CONNECTICUT GREEN BANK

Deployment Committee

Meeting Date
September 18, 2018

Deployment Committee

Rob Klee, Chairman

Commissioner of the Department of Energy and Environmental Protection

Betsy Crum

Former Executive Director, Women's Housing Institute

Denise L. Nappier – Designee, Bettina Bronisz

Treasurer, State of Connecticut

Matthew Ranelli

Partner, Shipman & Goodwin LLP

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

CONNECTICUT GREEN BANK

September 11, 2018

Dear Connecticut Green Bank Deployment Committee:

We have a regular meeting of the Deployment Committee scheduled on Tuesday, September 18, 2018 from 1:30 to 2:30 p.m. in the Colonel Albert Pope Board Room of the Connecticut Green Bank at 845 Brook Street, Rocky Hill, CT 06067. Given the need to have full approval from the Board of Directors on certain transactions, we will adjourn the Deployment Committee at around 2:00 p.m. to take-up business that requires full review and approval by the Board of Directors at a special meeting for the remaining time.

On the agenda we have the following items:

- **Consent Agenda** – approval of the meeting minutes for May 29, 2018, provision of memo to update you on transactions approved by staff under $500,000 and no more in aggregate than $1,000,000, draft memo and loan loss reserve analysis per our new staff transaction restructured or written-off under $100,000 and no more in aggregate than $500,000 (comments welcome), and C-PACE transaction time extensions.

- **Loan Loss Decision Framework and Process** – applying the proposed loan loss decision framework and process, the staff is proposing to restructure a C-PACE transaction. The transaction, which was presented to the Board of Directors in June, is a revised offer for the Brookfield YMCA, which had installed a CHP system in combination with a number of energy conservation measures. We will go into executive session for this discussion – details to follow on dial-in instructions.

- **Incentive Business Recommendation** – we are proposing a revision to the RSIP battery storage pilot which was approved by the Board of Directors. The revisions include increasing the incentive level and limiting the pilot to a project we have with Avangrid.

[We will adjourn the Deployment Committee meeting at around 2:00, and convene the Board of Directors for the remaining time allotment. Please download the materials in Board Effect for the special Board of Directors meeting for the following transaction.]

- **Investment Business Previews and Recommendation** – we will briefly preview a few transactions that we anticipate on the horizon (e.g., commercial solar PPA and tax equity, and fuel cell construction facility for sub-base project) as well as propose (1) an interim financing facility with IPC for PosiGen using the PBI (and LMI-PBI) payments through the RSIP, and (2) initial purchase of C-PACE facility from Hannon Armstrong.

If you have any questions, comments or concerns, please feel free to contact me at any time. Looking forward to talking to you next week.

Sincerely,

Bryan Garcia
President and CEO

AGENDA

Deployment Committee of the
Connecticut Green Bank
845 Brook Street
Rocky Hill, CT 06067

Tuesday, September 18, 2018
1:30 - 2:30 p.m.

Staff Invited: George Bellas, Mackey Dykes, Brian Farnen, Bryan Garcia, Ben Healey, Dale Hedman, Bert Hunter, Kerry O'Neill, Eric Shrago, Kim Stevenson, Selya Price, and Isabelle Hazlewood

1. Call to order

2. Public Comments – 5 minutes

3. Consent Agenda – 5 minutes

   a. Approval of Meeting Minutes for May 29, 2018
   b. Transaction Approvals – Under $500,000 and No More in Aggregate than $1,000,000
   c. Transaction Restructurings and Write-Offs – Under $100,000 and No More in Aggregate than $500,000
   d. Transaction Approval Extensions
      i. C-PACE Transaction – New London
      ii. C-PACE Transaction – Middlefield

4. Loan Loss Decision Framework – 20 minutes

   a. C-PACE Transaction – Proposed Restructuring

5. Incentive Business Recommendation – 10 minutes

   a. RSIP Battery Storage Pilot Incentive – Revision to Prior Approval

6. Adjourn

Join the meeting online at https://global.gotomeeting.com/join/550855125

Or call in using your telephone:
Dial (786) 535-3211
Access Code: 550-855-125

Next Regular Meeting: Tuesday, November 13, 2018 from 2:00-3:00 p.m.
Colonel Albert Pope Board Room at the
Connecticut Green Bank, 845 Brook Street, Rocky Hill, CT

RESOLUTIONS

Deployment Committee of the
Connecticut Green Bank
845 Brook Street
Rocky Hill, CT 06067

Tuesday, September 18, 2018
1:30 - 2:30 p.m.

Staff Invited: George Bellas, Mackey Dykes, Brian Farnen, Bryan Garcia, Ben Healey, Dale Hedman, Bert Hunter, Kerry O'Neill, Eric Shrago, Kim Stevenson, Selya Price, and Isabelle Hazlewood

1. Call to order

2. Public Comments – 5 minutes

3. Consent Agenda – 5 minutes

   a. Approval of Meeting Minutes for May 29, 2018

Resolution #1

Motion to approve the meeting minutes of the Deployment Committee for May 29, 2018.

   b. Transaction Approvals – Under $500,000 and No More in Aggregate than $1,000,000
   c. Transaction Restructurings and Write-Offs – Under $100,000 and No More in Aggregate than $500,000
   d. Transaction Approval Extensions
      i. C-PACE Transaction – New London
      ii. C-PACE Transaction – Middlefield

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 Green

Bank Deployment Committee (the “Deployment Committee”) on September 18, 2018 (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 Deployment Committee extends authorization of the Finance Agreements to no later than 120 days from September 18, 2018 and consistent in every other manner with the original Board authorization for the Finance Agreement.

4. Loan Loss Decision Framework – 20 minutes

   a. C-PACE Transaction – Proposed Restructuring

<u>Resolution #3</u>

WHEREAS, pursuant to Section 16a-40g of the Connecticut General Statutes (as amended, the “Act”), the Connecticut Green Bank (“Green Bank”) established a commercial sustainable energy program for Connecticut, known as Commercial Property Assessed Clean Energy (“C-PACE”);

WHEREAS, pursuant to Conn. General Statute 16a-40g, Green Bank entered into that certain Financing Agreement dated September 30, 2014 (as amended, the “Loan”) with the Regional YMCA of Western Connecticut and Eastern Putnam County, Inc., the building owner of the Brookfield YMCA at 2 Huckleberry Hill Road, Brookfield, CT 06804, to finance the construction of certain clean energy measures through C-PACE;

WHEREAS, in accordance with the Green Bank’s process for loan losses which was approved by the Green Bank Board of Directors on June 13, 2018, Green Bank staff seeks the Deployment Committee’s approval to restructure the Loan as detailed in Exhibit B (the “Restructured Loan”) of the memorandum dated September 11, 2018 and submitted to the Deployment Committee (the “Memo”).

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 Restructured Loan with terms and conditions consistent with the Memo no later than 120 days from the date of the Deployment Committee approval; 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 affect the above-mentioned legal instruments.

5. Incentive Business Recommendation – 10 minutes

a. RSIP Battery Storage Pilot Incentive – Revision to Prior Approval

Resolution #4

WHEREAS, Public Act 15-194 "An Act Concerning the Encouragement of Local Economic Development and Access to Residential Renewable Energy" (the "Act") requires the Connecticut Green Bank ("Green Bank") to design and implement a Residential Solar Photovoltaic ("PV") Investment Program ("Program") that results in no more than three-hundred (300) megawatts of new residential PV installation in Connecticut before December 31, 2022 and creates a Solar Home Renewable Energy Credit ("SHREC") requiring the electric distribution companies to purchase through 15-year contracts the Renewable Energy Credits ("RECs");

WHEREAS, as of June 30, 2018, the Program has thus far resulted in over two hundred and fifteen megawatts of new residential PV installation application approvals and completions in Connecticut;

WHEREAS, pursuant to Conn. Gen Stat. 16-245a, a renewable portfolio standard (RPS) was established that requires that Connecticut Electric Suppliers and Electric Distribution Company Wholesale Suppliers obtain a minimum percentage of their retail load by using renewable energy, and an update to this RPS was provided in PA 18-50 that increased the Class I RPS from 20% by 2020 to 40% by 2030, reduces the Alternative Compliance Payment (ACP) to $40 from $55, adds power generation from waste heat and expands the definition of run of river hydropower as Class I resources.

WHEREAS, real-time revenue quality meters are included as part of solar PV systems being installed through the Program that determine the amount of clean energy production from such systems as well as the associated RECs which, in accordance with Public Act 15-194 will be sold to the Electric Distribution Companies through a master purchase agreement entered into between the Green Bank, Eversource Energy, and United Illuminating, and approved by the Public Utility Regulatory Authority;

WHEREAS, pursuant to the Act, the Green Bank has prepared a declining incentive block schedule ("Schedule") that offers direct financial incentives, in the form of the expected performance based buy down ("EPBB") and performance-based incentives ("PBI"), for the purchase or lease of qualifying residential solar photovoltaic systems, respectively, fosters the sustained orderly development of a state-based solar industry, and sets program requirements for participants, including standards for deployment of energy efficient equipment as a condition for receiving incentive funding;

WHEREAS, pursuant to the Act, to address willingness to pay discrepancies between communities, the Green Bank will continue to provide additional incentive dollars to improve the deployment of residential solar PV in low to moderate income communities.

WHEREAS, pursuant to the Act, to address sustained orderly development of a state-based solar industry, the proposed grid modernization and climate change pilot will provide incentives for solar PV to offset the additional energy load from clean energy sources and storage needs.

WHEREAS, pursuant to Section 16-245(d)(2) of the Connecticut General Statutes, a Joint Committee of the Energy Conservation Management Board and the Connecticut Green Bank was established to "examine opportunities to coordinate the programs and activities" contained in their respective plans (i.e., Conservation and Load Management Plan and Comprehensive Plan);

WHEREAS, the Global Warming Solutions Act of 2008 requires Connecticut to reduce its greenhouse gas emissions by 80 percent from 2001 levels by 2050, all the while transportation and the thermal heating and cooling of buildings representing the largest emitting sectors;

WHEREAS, residential solar PV can provide cleaner, cheaper, and more reliable sources of energy for electric vehicles and renewable thermal technologies while creating jobs and supporting local economic development;

NOW, therefore be it:

RESOLVED, that the Deployment Committee of the Connecticut Green Bank Board and the Commissioner of the Department of Energy and Environmental Protection approves of the RSIP Battery Storage Incentive schedule, programmatic cap and budget to be applied within the United Illuminating localized targeting of distributed energy resources demonstration project as set forth in the memorandum dated September 18, 2018.

6. Adjourn

Join the meeting online at https://global.gotomeeting.com/join/550855125

Or call in using your telephone:
Dial (786) 535-3211
Access Code: 550-855-125

Next Regular Meeting: Tuesday, November 13, 2018 from 2:00-3:00 p.m.
Colonel Albert Pope Board Room at the
Connecticut Green Bank, 845 Brook Street, Rocky Hill, CT

Deployment Committee Meeting

September 18, 2018

CONNECTICUT GREEN BANK

Deployment Committee

Agenda Item #1

Call to Order

Deployment Committee

Agenda Item #2

Public Comments

Deployment Committee

Agenda Item #3

Consent Agenda

Consent Agenda
Resolutions 1 and 2

1. **<u>Meeting Minutes</u>** – approval of meeting minutes of May 29, 2018

2. **<u>Time Extensions</u>** – C-PACE transaction time extensions to close

- **<u>Under $500,000 and No More in Aggregate than $1,000,000</u>** – memo to update Deployment Committee on transactions reviewed and approved by staff and clearing the queue for future transactions consistent with Comp Plan and Budget.

- **<u>Under $100,000 and No More in Aggregate than $500,000</u>** – draft memo and analysis to update Deployment Committee on restructured or written-off transactions (comments welcome)

Consent Agenda
No More in Aggregate than $1,000,000

Project Name	Comprehensive Plan	Amount	Type
36 Spring Lane (Farmington)	C-PACE – EE	$376,500	Benefit Assess.
345 Ely Avenue (Norwalk)	C-PACE – PV	$351,170	Benefit Assess.
2339 Barnum Avenue (Stratford)	C-PACE – PV and Roof	$74,227	Benefit Assess.
Total		**$801,897**	

Approximately $800,000 in loans

Deployment Committee

Agenda Item #4a

Loan Loss Decision Framework

C-PACE Transactions

Loan Loss Decision Framework

Structure

Type of Loss Anticipated	Amount of Principal Outstanding		
	<$500,000	$500,000-$2,500,000	>$2,500,000
Provisional	Staff (with review and reporting from the Auditor)		
Restructuring	Staff	Deployment	BOD
Write-Off	Staff	Deployment	BOD

Loan Loss Decision Framework is based on current best practice for the "Under $500,000 and No More in Aggregate than $1,000,000" staff transaction approval process, except with a focus on (1) amount of principal outstanding on a transaction, and (2) type of loss anticipated… **"Under $100,000 and No More in Aggregate than $500,000"** between report outs.

Regional YMCA of Western CT

EXECUTIVE SESSION

Deployment Committee

Agenda Item #5a

Incentive Business Recommendation

RSIP Battery Storage Pilot

RSIP Battery Storage Incentive

Overview

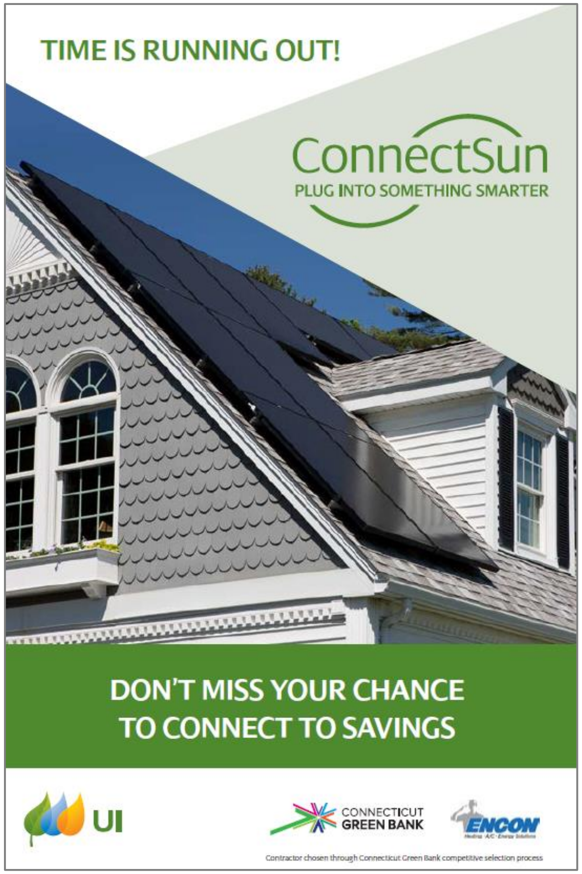
- **Incentive** – Equivalent to Step 13/14 EPBB, up front rebate on usable energy storage capacity, $231.50/kWh. Max $4630 per project, program cap $588,010.
- **Eligibility** – Limited to customers participating in the UI Localized Targeting of DERs demonstration project ("ConnectSun").
- **New Projects and Additions –** Must purchase battery storage with a new solar PV system or solar PV addition. Leased systems ineligible for incentive.
- **Usage -** Customers must switch to utility Time of Use rate and will be required to discharge the battery as specified in the program guidelines.
- **Data Release and System Functionality** – Households must sign data release form allowing for access to solar PV and battery storage data

RSIP Incentive Step	EPBB ($/W)	PBI ($/kWh)	LMI PBI ($/kWh)	Battery Storage Incentive ($/kWh)* *Available with UI pilot only*
13/14	$0.463/ $0.400	$0.035	$0.09/ $0.045	$231.50 (4 kWh min, 20 kWh max)

* Solar PV must be minimum 2.5 kW and at least half of battery (kWh) or else incentive is 2 * PV system rating * $231.50

RSIP Battery Storage Incentive
UI "ConnectSun" Pilot

- **ConnectSun** – UI "Localized Targeting of DERs" demonstration project, to be launched September 25, 2018
- **Goal** – Achieve 1 MWh peak load reduction on two distribution circuits that are forecasted to exceed capacity rating, through the deployment of distributed energy resources (DERs)
- **UI Circuits** – 1 residential, 1 commercial circuit in Fairfield/Southport, CT
- **Target** – 1,275 kW residential solar PV (potentially less with storage)
- **Rate Rider** – $0.05/kWh rate rider for production from qualifying Class I or III DERs between 2-6pm, June-September (includes discharge from battery storage device)



RSIP Battery Storage Incentive

Comparison to other state incentives

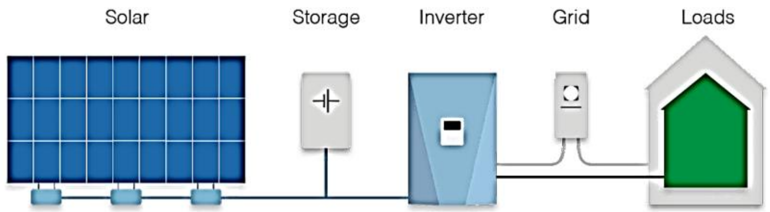
CONNECTICUT GREEN BANK

State	Incentive Type	Battery Storage Incentive Level	Example Calculation	Program Budget
MA	tariff	$0.0247-$0.0763/kWh, 10 years	$ 4,477	80 MW Tranche 1, ~$37 million
MD	tax credit	30% tax credit, maximum $5000	$ 4,590	$750,000 including residential, commercial projects (2018-2022)
CA	rebate	Small (<10kW): $350-450/kWh, Large (>10kW): $250-350/kWh	$ 6,840	$300 million residential, $70 million LMI budget
CT	rebate	$231.50/kWh; maximum $4,630	$ 3,958	127 residential customers, $588,010

References: https://www.mass.gov/service-details/development-of-the-solar-massachusetts-renewable-target-smart-program, http://energy.maryland.gov/business/Pages/EnergyStorage.aspx, and https://www.selfgenca.com/home/program_metrics/

RSIP Battery Storage Incentive

Example Battery Storage Solutions



https://www.pika-energy.com/

Battery Manufacturer and Model	Battery Continuous Power Rating (kW)	Battery Usable Energy Capacity (kWh)	Incentive Calculation ($231.50/kWh)
Pika Harbor Flex	4.5	11.4	$ 2,639
Pika Harbor Plus	6.7	17.1	$ 3,959
LG Chem RESU10H	5	9.3	$ 2,153
Tesla Powerwall 2	5	13.5	$ 3,125
Sonnen eco 4	3	4	$ 926
Sonnen eco 8	4	8	$ 1,852
Sonnen eco 12	8	12	$ 2,778
Sonnen eco 16	8	16	$ 3,704
Maximum size	10	20	$ 4,630

Pika Battery Storage Solution, photo by Revision Energy

Deployment Committee

Agenda Item #6

Adjourn

Deployment Committee of the
Connecticut Green Bank
845 Brook Street
Rocky Hill, CT 06067
Tuesday, May 29, 2018
2:00-3:00 p.m.

A regular scheduled meeting of the Deployment Committee of the Board of Directors of the Connecticut Green Bank was held on May 29, 2018 at the office of the Green Bank, 845 Brook Street, Rocky Hill, CT.

1. Call to order

Commissioner Rob Klee called the meeting to order at 2:03 p.m. Deployment Committee members participating: Matt Ranelli (by phone), Bettina Bronisz (by phone).

Staff Attending: Bryan Garcia, Cheryl Samuels, Brian Farnen, Kerry O'Neill (by phone) Nick Zuba (by phone), Eric Shrago (by phone), Mackey Dykes, Bert Hunter (by phone), Alex Kovtunenko and George Bellas.

2. Public Comments

There were no public comments.

3. Consent Agenda

a. Approval of Meeting Minutes for September 5, 2017

<u>Resolution #1</u>

Motion to approve the meeting minutes of the Deployment Committee for September 5, 2017.

b. C-PACE Transaction Time Extensions

<u>Resolution #2</u>

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 agreement for the C-PACE projects described in the Memo submitted to the Deployment Committee on May 22, 2018 (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 Deployment Committee extends authorization of the Finance Agreements to no later than 120 days from May 29, 2018 and consistent in every other manner with the original Board authorization for the Finance Agreements.

c. Transactions – Under $500,000 and No More in Aggregate than $1,000,000

Upon a motion made by Matt Ranelli, and seconded by Bettina Bronisz, the Committee unanimously approved the Consent Agenda.

4. Proposed Loan Loss Decision Framework and Process

Bryan Garcia provided an overview on proposed Loan Loss Framework and Process. He stated that the Green Bank has a strong Balance Sheet. He stated that there are 4300 different types of transactions on the Balance Sheet, with over $70 million in assets. He stated that the portfolio has been performing in regard to repayment. He stated that they have had 6 defaults, totaling approximately, $100,000. He stated that they are ensuring that they are underwriting transactions with high standards, resulting in high repayment. He stated that as they want to ensure a process is in place to deal with transactions that may need to be written off or restructured.

Brian Farnen stated that the process is consistent with the Bylaws. He stated that he discussed the process with a General Counsel group of other quasi-public agencies and that it appears that the Green Bank is the first to go this route.

Bryan Garcia stated that the process is from the structure that they currently have for transactions, allowing the staff to approve transactions under $500,000 and no more in aggregate of $1 million. He stated that they are proposing a similar process with regards to the Loan Loss Framework. He stated that the key criteria is determining the value of the modification, the value of the transaction or the outstanding principal balance. He stated that the principal outstanding would be the focus for modification and provisional loss, which would be determined by the Budget and Operations Committee and ACG Committee. He stated that they would only write off transactions that have no possibility of asset recovery. He stated that George Bellas would be working with the auditors on an annual basis, but the principal amount would be less than $500,000 and no more in aggregate than $500,000.

Bettina Bronisz questioned if there is any recovery insurance or any property. George Bellas stated that the Green Bank does not carry any type of insurance for that. Mackey Dykes stated that C-PACE was removed from the example, because it's a bit different since they do have the building as security. In an incident such as that, they would act on their foreclosure rights.

Matt Ranelli questioned the Bylaws on Governance, stating that there is nothing stating writing off bad debt. He questioned if the idea of setting up a Loan Loss Reserve was equivalent to writing something off. Brian Farnen stated that the Deployment Committee and ACG Committee can make a recommendation to the Board and that the combination of both with the authorization from the Board should be sufficient.

Matt Ranelli questioned the provisional loss and how it would work in the case of multiple losses on a transaction, or if it is limited to one loss or restructuring. Bryan Garcia stated that the Provisional Loss is a way to anticipate from an expense and budget perspective. George Bellas stated that what they call a provisional loss is for general Accounting purposes. He stated that they do the best they can in estimating based on the portfolio value. He stated that the portfolio last year was valued at approximately $42 million. He stated that they assign a percentage to the outstanding balance and they book in a provision, setting up a reserve. He stated that if one of those loans goes bad, it has already been recognized in the year you expected it to occur. He stated that it is then written off. He stated that this is just a first step and that the auditors review it. He stated that it must be done to determine if there are any potential losses and to provide a reserve for those. He stated that they had $5 million in loss reserves last year, against about a $42 - $43 million portfolio. He stated that the current value of the portfolio is approximately $46 million. He stated that nothing has been written off the Balance Sheet. He stated that this is just a process to the potential.

Commissioner Klee questioned how everyone felt regarding the numbers and this being the first step. Matt Ranelli states that he is not comfortable. He stated that he would rather know more than just a number. He would also like to know about frequency. He questioned what the trigger points would be regarding unusual activity in various programs. Bryan Garcia stated that this would be put into the Quarterly Report. He stated that they can structure what the number of projects are, as well as the amount of principal being restructured, and look at it by program, frequency, and percentage. George Bellas stated that they can put in a monthly Financial Sheet with loan loss provisions by line so that the Board can see the composition of the provisions. He stated that they are not writing anything off, that it is just provisional. Bettina Bronisz stated that they should be made aware of provisions so that they can spot any trends that may be starting.

Bryan Garcia stated that the average size of a C-PACE project is about $300,000, SMART-E is about $15,000, and Commercial Solar Lease about $200,000. He stated that SMART-E is a bit unique in that the first 1½% of their loan portfolio must be paid by the lender. He stated that they can put the data together in the Quarterly Report to show any trends and summarize staff approvals.

Matt Ranelli questioned what the motivation is, questioning if they are worried about a drag on time, and if there was any downside to having a relatively low number. Bryan Garcia stated that they want to keep it simple, but also stay on top of it. Brian Farnen stated that the Committee does not need to review and approve residential. He stated that they can report out on that to see the trends. He suggested putting the line at $100,000.

Commissioner Klee stated asked the Committee if they were comfortable with $100,000. Bryan Garcia stated that he feels good about it. He suggested that they go with it for 6 months to a year to see how it goes. Matt Ranelli stated that he was comfortable with that. He questioned how they will know what happening in the residential area. Bryan Garcia stated that they will include it in the reporting and track trends similarly. Commissioner Klee stated that about 6 or so, should be an alert. George Bellas stated that yes, that's possible.

Bryan Garcia discussed the process, stating that they the team would look at economics detailed in the memo on the transaction as a recommendation for restructure or writing off, documenting, reviewing, and approving based on the new threshold. He stated that this will sit on the Quarterly Memo.

Brian Farnen stated that they can bring a recommendation to the Board to approve with the revision that the authorization is lowered to $100,000. Commissioner Klee stated that as long as they have discretion he's okay with the $100,000 to $2.5 million, assuming that they can suggest it go to the Board. Matt Ranelli stated that he would prefer a much lower number than $2.5 million. Bettina Bronisz agreed with lowering the amount. Mackey Dykes stated that they it could be a certain percentage of the outstanding principal balance. Bettina Bronisz questioned if he was recommending a number or a percentage. Mackey Dykes stated that he was recommending both. He stated that where there is $1 million in principal outstanding and the restructure is more than 80% of the outstanding balance, then the Board must approve. Commissioner Klee stated that anything where they're doing more than $500,000 worth of modifications should go to the Board.

Bryan Garcia stated that the recommendation to the ACG Committee is below $100,000 to the staff, $100,000 to $1 million to the Deployment, and over $1 million will go to the Board. He stated that they will amend the Resolution.

Upon a motion made by Matt Ranelli, and seconded by Bettina Bronisz, the amended Resolution passed.

Resolution #3

WHEREAS, pursuant to Section 5.3.1 of the Connecticut Green Bank (Green Bank) Bylaws, the Audit, Compliance & Governance (ACG) Committee is charged with the review and approval of, and in its discretion recommendations to the Board regarding, all governance and administrative matters affecting the Green Bank, including but not limited to matters of corporate governance and corporate governance policies;

WHEREAS, on January 18, 2013, the Board of Directors authorized Green Bank staff to evaluate and approve funding requests less than $300,000 which are pursuant to an established formal approval process requiring the signature of a Green Bank officer, consistent with the Green Bank Comprehensive Plan, approved within Green Bank's fiscal budget and in an aggregate amount not to exceed $500,000 from the date of the last Deployment Committee meeting ("Staff Approval Policy for Projects Under $300,000");

WHEREAS, on July 18, 2014, the Green Bank Board of Directors approved of a recommendation brought forth by the Audit, Compliance, and Governance Committee and Deployment Committee to approve the authorization of Green Bank staff to evaluate and approve program funding requests less than $300,000 which are pursuant to an established formal approval process requiring the signature of a Green Bank officer, consistent with the Green Bank Comprehensive Plan, approved within Green Bank's fiscal budget and in an aggregate amount not to exceed $1,000,000 from the date of the last Deployment Committee meeting;

WHEREAS, on October 20, 2017, the Green Bank Board of Directors approved of a recommendation brought forth by the ACG Committee and Deployment Committee to approve the authorization to amend the Staff Approval Policy to increase program funding requests for Projects Under $300,000 to $500,000 with an aggregate amount limit of $1,000,000 from the date of the last Deployment Committee meeting; and

WHEREAS, the Staff of the Green Bank propose in a memo to the Deployment Committee on May 29, 2018, a Loan Loss Decision Framework and Process for managing assets requiring restructuring or write-off from the Green Bank's balance sheet.

NOW, therefore be it:

RESOLVED, that the Deployment Committee recommends that the Board approve of the Staff proposed Loan Loss Decision Framework and Process for managing assets requiring restructuring or write-off from the Green Bank's balance sheet; and

RESOLVED, that the Deployment Committee recommends to the Audit, Compliance and Governance Committee their review and consideration of the Staff proposed Loan Loss Decision Framework and Process, with revisions discussed and included in a revised memorandum that will be presented to the Audit, Compliance and Governance Committee, for managing assets requiring restructuring or write-off from the Green Bank's balance sheet, and then the consideration by the Board of Directors of the Green Bank.

5. Investment Business Recommendations

a. C-PACE Transaction – Proposed Restructuring

Upon a motion made by Commissioner Klee, and seconded by Bettina Bronisz, the Committee voted to go into Executive Session at 3:06 p.m.

6. Adjourn

The Committee came out of Executive Session and the meeting was adjourned at 3:07 p.m.

Respectfully Submitted,

____
Rob Klee, Chairperson

____

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

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)

Date: September 18, 2018

Re: Approval of Funding Requests below $500,000 – Update

At the October 20, 2017 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 funding requests less than $500,000 which are pursuant to an established formal approval process requiring the signature of a Green Bank officer, consistent with the Comprehensive Plan, approved within Green Bank's fiscal budget and in an aggregate amount not to exceed $1,000,000 from the date of the last Deployment Committee meeting. This memo provides an update on funding requests below $500,000 that were evaluated and approved. During this period, 3 projects were evaluated and approved for funding in an aggregate amount of approximately $801,897. If members of the board or committee would be interested in the internal documentation of the review and approval process Green Bank staff and officers go through, then please request it.

Project Name:	**New England Airfoil Products, Inc. – 36 Spring Lane, Farmington, CT**
Amount:	**$376,500**
Comprehensive Plan:	**CPACE**

<u>Description</u>

The property at 36 Spring Lane, Farmington, CT is a ~86,000 square foot owner-occupied industrial manufacturing building ("36 Spring Lane" or the "Property") that serves as the headquarters of New England Airfoil Products, Inc. ("NEAP" or the "Company"). NEAP is a diversified supplier to the aerospace industry. The Company has been in operations since 1955 and has been situated at 36 Spring Lane since 1963. In 2016, NEAP was acquired by Pietro Rosa TBM Sri ("Pietro Rosa"), an Italy-based manufacturer of compressor airfoils for gas turbines, as part of Pietro Rosa's strategic growth plan.

The proposed investment is a C-PACE transaction under which the Connecticut Green Bank ("Green Bank") would provide construction financing (at a per annum 5.0% interest rate) and a 15-year term loan commitment (5.75% interest rate), in the amount of $376,500 to support the installation of HVAC, lighting, and other energy efficiency measures. The savings-to-investment ratio is 3.28 over the effective useful life. A C-PACE assessment through the Town of Farmington will provide security. The Green Bank intends to hold this asset on its balance sheet for income generation purposes or until it can be sold to another capital provider.

Financial Metrics: Based on a value of $4,095,547 (the $3,900,000 appraised value set in 2018 plus 50% of CPACE hard costs of $391,094) and (a) a $350,000 term note and (b) a $750,000 line of credit, both of which are secured by the Property, the LiTV and LTV of the Property are 9.2% and 36.1%, respectively. The line of credit is conservatively assumed to be fully drawn. The $350,000 term note was used to finance 90% of a purchase of machinery needed to service a new contract with Honeywell International, and this note is also secured by the financed machinery. There is no other debt secured by the Property. However, NEAP carries other long-term debt, including:

1) $4,300,000 intercompany loan from Pietro Rosa;
2) $3,000,000 DECD loan ($2,470,188 outstanding as of 4/30/18). This loan is subject to a $1,000,000 principal reduction provided NEAP meets certain job creation and retention figures by 2021.

As they are not secured by the Property, the intercompany loan and DECD loan have not been factored into the LTV analysis.

In terms of DSCR, the average DSCR is 42.9 across the assessment term based on budgeted 2018 EBITDA. Budgeted EBITDA is used because NEAP was acquired by Pietro Rosa in February 2016, and prior to the acquisition, NEAP suffered from lagging capital investment and poor profitability. Pietro Rosa targeted NEAP for acquisition because it believed in a turnaround plan, and committed to investing in excess of $10 million into the facility as part of the repositioning. The execution of the turnaround is reflected in NEAP's financials, with top line revenue growing from $4.2M in 2016 to $8.0M in 2017 and a budgeted $16.4M in 2018. The revenue growth has been driven by a new contract for compressor blades with Honeywell International Inc's aerospace unit. This contract, which staff has reviewed, goes until 2030 and provides for a minimum purchase of $42.8M through 2021. Given the long term contracted nature of NEAP's revenue, staff is comfortable basing DSCR calculations off forward looking 2018 EBITDA rather than historical EBITDA as it is more reflective of the Company's future cash flows. Per a diligence call with NEAP, the Property is only approximately 50% utilized, and management believes it can eventually ramp up to $30+ million in revenue in the current facility.

The average DSCR given above is based on the projected debt service of the secured debt only (e.g., CPACE assessment, line of credit, and term note). Including the debt service of capital leases and the DECD loan would decrease DSCR to 4.58x. Intercompany debt service to Pietro Rosa has not been factored into either DSCR calculation as it is effectively a way for Pietro Rosa to finance the operational and capital expenditures of its foreign affiliate rather than true third-party debt. NEAP has been under no pressure to pay, and did not make any intercompany debt payments due in 2016 or 2017.

New England Airfoil Products - Revenue and EBITDA

	Actual		Budget
	12/31/2016	12/31/2017	12/31/2018
Gross Revenue	$4,222,653	$8,090,484	$16,414,487
Expenses	$5,855,490	$8,986,941	$16,372,576
NOI	**(1,632,837)**	**(896,457)**	**41,911**
Addbacks:			
Depreciation	652,097	798,862	1,177,371
Interest	52,070	113,511	175,042
Corporate Tax	(966,177)	(400,343)	27,900
Total Addbacks	**(262,010)**	**512,030**	**1,380,313**
EBITDA	**$ (1,894,847)**	**$ (384,427)**	**$ 1,422,224**

Sales by Customer

NEAP Inc.

Customer	2,018	%	increase	2,017	%
Honeywell Intl Inc	**12,926,341**	**80%**	**288%**	3,334,826	41%
PSM	**1,401,041**	**9%**	**28%**	1,092,879	13%
Mitsubishi Power Systems	**688,474**	**4%**	**15%**	599,450	7%
PCI - P&W	**405,000**	**3%**	**966%**	38,000	0%
Vericor Power Systems	**498,344**	**3%**	**-45%**	903,034	11%
Solar Turbines	**272,098**	**2%**	**-56%**	614,128	8%
Other customers			**-100%**	1,558,900	19%
Total	**16,191,299**	**100%**	**99%**	8,141,217	100%

additional details

Honeywell (AGT1500)	**12,146,098**	**75.0%**
Honeywell (T53)	**780,243**	**4.8%**
other sales	**3,264,958**	**25.0%**

Based on the balance sheet of the Company, as at 12/31/2017, the tangible net worth was $1.7M with a total liabilities to tangible net worth ratio of 5.81. This ratio improve if you reclassify the intercompany debt and part of the DECD loan as equity:

		Reclassifying as Equity	
	As-Is	DECD(1)	Third Party
Total Assets	11,764,737	11,764,737	11,764,737
Total Liabilities	10,036,955	9,036,955	4,136,955
Total Net Worth -	1,727,782	2,727,782	7,627,782
TL/TNW Ratio	**5.81**	**3.31**	**0.54**

(1) $1,000,000 of the DECD loan reclassified, will be reduced once job creation and retention targets met

The current ratio was 1.16 due to the high current portion of long term intercompany debt. Accordingly, these is no particular concern with the low current ratio.

Taking all of these factors into account, staff recommends the project for approval, pursuant to the Project Approval Form.

Project Name:	**345 Ely Avenue (345 Ely LLC and Sono Court Associates LLC) – Norwalk CT**
Amount:	**$351,170**
Comprehensive Plan:	**CPACE**

<u>Description</u>

The property at 345 Ely Avenue, Norwalk, CT ("345 Ely Avenue" or the "Property") is a 121,751-square foot industrial building owned by 345 Ely LLC and Sono Court Associates LLC ("Company"). Built in 1977, the Property sits upon a 7.57 acre site and is rented out to a sole tenant the World Wrestling Entertainment company ("Tenant"), which uses the facility as a production studio. The Company charges rent to the Tenant totaling $88,334 per month, and Company covers all other buildings costs.

The proposed investment is a C-PACE transaction under which the Connecticut Green Bank ("Green Bank") would provide construction financing (at a per annum 5.0% interest rate) and a 20-year term loan commitment (6.25% interest rate), in the amount of $351,170. The proposed investment would support the installation of a 131-kW solar PV system. The project is immediately cash flow positive, and the savings-to-investment ratio ("SIR") is 1.32 over the effective useful life. A C-PACE assessment through the City of Norwalk will provide security. The Green Bank intends to initially hold this asset on its balance sheet until it can be sold to another capital provider. Green Bank is underwriting this loan with the intention of holding it for an indefinite period. Ultimately, Green Bank will determine whether to retain the loan for a longer period to increase its holdings of earning assets or to sell or partially participate the loan to another capital provider in the future.

Financial Metrics: Based on a value of $8,550,953.50 (the $8,380,400 appraised value set from VGSI plus 50% of CPACE hard costs) and a current mortgage balance of $5,939,024 (April 2018) the Lien-to-Value ("LiTV") and Loan-to-Value ("LTV") for this investment are 4.11% and 73.6%, respectively.

With respect to other key financial metrics, the projected Debt Service Coverage Ratio ("DSCR") averages 1.75x over the term of the financing. The Property has strong financial health with a revenue over $1.4 million over the past three years and EBITDA between $798,100 and $900,000. Based on the year end balance sheet of the Property, the tangible net worth of $5,006,002 with total liabilities to tangible net worth ratio of 1.2. As the Property only has one tenant, we reviewed the financials provided online for the Tenant, which shows revenues of over $650 million. The Tenant has a lease agreement with a termination in January 2020, however the Company is confident that the lease agreement will be renewed.

Should for any reason the lease agreement with Tenant not be renewed, staff is comfortable that the property is situated in a general business area that would support a sale of the property at a value sufficient to repay the senior mortgage and any past due C-PACE assessments (~$31,000 / yr) that may result during a remarketing period for the property.

Project Name: **Bulldog Rebel Properties, LLC – 2339 Barnum Avenue, Stratford**

Amount: **$74,227**

Comprehensive Plan: **CPACE**

<u>Description</u>

[June 29, 2018 updates: increased quote received for roof work, resulting in higher loan amount. Summary of changes:

Ratio / metric	**June 4, 2018**	**June 29, 2018**
Proposed Assessment	$68,495	$74,227
Annual C-PACE Assessment	$6,089	$6,598
SIR	1.09	1.01
Average DSCR	1.52x	1.48x
Loan-To-Value	105.2%	106%
As-Is Appraised Value	$340,760	$343,543

Changes are within 10% of original approved values.]

The property at 2339 Barnum Avenue, Stratford, CT (“2339 Barnum Avenue” or the “Property”) is a 8,189-square foot mixed use building occupied by commercial retail (first floor) and residential tenants. The Property sits upon a 0.23 acre site and is owned by Bulldog Rebel Properties, LLC (the “Company”).

The proposed investment is a C-PACE transaction under which the Connecticut Green Bank (“Green Bank”) would provide construction financing (at a per annum 5.0% interest rate) and a 20-year term loan commitment (6.25% interest rate), in the amount of $68,495 to support the installation of a 16.3-kW solar PV system plus roof upgrades. The savings-to-investment ratio is 1.09 over the effective useful life. A C-PACE assessment through the Town of Stratford will provide security. Green Bank is underwriting this loan with the intention of holding it for an indefinite period. Ultimately, Green Bank will determine whether to retain the loan for a longer period to increase its holdings of earning assets or to sell or partially participate the loan to another capital provider in the future.

Financial Metrics: Rental income from the Property is disclosed in the joint tax return of the individuals Raymond J. Martin Jr. and Karen G. Martin. The tax returns have been used to derive net operating income (NOI) for the Property in the underwriting analysis. By analyzing the Property’s rental income for the years 2015 to 2017, together with the rent roll for 2018, the projected NOI for the Property is nearly $33k p.a., providing a healthy average DSCR of 1.52x over the financing term.

There is no formal balance sheet available for the Company, which means that the ‘current ratio’ and ‘total liabilities to tangible net worth ratio’ are not available. The Property value was assessed in 2017, by the Town of Stratford, to be $307,510. There is a mortgage on the Property, with a balance of $290,000. Using an ‘As-complete Proforma Value’ of $340,760[1], the LTV is 105% and the LiTV is 20%. However, Staff has reviewed a Promissory Note that pertains to the mortgage, dated February 2016, the terms of which imply that the mortgage debt is quasi-equity in nature and therefore inflates the LTV ratio. Reclassifying the mortgage as equity would result in an LTV of 20.1%. The mortgage lender is an affiliated company, owned by the same individuals who own Bulldog Rebel Properties, LLC, and the Promissory Note states that no repayments are made until February 2031 at which point the principal plus 3% interest is payable. In calculating the average DSCR of 1.52x across the financing term, Staff has conservatively assumed that the mortgage will be refinanced in 2031 on more typical terms (fully amortizing, 15 year term, 5% interest rate). Accordingly, there is no particular concern with the LTV ratio.

Taking all of these factors into account, staff recommends the project for approval, pursuant to the Project Approval Form.

---

[1] $307,510 appraised value, plus 50% of $66,500 C-PACE hard costs

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

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)

Date: September 18, 2018

Re: Staff Loan Loss Approval Policy for Transactions Under $100,000 – Q1 FY 2019 Report

---

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 thus far in Q1 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. Through August of FY19 there have been no loan write-offs. See the attached analysis prepared by the accounting department for further details. For FY 2019, 0 transactions have been written-off totaling $0 amount of losses – or 0% of the "Provision for Loan Loss" in the FY 2019 budget. The frequency of transaction write-offs has been 0 a month totaling $0 amount of losses on average.

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.

Project Name: **X**

Principal Outstanding: **$X**

Type of Loss: **Restructuring or Write-Off**

<u>Description</u>
Xxx

Connecticut Green Bank
Loan Loss Reserve Analysis
YTD August 31,2018

Loan Program	General Ledger Account	Dept	Program	Loan Portfolio Balance 7/1/2018	FY 2019 Investments YTD August	FY 2019 Repayments YTD August	Loan Portfolio Balance 8/31/2018	Loan Loss Reserve Balance 7/1/2018	Budgeted Additions to Provisional Reserve YTD 8/31/2018	Portfolio Loan Write-Offs YTD 8/31/2018	Loan Loss Reserve Balance 8/31/2018	Reserve as a % of Portfolio Balance	Write-offs as a % of Portfolio Balance	Loan Portfolio Carrying Value 8/31/2018
CPACE Program	127200 127225	CI&I	51800-C&I CPACE	$ 25,225,460	$ 810,627	$ (268,937)	$ 25,767,150	$ (2,522,546)	$ (456,970)	$ -	$ (2,979,516)	11.6%	0%	$ 22,787,634
Fuel Cell Projects	127100	Other Pgms	51600-Loans Commercial	$ 6,026,165	$ -	$ -	$ 6,026,165	$ (1,205,233)	$ -	$ -	$ (1,205,233)	20.0%	0%	$ 4,820,932
CHP Pilot	127100	SI	51300-MicroGrid/CHP Pilot Prgs	$ 489,121	$ -	$ (3,384)	$ 485,737	$ (48,912)	$ -	$ -	$ (48,912)	10.1%	0%	$ 436,825
Anaerobic Digester	127100	SI	51200-Anaerobic Digester Pilot	$ 1,797,663	$ -	$ (22,193)	$ 1,775,469	$ (179,766)	$ -	$ -	$ (179,766)	10.1%	0%	$ 1,595,703
Other Loans	127100	Other Pgms	50800-Grid-Tied R.E. Projects	$ 155,205	$ -	$ -	$ 155,205	$ (155,204)	$ -	$ -	$ (155,204)	100.0%	0%	$ 1
	127100	CI&I	51810-C&I New Product Develop.	$ 89,000	$ -	$ -	$ 89,000	$ (8,900)	$ -	$ -	$ (8,900)	10.0%	0%	$ 80,100
Multifamily / Affordable Housing / Credit Challenged / LMI	127100 (C4C)	Multi	52230-CHIF Multifamily PEL	$ 3,178,596	$ -	$ (22,890)	$ 3,155,706	$ (317,860)	$ -	$ -	$ (317,860)	10.1%	0%	$ 2,837,846
	127100 (Pre-Dev)	Multi	52250-Multifamily Programs	$ 90,927	$ 17,360	$ -	$ 108,287	$ (18,185)	$ (60,000)	$ -	$ (78,185)	72.2%	0%	$ 30,101
	127100 (Posigen)	Resi	52220-LMI Programs	$ 6,819,075	$ 1,560,932	$ -	$ 8,380,007	$ (681,907)	$ (250,000)	$ -	$ (931,907)	11.1%	0%	$ 7,448,100
Energy Efficiency	127100	Other Pgms	51910-Campus Efficiency NOW	$ 169,755	$ -	$ (30,910)	$ 138,845	$ (16,976)	$ -	$ -	$ (16,976)	12.2%	0%	$ 121,870
	127100	CI&I	51810-C&I New Product Develop.	$ 130,000	$ -	$ -	$ 130,000	$ (13,000)	$ -	$ -	$ (13,000)	10.0%	0%	$ 117,000
Solar Hot Water	127100	Other Pgms	51600-Loans Commercial	$ 6,535	$ -	$ (2,607)	$ 3,928	$ (327)	$ -	$ -	$ (327)	8.3%	0%	$ 3,601
Alpha Program	127100	Other Pgms	50100-Alpha Program	$ 150,000	$ -	$ -	$ 150,000	$ (75,000)	$ -	$ -	$ (75,000)	50.0%	0%	$ 75,000
Op Demo Program - 2013 forward	127100	Other Pgms	50200-Op Demo Program	$ 500,000	$ -	$ -	$ 500,000	$ (499,999)	$ -	$ -	$ (499,999)	100.0%	0%	$ 1
Wind Financing	127100	Other Pgms	50800-Grid-Tied R.E. Projects	$ 2,350,263	$ -	$ -	$ 2,350,263	$ (235,026)	$ -	$ -	$ (235,026)	10.0%	0%	$ 2,115,237
			Total:	$ 47,177,765	$ 2,388,919	$ (350,921)	$ 49,215,763	$ (5,978,841)	$ (766,970)	$ -	$ (6,745,811)	13.7%	0%	$ 42,469,951

Analysis:

Number of loans written off:	None
Dollar amount of loans written off:	$ -
Write-offs as a percent of portolio:	0%

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

CONNECTICUT GREEN BANK

Memo

To: The Connecticut Green Bank Deployment Committee

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: September 11, 2018

Re: Extending timeline for closing certain C-PACE transactions

---

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	Expires
6 Shaws Cove, New London, CT 06320	1/26/18 by Board	9/29/18
99 Powder Hill Road, Middlefield, CT 06455	1/26/18 by Board	9/29/18

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 Connecticut Green Bank Deployment Committee (the "Deployment Committee") to close this transaction and execute the financing agreement. The staff requests an additional 120 days from the date of this Deployment Committee 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 Green Bank Deployment Committee (the "Deployment Committee") on September 18, 2018 (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 Deployment Committee extends authorization of the Finance Agreements to no later than 120 days from September 18, 2018 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

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

CONNECTICUT GREEN BANK

Memo

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

From: Bryan Garcia, Dale Hedman, Selya Price, and Isabelle Hazlewood

Date: September 18, 2018

Re: Residential Solar Investment Program – Residential Battery Storage Incentive

---

Background

On March 2, 2012, the Connecticut Green Bank launched the Residential Solar Investment Program ("RSIP"). The RSIP requires that a minimum of 300 MW of new residential solar PV be installed in Connecticut on or before December 31, 2022, at a reasonable payback to the customer all the while developing a sustainable market for contractors.[1] The RSIP provides to residential customers, via solar PV contractors, direct financial incentives in the form of a one-time expected performance-based buy-down ("EPBB") or a 6-year performance-based incentive ("PBI") for the purchase and/or lease of qualifying PV systems respectively.

Deployment Progress for Incentives

To date, through the RSIP, we have approved and completed over 215 megawatts of projects – approximately 70 percent of the public policy target – while reducing the level of subsidies by over 80 percent since 2012 through 13 steps – see Table 1. About 24 percent (or 52 MW) of the installations are homeownership through the EPBB. As of September 2018, approved projects have reached over 222 MW, with 16.4 MW in Step 13.

Table 1. Installed Capacity by Step for Approved, In Progress, and Completed Projects (as of June 30, 2018)

RSIP Incentive Step	Approved (kW)	Completed (kW)	Total (kW)	Average Incentive ($/W$_{STC}$)
1	0	1,381	1,381	$1.789
2	0	5,992	5,992	$1.629
3	6	13,108	13,114	$1.229
4	80	19,258	19,338	$1.033
5	154	13,276	13,430	$0.746
6	84	12,162	12,247	$0.513
7	89	19,043	19,132	$0.400
8	457	26,798	27,254	$0.357
9	1,525	24,917	26,443	$0.332
10	4,119	27,594	31,713	$0.325

[1] See Connecticut General Statute Sec. 16-245ff.

RSIP Incentive Step	Approved (kW)	Completed (kW)	Total (kW)	Average Incentive ($/$W_{STC}$)
11	7,023	12,965	19,988	$0.311
12	14,720	4,537	19,257	$0.268
13*	6,026	7	6,033	$0.261
Total	**34,283**	**181,038**	**215,321**	**$0.529**

About 53 MW of solar PV deployment were the results of Steps 1 through 5, 117 MW of solar PV deployment were the results of Steps 6 through Step 10, and 45 MW is the result of Steps 11 through Step 13 thus far (and anticipated to be close to 60 MW at end of Step 13).[2]

On July 27, 2018, the Deployment committee approved the below incentive levels for Step 14, with the option of Green Bank staff to come back to the Board with a recommendation to lower the incentive if staff feels it necessary to reduce the incentive relative to development of an interim tariff that may be established under Public Act 18-50 Section 7 or other compelling reasons. For Step 14, the incentive levels will be $463/kW for the EPBB, $35/MWh for the PBI and $90/MWh for the LMI PBI.

The Step 14 incentive level is the same as the Step 13 incentive level for all incentive types. The Step 13 incentive level will be maintained to reflect recent increases in the cost of doing business for residential solar PV contractors and to support contractor preparation for the end of the RSIP and the transition to a tariff compensation structure. The goal is to enable a sustained, orderly transition to the post-RSIP market.

Table 2. Schedule of Incentives for Steps 11 through 14

RSIP Incentive Step	EPBB ($/W)			PBI ($/kWh)		LMI-PBI ($/kWh)	
	≤5 kW	5 to 10 kW	>10kW	≤10 kW	>10 kW	≤10 kW	>10 kW
1	$2.450	$1.250	$0.000	$0.300	$0.000		
2	$2.275	$1.075	$0.000	$0.300	$0.000		
3	$1.750	$0.550	$0.000	$0.225	$0.000		
4	$1.250	$0.750	$0.000	$0.180	$0.000		
5	$0.800		$0.400	$0.125	$0.060		
6	$0.675		$0.400	$0.080	$0.060		
7	$0.540		$0.400	$0.064	$0.060		
8	$0.540		$0.400	$0.054		$0.110	$0.055
9	$0.513		$0.400	$0.046		$0.110	$0.055
10	$0.487		$0.400	$0.039		$0.110	$0.055
11	$0.487		$0.400	$0.039		$0.110	$0.055
12	$0.463		$0.400	$0.035		$0.100	$0.050
13	$0.463		$0.400	$0.035		$0.090	$0.045
14	$0.463		$0.400	$0.035		$0.090	$0.045

Grid Modernization and Climate Change Pilot RSIP Incentives

The residential solar PV market potential in Connecticut is nearly 4 GW, or 660,000 households.[3] The successful implementation of the 300 MW RSIP policy will deliver nearly

[2] Section 106 of PA 11-80 applies to Steps 1 through 5, while PA 15-194 applies to Steps 6 and beyond – or projects approved after January 1, 2015.

[3] FY 2017 and FY 2018 Comprehensive Plan of the Connecticut Green Bank (p. 41)

10 percent of the economic potential for solar PV in Connecticut. The long-term success of the residential solar PV market in Connecticut depends on the regulatory certainty of the state's policy for compensation of distributed generation (currently retail net metering with a transition to a tariff structure upon RSIP reaching its 300 MW target). In addition to continuation of an adequate compensation structure for solar PV, progress should also be made in the following areas:

1. Fostering the sustained orderly development of a state-based industry, with respect to policies such as DER compensation, as well as a supportive regulatory environment and interconnection processes, and reasonable costs of doing business in the state;
2. Successfully collaborating with the electric distribution companies administering the Conservation and Load Management Fund; and
3. Integrating "cost-effective" solar PV as a zero-emission stable fuel source for transportation, home heating and cooling, and distributed energy resources (e.g., battery storage) to support grid infrastructure reliability and resiliency.

The role of the Connecticut Green Bank in being a market catalyst is helping ensure that residential solar PV achieves its economic potential in Connecticut over the long-term.

Grid Modernization
Understanding the value solar can bring to the grid and the ability of new technologies to increase hosting capacity are key to sustained market growth and adequately valuing solar resources post-RSIP. Green Bank and UI are hoping to demonstrate this value via the Localized Targeting of DERs demonstration project ("ConnectSun") by deferring a planned infrastructure upgrade and shedding light on the ability of advanced inverter functionalities to increase the hosting capacity of the distribution system.

Through this demonstration project UI seeks to reduce the peak load on two distribution circuits served by the Ash Creek Substation in Fairfield, Connecticut by one megawatt hour. Achieving this peak load reduction may enable UI to defer or avoid a significant infrastructure capacity investment. To achieve this peak load reduction, UI is encouraging customers on the selected circuits to install distributed energy resources (DERs) via targeted, "Solarize"-style marketing campaigns and by offering a financial performance-based incentive for DER generation during defined peak time periods.[4] This rate rider is applied to any generation from a qualifying DER, including battery discharge, during the defined peak period.

While solar PV is the primary technology being promoted to residential customers on the circuits, coupling solar with battery storage has significant potential to help achieve the goals of this pilot. By pairing solar and storage, customers can increase the coincidence of solar generated energy use with UI's peak hours, and more easily achieve peak load reductions. As a result, UI and Green Bank plan to strongly co-market these technologies in the demonstration project.

Proposal for a Revised Battery Storage Incentive
At the April 28, 2017 Board Meeting, the Board approved a Grid Modernization and Climate Change Pilot (GMCCP) that would provide additional incentives through the RSIP for battery

[4] The incentive is a $0.05/kWh rate rider called the "Demonstration Project DER Rate Rider" ("DPDRR"). The DPDRR is a monetary reward applied to any DER generation between 3-6pm from June 1st to September 30th. The DPDRR is available to participating customers for 5 years from their system Approval to Energize date.

storage deployed with new solar PV system installations. In the original GMCCP proposal, the below incentives (provided in Table 3) were approved with the Steps 11 through 13 EPBB and PBI incentives. Staff postponed implementation of these incentives given the timing of state budget sweeps, to allow for further consideration around program design and interconnection requirements with the utility companies, and to allow for consideration of tariff developments resulting from recent legislation, Public Act 18-50[5]. Staff has considered these factors and developed a proposal for a revised solar plus battery storage incentive.

Table 3. Previously Approved Schedule of Incentives for Steps 11 through 13 for Grid Modernization and Climate Change Pilot

RSIP Incentive Step	**EPBB** ($/W) or **PBI** ($/kWh) for **Grid Mod Pilot**	**LMI PBI** ($/kWh)	**Battery Storage Capacity** (14 kWh Max) **And Power Rating** (8 kW Max)	
			($/kWh)	($/kW)
11	$0.487 / $0.039	$0.110	$60.00	$50.00
12	$0.487 / $0.039	$0.110	$60.00	$50.00
13	$0.487 / $0.039	$0.110	$60.00	$50.00

Staff are proposing to limit implementation of the battery incentive pilot to a small segment of customers, those participating in the UI's ConnectSun demonstration project, in anticipation of developing a broader battery incentive program next year and to maximize the benefit derived from the incentive by concentrating on locations where solar PV plus storage is expected to provide additional distribution grid benefits. By restricting the incentive to ConnectSun participants the incentive will only be applied to solar plus storage installations that will provide grid reliability and peak load reduction benefits, and where these benefits are specifically needed to help prevent utility infrastructure upgrades.

Staff are recommending a higher incentive level to value the additional grid benefits these systems will provide and to sufficiently improve economics to encourage adoption. Staff are proposing that the battery storage incentive be equivalent to the current EPBB incentive level, translated into an energy capacity rating (kWh) for the battery, with the incentive provided for up to a maximum of 20 kWh or $4,630. The program cap would be 127 customers with a maximum program budget of $588,010.[6]

The proposed revision to the RSIP battery storage incentive structure is provided in Table 4 below. The incentive will be available for solar PV projects at Step 13 or 14 (which have the same incentive level), with Step 14 anticipated to begin late September/early October 2018.

[5] An Act Concerning Connecticut's Energy Future: https://www.cga.ct.gov/2018/act/pa/pdf/2018PA-00050-R00SB-00009-PA.pdf

[6] The ConnectSun solar PV target for the residential circuit is 1,275 kW. Based on an average 10 kW solar PV system (deployments on this circuit are anticipated to be higher than the RSIP 8 kW average size project), the target would be approximately 127 customers. At a maximum incentive of $4,630 per project, the total program budget is $588,010.

Table 4. Proposed Revision to Battery Storage Incentive Pilot for Approved RSIP Incentive Steps (HIGHLIGHTED COLUMN ONLY BEING APPROVED)

RSIP Incentive Step	EPBB ($/W)	PBI ($/kWh)	LMI PBI ($/kWh)	**Battery Storage Usable Energy Capacity Rating (20 kWh max) ($/kWh) United Illuminating Localized Targeting of distributed energy resources demonstration project**
13/14	$0.463 / $0.400	$0.035	$0.09/$0.045	**$231.50**

Table 5 provides a comparison of other state battery storage incentives with the proposed RSIP pilot incentive for Connecticut.

Table 5. Table of State Battery Storage Incentives[7]

State	Incentive Type	Battery Storage Incentive Level	Example Calculation	Program Budget
MA	tariff	$0.0247-$0.0763/kWh over 10 years	$ 4,477	80 MW Tranche 1, estimated to be $37 million
MD	tax credit	30% tax credit, $5000 maximum	$ 4,590	$750,000 including residential and commercial projects (available 2018-2022)
CA	rebate	Small (<10kW): $350-450/kWh, Large (>10kW): $250-350/kWh	$ 6,840	$300 million residential budget, $70 million LMI budget
CT	rebate	$231.50/kWh; maximum $4,630	$ 3,958	127 customers or $588,010 maximum budget

The RSIP battery storage incentive must factor in the following parameters/requirements:

- To qualify for the battery storage incentive, the solar PV system must have a nameplate rating of at least 2.5 kW-DC. The battery storage solution must have a maximum continuous rated power output of at least 2.5 kW and usable energy capacity of at least 4 kWh.
- The incentive is $231.50/kWh of usable energy capacity, reduced based on the size of the solar PV system, if needed. If the nameplate rating of the solar PV system (kW-DC) is less than half the usable energy capacity of the battery (kWh), then the

[7] References for state battery storage incentives for MA, MD, and CA, respectively, include: https://www.mass.gov/service-details/development-of-the-solar-massachusetts-renewable-target-smart-program, http://energy.maryland.gov/business/Pages/EnergyStorage.aspx, and https://www.selfgenca.com/home/program_metrics/. Example calculations assume a 17.1 kWh, 6.7 kW battery storage system, a 9.5 kW-DC solar PV system, and a cost of $15,300 for the battery storage solution. A tariff rate of $0.0565/kWh was used for the MA SMART incentive (based on their program calculator) and applied to PV production with capacity factor 12.3%, degradation rate of 0.5%, and an associated 10 year cash flow discounted at 3%. The CA incentive was calculated based on an incentive of $400/kWh.

incentive is calculated by multiplying the PV system rating by 2, and then multiplying by $231.50.

- The maximum incentive will be the equivalent of the incentive for a battery with a 20 kWh usable energy capacity rating, which will be 20 kWh * $231.50 = $4,630.
- Example calculations will be provided in a program guidelines document.

Additional program requirements for customers receiving the RSIP battery storage incentive are as follows:

1. **"ConnectSun" Eligibility** – Customers receiving a battery storage incentive through the RSIP must be participating in the UI Localized Targeting of DERs demonstration project ("ConnectSun").
2. **New Projects and Additions -** Customers that purchase battery storage with a new solar PV system or solar PV addition (to an existing solar PV system) are eligible for the battery storage incentive. The additional solar PV capacity would need to be 2.5 kW-DC or more and would need to meet RSIP requirements for solar PV additions including installation of a new revenue grade production meter for the solar PV addition. Leased battery storage systems are ineligible for the incentive.
3. **Battery Chemistry and Capability** - Battery storage technology must be based on lithium chemistry and the battery storage solution must be capable of meeting the discharge requirements specified in the program guidelines.
4. **Usage -** Customers receiving the incentive must switch to a Time of Use rate for at least one year beginning on their utility approval to energize date and will be required to discharge the battery as specified in the program guidelines. The discharge requirements will enable customers to monetize a rate rider benefit provided by UI under the "ConnectSun" program, as well as provide further peak load reduction and load shifting benefits.
5. **Data Release and System Functionality** – Households must sign a data release form for access to all data related to the performance of the solar PV and battery storage system as well as customer energy consumption data to allow for measurement of the value of distributed energy resources to the grid. Customers must also sign provisions agreeing to keep their system and associated monitoring systems in working order, similar to the provisions in the RSIP Terms and Conditions signed by solar PV customers.
6. **Other Qualifications** - Contractors offering the battery incentive must be qualified as RSIP Eligible Contractors or Third-Party Photovoltaic System Owners. Battery incentive program guidelines will be detailed in an Appendix to the RSIP RFQ that will need to be signed by all contractors participating in the battery incentive program.

Resolution

WHEREAS, Public Act 15-194 "An Act Concerning the Encouragement of Local Economic Development and Access to Residential Renewable Energy" (the "Act") requires the Connecticut Green Bank ("Green Bank") to design and implement a Residential Solar Photovoltaic ("PV") Investment Program ("Program") that results in no more than three-hundred (300) megawatts of new residential PV installation in Connecticut before December 31, 2022 and creates a Solar Home Renewable Energy Credit ("SHREC") requiring the electric distribution companies to purchase through 15-year contracts the Renewable Energy Credits ("RECs");

WHEREAS, as of June 30, 2018, the Program has thus far resulted in over two hundred and fifteen megawatts of new residential PV installation application approvals and completions in Connecticut;

WHEREAS, pursuant to Conn. Gen Stat. 16-245a, a renewable portfolio standard (RPS) was established that requires that Connecticut Electric Suppliers and Electric Distribution Company Wholesale Suppliers obtain a minimum percentage of their retail load by using renewable energy, and an update to this RPS was provided in PA 18-50 that increased the Class I RPS from 20% by 2020 to 40% by 2030, reduces the Alternative Compliance Payment (ACP) to $40 from $55, adds power generation from waste heat and expands the definition of run of river hydropower as Class I resources.

WHEREAS, real-time revenue quality meters are included as part of solar PV systems being installed through the Program that determine the amount of clean energy production from such systems as well as the associated RECs which, in accordance with Public Act 15-194 will be sold to the Electric Distribution Companies through a master purchase agreement entered into between the Green Bank, Eversource Energy, and United Illuminating, and approved by the Public Utility Regulatory Authority;

WHEREAS, pursuant to the Act, the Green Bank has prepared a declining incentive block schedule (“Schedule”) that offers direct financial incentives, in the form of the expected performance based buy down (“EPBB”) and performance-based incentives (“PBI”), for the purchase or lease of qualifying residential solar photovoltaic systems, respectively, fosters the sustained orderly development of a state-based solar industry, and sets program requirements for participants, including standards for deployment of energy efficient equipment as a condition for receiving incentive funding;

WHEREAS, pursuant to the Act, to address willingness to pay discrepancies between communities, the Green Bank will continue to provide additional incentive dollars to improve the deployment of residential solar PV in low to moderate income communities.

WHEREAS, pursuant to the Act, to address sustained orderly development of a state-based solar industry, the proposed grid modernization and climate change pilot will provide incentives for solar PV to offset the additional energy load from clean energy sources and storage needs.

WHEREAS, pursuant to Section 16-245(d)(2) of the Connecticut General Statutes, a Joint Committee of the Energy Conservation Management Board and the Connecticut Green Bank was established to “examine opportunities to coordinate the programs and activities” contained in their respective plans (i.e., Conservation and Load Management Plan and Comprehensive Plan);

WHEREAS, the Global Warming Solutions Act of 2008 requires Connecticut to reduce its greenhouse gas emissions by 80 percent from 2001 levels by 2050, all the while transportation and the thermal heating and cooling of buildings representing the largest emitting sectors;

WHEREAS, residential solar PV can provide cleaner, cheaper, and more reliable sources of energy for electric vehicles and renewable thermal technologies while creating jobs and supporting local economic development;

NOW, therefore be it:

RESOLVED, that the Deployment Committee of the Connecticut Green Bank Board and the Commissioner of the Department of Energy and Environmental Protection approves of the RSIP Battery Storage Incentive schedule, programmatic cap and budget to be applied within the United Illuminating localized targeting of distributed energy resources demonstration project as set forth in the memorandum dated September 18, 2018.

CONNECTICUT GREEN BANK SM

845 Brook Street
Rocky Hill, CT 06067

300 Main Street, 4th Floor
Stamford, CT 06901