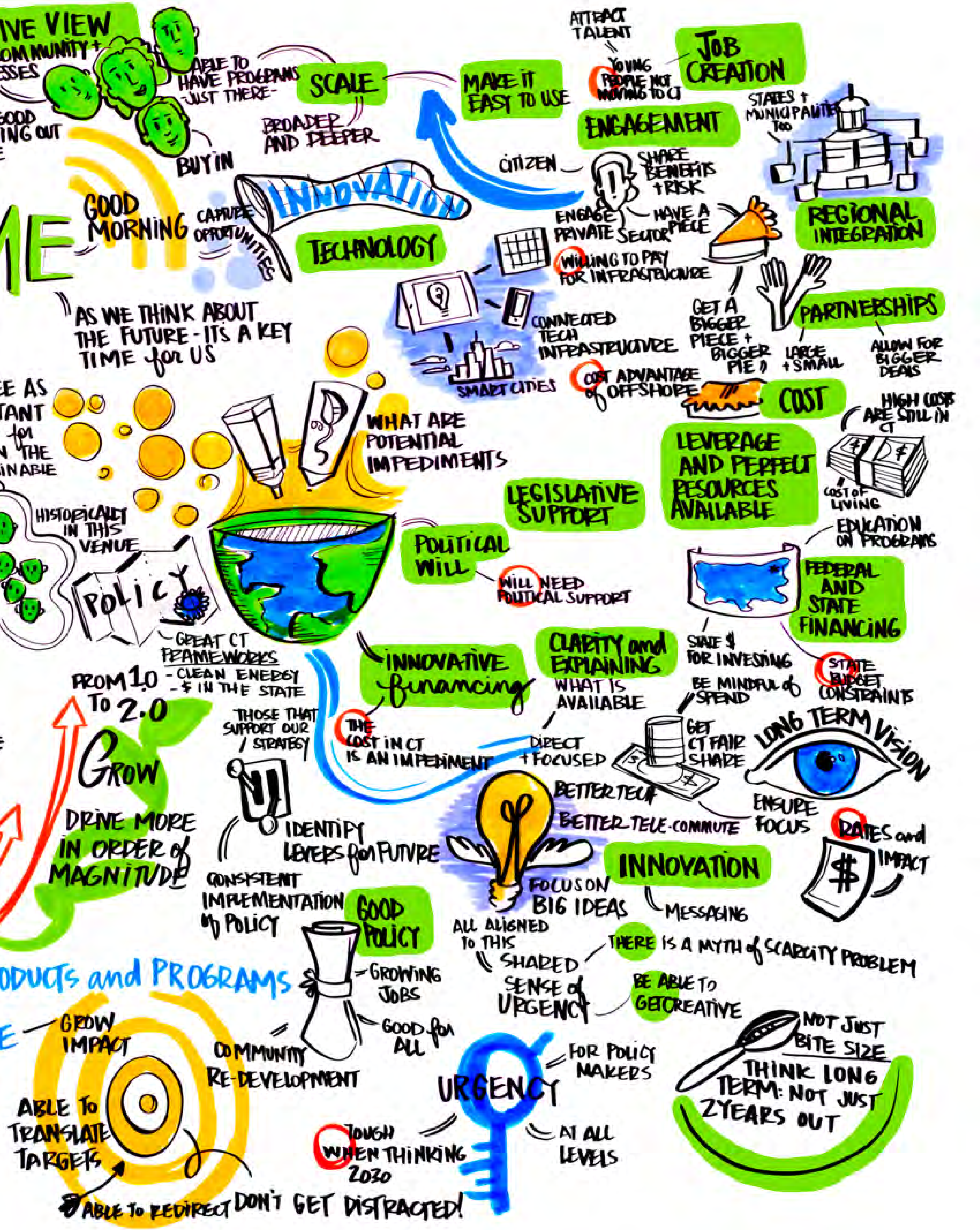
Potential Impediments. The State budget, political will, a focus on financial sustainability, a broadening scope, customer acquisition, rigid regulatory framework, and the myth of scarcity were all identified by the group as possible impediments to success and progress.

John Harrity, Roundtable on Climate and Jobs

Monica Eager, Dpict

Eric Shrago & Bryan Garcia, CT Green Bank, Dr. Jonathan Raab, Raab Associates

Claire Coleman, CT Fund for the Environment



IVE VIEW
OMMUNITY +
SSES
ABLE TO HAVE PROGRAMS -JUST THERE-
SCALE
BROADER AND DEEPER
BUY IN
MAKE IT EASY TO USE
ATTRACT TALENT
YOUNG PEOPLE NOT MOVING TO CT
JOB CREATION
ENGAGEMENT
STATES + MUNICIPALITIES TOO
CITIZEN
SHARE BENEFITS + RISK
INNOVATION
GOOD MORNING
CAPTURE OPPORTUNITIES
TECHNOLOGY
ENGAGE PRIVATE SECTOR
HAVE A PIECE
WILLING TO PAY FOR INFRASTRUCTURE
REGIONAL INTEGRATION
AS WE THINK ABOUT THE FUTURE - ITS A KEY TIME for US
CONNECTED TECH INFRASTRUCTURE
SMART CITIES
GET A BIGGER PIECE + BIGGER PIE!
PARTNERSHIPS
LARGE + SMALL
ALLOW FOR BIGGER DEALS
COST ADVANTAGE of OFFSHORE
COST
HIGH COSTS ARE STILL IN CT
COST OF LIVING
WHAT ARE POTENTIAL IMPEDIMENTS
LEGISLATIVE SUPPORT
LEVERAGE AND PERFECT RESOURCES AVAILABLE
EDUCATION ON PROGRAMS
HISTORICALLY IN THIS VENUE
POLICY
GREAT CT FRAMEWORKS
- CLEAN ENERGY
- $ IN THE STATE
POLITICAL WILL
WILL NEED POLITICAL SUPPORT
FEDERAL AND STATE FINANCING
STATE $ FOR INVESTING
STATE BUDGET CONSTRAINTS
FROM 1.0 TO 2.0
INNOVATIVE financing
CLARITY and EXPLAINING
WHAT IS AVAILABLE
BE MINDFUL of SPEND
THOSE THAT SUPPORT OUR STRATEGY
THE COST IN CT IS AN IMPEDIMENT
DIRECT + FOCUSED
GET CT FAIR SHARE
LONG TERM VISION
GROW
BETTER TECH
BETTER TELE-COMMUTE
ENSURE FOCUS
RATES and IMPACT
DRIVE MORE IN ORDER of MAGNITUDE
IDENTIFY LEVERS for FUTURE
INNOVATION
MESSAGING
CONSISTENT IMPLEMENTATION of POLICY
GOOD POLICY
FOCUS ON BIG IDEAS
ALL ALIGNED TO THIS
SHARED SENSE of URGENCY
THERE IS A MYTH of SCARCITY PROBLEM
BE ABLE TO GET CREATIVE
ODUCTS and PROGRAMS
GROWING JOBS
GOOD for ALL
GROW IMPACT
COMMUNITY RE-DEVELOPMENT
NOT JUST BITE SIZE
THINK LONG TERM: NOT JUST 2 YEARS OUT
FOR POLICY MAKERS
URGENCY
AT ALL LEVELS
ABLE TO TRANSLATE TARGETS
TOUGH WHEN THINKING 2030
ABLE TO REDIRECT
DON'T GET DISTRACTED!

From Green Bank 1.0 to Green Bank 2.0

Following a review of Green Bank 1.0 - the history, purpose, vision, mission and goals, as well as the structure, business units and performance of Connecticut Green Bank from July 2011 through December 2018 - participants were presented with a vision for Green Bank 2.0. This vision included:

Increasing investment in Connecticut. Scaling up investment another order of magnitude from $80/person/year to $850/person/year for Connecticut to meet the level of investment highlighted by the UN Sustainable Development Goals;

Carbon neutrality by 2050. Supporting Governor Lamont's vision of carbon neutrality by 2050, building on the leadership of his predecessors in establishing policies and framework to support clean energy deployment and mitigate climate change; and

Environmental sustainability. Recognizing the work of others (NY, RI, UK, etc.) in adapting the green bank model to other environmental infrastructure sectors (waste and recycling, water, agriculture, land conservation, parks, resiliency, etc.).

Brian Farnen, CT Green Bank

Participants were enthusiastic about the ongoing leadership role that Connecticut Green Bank must play in creating innovative, scalable solutions that can be replicated in the state and around the world. The vision for Green Bank 2.0 sparked a discussion among participants with many themes emerging:

Financial sustainability. The Green Bank, now facing new constraints and under pressure to make financial returns that lead to organizational sustainability, needs to establish investment targets that 1) drive ROI and 2) continue to leverage public funds with multiples of capital investment.

Addressing climate change "wedges." The development of markets for technologies that have the potential to help Connecticut meet its 2050 climate change goals present big opportunities. These market "wedges" include zero emission vehicles, battery storage and carbon free clean energy, renewable heating and cooling, and resiliency infrastructure (such as fuel cells and microgrids).

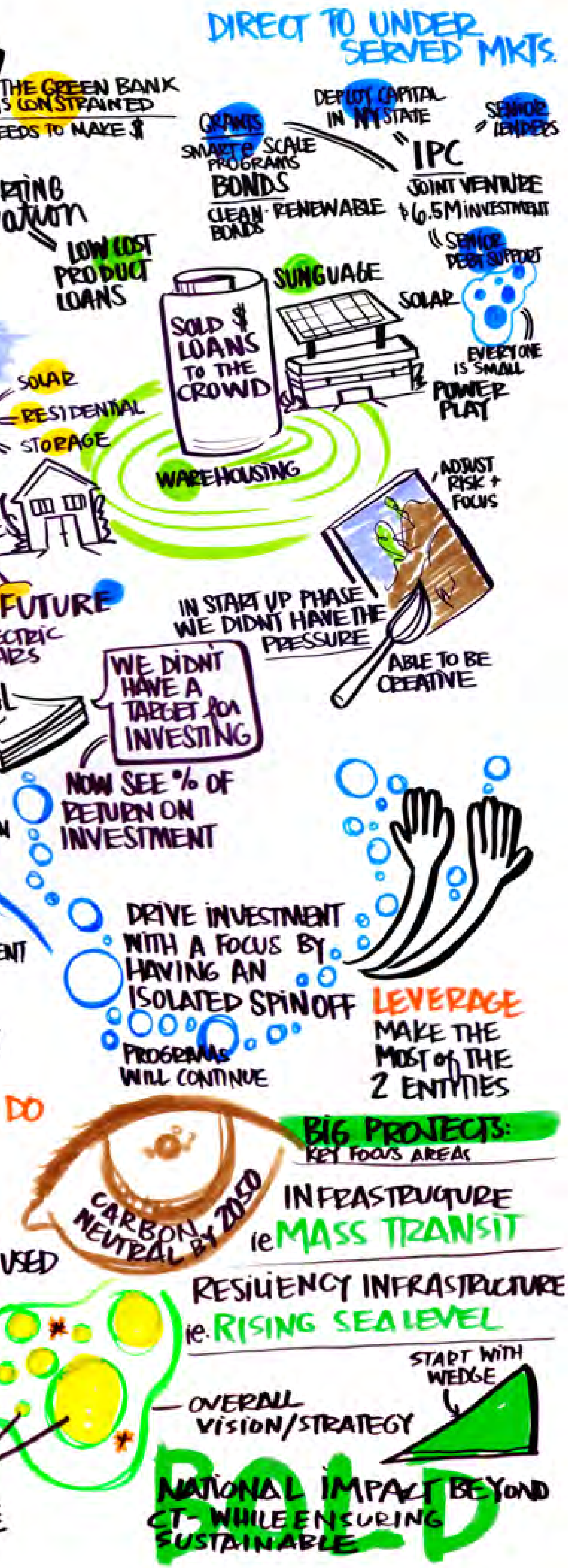
"Green" leadership and advocacy. Connecticut Green Bank's role as a catalyst and leader, raising awareness for and defining "green" in the U.S., will continue to be important. The ability to expand awareness of green bonding mechanisms, collect and analyze data, develop impact metrics, and communicate results to investors and citizens can have far-reaching effects.

Underserved Markets. Low income households, nonprofits, small businesses, and other underserved markets need the Green Bank's support in attracting private investment and ensuring inclusive prosperity. The Green Bank can make big impacts by reducing perceived risks by private investors, piloting and scaling programs, and eliminating barriers to clean energy improvements.

Scale and Scope. The Green Bank has a unique ability to evolve and adapt by building on its strength's in financing and clean energy policy to scale-up investments in clean energy. However, broadening scope to include new markets (e.g., environmental infrastructure) would present new challenges.

Mary Sotos, DEEP (foreground), Eric Shrago, CT Green Bank (background)

MARGIN
HARD TO GET GREEN CERTIFICATION SEEN AS $ INVESTMENT BENEFIT
PROGRAMS
SOME ARE WORKING ON VERY SLIM MARGINS
SUSTAINABILITY
- NOT JUST BANKING
- INVESTMENT
- PENSIONS
ETC.
METRICS
THIS IS THE MOST IMPORTANT THING WE WILL DO!
POLICY
BE GREEN ADVOCATES INTERNALLY
ABLE TO ACCESS
DATA CONSOLIDATION
SUPPO
DELIVERED SUCCESS
ALL BANKS LIKE GREEN BANK OR
WE TAKE ON GREEN FUTURE
TOOLS
ABLE TO USE DATA TO INACT
Change
INCUBATE FOR NATIONAL APPLICATION
WIND + HYDRO FUEL CELLS
TECHNIQUES
TECH
IF WE DON'T LEAD NO ONE ELSE WILL
MODEL 1.0
WE ENVISIONED
CLEAN ENERGY AVAILABILITY
THINK ABOUT HOW WE BUILD THE PLANE WHILE FLYING
LEAD THE GREEN BANK MOVEMENT
HEALTH HOME
IT'S AN AGE-THING PEOPLE ARE NOT ALWAYS PLUGGED IN
THINK ABOUT SCALE
MODEL THAT HAS BEEN USED for + by others
ACCELERATING PRIVATE INVESTMENT and CAPITAL
ATTRACT and DEPLOY
CAPITA
INTEREST IN GREEN: USA
LEVERAGE PUBLIC FUNDS
SCALE OUT...
THINK ABOUT WHERE WE ARE HEADED
SCALE UP...
NEED FOR MORE KNOWLEDGE + EDUCATION INSIDE BANKS
TODAY + TOMORROW THINK BIG AGAIN
SEE THE NEED + DO THE CALCULATION
FLOOD CONTROL
NOT JUST CLEAN ENERGY
PARKS + REC
GO BEYOND WHERE WE think we can
2.0
ENSURE OUR VISION IS BIG ENOUGH
NOTICE SHIFTS
ADAPT
INVESTMENT CAPITAL + CLEAN ENERGY
FLEET PURCHASING
BE ABLE TO GROW TO/BY MAGNITUDE
BALANCE COMPETITION OF FOCUS
WASTE + RECYCLING
CLEAN WATER
MORE ON THE GROUND ie SOLAR IN CT
STILL TO
BEING USED WORLDWIDE
MODEL
CAN BE APPLIED TO MANY ARES
CLEAR VISION
ENSURE $ BEING DEPLOYED IS WELL
FOCUSED ON GREEN
SPECIFICALLY WHAT WE CAN DO IN CT
CORE
IS IT SHIFTS?
IS IT EVOLVE?
ENSURE CAPITAL INVESTMENTS APPEAR - EASY + ABLE TO INTEGRATE
EVOLVING TO MEET NEW + EVOLVING NEEDS
EXPAND ON THE EDGES
BUILD ON OUR STRENGTHS
- FINANCING
- POLICY
TOOLS NEEDED
- WHAT ADDS VALUE TO SOCIETY
ROLE FOR MULTIPLE ENTITIES



Bert Hunter, CT Green Bank

Brian Farnen, CT Green Bank

David Cantor, Liberty Bank

Existing Products and Programs

After participants had outlined both challenges and opportunities in transitioning to Green Bank 2.0, the focus turned to existing products and programs offered by Connecticut Green Bank in partnership with private investments, including:

- **Residential Solar Investment Program -** a statutorily required program that uses a declining incentive block structure to support 300 MW of behind-the-meter residential solar PV;
- **Solar for All -** an innovative solar PV lease and energy efficiency energy savings agreement financing product targeted at low-to-moderate income families using a special RSIP incentive;
- **Energize CT Smart-E Loan -** a credit enhancement program with community banks & credit unions offering low cost, long-term financing for measures supporting the Comprehensive Energy Strategy;
- **Multifamily Programs -** a program that includes a variety of pre-development and term loan financing products for affordable multifamily properties;
- **C-PACE -** a commercial, industrial and institutional financing program that uses a benefit assessment mechanism to provide low cost, long-term financing for measures supporting the Comprehensive Energy Strategy;
- **Green Bank Solar PPA -** a commercial, industrial and institutional financing product that uses an innovative power purchase agreement structure, in combination with C-PACE where appropriate, to reduce the burden of energy costs through the deployment of solar PV; and
- **Project Finance -** specific opportunities created to support in-state large-scale projects, including anaerobic digesters, small run-of-the-river hydro, grid tied fuel cells and combined heat and power projects requiring structured financial agreements.

Kerry O'Neill, Inclusive Prosperity Capital and Stuart Decew, CBEY

Following a discussion on the existing products and programs, participants tackled questions that will impact how the Green Bank considers future decisions regarding the existing product portfolio.

How should the Green Bank decide to expand programs vs. transitioning them to the private sector? What indicators can help make these decisions? How should sustainability factor into the process? Participants agreed that the Green Bank would need to consider investment criteria in order to determine when to enter, expand, or exit a product or program and introduced a number of other important themes:

Risk and Return. Participants recognized the importance of risk and return to ensure the Green Bank's financial sustainability, while at the same time ensuring that private capital is not crowded out as the Green Bank's leverage ratio may decline.

Speed and Penetration. The market potential across the Green Bank's suite of products and program is still substantial. Participants recognized that there are increasing customer acquisition challenges and costs, but that the Green Bank needs to accelerate activities and achieve deeper penetration in the markets it serves.

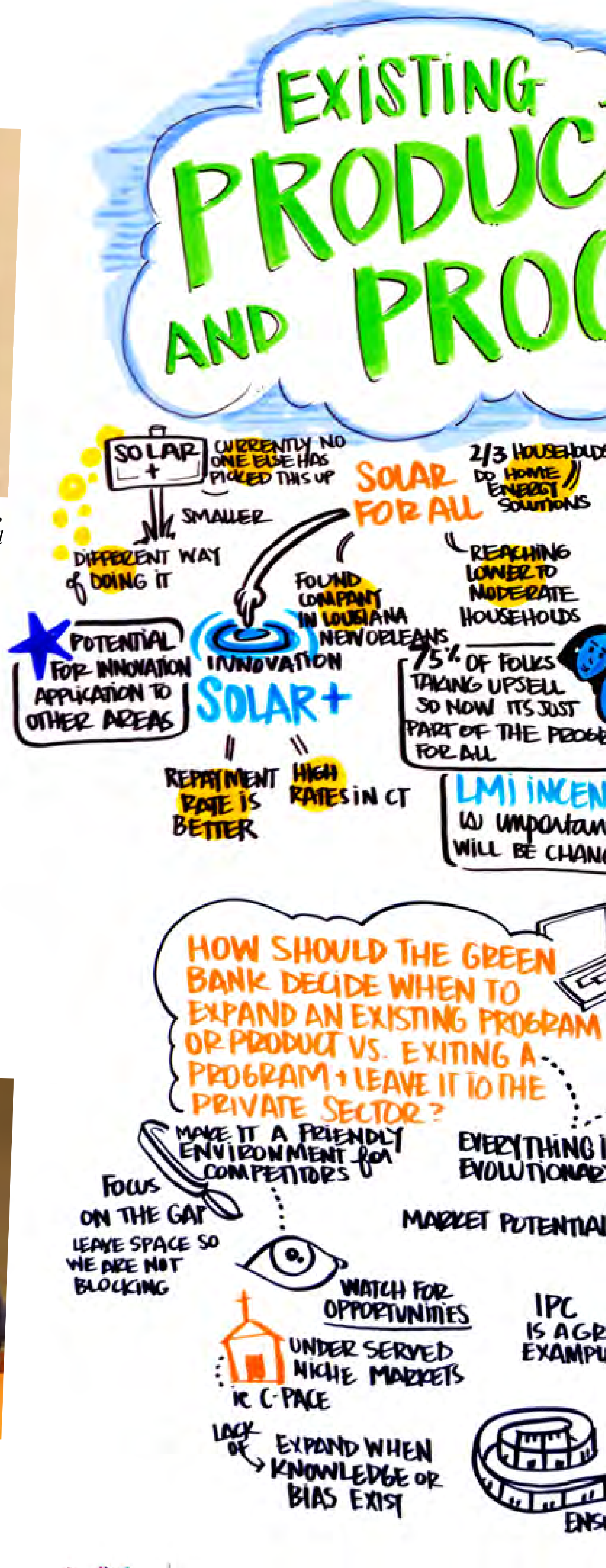
Replicability and Scalability. The climate crisis is an urgent one, and in order to make a substantial impact, participants acknowledged that products and programs needed to be replicable and scalable across the country.

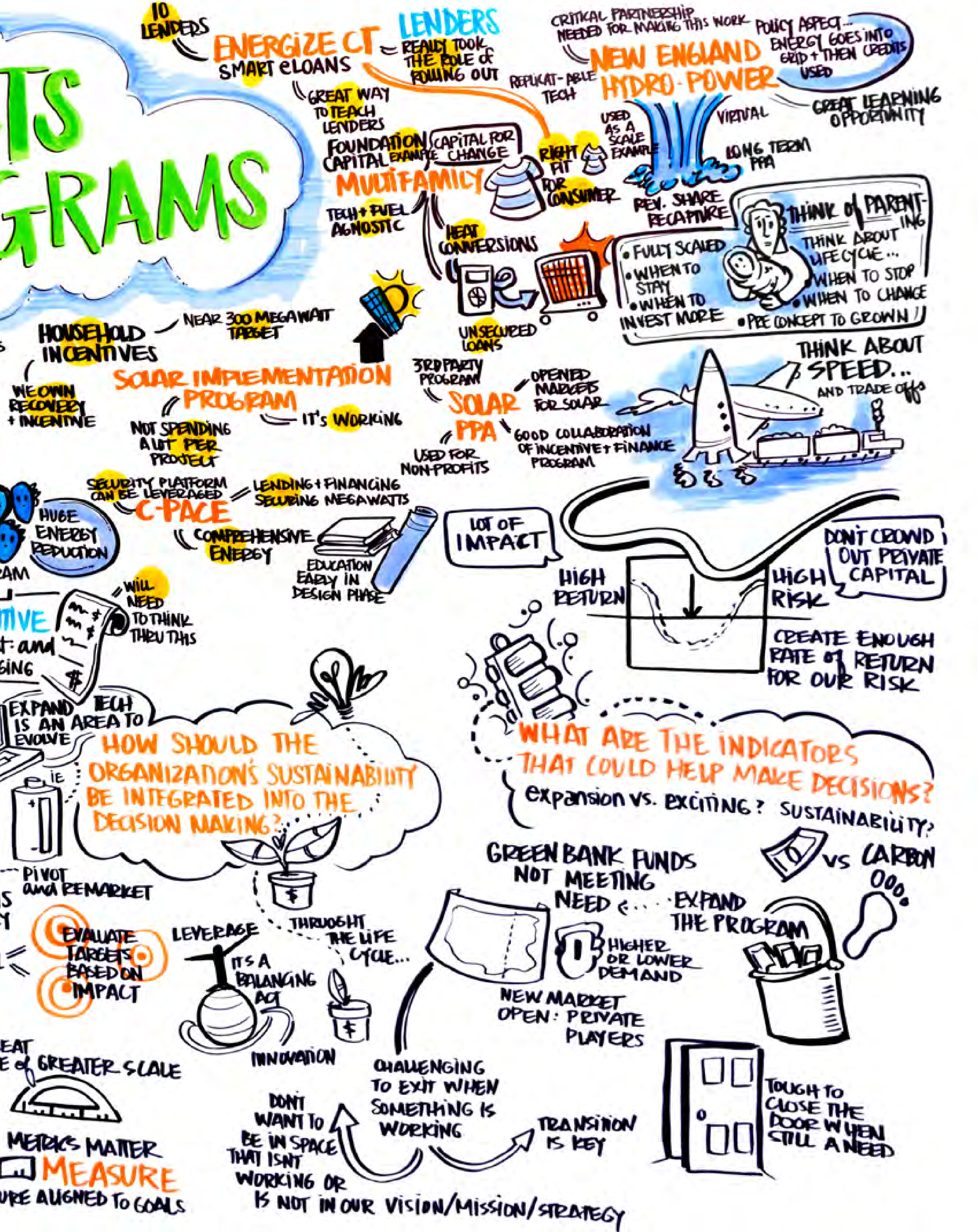
Catherine Smith, DECD

Kerry O'Neill, Inclusive Prosperity Capital and Brenda Watson, Operation Fuel

Alex Kovtunenko, CT Green Bank

Pat McDonnell, Avangrid and Stuart Decew, CBEY




TS
GRAMS
10 LENDERS
ENERGIZE CT SMART ELOANS
LENDERS
REALLY TOOK THE ROLE OF ROLLING OUT
GREAT WAY TO TEACH LENDERS
FOUNDATION CAPITAL EXAMPLE
CAPITAL FOR CHANGE
MULTIFAMILY
TECH + FUEL AGNOSTIC
HEAT CONVERSIONS
RIGHT FIT FOR CONSUMER
UNSECURED LOANS
CRITICAL PARTNERSHIP NEEDED FOR MAKING THIS WORK
NEW ENGLAND HYDRO-POWER
POLICY ASPECT... ENERGY GOES INTO GRID + THEN CREDITS USED
REPLICAT-ABLE TECH
USED AS A SCALE EXAMPLE
VIRTUAL
GREAT LEARNING OPPORTUNITY
LONG TERM PPA
REV. SHARE RECAPTURE
THINK OF PARENTING
THINK ABOUT LIFECYCLE...
• FULLY SCALED
• WHEN TO STAY
• WHEN TO INVEST MORE
• WHEN TO STOP
• WHEN TO CHANGE
• PRE CONCEPT TO GROWN
HOUSEHOLD INCENTIVES
NEAR 300 MEGAWATT TARGET
WE OWN RECOVERY + INCENTIVE
SOLAR IMPLEMENTATION PROGRAM
IT'S WORKING
NOT SPENDING A LOT PER PROJECT
3RD PARTY PROGRAM
SOLAR PPA
OPENED MARKETS FOR SOLAR
GOOD COLLABORATION OF INCENTIVE + FINANCE PROGRAM
USED FOR NON-PROFITS
THINK ABOUT SPEED... AND TRADE OFFS
SECURITY PLATFORM CAN BE LEVERAGED
C-PACE
LENDING + FINANCING SECURING MEGAWATTS
HUGE ENERGY REDUCTION
COMPREHENSIVE ENERGY
EDUCATION EARLY IN DESIGN PHASE
LOT OF IMPACT
DON'T CROWD OUT PRIVATE CAPITAL
HIGH RETURN
HIGH RISK
CREATE ENOUGH RATE OF RETURN FOR OUR RISK
RAM
TIVE
t and
SING
WILL NEED TO THINK THRU THIS
EXPAND TECH IS AN AREA TO EVOLVE
IE
HOW SHOULD THE ORGANIZATION'S SUSTAINABILITY BE INTEGRATED INTO THE DECISION MAKING?
WHAT ARE THE INDICATORS THAT COULD HELP MAKE DECISIONS?
expansion vs. EXCITING? SUSTAINABILITY?
VS CARBON
PIVOT and REMARKET
GREEN BANK FUNDS NOT MEETING NEED
EXPAND THE PROGRAM
HIGHER OR LOWER DEMAND
NEW MARKET OPEN: PRIVATE PLAYERS
EVALUATE TARGETS BASED ON IMPACT
LEVERAGE
THROUGHT THE LIFE CYCLE...
IT'S A BALANCING ACT
INNOVATION
EAT
E of GREATER SCALE
CHALLENGING TO EXIT WHEN SOMETHING IS WORKING
DON'T WANT TO BE IN SPACE THAT ISN'T WORKING OR IS NOT IN OUR VISION/MISSION/STRATEGY
TRANSITION IS KEY
TOUGH TO CLOSE THE DOOR WHEN STILL A NEED
METRICS MATTER
MEASURE
URE ALIGNED TO GOALS

Potential New Products and Services

After discussing existing products and programs, participants turned to an exploration of potential new products and services. A couple of "big ideas" were presented to spark the discussion and push participant's thinking outside of the box:

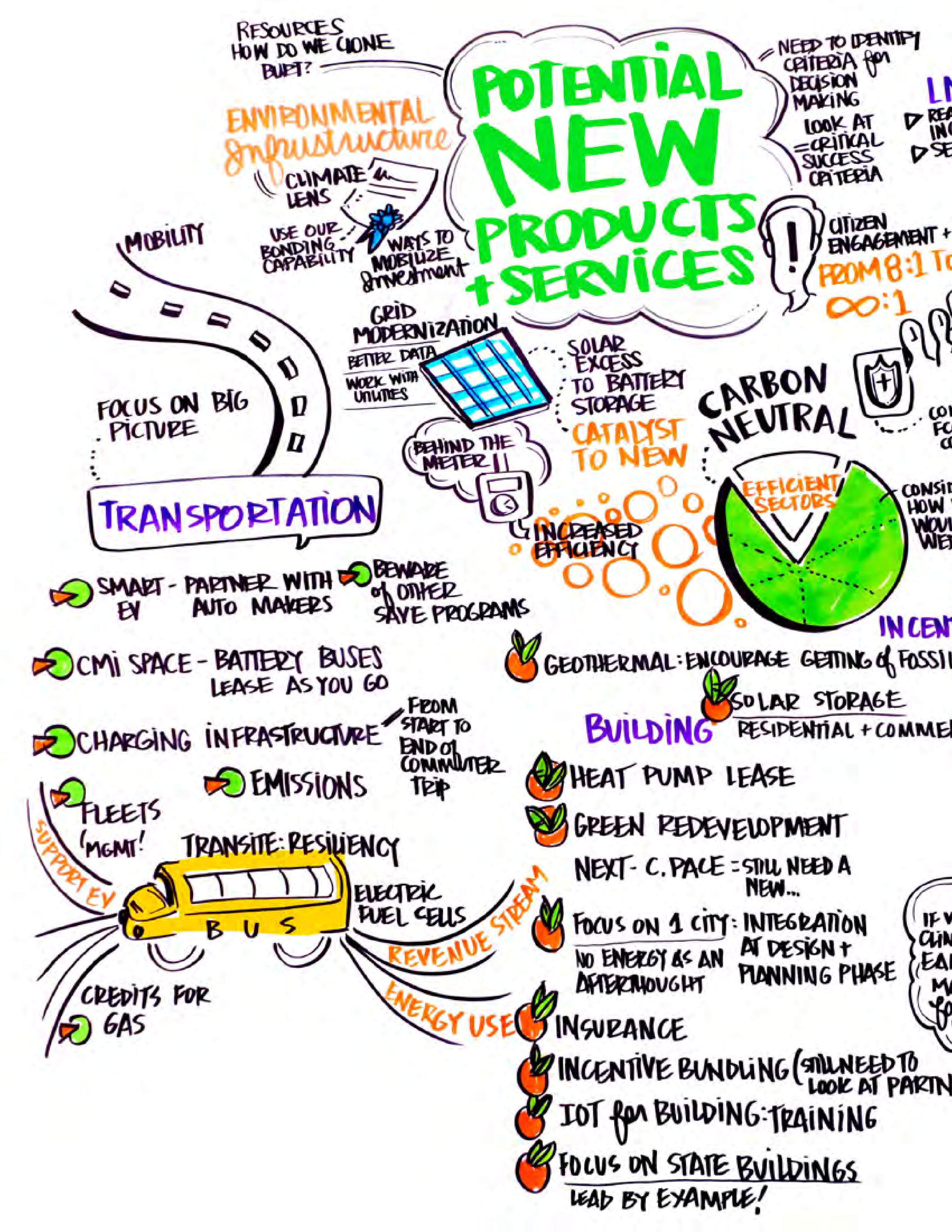
- **Grid Modernization and Decarbonization.** This technology-focused vision leverages behind-the-meter renewable energy resources such as solar PV in combination with battery storage to maximize benefits for customers and ratepayers. Including zero emission vehicles and zero emission heating and cooling technologies such as air source and ground source heat pumps could be integral in addressing climate change;
- **Citizen Engagement and Investment Platform.** By creating a public awareness and engagement program in partnership with Sustainable CT, the Green Bank could enlist local citizens to financially support community-based projects, building off the Green Bank's crowd investing experience. This would providing impact investing opportunities that raise capital to support projects, while also defending the Green Bank through bond issuances and growing a supportive base of citizens;
- **Environmental Infrastructure.** Leveraging a public finance approach to scale-up the Green Bank's investment model beyond "clean energy" through use of its public financing capabilities - such as bonding - that would support "environmental infrastructure" projects (water, waste, recycling, etc.).

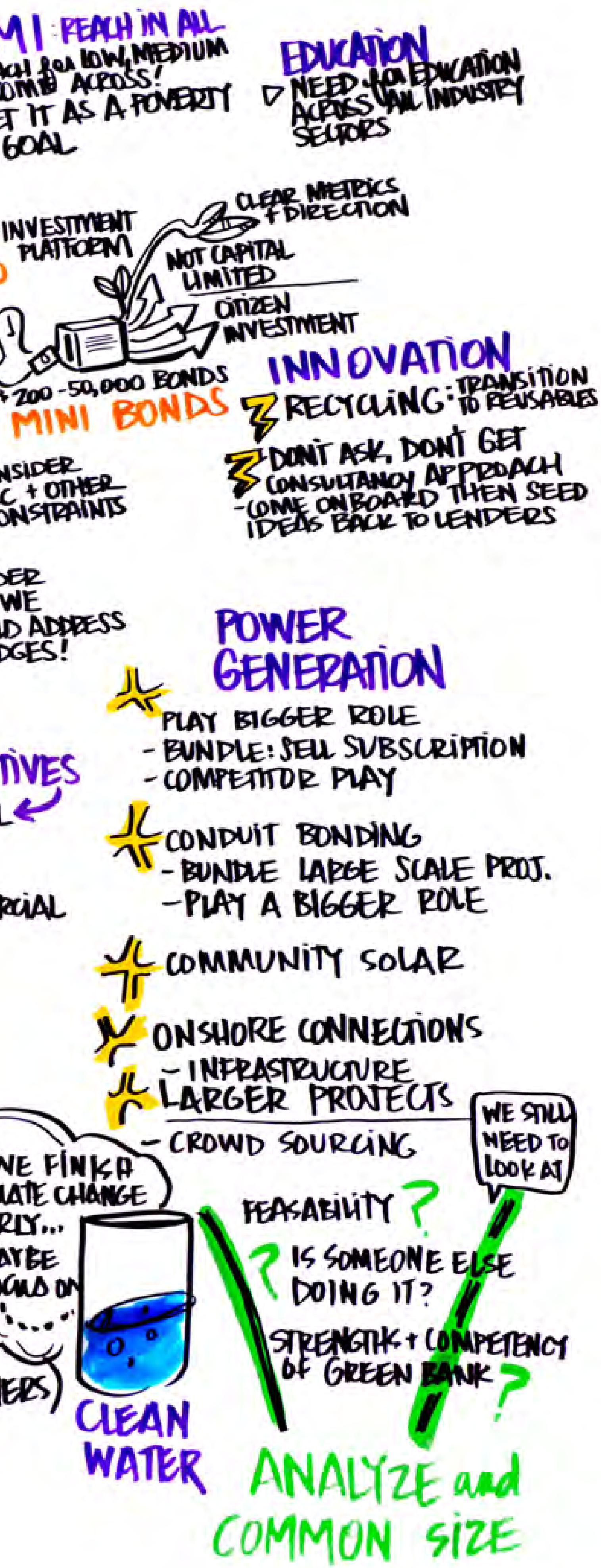
Stuart Decew, CBEY

Participants had no shortage of "big ideas" of their own. When asked what the best candidates for potential new Green Bank products and programs were and why, and whether these ideas could fit with the Green Bank's needs for organizational sustainability, they outlined a number of concepts for further exploration regarding new products that would serve the Green Bank's objectives:

- **Address Climate Change "Wedges" -** given the urgency of the climate change problem, solutions that address key, substantial market "wedges" with financial innovation including community solar, zero emission buses and refueling infrastructure and heat pumps;
- **Deploy Technologies that Empower and Motivate Customers -** energy usage meters and devices that can enable customers to better understand their needs based on season and time, supporting time of use rates and other strategies that help customers realize and verify savings opportunities;
- **Bonding -** use of the Green Bank's bonding capability to raise capital, while ensuring that environmental infrastructure projects are viewed through the lens of mitigating climate change;
- **Insurance -** an insurance product that insures energy savings could help increase adoption among customers concerned about investment and technology risks;
- **Energy Savings Agreements -** pay as you save model can be more palatable to customers and could help with customer acquisition challenges;
- **Packages -** financing solutions and insurance or savings guarantees that increase customer confidence and reduce their risk;
- **Bundling -** technology and solution bundling (such as a Smart-E bundle);
- **R-PACE -** potential future solution requiring regulatory clarity at the federal level and comfort from the mortgage industry;
- **Investment Criteria -** an important next step for decision making in introducing new products.

John Humphries, Roundtable on Climate and Jobs


POTENTIAL NEW PRODUCTS + SERVICES
RESOURCES HOW DO WE CLONE BURT?
NEED TO IDENTIFY CRITERIA for DECISION MAKING
LOOK AT = CRITICAL SUCCESS CRITERIA
ENVIRONMENTAL Infrastructure
CLIMATE LENS
USE OUR BONDING CAPABILITY
WAYS TO MOBILIZE Investment
MOBILITY
CITIZEN ENGAGEMENT +
FROM 8:1 TO
∞:1
GRID MODERNIZATION
BETTER DATA
WORK WITH UTILITIES
SOLAR EXCESS TO BATTERY STORAGE
CATALYST TO NEW
BEHIND THE METER
INCREASED EFFICIENCY
CARBON NEUTRAL
EFFICIENT SECTORS
FOCUS ON BIG PICTURE
TRANSPORTATION
SMART - EV
PARTNER WITH AUTO MAKERS
BEWARE of OTHER SAVE PROGRAMS
CMI SPACE - BATTERY BUSES LEASE AS YOU GO
CHARGING INFRASTRUCTURE
FROM START TO END of COMMUTER TRIP
EMISSIONS
FLEETS 'MGMT'
SUPPORT EV
TRANSITE: RESILIENCY
B U S
ELECTRIC FUEL CELLS
REVENUE STREAM
ENERGY USE
CREDITS FOR GAS
INCENT
GEOTHERMAL: ENCOURAGE GETTING of FOSSI
SOLAR STORAGE
RESIDENTIAL + COMME
BUILDING
HEAT PUMP LEASE
GREEN REDEVELOPMENT
NEXT - C. PACE = STILL NEED A NEW...
FOCUS ON 1 CITY: INTEGRATION AT DESIGN + PLANNING PHASE
NO ENERGY AS AN AFTERTHOUGHT
INSURANCE
INCENTIVE BUNDLING (STILL NEED TO LOOK AT PARTN
IOT for BUILDING: TRAINING
FOCUS ON STATE BUILDINGS
LEAD BY EXAMPLE!




David Cantor, Liberty Bank and Bert Hunter, CT Green Bank


Mark Allegrini, Sustainable Connecticut


John Humphries, Roundtable on Climate and Jobs


Inclusive
CAPITALISM:
FAITH AND FINANCE IN
THE GREEN ECONOMY
· MARY EVELYN
TUCKER
THEY GO
HAND IN
ENVIRONMENTAL AN
HUMANITARIANISM
MET AT A
REAL NETWOR
EVENT.
NEW
APPROACH
NEED FRESH
APPROACHES
NEED VALUES
AND PHILOSOPHY
BECAUSE of
PROGRAMS
ABLE TO
CONNECT
AND HEAL
CARE FO
THE PO
PROGRAMS
FOR THE ELDERLY
AND YOUNG
AS CHINA
+ INDIA
change
THE WORLD CHANGES
PRINCIPLES
STRATEGY
TACTICS
CREATE AN
INTER-GENERAT
HANDSHAKE
STEP
BACK and THINK...
WHAT KIND OF WORLD
DO WE WANT TO
CREATE
WE KNOW
TECHNOLOGY

Inclusive Capitalism: Faith and Finance in the Green Economy

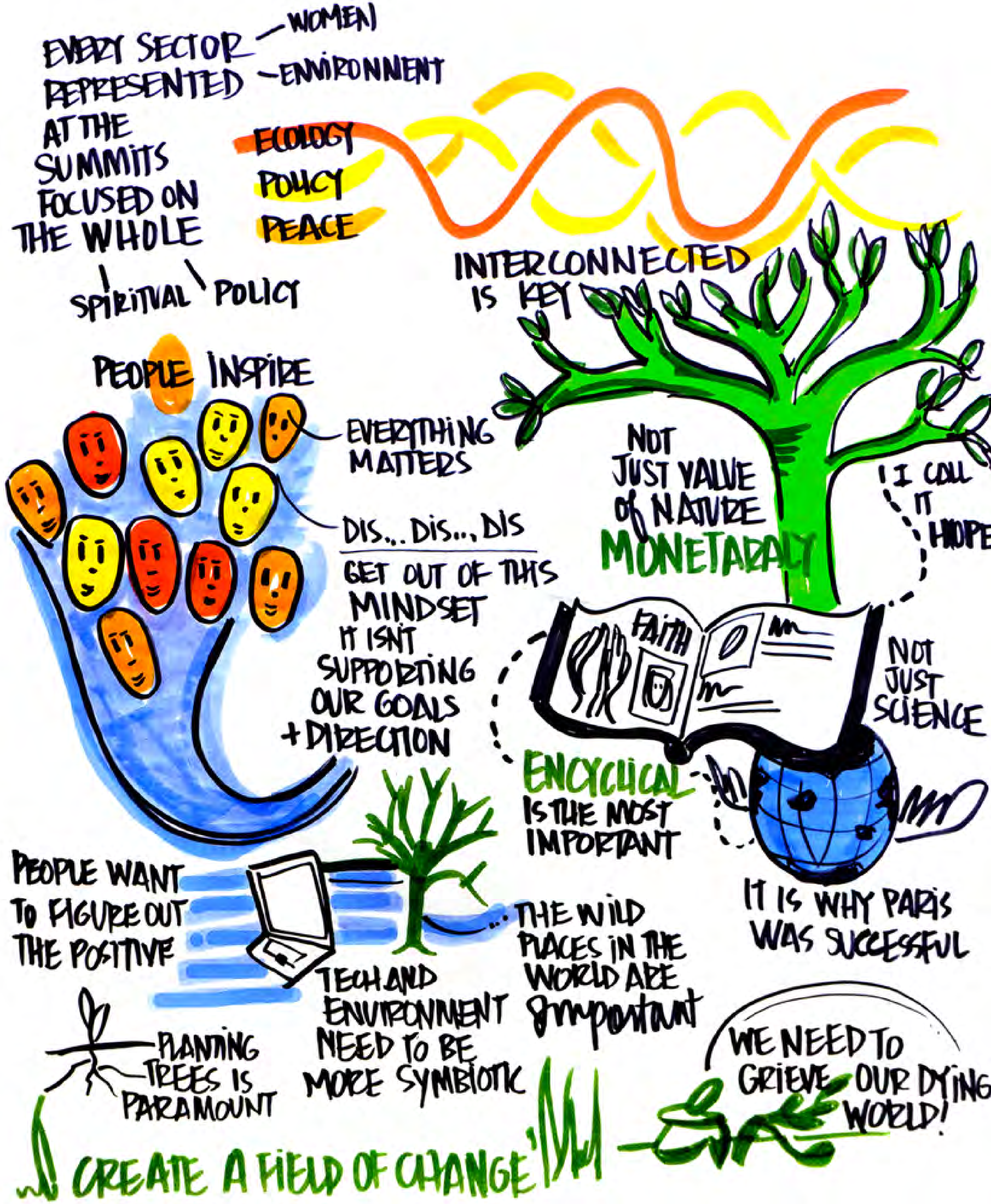
At the conclusion of the first day, Mary Evelyn Tucker, Senior Lecturer and Senior Research Scholar at Yale University delivered a keynote address entitled “Inclusive Capitalism: Faith and Finance in the Green Economy.” Drawing on her spiritual knowledge of the world’s religions, she provided a powerful vision of “hope.” The themes and messages delivered through this keynote will inform the creation of a vision statement for the Green Bank’s 2020 Comprehensive Plan. Mary Evelyn has been involved in ongoing conversations through the Renewable Energy and International Law Network on the role of faith and finance, and was uniquely positioned to discuss the convergence of faith, finance, and sustainability - energizing the group for the next day of the conference. A number of powerful themes wove through Mary Evelyn’s narrative:

Build
Care
Community
Compass
Compassion
Connectedness
Creativity
Earth
Hope

Humanity
Inclusive
Inspire
Intergenerational
Moral
Movement
Nature
Peace
Planet

Prosperous
Responsibility
Spark
Spirit
Stories
Symbiotic
Together
Value
World

Bryan Garcia, CT Green Bank and Mary Evelyn Tucker, Yale University


EVERY SECTOR REPRESENTED AT THE SUMMITS FOCUSED ON THE WHOLE
WOMEN
ENVIRONMENT
SPIRITUAL
POLICY
ECOLOGY
POLICY
PEACE
INTERCONNECTED IS KEY
PEOPLE INSPIRE
EVERYTHING MATTERS
DIS... DIS... DIS
GET OUT OF THIS MINDSET
IT ISN'T SUPPORTING OUR GOALS + DIRECTION
NOT JUST VALUE OF NATURE
MONETARALY
I CALL IT HOPE
FAITH
NOT JUST SCIENCE
ENCYCLICAL IS THE MOST IMPORTANT
IT IS WHY PARIS WAS SUCCESSFUL
PEOPLE WANT TO FIGURE OUT THE POSITIVE
TECH AND ENVIRONMENT NEED TO BE MORE SYMBIOTIC
THE WILD PLACES IN THE WORLD ARE important
PLANTING TREES IS PARAMOUNT
WE NEED TO GRIEVE OUR DYING WORLD!
CREATE A FIELD OF CHANGE


DEATH of THE WORLD BEFORE DEATH of CAPITALISM
ENVIRONMENTAL + ECONOMIC GROWTH
EPA
WE CANT IMAGINE END OF ENVIRO
STRONG DRIVE FOR CHANGE
WARNING
ENVIRONMENTAL CHANGE
NEED LONG TERM FOCUS AND LONG TERM CHANGE
WE NEED A DOC TO SIGN
82" YES TO CHANGE
CONNECT BACK... TO KEY DATES
72'
62'
THE SPARK
CHARTER
LIGHT THE FIRE
SPARKED CHANGE
THE CREATIVITY
WHAT IS OUR MORALE COMPASS?
ENERGY IS KEY
WHAT WILL WE GIVE OUR LIVES TO...
WHAT DRIVES US?!
TAP INTO ENERGY
SUN
WATER
AIR
THE ENERGY OF THE EARTH
ALIGNING the ELEMENTS
BY THE SEASON
WORK + PLANT WITH THEM
CONNECT TO OUR SPIRIT
ASK THE ENVIRONMENTAL QUESTION
SPIRIT
PEACE
VALUE

COME TOGETHER IN HOPE

IT WON'T BE EASY

THIS IS THE WORK WE MUST BE CALLED TO DO!

THERE WILL BE THINGS THAT PULL US APART

WE NEED TO BUILD A COMMUNITY

POLITICAL
RELIGIOUS
GENERATIONAL
RACIAL

LEADERS

HAVE SOMETHING PAIRING

DOCTRINES

PEOPLE, SCIENCE, ECONOMICS + COMPASSION

NEED TO SHARE THE STORIES

THERE IS NO SILVER BULLET

THIS IS

WE NEED MORE

LITERATURE ON THE ENVIRONMENT

ENVIRO CHANGES

MAYBE THE MORE OBVIOUS IT IS - PEOPLE WILL ACT!

WHAT WILL THIS MEAN TO OUR CHILDREN AND THE NEXT GENERATIONS

SEEN AS MORE DIRE

PEOPLE ARE BAD ABOUT PLANNING FOR THE FUTURE

READ A MARY ELLIOTT POEM

SHE WAS THE POET OF THE ENVIRONMENT


LOOKING FOR CONNECTEDNESS
THEY FOCUS ON THE MOVEMENT
CORPORATE SOCIAL RESPONSIBILITY
THEY WANT TO SEE A CHANGE
PEOPLE ARE LOOKING FOR GREATER HOPE
WHY DON'T MORE PEOPLE CHANGE - ie EVs?
FOCUS
SUSTAINABILITY PROCESS + TACTICS
WHY ARE CHANGES SO SLOW?
NEED TO HAVE A FUNDAMENTAL SHIFT TO INDUSTRIES
THE SHIFT WILL ONLY HAPPEN WHEN CORPORATE AMERICA CHANGES
TELL THE PEOPLE STORY
IF WE DON'T COMMUNICATE HOW WE ARE CHANGING PEOPLES LIVES...THEY WON'T GET IT!
OUR SYSTEMS ARE HARMING SO MANY PEOPLE!

Investment Criteria

Participants started the second day delving further into investment criteria, a reoccurring theme from the first day. Determining what investment criteria should be applied to discern when to enter, expand or exit a product or program was outlined as a critical next step.

The groups sough to rate (low, medium, high) four different investment criteria:

- **GHG reduction;**
- **Return on investment for the Green Bank; and**
- **Underserved populations (e.g., LMI), and**
- **Cost savings.**

The groups then applied these investment criteria to three addressable "wedges" for climate change:

- **Grid scale solar PV or wind;**
- **High efficiency heat pumps for buildings, including renewable heating and cooling; and**
- **Electric and fuel cell buses and infrastructure.**

The participants identified that it is difficult to prioritize and rate investment criteria with a simple rating system from high to low, as it did not allow for enough differentiation. In addition, the three examples given didn't allow for project or program level specificity (such as grid-scale solar PV vs. community solar).

Bert Hunter, CT Green Bank

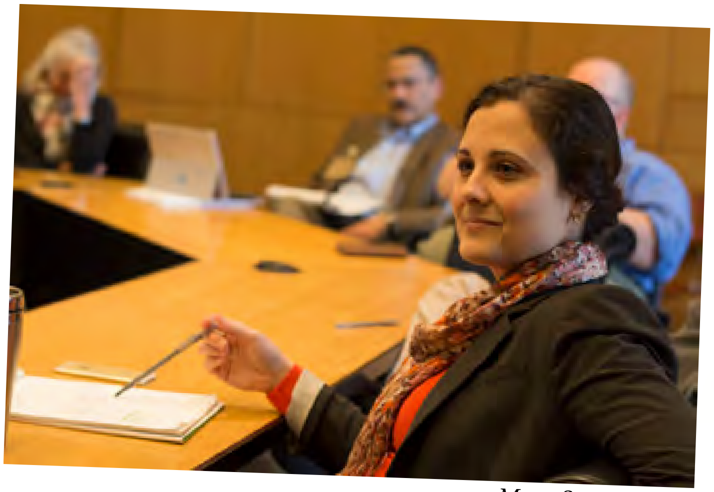
Participants also identified other potential challenges for the criteria themselves:

Investment Criteria	Challenges of Criteria
GHG Reduction	Total vs. Per Capita vs. Per $ Spent vs. Lifetime
Return on Investment for the Green Bank	Interest Rate and Tenor vs. Cash Flow vs. P&L
Underserved Populations	(none noted)
Cost Savings	• Customer or Ratepayer • Annual vs. lifetime • Positive cash flow

Throughout the discussions, participants came up with additional investment criteria that could be used to make decisions regarding products and programs in the future. Some of the criteria that participants believed should be considered included:

Additionality
Administrative Costs
Benefits
CO_2 Reduced / $1
Catalytic
Cost / Benefit (e.g., $ / GHG)
Create Jobs
Demand
Development Costs
Ease
Economic Impact
Financial Risk
Generate political capital
Health impact
Human capital
Market need
Political risk
Reductions in "wedge"
Replicability
Reputational Risk
Reputational Benefit
Scalability
Speed
Time

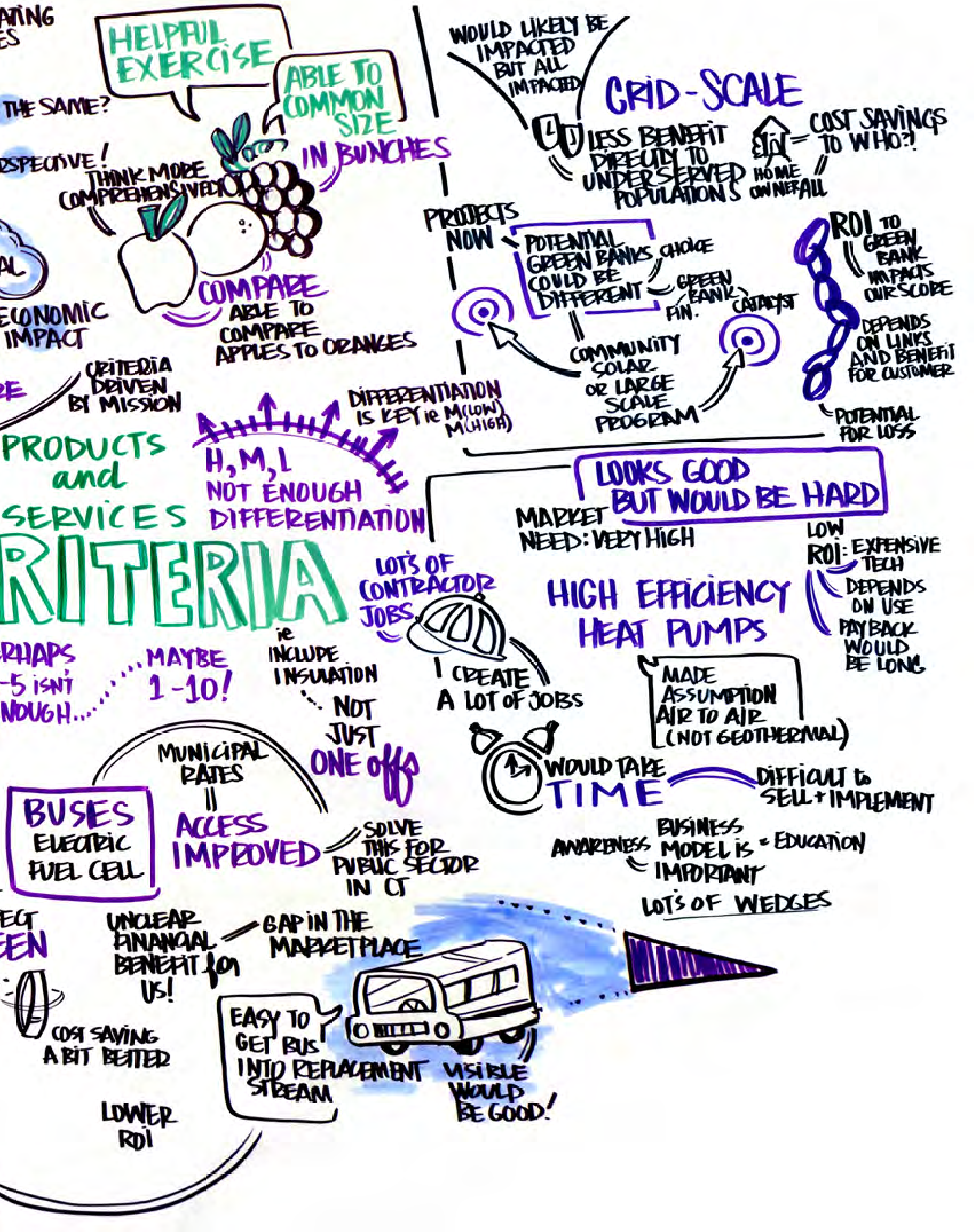
Bryan Garcia, CT Green Bank (foreground), Kim Stevenson, CT Green Bank (background)



Mary Sotos, DEEP

Bert Hunter, CT Green Bank

Bryan Garcia, CT Green Bank



ATING
ES
HELPFUL EXERCISE
ABLE TO COMMON SIZE
IN BUNCHES
THE SAME?
RSPECTIVE!
THINK MORE COMPREHENSIVELY
COMPARE
ABLE TO COMPARE APPLES TO ORANGES
ECONOMIC IMPACT
CRITERIA DRIVEN BY MISSION
PRODUCTS and SERVICES
H, M, L
NOT ENOUGH DIFFERENTIATION
DIFFERENTIATION IS KEY ie M(LOW) M(HIGH)
RITERIA
LOTS OF CONTRACTOR JOBS
RHAPS -5 ISN'T NOUGH...
...MAYBE 1-10!
ie INCLUDE INSULATION
NOT JUST ONE OFFS
CREATE A LOT OF JOBS
MUNICIPAL RATES
ACCESS IMPROVED
BUSES
ELECTRIC
FUEL CELL
SOLVE THIS FOR PUBLIC SECTOR IN CT
UNCLEAR FINANCIAL BENEFIT for US!
GAP IN THE MARKETPLACE
COST SAVING A BIT BETTER
EASY TO GET BUS INTO REPLACEMENT STREAM
VISIBLE WOULD BE GOOD!
LOWER ROI
WOULD LIKELY BE IMPACTED BUT ALL IMPACTED
GRID-SCALE
LESS BENEFIT DIRECTLY TO UNDERSERVED POPULATIONS
COST SAVINGS TO WHO?!
HOME OWNER ALL
PROJECTS NOW
POTENTIAL GREEN BANKS CHOICE COULD BE DIFFERENT
GREEN BANK
FIN.
CATALYST
COMMUNITY SOLAR OR LARGE SCALE PROGRAM
ROI TO GREEN BANK IMPACTS OUR SCORE
DEPENDS ON LINKS AND BENEFIT FOR CUSTOMER
POTENTIAL FOR LOSS
LOOKS GOOD BUT WOULD BE HARD
MARKET NEED: VERY HIGH
LOW ROI: EXPENSIVE TECH
DEPENDS ON USE
PAYBACK WOULD BE LONG
HIGH EFFICIENCY HEAT PUMPS
MADE ASSUMPTION AIR TO AIR (NOT GEOTHERMAL)
WOULD TAKE TIME
DIFFICULT to SELL + IMPLEMENT
AWARENESS
BUSINESS MODEL IS IMPORTANT
= EDUCATION
LOTS OF WEDGES
ECT
EEN

Current and Potential Funding Sources

With several ideas for new products and programs, as well as suggestions for criteria to evaluate investment opportunities, participants turned their attention to funding future Green Bank activities. After reviewing existing funding sources and exploring how similar organizations are funded, participants were asked how reliable the current funding sources are and if there were ways to protect them. Participants agreed on many points:

Investment Criteria	Reliability	Risks	Actions to Protect
Clean Energy Fund	• Low fluctuation • Electrification of vehicles and heating/ cooling could increase	• Unreliable • Political Risk • Declining in Nature	• Securitization and blocking raids through CHFA-like bond indenture • Amend legislation based on the finds of lawsuit • Strengthen grassroots support • Mini-green bonds to build citizen investors
RGGI Allowance Proceeds	-	• Unreliable • Revenues are unpredictable • Low revenues	-
Grants	• Can't be raided • Strong relationships with foundations • Federal government increase opportunities	• High effort required to compete for	-
Investment Income (Interest)	• Steady portfolio growth • Predictable	• Cash could be swept • Subject to investment risk	• Securitize • Blocking raids through indenture
Investment Income (Fees)	-	• Volumetric • Cash could be swept	-
Investment Income (FCM)	• Market value in the future difficult to predict	• Cash could be swept • Subject to public policy changes	-
Investment Income (RECs)	• Market value in the future difficult to predict	• Cash could be swept • Subject to public policy changes	-

Considering the challenges facing current funding, participants were asked if there were other funding sources that would facilitate moving the Green Bank from 1 to 2 orders of magnitude. Several ideas were captured:

Bonding. Explore bonding capabilities to raise funds and protect income from existing sources (including mini-bonds, where the Green Bank sells a portion of a bond that encumbers revenue to the Green Bank to the citizens of Connecticut). This requires the Green Bank to identify uses of funds and be ready to deploy capital quickly.

Private Activity Bond Conduit. The Green Bank has statutory authority to issue bonds on behalf of others (while earning fees). This will require identifying borrowers with buyers that need this conduit.

USDA and Other Federal Funds. Continuing to pursue low cost capital for loans from USDA, DOT and DOD, and seeking legislative fixes that will make this process easier.

Impact Investment / Corporate Partners. Pursuing more impact investments and partner with corporations and community foundations and endowments seeking to make sustainability investments.

Electric Efficiency Partners Program. Bring additional programmatic solutions to PURA or use EEP funds as a sweetener alongside existing Green Bank or third-party investments.

Transportation Climate Initiative. Seek policy that directs a portion of these RGGI like funds to the Green Bank to fund transportation investments.

Transaction Fees. Build stream of income from investment banking-like transactions (e.g., Fuel Cell Energy deal).

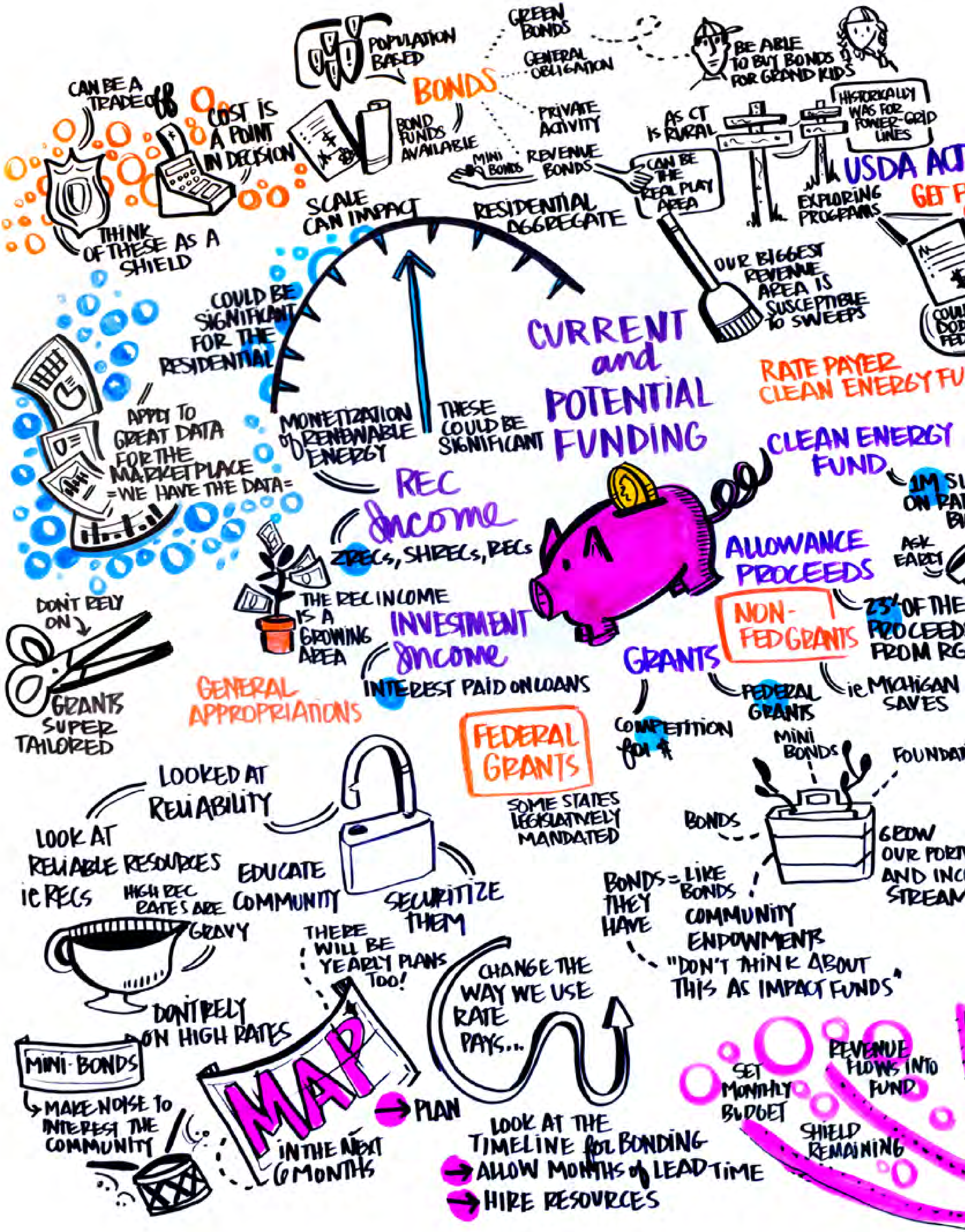
Community Reinvestment Act. Using Inclusive Prosperity Capital, attract capital from CRA lenders.

Alternative Compliance Payments. Pursue policy that redirects the ACP back to the Green Bank, reducing public policy cost exposure on ratepayers from the RPS

Opportunity Zone Fund. Launch a fund that attracts funds earmarked for opportunity zones.

Lockbox. Pursue a strategy that restricts investment of ratepayer funds towards their intended purpose (similar to Special Transportation Fund).

Mackey Dykes, CT Green Bank (foreground), Bryan Garcia, CT Green Bank (background)


CURRENT and POTENTIAL FUNDING
BONDS
POPULATION BASED
GREEN BONDS
GENERAL OBLIGATION
PRIVATE ACTIVITY
REVENUE BONDS
MINI BONDS
BE ABLE TO BUY BONDS FOR GRAND KIDS
BOND FUNDS AVAILABLE
CAN BE A TRADE OFF
COST IS A POINT IN DECISION
THINK OF THESE AS A SHIELD
AS CT IS RURAL
HISTORICALLY WAS FOR POWER-GRID LINES
CAN BE THE REAL PLAY AREA
USDA AC
GET F
EXPLORING PROGRAMS
OUR BIGGEST REVENUE AREA IS SUSCEPTIBLE TO SWEEPS
SCALE CAN IMPACT
RESIDENTIAL AGGREGATE
COULD BE SIGNIFICANT FOR THE RESIDENTIAL
APPLY TO GREAT DATA FOR THE MARKETPLACE =WE HAVE THE DATA=
MONETIZATION of RENEWABLE ENERGY
THESE COULD BE SIGNIFICANT
REC Income
ZRECs, SHRECs, RECs
THE REC INCOME IS A GROWING AREA
INVESTMENT Income
INTEREST PAID ON LOANS
RATE PAYER CLEAN ENERGY FU
CLEAN ENERGY FUND
1M SI ON RAT B
ASK EARLY
ALLOWANCE PROCEEDS
23% OF THE PROCEEDS FROM RG
NON-FED GRANTS
ie MICHIGAN SAVES
GRANTS
FEDERAL GRANTS
COMPETITION for $
DON'T RELY ON
GRANTS SUPER TAILORED
GENERAL APPROPRIATIONS
FEDERAL GRANTS
SOME STATES LEGISLATIVELY MANDATED
MINI BONDS
FOUNDAT
BONDS
GROW OUR PORT AND INC STREAM
BONDS = LIKE BONDS THEY HAVE
COMMUNITY ENDOWMENTS
"DON'T THINK ABOUT THIS AS IMPACT FUNDS"
LOOKED AT RELIABILITY
LOOK AT RELIABLE RESOURCES ie RECS
HIGH REC RATES ARE GRAVY
EDUCATE COMMUNITY
SECURITIZE THEM
DON'T RELY ON HIGH RATES
THERE WILL BE YEARLY PLANS TOO!
CHANGE THE WAY WE USE RATE PAYS...
MINI-BONDS
MAKE NOISE TO INTEREST THE COMMUNITY
MAP
PLAN
IN THE NEXT 6 MONTHS
LOOK AT THE TIMELINE for BONDING
ALLOW MONTHS of LEAD TIME
HIRE RESOURCES
SET MONTHLY BUDGET
REVENUE FLOWS INTO FUND
SHIELD REMAINING

Bryan Garcia, CT Green Bank


Selya Price, CT Green Bank


Stuart Decew, CBEY

Headlines

As a wrap-up exercise, participants broke into groups for a session referred to as "Headlines," where participants attempt to envision a future scenario by identifying a headline for a 2030 article in an in-state and out-of-state publication. Some examples included:

In-State Headlines:

"1 Million Connecticut Households Become 'Carbon Neutral' as a Result of Green Bank Programs" - Jan Ellen Spiegel, CT Mirror, 2030

"Connecticut Green Bank Makes Connecticut a Better Place to Live" - Hartford Courant, 2030

Jessica Bailey, Greenworks Lending (foreground), Matt Macunas, CT Green Bank (background)

Out-of-State Headlines:

"As a result of the National Green Bank, the U.S. is on track to exceed the Paris Agreement" - The Economist, 2030

"Last Diesel Bus Scrapped, Will Live in the Carriage Barn at Pocantico" - BuzzFeed News, 2030

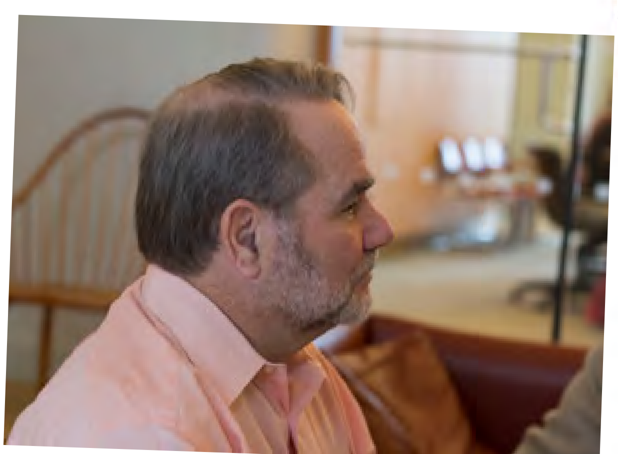
"New London Offshore Wind Port Manufactures and Assembles 10 GW of Power" - Wall Street Journal, 2030

"Connecticut Green Bank Teams up with Cows and Machinists to Power State's Fleet of Electric Buses" - New York Times, 2030

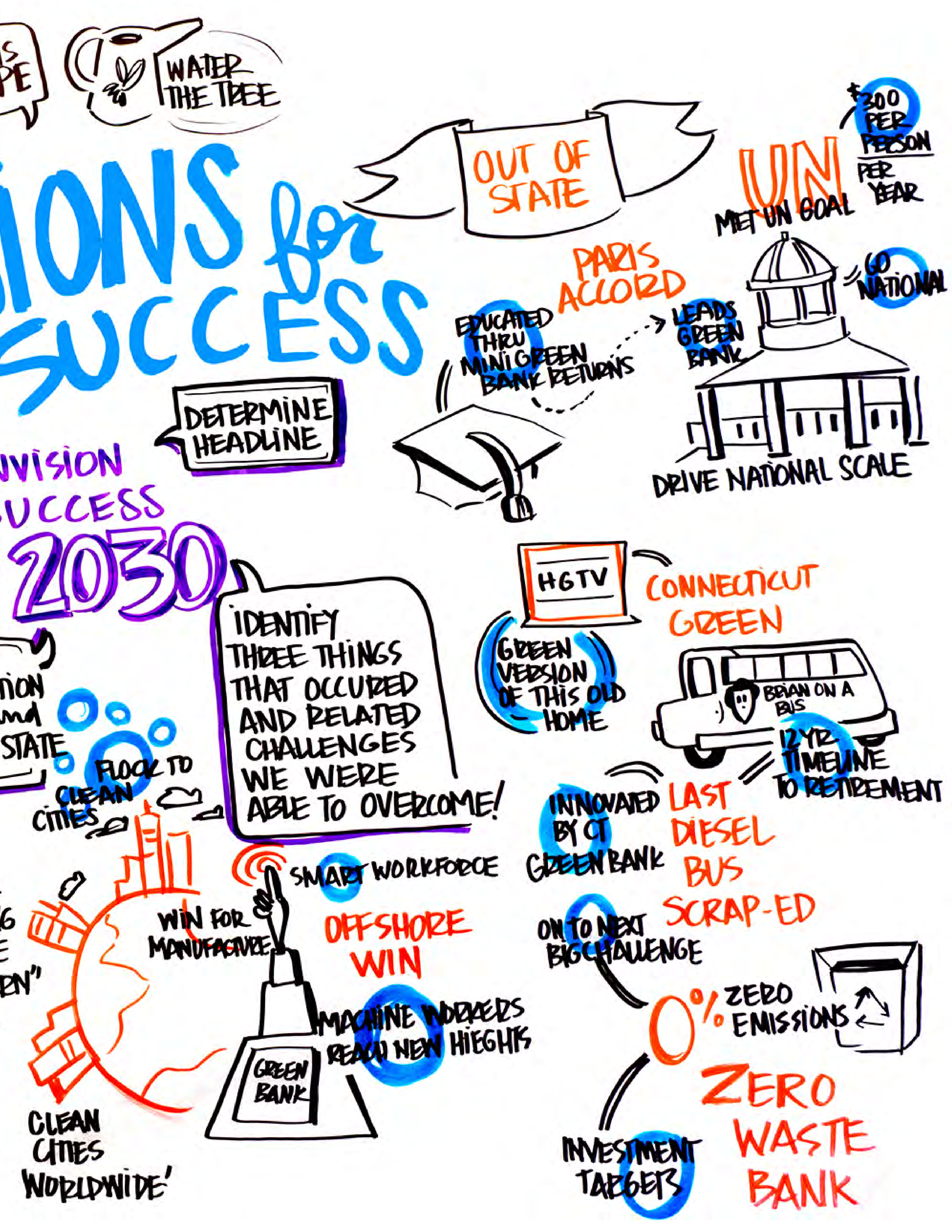
Eric Shrago, CT Green Bank

Matt Macunas, CT Green Bank

Kim Stevenson, CT Green Bank



Bob Lamb, Lamont Financial



WATER THE TREE
IONS for SUCCESS
DETERMINE HEADLINE
OUT OF STATE
UN
$300 PER PERSON PER YEAR
MET UN GOAL
PARIS ACCORD
GO NATIONAL
EDUCATED THRU MINI GREEN BANK RETURNS
LEADS GREEN BANK
DRIVE NATIONAL SCALE
NVISION
UCCESS
2030
IDENTIFY THREE THINGS THAT OCCURED AND RELATED CHALLENGES WE WERE ABLE TO OVERCOME!
HGTV
GREEN VERSION OF THIS OLD HOME
CONNECTICUT GREEN
BRIAN ON A BUS
12 YR TIMELINE TO RETIREMENT
STATE
FLOCK TO CLEAN CITIES
INNOVATED BY CT GREEN BANK
LAST DIESEL BUS SCRAP-ED
SMART WORKFORCE
WIN FOR MANUFACTURE
OFFSHORE WIN
ON TO NEXT BIG CHALLENGE
0% ZERO EMISSIONS
MACHINE WORKERS REACH NEW HIEGHTS
GREEN BANK
ZERO WASTE BANK
INVESTMENT TARGETS
CLEAN CITIES WORLDWIDE!

Key Findings and Recommendations

The two-day conference was an effective exercise, identifying several key pieces of information integral to moving from Green Bank 1.0 to 2.0:

Commitment to Address Climate Change.

Given the urgency of the issue (demonstrated by the onset of natural disasters, polar vortex, etc.) the Green Bank must be committed and focused on strategies to address climate change mitigation (such as addressing climate change wedges) and adaptation (resiliency)

Scaling Up Investment and Impact in Connecticut and Beyond.

In order to achieve Connecticut's climate change and economic goals, more investment from private capital sources which is sparked and leveraged by innovative public sector financing that is affordable and of long duration, will be needed in order for the state to realize the environmental, economic and job benefits and opportunities from the climate economy. While focusing on benefits to Connecticut, the Green Bank can also take actions that influence and increase investment in and help address climate change nationally and globally.

Pursuit of Financial Sustainability.

With the status of the long-term state budget situation creating ongoing challenges to ratepayer funds (i.e., Clean Energy Fund, RGGI, etc.) there is a pressing needed for the Green Bank to:

- Use its full suite of public policy tools (such as bonding capabilities) to access other sources of funding that will better ensure its financial sustainability
- Adopt investment criteria that allow for better tracking and measurement of the Green Bank portfolio with respect to multiple objectives including financial sustainability.
- Address customer acquisition challenges to increase transaction volumes to levels needed for sustainability.

As a follow-up to the conference, the following recommendations will be pursued in order to facilitate progress towards Green Bank 2.0:

Bonding.

The Green Bank will develop a bond indenture, including the incorporation of non-impairment, to begin to develop its bond rating while accessing capital through public finance markets that can be used to augment its investment strategy. This recommendation will require 3 to 6 months to execute and include:

- **Building a Team.** Identifying legal counsel, financial advisor, underwriter and trustee for bond issuances;
- **Developing a Bond Indenture.** Including provisions to protect the Green Bank's assets and sources of revenues (such as system benefit funds); and
- **Issuing Bonds.** Leading the "green bond movement" across the U.S. through use of proceeds, best-in-class EM&V, and innovation of mini-green bonds to engage all citizens in investment to confront climate change.

Investment Strategy.

Integrating the bond funding structure into the investment planning and operations of the organization, while developing the following:

- **Portfolio Investment Target.** Establishing a near and midterm portfolio investment target (i.e., amount, interest, risk and maturity);
- **Leverage Ratio Target.** Determining a reasonable leverage ratio target that supports the pursuit of financial sustainability, while at the same time leveraging public funds with multiples of private capital investment; and
- **Investment Criteria.** Defining and prioritizing investment criteria to serve as a screen for supporting the investment strategy.

Comprehensive Plan.

Developing the Green Bank 2.0 Comprehensive Plan that reflects the key findings of the conference, while providing guidance and direction to the operation of the organization, including:

- **Vision Statement.** Develop a short and powerful vision statement, from the powerful words used in the keynote address, that inspires our current and future supporters;
- **"Wedges" Structure.** Build the plan around the three key climate change GHG emission mitigation wedges (zero carbon grid, zero emission vehicles, and zero emission heating) and climate change adaptation (microgrid and grid modernization); and
- **Community Engagement.** Rebuild our ability to engage and inspire the citizens of Connecticut in taking action to confront climate change through innovative campaigns (e.g. Clean Energy Communities, Solarize, etc.) products (e.g., mini green bonds, community solar, etc.), and programs (e.g. Solar for All). Evolve our messaging and communications in a way that our customers and stakeholders can more easily understand and connect with what we do.

CONNECTICUT
GREEN BANK℠

CONNECTICUT GREEN BANK

Sharing Solar Benefits

Reaching Households in Underserved Communities of Color in Connecticut

May 2019

Executive Summary

The Connecticut Green Bank's (Green Bank's) low-to-moderate income (LMI) focused solar PV programs have had a significant impact on solar penetration in Connecticut's historically underserved and under-resourced communities. Solar PV adoption in LMI census tracts is now higher than solar penetration in upper income census tracts relative to the distribution of owner-occupied homes. However, recent national studies have shown that there is widespread inequity in the deployment of residential rooftop solar in the U.S. when considering race and ethnicity, and not income alone.[1] In February 2019, the Green Bank conducted an analysis of the distribution of the Residential Solar Investment Program (RSIP) fleet to determine whether or not the program has been successful in reaching racial and ethnic minorities in addition to low-income households.

The analysis shows that the RSIP program has been effective at reaching communities of color, and in some instances penetration in communities of color outperforms penetration in White neighborhoods.

Key Facts:

Two significant barriers to solar adoption in Connecticut are income and homeownership.

LMI households and communities of color that were previously underrepresented in solar PV adoption responded favorably to measured incentives and market focus, suggesting that with the right program design, it is possible to achieve a racially and economically inclusive solar market.

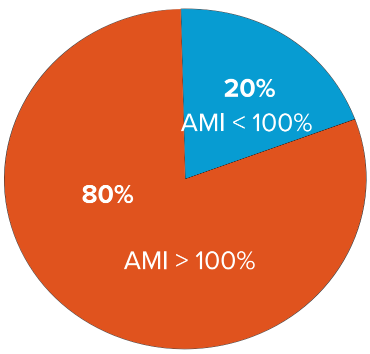
Background

The Connecticut Green Bank was established through Public Act 11-80 in 2011. In 2012, the Green Bank launched the Residential Solar Investment Program (RSIP) which provides up-front rebates and performance-based incentives to owner-occupied residential solar PV installations through a declining incentive block model. Two years after launching the RSIP, Connecticut experienced huge growth in its residential solar market, expanding from 16 megawatts (MW) approved in 2012-2013, to 33 MW in 2014 alone. Despite this success, only 11% of projects approved in 2014 were located in census tracts with a median income <80% of the area median income (AMI). To rectify this disparity, the Green Bank designed two opportunities to support contractors focused on low-to-moderate income solar deployment and achieve socioeconomic parity within the RSIP.

1 Sunter, D. A., Castellanos, S., & Kammen, D. M. (2019). Disparities in rooftop photovoltaics deployment in the United States by race and ethnicity. Nature Sustainability,2(1), 71-76. doi:10.1038/s41893-018-0204-z https://www.nature.com/articles/s41893-018-0204-z

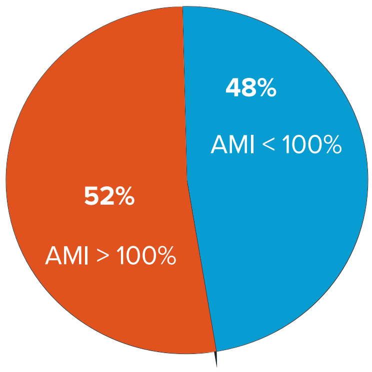
In 2015, the Green Bank established a unique low-to-moderate income performance-based incentive (LMI PBI) within the RSIP. The LMI PBI incentive is greater than the market rate PBI and is only available to third-party owned solar PV installations serving LMI households. In 2015, the Green Bank also opened an RFP inviting solar financing proposals that would drive deployment in low-to-moderate income communities. As a result of this RFP, the Green Bank also established the Solar for All partnership with PosiGen – a solar provider focused on the LMI market, to help expand solar and energy efficiency deployment in underserved communities. Since launching these programs in 2015, solar adoption in low-to-moderate income communities increased by 187% (see Tables 1 and 2).[2]

Census Tract Income Level (AMI Band)



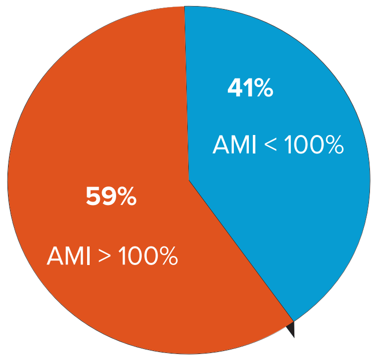
2012

Census Tract Income Level (AMI Band)



2018

Census Tract Income Level (AMI Band)



Total 2012 - 2018

Table 1 RSIP Projects by AMI Band and Calendar Year Approved (2012-2018)[3]

Census Tract Income Level (AMI Band)	2012	2013	2014	2015	2016	2017	2018	Grand Total
<60%	17	36	135	353	649	604	839	2,633
60%-80%	30	100	339	780	886	707	1,116	3,958
80%-100%	107	232	810	1,422	1,128	877	1,361	5,937
100%-120%	155	370	1,028	1,763	1,223	904	1,476	6,919
>120%	462	726	2,152	2,674	1,772	1,421	2,129	11,336
Grand Total	771	1,464	4,464	6,992	5,658	4,513	6,921	30,783

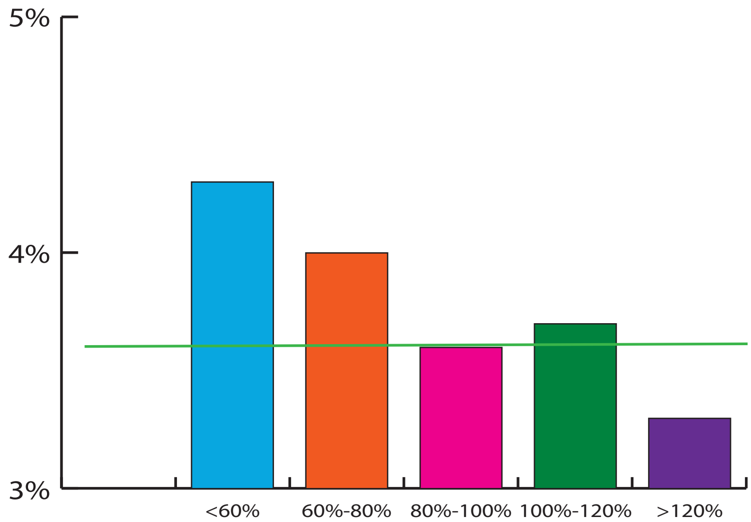
2 Total RSIP deployment in census tracts <100% AMI was 4,361 at the end of calendar year 2015, and rose to 12,527 at the end of calendar year 2018 representing 187% growth. Total RSIP deployment in census tracts <80% AMI was 1,790 at the end of calendar year 2015 and rose to 6,548 by the end of calendar year 2018 representing 266% growth.

3 RSIP data through 12/31/2018

Table 2 RSIP Distribution as a Percent of Owner-Occupied Homes by Income Band (2012-2018)[4]

Census Tract Income Level (AMI Band)	# Projects	Total Owner-Occupied 1-4 Unit Homes	Percent of Homes with Solar
<60%	2,633	60,769	4.3%
60%-80%	3,958	99,220	4.0%
80%-100%	5,937	165,331	3.6%
100%-120%	6,919	187,463	3.7%
>120%	11,336	345,311	3.3%
Grand Total	**30,783**	**858,094**	**3.6%**

Analysis One – RSIP Penetration in Communities of Color



To analyze RSIP penetration in communities of color, data from the 2016 U.S. Census was used to categorize each census tract in Connecticut as “Majority Hispanic,” “Majority Black,” “Majority White,” or “No Majority Race” based on how the population identified in that year. Census tracts were categorized as having a majority race if more than 50% of the population in that census tract identified as Hispanic, Black or White. A no majority census tract indicates that there was no single dominant race or ethnic group in that census tract. 74.4% of Connecticut’s population lives in a predominantly White census tract, 7.8% live in a majority Hispanic census tract and 3.1% live in a majority Black census tract. 14.7% of the population lives in a census tract with no dominant race (see Table 3).

4 RSIP data through 12/31/2018

Table 3 Connecticut Census Tracts and Population by Race/Ethnicity

	Number of Census Tracts	Total Population	Percent of Population
Majority Hispanic	51	280,795	7.8%
Majority Black	24	111,390	3.1%
Majority White	558	2,669,635	74.4%
No Majority Race	200	526,750	14.7%
Grand Total	**833**	**3,588,570**	**100%**

Because the RSIP program is limited to owner-occupied households the analysis also looked at the distribution of owner-occupied households in each census tract category. 85% of owner-occupied households in Connecticut are located in majority White census tracts, while less than 6% of owner-occupied households are located in majority Hispanic or Black census tracts (see Table 4).

Table 4 Owner-Occupied 1-4 Unit Homes by Race/Ethnicity of Census Tract

	Number of Owner-Occupied 1-4 Unit Homes	Percent of all Owner-Occupied 1-4 Unit Homes
Majority Hispanic	31,152	3.6%
Majority Black	18,163	2.1%
Majority White	731,901	85.3%
No Majority Race	76,878	9.0%
Grand Total	**858,094**	**100%**

Comparing the distribution in the RSIP to the distribution of owner-occupied homes by race/ethnicity reveals that the RSIP is slightly overrepresented in these tracts. 4.1% of RSIP projects compared to 3.6% owner-occupied households are located in majority Hispanic census tracts and 3.8% of RSIP projects are in census tracts that identified as majority Black compared to just 2.1% of owner-occupied households. The RSIP is roughly on par with the distribution of owner-occupied housing in no majority tracts, which contain 10.3% of projects vs 9% of owner-occupied homes respectively (see Table 5).

Table 5 Distribution of RSIP Projects Compared to Owner-Occupied Households by Race/ Ethnicity

	Percent of 1-4 Unit Owner-Occupied Homes	Percent of RSIP Projects
Majority Hispanic	3.6%	4.1%
Majority Black	2.1%	3.8%
Majority White	85.3%	81.8%
No Majority Race	9.0%	10.3%
Grand Total	**100.0%**	**100%**

In addition to owner-occupancy, the analysis also considered income. The majority of owner-occupied homes in predominantly majority Black and Hispanic census tracts in the state are located in census tracts with a median income <80% of the area median. The majority of owner-occupied homes in upper income census tracts are majority White census tracts, although a small portion (3.9%) of upper income homes are in No Majority Race census tracts (see Table 6).

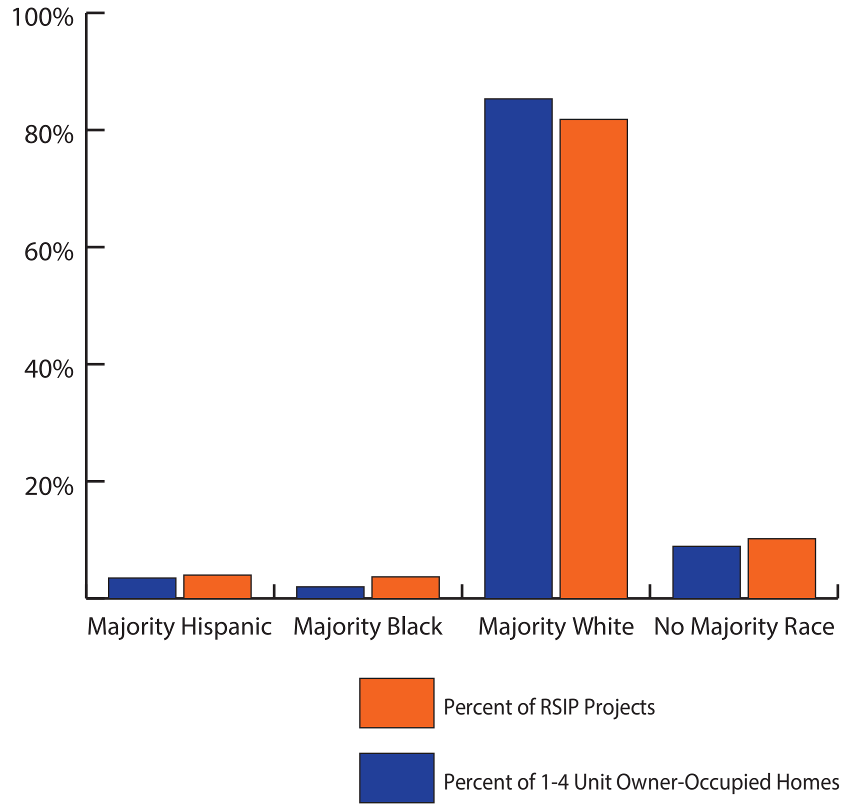


Table 6 Distribution of Owner-Occupied Homes by Race/Ethnicity and Income

Census Tract Income Level (AMI Band)	Majority Hispanic		Majority Black		Majority White		No Majority Race	
	Number of OO Homes	Percent of OO Homes	Number of OO Homes	Percent of OO Homes	Number of OO Homes	Percent of OO Homes	Number of OO Homes	Percent of OO Homes
<60%	18,423	30.3%	7,800	12.8%	11,454	18.8%	23,092	38.0%
60%-80%	10,757	10.8%	5,647	5.7%	62,233	62.7%	20,583	20.7%
80%-100%	1,972	1.2%	4,716	2.9%	148,294	89.7%	10,349	6.3%
100%-120%	-	--	-	--	178,030	95.0%	9,433	5.0%
>120%	-	--	-	--	331,890	96.1%	13,421	3.9%
Grand Total	**31,152**	**3.6%**	**18,163**	**2.1%**	**731,901**	**85.3%**	**76,878**	**9.0%**

When comparing the distribution of the RSIP portfolio to the distribution of owner-occupied homes in communities of color by income band, we see that the RSIP again mirrors or is overrepresented when compared to majority White tracts. In the <60% AMI band the percent of RSIP projects in this income band is slightly below par compared to the number of owner-occupied homes in majority Hispanic neighborhoods (30.2% of homes vs 24.9% of projects), on par with the number of homes in no majority census tracts (38% of homes and projects) and beyond parity with respect to the number of owner-occupied homes in majority Black census tracts (12.8% of homes vs 22.4% of projects). In addition, in the <60% AMI band, the percent of RSIP projects is slightly below par compared to the number of owner-occupied homes in majority White neighborhoods (18.8% of homes vs 14.58% of RSIP projects), while there is parity in the No Majority Race census tracts. The RSIP is overrepresented in both the Black and Hispanic categories in the 60-80% and 80-100% AMI bands, while it is underrepresented in majority White census tracts for the 60-80% AMI band and roughly on par for the 80-100% band. In income bands of 100% and higher, RSIP is roughly on par with the number of owner-occupied homes in majority White census tracts. RSIP deployment versus % of owner-occupied homes is roughly at or above parity in all AMI bands for no majority race census tracts (see Table 7).

Table 7 Owner-Occupied Housing and RSIP Distribution by Race/Ethnicity and Income

Census Tract Income Level (AMI Band)	Majority Hispanic		Majority Black		Majority White		No Majority Race	
	% of OO Homes	% of RSIP	% of OO Homes	% of RSIP	% of OO Homes	% of RSIP	% of OO Homes	% of RSIP
<60%	30.3%	24.91%	12.8%	22.41%	18.8%	14.58%	38.0%	38.09%
60%-80%	10.8%	13.04%	5.7%	7.68%	62.7%	56.04%	20.7%	23.24%
80%-100%	1.2%	1.57%	2.9%	4.48%	89.7%	87.94%	6.3%	6.01%
100%-120%	--	--	--	--	95.0%	95.04%	5.0%	4.96%
>120%	--	--	--	--	96.1%	95.14%	3.9%	4.86%
Grand Total	3.6%	4.11%	2.1%	3.77%	85.3%	81.81%	9.0%	10.31%

Lastly, when comparing installation rates per owner-occupied home by race/ethnicity we see that the RSIP has been successful in reaching communities of color. On an installation per owner-occupied home basis, there are 86% more installations in majority Black census tracts than majority White census tracts, 18% more installations in majority Hispanic census tracts and 20% more installations in No Majority Race census tracts than majority White census tracts (see Table 8).

Table 8 RSIP Installations Per Capita Comparison

	Number of Owner-Occupied 1-4 Unit Homes	Number of RSIP Installations	Number of Installations per Owner-Occupied Home (OOH)	Percent More/ Less than the Number of RSIP Installations per OOH in majority-White tracts
Majority Hispanic	31,152	1,265	0.0406	18%
Majority Black	18,163	1,160	0.0639	86%
Majority White	731,901	25,184	0.0344	0%
No Majority Race	76,878	3,174	0.0413	20%
Grand Total	858,094	30,783	0.0359	4%

Analysis Two – Solar for All Penetration in Communities of Color

In addition to looking at the entire RSIP, the analysis was repeated using only data from the Solar for All program's (PosiGen's) solar installations. As the primary Green Bank-supported driver of solar adoption in LMI communities, the goal of this analysis was to determine whether the Solar for All program and its implementer, PosiGen, had been more successful at reaching communities of color than the RSIP overall. The results show that PosiGen has been more successful in reaching communities of color than the RSIP portfolio – 10-16% of PosiGen's projects are in majority Hispanic or Black census tracts and over 25% of their projects are in No Majority census tracts. On a per owner-occupied home basis, PosiGen has 1,275% more projects per home in majority Black census tracts than majority White census tracts, 427% more projects in No Majority tracts than majority White census tracts and 408% more projects in majority Hispanic tracts (see Tables 9-11).

Table 9 Owner-Occupied Housing and Solar for All Project Distribution by Race/Ethnicity and Income

Income Band (% of AMI)	Majority Hispanic		Majority Black		Majority White		No Majority Race	
	% of OO Homes	% of Projects	% of OO Homes	% of Projects	% of OO Homes	% of Projects	% of OO Homes	% of Projects
<60%	30.3%	16.98%	12.8%	31.96%	18.8%	7.56%	38.0%	43.50%
60%-80%	10.8%	16.56%	5.7%	14.13%	62.7%	44.15%	20.7%	25.17%
80%-100%	1.2%	1.14%	2.9%	6.27%	89.7%	84.62%	6.3%	7.98%
100%-120%	--	--	--	--	95.0%	89.71%	5.0%	10.29%
>120%	--	--	--	--	96.1%	85.00%	3.9%	15.00%
Grand Total	3.6%	10.24%	2.1%	16.17%	85.3%	47.38%	9.0%	26.21%

Table 10 Solar for All Installations Per Capita Comparison

	Number of Owner-Occupied 1-4 Unit Homes	Number of Solar for All Installations	Number of Installations per Owner-Occupied Home (OOH)	Percent More/Less than the Number of Solar for All Installations per OOH in White-majority tracts
Majority Hispanic	31,152	207	0.0066	408%
Majority Black	18,163	327	0.0180	1275%
Majority White	731,901	958	0.0013	0%
No Majority Race	76,878	530	0.0069	427%
Grand Total	858,094	2,022	0.0024	80%

Table 11 Distribution of RSIP Portfolio Compared to Solar for All Portfolio by Race/ Ethnicity

	Number of RSIP Installations	Percent of RSIP Installations	Number of Solar for All Installations	Percent of Solar for All Installations
Majority Hispanic	1,265	4.1%	207	10.2%
Majority Black	1,160	3.8%	327	16.2%
Majority White	25,184	81.8%	958	47.4%
No Majority Race	3,174	10.3%	530	26.2%
Grand Total	30,783	100%	2,022	100%

Conclusion

This analysis shows that the RSIP has been effective at reaching homeowners in communities of color despite a clear correlation between income, race and ethnicity and homeownership in Connecticut. 85% of 1-4 unit owner-occupied homes in Connecticut are located in majority White census tracts, and nearly 70% of these homes are located in census tracts with median income greater than 100% of the area median income. Despite these institutional barriers to homeownership, and as a by-product, solar PV adoption, data from the Connecticut Green Bank's Residential Solar Investment Program (RSIP) demonstrates that states can achieve "solar parity" by equitably distributing resources and access across all racial, ethnic, and socioeconomic groups.

LMI communities and communities of color that were previously underserved in solar PV adoption responded favorably to measured incentives and market focus. The experience in Connecticut bucks the trend of recent national studies that have shown a widespread inequality in the deployment of rooftop solar in the U.S. when considering race and ethnicity. Despite this success, there is still much work to be done to ensure equitable access to clean energy in the state. Less than 5% of owner-occupied households across all racial, ethnic and income groups have been able to participate in the state's primary residential solar program thus far, and many more renters could be reached through shared clean energy programs. Continued and improved opportunities for participation across all racial, ethnic and income groups could play a major role in widespread support for a transition to more renewable energy to not only improve our environment but ensure inclusive prosperity in the growing green economy. As the RSIP approaches its statutory target of 300 MW, the Connecticut Green Bank would like to underscore that future programs and policies must address LMI communities of color and strongly recommends that these programs and policies include mechanisms that facilitate the continued participation of historically underserved households.

Acknowledgements

The Green Bank would like to thank the following professionals for their input on this report: Ken Gillingham, Associate Professor at Yale University; Camille Johnson, Senior Program Officer at the Institute for Sustainable Communities; Kerry O'Neill, CEO, Inclusive Prosperity Capital; and Madeline Priest, Manager, Market Engagement, Inclusive Prosperity Capital. The analysis in this report was produced by the Green Bank's Isabelle Hazlewood, Manager, with support from Selya Price, Director of Infrastructure Programs, and Emily Basham, Senior Associate.

Markets

Green Bonds Are Finally Sprouting Up All Over the Globe

It's looking as if 2019 will be a banner year for financing environmentally friendly projects.

By Brian Chappatta
June 18, 2019 6:30 AM EDT

The diversity of borrowers coming to market stands out as an important trend. *Photographer: Evaristo Sa/AFP/Getty Images*

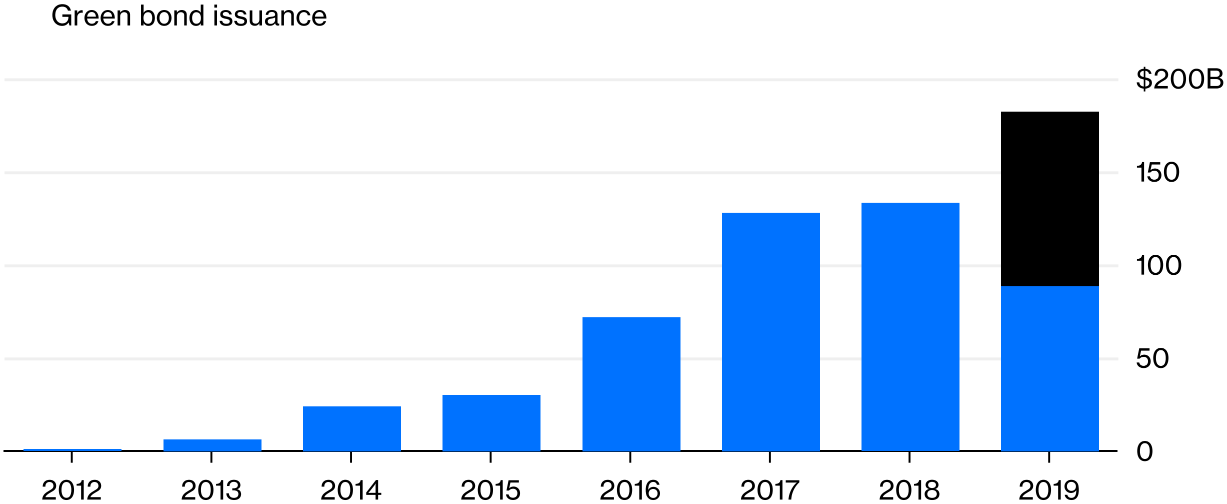
After more than a decade, it appears green bonds are finally taking root.

So far this year, countries, companies and local governments across the globe have sold about $89 billion of bonds to fund projects that are good for the environment, data compiled by Bloomberg show. Bloomberg Intelligence analyst Jaimin Patel estimates the current run rate will put global non-asset-backed green bond issuance at more than $182 billion for the year, which would easily top 2018's $133 billion and

2017’s $128 billion. More important, it looks as if the market is returning to steeper growth after last year’s stagnation.

Shooting Higher

Global green-bond sales are on pace to set a record after stagnating last year



Source: Bloomberg
Note: Black area in 2019 is projected issuance through year-end

To be clear, the Climate Bonds Initiative’s stated goal of $1 trillion in yearly green-bond issuance remains a ways off. But 2019 has brought signs that it’s not just a pipe dream. May’s $23.8 billion was the second-highest monthly volume on record. Those who borrowed last month included the Netherlands, whose 5.98 billion euro ($6.7 billion) deal represented the first sovereign green bond ever sold by a triple-A rated country, according to Moody’s Investors Service. And it’s not just that issuers are stepping up – investors are, too. The Netherlands’ order book swelled to 21.2 billion euros in less than two hours.

Nor is the green-bond wave showing any signs of cresting. Just this week, issuers on three continents laid out plans to borrow: Chile brought a 30-year green deal to market, Korea Electric Power Corp. priced $500 million of five-year securities, and EDP Finance B.V., a Portuguese issuer with ratings one step above junk, set up investor calls for its green-bond debut. And that doesn't even include Connecticut, which plans to issue $250 million of top-rated green bonds for water and wastewater projects.

Speaking of Connecticut, its two U.S. senators, Chris Murphy and Richard Blumenthal, are among the five Democrats who last month introduced legislation that would create a United States Green Bank. They would capitalize it "with up to $50 billion as a wholly-owned corporation of the United States government, under the direction of the Secretary of the Treasury." It would "finance clean energy projects by capitalizing regional, state and local intermediary institutions (e.g. state Green Banks), which then directly finance eligible projects."

The likelihood that proposal goes anywhere, given the current makeup of Washington, is probably slim at best. But it speaks to a broader feeling that green bonds are more than just a clever marketing gimmick – they're here for good, and investors and issuers alike ought to start planning accordingly. In one example, a panel of experts on sustainable financing appointed by the Canadian government released a report last week that said green bonds should have tax breaks like U.S. municipal debt to create a more well-functioning market.

This sort of growth and widening acceptance was by no means inevitable. Just a year ago, I wrote that the green-bond market appeared to be stuck in infancy because of self-designating and a general lack of enforcement. And, indeed, last year's offerings pointed toward a market that was plateauing even though the existential threat of climate change was put in stark relief by the United Nations.

It's not entirely clear what changed. Maybe countries and companies truly are reacting to the U.N.'s October report, which argued that the world has 12 years to avert catastrophic climate damage, and just needed time to get their financing in order. Regardless, the diversity of borrowers coming to market stands out as an important trend. About 39% of issuance in the first five months of 2019 came from countries other than China, France, the U.S., Germany, the Netherlands and Sweden, the most since at least 2014, Bloomberg data show. According to Patel, this is "important to ensuring the stability of longer-term growth in the green bond market, while limiting the impact of one-time spikes by established issuers."

Before declaring that bond investors are saving the world, remember that details matter in these deals. There's still no catch-all for the green-bond market, which is clear from looking at the Climate Bonds Initiative's website. As of June 17, it shows $90 billion of 2019 issuance, divided into $69.5 billion of "labeled green bonds aligned with CBI definitions" and $20.5 billion of "Certified Climate Bonds." Excluded from that total is another $22.2 billion of "labeled green bonds not aligned with CBI definitions." [1] It's useful and transparent that the group breaks it out like that, but that's still a sizable amount of debt that in some ways is green in name only.

CBI's own estimate for 2019 green-bond sales is $250 billion, or an almost 50% increase from last year. That's impressive for a market that several years ago was little more than a novelty and represents a return to the rapid growth that characterized pretty much every period except 2018.

My hunch is the steady drumbeat of climate change has become loud enough to persuade countries and companies to look beyond the short term when preparing to borrow. Yes, it's extra work for issuers to verify every year that they adhere to a set of principles, but that's likely the most onerous during the first go-round. For institutions with the largest amount of green bonds outstanding, like the European Investment Bank, France and KfW (the German state-owned development bank), economies of scale come into play.

Call it a comeback for green bonds. The uptick in debut issuers, in particular, suggests that environmentally friendly financing might finally be sinking its roots into the global debt markets.

1 According to CBI, this has to do with guidelines from the People's Bank of China on green bonds that don't conform with the Climate Bonds Initiative's taxonomy. It includes debt that funds upgrades to coal-fired power stations and large hydropower electricity generation, along with securities with more than 10% of proceeds allocated to "general corporate purposes."

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