



Deployment Committee

Meeting Date

May 24, 2023



Deployment Committee

Hank Webster

Deputy Commissioner
Department of Energy and
Environmental Protection

Matt Ranelli

Partner
Shipman & Goodwin

Lonnie Reed

Board Chair

Erick Russell – Designee, Bettina

Bronisz

Treasurer
State of Connecticut

Robert Hotaling

Deputy Commissioner
DECD

Dominick Grant

Dirt Partners

May 17, 2023

Dear Deployment Committee Members:

We have a regular meeting of the Deployment Committee scheduled for **Wednesday, May 24 from 2:00-3:00 p.m.**

Please take note that this will be an online meeting.

This is going to be a very productive meeting as many of the C-PACE transactions we have been discussing with you are now coming before you. These projects still need to receive a determination by the utilities of whether or not they will receive incentives through the Nonresidential Renewable Energy Solutions (“NRES”) program, but we wanted to seek your contingent approval so that we can move forward with those that receive such approval once we receive notice from the utilities.

For the agenda, we have the following:

- **Consent Agenda** – we have several items on the consent agenda, including:
 - Meeting Minutes for November 16, 2022
 - Energy Storage Solutions – Reservation of Funds Letter
- **Financing Program Updates and Recommendations** – an update on the progress we are making incorporating resilience into C-PACE, a transaction write-off, and numerous C-PACE transactions, including:
 - Five (5) C-PACE transactions for projects greater than \$500,000 and less than \$2,500,000, including the following projects:
 - **Bridgeport** – 90 kW solar PV, roof repair, and utility service upgrade project totaling \$510,097
 - **Barkhamsted** – *294 kW solar PV and roof replacement project totaling \$923,152 [Coming on Friday, May 19, 2023]*
 - **Orange/Milford** – *214 kW solar PV and roof replacement project totaling \$700,301 [Coming on Friday, May 19, 2023]*
 - **Milford** – 185 kW solar PV project totaling \$513,718
 - **Waterbury** – 273 kW solar PV, roof repair, and energy efficiency project totaling \$1,557,602
- **Incentive Program Updates and Recommendations** – *a pilot “Linked Deposits” program for the Smart-E Loan to keep interest rates down. [Coming on Friday, May 19, 2023]*

- **Environmental Infrastructure Updates and Recommendations** – a request to expand the Smart-E Loan measures to include “water”. *[Coming on Friday, May 19, 2023]*
- **Other Business** – and lastly, if there is any time, we have included other business.

Please note, those items *underlined, italicized, and highlighted* above, are materials coming by the close of business on Friday, May 19, 2023.

Have a great rest of the week and weekend ahead.

Sincerely,

A handwritten signature in black ink, appearing to be 'Bryan Garcia', with a long horizontal stroke extending to the right.

Bryan Garcia
President and CEO



AGENDA

Deployment Committee of the
Connecticut Green Bank
75 Charter Oak Avenue
Hartford, CT 06106

Wednesday, May 24, 2023
2:00-3:00 p.m.

Dial [+1 860-924-7736,,513435466#](tel:+18609247736513435466)

Staff Invited: David Beech, Sergio Carrillo, Catherine Duncan, Mackey Dykes, Brian Farnen, Bryan Garcia, Bert Hunter, Alysse Lembo-Buzzelli, Jane Murphy, Eric Shrago, and Ashley Stewart

1. Call to order
2. Public Comments – 5 minutes
3. Consent Agenda – 5 minutes
 - a. Meeting Minutes of November 16, 2022
 - b. Energy Storage Solutions – Incentive Approvals
4. Financing Programs Updates and Recommendations – 35 minutes
 - a. C-PACE Transaction – Bridgeport
 - b. C-PACE Transaction – Barkhamsted
 - c. C-PACE Transaction – Orange/Milford
 - d. C-PACE Transaction – Milford
 - e. C-PACE Transaction – Waterbury
 - f. St. Johns Church – Write-Off Approval
 - g. C-PACE – Resilience Update
5. Incentive Programs Updates and Recommendations – 5 minutes
 - a. Smart-E Loan – Linked Deposits Pilot
6. Environmental Infrastructure Updates and Recommendations – 5 minutes
 - a. Smart-E Loan – Expansion to include Environment Infrastructure Measures
7. Other Business – 5 minutes

8. Adjourn

Microsoft Teams meeting

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Meeting ID: 243 127 744 187

Passcode: z8wJHm

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[+1 860-924-7736,,513435466#](#) United States, Hartford

Phone Conference ID: 513 435 466#

***Next Regular Meeting: Wednesday, September 20, 2023 from 2:00-3:00 p.m.
Colonel Albert Pope Board Room at the
Connecticut Green Bank, 75 Charter Oak Avenue, Hartford***



RESOLUTIONS

Deployment Committee of the
Connecticut Green Bank
75 Charter Oak Avenue
Hartford, CT 06106

Wednesday, May 24, 2023
2:00-3:00 p.m.

Dial [+1 860-924-7736,,513435466#](tel:+18609247736513435466)

Staff Invited: David Beech, Sergio Carrillo, Catherine Duncan, Mackey Dykes, Brian Farnen, Bryan Garcia, Bert Hunter, Alysse Lembo-Buzzelli, Jane Murphy, Eric Shrago, and Ashley Stewart

1. Call to order
2. Public Comments – 5 minutes
3. Consent Agenda – 5 minutes
 - a. Meeting Minutes of November 16, 2022

Resolution #1

Motion to approve the meeting minutes of the Deployment Committee for November 16, 2022

- b. Energy Storage Solutions – Incentive Approvals

Resolution #2

WHEREAS, in its June 24, 2022 meeting the Connecticut Green Bank Board of Directors (Board) approved the implementation of an Upfront Incentive Project Approval procedures (“Procedures”) for non-residential projects under the Energy Storage Solutions Program (Program) with an estimated upfront incentive payment greater than \$500,000 and procedures for less than \$500,000;

WHEREAS, as part of the Procedures, Green Bank staff shall present Program projects via the consent agenda utilizing a standard form Tear Sheet process described in the memorandum to the Board dated June 24, 2022;

WHEREAS, in its December 9, 2022 meeting the Board approved updated Procedures to better align with the Program process;

WHEREAS, Green Bank Staff reviewed funding requests for projects with incentives below \$500,000, and approved them via Project Approval Forms for a total amount of \$560,400 and intends to issue Reservation of Fund letters upon Deployment Committee review and authorization.

NOW, therefore be it:

RESOLVED, that the Deployment Committee hereby approves the estimated upfront incentives for one non-residential project above \$500,000 totaling \$734,250 consistent with the approved Procedures and this memorandum dated May 17, 2023;

RESOLVED, that the proper Green Bank officers are authorized and empowered to do all other acts and execute and deliver any and all documents and regulatory filings as they shall deem necessary and desirable to affect the above-mentioned incentives consistent with the Procedures.

4. Financing Programs Updates and Recommendations – 35 minutes
 - a. C-PACE Transaction – Bridgeport

Resolution #3

WHEREAS, pursuant to Connecticut General Statute Section 16a-40g (the “Statute”), 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 **\$510,097** construction and (potentially) term loan under the C-PACE program to Cathedral Parish, the building owner of 329 Washington Avenue, Bridgeport, 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

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 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 Deployment Committee dated May 17th, 2023, 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 Deployment Committee;

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 Statute, 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.

b. C-PACE Transaction – Barkhamsted

Resolution #4

WHEREAS, pursuant to Connecticut General Statute Section 16a-40g (the “Statute”), 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 Deployment Committee (the “Deployment Committee”) has approved a \$40,000,000 C-PACE construction and term loan program;

WHEREAS, the Green Bank seeks to provide a **\$898,197** construction and (potentially) term loan under the C-PACE program to Bead Industries, Inc., the building owner of 236 New Hartford Road, Barkhamstead, 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

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 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 Committee dated May 19, 2023, 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 Deployment Committee;

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 Statute, 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.

c. C-PACE Transaction – Orange/Milford

Resolution #5

WHEREAS, pursuant to Connecticut General Statute Section 16a-40g (the “Statute”), 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 Deployment Committee (the “Deployment Committee”) has approved a \$40,000,000 C-PACE construction and term loan program;

WHEREAS, the Green Bank seeks to provide a **\$700,301** construction and (potentially) term

loan under the C-PACE program to Bead Industries, Inc., the building owner of 11 Cascade Boulevard, Orange, 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

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 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 Committee dated May 19, 2023, 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 Deployment Committee;

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 Statute, 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.

d. C-PACE Transaction – Milford

Resolution #6

WHEREAS, pursuant to Connecticut General Statute Section 16a-40g (the "Statute"), 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 **\$513,718** construction and (potentially) term loan under the C-PACE program to Colon Industries, LLC, the building owner of 66 Erna Avenue, Milford, 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

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 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 Deployment Committee dated May 17th, 2023, 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 Deployment Committee;

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 Statute, 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.

e. C-PACE Transaction – Waterbury

Resolution #7

WHEREAS, pursuant to Connecticut General Statute Section 16a-40g (the “Statute”), 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 **\$1,557,602** construction and (potentially) term loan under the C-PACE program to Holy Cross High School of Waterbury, the building owner of 587 Oronoke Rd. , Waterbury, 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

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 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 Deployment Committee dated May 17th, 2023, 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 Deployment Committee;

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 Statute, 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.

f. St. Johns Church – Write-Off Approval

Resolution #8

WHEREAS, on October 20, 2017, the Green Bank Board of Directors approved of a recommendation brought forth by both 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, based on a recommendation brought forth by the Deployment and ACG Committees, the Board approved and authorized the Green Bank staff to implement the Loan Loss Decision Framework and Process for managing assets requiring restructuring or write-off from the Green Bank's balance sheet and consistent with the memorandum to the Board dated June 13, 2018 ("Loan Loss Decision Framework and Process ") and for a similar framework to be developed at a future date for the Green Bank's special purpose vehicles (i.e., subsidiaries); and

WHEREAS, on May 19, 2020, the Audit, Compliance and Governance Committee, and on May 27, 2020, the Deployment Committee, recommended that the Board of Directors approve of the Staff proposed Loan Loss Decision Framework and Process for Subsidiaries for managing assets requiring restructuring or write-off from the Green Bank's balance sheet and consistent with the memorandums presented to the committees May 12, 2020, and May 20, 2020, respectively; and

WHEREAS, the Green Bank, through CT Solar Lease 3 LLC, owns and operates a solar energy facility ("SEF") at St. John's Episcopal Church at 734 Fairfield Avenue, Bridgeport, CT 06604 (the "Project") that has extensive damage caused by squirrels and, even if repaired, is expected to continue to have excessive maintenance cost given the nature of the roof, as more thoroughly explained in a memorandum to the Deployment Committee dated May 17, 2023 (the "Write-off Memo"); and

WHEREAS, the Green Bank staff is requesting a write-off associated with the Project as a result of the damage.

NOW, therefore be it:

RESOLVED, that the Deployment Committee approves of the Staff proposed write-off consistent with the Write-off Memo.

- g. C-PACE – Resilience Update
- 5. Incentive Programs Updates and Recommendations – 5 minutes
 - a. Smart-E Loan – Linked Deposits Pilot

Resolution #9

WHEREAS, the Connecticut Green Bank ("Green Bank") has established the Smart-E Loan program with financing agreements with various credit unions, community banks and a community development financial institution;

WHEREAS, Green Bank desires to pilot a linked deposits program with a Smart-E lender as described in the memorandum to the Deployment Committee dated May 19, 2023 (the "Linked Deposit Pilot Memo");

WHEREAS, Green Bank staff recommends approval by the Deployment Committee of the Linked Deposit Pilot in an amount not to exceed \$2,000,000

NOW, therefore be it:

Resolved, that the Deployment Committee approves the Linked Deposit Pilot, to be implemented generally as described in the Linked Deposit Pilot Memo;

Resolved, that the President of the Green Bank; and any other duly authorized officer of the Green Bank, is authorized to execute and deliver, any contract or other legal instrument necessary to effect the Linked Deposit Pilot on such terms and conditions as are materially consistent with the Linked Deposit Pilot Memo; and

Resolved, that the proper Green Bank officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instruments.

6. Environmental Infrastructure Updates and Recommendations – 5 minutes

a. Smart-E Loan – Expansion to include Environment Infrastructure Measures

Resolution #10

WHEREAS, in May of 2013, Green Bank launched the Smart-E Loan program, currently operating statewide, with nine local lenders providing low cost and long-term financing for measures that are consistent with the state energy policy and the implementation of the CES;

WHEREAS, March of 2022 program staff requested and the Board approved that the Smart-E Loan term sheet be further enhanced to allow for the addition of environmental infrastructure measures to the list of “eligible improvements,” and that the Board authorized the Deployment Committee to determine the specific measures by segment (e.g., water, waste and recycling, etc.) to be supported through the Smart-E program; and

WHEREAS, November of 2022 program staff requested and the Deployment Committee approved that the Smart-E Loan term sheet be further enhanced to allow for the “climate adaptation and resiliency” measures recommended by WSP to be supported through the Smart-E program.

NOW, therefore be it:

RESOLVED, that the Deployment Committee approves of the “water” measures proposed by the staff within its memo of May 17, 2023 be included as “eligible improvements” within the Smart-E Loan.

RESOLVED, that the Deployment Committee seeks review and approval of additional environmental infrastructure measures for consideration as “eligible improvements” within the Smart-E Loan at a future date.

RESOLVED, that the Deployment Committee seeks review and approval of a plan for the staff rollout of environmental infrastructure measures within the Smart-E Loan, including, but not limited to contractor participation, project inspections, loss reserve budgeting, and customer marketing and outreach.

7. Other Business – 5 minutes

8. Adjourn

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Phone Conference ID: 513 435 466#

***Next Regular Meeting: Wednesday, September 20, 2023 from 2:00-3:00 p.m.
Colonel Albert Pope Board Room at the
Connecticut Green Bank, 75 Charter Oak Avenue, Hartford***

ANNOUNCEMENTS

- **Mute Microphone** – in order to prevent background noise that disturbs the meeting, if you aren't talking, please mute your microphone or phone.
- **Chat Box** – if you aren't being heard, please use the chat box to raise your hand and ask a question.
- **Recording Meeting** – we continue to record and post the board meetings.
- **State Your Name** – for those talking, please state your name for the record.

Brief Introductions

New Members to Board of Directors



Hank Webster

Deputy Commissioner of Energy
DEEP



Rob Hotaling

Deputy Commissioner and CIO
DECD



CONNECTICUT
GREEN BANK SM

Deployment Committee Meeting

May 24, 2023

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. **Meeting Minute** – approve meeting minutes of November 16, 2022
2. **Energy Storage Solutions** – estimated upfront incentive in the amount of \$734,250 for a 1.958 MW battery storage project located at the South Norwalk Electric and Water facility in Wilton

Deployment Committee

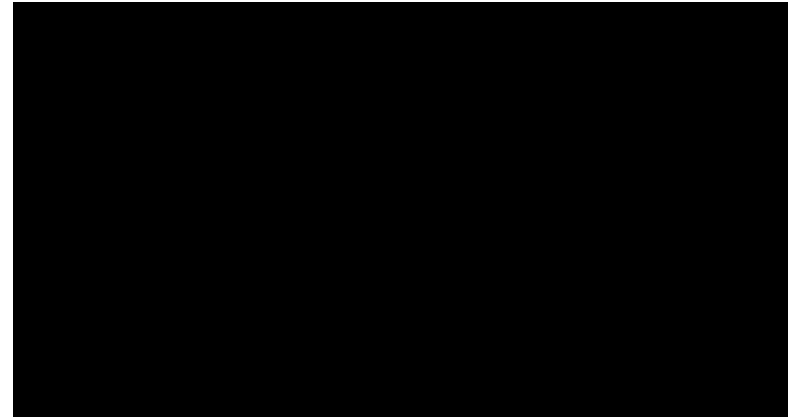
Agenda Item #4a
Financing Programs
Updates and Recommendations
C-PACE Transaction – Bridgeport

329 Washington Ave, Bridgeport

Ratepayer Payback



- **\$510,097** for a 90.24kW (DC) Solar PV System.
- Projected savings are **7,142 MMBtu** versus **\$510,097** of ratepayer funds at risk.



- 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) repayment of the C-PACE benefit assessment by the property owner.

329 Washington Ave, Bridgeport



Terms and Conditions

- **\$510,097** construction loan at 5% and term loan set at a fixed 5.25% over the 20-year term
- **\$510,097** loan against the property
 - ❑ Property valued at \$11,100,970
 - ❑ Loan-to-value ratio equals [REDACTED] & Lien-to-value ratio equals [REDACTED]
 - ❑ DSCR > [REDACTED]

The Five W's

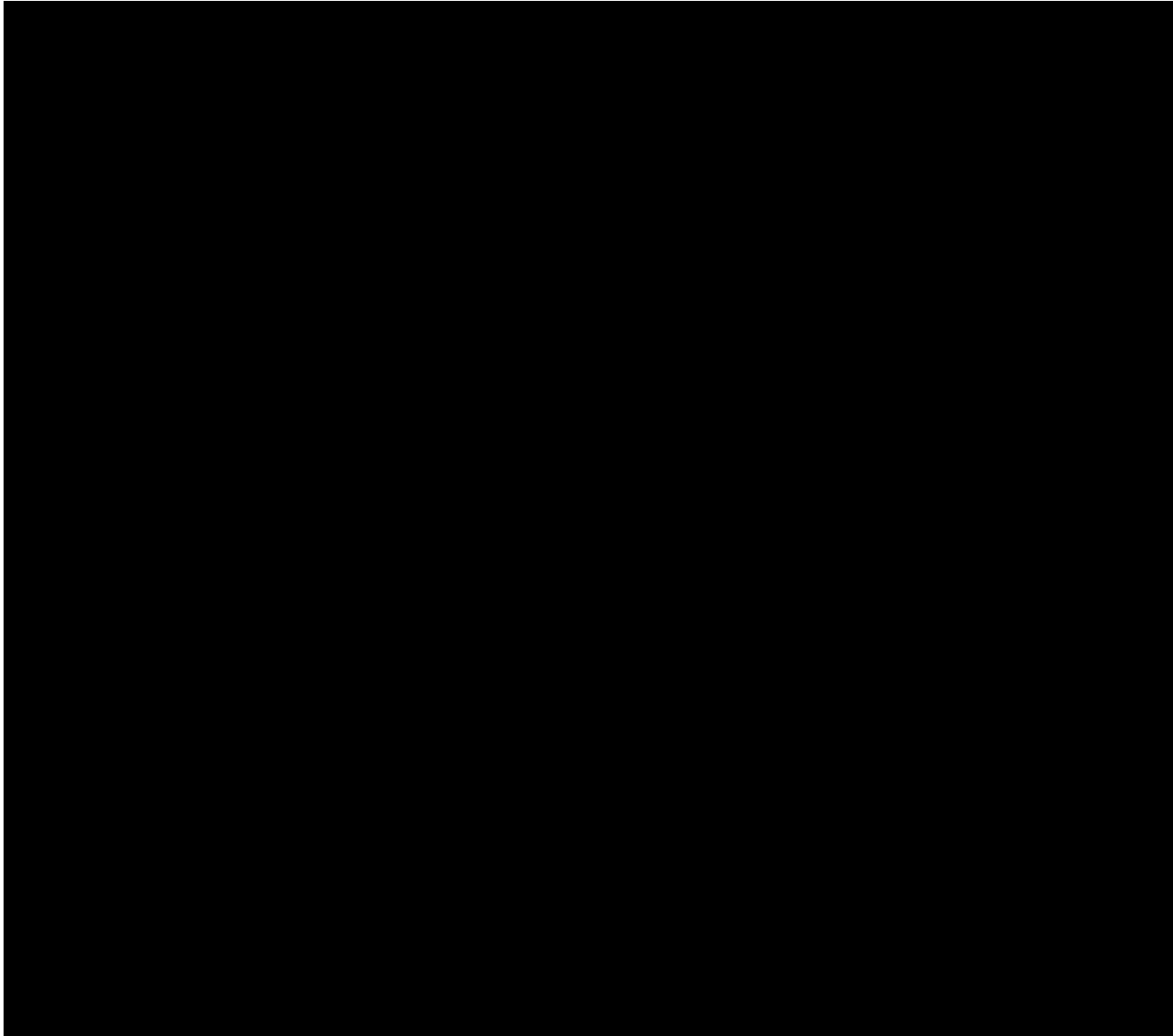
- **What?** Receive approval for a \$510,097 construction and term loans under the C-PACE program to Cathedral Parish to finance the construction of specified energy upgrades.
- **When?** Project to commence 2023.
- **Why?** Allow Green Bank to finance this C-PACE transaction continue to build momentum 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?** Cathedral Parish, the property owner of 329 Washington Ave, Bridgeport, CT.
- **Where?** 329 Washington Ave, Bridgeport, CT 06604

329 Washington Ave, Bridgeport

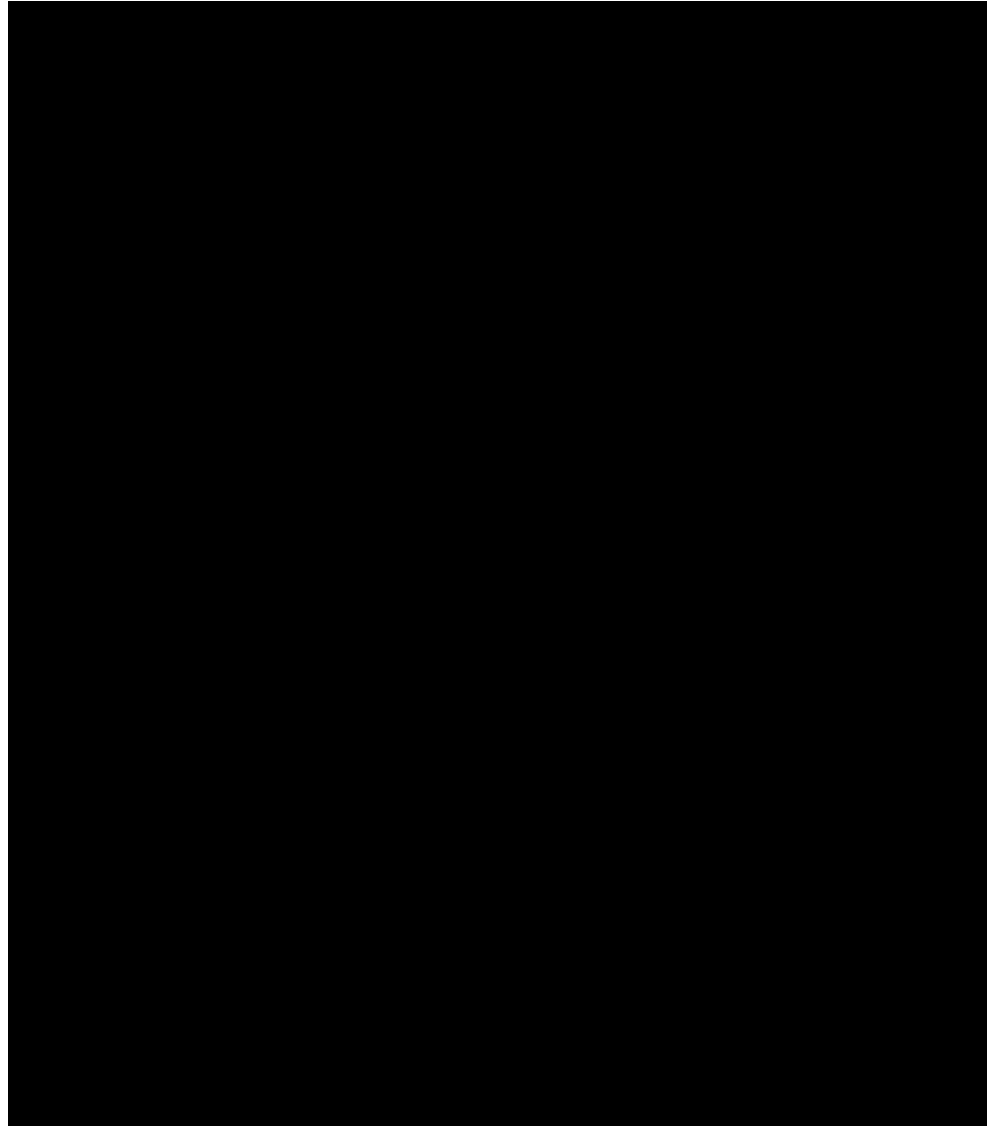


CONNECTICUT
GREEN BANK

Project Tear Sheet



Key Financial Metrics



Resolution #3



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 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 Deployment Committee dated May 17th, 2023, 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 Deployment Committee;

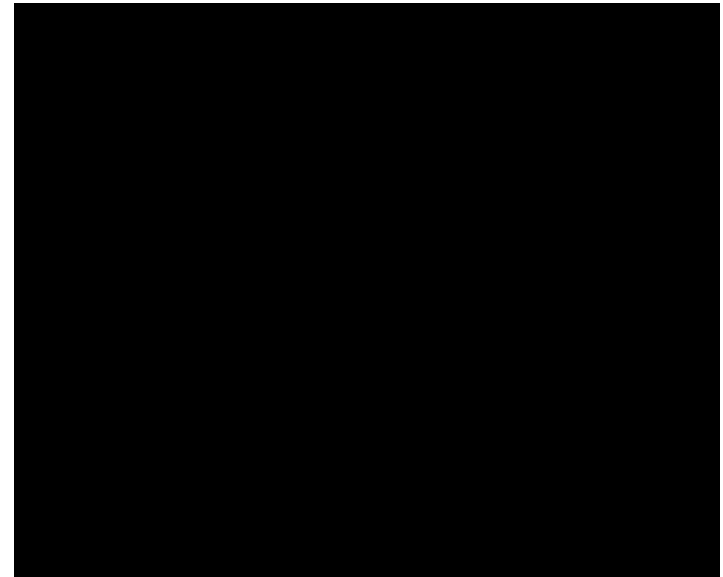
RESOLVED, that before executing the Loan, the President of the Green Bank and any other duly authorized officer of the Green Bank shall receive confirmation that the C-PACE transaction meets the statutory obligations of the Statute, including but not limited to the savings to investment ratio and lender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

Deployment Committee

Agenda Item #4b
Financing Programs
Updates and Recommendations
C-PACE Transaction – Barkhamsted

236 New Hartford Rd, Barkhamsted Ratepayer Payback



- **\$923,152** for a 294 kW rooftop Solar PV systems roof replacement
 - Projected savings are **25,509 MMBtu** versus **\$923,152** of ratepayer funds at risk.
-
- 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) repayment of the C-PACE benefit assessment by the property owner.

236 New Hartford Rd, Barkhamsted

Terms and Conditions



- **\$923,152** construction loan at 5% and term loan set at a fixed 5.75% over the 20-year term
- **\$923,152** loan against the property
 - Property valued at \$2,415,139
 - Loan-to-value ratio equals [REDACTED] & Lien-to-value ratio equals [REDACTED]
- DSCR > [REDACTED]

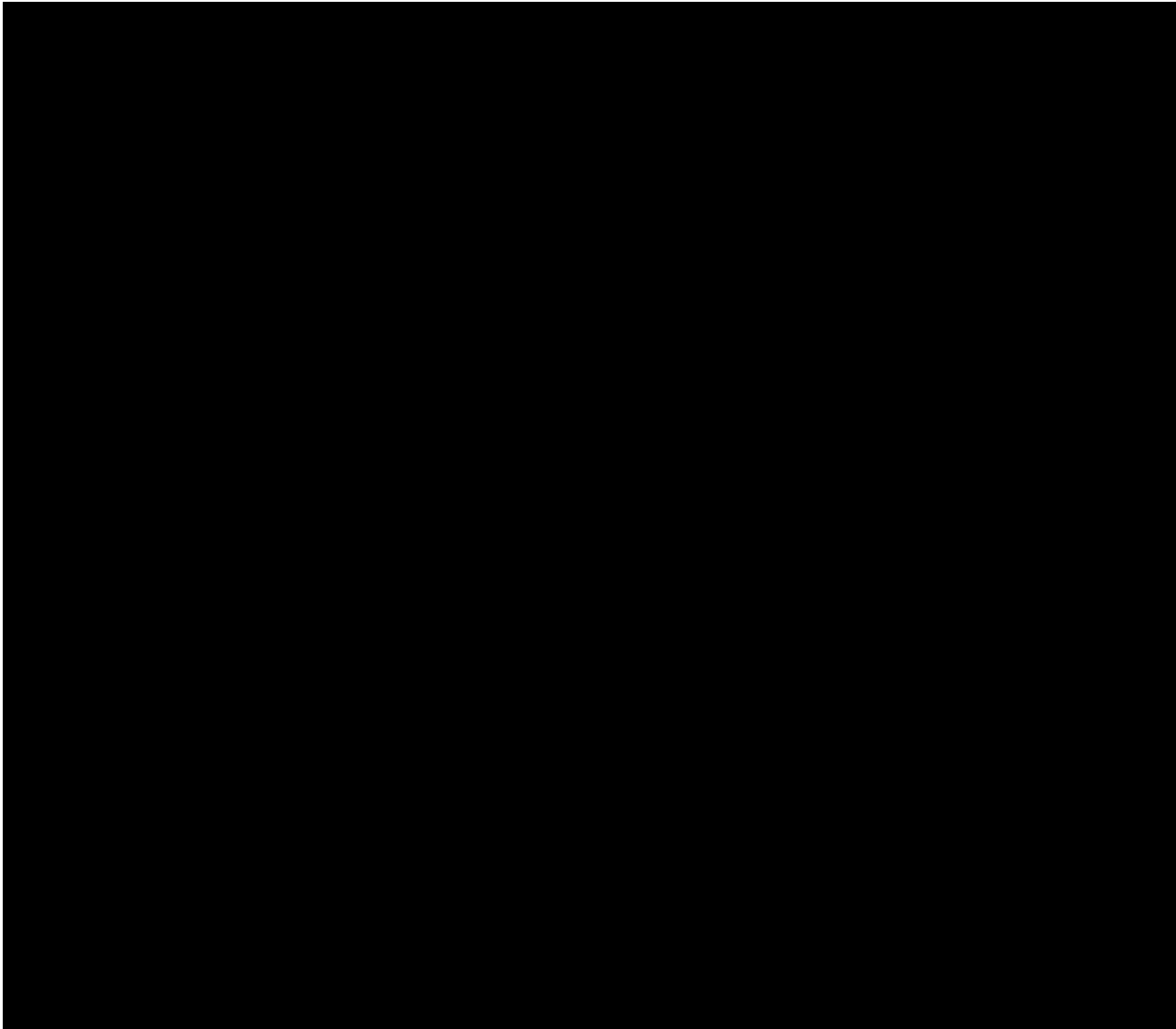
236 New Hartford Rd, Barkhamsted



The Five W's

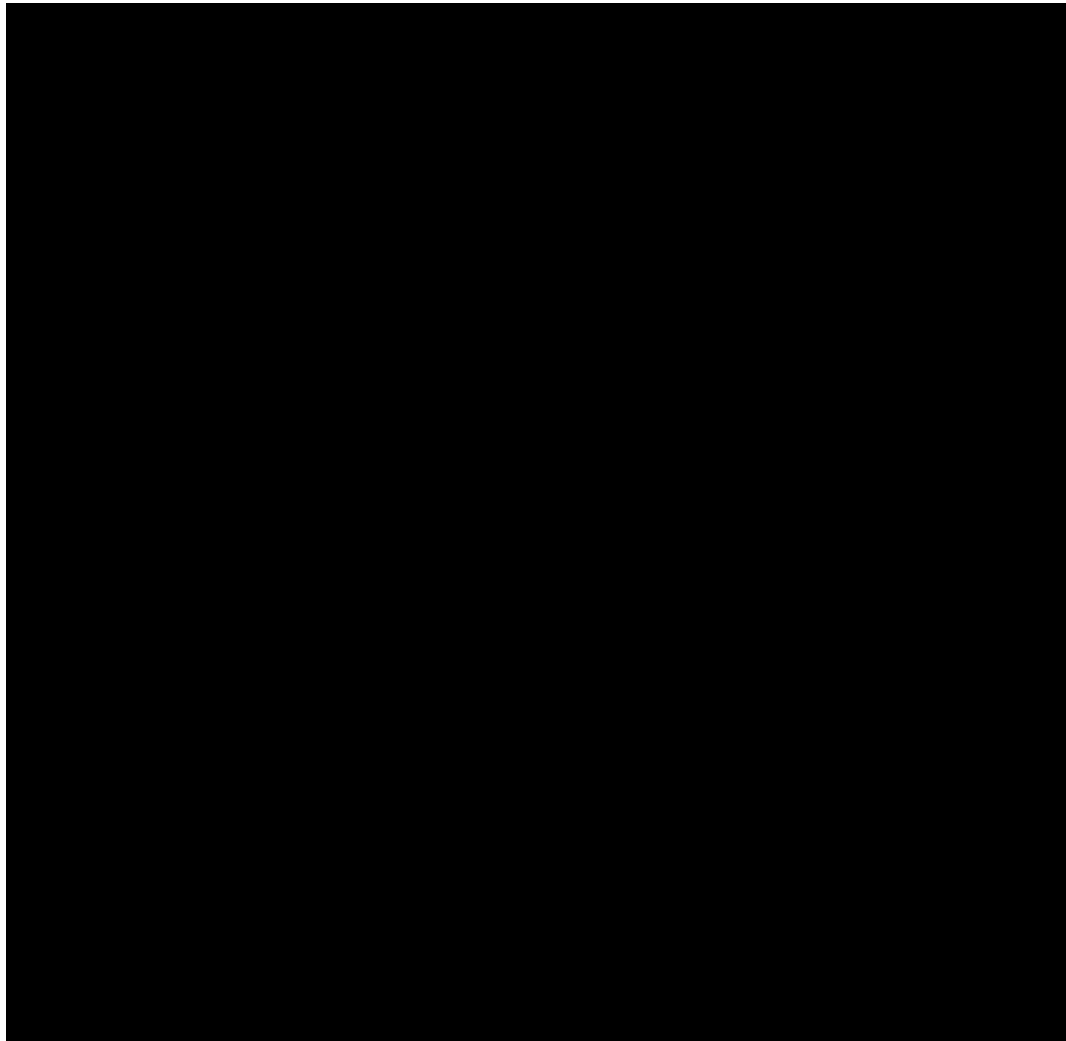
- **What?** Receive approval for a \$923,152 construction and term loans under the C-PACE program to Air Realty Group LLC to finance the construction of specified energy upgrades.
- **When?** Project to commence 2023.
- **Why?** Allow Green Bank to finance this C-PACE transaction, continue to build momentum 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?** Air Realty Group LLC, the property owner of 236 New Hartford Rd, Barkhamsted CT.
- **Where?** 236 New Hartford Rd, Barkhamsted CT 06063

236 New Hartford Rd, Barkhamsted Project Tear Sheet



236 New Hartford Rd, Barkhamsted

Key Financial Metrics



Resolution #4



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 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 Committee dated May 19, 2023, 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 Deployment Committee;

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 Statute, 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.

Deployment Committee

Agenda Item #4c
Financing Programs
Updates and Recommendations
C-PACE Transaction – Orange/Milford

11 Cascade Blvd, Orange/Milford

Ratepayer Payback



- **\$700,301** for a 213.3 kW rooftop Solar PV system & roof replacement
 - Projected savings are **20,440 MMBtu** versus **\$700,301** of ratepayer funds at risk.
-
- 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) repayment of the C-PACE benefit assessment by the property owner.

11 Cascade Blvd, Orange/Milford



Terms and Conditions

- **\$700,301** construction loan at 5% and term loan set at a fixed 5.75% over the 20-year term
- **\$700,301** loan against the property
 - Property valued at \$2,129,371
 - Loan-to-value ratio equals [REDACTED] & Lien-to-value ratio equals [REDACTED]
- DSCR > [REDACTED]

11 Cascade Blvd, Orange/Milford

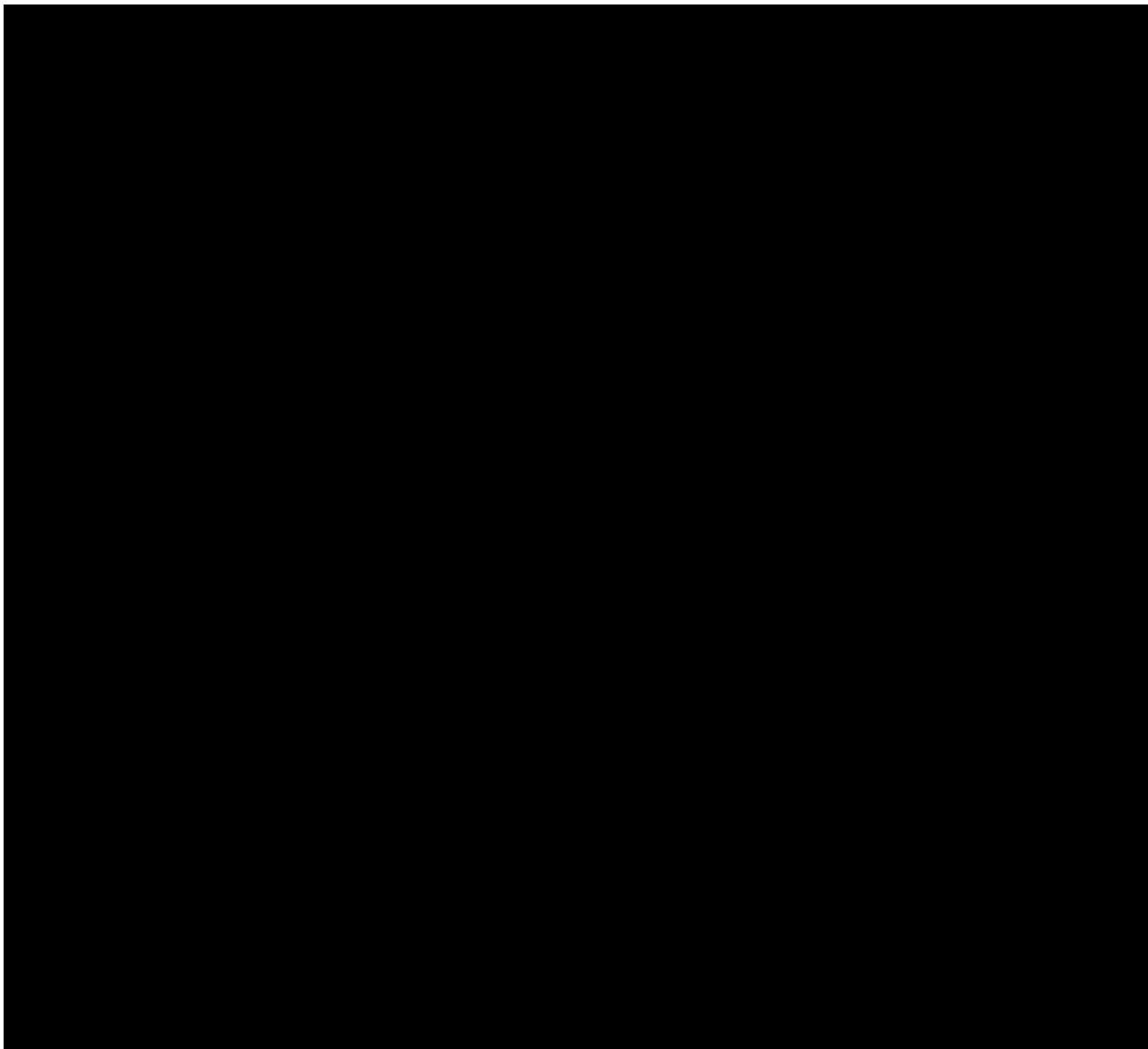


The Five W's

- **What?** Receive approval for a \$700,301 construction and term loans under the C-PACE program to Bead Industries, Inc. to finance the construction of specified energy upgrades.
- **When?** Project to commence 2023.
- **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?** Bead Industries, Inc., the property owner of 11 Cascade Blvd, Milford/Orange CT.
- **Where?** 11 Cascade Blvd, Milford/Orange, CT

11 Cascade Blvd, Orange/Milford

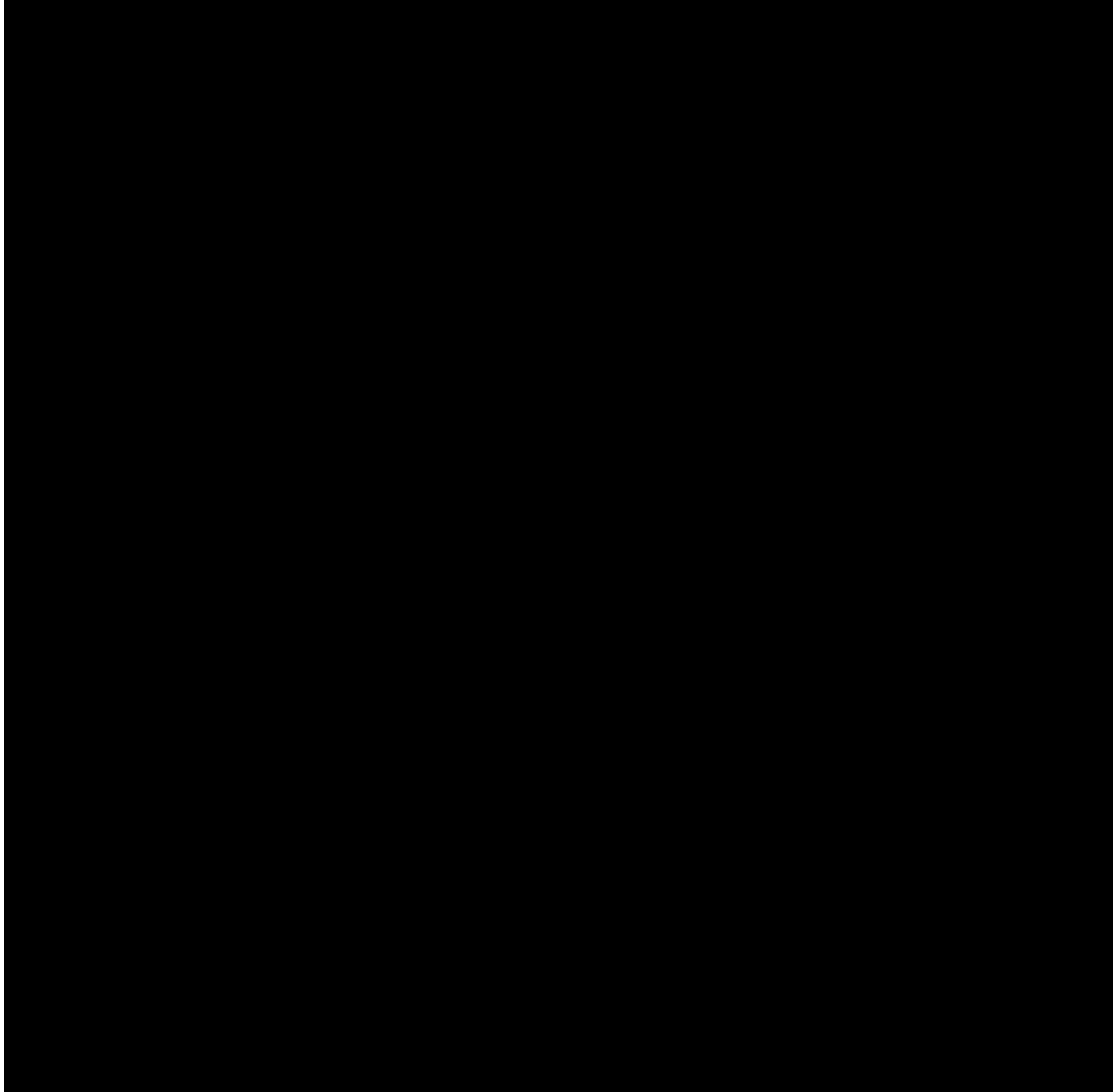
Project Tear Sheet



11 Cascade Blvd, Orange/Milford



Key Financial Metrics



Resolution #5



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 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 Committee dated May 19, 2023, 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 Deployment Committee;

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 Statute, 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.

Deployment Committee

Agenda Item #4d

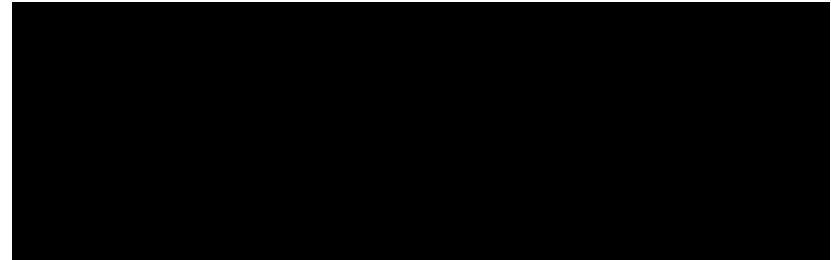
Financing Programs

Updates and Recommendations

C-PACE Transaction – Milford

66 Erna Avenue, Milford

Ratepayer Payback



- **\$513,718** for a 185 kW (DC) Solar PV System.
 - Projected savings are **14,268 MMBtu** versus **\$513,718** of ratepayer funds at risk.
-
- 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) repayment of the C-PACE benefit assessment by the property owner.

66 Erna Avenue, Milford

Terms and Conditions



- **\$513,718** construction loan at 5% and term loan set at a fixed 5.25% over the 20-year term
- **\$513,718** loan against the property
 - ❑ Property valued at \$3,499,378
 - ❑ Loan-to-value ratio equals [REDACTED] & Lien-to-value ratio equals [REDACTED]
 - ❑ DSCR > [REDACTED]

66 Erna Avenue, Milford

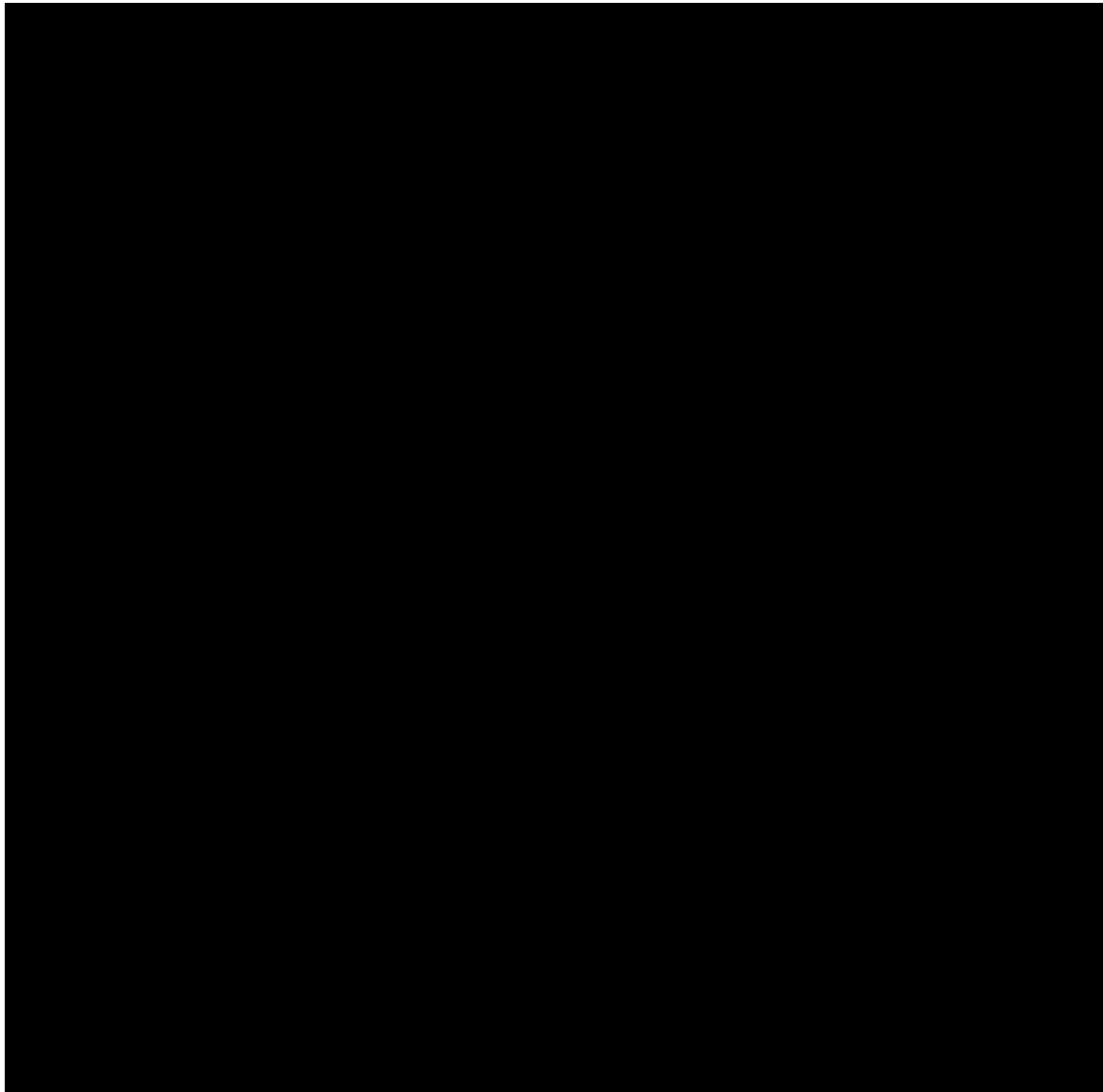
The Five W's



- **What?** Receive approval for a \$ \$513,718 construction and term loans under the C-PACE program to Cathedral Parish to finance the construction of specified energy upgrades.
- **When?** Project to commence 2023.
- **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?** Colon Industries LLC, the owner of 66 Erna Avenue, Milford, CT
- **Where?** 66 Erna Avenue, Milford, CT 06461

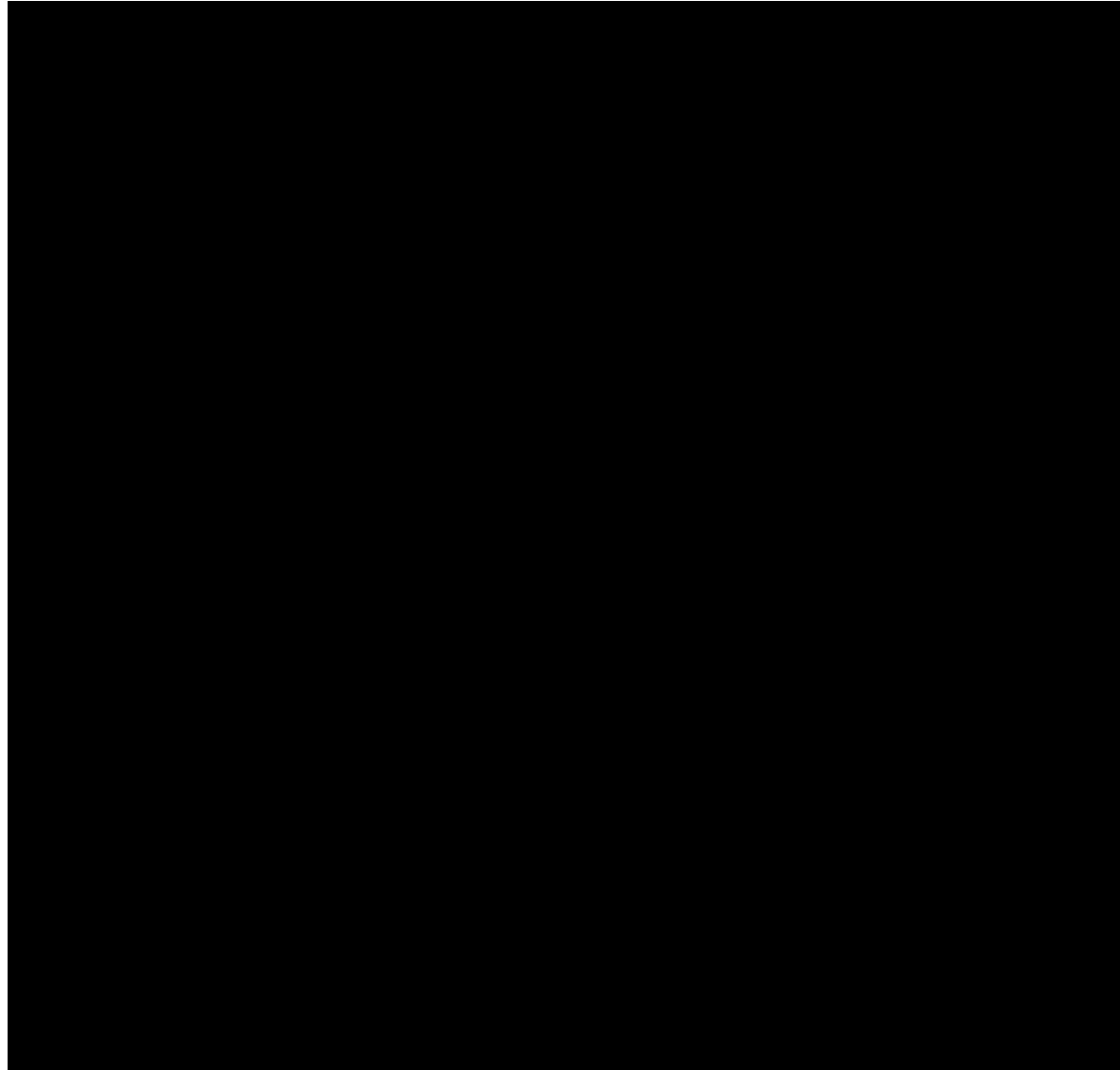
66 Erna Avenue, Milford

Project Tear Sheet



66 Erna Avenue, Milford

Key Financial Metrics



Resolution #6



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 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 Deployment Committee dated May 17th, 2023, 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 Deployment Committee;

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 Statute, 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.

Deployment Committee

Agenda Item #4e
Financing Programs
Updates and Recommendations
C-PACE Transaction – Waterbury

587 Oronoke Rd, Waterbury

Ratepayer Payback



- **\$1,557,602** for a 277.3 kW rooftop Solar PV system, roof replacement, lighting, BMS & controls
 - Projected savings are **49,915 MMBtu** versus **\$1,557,602** of ratepayer funds at risk.
-
- 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) repayment of the C-PACE benefit assessment by the property owner.

587 Oronoke Rd, Waterbury

Terms and Conditions



- **\$1,557,602** construction loan at 5% and term loan set at a fixed 5.5% over the 15-year term
- **\$1,557,602** loan against the property
 - Property valued at \$45,507,430
 - Loan-to-value ratio equals [REDACTED] & Lien-to-value ratio equals [REDACTED]
- DSCR > [REDACTED]

587 Oronoke Rd, Waterbury

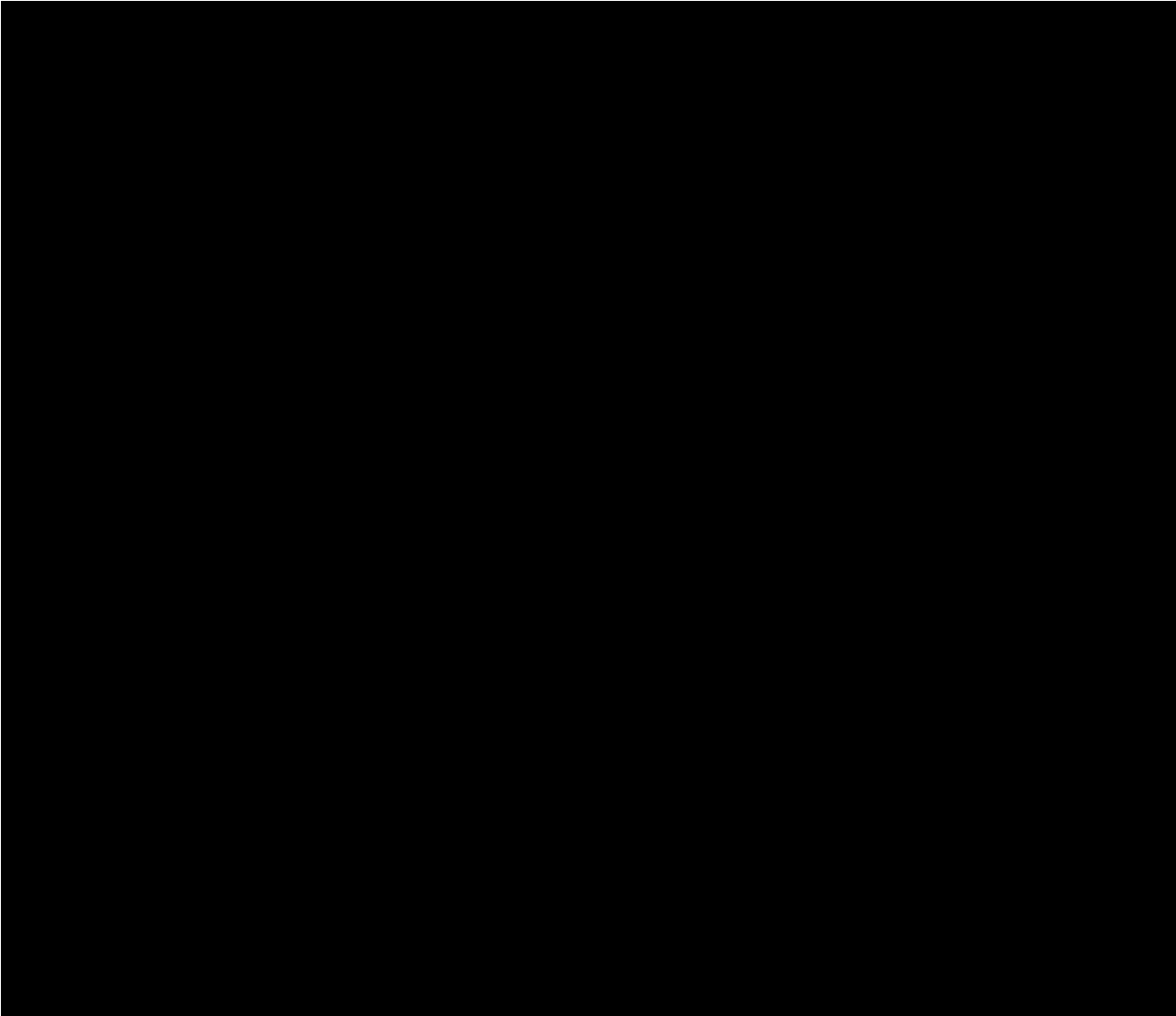


The Five W's

- **What?** Receive approval for a \$1,557,602 construction and term loans under the C-PACE program to Holy Cross High School of Waterbury to finance the construction of specified energy upgrades.
- **When?** Project to commence 2023.
- **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?** Holy Cross High School of Waterbury, the property owner of 587 Oronoke Rd, Waterbury, CT.
- **Where?** 587 Oronoke Rd, Waterbury, CT 06708

587 Oronoke Rd, Waterbury

Project Tear Sheet



587 Oronoke Rd, Waterbury

Key Financial Metrics



Resolution #7



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 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 Deployment Committee dated May 17th, 2023, 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 Deployment Committee;

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 Statute, 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.

Deployment Committee

Agenda Item #4f
Financing Programs
Updates and Recommendations
St. Johns Church – Write-Off Approval

St. John's Episcopal Solar PPA – Write off



- 45.5 kW solar PPA project owned by CT Solar Lease 3 LLC
- Project was placed in service November 14, 2017
- Cost to install the project in 2017 was ~\$100,000
- Customer fully current – this is not a write-off due to “non-payment”



Extensive damage



- Squirrel Damage - Example of “chewed up” connectors
- Potential fire hazard requiring action with urgency

Write off



- Cost to restore and reinstall the solar - \$98k
- Expensive due to height and tilt (steep pitch) of upper roof
- The write-off amount: \$155,630.32 (\$106,121 PPA + ZREC revenue and \$49,509.34 removal cost)
- Some equipment may be used in other sites, reducing the eventual write-off amount
- Risk and Mitigants (for future installs):
 - Use of squirrel guards for all installations
 - Additional technical diligence for difficult to maintain roofs

Resolution #8



NOW, therefore be it:

RESOLVED, that the Deployment Committee approves of the Staff proposed write-off consistent with the Write-off Memo.

Deployment Committee

Agenda Item #4g

Financing Programs

Updates and Recommendations

C-PACE – Resilience Update

“**Resilience**” means the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from deliberate attacks, accidents or naturally occurring threats or incidents, **including, but not limited to, threats or incidents associated with the impacts of climate change.**

The bank shall consult with the Department of Energy and Environmental Protection and the Connecticut Institute for Resilience and Climate Adaptation to develop program eligibility criteria for financing of resilience improvements, consistent with state environmental resource protection and community resilience goals.

Require performance of an energy audit, renewable energy system feasibility analysis, or **resilience study** on the qualifying commercial real property that **assesses the expected energy or resilience cost savings** of the energy or **resilience improvements over the useful life of such improvements** before approving such financing

Our Approach



To help us understand the need for resilience financing for commercial properties in CT, we plan to:

- Identify common **Climate Change Adaptation** measures as examples
 - Stormwater
 - Flood Management
 - Storm events/Extreme Weather
 - Wind
 - Fire
 - Sea Level Rise
 - Extreme Heat (MFH)

- Indicate how **other resilience measures** can be submitted for review/acceptance
- **Collect intel & data** from to understand market needs & **adapt** the guidelines accordingly in the future
- **Utilize existing resilience standards for buildings**



Deployment Committee

Agenda Item #5a

Incentive Programs Updates and Recommendations

Smart-E Loan – Linked Deposits Pilot

Smart-E Loan

Single Family Unsecured Loan



smart-e loan



Market Segment	Residential Single Family (Credit Enhancement – IRB, LLR)
Product Summary	Partnership with thirteen (13) 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 4.49-6.99% for \$500-\$50,000 of borrowing.
Support Needed	<ul style="list-style-type: none"> Provide 2nd Loan Loss Reserve (LLR) up to 7.5% of losses Class A and 15.0% of losses Class B
CT Results	6,316 projects for \$116.3 MM investment, 10.7 MW solar PV, over 85% projects have EE



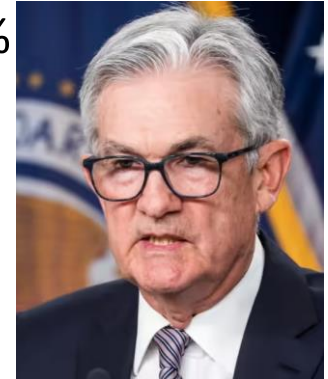
REFERENCES

Annual Comprehensive Financial Report FY 2022

Context for Linked Deposits Pilot



- FRB raises interest rates from 0% to a target range of 5-5.25% over 14 months – the highest level since June 2006 and Sept 2007 (started Mar 2022)
- Smart-E “not-to-exceed” rates have been held steady since inception
- Bank & Credit Union cost of funds have been increasing – but not uniform
 - Depends on several factors
 - Mix of Deposits (demand – time – CDs)
 - Loan to Deposits ratio
 - Business mix (C&I vs Consumer)
- Recent “road show” revealed 1-2 lenders “of concern” with “net interest margin” under particular stress (one lender advised “program suspension”)
- Staff considered several options – but prefers a “targeted approach” to deal with lenders having acute margin issues
- Conceptualized a “linked deposits” approach – placing deposits with certain lenders at a “concessional rate” for a defined period (during high interest stress)



How Linked Deposits Work / Pilot



- A Green Bank, government agency or other impact investor seeks to stimulate outcomes that are (a) funded with loans and (b) sensitive to interest rates
- The “impact investor” deposits funds with the “program lender” at a predetermined concessional rate (i.e., a rate lower than “market”)
- The rate chosen is determined to be the level at which a desired outcome is achievable
- In the Smart-E case
 - Green Bank agrees for a period of time to make deposits with the participating lender
 - Interest Rate determined as a “margin” below the average Smart-E yield for a cohort of loans
 - The margin is 3% (i.e., Smart-E yield ~5.25% ... deposit rate (variable) ~2.25% ... “market” ~4.5%)
 - In the pilot case – the cohort is loans January 1, 2023 – June 30, 2024 (concession starts ~6/1/23)
 - Deposit limit is \$2,000,000
 - Deposits to be returned to Green Bank not later than June 30, 2028 (5 years = avg life of Smart-E loan)
 - Can be terminated by the program lender at any time (i.e., if interest rates fall)
 - Extendable (beyond 6/30/24) at the joint-option of the Program Lender and Green Bank
 - Reasonable cost (year 1 ~\$24,000 ... life of pilot ~\$60,000 for identified lender .. Pilot NTE 6/30/25)

Resolution #9



NOW, therefore be it:

RESOLVED, that the Deployment Committee approves the Linked Deposit Pilot, to be implemented generally as described in the Linked Deposit Pilot Memo;

RESOLVED, that the President of the Green Bank; and any other duly authorized officer of the Green Bank, is authorized to execute and deliver, any contract or other legal instrument necessary to effect the Linked Deposit Pilot on such terms and conditions as are materially consistent with the Linked Deposit Pilot Memo; and

RESOLVED, that the proper Green Bank officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instruments.

Deployment Committee

Agenda Item #6a

Environmental infrastructure Programs

Updates and Recommendations

Smart-E Loan – Expansion to Include Environmental
Infrastructure Measures

November 16, 2022



Approval of “Climate Adaptation and Resilience” Measures

NOW, therefore be it:

RESOLVED, that the Deployment Committee approves of the “climate adaptation and resiliency” measures proposed by the Green Bank staff in the memo dated November 9, 2022 be included as “eligible improvements” within the Smart-E Loan.

RESOLVED, that the Deployment Committee requests that the Collaborators seek a final review by the Federal Emergency Management Agency for how “climate adaptation and resiliency” measures may benefit insurance.

RESOLVED, that the Deployment Committee seeks review and approval of additional environmental infrastructure measures for consideration as “eligible improvements” within the Smart-E Loan at a future date.

RESOLVED, that the Deployment Committee seeks review and approval of a plan for the staff rollout of environmental infrastructure measures within the Smart-E Loan, including, but not limited to contractor participation, project inspections, loss reserve budgeting, and customer marketing and outreach.

Environmental Infrastructure & Smart-E

Potential Measures for Expansion



■ Background—

- Stakeholder engagement and opportunities within existing programs
- Potential additions of environmental infrastructure measures to the list of “eligible improvements” within the Smart-E Loan program, with a focus on “water” measures
- Partnered with Quantified Ventures to develop this priority list

■ Scope of Expansion—

- Proposed measures were identified through research and stakeholder interviews. Recommended measures were then vetted through CT Green Bank and state agencies (i.e. CTDEEP, DPH, etc.) to determine a final list of nine (9) prioritized measures.

■ Measures—

- Priority measures cover resilience metrics across water and energy efficiency, flood prevention and stormwater, water quality, improved health impacts, climate resilience, mitigation of extreme heat

Examples of Priority Measures



Upgrade Appliances + Water Fixtures + Leaking Plumbing
(Bundled)

Goal:
Reduce water and energy consumption, thereby reducing GHG emissions

Replace and Upgrade Private Onsite Septic Systems

Goal:
Reduce groundwater and surface water contamination

Replace Leaded Water Supply Lines And Fixtures Containing Lead

Goal:
Improve public health by providing safe, accessible drinking water

Install Sewer Backflow Preventers

Goal:
Reduce sewage backups into homes or businesses as the result of municipal sewer or drainage system overflows.

Dam Maintenance and Replacement

Goal:
Reduce failure of high hazard dams during weather events, flood management, and support dam removal

Resolution #10



NOW, therefore be it:

RESOLVED, that the Deployment Committee approves of the “water” measures proposed by the staff within its memo of May 17, 2023 be included as “eligible improvements” within the Smart-E Loan.

RESOLVED, that the Deployment Committee seeks review and approval of additional environmental infrastructure measures for consideration as “eligible improvements” within the Smart-E Loan at a future date.

RESOLVED, that the Deployment Committee seeks review and approval of a plan for the staff rollout of environmental infrastructure measures within the Smart-E Loan, including, but not limited to contractor participation, project inspections, loss reserve budgeting, and customer marketing and outreach.

Deployment Committee

Agenda Item #7
Other Business

Deployment Committee

Agenda Item #8
Adjourn



**DEPLOYMENT COMMITTEE OF THE
CONNECTICUT GREEN BANK**
Regular Meeting Minutes

Wednesday, November 16, 2022
2:00 p.m. – 3:00 p.m.

A regular meeting of the Deployment Committee of the **Connecticut Green Bank (the “Green Bank”)** was held on November 16, 2022.

Due to COVID-19, all participants joined via the conference call.

Committee Members Present: Binu Chandy (DECD), Matthew Ranelli, Lonnie Reed, Bettina Bronisz as a proxy for Sara Sanders, Kristen Rigney as a proxy for Victoria Hackett

Committee Members Absent: Dominick Grant, Victoria Hackett (DEEP), Sarah Sanders

Staff Attending: Mackey Dykes, Bryan Garcia, Bert Hunter, Alexei Kovtunenکو, Cheryl Lumpkin, Desiree Miller, Jane Murphy, Ariel Schneider, Eric Shrago, Dan Smith

Others present: Giulia Bambara, Claire Sickinger

1. Call to Order

- Kristen Rigney called the meeting to order at 2:04 pm.

2. Public Comments

- No public comments.

3. Consent Agenda

Resolution #1

Motion to approve the minutes of the Deployment Committee meeting for February 23, 2022.

Upon a motion made by Matthew Ranelli and seconded by Lonnie Reed, the Deployment Committee voted to approve Resolution 1. None opposed and Bettina Bronisz abstained. Motion approved.

4. Incentive Programs Updates and Recommendations

- a. Smart-E Loan – Expansion to include Environment Infrastructure Measures (Climate Adaptation and Resilience)**

Subject to Changes and Deletions

- Bryan Garcia summarized the history of the Green Bank’s public policy, planning process, and the Smart-E Loan program. The Smart-E Loan program has resulted in 6316 projects being funded for \$116.3MM. He reviewed the collaborators with the Green Bank (i.e., DEEP, Insurance Department, and CIRCA) for climate adaptation and resiliency measures which includes the United States Climate Alliance in partnership with the European Union and with support by the Climate Finance Advisors.
- Bryan Garcia reviewed the proposed measures to expand the Smart-E Loan program to cover projects that address climate adaptation and resiliency which is a list of 31 measures including energy efficiency, landscaping, loss prevention, water intrusion reduction, and waterproofing. The list was vetted with the State Agencies Fostering Resilience (SAFR) Council and final review for recommendation is being sought by a FEMA regional insurance specialist.
 - Lonnie Reed asked if FEMA is offloading more to the Green Bank as a collaborator as they back away from some of their coverages. Bryan Garcia responded that the resilience and insurance measures process is very complicated but will pass the question along to the insurance team.
 - Matthew Ranelli stated he had several questions but was willing to discuss them in more detail offline after the meeting. He asked if under the state building code, if the project accepts state funds there is a different requirement for that, so will the Smart-E Loan recipients be required to meet those requirements. He also asked if there will be protections in place within building contracts to comply with certain standards as many projects are completed by less familiar contractors. Bryan Garcia agreed that he would like to be able to discuss them more thoroughly later, and explained the Resolution is just to get the list approved but nothing is being underwritten or hard-set yet.
 - Bettina Bronisz asked for clarification about the third Resolved statement. Bryan Garcia answered that under Environmental Infrastructure, Climate Adaptation and Resiliency is one measure and there are other measures, such as related to water, that are not being presented today but will be in the future, so the statement is just allowing for future instruction and guidance.

Resolution #2

WHEREAS, in May of 2013, Green Bank launched the Smart-E Loan program, currently operating statewide, with nine local lenders providing low cost and long-term financing for measures that are consistent with the state energy policy and the implementation of the State’s Comprehensive Energy Strategy; and

WHEREAS, at the March 25th, 2022 Connecticut Green Bank Board of Directors (the “Board”) meeting the Board approved the staff recommendation that the Smart-E Loan term sheet be further enhanced to allow for the addition of environmental infrastructure measures to the list of “eligible improvements,” and that the Board authorized the Deployment Committee to determine the specific measures by segment (e.g., water, waste and recycling, etc.) to be supported through the Smart-E program.

NOW, therefore be it:

RESOLVED, that the Deployment Committee approves of the “climate adaptation and resiliency” measures proposed by the Green Bank staff in the memo dated November 9, 2022 be included as “eligible improvements” within the Smart-E Loan.

Subject to Changes and Deletions

RESOLVED, that the Deployment Committee requests that the Collaborators seek a final review by the Federal Emergency Management Agency for how “climate adaptation and resiliency” measures may benefit insurance.

RESOLVED, that the Deployment Committee seeks review and approval of additional environmental infrastructure measures for consideration as “eligible improvements” within the Smart-E Loan at a future date.

RESOLVED, that the Deployment Committee seeks review and approval of a plan for the staff rollout of environmental infrastructure measures within the Smart-E Loan, including, but not limited to contractor participation, project inspections, loss reserve budgeting, and customer marketing and outreach.

Upon a motion made by Lonnie Reed and seconded by Bettina Bronisz, the Deployment Committee voted to approve Resolution 2 as amended. None opposed or abstained. Motion approved unanimously.

5. Investment Updates and Recommendations

a. Green Bank Capital Solutions – Energy Resources Proposal for Bradley International Airport Project

- Desiree Miller summarized the proposal for a new debt facility for a project for Energy Resources USA. She reviewed the transaction details including the funding sources and explained the need for capital and therefore the debt facility.
 - Bettina Bronisz asked for clarification about what the projects at Bradley Airport were specifically. Desiree Miller answered it is for lighting, refrigeration, and HVAC at two different parking lots, multiple terminals, firehouse, and other outside locations.
 - Matthew Ranelli asked how Energy Resources USA was selected and what their original plan for capital was. Mackey Dykes explained they were selected by the Airport Authority. Mackey Dykes responded that for their original capital funding plan, it may have been a situation where the market conditions were better and it may not have originally been an issue, though he is not completely sure.
 - Lonnie Reed noted there may be marketing opportunities available as part of this project.

Resolution #3

WHEREAS, the Connecticut Green Bank (“Green Bank”) has significant experience in the development and financing of commercial energy efficiency projects in Connecticut;

WHEREAS, the Green Bank continually seeks new ways to facilitate the deployment of energy efficiency and renewable energy in the State; and

WHEREAS, the Green Bank has established the Capital Solutions Open RFP Program (the “Capital Solutions Program”) to accommodate clean energy and environment infrastructure capital needs not met by other existing Green Bank programs; and

WHEREAS, Energy Resources USA LLC (“Energy Resources”) has applied to the Capital Solutions Program and staff is recommending approval of Energy Resources’ application for a construction loan facility (the “Construction Loan”), substantially on the terms

Subject to Changes and Deletions

and conditions explained in a memorandum to the Deployment Committee of the Green Bank Board of Directors (the “Deployment Committee”) dated November 14, 2022 (the “Deployment Committee Memo”);

NOW, therefore be it:

RESOLVED, that the Green Bank approves the Capital Solutions application of Energy Resources and the establishment of a construction line of credit for funding its obligations under contracts for energy efficiency retrofits for state projects pursuant to the Eversource Small Business Energy Advantage program in an amount not to exceed \$2.5 million on terms substantially similar to those described in the Deployment Committee Memo; and

RESOLVED, that the proper Green Bank officers are authorized and empowered to do all other acts and negotiate and deliver all other documents and instruments as they shall deem necessary and desirable to affect the above-mentioned legal instruments.

Upon a motion made by Binu Chandy and seconded by Matthew Ranelli, the Deployment Committee voted to approve Resolution 3. None opposed or abstained. Motion approved unanimously.

6. Financial Updates and Recommendations

- Alexei Kovtunenکو summarized the new IRA Tax Credits opportunities and how they affect existing and future programs on a general level. Some of the tax credits he reviewed are the Energy Efficient Home Improvement Credit and Energy Investment Credit. He reviewed the comments submitted by the CT Green Bank and by stakeholders.
- Alexei Kovtunenکو briefly went over some of the other provisions within the IRA such as funding to State Energy Offices to develop a more robust HOMES rebate program, HEEH rebate program, EECB deduction, and more.

7. Other Business

- None

8. Adjourn

Kristen Rigney adjourned the Deployment Committee Meeting at 3:00 pm.

Respectfully submitted,

Kristen Rigney as proxy for Victoria Hackett, Vice Chairperson

Memo

To: Deployment Committee of the Connecticut Green Bank
From: Sergio Carrillo, Bryan Garcia
Cc: Mackey Dykes, Brian Farnen, Bert Hunter, Jane Murphy, and Eric Shrago
Date: May 17, 2023
Re: Energy Storage Solution Program – Upfront Incentive Approvals

Background:

The Energy Storage Solutions (ESS) Program was established by the Public Utilities Regulatory Authority (PURA) in Docket No. 17-12-03RE03, [PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Electric Storage](#). In PURA’s final Decision¹ in this docket, issued July 28, 2021, PURA appointed The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource), The United Illuminating Company (UI), and the Connecticut Green Bank (Green Bank) as co-administrators of the ESS Program.²

The Green Bank’s Program responsibilities include customer enrollment, administration of the upfront incentive, marketing and promotion, and data aggregation and publication to support Program evaluation, measurement, and verification, among others.

A. Upfront Incentive Approval Process

At its June 24, 2022 meeting, the Green Bank Board of Directors (BOD) authorized a process for the approval of upfront incentives for projects participating in the ESS Program, by which projects with estimated upfront incentives greater than \$500,000 would follow a process similar to the approval process used for C-PACE program.

Within the existing BOD and Deployment Committee regular meeting schedule, Green Bank staff shall obtain BOD approval of estimated upfront incentive payments via consent agenda utilizing the Tear Sheet process described in the Memorandum to the Board dated June 24,

¹ PURA’s final Decision in Docket 17-12-03RE03 may be found [here](#).

² Additionally, with the passage of Public Act 21-53, “An Act Concerning Energy Storage,” PURA shall solicit input from the Department of Energy and Environmental Protection (DEEP), the Office of Consumer Counsel (OCC), the Electric Distribution Companies (EDCs), and the Green Bank in developing energy storage system programs, and may select DEEP, EDCs, Green Bank, a third party, or any combination thereof to implement one or more programs for electric storage resources as directed by PURA.

2022. Only after securing BOD approval will Green Bank staff issue Reservation of Funds (ROF) letters to project developers and/or owners.

After projects are fully operational, Green Bank staff will notify the BOD of their intent to issue Confirmation of Funds (COF) letters, highlighting any differences between the Board-approved incentive and the final incentive amount, and the reason for the difference.

B. Request for Approval of New Upfront Incentives Above \$500,000

One ESS project with an estimated upfront incentive above \$500,000 requires BOD approval. Table 1 below shows the project seeking approval of an estimated upfront incentive totaling \$734,250. Additionally, the project has a total capacity of 1.958 MW, which accounts for 1.96% of the 100 MW of non-residential capacity available for Tranche 2 of the ESS Program.

Project Name	Contractor Name	Battery Manufacturer	Battery Model	Host Customer City	Total System Power (kW)	Total System Energy Capacity (kWh)	Estimated Upfront Incentive	Total Battery Cost
ESS-00616	CPower	Tesla	Megapack	Wilton	1,958.00	5,874.00	\$ 734,250.00	\$ 2,496,452.00

Table 1. Summary of Estimated Upfront Incentives Above \$500,000

The project shown in Table 1 above, ESS-00616, is a large commercial and industrial (C&I) project located at South Norwalk Electric & Water in Wilton, a critical facility.³ The battery energy storage system (BESS) will be owned by CPower, and the project is not eligible for Forward Capacity Market (FCM) participation. Additionally, the project’s battery model is a Tesla Megapack, which is preapproved for the Program.

The project will provide resiliency benefits to the host customer, in addition to grid-wide benefits via a flattening of the demand curve. Further, the project is expected to be completed in 2025 after the completion of interconnection studies, which can be lengthy and costly.

Finally, the attached Tear Sheet in Appendix A provides additional details pertaining to project ESS-00616.

C. Notice of Approval of New Upfront Incentives Below \$500,000

Two ESS projects with upfront incentives below \$500,000 received Green Bank staff approval via Project Approval Forms (PAF). Table 2 below shows the two projects approved by Green Bank staff with estimated upfront incentives for a total amount of \$560,400. Additionally, the two projects have a total capacity of 2.427 MW, which accounts for 2.43% of the 100 MW of non-residential capacity available for Tranche 2 of the ESS Program.

³ According to the ESS [Program Manual](#), “Critical Facilities shall be defined according to Conn. Gen. Stat. § 16-243y(a)(2), as well as known facilities that were designated essential by the DECD pursuant to Governor Lamont’s [Executive Order 7H](#).” ESS Program Manual, pp. 41-42.

Project Name	Contractor Name	Battery Manufacturer	Battery Model	Host Customer City	Total System Power (kW)	Total System Energy Capacity (kWh)	Estimated Upfront Incentive	Total Battery Cost
ESS-00237	Siemens Industry, Inc. / Calibrant Energy	ELM	MG500	Torrington	500.00	1,000.00	\$ 175,000.00	\$ 750,000.00
ESS-00380	CPower	Tesla	Megapack	Hartford	1,927.00	3,854.00	\$ 385,400.00	\$ 2,550,000.00
Totals					2,427.00	4,854.00	\$ 560,400.00	\$ 3,300,000.00

Table 2. Summary of Estimated Upfront Incentives Below \$500,000

The first project shown in Table 2, ESS-00237, is a medium C&I project located in a critical facility at a Hartford Healthcare site in Torrington. The project will participate in the Forward Capacity Market (FCM), and the battery energy storage system (BESS) will be owned by the customer. Additionally, the project’s battery model, ELM Fieldsight MG500, is preapproved for the Program.

The second project, ESS-00380, is a large C&I project located at Trinity College in Hartford. The project is not eligible for FCM participation, and the BESS will be owned by the contractor, CPower. The second project’s battery model, Tesla Megapack, is also preapproved for the Program.

Last, both projects will provide resiliency benefits to the host customer, in addition to grid-wide benefits via a flattening of the demand curve. Both projects are also expected to be completed in 2025 after the completion of interconnection studies, which can be lengthy and costly.

Resolution

WHEREAS, in its June 24, 2022 meeting the Connecticut Green Bank Board of Directors (Board) approved the implementation of an Upfront Incentive Project Approval procedures (“Procedures”) for non-residential projects under the Energy Storage Solutions Program (Program) with an estimated upfront incentive payment greater than \$500,000 and procedures for less than \$500,000;

WHEREAS, as part of the Procedures, Green Bank staff shall present Program projects via the consent agenda utilizing a standard form Tear Sheet process described in the memorandum to the Board dated June 24, 2022;

WHEREAS, in its December 9, 2022 meeting the Board approved updated Procedures to better align with the Program process;

WHEREAS, Green Bank Staff reviewed funding requests for projects with incentives below \$500,000, and approved them via Project Approval Forms for a total amount of \$560,400 and intends to issue Reservation of Fund letters upon Deployment Committee review and authorization.

NOW, therefore be it:

RESOLVED, that the Deployment Committee hereby approves the estimated upfront incentives for one non-residential project above \$500,000 totaling \$734,250 consistent with the approved Procedures and this memorandum dated May 17, 2023;

RESOLVED, that the proper Green Bank officers are authorized and empowered to do all other acts and execute and deliver any and all documents and regulatory filings as they shall deem necessary and desirable to affect the above-mentioned incentives consistent with the Procedures.

Appendix A: Project Tear Sheets

Energy Storage Solution Program Upfront Incentive Application

Project Description	Installation of a Tesla Megapack battery storage system with 1,958 kW of power capacity, and with 5,874 kWh of energy capacity, to reduce electric bills and provide backup power to a utilities facility during power outages.
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Customer / Site information

Customer Name	South Norwalk Electric & Water
Address	164 Old Boston Rd., Wilton, CT 06897
Business Purpose	Utilities
Incentive Application No.	ESS-00616
Incentive Application Date	3/17/2023
Customer Peak Annual Demand (kW)	749
Customer Class (S / M / L)	Large
Project Developer / Installer	CPower

Program Eligibility

Critical Facility	Yes
Small Business	No
Onsite Fossil Fuel Generator	No
Grid Edge Customer	No
Participation in FCM Allowed	No
Participation in FCM Declared	No
Resiliency Plan on File (N/A if Grid Edge Customer)	Yes

Battery Energy Storage System (BESS) Characteristics

System Configuration	Standalone
Expected Program Participation	Passive and Active Dispatch
BESS Make / Model	Tesla Megapack
BESS Power Rating (kW)	1,958
BESS Energy Capacity (kWh)	5,874
BESS Technology Approval Status	Pre-Approved
Interconnection Application Filed	Yes
Interconnection Study Required	Fast Track study needed
Estimated Project Cost	\$2,496,452

Benefit / Cost Ratios

RIM – Ratepayer Impact Measure	1.79
PCT – Participant Cost Test	1.19
PACT – Program Administrator Cost Test	2.31
SCT – Societal Cost Test	1.94
TRC – Total Resource Cost Test	1.95

Upfront Incentive Information

Incentive Application Status	<ul style="list-style-type: none"> ▪ Application Submitted ▪ Approved Reservation of Funds Letter (ROF) ▪ Approved Confirmation of Funds Letter (COF)
Incentive Calculation Method	Tiered Rate using Peak Demand
Estimated Upfront Incentive	\$734,250

329 Washington Avenue: A C-PACE Project in Bridgeport, CT

Address	329 Washington Avenue, Bridgeport, CT 06604	
Owner	Cathedral Parish	
Proposed Assessment	\$510,097	
Term (years)	20 years	
Term Remaining (months)	Pending construction completion	
Annual Interest Rate	5.25%	
Annual C-PACE Assessment	\$41,501	
Savings-to-Investment Ratio	1.11	
Average DSCR over Term	[REDACTED]	
Lien-to-Value	[REDACTED]	
Loan-to-Value	[REDACTED]	
Projected Energy Savings (mmBTU)	Year 1	374
	Over 25 Year EUL	7,142
Estimated Cost Savings (incl. ZREC/Tariff and tax benefits)	Year 1	\$25,869
	Over 25 Year EUL	\$659,156
Objective Function	14 kBTU / ratepayer dollar at risk	
Location	Bridgeport, CT	
Type of Building	School	
Year of Build	1964	
Building Size (sf)	35,275	
Year Acquired by Owner	2012	
As-Complete Appraised Value¹	[REDACTED]	
Mortgage Outstanding	[REDACTED]	
Mortgage Lender Consent	[REDACTED]	
Proposed Project Description	90.24kw Solar PV system, Roof Repair, and Utility Service Upgrade	
Est. Date of Construction Completion	Pending closing	
Current Status	Awaiting Deployment Committee Approval	
Energy Contractor	[REDACTED]	

[REDACTED]

236 New Hartford Road: A C-PACE Project in Barkhamstead, CT

Address	236 New Hartford Road, Barkhamstead, CT 06063			
Owner	Air Realty Group LLC			
Proposed Assessment	\$938,197			
Term (years)	20			
Term Remaining (months)	Pending construction completion			
Annual Interest Rate	5.75%			
Annual C-PACE Assessment	\$76,651			
Savings-to-Investment Ratio	1.04			
Average DSCR	[REDACTED]			
Lien-to-Value	[REDACTED]			
Loan-to-Value	[REDACTED]			
Projected Energy Savings (mmBTU)		EE	RE	Total
	Per year	-	1,083	1,083
	Over term	-	25,509	25,509
Estimated Cost Savings (incl. ZRECs and tax benefits)	Per year (av.)	-	\$63,818	\$63,818
	Over project life	-	\$1,595,443	\$1,595,443
Objective Function	28.4 kBTU / ratepayer dollar at risk			
Location	Barkhamstead			
Type of Building	Manufacturing facility			
Year of Build	1925			
Building Size (sf)	78,450 sf			
Year Acquired by Owner	2015 ²			
As-Is Appraised Value³	[REDACTED]			
Mortgage Lender Consent	[REDACTED]			
Proposed Project Description	Rooftop solar PV (294kW) plus roof upgrades			
Est. Date of Construction Completion	Pending closing			
Current Status	Awaiting Staff Approval			
Energy Contractor	[REDACTED]			

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

11 Cascade Boulevard: A C-PACE Project in Orange, CT

Address	11 Cascade Boulevard, Orange, CT 06460	
Owner	Bead Industries, Inc.	
Proposed Assessment	\$700,301	
Term (years)	20	
Term Remaining (months)	Pending construction completion	
Annual Interest Rate	5.75%	
Annual C-PACE Assessment	\$59,375	
Savings-to-Investment Ratio	1.09	
Average DSCR over Term	[REDACTED]	
Lien-to-Value	[REDACTED]	
Loan-to-Value	[REDACTED]	
Projected Energy Savings (mmBTU)	Year 1	868
	Over 25 Year EUL	20,440
Estimated Cost Savings (incl. ZREC/Tariff and tax benefits)	Year 1	\$293,659
	Over 25 Year EUL	\$1,319,296
Objective Function	29.19 kBTU / ratepayer dollar at risk	
Location	Orange, CT	
Type of Building	Industrial	
Year of Build	1982	
Building Size (sf)	74,000	
Year Acquired by Owner	2006	
As-Complete Appraised Value¹	[REDACTED]	
Mortgage Outstanding	[REDACTED]	
Mortgage Lender Consent	[REDACTED]	
Proposed Project Description	213.6 kw Solar PV and Roof Replacement	
Est. Date of Construction Completion	Pending closing	
Current Status	Awaiting Deployment Committee Approval	
Energy Contractor	[REDACTED]	

¹ [REDACTED]

66 Erna Avenue: A C-PACE Project in Milford, CT

Address	66 Erna Avenue, Milford , CT 06461		
Owner	Colon Industries LLC		
Proposed Assessment	\$513,718.00		
Term (years)	20		
Term Remaining (months)	Pending construction completion		
Annual Interest Rate	5.25		
Annual C-PACE Assessment	\$41,795.00		
Savings-to-Investment Ratio	1.40		
Average DSCR	██████████		
Lien-to-Value	██████████		
Loan-to-Value	██████████		
Projected Energy Savings (mmBTU)		RE	Total
	Per year	748	748
	Over EUL	14,268	14,268
Estimated Cost Savings (incl. ZRECs and tax benefits)	Per year	\$39,462.00	\$39,462.00
	Over EUL	\$1,167,068.00	\$1,167,068.00
Objective Function	27.77 kBTU / ratepayer dollar at risk		
Location	Milford, CT		
Type of Building	Industrial		
Year of Build	1940		
Building Size (sf)	26,356		
Year Acquired by Owner	6/9/2011		
As-Complete Appraised Value	██████████		
Mortgage Lender Consent	██		
Proposed Project Description	185 kW rooftop solar PV system.		
Est. Date of Construction Completion	Pending closing		
Current Status	Awaiting Deployment Committee Approval		
Energy Contractor	██		

Memo

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

From: Mariana Trief (Associate Director, Investments), Bert Hunter (EVP & Chief Investment Officer), Bryan Garcia (President and CEO), Jane Murphy (EVP, Finance & Administration), Eric Shrago (Managing Director of Operations)

Date: May 17, 2023

Re: Write-off Approval for St. John’s Episcopal PPA Project

At the June 26, 2020 Board of Directors (“BOD”) meeting of the Connecticut Green Bank (“Green Bank”) it was resolved that the Deployment Committee will have the authority to approve loan loss restructurings or write-offs for transactions greater than \$100,000 and less than \$1,000,000. Green Bank staff is coming forward with a write-off for a solar energy facility (“SEF”) at St. John’s Episcopal Church at 734 Fairfield Avenue, Bridgeport, CT 06604 (the “Project”).

The Project is a 45.5 KW rooftop solar project that is owned by CT Solar Lease 3 LLC (“SL3”), a Connecticut limited liability company which is owned 99% by the investor member providing tax equity for tax benefit monetization and 1% by CEFIA Solar Services Inc. who serves as the “managing member” of SL3. SL3 entered into a Power Purchase and License Agreement dated as of August 30, 2017 (“PPA”) with the property owner. The cost to install the SEF in 2017 was \$100,550. The Project was placed in service with the utility on November 14, 2017.

Following inspections by two qualified contractors, the Green Bank discovered extensive damage throughout the entire SEF, likely caused by squirrels. Green Bank was advised that the system required time sensitive repairs to prevent the potential for fire. The cost associated with restoration and reinstallation of the SEF were prohibitive, estimated to be \$98k by a qualified contractor. Repairs are not feasible given the cost along with the potential for similar squirrel damage in the future likely resulting in expensive repairs due to the nature of the roof (height and tilt). Complicating the situation is the steep pitch of the roof of the structure. Unfortunately, insurance does not cover damage to the solar system caused by squirrels. Insurance could cover damage to the property caused by the squirrels and staff will confirm once the system is removed if there is any such damage that would warrant an insurance claim.

The write-off amount includes \$106,121 in gross expected revenue, including PPA revenue and lost ZREC income, along with \$49,509.34 to remove the system, resulting in a total write-off amount of \$155,630.32. There is a high likelihood that equipment that has not been

damaged can be used for repairs and restorations at other sites thereby reducing the eventual write-off amount (but this is uncertain and not captured in the amounts above).

To prevent these issues from arising in the future, Green Bank staff will provide additional technical oversight when a solar project is being developed so that projects that are difficult and expensive to maintain (such as with a steep roof) are carefully considered in determining whether such an installation should be approved for Green Bank financing. In addition, Green Bank is considering requiring the use of squirrel guards for all of its rooftop installations.

With the approval by the Deployment Committee, the Green Bank will move towards writing off the Project – however, staff wants to make it clear that due to the fire hazard, staff approved removal of the system on May 10, 2023.

Resolution

WHEREAS, on October 20, 2017, the Green Bank Board of Directors approved of a recommendation brought forth by both 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, based on a recommendation brought forth by the Deployment and ACG Committees, the Board approved and authorized the Green Bank staff to implement the Loan Loss Decision Framework and Process for managing assets requiring restructuring or write-off from the Green Bank's balance sheet and consistent with the memorandum to the Board dated June 13, 2018 ("Loan Loss Decision Framework and Process ") and for a similar framework to be developed at a future date for the Green Bank's special purpose vehicles (i.e., subsidiaries); and

WHEREAS, on May 19, 2020, the Audit, Compliance and Governance Committee, and on May 27, 2020, the Deployment Committee, recommended that the Board of Directors approve of the Staff proposed Loan Loss Decision Framework and Process for Subsidiaries for managing assets requiring restructuring or write-off from the Green Bank's balance sheet and consistent with the memorandums presented to the committees May 12, 2020, and May 20, 2020, respectively; and

WHEREAS, the Green Bank, through CT Solar Lease 3 LLC, owns and operates a solar energy facility ("SEF") at St. John's Episcopal Church at 734 Fairfield Avenue, Bridgeport, CT 06604 (the "Project") that has extensive damage caused by squirrels and, even if repaired, is expected to continue to have excessive maintenance cost given the nature of the roof, as more thoroughly explained in a memorandum to the Deployment Committee dated May 17, 2023 (the "Write-off Memo"); and

WHEREAS, the Green Bank staff is requesting a write-off associated with the Project as a result of the damage.

NOW, therefore be it:

RESOLVED, that the Deployment Committee approves of the Staff proposed write-off consistent with the Write-off Memo.



Memo

To: Connecticut Green Bank (“Green Bank”) Board of Directors (the “Board”)

From: Bert Hunter, EVP & Chief Investment Officer

CC: Bryan Garcia, President and CEO; Sergio Carrillo, Managing Director of Incentive Programs, Brian Farnen, General Counsel and CLO; Jane Murphy, EVP of Finance & Administration, Eric Shrago, VP of Operations

Date: May 19, 2023

Re: Smart-E Loan Program: Linked Deposit Pilot

Background, Summary of Pilot Program & Request for Approval

In 2013, the Connecticut Green Bank (the “Green Bank”) Board of Directors (the “Board”) approved what is now the Green Bank’s flagship residential loan product offered through a network of local credit unions, community banks and a community development financial institution (CDFI). Smart-E financing, offered by the Green Bank in partnership with Eversource and United Illuminating / Avangrid (UI), Connecticut Natural Gas and Southern Connecticut Gas, utilizes select local lenders and contractors. The Smart-E program offers long-term, low-interest financing to help homeowners upgrade their home’s energy performance with no money down. Since inception, more than \$110 million in loans have been originated. A variety of measures are eligible for financing, shown here:

Home Performance/Efficiency

- Attic, wall, or floor insulation
- Duct sealing
- Air sealing
- Window replacement

Heating and Cooling

- Air source heat pump
- Ground source heat pump
- Central air conditioning
- Ductless mini-split heat pump
- High efficiency furnace / boiler
- Steam boiler

Water Heating

- Heat pump water heater
- Indirect water heater - natural gas
- On-demand tankless water heater

Renewables

- Solar PV system
- Solar battery storage
- Solar hot water
- Electric vehicle recharging station

Health and Safety

- Asbestos removal
- Mold remediation

Related Energy Improvements

- ENERGY STAR appliances
- Roof repair for solar
- Tree removal for solar
- Conversion to natural gas

Green Bank staff and Inclusive Prosperity Capital (IPC) have met with nearly all Smart-E lenders over the past several weeks to brief our program partners on the expansion of loan limits and other program enhancements, such as expanding the program over time to include various environmental infrastructure measures (e.g., climate adaptation and resilience) approved in consultation with CIRCA, DEEP, DPH, Insurance Department, and others. In the course of these conversations, a small portion of lenders expressed concern about net financing margin compression (the differential between the average Smart-E program “not to exceed” interest rates and funding costs). For many lenders in the program, deposits exceed loans of all of the lender’s program (i.e., home equity loans, auto loans, credit card loans and Smart-E loans). For these lenders, and depending upon their deposit mix (low interest demand deposits and higher cost CDs), financing margin is less of a concern at the moment. For others, loans are a very high percentage of deposits or even exceed deposits. At that point, the lender must borrow funds to make incremental loans. Under present conditions, these borrowings can cost banks 5% or more. With the average Smart-E loan rate of about 5.25%, financing margins for lenders in this situation have grown very narrow vs. even a year ago when interest rates were between 1.0 and 1.5%.

One of our lenders, Mutual Security Credit Union, is in this narrow margin situation to the extent that the lender was concerned that it would need to suspend its participation in the program. Given that MSCU has been a strong Smart-E partner, Green Bank wants to do what it can to retain MSCU in the program.

Green Bank staff has developed with MSCU and seeks approval from the Deployment Committee for a “linked deposit” pilot program. Under the linked deposit pilot, Green Bank would place deposits with MSCU to fund the level of Smart-E loans it books from January 1, 2023 to June 30, 2024. The arrangement would be extendable at the mutual option of MSCU and Green Bank. Terms have been agreed with MSCU (see Appendix A) and the cost of the program (which would start in May 2023 for loans funded by MSCU since January 1, 2023 and extend through June 30, 2024, subject to annual renewal) is expected to be about \$25,000 through June 2024 and approximately another \$25,000 if extended for an additional year. The 5-year cost is expected to be about \$60,000 (the maximum length of the program). See cost assumptions in Appendix B.

Given the relatively low cost of this pilot program and given that this investment will retain one of our leading Smart-E lenders, approval by the Deployment Committee of this pilot program is recommended.

Green Bank Financial Statements

How is the pilot program accounted for on the balance sheet?

Green Bank’s money market account advances remain as cash invested with financial institutions, with a yield impact as explained in this memorandum.

Resolutions

WHEREAS, the Connecticut Green Bank (“Green Bank”) has established the Smart-E Loan program with financing agreements with various credit unions, community banks and a community development financial institution;

WHEREAS, Green Bank desires to pilot a linked deposits program with a Smart-E lender as described in the memorandum to the Deployment Committee dated May 19, 2023 (the “Linked Deposit Pilot Memo”);

WHEREAS, Green Bank staff recommends approval by the Deployment Committee of the Linked Deposit Pilot in an amount not to exceed \$2,000,000

NOW, therefore be it:

RESOLVED, that the Deployment Committee approves the Linked Deposit Pilot, to be implemented generally as described in the Linked Deposit Pilot Memo;

RESOLVED, that the President of the Green Bank; and any other duly authorized officer of the Green Bank, is authorized to execute and deliver, any contract or other legal instrument necessary to effect the Linked Deposit Pilot on such terms and conditions as are materially consistent with the Linked Deposit Pilot Memo; and

RESOLVED, that the proper Green Bank officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instruments.

Submitted by: Bryan Garcia, President and CEO and Bert Hunter, EVP and CIO

Appendix A

Linked Deposit Terms & Conditions

Deposits	On a monthly basis, Green Bank would make money market account deposits with MSCU in an amount that would match dollar-for-dollar the advances made by MSCU in the prior month for Smart-E loans. The Green Bank would commence with the advances made from January 1, 2023 – which based on the information MSCU supplied to the Green Bank is approximately \$340,000 (or more – subject to MSCU confirmation.)
Interest Rate	MSCU would pay to Green Bank (monthly) an interest rate determined by the difference (not less than 0%) of the average portfolio rate on loans made by MSCU in the prior month for Smart-E loans less 3%, rounded up or down to the nearest 0.05%. For the purposes of this determination, the standard “not to exceed” rates in existence as of April 2023 shall be used (or such higher rate if the Smart-E not-to-exceed rates are subsequently raised); i.e., lower IRB loan rates shall not be used.
Withdrawal of funds on deposit in the Money Market Account	Green Bank would commit to leave amounts deposited in the MSCU Money Market Account (MMA) in the account for a period to be mutually agreed on an annual basis (within one month either side of each June 30 commencing in 2024) but, subject to “Permitted Withdrawals” below and unless otherwise agreed, Green Bank (a) would not withdraw funds from the MMA prior to June 30, 2024 and (b) could withdraw all funds in the MMA by June 30, 2028.
Permitted Withdrawals	On a portfolio basis, within 30 days of the end of the availability period (defined below) and every calendar quarter thereafter, should the outstanding balance of the aggregate of deposits from Green Bank <u>exceed</u> the outstanding balance of the aggregate of Smart-E loans funded by this program (i.e., loans on or after 1/1/2023), MSCU would redeem within 30 days of request by Green Bank an amount of Green Bank deposits with

	MSCU to bring deposits and loans into balance (deposits to be redeemed would be from the shortest maturity deposits remaining.)
Optional Withdrawals	At any time, should MSCU desire Green Bank to terminate the linked deposit arrangement with the MMA, Green Bank will, upon MSCU's request with 1 day's notice, withdraw any portion of Green Banks MMA deposit so requested.
Availability Amount and Availability Period	Green Bank agrees to fund up to \$2,000,000 of Smart-E loans by deposits to the MMA until June 30, 2024, with a renewal option at the request of MSCU and agreement by Green Bank to extend. While it is the intention of this linked deposit arrangement to retain MSCU's participation in the Smart-E program at least through the availability period, MSCU would reserve all rights to suspend its participation at any time.
Reporting	Monthly reporting of funded loans and loan balances by MSCU to Green Bank to enable Green Bank to monitor the loan vs deposit position.
Deposit Monitoring	MSCU will provide an online method for the Green Bank to monitor its MMA deposits and interest accruals.

Appendix B

	Linked Deposit	Market Yield Assumption (*)	Linked Deposit Rate	Opportunity Cost %	Opportunity Cost \$
Jun-23	\$400,000	4.50%	2.25%	2.25%	\$750.00
Jul-23	\$533,333	4.50%	2.25%	2.25%	\$1,000.00
Aug-23	\$666,667	4.50%	2.25%	2.25%	\$1,250.00
Sep-23	\$800,000	4.50%	2.25%	2.25%	\$1,500.00
Oct-23	\$933,333	4.50%	2.25%	2.25%	\$1,750.00
Nov-23	\$1,066,667	4.50%	2.25%	2.25%	\$2,000.00
Dec-23	\$1,200,000	4.50%	2.25%	2.25%	\$2,250.00
Jan-24	\$1,333,333	4.25%	2.25%	2.00%	\$2,222.22
Feb-24	\$1,466,667	4.25%	2.25%	2.00%	\$2,444.44
Mar-24	\$1,600,000	4.00%	2.25%	1.75%	\$2,333.33
Apr-24	\$1,733,333	4.00%	2.25%	1.75%	\$2,527.78
May-24	\$1,866,667	3.75%	2.25%	1.50%	\$2,333.33
Jun-24	\$2,000,000	3.75%	2.25%	1.50%	\$2,500.00
					\$24,861.11
Jul-24	\$2,133,333	3.50%	2.25%	1.25%	\$2,222.22
Aug-24	\$2,266,667	3.50%	2.25%	1.25%	\$2,361.11
Sep-24	\$2,400,000	3.25%	2.25%	1.00%	\$2,000.00
Oct-24	\$2,533,333	3.25%	2.25%	1.00%	\$2,111.11
Nov-24	\$2,666,667	3.00%	2.25%	0.75%	\$1,666.67
Dec-24	\$2,800,000	3.00%	2.25%	0.75%	\$1,750.00
Jan-25	\$2,933,333	3.00%	2.25%	0.75%	\$1,833.33
Feb-25	\$3,066,667	3.00%	2.25%	0.75%	\$1,916.67
Mar-25	\$3,200,000	3.00%	2.25%	0.75%	\$2,000.00
Apr-25	\$3,333,333	3.00%	2.25%	0.75%	\$2,083.33
May-25	\$3,466,667	3.00%	2.25%	0.75%	\$2,166.67
Jun-25	\$3,600,000	3.00%	2.25%	0.75%	\$2,250.00
					\$24,361.11
	Average Balance				
FY26	\$3,000,000	3.00%	2.25%	0.75%	\$22,500.00
FY27	\$2,400,000	2.70%	2.25%	0.45%	\$10,800.00
FY28	\$1,800,000	2.40%	2.25%	0.15%	\$2,700.00
					\$60,361.11



Memo

To: Deployment Committee of the Connecticut Green Bank

From: Bryan Garcia and Ashley Stewart

Cc: Sara Harari, Bert Hunter, Eric Shrago of the Green Bank, and Ralph Mesite, Kerry O'Neill, and Madeline Priest of Inclusive Prosperity Capital

Date: May 17, 2023

Re: Smart-E Loan Program – Inclusion of Further “Environmental Infrastructure” Measures

Purpose

The purpose of this memorandum is to request programmatic approval from the Connecticut Green Bank’s (“Green Bank”) Deployment Committee to allow for the addition of environmental infrastructure measures to the list of “eligible improvements” within the Smart-E Loan program, with a focus on “water” measures. At the March 25, 2022, meeting of the Board of Directors of the Green Bank, it was resolved that the Deployment Committee was authorized to determine the specific measures by segment (e.g., climate adaptation and resiliency) to be supported through the Smart-E Loan program. This document focuses on potential measures within the “water” segment.

Background

The passage of Public Act 21-115 “An Act Concerning Climate Change Adaptation,” led by Governor Lamont, and based on a recommendation from the Governor’s Council on Climate Change (“GC3”), expanded the scope of the Green Bank beyond “clean energy” to include “environmental infrastructure”.¹ In FY22 and FY23, the Green Bank staff underwent an extensive planning process to support the expansion of its scope, including the development of a Comprehensive Plan that includes environmental infrastructure. Within the FY23 Comprehensive Plan,² is the task “Launching New Products,” which includes developing existing financing products for clean energy (e.g., Smart-E Loan, C-PACE) to support environmental infrastructure measures (e.g., climate adaptation and resiliency).

With respect to “water,” Public Act 21-115 includes several important provisions with respect to state clean water revolving funds to note which includes (1) the establishment of the

¹ Definitions for “Clean Energy” and “Environmental Infrastructure” included here:

<https://www.cga.ct.gov/2021/TOB/H/PDF/2021HB-06441-R00-HB.PDF>

² https://www.ctgreenbank.com/wp-content/uploads/2022/08/Comprehensive-Plan_FY-2023_FINAL_080122-1.pdf

Environmental Infrastructure Fund³, **(2)** the resources sought for this fund is not limited except with the Clean Water Fund⁴, and **(3)** the Green Bank will work with the Commissioner of DEEP and DPH with any application, grant or funding under the Clean Water Act⁵.

Through an extensive stakeholder engagement process, with the purpose of identifying suitable “water” measures that can be financed through the Smart-E Loan in support of public policy, thirty-one (31) measures were identified, of which nine (9) measures are being recommended for inclusion – see Attachment A.

As mentioned previously, in March 2022 the Board of Directors resolved that the Deployment Committee was authorized to determine the specific measures by segment (e.g., climate adaptation and resiliency) to be supported through the Smart-E Loan program. In Fall 2022, the Green Bank partnered with Climate Finance Advisors (“CFA”), a subsidiary of WSP,⁶ to identify suitable “climate adaptation and resiliency” measures for the Smart-E Loan program. WSP’s catalogue of “Climate Resilience” measures included five (5) categories – energy efficiency (i.e., many of which are already included within the Smart-E Loan), landscaping, loss prevention, water intrusion reduction, and waterproofing measures. On November 9, 2022, the Deployment Committee approved the staff recommendations of “climate adaptation and resiliency” measures, with certain conditions.

The Green Bank partnered with Quantified Ventures (“QV”) to develop a list of possible “water” measures to be considered for the Smart-E Loan. Through stakeholder engagement with the state departments (DEEP, DPH and DoAg) it was determined that the focus of this expansion should be on “water” and identify resiliency action measures that go beyond the resilience focus in WSP’s analysis. The measures addressed in this expansion include six (6) different resilience hazards, including energy efficiency, energy resilience, water efficiency, flooding, water quality, and health impacts.

Similar to WSP, QV’s analysis included various metrics for each proposed measure – including measure description summary, source of information for the measures, affected component of property (e.g., roof, yard), stage of resilience (i.e., preparation, response, and/or recovery), estimate of the cost range of the measure, estimate of the useful life of the measure, and an estimate of the difficulty of the homeowner to adopt the measure. There is also information regarding the type of contractor / certification needed to carry out each measure.

With respect to the Green Bank’s “water” efforts, it has collaborated with several state agencies to be sure that this offering supports their policy goals. This has included engagement and input from state agencies in Connecticut, including:

³ Environmental Infrastructure Fund – **shall not receive funds that have been deposited in, or are required to be deposited in, an account of the Clean Water Fund pursuant to sections 22a-475 to 22a-483f, inclusive, or (iii) funds collected from a water company, as defined in section 25-32a.**

⁴ Funding Sources – specifically authorized, include, but are not limited to any federal funds, **provided such funds are not required to be deposited in the accounts of the Clean Water Fund pursuant to sections 22a-475 to 22a-483f, inclusive.**

⁵ Applying for Funds – **the Green Bank shall not apply, directly or through a subsidiary, to be eligible for grants under (i) the Clean Water Act, 33 USC 1251 et seq., as amended from time to time, without the approval of the State Treasurer and the Commissioner of Energy and Environmental Protection, or (ii) the Safe Drinking Water Act, 42 USC 300f et seq., as amended from time to time, without the approval of the State Treasurer and the Commissioner of Public Health.**

⁶ <https://www.wsp.com/en-US>

- Department of Energy and Environmental Protection⁷
- Department of Public Health

The Green Bank is seeking to undertake a number of different initiatives to increase resilience from the impacts of climate change, including identifying “water” measures for the Smart-E Loan, that can provide access to capital to homeowners today, that seek to empower homeowners to install and finance “water” improvements on their properties.

In an effort to identify suitable “water” measures for the Smart-E Loan, the Green Bank continued its relationship with QV an outcomes-based capital firm that develops and structures financing for transformative projects that produce environmental, health, and social impact. The partnership included identifying and prioritizing “water” measures for consideration, including:

1. **Literature Review and Research** – undergoing extensive reviews of potentially relevant measures based on QV’s past experience in the water sector, an analysis of existing programs, and other sources.
2. **Measure Review** – vetting by state agencies, including Inclusive Prosperity Capital (“IPC”),⁸ of the list of identified measures for consideration; and
3. **Stakeholder Feedback** – presentation, review, and feedback from relevant stakeholders – including a work session with DEEP in Fall 2022.

When WSP presented their “climate adaptation and resiliency” measures to the State Agencies Fostering Resilience (“SAFR”) Council^{9,10}, various members requested that the Green Bank consider “water” measures to be included within the Smart-E Loan program as well. WSP and QV’s work can be viewed in tandem to produce a holistic overview of potential “climate adaptation and resiliency” and “water” measures.

Request

The staff is requesting the following from the Deployment Committee:

1. **Water Measures** – review and approve the measures proposed by staff to be included within the Smart-E Loan list of “eligible improvements”;
2. **Rollout** – approval of “water” measures does not constitute approval for the staff to allow the Smart-E Loan to be able to finance such measures until such time as an

⁷ On February 28, 2023, CT Green Bank met with DEEP staff to discuss expanding tools to support the Northend of Hartford’s CSO and sewage backflow into residential basements. The Green Bank will continue to work with DEEP and DPH in outreach and education for these measures.

⁸ IPC supports the Green Bank with the administration of the Smart-E Loan

⁹ On October 29, 2015, former Governor Malloy announced an executive order making permanent a working group - comprised of state agency heads and experts - that is responsible for strengthening the state’s resiliency from extreme weather events, including tropical storms, hurricanes, storm surges, flooding, ice storms, extreme high winds, extreme heat, and slow onset events such as sea level rise. Created under Governor Malloy’s Executive Order No. 50, the State Agencies Fostering Resilience Council (“SAFR Council”) will be responsible for working to create a Statewide Resilience Roadmap based on the best climate impact research and data and assisting the state Office of Policy and Management in the creation of a state policy on disaster resilience. The organization of SAFR changed in 2019 under a new gubernatorial administration. Governor New Lamont’s Executive Order No. 3 identified the SAFR Council as a subcommittee of the Governor’s Council on Climate Change (GC3).

¹⁰ <https://resilientconnecticut.uconn.edu/engagement/safr/>

appropriate rollout plan (e.g., contractor participation, project inspection) is completed and presented for review and approval by the Deployment Committee.

It should be noted that no ratepayer funds will be used towards Smart-E Loans for environmental infrastructure projects. The loans will be funded using private capital (i.e., from participating lenders – community banks, credit unions, community development financial institutions), and the lenders will have access to a loan loss reserve provided by the Green Bank, but those loan loss reserve accounts will be backed by the balance sheet and funded using interest income or other earned revenues that come to the Green Bank. In the future, the Green Bank may also consider utilizing a Linked Deposit mechanism as an additional financing tool to provide special offers by reducing interest rates.

Additionally, funds from the American Recovery and Reinvestment Act (“ARRA”), as well as pending funds from the Energy Efficiency Revolving Loan Funds, will not be used for interest rate buydown campaigns on environmental infrastructure projects. Lenders, contractors and homeowners will be advised that projects that include both a clean energy and environmental infrastructure component should be financed as separate Smart-E Loans in order to qualify for the loan loss reserve once the official program is launched.

Conclusion

10 years after the Deployment Committee’s approval to create the Smart-E Loan, the program has helped over 7,300 Connecticut households by providing them with \$138.5 million in funds needed to make critical home energy improvements – from small insulation upgrades to whole home electrification including air and ground source heat pumps, solar, battery storage, and electric vehicle charging stations. The program team is now seeking the Deployment Committee’s approval to advance Smart-E to its next phase, where homeowners will be able to finance specific measures around residential water investments to support the public policy of Connecticut. By providing homeowners with access to capital to finance clean energy and environmental infrastructure improvements, the Green Bank has another funding mechanism to meet its mission to confront climate change.

Resolution

WHEREAS, in May of 2013, Green Bank launched the Smart-E Loan program, currently operating statewide, with nine local lenders providing low cost and long-term financing for measures that are consistent with the state energy policy and the implementation of the CES;

WHEREAS, March of 2022 program staff requested and the Board approved that the Smart-E Loan term sheet be further enhanced to allow for the addition of environmental infrastructure measures to the list of “eligible improvements,” and that the Board authorized the Deployment Committee to determine the specific measures by segment (e.g., water, waste and recycling, etc.) to be supported through the Smart-E program; and

WHEREAS, November of 2022 program staff requested and the Deployment Committee approved that the Smart-E Loan term sheet be further enhanced to allow for the “climate adaptation and resiliency” measures recommended by WSP to be supported through the Smart-E program.

NOW, therefore be it:

RESOLVED, that the Deployment Committee approves of the “water” measures proposed by the staff within its memo of May 17, 2023 be included as “eligible improvements” within the Smart-E Loan.

RESOLVED, that the Deployment Committee seeks review and approval of additional environmental infrastructure measures for consideration as “eligible improvements” within the Smart-E Loan at a future date.

RESOLVED, that the Deployment Committee seeks review and approval of a plan for the staff rollout of environmental infrastructure measures within the Smart-E Loan, including, but not limited to contractor participation, project inspections, loss reserve budgeting, and customer marketing and outreach.



Measure #	Climate Resiliency Measure Intent	Resilience Metric	Resiliency Measure Action
1	Water <i>(Bundled)</i>	Water Efficiency Energy Efficiency	Energy efficient appliances
			Fixture replacement and upgrade
			Leaking outdoor residential plumbing

2	Water	Flooding Water Quality Health Impacts	Onsite Wastewater Replacement
3	Water	Water Quality Health Impacts	Residential Wells

4	Water	Health Impacts	Residential Lead Service Line Replacement
5	Water	Flooding Resilience	Dam Maintenance or Removal
6	Water - WSP List	Flood	Replace impervious surfaces
7	Climate Adaptation and Resilience - <i>WSP List</i>	Extreme temperature Flood (stormwater runoff)	Plant trees, including native and shade trees

8	Water	Flooding Water Quality Health Impacts	Sewer back-flow preventers; sewer lateral inspection and cleaning
9	Water	Flooding Water Quality Health Impacts	Sewer line lateral replacement/relining

Notes on Climate Resilience Measure

Clothes washers, dishwashers, refrigerators, freezers, dehumidifiers, heat pumps, hot water heaters, or air purifiers

Roughly 70% of American's daily water use comes from indoor uses. Replacing toilets, shower heads, and faucets can significantly reduce household consumption and these upgrades are affordable and easy to perform.

High efficiency toilets consume just 1.28 gallons or less of water per flush—far less than older models which use up to 7 gallons— and are independently certified to perform better.

Service line leaks

Well casing

On-site sewage disposal systems are used in rural areas where houses are spaced so far apart that a sewer system would be too expensive to install, or in areas around cities where the city government has not yet provided sewers to which the homes can connect. Onsite wastewater systems are multi-stage systems that collect, treat, and disperse wastewater generated by a home. The wastewater is treated and discharged to the soils rather than collected and transported to a wastewater treatment plant. The typical onsite wastewater system consists of a septic tank and leachfield to disperse the wastewater into the ground. Approximately 40% CT residents (1.5M people) use onsite sewage. These are likely overseen by Local Director Health (health districts). ROughly, 95% of the 40% served are under the jurisdiction of DPH and the Local Health Department.

Septic systems on sites with design flows of 7,500* gallons per day (GPD) and less are permitted by the Local Director Health. Additionally, plans for large septic systems serving buildings with design flows of 2,000 to 7,500 GPD must be approved by the CT Department of Public Health. Septic systems, defined as subsurface sewage disposal systems, are regulated by Public Health Code (PHC) Section 19-13-B103 and the associated Technical Standards for Subsurface Sewage Disposal Systems (Technical Standards). Septic systems on sites with design flows exceeding 7,500 GPD, alternative sewage disposal systems, and community sewage systems are permitted by the CT Department of Energy and Environmental Protection (CTDEEP).

Sea level rise from climate change is threatening home septic systems. Climate impacts, maintenance and design/installation/operation can cause problems for communities, and water quality. The most serious documented problems involve contamination of surface waters and ground water with disease-causing pathogens and nitrates. Other problems include excessive nitrogen discharges to sensitive coastal waters and phosphorus pollution of inland surface waters, which increases algal growth and lowers dissolved oxygen levels.

-Private residential wells serve approximately 23% of CT's population. Private well owners are responsible for testing the well's quality and maintaining their well system. Towns regulate siting and approval prior to construction.

-Effective 10-01-2022 private well testing will be reported to the CT Dept of Health, local health department, and in some cases CTDEEP. All new wells must be tested for coliform, nitrate, nitrite, sodium, chloride, iron, lead, manganese, hardness, turbidity, pH, sulfate, apparent color, odor, arsenic, and uranium.

-Install whole house or point-of-use filtration on homes supplied by private wells to address primary and secondary contaminants

-Deepen and/or hydrofracture existing private wells to address water quality and quantity issues

-Connecting to a public water system, if available, or replacing existing drilled well with better sited/constructed well could provide resiliency and continued monitoring of water quality.

-Major Priority for DEEP but may not have a dedicated funding/financing source

Lead and copper enter drinking water primarily through plumbing materials. Exposure to lead and copper may cause health problems ranging from stomach distress to brain damage. The most common sources of lead in drinking water are lead pipes, faucets, and fixtures. In homes with lead pipes that connect the home to the water main, also known as lead services lines, these pipes are typically the most significant source of lead in the water. Lead pipes are more likely to be found in older cities and homes built before 1986. It is estimated that there are between 6 to 10 million lead service lines in the country.

There are a lot of small to mid-size dams that are owned by residents. The cost of repair, redesign, and removal are often barriers to owners. This could include assessment of risk, and changes in hazard classification with increased storms and development changes.

Retrofitting a property to replace impervious surfaces (e.g., pavers, driveways, and patios) with permeable options reduces the water runoff the property generates. This reduces the impact on the public drainage system. Permeable options can include material and easily penetrating vegetation options. An added bonus of reducing heat retention of the property is to replace asphalt with a lighter, permeable option.

Adding native trees to the property reduces stormwater runoff, provides shade, and contributes to the community's overall tree canopy inventory. Trees should be selected based on whether they are native, have deep growing root systems, and are not susceptible to breaking under heavy winds, rains, or snow loads. Shade trees also contribute to reducing the energy load of the property and may be a good alternative to properties unable to produce sufficient solar to warrant a solar array.

Occasionally, the city sewer or municipal drainage system overflows and sends wastewater back through the sewage pipe and into homes or businesses. An overflow can occur for many reasons, including cracks in the pipe, a surcharge caused by large snowmelt or heavy rains, or a blockage caused by tree roots or plumbing system deterioration, and more. However, it can also be caused by a blockage in premises plumbing system due to a failed sump pump, hair clogs, grease clogs, or any other physical obstruction in the pipes. Back-flow preventers prevent this from happening.

The most common issues being assessed during lateral inspections are signs of inflow & infiltration (I&I). Because sanitary sewer systems are designed to exclusively carry waste from toilets, sinks, showers, etc., I&I can add excess groundwater or rainwater to the system, thereby risking an overflow and diminishing the city's treatment capacity. Sanitary sewer overflows (SSOs) can spill untreated sewage out into streets, parks and bodies of water, exposing the community to bacteria and creating risk for disease.

Beyond identifying signs of I&I, operators look for other defects in the lateral, including cracks, blockages and signs of deterioration. They also inspect for cross bores, ensuring other utilities installed with trenchless

A common reason for sewer line replacement is a busted pipe somewhere in the system. This can happen because of shifting or settling soil around the property, increased pressure on the ground above the sewer line, or pipe corrosion. If this happens, call a sewer line replacement expert to repair the damage and install a new sewer line to get the system back in operation as quickly as possible.

How to recognize signs of sewer line damage. If there is a breach in the sewer lines, there are indicators that suggest something is wrong. If you notice any of these signs, respond immediately by calling an experienced service technician to prevent any further damage and increased repair costs. Common signs of failed sewer line:

- Standing water or foul smell in the yard
- Draining difficulties
- Water damage in the home or business

Sources for More Information	Affected Component of Property
https://www.energystar.gov/products/products_list	Bathroom, kitchen, laundry,
https://www.energy.gov/energysaver/reduce-hot-water-use-energy-savings https://www.epa.gov/watersense https://www.epa.gov/watersense/watersense-products	Bathroom, kitchen
https://mosmanwellworks.com/how-to-detect-a-leak-in-your-well https://inspectapedia.com/plumbing/Well_Pipe_Leaks.php https://pipespy.com/blog/water-line-replacements/ https://www.homeserve.com/en-us/blog/cost-guide/water-line-repair/	Home, lawn

<p>https://portal.ct.gov/dph/Environmental-Health/Environmental-Engineering/Environmental-Engineering----Subsurface-Sewage</p> <p>https://www.epa.gov/septic/septic-system-impacts-water-sources</p> <p>https://riib.org/solutions/programs/community-septic-system-loan-program/</p> <p>https://uwrl.usu.edu/environmental-quality/projects/mitigating-methane</p> <p>https://homeguide.com/costs/drain-leach-field-replacement-cost</p> <p>https://www.brookings.edu/blog/the-avenue/2022/06/29/sea-level-rise-from-climate-change-is-threatening-home-septic-systems-and-public-health/</p> <p>https://www.sciencedaily.com/releases/2022/10/221011161245.htm</p>	<p>Home, lawn</p>
<p>https://portal.ct.gov/dph/Environmental-Health/Private-Well-Water-Program/Private-Wells</p> <p>https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/environmental_health/private_wells/EHDWCL202260Changes19a37PrivateWellSemiPublicWellTestingLaws.pdf</p> <p>https://homeguide.com/costs/well-drilling-cost</p> <p>https://portal.ct.gov/DPH/Environmental-Health/Environmental-and-Occupational-Health-Assessment/Action-List-for-Drinking-Water</p>	<p>Home</p>

<p>https://www.epa.gov/sites/default/files/2019-10/documents/strategies to achieve full lead service line replacement 10 09 19.pdf</p> <p>https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water</p> <p>https://www.epa.gov/ground-water-and-drinking-water/lead-service-line-replacement</p>	Home
<p>https://damsafety.org/dam-owners/dam-removal</p>	Outdoor Property
<p>https://www.riversmarthomes.org/permeablepavers</p> <p>https://www.riversmarthomes.org/isr</p> <p>https://www.cambridgema.gov/-/media/Files/CDD/Climate/resilientcambridge/toolkithomeowners.pdf</p> <p>https://marydhonau.com/wp-content/uploads/2022/02/Landmark-KYFR-Guide-jan-2021-v4.pdf</p>	Driveway; Patio
<p>https://www.cambridgema.gov/-/media/Files/CDD/Climate/resilientcambridge/toolkithomeowners.pdf</p> <p>https://www.smarthomeamerica.org/resources/homeowners-handbook-to-prepare-for-natural-disasters</p> <p>https://www.riversmarthomes.org/shadetrees</p>	Yard

<p>https://elitemechanical.us/how-does-a-sewer-backflow-preventer-work/</p> <p>https://www.squareone.ca/resource-centres/getting-to-know-your-home/backwater-valve</p> <p>https://blog.wincan.com/sewer-basics-what-is-a-sewer-lateral-inspection</p> <p>https://www.forbes.com/home-improvement/plumbing/sewer-line-camera-inspection-cost/#:~:text=For%20basic%20sewer%20camera%20inspection,point%20is%20closer%20to%20%24900.</p>	Home
<p>https://www.thisoldhouse.com/plumbing/reviews/sewer-line-replacement-cost</p> <p>https://www.forbes.com/home-improvement/plumbing/sewer-line-repair-replace-cost/</p> <p>https://www.thisoldhouse.com/plumbing/reviews/sewer-line-repair</p> <p>https://www.drainbrainllc.com/when-is-a-sewer-line-replacement-necessary</p>	Home

Stage of Resilience (Preparation/Response/Recovery)	Cost of Measure (Very High / High / Medium / Low)	Average Useful Life of Measure (years)
Preparation	Low: \$500-10k	~10 years
Preparation	Low: \$500-10K	10-15 yrs.
Preparation	Low: \$500-10k	30 years

Preparation	Medium: \$10k-50k	Up to 25 years
Preparation	Medium: \$10k-25k	30+ years

Response	Medium: \$10k-25k	30+ years
Response	High: > \$25k	30+ years
Response	Medium: \$10k-25k	N/A
Response	Low (\$500-\$10k)	30-100 years

Preparation	Low (\$500-\$10k)	Up to 25 years
Preparation	Low (\$500-\$10k)	Up to 25 years

Difficulty of Property Owner Adoption and Contractor Market Awareness (High/Medium/Low)	Type of Contractor/Certification	Include as Final Measure - CGB (Yes/No)?
Low	self certification; submit receipts	YES
Low	Plumbing contractor; self certification, submit receipts	YES
Low	Plumbing contractor; submit receipts	YES

Medium	DPH Licensed installer or contractor	YES
Low	Licensed well driller; water treatment installer	YES

Low	Licensed contractor	YES
High	Licensed contractor; engineer	YES
Medium	Licensed contractor; engineer	YES
Low	Yes	Yes

Low	Plumbing contractor	
Low	Plumbing contractor	

Include as Final Measure - IPC (Yes/No)?	Include as Final Measure - DEEP (Yes/No)?	Include as Final Measure - DPH (Yes/No)?
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes

Yes	Yes	Yes
Yes	Yes	Yes

Yes		Yes
Yes	Yes	
Yes	YES	
Yes	Yes	Yes

Yes	Yes	
Yes	Yes	



75 Charter Oak Ave
Suite 1 - 103
Hartford, CT 06106

700 Canal Street, 5th Floor
Stamford, CT 06902