



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

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December 4, 2013

Dear Deployment Committee Members:

The Deployment Committee will convene a special meeting on Wednesday, December 11 from 2:00 to 3:30 p.m. in the Colonel Albert Pope Board Room at the offices of CEFIA at 845 Brook Street, Rocky Hill, CT 06067. Given the issue raised by the Board of Directors regarding CEFIA's Class I REC assets, we will have part of the meeting be with the Budget and Operations Committee.

Our special meeting agenda items include:

- **Class I REC Asset Portfolio** – the Deployment Committee and the Budget and Operations Committee were to work with the staff to determine a strategy for managing the organization's class I REC asset portfolio. Given the extraordinary success CEFIA is having with the Residential Solar Investment Program (RSIP), it is producing a large Class I renewable energy credit (REC) asset portfolio for CEFIA's balance sheet. The RECs that CEFIA is generating are an asset that can be sold to generate additional revenues into CEFIA.
- **Residential Solar Investment Program: Step 4** – as Step 3 of the program's "race to the solar rooftop" is now complete, we will begin to transition to Step 4 by further reducing the incentive level. The program has seen installed costs declining and consumer demand increasing. CEFIA began in Q4 of 2013 to release its financing programs to support the ongoing transition from rebates to loans and leases.
- **Multifamily and Affordable Housing Program** – we are currently developing several multifamily and affordable housing programs that we would like to discuss. As this is a new area of program development and a priority for CEFIA, we wanted to get your feedback on the progress we have been making to support this segment of the market.

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

We look forward to the meeting next week.

Sincerely,

A handwritten signature in blue ink, appearing to read "B. Garcia", with a long horizontal flourish extending to the right.

Bryan Garcia
President and CEO



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AGENDA

Deployment Committee of the
Clean Energy Finance and Investment Authority
845 Brook Street, Rocky Hill, CT 06067

Wednesday, December 11, 2013
2:00-3:30 p.m.

Staff Invited: Brian Farnen, Bryan Garcia, Ben Healey, Dale Hedman, Bert Hunter, Kerry O'Neill and Kim Stevenson

1. Call to order
2. Public Comments – 5 minutes
3. Approval of meeting minutes* – 5 minutes
 - a. Deployment Committee for October 29, 2013
 - b. Budget and Operations Committee for November 6, 2013
4. Class I REC Asset Portfolio* – 30 minutes

<<< Break-Out from the Budget and Operations Committee >>>

5. Residential Solar Investment Program: Step 4* – 30 minutes
6. Multifamily and Affordable Housing Program Update – 30 minutes
7. Adjourn

*Denotes item requiring Committee action

** Denotes item requiring Committee action and recommendation to the Board for approval

Join the meeting online at <https://www4.gotomeeting.com/join/760390327>

Dial +1 (619) 550-0000

Access Code: 760-390-327

***Next Regular Meeting: Wednesday, February 5, 2014
Clean Energy Finance and Investment Authority in the
Colonel Albert Pope Board Room at 845 Brook Street, Rocky Hill, CT***



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RESOLUTIONS

Deployment Committee of the
Clean Energy Finance and Investment Authority
845 Brook Street, Rocky Hill, CT 06067

Wednesday, December 11, 2013
2:00-3:30 p.m.

Staff Invited: Brian Farnen, Bryan Garcia, Ben Healey, Dale Hedman, Bert Hunter, Kerry O'Neill and Kim Stevenson

1. Call to order
2. Public Comments – 5 minutes
3. Approval of meeting minutes* – 5 minutes
 - a. Deployment Committee for October 29, 2013

Resolution #1 (Deployment Committee)

Motion to approve the minutes of the Deployment Committee for October 29, 2013 Meeting. Second. Discussion. Vote.

- b. Budget and Operations Committee for November 6, 2013

Resolution #2 (Budget and Operations Committee)

Motion to approve the minutes of the Budget and Operations Committee for November 6, 2013 Meeting. Second. Discussion. Vote.

4. Class I REC Asset Portfolio* – 30 minutes

Resolution #3 (Deployment Committee)

WHEREAS, Article V, section 5.3.3 of the Clean Energy Finance and Investment Authority (CEFIA) Bylaws requires the Deployment Committee (the “Committee”) to provide oversight of policies and practices relating to the evaluation and recommendation of initial investments, follow-on investments, investment modifications and restructurings, and the sale or other disposition of investments by the Authority’s professional investment staff, including implementation of investment exit strategies;

NOW, therefore be it:

RESOLVED, that the Committee hereby recommends to the Board for approval the draft Guidelines and Procedures for CEFIA Management of Class I REC Asset Portfolio in substantially the form provided to the Committee in the memorandum dated December 4, 2013 and which may be revised by CEFIA staff from time to time to incorporate the recommendations of independent third party consultants with REC market expertise.

Resolution #4 (Budget and Operations Committee)

WHEREAS, Article V, section 5.3.2 of the Clean Energy Finance and Investment Authority (CEFIA) Bylaws requires the Budget and Operations Committee (the “Committee”) to recommend and monitor compliance with prudent fiscal policies, procedures, and practices to assure that CEFIA has the financial resources and financial strategy necessary to carry out its statutory responsibilities and mission;

NOW, therefore be it:

RESOLVED, that the Committee hereby recommends to the Board for approval the draft Guidelines and Procedures for CEFIA Management of Class I REC Asset Portfolio in substantially the form provided to the Committee in the memorandum dated December 4, 2013 and which may be revised by CEFIA staff from time to time to incorporate the recommendations of independent third party consultants with REC market expertise.

<<< Break-Out from the Budget and Operations Committee >>>

5. Residential Solar Investment Program: Step 4* – 30 minutes

Resolution #5

WHEREAS, Section 106 of Public Act 11-80 “An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning for Connecticut’s Energy Future” (the “Act”) requires the Clean Energy Finance and Investment Authority (“CEFIA”) to design and implement a Residential Solar Photovoltaic (“PV”) Investment Program (“Program Plan”) that results in a minimum of thirty (30) megawatts of new residential PV installation in Connecticut before December 31, 2022;

WHEREAS, as of November 29, 2013, the Program Plan has thus far resulted in approximately fifteen (15) megawatts of new residential PV installation application approvals in Connecticut;

WHEREAS, pursuant to Section 106 of the Act, CEFIA has prepared a Program Plan and a declining incentive block schedule (“Schedule”) that offer direct financial incentives, in the form of performance-based incentives (“PBI”) or expected performance-based buydowns (“Rebate”), for the purchase or lease of qualifying residential solar photovoltaic systems;

WHEREAS, the performance of the Rebate model in Step 3 is faster in deploying rooftop solar PV and requires less ratepayer subsidies than the PBI model therefore maximizing the amount of clean energy deployed per dollar of ratepayer funds at risk;

WHEREAS, on December 21, 2012, the CEFIA Board of Directors (“Board”) reviewed and approved the staff recommendations to establish a Step 4 “Race to the Solar Rooftop” capacity of 10 MW;

WHEREAS, the Deployment Committee has reviewed and directed CEFIA staff to bring a Step 4 Schedule of Incentives to the Board; and

WHEREAS, Solarize Connecticut is a program designed to encourage the adoption of residential solar PV by lowering customer acquisition costs through a coordinated education, marketing and outreach effort, combined with a tiered pricing structure that provides increased savings to homeowners as more people in a selected municipality go solar (“Solarize Communities”).

NOW, therefore be it:

RESOLVED, that the Deployment Committee recommends that the Board hereby approves the Schedule of Incentives for Step 4 outlined above to achieve 10.0 MW of solar PV deployment as follows:

5.0 MW of Rebates,
3.0 MW of PBI, and
2.0 MW of additional capacity for the models to compete for incentives;

RESOLVED, that the Deployment Committee recommends that the Board direct staff that at the point where 5.0 MWs of committed capacity is reached during Step 4 of the Schedule, or earlier if staff deems it appropriate to release a report that makes a recommendation to the Deployment Committee on the Step 5 and beyond for capacity allocation and incentive levels;

RESOLVED, that the Deployment Committee recommends that by (a) the point of the Step 4 incentive where 7.5 MW of committed capacity is reached for either the PBI or the Rebate models or (b) January 1, 2015 whichever comes first, the Board will approve a Step 5 capacity allocation and incentive level to ensure the sustained and orderly deployment of the residential solar market in Connecticut;

RESOLVED, that the Deployment Committee recommends that the Board approve Step 4 incentives be maintained for Solarize Communities down selected for Phase 4 of the Solarize Connecticut program throughout the entirety of the campaign if Step 4 incentives are in place at the beginning of Phase 4; and

RESOLVED, that this Board action is consistent with Section 106 of the Act.

6. Multifamily and Affordable Housing Program Update – 30 minutes
7. Adjourn

*Denotes item requiring Committee action

** Denotes item requiring Committee action and recommendation to the Board for approval

Join the meeting online at <https://www4.gotomeeting.com/join/760390327>

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***Next Regular Meeting: Wednesday, February 5, 2014
Clean Energy Finance and Investment Authority in the
Colonel Albert Pope Board Room at 845 Brook Street, Rocky Hill, CT***



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Deployment Committee and Budget and Operations Committee of the Clean Energy Finance and Investment Authority

Agenda Item #1

Call to Order

December 11, 2013



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Deployment Committee and Budget and Operations Committee of the Clean Energy Finance and Investment Authority

Agenda Item #2

Public Comments

December 11, 2013



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Deployment Committee and Budget and Operations Committee of the Clean Energy Finance and Investment Authority

Agenda Item #3

Approval of the Meeting Minutes of October 29, 2013 (DC)
and November 6, 2013 (B&O)

December 11, 2013



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Deployment Committee and Budget and Operations Committee of the Clean Energy Finance and Investment Authority

Agenda Item #4

Class I REC Asset Portfolio

December 11, 2013

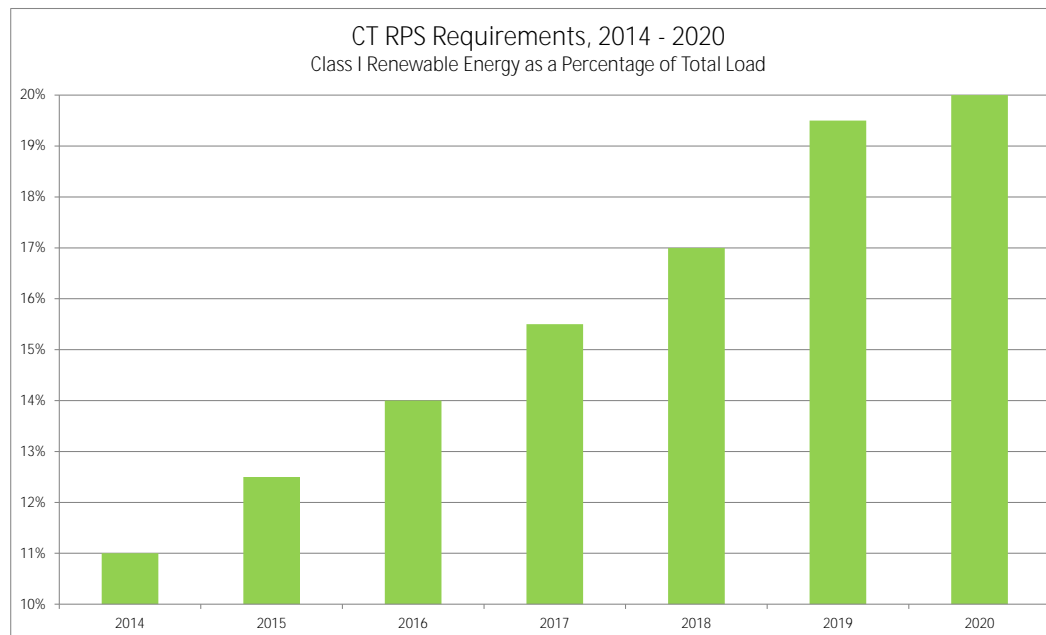
CEFIA Class I REC Asset Portfolio

Renewable Portfolio Standard (RPS)



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Connecticut's Renewable Portfolio Standard ("RPS") requires a certain percentage of the state's electric load to come from renewable energy sources each year



Each 1% of the RPS is equivalent to requiring 275,000 RECs for compliance – 11% in 2014 is an estimated 3,025,000 Class I RECs

CEFIA Class I REC Asset Portfolio

Renewable Energy Credits (RECs)



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RPS fulfillment is measured in Renewable Energy Credits (“RECs”)

1 REC = 1 MWh (or 1,000 kWh) of clean energy produced

CEFIA owns the RECs from solar PV systems under the RSIP

The average RSIP system of 7 kW produces about 8 RECs per year

CEFIA has now approved over 2,000 systems, which means **we should have over 16,000 RECs to sell** in the coming year alone

CEFIA Class I REC Asset Portfolio Locus Dashboard Overview



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Browser: https://solaros.datareadings.com/Partner/dashboard/noc/1 SolarOS - Dashboard

File Edit View Favorites Tools Help

Locus ENERGY clean energy connected

Fair 49.0 °F (9.4 °C)

Welcome, CEFIA
Updated: November 15, 2013 8:44 AM
[Help](#) | [Log Out](#)

Dashboard Clients Reports & Analytics Alerts Settings Support

Diagnostic Summary

All Clients & Sites

Status Overview Client-level View Component-level View

Communication Status	CONNECTED 547	DISCONNECTED 269
Equipment Alerts	MEDIUM 2	HIGH 46
Relative Performance	LOW 16	VERY LOW 8
Performance Yield	LOW 0	VERY LOW 0
Performance Expectations	MEDIUM 6	HIGH 2

Energy Generation

RSIP Clients

Today Year Lifetime

kWh

Year

Power Generation

RSIP Clients

Today Yesterday

kW

Hour

Open Alerts

All Clients & Sites

Show 10 entries

Priority	Event	Client	Component
High	Device produced no power	estrom, sheryl	carle0419@yahoo.com
High	Device produced no power	Fineran, Mike	fineransfinishes@yahoo.com

System Map

All Clients & Sites

Map showing locations in New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, West Virginia, District of Columbia, Rhode Island, Massachusetts, Vermont, New Hampshire.

Quick Links

- Add New Client
- Manage Users
- Configure Dashboard

RSS Feeds

- Mixed Result: Arizona Keeps Net Metering, But Levi...
- Google, Facebook Up the Renewable Energy Ante
- Strange Bedfellows: Why the Tea Party is Fighting...
- Asia Report: China Ascending to Solar PV Pinnacle

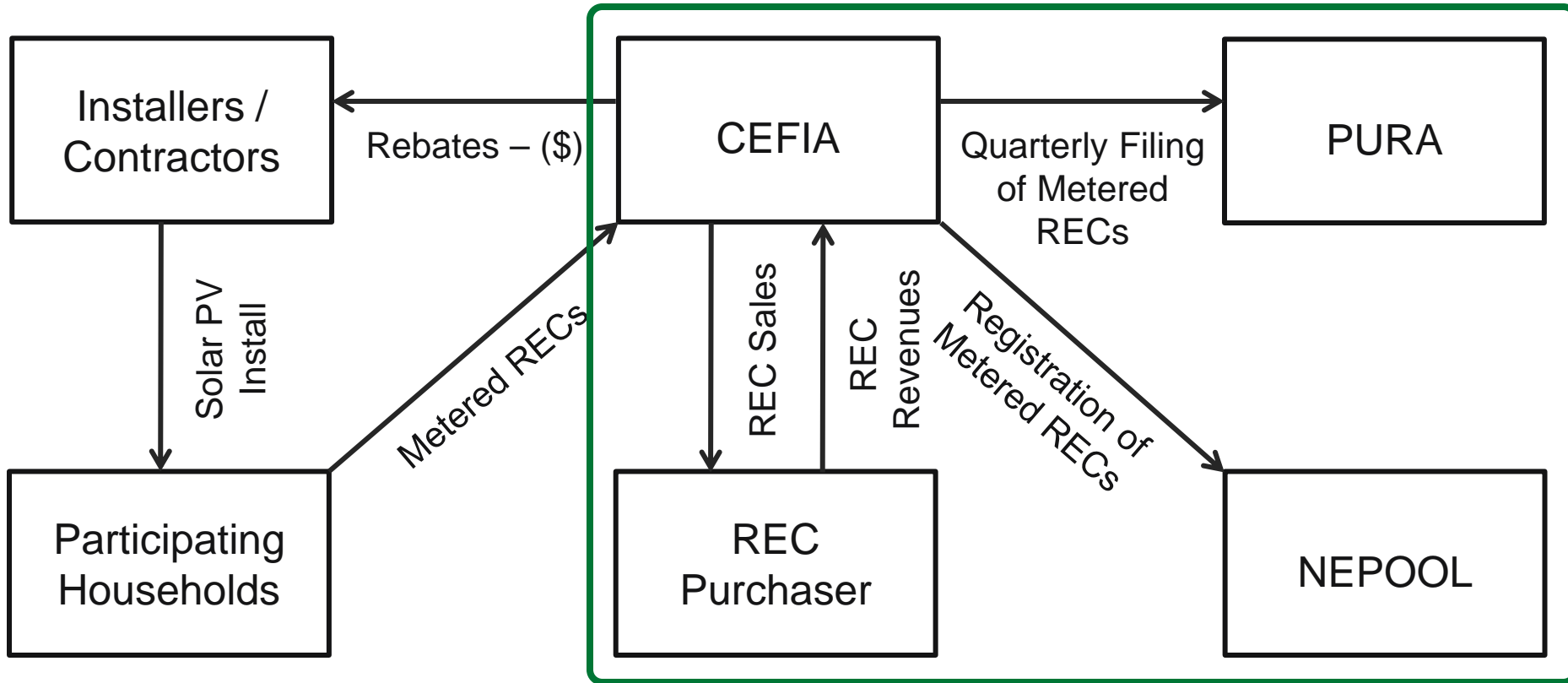
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Capital Flow Diagram

Realizing REC Revenues



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CEFIA Class I REC Asset Portfolio

REC Brokers / Pricing Insight

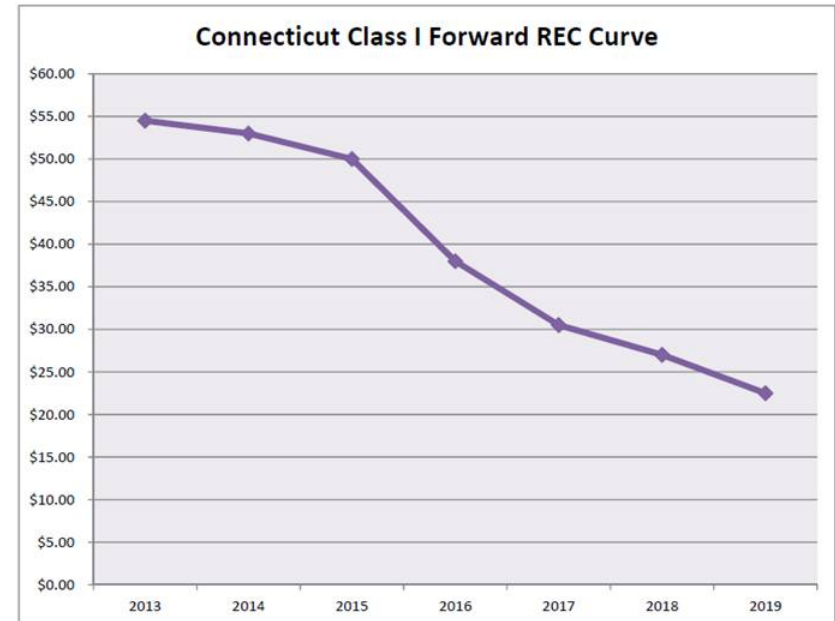


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CEFIA ran RFQ process to qualify brokers for the purpose of marketing and selling CEFIA's RECs via an auction process

Five qualified brokers selected

CEFIA can use the brokers to sound the market and then price a transaction





Policy designed to achieve the following objectives:

Minimize transaction costs

Benefit from expert advice

Lock in attractive pricing where possible

Limit downside exposure

Retain the opportunity for upside gains

Provide some level of revenue certainty for planning purposes, in terms of reinvestment of REC proceeds by recovering funds used for the RSIP

CEFIA Class I REC Asset Portfolio

Proposed 3-Step Policy



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Step 1 annual RSIP portfolio analysis

What is CEFIA's installed capacity and projected growth?

What does that portfolio's historical and projected REC production look like?

Step 2 semiannual market analysis

Evaluating both the spot and forward markets

Focusing on key elements of value and risk

Step 3 price transactions in the spot and/or forward markets to ensure highest and best return

CEFIA Class I REC Asset Portfolio

Focus on Step 3



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Requirements:

Use qualified brokers and established industry sources to ensure full price discovery

Transact with investment-grade or otherwise qualified counterparties

Price all RECs to be sold at market rates (90% threshold)

Transact no more than 75% of projected REC production through a “non-contingent” future contract

Transact up to 100% of projected REC production through a “unit-contingent” future contract



REC brokers can provide immediate market intelligence but less insight into future policy risk that can affect pricing need to regularly consult other market fundamentals analyses

For non-investment grade counterparties, require appropriate financial safeguards when trading

CEFIA should create process for seemingly “out of market” transactions undertaken due to unique perspective on market direction

CEFIA should develop standard draft REC transaction contract to limit risk of failed closings



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**Deployment Committee of the
Clean Energy Finance and
Investment Authority
(Transition B&O Committee)**

Agenda Item #5

Residential Solar Investment Program: Step 4

December 11, 2013



Key Questions

Strategic Plan – is the RSIP consistent with the Board approved Comprehensive Plan and Budget for the fiscal year?

Ratepayer Payback – How much clean energy is being produced from the project versus the dollars of ratepayer funds at risk?

Terms and Conditions – What are the terms and conditions of the ratepayer payback, if any?

Capital Expended – How much of the ratepayer and other capital that CEFIA manages is being expended on the project?

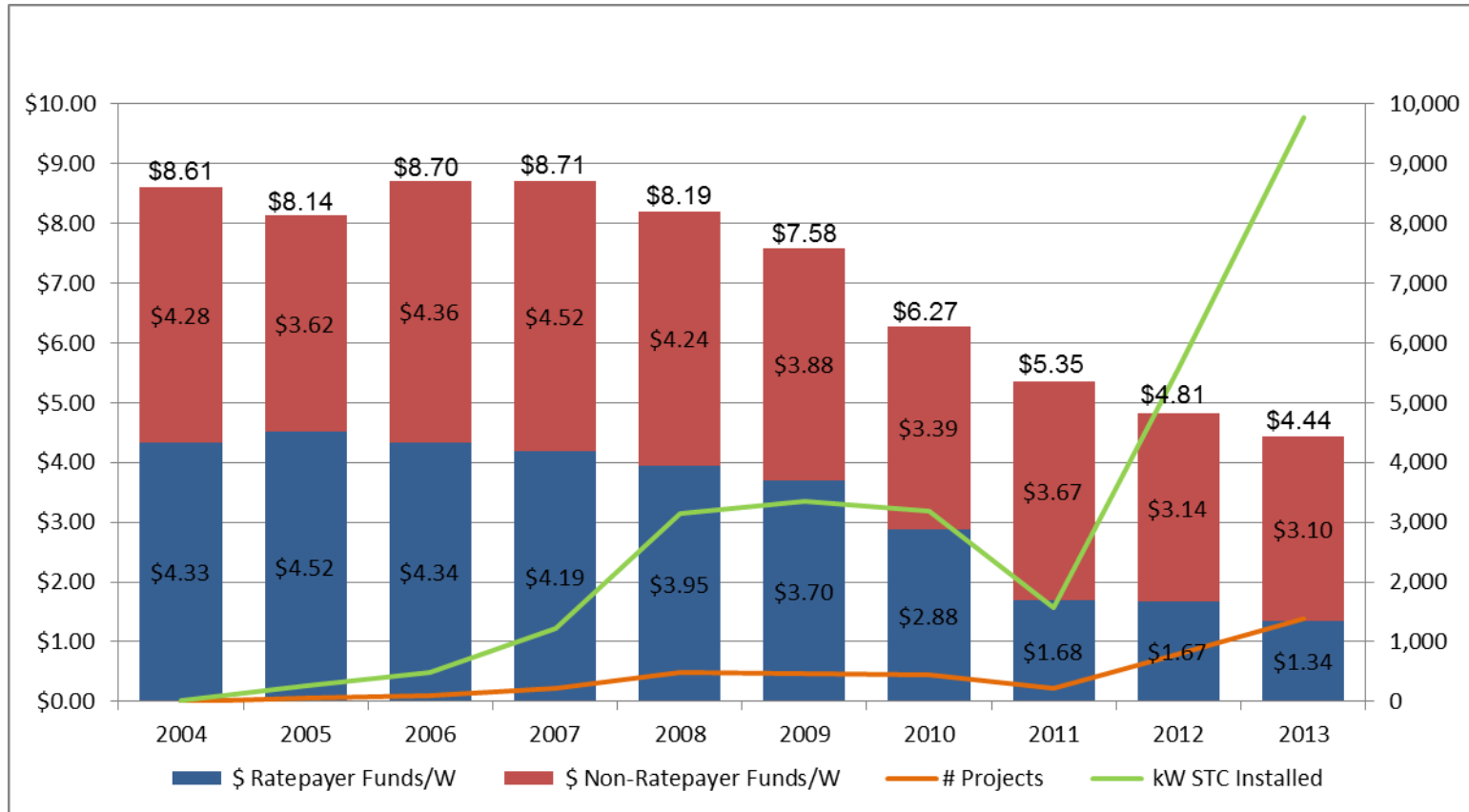
Risk – What is the maximum risk exposure of ratepayer funds for the project?

Target Market – Who are the end-users of the project?

Residential Solar Investment Program Program Performance



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Increasing the amount of rooftop solar PV deployed per dollar of ratepayer funds at risk

Incentive and Policy Comparison

Objective Function (RSIP vs. ZREC)



		Through Step 3 of RSIP	Round 1 of ZREC Actual		
			Small	Medium	Large
NOMINAL	Clean Energy Produced (kWh)	270,520,000	240,080,000	257,405,000	346,640,000
	Ratepayer Funds Expended (\$)	\$23,519,915	\$38,631,256	\$37,619,799	\$36,130,332
	Objective Function (kWh/\$1 Expended)	11.35	6.21	6.84	9.59
	Objective Function (\$/1 kWh Produced)	\$0.088	\$0.161	\$0.146	\$0.104
PRESENT VALUE	Ratepayer Funds Expended (\$)	\$22,879,608	\$30,829,955	\$30,022,754	\$28,834,074
	Objective Function (kWh/\$1 Expended)	11.81	6.21	6.84	12.02
	Objective Function (\$/1 kWh Produced)	\$0.085	\$0.128	\$0.117	\$0.083
	Clean Energy Deployed (MW _{STC})	15.2	13.7	14.8	19.4

Reference

Clean energy produced assumes degradation of 0.5% each year over 15 years.
Discount rate used is the rate of inflation or 3%.

Residential Solar Investment Program

Step 4 Incentive Proposal



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	Rebate (\$/W)		PBI (\$/kWh)
	5 kW	5 to 10 kW	10 kW
Step 1	\$2.450	\$1.250	\$0.300
Step 2	\$2.275	\$1.075	\$0.300
Step 3	\$1.750	\$0.550	\$0.225
Step 4 (proposed)	\$1.250	\$0.750	\$0.180
(Reduction)/Increase from Step 3	(\$0.500)	\$0.200	(\$0.045)
% (Reduction)/Increase from Step 3	(29%)	36%	(20%)

Residential Solar Investment Program

Step 4 Present Value of Incentives



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	5 kW	7 kW	10 kW
PV of the Rebate	\$6,250	\$7,750	\$10,000
PV of the PBI	\$5,486	\$7,680	\$10,971
Difference	\$764	\$70	(\$971)

Residential Solar Investment Program

Objective Function by Step



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	Step 1	Step 2	Step 3 (Current)	Step 4 (Estimated)
Installed Capacity (kW)	1,190	6,485	7,550	10,000
20 Years Clean Energy Produced (kWh)	30,000,000	170,000,000	195,000,000	260,000,000
CEFIA Funds Expended (\$)	\$2,115,264	\$10,667,669	\$9,476,448	\$11,000,000
Objective Function (kWh/\$1 Expended)	14.2	15.9	20.6	23.6
Objective Function (\$/1 kWh Produced)	\$0.071	\$0.063	\$0.049	\$0.042

Incentive and Policy Comparison

Objective Function (RSIP vs. ZREC)



		Step 4 of RSIP Proposed	Round 2 of ZREC Actual		
			Small	Medium	Large
NOMINAL	Clean Energy Produced (kWh)	177,659,000	368,659,000	428,169,000	457,996,000
	Ratepayer Funds Expended (\$)	\$11,674,000	\$42,990,873	\$45,391,361	\$35,833,606
	Objective Function (kWh/\$1 Expended)	15.22	8.58	9.43	12.78
	Objective Function (\$/1 kWh Produced)	\$0.066	\$0.117	\$0.106	\$0.078
PRESENT VALUE	Ratepayer Funds Expended (\$)	\$11,068,823	\$42,990,873	\$45,391,361	\$35,833,606
	Objective Function (kWh/\$1 Expended)	15.73	10.45	11.82	16.02
	Objective Function (\$/1 kWh Produced)	\$0.064	\$0.093	\$0.085	\$0.062
	Clean Energy Deployed (MW _{STC})	10.0	21.1	24.5	19.2

Reference

Clean energy produced assumes degradation of 0.5% each year over 15 years.
Discount rate used is the rate of inflation or 3%.



DEEP Commissioner – meet with Commissioner Esty (in process)

Deployment Committee Chair – call with Reed Hundt in December (complete)

Solar Connecticut – meet with the installers in October and November (complete)

Deployment Committee – discuss with the Deployment Committee on December 11th (in process)

Board of Directors – recommend for approval by the Board of Directors on December 20th (in process)

DEEP – formal written approval of incentive on December 31st (in process)

Residential Solar Investment Program

Step 4 Recommendation



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Race to the solar rooftop of 10 MW – 5 MW rebate, 3 MW PBI, and 2 MW competitive

Incentive levels

Rebate – \$1.25/W 5 kW; and \$0.75/W $5 < x < 10$ kW

PBI – \$180/MWh

CEFIA owns the REC and will sell to get RSIP incentive paid back

Report to look at REC value recovery of RSIP incentive, transition from subsidies to financing in subsequent steps, etc. before 5 MW of capacity in Step 4 is committed



Strategic Plan – is the RSIP consistent with the Board approved Comprehensive Plan and Budget for the fiscal year?

As a Statutory Program in the CEFIA comprehensive plan (as required by Section 106 of PA 11-80), the **RSIP is consistent with that plan and the Board approved a budget** in the amount of \$9,200,000 to support rebates and PBI for FY 2014.

RSIP expended no more than \$5,000,000 to date for FY 2014 - \$3.4 million for rebate and \$1.3 million for PBI (FY 2012-FY 2014)





Key Questions

Ratepayer Payback – How much clean energy is being produced from the project versus the dollars of ratepayer funds at risk?

For Step 4 of the RSIP, it is expected that **more than 13,000,000 kWh a year** (or about 260 GWh over 20 years) will be produced from the deployment of 10.0 MW of solar PV in the residential sector **from \$11,000,000 of ratepayer funds at risk.**





Key Questions

Terms and Conditions – What are the terms and conditions of the ratepayer payback, if any?

The **rebate is paid upfront** during construction and after the inspection of the completed installation. The **PBI is paid out quarterly** after the completion of a project **for a period of six years** based on the production of a solar PV system.

By providing a rebate and PBI to a project, **CEFIA owns the RECs**. Approximately 13,000 RECs will be created a year as a result of Step 4. RECs are sold into the Class I RPS. If RECs are sold at \$20 each – range of \$0 to \$55 – then \$260,000 of ratepayer payback a year is received or about \$4,600,000 over 20 years.





Key Questions

Capital Expended – How much of the ratepayer and other capital that CEFIA manages is being expended on the project?

Section 106 of Public Act 11-80 allows up to one-third of ratepayer funds to be expended on the RSIP a year. The **CEFIA Board approved \$9,200,000**, the full one-third of the statutory allowance, for the RSIP for FY 2014. To date, no more than \$5,000,000 has been expended to the RSIP in FY 2014.

At a “Race to the Solar Rooftop” target of 10.0 MW, and an estimated incentive level of \$1.10/W for rebate and \$180/MWh for the PBI, CEFIA estimates that **\$6,600,000 will be expended on the rebate (i.e. 6 MW) and \$700,000 (i.e. 4 MW) on the PBI over a one-year period in 2014.**





Risk – What is the maximum risk exposure of ratepayer funds for the project?

Despite the potential for \$4,600,000 in revenue from the production and sale of RECs at \$20 each into the Class I RPS market over 20 years, staff expects that the **maximum risk exposure of the ratepayer funds for the RSIP in Step 4 is \$11,000,000.**





Target Market – Who are the end-users of the project?

Per Section 106 of Public Act 11-80, the end-users of the RSIP are residential ratepayers. These ratepayers are interested in either owning (i.e. rebate) a solar PV system or paying a reduced or fixed electricity price by leasing (i.e. PBI) a solar PV system.

Over 10% of the projects supported in Step 1, Step 2, and Step 3 are located in distressed communities.





Key Questions

Financial Statements – How is the program investment accounted for on the balance sheet and profit and loss statements?

The **rebate** will be reflected on the balance sheet as a reduction to “cash” (current assets) with a corresponding entry on the profit and loss statement under “Operating Expenses” in the relevant ledger account under “Financial Incentives – Grants and Rebates,” which will have the effect of reducing unrestricted net assets. The **PBI** will be reflected as an “Open Commitment” which is recorded in the notes to the financial statements and when paid over six years, the PBI will be reflected on the balance sheet as a reduction to “cash” (current assets) with a corresponding entry on the profit and loss statement under “Operating Expenses” in the relevant ledger account under “Financial Incentives – Grants and Rebates,” and will have the effect of reducing unrestricted net assets.





Financial Statements (cont'd) – How is the program investment accounted for on the balance sheet and profit and loss statements?

The **production of RECs** has been accounted for as a reduction of “Rebate Expense” with a corresponding increase to the Non-Current Asset Account: “Investment RECs”. At the time of sale of the RECs, the “Investments – RECs” account is reduced by the carrying value of the RECs sold and the Profit and Loss Statement will recognize a gain or loss to reflect any difference in value between the actual sale price of the RECs and the carrying value of the RECs sold.



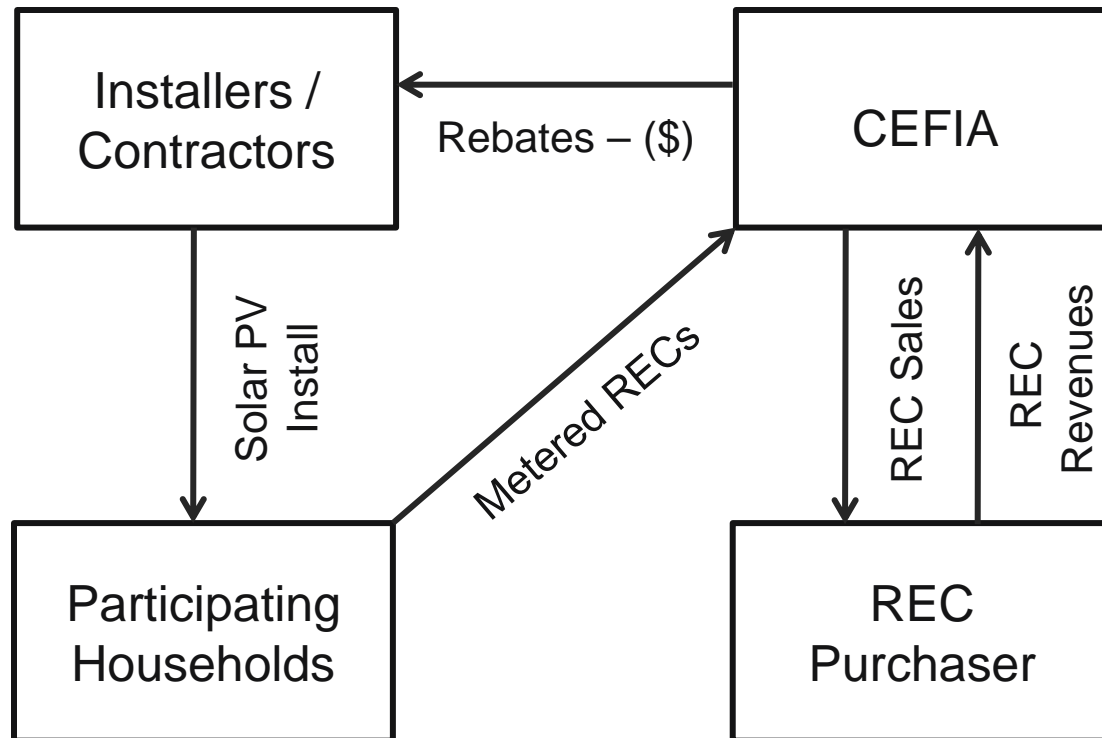
Residential Solar Investment Program

Key Questions



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Capital Flow Diagram





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Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #6

Multifamily and Affordable Housing Program

December 11, 2013

Multifamily and Affordable Housing Opportunity and Challenges



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Significant Opportunity – potential annual energy cost savings on the order of \$125,000,000 per year

250,000 multifamily units in buildings with > 4 units (approx. 18% of CT's total housing units)

Potential to save \$500+ in utility costs per unit each year, conservatively

Buildings concentrated in CT's ring cities near gas lines



Fuel Poverty Imperative –

low-income households owe much more in utility bills than they can afford



Challenges

- Capital to plan and finance
- Securing lender consent
- Split incentives
- Health and safety issues
- No performance data
- Confusion negotiating the improvement process

Multifamily and Affordable Housing

CEFIA'S Approach



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Leverage CT's strengths, address gaps, seed and grow the market, support private financing to move in and take over

Bring in national leaders with a demonstrated track record to help build the market and "crack the MFH nut"

Partner with and source projects through key channels



Multifamily and Affordable Housing Initiatives to Build the Market



cpace | An Energize CT Program

clean energy *solutions*



CDFI's



CHFA Partnership



WINN-HUD OME



Multifamily and Affordable Housing Next Steps



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BOD input and approval needed

Approval of funds to capitalize CHIF Multifamily Loan Fund - \$1MM of \$5MM budgeted – beginning of Q1 2014

RFP release and BOD approval of winning proposals for CDFI MFAH loan programs – \$4MM of \$5MM budgeted - latter part of Q1 2014

BOD updates

Announce Urban Ingenuity Partnership – Q1 2014

Announce New Ecology–CNT Partnership – Q1 2014

CT Energy and Healthy Homes Initiative

CHFA Pilots

WINN-HUD OME

Pipeline progress for all initiatives





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Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #7

Adjourn

December 11, 2013

DEPLOYMENT COMMITTEE OF THE CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

**Draft Minutes – Regular Meeting
Tuesday, October 29, 2013**

A regular meeting of the Deployment Committee of the Board of Directors of the **Clean Energy Finance and Investment Authority (“CEFIA”)** was held on October 29, 2013, at the office of CEFIA, 845 Brook Street, Rocky Hill, CT.

1. **Call to Order:** Mr. Hundt, noting the presence of a quorum, called the Deployment Committee meeting to order at 2:07 p.m. Deployment Committee members participating: Bettina Ferguson representing Denise Nappier, State Treasurer (by phone); Reed Hundt (by phone); and Matthew Ranelli (by phone).

Absent: Patricia Wrice (by phone).

Staff Attending: Brian Farnen, Bryan Garcia, Bert Hunter, Alexandra Lieberman, Shelly Mondo, and Genevieve Sherman.

2. **Public Comments:**

There were no public comments.

3. **Approval of Meeting Minutes:**

The Deployment Committee members were asked to consider the minutes from the September 3, 2013 meeting.

Upon a motion made by Mr. Ranelli, seconded by Mr. Hundt, the Deployment Committee members voted in favor of adopting the minutes from the September 3, 2013 meeting as presented (Ms. Ferguson abstained from the vote).

4. **Commercial and Industrial Programs (C-PACE Transactions):**

a. *Update on C-PACE Program:*

Ms. Sherman provided an update on the C-PACE program noting that 66 towns have signed on, including New Haven, which represents almost 75 percent of the Connecticut market eligible. She mentioned that a contractor training session was recently held with about 80 contractors. Ms. Sherman mentioned that several new capital providers were added, including Bank of America. She stated that progress has been made on closing transactions. Ms. Sherman indicated that two of the projects that were approved by the

Board are no longer proceeding under the program due primarily to the projects not being able to secure a contract under the Zero Emission Renewable Energy Credit (ZREC) Program. Approximately \$9,000,000 of projects will be presented at the November and December Board meetings.

Mr. Hunter reported on the sell down of benefit assessment liens previously approved by the Board or the Deployment Committee and subject to a commitment from CEFIA under a financing agreement. He mentioned that staff is pleased with the responses to the offering notice issued by CEFIA in July, and further discussions were held with three of the bidders. A formal announcement of the winner has not yet been made. More information will be provided at the Board meeting to be held on November 15. In response to a question, Mr. Hunter stated that the difference between the face amount of the benefit assessment liens and the price staff believes will be achieved is less than 5% or less than \$350,000 on \$7,000,000 of transactions. In addition, Mr Hunter noted that the structure of the sell down would result in CEFIA retaining approximately 20 percent of the face amount of the benefit assessment liens in a subordinated position. He explained how that amount is anticipated to be reduced in order for approximately \$1 of CEFIA investment to support \$9 of private capital.

Noting that other states are very interested in CEFIA's program, Mr. Hundt asked staff at a future meeting to talk about the merits of the C-PACE program and the sell down efforts. He asked staff to consider ways the program can be expanded and standardized. Mr. Hunter noted that one of the benefits of the bid selected is that the structure being pursued could enable a path to the private placement markets very quickly with the ultimate objective being a public market offering of bonds backed by the benefit assessment liens. Mr. Hundt questioned whether statutory language being drafted for a national green bank should include any aspects of the C-PACE program. Mr. Garcia noted that staff would review the draft legislation and make comments in this regard.

b. 384-388 Hopmeadow Street, Simsbury, CT

Ms. Sherman discussed the request for C-PACE construction and potential term loan financing to fund the energy efficiency project at Mitchell's Automotive located at 384-388 Hopmeadow Street, Simsbury, CT. She explained that there are three properties on the parcel and two will have solar. Ms. Sherman reviewed the loan to value ratio, the total savings and key financial metrics. She discussed the terms of the loan. In response to a question, Ms. Sherman stated that the term of the loan is standard for the a solar PV project financed by the program. She indicated that the deadline for the existing interest rate structure is for projects submitted before November 1 with rates being increased slightly after that date. Mr Hunter commented that one of the benefits of the sell down was "price discovery," meaning obtaining from the capital markets a sense of how CEFIA's transactions are priced. He suggested that initial indications are that CEFIA's pricing that will come into effect November 1 will be close to market expectations, suggesting further that any discount offered in the sell down process in the period immediately ahead should be reasonably contained.

Staff was asked by the end of the year to report on an appropriate interest rate for 2014 and an appropriate reference point or parameter to measure the interest rate (i.e. Treasury rates).

Upon a motion made by Ms. Ferguson, seconded by Mr. Ranelli, the Deployment Committee members voted unanimously in favor of adopting the following resolution regarding a C-PACE construction and potential term loan for 384-388 Hopmeadow Street, Simsbury, CT:

WHEREAS, Section 157 of Public Act 12-2 of the June 12, 2012 Special Session of the Connecticut General Assembly and as amended (the "Act"), CEFIA is directed to, amongst other things, establish a commercial sustainable energy program for Connecticut, known as Commercial Property Assessed Clean Energy ("C-PACE"); and

WHEREAS, the CEFIA Board of Directors has approved a \$40,000,000 C-PACE construction and term loan program; and

WHEREAS, CEFIA seeks to provide a \$478,000 construction and (potentially) term loan under the C-PACE program to Mitchell Auto Group, Inc., the property owner of 384-388 Hopmeadow Street, Simsbury, CT, (the "Loan") to finance the installation and upgrades of a 120kW solar PV system in line with the State's Comprehensive Energy Strategy and CEFIA's Strategic Plan.

NOW, therefore, be it:

RESOLVED, that the President of CEFIA and any other duly authorized officer of CEFIA is authorized to execute and deliver the Loan in an amount not to be greater than one hundred and ten percent of the Loan amount with the terms and conditions consistent with the memorandum submitted to the Deployment Committee dated October 29, 2013 and as he or she shall deem to be in the interests of CEFIA and the ratepayers no later than 90 days from October 29, 2013.

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

RESOLVED, that the proper CEFIA 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 instrument.

5. Adjournment: Upon a motion made by Mr. Ranelli, seconded by, Ms. Ferguson the Deployment Committee members voted unanimously in favor of adjourning the meeting at 2:31 p.m.

Respectfully submitted,

Reed Hundt, Chairperson of the
Deployment Committee

**BUDGET AND OPERATIONS COMMITTEE OF THE
CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY
Draft Minutes – Special Meeting
Wednesday, November 6, 2013**

A special meeting of the Budget and Operations Committee (“Budget Committee”) of the Board of Directors of the **Clean Energy Finance and Investment Authority (the “CEFIA”)** was held on November 6, 2013, at the office of the Clean Energy Finance and Investment Authority, 845 Brook Street, Rocky Hill, CT 06067.

1. **Call to Order:** The meeting was called to order at 9:22 a.m. Budget Committee members participating: Mun Choi (by phone), Daniel Esty, and Norma Glover (by phone).

Staff Attending: Mackey Dykes, Bryan Garcia, Suzanne Kaswan, Brian Farnen and Shelly Mondo.

2. **Public Comments:** There were no public comments.

3. **Approval of Meeting Minutes:**

The Budget Committee members were asked to consider the minutes from the July 15, 2013 meeting.

Upon a motion made by Mr. Choi, seconded by Ms. Glover, the Budget Committee members voted unanimously in favor of adopting the minutes from the July 15, 2013 meeting as presented.

4. **Sick Leave Bank:**

Mr. Dykes discussed the background of the Sick Leave Bank that was established at Connecticut Innovations (“CI”) in 2009 and adopted by the CEFIA Board in December 2011 as part of the Employee Handbook. He noted that the policy was similar to but more restrictive than the Sick Leave Bank policy for classified managers in State Service.

Ms. Kaswan discussed the number of employees who have participated and donated hours to the Sick Leave Bank since 2009, noting that none of the donated hours have been used. She stated that since the Sick Leave Bank is now being operated jointly for the benefit of CI and CEFIA, approximately 400 hours have been donated. Ms. Kaswan explained that when the policy was created, it was more restrictive because there were fewer employees participating. With both organizations participating, there is a more substantial pool and CEFIA can be less restrictive. Ms. Kaswan discussed the cost analysis associated with the Sick leave Bank. She noted that time for the donated

hours has already been allocated, and no additional funding is required. Ms. Kaswan mentioned that other state and quasi-public agencies in addition to private companies have similar Sick Leave Bank policies.

Ms. Kaswan reviewed the proposed modifications to the amendments presented to the Board on October 18, 2013. A discussion ensued on the concern raised at the Board meeting about not being eligible if an employee has been disciplined for sick leave abuse. Ms. Kaswan explained that a modification has been made to allow a team consisting of senior staff and human resources staff to waive this requirement depending upon the circumstances of an employee.

In response to a question, Ms. Kaswan indicated that the same policy will be presented to CI and its appropriate subcommittee.

Upon a motion made by Mr. Esty, seconded by Ms. Glover the Budget and Operations Committee voted unanimously in favor of adopting the following resolution regarding CEFIA's Sick Leave Bank policy:

RESOLVED, that the Budget and Operations Committee recommends that the CEFIA Board of Directors approves the following CEFIA Handbook revisions marked in **bold**:

The CEFIA Sick Leave Bank is a pool of sick days that has been established by employees of CEFIA who have made a donation of their accumulated sick days. The Bank is available to members to draw up to ten (10) eight- hour sick days per year in the unfortunate event that they experience a qualified illness or injury.

Sick Leave Bank members will receive benefits in the form of paid sick leave if all of the following requirements are met:

- the member has a medical condition that prevents them from working that has been verified by a Medical Certificate OR a member's immediate family member has a medical condition that has been verified by a Medical Certificate and requires the Sick Leave Bank member's care;
- the member has been out on approved medical leave (paid or unpaid) as described above for at least two consecutive weeks.
- the member has exhausted all of their sick, ~~vacation~~, personal leave and compensatory time;
- **the member has exhausted all of their vacation time in excess of 30 days (or 240 hours);**
- the member has not been disciplined for an absence-related reason for the past 12 months; **provided, however, a committee comprised of Senior Management and Human Resources may waive this requirement;**

- the member has completed a Sick Leave Bank Withdrawal Request Form and it has been approved by human resources.

Ms. Glover expressed concern with the manner in which this issue was presented to the Board. She requested that in the future the Board and Committee be advised about issues in a timely manner and well in advance of meetings. Since Ms. Glover may not be able to attend the next Board meeting, Mr. Esty indicated that he would communicate Ms. Glover's message to the Board.

5. **Adjournment:** Upon a motion made by Ms. Glover, seconded by Mr. Choi, the Budget Committee members voted unanimously in favor of adjourning the November 6, 2013 meeting at 9:45 a.m.

Respectfully submitted,

Daniel Esty, Chairperson of Budget
Committee



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Memo

To: Board of Directors of the Clean Energy Finance and Investment Authority

From: Bryan Garcia (President and CEO), David Goldberg (Director of Government and External Relations), Ben Healey (Senior Manager of Clean Energy Finance), Dale Hedman (Director of Statutory and Infrastructure Programs), and Bert Hunter (EVP and CIO)

Cc: George Bellas (VP of Finance and Administration, Connecticut Innovations), Mackey Dykes (Chief of Staff), and Brian Farnen (General Counsel and Chief of Staff)

Date: November 8, 2013

Re: Class I REC Asset Portfolio from the Residential Solar Investment Program

Overview

Connecticut has an aggressive renewable portfolio standard policy (see Table 1). The deployment of solar photovoltaic (PV) systems and production of clean energy from such systems are eligible to supply RECs to help competitive electric suppliers and standard offer providers in CL&P and UI service territory satisfy their RPS compliance requirements. In general, every 1.0% of the Connecticut RPS represents about 275,000 RECs. In 2014, for example, approximately 3,025,000 RECs are estimated to be needed in order to satisfy the Class I RPS requirement. To put this number into perspective, the average 7 kW solar PV system in Connecticut generates about 8 RECs per year – or 0.0003% of the 2014 Class I RPS requirement. Put another way, over 375,000 households would have to install solar PV on their roofs in Connecticut to satisfy the amount of RECs required to meet the 2014 Class I RPS.

Table 1. Connecticut's Renewable Portfolio Standard

RPS Class	2014	2015	2016	2017	2018	2019	2020
Class I ¹	11.0%	12.5%	14.0%	15.5%	17.0%	19.5%	20.0%
Class II ²	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Class III ³	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Total	18.0%	19.5%	21.0%	22.5%	24.0%	26.5%	27.0%

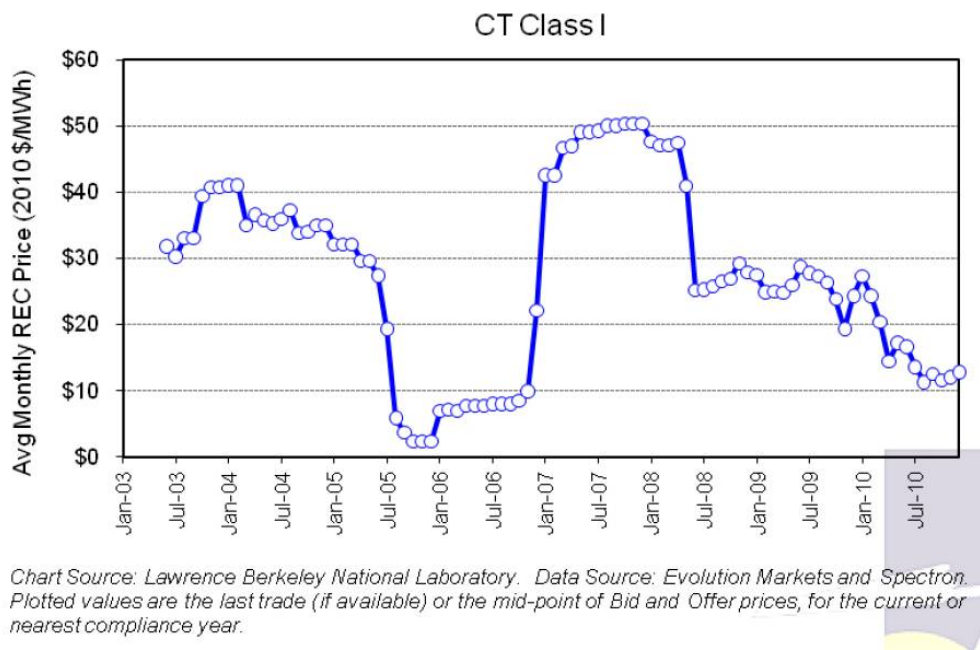
¹ Class I resources include electricity derived from solar power, wind power, fuel cells (using renewable or non-renewable fuels), geothermal, landfill methane gas, anaerobic digestion or other biogas derived from biological sources, ocean thermal power, wave or tidal power, low-emission advanced renewable energy conversion technologies, certain run-of-the-river hydropower facilities not exceeding 30 megawatts (MW) in capacity, and biomass facilities that use sustainable biomass fuel and meet certain emissions requirements. Electricity produced by end-user distributed generation (DG) systems using Class I resources also qualifies.

² Class II resources include trash-to-energy facilities, certain biomass facilities not included in Class I, and certain older run-of-the-river hydropower facilities.

³ Class III resources include: (1) customer-sited CHP systems, with a minimum operating efficiency of 50%, installed at commercial or industrial facilities in Connecticut on or after January 1, 2006; (2) electricity savings from conservation and load management programs that started on or after January 1, 2006, provided that on or after January 1, 2014, no such programs supported by ratepayers shall be eligible; and (3) systems that recover waste heat or pressure from commercial and industrial processes installed on or after April 1, 2007. The revenue from these credits must be divided between the customer and the state Conservation and Load Management Fund, depending on when the Class III systems are installed, whether the owner is residential or nonresidential, and whether the resources received state support.

If a competitive supplier or standard offer provider fails to satisfy the Class I RPS requirement, then they must pay an alternative compliance payment (ACP) of \$55 per REC for the amount of RECs that the supplier or provider is short. Currently, in Connecticut, Class I RECs are traded on the spot market in 2013 for greater than \$54. Historically, Class I REC prices have been volatile (see Figure 1).

Figure 1. Mid-Point of Bid and Offer Prices for Class I RECs in Connecticut from January of 2003 through July of 2010



Per Section 106 of Public Act 11-80, CEFIA is responsible for administering a Residential Solar Investment Program (RSIP) to deploy no less than 30 megawatts (MW) of new solar photovoltaic systems in Connecticut by the end of 2022. As the CEFIA Board of Directors is aware, the RSIP has achieved extraordinary success to date by deploying nearly 14 MW in 20 months since the start of the program in March of 2012. For homeowners that participate in the RSIP, the renewable energy credits (RECs)⁴ that are generated from the systems installed are owned contractually by CEFIA. Every solar photovoltaic system installed through the RSIP has real-time monitoring systems and revenue quality meters that measure the kilowatt-hours of clean energy produced from the system and thus account for the RECs being produced.

Given CEFIA’s ownership of Class I RECs through the RSIP, it is building a sizable asset that can be realized through spot market (i.e. a particular point in time) or future contract (i.e. a specified period of time) transactions whereby CEFIA’s RECs are sold to an interested buyer.

PURA Docket No. 13-02-03

In order to transact RECs in Connecticut, the regulator of the RPS market – the Public Utility Regulatory Authority (PURA) – must determine that a project (or projects) qualifies as a Class I eligible renewable energy technology. In anticipation of selling its Class I RECs from solar PV as a result of the RSIP, CEFIA registered a 30 MW solar PV facility with the New England Power Pool

⁴ 1,000 kilowatt-hours equals 1 megawatt-hour or 1 REC

Generation Information System (NEPOOL GIS) and was assigned a NEPOOL GIS Identification Number NON36589.

Subsequent to receiving its registration from the NEPOOL GIS, CEFIA submitted an application to PURA on February 5, 2013 – a little less than a year after the launch of the RSIP on March 1, 2012. CEFIA requested that PURA determine that the generating facilities being supported through the RSIP would qualify as a portfolio of projects as opposed to applying to PURA for each and every project. PURA determined that CEFIA’s request was consistent with the Class I RPS and that effective January 1, 2013 all RECs created as a result of the RSIP are deemed eligible to be aggregated as a generating behind-the-meter facility and assigned Registration No. CT 00534-13.

Class I REC Asset Portfolio Valuation

Through the RSIP, CEFIA is building a sizable REC asset – see Tables 2 and 3.

Table 2. Net Present Value of Class I RECs from an Average 7 kW Residential Solar PV Installation⁵

Length of Contract	\$25 REC Price	\$35 REC Price	\$45 REC Price
1-year	\$195	\$274	\$352
3-year	\$572	\$801	\$1,029
5-year	\$930	\$1,302	\$1,674
10-year	\$1,752	\$2,453	\$3,153

Table 3. Net Present Value of Class I RECs from 1 MW of Residential Solar PV Installations

Length of Contract	\$25 REC Price	\$35 REC Price	\$45 REC Price
1-year	\$27,912	\$39,076	\$50,241
3-year	\$81,700	\$114,380	\$147,060
5-year	\$132,883	\$186,037	\$239,190
10-year	\$250,261	\$350,365	\$450,470

Based on the average installed cost of \$31,700 for a 7 kW residential solar PV system, and the current level of RSIP incentive provided to these projects by CEFIA of \$8,800, a 10-year contract for RECs at \$35 a REC would generate approximately \$2,450 – or return nearly 30% of the RSIP back to CEFIA.

Depending upon the amount of Class I RECs available to sell, the price a buyer is willing to pay, and the length of time a buyer is willing to contract at (i.e., a one-time transaction for a single year is a spot market transaction, while a commitment to purchase over several years is a forward or future contract), CEFIA can realize additional cash flow into the organization that can be used for various purposes (i.e. administrative and program costs, financing programs, incentives, etc.). To date, CEFIA has reached 14 MW of residential solar PV capacity in Connecticut that will generate Class I RECs over the 25-year life of the projects (see Table 4).

⁵ Estimates are based on the following assumptions – 13% capacity factor, 0.5% degradation rate, a 2.0% discount rate, and an average system size of 7 kW based on the current program performance of the RSIP.

Table 4. Cumulative Amount of Class I RECs Produced Over Time from 14 MW of Residential Solar PV

Cumulative Class RECs Generated Over Time	Amount of Class I RECs
1-year	16,943
3-years	47,591
5-years	78,923
10-years	155,892

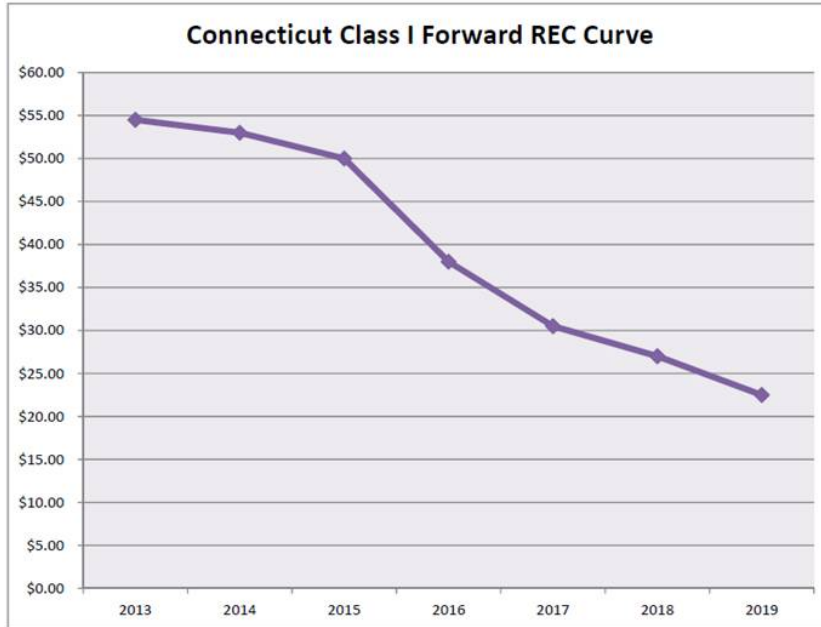
As a result of the successful implementation of the RSIP, CEFIA is producing Class I RECs that have the potential to generate additional revenues into the organization and continue to advance the mission of Connecticut’s “green bank”.

Request for Qualifications from REC Brokers

Over the summer, staff put out an RFQ to identify REC brokers who could potentially serve as CEFIA’s agent in helping us market and sell RECs generated by our RSIP portfolio. The heart of the RFQ was a request for each respondent to discuss the CT Class I REC market and demonstrate his or her understanding of how current and future market dynamics might affect CEFIA’s ability to most effectively monetize our REC portfolio. In particular, CEFIA sought to solicit each respondent’s insight into issues of forward versus spot pricing, contract length (1 year, 3-5 years, 5 years+), and the different options CEFIA could pursue in terms of marketing and selling its future stream of RECs via an auction process. The RFQ also requested indicative pricing from each respondent for a representative transaction or suite of services.

Through the RFQ, CEFIA identified five brokers whom we qualified as potential brokerage partners and whom we could call upon to market specific transactions: BGC Partners, Evolution Markets, GP Renewables, Marex Spectron, and Skystream. Representative pricing among the respondents ranged from 0.75% to 2.00% of proceeds, depending on deal size, and included various proposals for ancillary services. Since pricing responses to the RFQ were only representative and not fixed to specific deal terms, our intention in going to market will now be to ask each qualified broker to price a specific transaction that CEFIA would like to sell. Additionally, at that time, CEFIA will request a firm take-down fee associated with that transaction, so that we can partner with the broker who offers the most attractive combination of pricing, contract length, and transaction fees.

Based on responses to the RFQ and subsequent communications with the various REC brokers, we currently anticipate and modeled the forward price curve as set forth in the graphic below. The strategic decision for CEFIA will be to determine how much of a potential reduction in price CEFIA is willing to take in future years to lock in a longer term REC off-take contract.



Accordingly, staff requests approval by CEFIA’s Board of Directors to engage in contracts to monetize the RECs that have and are reasonably anticipated to accumulate by virtue of the program pursuant to guidelines and procedures that staff shall establish for such purposes.

Resolution

WHEREAS, Section 106 of Public Act 11-80 “An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning for Connecticut’s Energy Future” (the “Act”) requires the Clean Energy Finance and Investment Authority (“CEFIA”) to design and implement a Residential Solar Photovoltaic (“PV”) Investment Program (“Program”) that results in a minimum of thirty (30) megawatts of new residential PV installation in Connecticut before December 31, 2022, and CEFIA has designed and implemented the Program;

WHEREAS, Pursuant to Conn. Gen Stat. 16-245a, a renewable portfolio standard (RPS) was established that requires that Connecticut Electric Suppliers and Electric Distribution Company Wholesale Suppliers (“Buyers”) obtain a minimum percentage of their retail load by using renewable energy.

WHEREAS, CEFIA has been assigned by New England Power Pool Generation Information System (“NEPOOL GIS”) an Identification Number NON36589 for the residential solar PV projects it supports through the Program, and subsequently the Public Utility Regulatory Authority (“PURA”) assigned a Registration No. CT 00534-13 to the behind-the-meter facilities supported by the Program;

WHEREAS, real-time revenue quality meters are included as part of solar PV systems being installed through the Program that determine the amount of clean energy production from such systems as well as the associated renewable energy credits (“RECs”) which, in accordance with Program guidelines, become the property of CEFIA to hold, manage and sell in CEFIA’s sole discretion;

WHEREAS, CEFIA staff seek to sell quantities of the Class I RECs produced as a result of the Program to Buyers who are seeking to comply with the Connecticut Class I RPS;

WHEREAS, CEFIA staff issued a Request for Qualifications on August 26, 2013 for brokers that are registered with the NEPOOL GIS to assist it in selling CEFIA's RECs (RFQ);

WHEREAS, CEFIA staff selected five brokers from the RFQ to sell RECs in Connecticut and act as CEFIA's preferred brokerage partners ("Preferred REC Brokers") and whom CEFIA could call upon to market specific REC transactions.

NOW, therefore be it:

RESOLVED, that the President of CEFIA and any other duly authorized officer of CEFIA, pursuant to guidelines and procedures that staff shall establish for such purposes in advance, is authorized to execute and deliver any contract with a Preferred REC Broker for the immediate and/or long-term sale of quantities of CEFIA's RECs from the Program, which shall include any applicable brokerage fees, as he or she shall deem to be in the interests of CEFIA and the ratepayers; and

RESOLVED, that the proper CEFIA 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 instrument.



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

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Memo

To: CEFIA Deployment Committee; CEFIA Budget and Operations Committee

From: Bryan Garcia, President and CEO

Cc: Brian Farnen, General Counsel and CLO; Ben Healey, Senior Manager;
Dale Hedman, Director of Statutory and Infrastructure Programs

Date: December 4, 2013

Subject: Draft Guidelines and Procedures for CEFIA Management of Class I REC Asset Portfolio

Connecticut's aggressive Renewable Portfolio Standard ("RPS") requires a certain percentage of the state's electric load to come from renewable energy sources each year. That figure is 11% from "Class I" sources in 2014, rising steadily to 20% in 2020. RPS fulfillment is measured in Renewable Energy Credits ("RECs") – 1 REC per clean MWh generated – and the 11% of load required for 2014 represents approximately 3,025,000 Class I RECs in the coming year. A general "rule of thumb" is that each 1% of compliance towards the RPS requires about 275,000 RECs.

CEFIA owns the RECs from solar PV systems under the Residential Solar Investment Program, and the average RSIP system produces about 8 RECs per year. As CEFIA has now approved over 2,000 systems, we will have over 16,000 RECs to sell in the coming year alone.

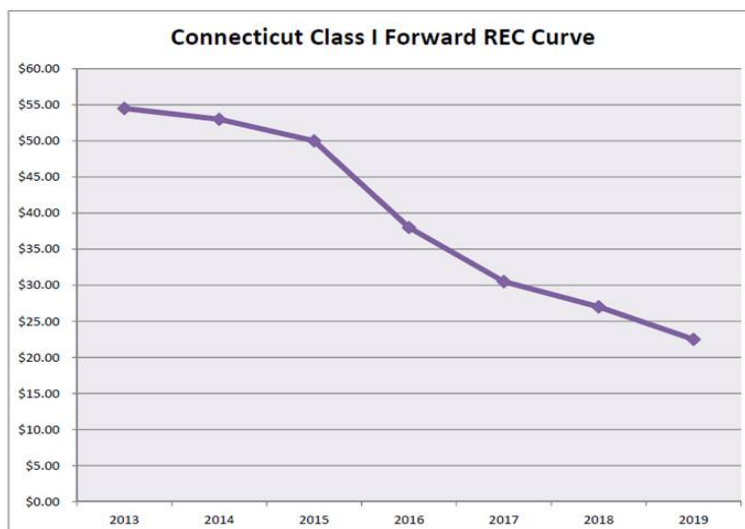
The maximum price that RECs will sell for is \$55, due to the Alternative Compliance Payment ("ACP") cap. However, the market is currently short RECs, given Connecticut's strong RPS, with the forward curve also fairly robust (see Figure 1 below). Assuming CEFIA were to sell the 16,000 RECs it expects to generate in 2014 through a future contract based on the forward curve for 2014 through 2019, then approximately \$3.5 million would be generated in 6 years at an average REC price of about \$37 per REC.

Over the summer of 2013, CEFIA ran a Request for Qualifications ("RFQ") process to select a limited pool of qualified brokers for the purpose of marketing and selling CEFIA's RECs via open-market auctions. We have now five qualified brokers whom CEFIA can use to sound the market and then price a transaction for us, when we are ready: BGC Partners, Evolution Markets, GP Renewables & Trading, Marex Spectron, and Skystream Markets.

As CEFIA's Class I REC portfolio will continue to grow over time, it is an asset that will require ongoing monitoring and management by CEFIA staff. Therefore, we propose the attached guidelines and procedures to govern staff's management of this portfolio (see Exhibit I). Staff

would welcome feedback from the members of the Deployment and Budget & Operations Committees before finalizing these procedures.

Figure 1. Recently Quoted Price Curve for 2013-2019 Vintage Connecticut Class I Renewable Energy Credits



2013 Class I RECs

As a result of projects funded by CEFIA in 2013 and the Connecticut Clean Energy Fund (CCEF) prior, the following is a breakdown of Class I RECs produced as of November 30, 2013 – see Table 1.

Table 1. Class I RECs Produced in 2013 through November 30, 2013 from CEFIA and CCEF Funded Projects

	RSIP¹	OSDG – Solar PV	OSDG – Fuel Cell	Total
Projects Installed as of November 30, 2013	1,201	45	-	1,246
Installed Capacity (kW)	8,413	7,779	-	16,192
Class I RECs Produced in 2013²	5,617	7,862	-	13,479
RECs Sold in 2013 by Long-Term Contracts	0	0	0	0

Of the Class I RECs produced in 2013 from CEFIA and CCEF funded projects, 10,000 are committed for sale through existing long-term contracts entered into by the CCEF at a price of \$15, leaving the remainder of the Class I RECs available for sale in 2013. Note, this does not include the Class I RECs being generated through the rest of the calendar year.

¹ As of November 29, 2013, there are 2,194 residential solar PV projects approved by CEFIA for incentives through the RSIP. Of these approved projects, 1,201 are completed, 391 are in progress, and 602 are approved and moving towards implementation.

² Class I RECs produced include estimates for October and November.

RESOLUTIONS

BUDGET AND OPERATIONS COMMITTEE

WHEREAS, Article V, section 5.3.2 of the Clean Energy Finance and Investment Authority (CEFIA) Bylaws requires the Budget and Operations Committee (the “Committee”) to recommend and monitor compliance with prudent fiscal policies, procedures, and practices to assure that CEFIA has the financial resources and financial strategy necessary to carry out its statutory responsibilities and mission;

NOW, therefore be it:

RESOLVED, that the Committee hereby recommends to the Board for approval the draft Guidelines and Procedures for CEFIA Management of Class I REC Asset Portfolio in substantially the form provided to the Committee in the memorandum dated December 4, 2013 and which may be revised by CEFIA staff from time to time to incorporate the recommendations of independent third party consultants with REC market expertise.

DEPLOYMENT COMMITTEE

WHEREAS, Article V, section 5.3.3 of the Clean Energy Finance and Investment Authority (CEFIA) Bylaws requires the Deployment Committee (the “Committee”) to provide oversight of policies and practices relating to the evaluation and recommendation of initial investments, follow-on investments, investment modifications and restructurings, and the sale or other disposition of investments by the Authority’s professional investment staff, including implementation of investment exit strategies;

NOW, therefore be it:

RESOLVED, that the Committee hereby recommends to the Board for approval the draft Guidelines and Procedures for CEFIA Management of Class I REC Asset Portfolio in substantially the form provided to the Committee in the memorandum dated December 4, 2013 and which may be revised by CEFIA staff from time to time to incorporate the recommendations of independent third party consultants with REC market expertise.

EXHIBIT I

Draft Guidelines and Procedures for CEFIA Management of Class I REC Asset Portfolio

Objective: maximize the value of CEFIA's Class I REC asset portfolio to generate revenues that can support the mission of the organization, while taking appropriate measures to hedge portfolio risk over both the short and long terms

Step 1

On an ongoing basis, but not less than once annually, CEFIA staff will evaluate the status of its Class I REC asset portfolio, including the identification of specified key elements of value and risk:

- Current installed capacity (in megawatts (MW)) under the Residential Solar Investment Program or its successor programs. This evaluation will include:
 - o A "look-back" to determine the trajectory of capacity growth, as well as an analysis of any specific drivers that may have led that trajectory to deviate from historical averages
 - o Projections of future capacity build-out
 - A confidence interval will be applied to these projections to enable CEFIA to evaluate the risk of actual installed capacity growth being higher or lower than projected
- REC production, historically by quarter (actual metered generation and registered on NEPOOL-GIS). This evaluation will include:
 - o An analysis demonstrating the relationship between installed capacity and REC production, with a specific focus on the lag between new residential solar PV capacity and the production of REC assets
 - o Projections of estimated future REC production
 - A confidence interval will be applied to these projections to enable CEFIA to evaluate the risk of actual future REC production being higher or lower than projected

Step 2

On an ongoing basis, but not less than semiannually, CEFIA staff will evaluate the status of the REC markets through conversations with qualified REC brokers, including the identification of specified key elements of value and risk:

- REC prices in both the spot and future markets. This evaluation will include:
 - o A "look-back" to determine REC prices over the previous six months and current market trends
 - o An analysis of forward pricing curves from at least two brokers going out no fewer than 3-5 years
 - Furthermore, a qualitative analysis will be undertaken describing any existing or projected price volatility to help guide CEFIA staff decisions about market risk
- Contract Length
 - o Using the forward pricing curves obtained, CEFIA staff will create a matrix to help determine the amount of value (in NPV terms, applying the rate of inflation as the

discount rate) potentially sacrificed per REC, in exchange for locking in firm pricing for each vintage year

Step 3

After evaluating the status of CEFIA's existing and projected portfolio at any point in time, CEFIA staff will work with qualified broker selected through CEFIA's Request for Qualifications process to price a variety of potential REC transactions:

- In the spot market, the following conditions must be met for CEFIA staff to transact RECs:
 - o The RECs must be officially registered on NEPOOL-GIS
 - o In general, the RECs should be offered on the market through a qualified broker. (However, on an exception basis, staff can enter directly into a bilateral agreement with a REC purchaser if price discovery has occurred, meaning that CEFIA has either:
 - o Already priced the RECs on the market via quotes offered by at least two qualified brokers; or
 - o Received market reports from at least two qualified brokers that provide certainty around current spot market prices
 - o The REC sale price must be no less than 10% below the average weighted sale price, as quoted by at least two qualified brokers, of spot market transactions over the previous quarter, unless that sale price has declined by at least 10% from the beginning to the end of that quarter
 - o The purchaser must be either an investment-grade counterparty or have successfully closed at least one REC purchase transaction of similar size per year over the previous three years

- In the forward market, the following conditions must be met for CEFIA staff to transact RECs:
 - o Based on staff estimates of future REC production in Step 2 above, as bracketed by a 95% confidence interval, no more than 75% of that 95% lower bracket may be transacted through a "non-contingent" forward contract, in which CEFIA agrees to supply a fixed number of RECs on a given date(s) in the future
 - o Up to 100% of all future RECs may be transacted through a "unit contingent" forward contract, in which the purchaser agrees to take however many RECs CEFIA chooses to supply on a given date(s) in the future
 - o All RECs to be offered on the forward market must be priced through a qualified broker (although CEFIA staff can choose to enter directly into a bilateral agreement with a REC purchaser if price discovery has occurred)
 - o The REC sale price for each vintage year must be no less than 10% below the average forward curve price quoted by at least two qualified brokers for that vintage year, for both non-contingent and unit-contingent RECs, respectively
 - o The purchaser must be either an investment-grade counterparty or have successfully closed at least one REC purchase transaction of similar size per year over the previous three years

In all cases, CEFIA staff will seek to limit transaction costs while simultaneously taking advantage of expert advice to ensure the organization:

- Locks in attractive pricing where possible;
- Limits downside exposure;

- Retains the opportunity for upside gains; and
- Provides some level of revenue certainty for planning purposes, in terms of reinvestment of REC proceeds.



CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

Residential Solar Investment Program

A Statutory Program

Due Diligence Package

December 11, 2013

Document Purpose: This document contains background information and due diligence on the Residential Solar Investment Program and the organizations involved. This information is provided to the Board of Directors for the purposes of reviewing and approving recommendations made by the staff of the Clean Energy Finance and Investment Authority.

In some cases, this package may contain among other things, trade secrets, and commercial or financial information given to the Clean Energy Finance and Investment Authority in confidence and should be excluded under C.G.S. §1-210(b) and §16-245n(D) from any public discourse under the Connecticut Freedom of Information Act. If such information is included in this package, it will be noted as confidential.

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Program Qualification Memo

To: Deployment Committee
From: Bryan Garcia, Dale Hedman, Ed Kranich, and Neil McCarthy
Date: December 11, 2013
Re: Residential Solar Investment Program – Step 4

Summary

The staff proposes the following incentive levels for Step 4 of the Residential Solar Investment Program:

1. Race to the Solar Rooftop – to increase the pace of rooftop solar PV deployment, the two separate tracks (i.e. rebate and PBI) for residential solar PV rooftop deployment will continue with an additional third track (i.e. race track). The total capacity target for step 4 is 10.0 MW – 5.0 MW for rebate, 3.0 MW for PBI, and 2.0 MW for the race track – by January 1, 2015. For the track that reaches their capacity first, they will then have access to the race track capacity and then the other's capacity track.
2. Incentive Level – we propose approximately a 20% reduction of the Step 3 incentive levels to \$1.25/W for systems up to 5 kW and an additional incentive of \$0.75/W for systems 5-10 kW for the rebate and \$180/MWh for the PBI in Step 4. With these incentive levels, CEFIA will achieve a leverage ratio target of about 25%¹ (an improvement from 30%) for the Step 4 portfolio of projects. Per Section 106 of PA 11-80, CEFIA staff will seek DEEP's approval of the schedule of incentives for Step 4.
3. Incentive Cap – we propose an incentive cap of 30% per project for Solarize projects only.

This incentive structure for Step 4 is designed to reward the model (i.e. rebate or PBI) that is more effective at "maximizing the amount of clean energy deployed per dollar of ratepayer funds at risk." With the successful implementation of Step 4, CEFIA will continue to transition the residential solar PV market by reducing its reliance on subsidy-based incentives and continuing progress towards financing programs that delivers a payback to ratepayers. CEFIA's financing programs for solar PV were launched in Q1 (July through September of 2013) and Q2 (October through December of 2013) of FY 2014 nearly six months later than had originally been anticipated.

Program Description

On March 2, 2012, CEFIA launched the residential solar investment program (the Program). The Program, a statutory requirement underneath Section 106 of Public Act 11-80, supports the sustainable market development for residential solar PV deployment in Connecticut. The Program offers rebates

¹ \$1 of ratepayer incentive to \$3 of non-ratepayer incentive as a portion of the overall installed costs of a project.

and performance-based incentives (PBI) to support homeowners who install solar photovoltaic systems. Through twenty-one months of the Program, CEFIA has approved over 2,150 projects that are installing approximately 15.2 MW of clean energy (see Table 1).

Table 1. Program Data as of November 29, 2013

	Rebate	PBI	Total
# Projects Approved	1,420	743	2,163
Total Installed Cost	\$44.8 MM	\$24.7 MM	\$69.5 MM
Installed Capacity (kW)	10.1 MW	5.1 MW	15.2 MW
Installed Cost (\$/W)	\$4.30	\$4.83	\$4.56
Total Incentive Amount	\$14.0 MM	\$8.2 MM	\$22.2 MM
Incentive (\$/W)	\$1.15	\$1.42	\$1.26
Equivalent ZREC Price (\$/REC)	\$76	\$87	

The incentives provided by CEFIA through the Program are half of the ratepayer supported incentives in the competitive Round 1 of the Zero Emissions Renewable Energy Credit (ZREC) program.² It should also be noted that 270 projects, or 12% of the projects, are located in distressed communities as defined by the Connecticut Department of Economic and Community Development.³

Projects underneath the Program have thus far sought approximately \$22.2 million in incentives leveraged by an additional \$47.3 million of private investment – a leverage ratio of 1:2, an improvement above the CCEF's historical performance of 1:1; meaning more installations and jobs per ratepayer dollar provided.

The data on program performance indicates the following:

PBI Competition – we are now seeing more competition from PBI installers. It should be noted that Solar City, a PBI installer, is now the #1 residential solar PV installer in Connecticut – installing as many systems as the next four (4) installers combined. It should also be noted that the local rebate installers are deploying rooftop solar PV at a pace nearly twice as fast as the PBI installers.

Costs Declining – as competition increases in the market, installed costs are decreasing by more than 15% from Step 1 (of \$5.32/W) to Step 3 (of \$4.51/W). Installed costs for rebate installers is currently less (i.e. \$4.30/W) than that of PBI installers (i.e. \$4.84/W) for Step 3. In 2014, CEFIA

² United Illuminating offers a 15-year ZREC price of \$145, while CL&P offers at \$160 for projects less than 100 kW for Round 1 projects. CEFIA incentives are compared to the ZREC incentives on a present value basis using a 2% discount rate.

³ According to C.G.S. Section 32-9p, a distressed municipality should be based on "high unemployment and poverty, aging housing stock and low or declining rates of growth in job creation, population, and per capita income." <http://www.ct.gov/ecd/cwp/view.asp?a=1105&q=251248>

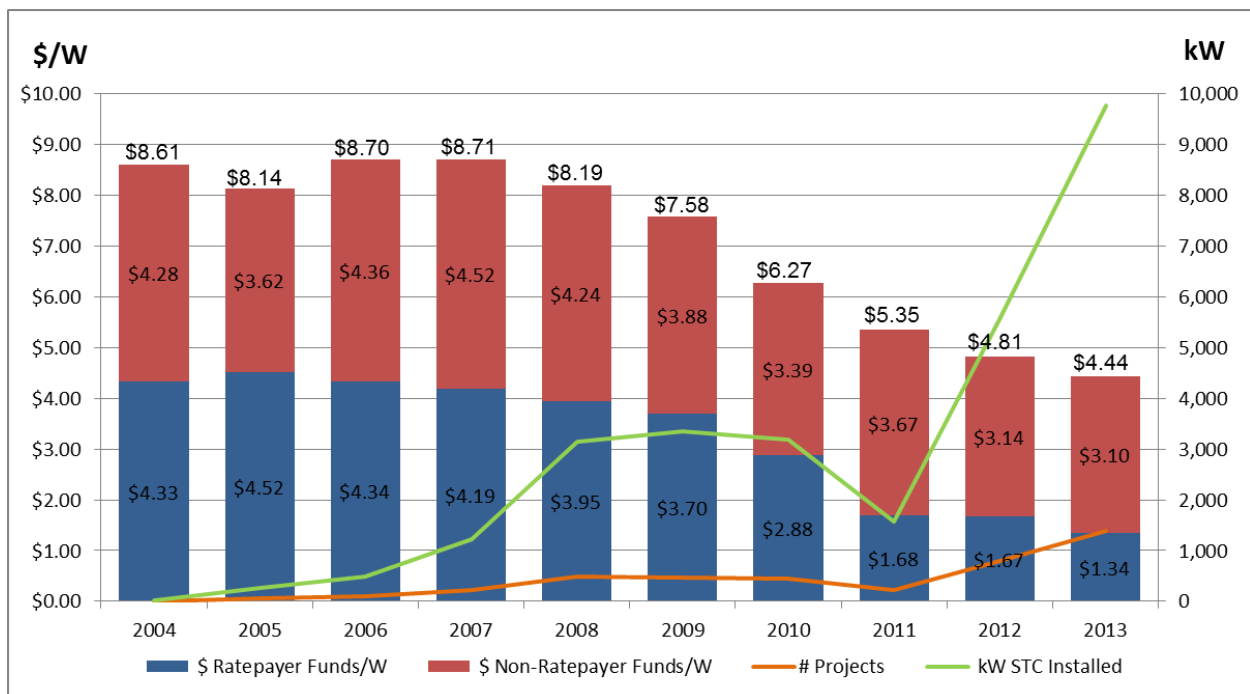
expects average costs per watt installed to continue to decline to between \$4.00 to \$4.25/W as a result of further competition in the market and continuing efforts to reduce "soft costs".

Customer Demand Increasing – the demand for residential solar PV is increasing as indicated by the number of approved projects and the installed capacity resulting from those projects.

Ratepayer Subsidies Decreasing – the percentage of incentives as a portion of the overall project costs are decreasing.

For a graphical picture of the Program's performance through November 29, 2013 – see Figure 1.

Figure 1. Comparison of Installed Costs, Incentives, Projects and Installed Capacity (2004 through November 29, 2013)



The CCEF-supported programs were from 2004 through 2011, with CEFA-supported programs beginning in 2012.

CEFA's goal is to create a robust market for residential solar PV systems in Connecticut that achieves:

Sustainable Market Development – avoids the stop-start nature of incentives that were experienced in the past while maximizing the amount of rooftop solar PV deployed per dollar of ratepayer funds at risk;

Leverage – achieves a 3:1 (or between 25% to 30%) leverage ratio of non-ratepayer funds to ratepayer funds;

Costs – support strategies that make solar PV more affordable and accessible – i.e. Solarize marketing campaign approaches have brought installed costs down by 20-30%;

Program Administrative Costs – use lean manufacturing practices to improve the efficiency and effectiveness of program administration to be able to handle more volume without having to expand staff administration;

Energy Efficiency – incorporates energy efficiency measures into solar PV projects; and

Financing – shifts from subsidy-based incentives over time to low-cost and long-term financing to ensure that maximum residential rooftop solar PV deployment is occurring per dollar of ratepayer funds at risk.

With these goals in mind, we are proposing the following schedule of incentives for Step 4 – see Table 2:

Table 2. PROPOSED SCHEDULE OF INCENTIVES FOR STEP 4

	Rebate		PBI
	x 5 kW	10kW x > 5 kW	x 10 kW
Current Step 3	\$1.75/W	\$0.55/W	\$0.225/kWh
Proposed Step 4	\$1.25/W	\$0.75/W	\$0.180/kWh
Total (Reduction)/Increase	(\$0.50/W)	\$0.20/W	(\$0.045/kWh)
% (Reduction)/Increase	(29%)	36%	(20%)

Depending upon the size of the system installed, the reduction in the level of incentive for the rebate is approximately the same as it is for the PBI – see Table 3.

Table 3. Present Value of the Rebate versus the PBI for Different Sized Systems

	5 kW Installation	7 kW Installation	10 kW Installation
Value of the Rebate	\$6,250	\$7,750	\$10,000
Value of the PBI	\$5,486	\$7,680	\$10,971
Difference	\$764	\$70	(\$971)

Overall, Step 4 results in a reduction of approximately 20% for both the rebate and the PBI from Step 3.

Strategic Plan

Is the program proposed, consistent with the Board approved Comprehensive Plan and Budget for the fiscal year?

The Residential Solar Investment Program proposal is consistent with the Board approved Comprehensive Plan and Budget for FY 2014. This request of the portfolio of incentives for the Program is consistent with that plan and budget.

The Program is a statutory requirement pursuant to Section 106 of Public Act 11-80.

Ratepayer Payback

How much clean energy is being produced (i.e. kWh over the projects lifetime) from the program versus the dollars of ratepayer funds at risk?

The Program proposes a "Race to the Solar Rooftop" target of 10.0 MW for Step 4. At an average forecasted incentive of \$1.10/W (i.e. assumes a 7 kW system) for rebates and PBI, \$11.0 million of ratepayer capital will be used as incentives to support the deployment of 10.0 MW of solar PV which will produce over 13 million kWh of clean energy a year or over 260 GWh over a 20-year period as a result of Step 4.

The following is a breakdown of the objective function for the RSIP through Step 4 (see Table 4).

Table 4. Objective Functions of the Residential Solar Investment Program for Steps 1 through Step 4

	Step 1	Step 2	Step 3 (Current)	Step 4 (Estimated)
Installed Capacity (kW)	1,190	6,485	7,550	10,000
Clean Energy Produced ⁴ (kWh)	30,000,000	170,000,000	195,000,000	260,000,000
CEFIA Funds Expended	\$2,115,000	\$10,665,000	\$9,475,000	\$11,000,000
kWh Produced / 1\$ Expended	14.2	15.9	20.6	23.6
\$Expended / 1 kWh Produced	\$0.071	\$0.063	\$0.049	\$0.042

For providing the rebate and PBI in Step 4, CEFIA owns the renewable energy credits (RECs) produced by the systems – which is equivalent to about 13,000 RECs a year or \$260,000 of value a year assuming a \$20 REC price. Over a 20-year period, it is estimated that \$4.6 million in REC revenue will be generated from 10.0 MW of residential rooftop solar PV systems.

Between the rebate and RECs, it is estimated that at least \$4.6 million of the \$11.0 million of ratepayer capital will be paid back – see Table 5.

Table 2. Ratepayer Funds at Risk = Step 4 Rebates and PBI Provided less REC Revenue

Ratepayer Payback	(Expense)/Revenue	Period of Time
Step 4 Rebates and PBI	(\$11,000,000)	Paid out over 6 years
Renewable Energy Credit Revenue	\$4,600,000	Received over 20 years
Ratepayer Funds at Risk	(\$6,400,000)	

Terms and Conditions

What are the terms and conditions of ratepayer payback, if any?

The rebate and PBI of \$11.0 million offered under Step 4 are incentives that are paid out either upfront for the rebate or over a 6-year period for the PBI based on the performance of the system.

⁴ Estimated over 20 years.

CEFIA owns all RECs associated with projects that receive a rebate or PBI. If CEFIA can achieve a REC price of at least \$20 on average over 20 years, then it can generate over \$4.6 million in revenues back to CEFIA.

Capital Expended

How much of the ratepayer and other capital that CEFIA manages is being expended on the program?

By statute, CEFIA shall apportion no more than one-third of the total surcharge collected annually.

Risk

What is the maximum risk exposure of ratepayer funds for the program?

Despite the REC revenue that will be realized as a result of the program, staff expects that the maximum risk exposure for the program is \$11.0 million – the estimated value of the rebates and PBI provided through Step 4 of the program to achieve the “Race to the Solar Rooftop” target of 10.0 MW. Given the variability of REC pricing, it would be difficult to ascertain the true value that CEFIA would receive without a forward contract with a fixed price.

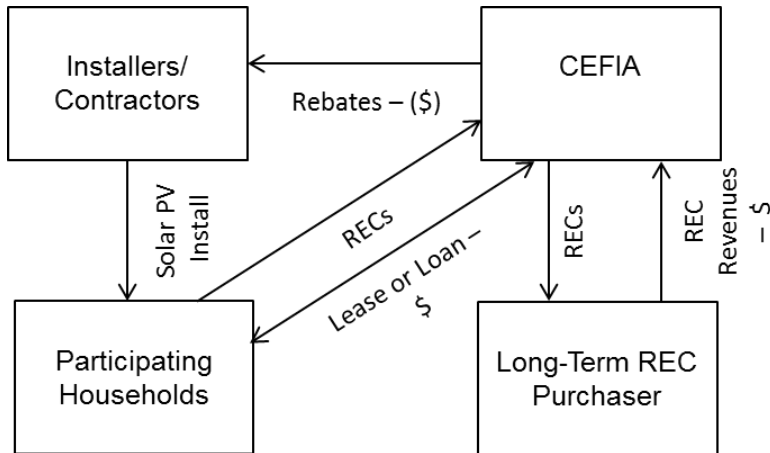
Financial Statements

How is the program investment accounted for on the balance sheet and profit and loss statements?

The funding support for the RSIP would be in the form of an upfront rebate or paid over time through a PBI. Once paid the rebate will be reflected on CEFIA's balance sheet as a reduction to “cash” (current assets) with a corresponding entry on the profit and loss statement under “Operating Expenses” in the relevant ledger account under “Financial Incentives - Grants and Rebates,” which will have the effect of reducing unrestricted net assets. Once approved the PBI will be reflected on CEFIA's financial statements as an “Open Commitment” which is recorded in the notes to the financial statements and when actually paid over six years, the PBI will be reflected on CEFIA's balance sheet as a reduction to “cash” (current assets) with a corresponding entry on the profit and loss statement under “Operating Expenses” in the relevant ledger account under “Financial Incentives - Grants and Rebates,” which will have the effect of reducing unrestricted net assets.

Historically, the production of RECs has been accounted for as a reduction of Rebate Expense (to reflect the fact that CEFIA, by issuing the Rebate (or PBI) has – for a portion of that payment – acquired the RECs that the PV systems will produce) with a corresponding increase to the Non-Current Asset Account: “Investment-RECs.” At the time of a sale of RECs, the “Investments – RECs” account is reduced by the carrying value of the RECs sold and the Profit and loss statement will recognize, as necessary, a gain or loss to reflect any difference in value between the actual sale price of the RECs and the carrying value of the RECs sold.

Capital Flow Diagram



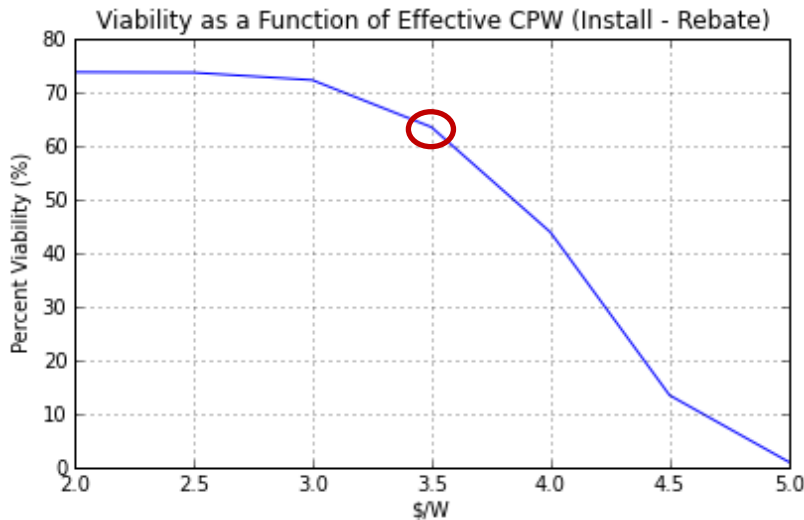
Target Market

Who are the end-users of the program?

Per Section 106 of Public Act 11-80, the end-users of the program are residential ratepayers. These ratepayers are interested in either owning solar PV systems or paying a reduced electricity rate as a result of a solar PV system installed on their home.

It should be noted that of the 2,160 currently approved or completed RSIP projects to date, 270 of them, or approximately 12% of the projects, are located in distressed communities as defined by the Connecticut Department of Economic and Community Development.

Looking towards the future, CEFIA – together with our partners at Geostellar – continues to finalize work on a “total addressable market” (or “TAM”) analysis, which will take us beyond the 30 MW capacity mandate the legislature set for the RSIP in Section 106 of PA 11-80. Towards that end, the chart below illustrates the percentage of Connecticut’s residential households who would achieve a full payback of their upfront costs within 25 years, depending on their “effective cost per watt” for a residential solar PV system (essentially, the installed cost of the system minus an RSIP rebate, assuming full monetization of the federal investment tax credit and electric prices escalating from a starting point of \$0.15 / kWh).



As the chart shows, given current installed costs below \$4.50 / W and a proposed Step 4 incentive that should average about \$1.10 / W, around 65% of Connecticut households will be “solar viable” within the 25-year payback range. Of course, it is important to note that as we look at more realistic homeowner payback requirements (i.e. 5 to 10 years) with Geostellar over the next month, this figure will come down; however, the identified TAM will still represent a significant, gigawatt-plus residential solar opportunity for Connecticut over the coming years.

CEFIA Role, Financial Assistance & Selection/Award Process

CEFIA’s role is to administer the statutory program. Financial assistance being offered through the program is based on general program guidelines developed by staff and a schedule of incentives approved by the Department of Energy and Environmental Protection.

Program Partners

The program partners are the more than 60 qualified solar contractors that support the installation of rooftop solar PV systems for residential ratepayers.⁵

Risks and Mitigation Strategies

Risk: Proposed incentives for Step 4 are too high and they generate more installations than we had anticipated in 2014 with a target of 10.0 MW by January 1, 2015.

Mitigation Strategy: Staff will closely monitor the applications submitted and approved to the program during Step 4. If applications significantly exceed what is expected, staff will propose an adjustment to the Step 4 incentives to the Board to decrease the incentive levels further prior to the end of the yearlong step.

⁵ <http://www.energizect.com/residents/programs/residential-solar-investment-program>

Operating Procedures

The Residential Solar Investment Program follows the “ Programmatic Selection and Award” aspects of CEFIA’s Operating Procedures for financial assistance in the form of grants, loans or loan guarantees, debt, or equity investments.

Resolutions

WHEREAS, Section 106 of Public Act 11-80 “ An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning for Connecticut’s Energy Future” (the “ Act”) requires the Clean Energy Finance and Investment Authority (“ CEFIA”) to design and implement a Residential Solar Photovoltaic (“ PV”) Investment Program (“ Program Plan”) that results in a minimum of thirty (30) megawatts of new residential PV installation in Connecticut before December 31, 2022;

WHEREAS, as of November 29, 2013, the Program Plan has thus far resulted in approximately fifteen (15) megawatts of new residential PV installation application approvals in Connecticut;

WHEREAS, pursuant to Section 106 of the Act, CEFIA has prepared a Program Plan and a declining incentive block schedule (“ Schedule”) that offer direct financial incentives, in the form of performance-based incentives (“ PBI”) or expected performance-based buydowns (“ Rebate”), for the purchase or lease of qualifying residential solar photovoltaic systems;

WHEREAS, the performance of the Rebate model in Step 3 is faster in deploying rooftop solar PV and requires less ratepayer subsidies than the PBI model therefore maximizing the amount of clean energy deployed per dollar of ratepayer funds at risk;

WHEREAS, on December 21, 2012, the CEFIA Board of Directors (“ Board”) reviewed and approved the staff recommendations to establish a Step 4 “ Race to the Solar Rooftop” capacity of 10 MW;

WHEREAS, the Deployment Committee has reviewed and directed CEFIA staff to bring a Step 4 Schedule of Incentives to the Board; and

WHEREAS, Solarize Connecticut is a program designed to encourage the adoption of residential solar PV by lowering customer acquisition costs through a coordinated education, marketing and outreach effort, combined with a tiered pricing structure that provides increased savings to homeowners as more people in a selected municipality go solar (“ Solarize Communities”).

NOW, therefore be it:

RESOLVED, that the Deployment Committee recommends that the Board hereby approves the Schedule of Incentives for Step 4 outlined above to achieve 10.0 MW of solar PV deployment as follows:

- 5.0 MW of Rebates,
- 3.0 MW of PBI, and
- 2.0 MW of additional capacity for the models to compete for incentives;

RESOLVED, that the Deployment Committee recommends that the Board direct staff that at the point where 5.0 MWs of committed capacity is reached during Step 4 of the Schedule, or earlier if staff deems it appropriate to release a report that makes a recommendation to the Deployment Committee on the Step 5 and beyond for capacity allocation and incentive levels;

RESOLVED, that the Deployment Committee recommends that by (a) the point of the Step 4 incentive where 7.5 MW of committed capacity is reached for either the PBI or the Rebate models or (b) January 1, 2015 whichever comes first, the Board will approve a Step 5 capacity allocation and incentive level to ensure the sustained and orderly deployment of the residential solar market in Connecticut;

RESOLVED, that the Deployment Committee recommends that the Board approve Step 4 incentives be maintained for Solarize Communities down selected for Phase 4 of the Solarize Connecticut program throughout the entirety of the campaign if Step 4 incentives are in place at the beginning of Phase 4; and

RESOLVED, that this Board action is consistent with Section 106 of the Act.

Program Implementation Plan

Human Resources

Statutory and Infrastructure Programs – will lead in administering the program and collecting information on each project

Finance – will track leases and loans for each project to track ratepayer payback

Administration – will support the analysis of the data being collected to track the overall performance of the program

Financial Resources

1. Rebates up to 5.0 MW to households interested in owning a solar PV system; PBI up to 3.0 MW to households interested in leasing a solar PV system; and 2.0 MW of competitive capacity for Step 4;
2. Lease and Loan Programs – see separate due diligence packages

Metrics, Targets, Measurement, Verification & Reporting

Metrics:

- Amount of clean energy produced per dollar of ratepayer funds at risk
- Ratio of private to public capital leveraged and ratio of grants versus financing programs
- Annual clean energy generation
- Total amount of investment

Targets:

- Attract nearly \$40 million of non-ratepayer capital through the achievement of a leverage ratio of 1:3
- Deploy approximately 7.8 MW of Class I renewable sources in Connecticut
- Produce 13,000 MW hours of Class I renewable sources per year for 20-years
- Reduce installed costs from Step 3 to Step 4 by at least 10%

CEFIA will collect data on the following (the Market Watch Report will continue to report the performance of the program on a weekly basis), but not be limited to:

- Installed capacity
- # of projects
- Installed costs
- Actual clean energy produced
- Benefits achieved including environmental (i.e. emissions avoided) and economic development (i.e. jobs created)



Memo

To: CEFIA BOD
From: Kim Stevenson, Associate Director Multifamily Housing
CC: Jessica Bailey, Andy Brydges, Mackey Dykes, Bryan Garcia, Dave Goldberg, Brian Farnen, Ben Healey, Dale Hedman, Bert Hunter, Kerry O'Neill, Genevieve Sherman
Date: December 5, 2013
Re: Update on CEFIA Multifamily and Affordable Housing Initiatives

EXECUTIVE SUMMARY

CEFIA is developing several multifamily and affordable housing (MFAH) programs, which is a new area of program development and a priority for CEFIA. We will propose new MFAH programs to the CEFIA Board of Directors for input and approval in the first half of FY 14. We have also established working relationships with key channel partners to begin sourcing deal flow, with a prospective pipeline of well over 2,000 units.

Implementing energy improvements in the MFAH market has been difficult to achieve, both in Connecticut and nationally, because of challenges related to securing financing, split incentives between owners and tenants, lack of reliable performance data and case studies to build investor confidence, as well as various other challenges. Therefore, a key tenet of CEFIA's MFAH strategy has been to identify and bring in national leaders, from within and outside Connecticut, with demonstrated ability to "*crack the multifamily housing nut*" and successfully build and close deal flow and run programs. We have two strong partnerships lined up, each with nationally recognized MFAH experts on their teams, and who are bringing resources to Connecticut to build the market – attracted by the cutting edge clean energy leadership and achievements underway in Connecticut.

As with all CEFIA programs, our approach is to use the minimum level of CEFIA funds necessary to support the market, and then to reduce CEFIA's participation over time as the market takes off and the private sector takes over. CEFIA has four major multifamily affordable housing initiatives in place, which are described in detail in this document:

1. *Building the Multifamily Market through C-PACE*
2. *Building the Multifamily Market through CDFI's and Strategic Partners*
3. *WINN-HUD open market ESCO*
4. *CT Housing Finance Authority Partnership*

BACKGROUND

Connecticut's Multifamily and Affordable Housing (MFAH) sector presents a critical imperative and significant opportunity for investment in clean energy improvements, with a priority focus on affordable housing, and targeted to:

- Reduce energy costs for residents as well as energy and energy-related maintenance costs for building owners,
- Fund all cost effective energy measures, within the context of a building's lifetime capital improvement plan, including energy related capital improvements, and
- Improve the safety, health and comfort of low income residents.

This MFAH opportunity sits at the nexus of priorities established by the [Connecticut Comprehensive Energy Strategy](#)¹ established by DEEP, [Governor Malloy's Commitment to Affordable Housing](#) including more than \$360 million for State funded affordable housing projects for seniors, working families, young professionals and other residents, and [CEFIA's Comprehensive Plan](#). It includes an important partnership with the CT Housing Finance Authority (CHFA), which finances approximately 45% of the State's affordable, multifamily units¹ and has a [stated policy](#) to require cost effective energy efficiency measures in all multifamily developments as well as support for the use of renewable and alternative energy.

CEFIA began a concerted effort to build deployment capacity in the MFAH sector during Q3 of 2013 as Kim Stevenson transitioned from winding down legacy CT Clean Energy Fund (CCEF) Technology Innovation Programs into the new role of spearheading CEFIA's Multifamily and Affordable Housing Programs, where she has deep expertise and previous professional experience.

This initiative began with a review of the MFAH sector to identify priority opportunities and challenges as well as holding exploratory meetings to establish relationships with sector leaders and key stakeholders including: CHFA, U.S. Department of Housing and Urban Development (HUD), CT based Community Development Financial Institutions (CDFI's), Utilities (CL&P and UI), CT Housing Coalition, Community Action Councils, CT Department of Public Health (DPH),

¹ Over the past 40 years, CHFA has provided financing for the acquisition, construction and/or rehabilitation of more than 35,800 units of affordable rental housing for families and the elderly across Connecticut.

Operation Fuel, and various private and non-profit housing developers. CEFIA's overarching strategy in building deployment capacity in the multifamily affordable housing sector is to identify and fill gaps and leverage CEFIA resources by supporting and partnering with organizations identified with a demonstrated track record of success both in Connecticut and nationally.

During Q3 and Q4 2013 CEFIA made significant progress in identifying opportunities and gaps for CEFIA's MFAH initiatives. We are now establishing important partnerships and are preparing to initiate programs that will require CEFIA Board input, support and approval in Q1 and Q2 of 2014. To that end, this document provides market context, an update on CEFIA's MFAH initiatives, as well as anticipated programs we will be bringing to the CEFIA BOD in 2014.

MARKET OPPORTUNITY AND CHALLENGES

Opportunity

Deployment of cost effective energy efficiency and renewable energy improvements in multifamily housing is sorely lacking in Connecticut (and nationally) and presents significant opportunity for investment. CEFIA estimates, conservatively, that potential annual utility cost savings for the multi-family housing sector is on the order of \$125 million per year².

Much of this housing stock was built before 1970 and now faces significant needs for energy updates and other capital improvements. Approximately 45% of multifamily housing units in Connecticut are located in properties with 20 or more units, which are predominantly concentrated in the State's largest cities (Bridgeport, Hartford, New Haven, Stamford, Waterbury), as well as located near existing or planned natural gas lines. Many are heated by oil furnaces and electrical heating systems, offering significant opportunity for fuel conversion to natural gas as well as other clean energy measures.

The "Fuel Poverty" Imperative

Home energy bills present a significant financial burden to low-income residents in Connecticut, where about one in five households cannot afford to pay their energy bills. These findings are based on a [study recently commissioned by Operation Fuel](#). The annual home energy affordability gap currently is about \$700 million for more than 295,000 Connecticut households with incomes at or below 200 percent of the Federal Poverty Level. This means that the average low-income household owes about \$2,363 more in energy bills than it can afford to pay³.

² This number assumes approximately 250,000 units in multi-family buildings (defined as buildings with 5 or more units) with potential to reduce average annual utility costs on the order of about \$500/unit).

³ The Affordability Gap measures the dollar amount by which actual home energy bills exceed affordable home energy bills. If a Connecticut household has an annual income of \$12,000 and an annual home energy bill of \$3,000, that household has a home energy burden of 25% ($\$3,000 / \$12,000 = 0.25$). An *affordable* home energy burden is set at 6% of annual income.

The primary source of energy assistance for Connecticut's lower-income households is the federal [Low-Income Home Energy Assistance Program \(LIHEAP\)](#). With a CT state allocation of about \$76 million, LIHEAP covers less than 11 percent of the state's home energy affordability gap. As a result, Connecticut's lower-income families and elderly residents must often choose between energy, food and other basic necessities and look to organizations such as Operation Fuel for energy assistance.

Clearly, realizing the savings potential of clean energy improvements reduces the need for families to make hard spending choices around basic necessities.

Gaps and Challenges

Connecticut's (as well as the nation's) multifamily residential sector has been difficult to penetrate for a multitude of reasons. These include:

- Lack of available capital to plan and finance upgrade costs (beyond incentives provided by utility and other programs)
- Challenges in securing lender consent for additional, secured financing because of programmatic prohibitions against new property liens (e.g. HUD- and FHA-financed properties), limited or non-existent borrower guarantees (e. g. tax credit projects, housing authorities, FHA-insured projects and securitized debt), or lack of other pledgeable assets, suitable security or limited cash flow or liquidity that prohibits use of conventional financing because of the limited financial strength of many property owners in low-income communities
- Split incentives related to utility cost savings between tenants and owners
- Energy-related health and safety conditions and building code violations, which are often costly, and must be remediated before weatherization and energy related improvements can move forward
- Property owner (customer/ demand side) confusion in negotiating the efficiency and renewable energy improvement process, identifying and securing reliable contractors, and navigating financial and other resources available
- Lack of performance data and case studies to build the business case and tell the story
- Lack of general market knowledge around implementation and benefits, as well as effective marketing efforts

CEFIA MULTIFAMILY HOUSING INITIATIVES

Certainly the biggest challenge confronting the MFAH sector has been building deal flow and closing deals, despite the significant investment opportunity. Therefore, a key tenet of CEFIA's strategy has been to identify and bring in national leaders, from within and outside

Connecticut, with demonstrated ability to “*crack the multifamily housing nut*” and successfully build and close deal flow and run programs. We have two stellar partnerships lined up, each with nationally recognized MFAH experts on their teams, and who are bringing, in combination, approximately \$1.5MM of their own funding and resources to Connecticut to build the market – attracted by the cutting edge clean energy leadership and achievements underway in Connecticut.

Our overall market development approach responds to the key gaps and challenges identified above and, with several strategic partners, we plan to support financing programs and products that provide:

1. *C-PACE multifamily loans, made on the basis of projected energy cost savings, and secured by a public benefit assessment and lien on the property.* Based on our current pipeline, we anticipate early C-PACE projects to include CHFA financed properties as well as market rate multifamily rental properties that can secure the lender consent required for C-PACE financing. Properties are anticipated to contain 100 units or more, given the project size needed to make C-PACE economics work.
2. *Unsecured multifamily loans, made on the basis of projected energy cost savings, with credit enhancements from CEFIA,* predominantly anticipated to consist of loan loss reserves. Given the programmatic and financial barriers described above, many MFAH properties, especially those with existing HUD or FHA financing or insurance, are banned from securing the lender consent required for C-PACE financing and, in most cases, can take on unsecured debt only. This category includes HUD funded public housing, all FHA and HUD funded or insured properties, as well as many of the underserved 3- to 6-unit buildings in our large cities, which are often over 100 years old, and in great need of energy and other capital improvements.

Channel Partners

We have identified the following organizations as key channels partners for building CEFIA’s MFAH pipeline, and have begun to establish working relationships with each. CHFA, in particular, is a critical partner, with whom CEFIA has been working closely on all our MFAH initiatives, including program development and sourcing deals.

- Connecticut Housing Finance Authority (CHFA)
- Connecticut Housing Coalition
- Community Action Councils
- Community Development Financial Institutions (CDFI’s)
- Federal Department of Housing and Urban Development (HUD)
- Large multifamily property owners and developers, both private and non-profit
- Public Housing Authorities, both state and federally financed
- Utility companies CL&P and UI, including properties deferred from weatherization and other energy improvements due to health and safety hazards

As with all CEFIA programs, our approach is to use the minimum level of CEFIA funds necessary to catalyze the market and leverage/ secure initial private funds, and then to reduce CEFIA's participation over time as the market takes off and the private sector takes over.

CEFIA has four major multifamily affordable housing initiatives in place, described below:

1. *Building the Multifamily Market through C-PACE*
2. *Building the Multifamily Market through CDFI's and Strategic Partners*
3. *WINN-HUD open market ESCO*
4. *CT Housing Finance Authority Partnership*

1. Building the Multifamily Market through C-PACE

CEFIA C-PACE Multifamily Housing Partner

CEFIA's strategy here is to secure and support a C-PACE multifamily housing partner who will be responsible for sourcing C-PACE multifamily transactions, providing technical assistance to owners in developing and submitting applications, and structuring and financing C-PACE eligible energy upgrades. The partner will be compensated on a fee-for-service basis, incorporated into origination and other transaction fees. CEFIA, in turn, will support its multifamily financing partner in building the C-PACE pipeline through lead referrals to qualified projects and by making CEFIA endorsed introductions to key channels partners. CEFIA will also provide credit enhancements to help catalyze the pipeline and close deals, if necessary. We will provide third party technical review and underwriting, as we do for all C-PACE deals.

CEFIA released an RFP for a C-PACE multifamily financing partner in October, 2013. The Urban Ingenuity team, including Clean Energy Solutions, Inc. and financing partners Hannon Armstrong and Wells Fargo Securities, was notified as the winning recipient in November, 2013. The team has secured a capital pool of \$900 million that is available for direct investment in building retrofit projects within the State of Connecticut. Urban Ingenuity estimates that the team will invest time and other resource investments valued at about \$500,000 in the first year of program operations.

Urban Ingenuity serves as Program Administrator for the Washington DC Commercial PACE program and is responsible for shepherding the first multifamily PACE project in the nation to closing.

Pipeline

There are currently 20 MFAH applications in the C-PACE pipeline, from private and non-profit owners, representing 12 municipalities. These prospects conservatively include well over 1,000 residential units and over 1.2 million square feet. CEFIA has received inquiries from 25 additional prospects, with that number now growing daily.

Key Milestones and Next Steps

CEFIA and Urban Ingenuity are currently in the process of establishing partnership terms prior to executing a Letter of Agreement (LOA). Once a LOA is in place, we will formally announce the partnership and CEFIA will initiate introductions to the key channel partners. We will keep the CEFIA BOD apprised of investment progress, as we do for all C-PACE projects. If multifamily specific credit enhancements are necessary for this program, we anticipate seeking CEFIA BOD support and approval in Q1 2014.

2. Building the Multifamily Market through CDFI's and Strategic Partnerships

For multifamily affordable housing projects where C-PACE financing is either not allowed or not a good fit, we are pursuing a strategy to support community development financial institutions (CDFIs) in building their capacity to offer clean energy loan products with strategic channel partners to support deal flow and a CEFIA endorsed technical assistance partner available to support owners in navigating the energy improvement process, and to support CDFIs in building capacity.

Proposed Use of CEFIA Funds/ Credit Enhancements

CEFIA funds of \$4MM, out of the \$5MM budgeted in FY14 for multifamily residential loans, are targeted to be used for these programs. They will be targeted as credit enhancements to support existing and new loan programs run by qualified CDFIs, and made available through a competitive RFP process. Loan programs are anticipated to include, but not be limited to the following:

- Working capital loans to perform necessary pre-development work, including energy audits, required to define project improvement scopes of work and make go/ no go investment decisions on energy improvements
- Bridge loans to cover utility incentives up front, enabling them to be factored in with equity and similar funding sources, thereby increasing the amount of debt financing that can be leveraged as well as the extent of cost effective clean energy improvements that can be made
- Long-term gap financing for comprehensive, cost effective energy improvements, including remediation of energy-related health and safety issues
- Construction and permanent financing for property renovation, to enable deeper and more comprehensive, cost effective energy improvements than were previously possible

Pool of Funds Concept

CEFIA's proposed approach is to establish a pool of funds from which the CDFIs can make minimum and maximum draws for credit enhancements awarded to loan programs proposed through the RFP process. Once a full draw is almost exhausted, a subsequent draw may be

requested. If drawn funds are not used within a pre-determined timeframe, they must be returned to the pool, thus incenting and ensuring funds are available for high performers. CEFIA funds for credit enhancements are expected to be made available to all pool participants until fully disbursed. CEFIA will set floors and ceilings on available credit enhancements – and establish a supportive competitive environment to incent getting loans closed, high quality projects done, cost reduction over time, and maximum leverage of CEFIA dollars with private funds.

Strategic Partnerships

- CEFIA MFAH Technical Assistance Partner – As CEFIA’s prospective MFAH Technical Assistance Partner, the team of [New Ecology](#) and [CNT Energy](#) will be recommended to multifamily property owners as a trusted energy advisor and owner’s agent to help navigate the energy improvement process including: benchmarking, auditing, scoping, financing, implementing, commissioning and post-completion monitoring.

New Ecology and CNT Energy are both nationally recognized leaders in building and operating successful MFAH energy improvement programs. They have been funded by the [JPB Foundation](#) of NY, focused on poverty alleviation, to develop the *National Delivery Network for Energy-Efficiency Services to Multifamily Affordable Housing Owners*.

Connecticut has been strategically identified as one of their first locations, where this team plans to open and staff an office and invest approximately \$1MM (\$500K cash/ \$500 in-kind) to help build the market.

- CT Housing Investment Fund (CHIF)/ CL&P Multifamily Loan Fund (Pilot) - [CHIF](#), a Hartford based CDFI, has played a leadership role in establishing and operating energy conservation loan funds for housing that serves low income residents in Connecticut. CHIF and CL&P are currently establishing a Multifamily Loan fund for owners of affordable multifamily properties to enable their participation in CL&P’s Home Energy Solutions-Income Eligible (HES-IE) program when other financing is not feasible. It will enable owners to fund the non-rebated portion of HES-IE project costs when other financing options are not available due to restrictions imposed by the underlying financing or limitations of the ownership structure.

CHIF Loan Loss Reserve Funded using CEFIA Innovation RFP Award of \$300,000

CHIF has secured a capital commitment of \$1 million for this multifamily fund through the [Opportunity Finance Network](#), a national technical assistance and funding organization serving the CDFI industry. CHIF was also awarded \$300,000 of American Recovery and Reinvestment Act (ARRA) funding by CEFIA as part of the CEFIA Innovation RFP in 2012. This award will be used as a loan loss reserve for the OFN funding, and for other third-party capital CHIF is able to raise, as this loan product shows proof of concept. CEFIA is currently

negotiating funding terms with CHIF and anticipates signing a funding agreement later this month or in early 2014.

Capitalization Request to CEFIA from CHIF and CL&P for \$1MM

In addition, CL&P has asked CEFIA to consider providing an additional \$1 million of capital to fund this loan program, in place of it coming from CT Energy Efficiency Fund (CEEF) funds. CEFIA has indicated that we are receptive to this request, however, terms must be negotiated with CHIF and CL&P and the request must go through CEFIA's diligence process and be approved by its Board of Directors. We plan to handle this request through the CEFIA strategic investment process and, if approved, funds would come out of the \$5MM budgeted for multifamily residential loans. Anticipated timing for due diligence and then presentation and request for approval to the CEFIA BOD is mid-January 2014.

- *CT Efficient and Healthy Homes Initiative (Expansion)* - As a result of the NU-NSTAR merger, and at the request of the Connecticut Consumer Council, approximately \$1.5MM has been made available to remediate building code and health and safety issues in Connecticut's low income housing sector. At DEEP's request, CEFIA was asked to provide recommendations regarding use of these funds, in order to align their use with the State's and CEFIA's broader goals of using limited public funds to leverage private financing, resulting in broader and deeper market penetration of clean energy measures as well as increased cost savings to tenants and property owners.

To this end, the CEFIA MFAH team recommends using these funds to expand the reach and scope of the [CT Efficient Healthy Homes Initiative \(CTEHHI\)](#), funded by CEEF and DOE under a Weatherization Innovation Pilot Program, which has already demonstrated great success, and has a ready pipeline of clients and homes in need of services, yet has run out of funding. As a result of discussions that took place with the CTEHHI program partners, including the utilities, CHIF, and CT DPH, CEFIA will join this initiative to support development of expanded and innovative financing programs. We will keep the CEFIA BOD updated on progress as the program develops.

Pipeline

CEFIA understands there to be a ready pipeline of utility sponsored Home Energy Solutions – Income Eligible (HES-IE) projects, in excess of 1,200 affordable housing units⁴, that are in need of gap financing for the portion of energy measures not covered by utility incentives as well as energy related health and safety measures in need of remediation.

⁴ According to conversations with the utilities and CHIF.

Key Milestones and Next Steps

We are moving all of these initiatives forward simultaneously against the following targets:

- Completion of the diligence process and proposal to CEFIA BOD for approval of funds to capitalize CHIF MFAH Loan Fund (\$1MM of 5MM budgeted for multifamily loans) – anticipated for Jan 17 CEFIA BOD meeting
- Formal announcements of CEFIA New Ecology-CNT Partnership – Q1 2014
- Release of an RFP to CDFIs for proposals to support MFAH loan programs and CEFIA BOD for approval of winning proposals (\$4MM of \$5MM budgeted for multifamily loans) – latter part of Q1 2014

For those initiatives that do not require CEFIA BOD approval, we will continue to keep the BOD updated on progress.

3. WINN-HUD Open Market ESCO

In the fall of 2011, WINN Development applied for and was awarded a \$5.25 million grant from HUD, with a letter of support from CEFIA, to pilot an innovative energy efficiency program designed to serve multifamily low-income housing developments. This HUD innovation initiative was established to facilitate “game-changing” solutions to effective investment of private capital to improve the energy efficiency of low-income multifamily housing. The WINN proposal – *Multifamily Energy Loan Fund* – created a loan fund to facilitate energy savings agreements (ESA) in the multifamily (40-300 units) housing market. The program operates in Connecticut, Massachusetts and New York.

Because existing debt, programmatic restrictions, and complex partnerships limit the ability of low income properties to add new debt to finance energy improvements, WINN developed an off balance sheet approach. Through Energy Savings Performance Contracts (ESPC) and insured savings guarantees, a third party energy services integrator – the Open Market ESCO – borrows funds to finance an energy project on behalf of the multifamily property owner. HUD and CEFIA funds are used to leverage private capital and finance the improvements through the Open Market ESCO.

CEFIA has supported WINN through the program development process and, in August 2013, CEFIA executed a *Master Credit Enhancement and Participation Agreement*, committing up to \$1.87MM for Connecticut projects financed through this program.

Unfortunately, WINN has not made hoped-for progress in selling the program and closing loans because of structural issues with the financing that are not attractive to owners. To its credit, the WINN team has put these issues on the table with HUD and CEFIA, and efforts are being made to restructure the program as a result of lessons learned. CEFIA staff actively participates in regular pipeline reviews with WINN and has actively supported marketing efforts in CT. We will continue to support WINN as they work to put forth creative restructuring proposals.

Key Milestones and Next Steps

CEFIA anticipates a proposal from WINN, in late Dec – early Jan, to restructure financing terms offered to property owners through the Open Market ESCO. We are hopeful that WINN can turn things around, but anticipate that reprogramming of CEFIA funds allocated to this program may be necessary. (HUD funds must be committed/ spent by the Sept 23, 2014 Program deadline, with the possibility of a 6-month extension that cannot be requested until March 2014.) Once CEFIA has more clarity on WINN's proposed modifications, we will update the CEFIA BOD and seek BOD input and approvals, as necessary.

4. CT Housing Finance Authority (CHFA) Partnership

In June 2013 CEFIA and CHFA signed a Memorandum of Agreement (MOA) that recognized the importance and benefits of cooperation between the two organizations in accelerating the implementation of energy efficiency and renewable energy improvements for owners and tenants of affordable multifamily rental housing. To this end, and in an effort to streamline and coordinate program offerings, CEFIA and CHFA continue to collaborate and share information related to proposed loan programs and funding availability, respective project pipelines, as well as energy monitoring and verification (EM&V) initiatives and requirements.

Most recently, and per the MOA, CHFA has requested a proposal from CEFIA to run a prospective pilot initiative to help inform multifamily energy monitoring and verification (EM&V) and underwriting requirements. A successful outcome will achieve the following:

- Establish a clear process for benchmarking, identifying, underwriting, implementing, and measuring energy improvements.
- Understand how to reliably underwrite energy improvements and provide allowances for additional capital improvements based on an enhanced ability to reliably model, specify and achieve cost savings from the energy improvements.
- Establish when and how to optimally select between or layer the various financing options including CHFA funding, C-PACE funding and other sources of capital.
- Establish case studies and meaningful energy performance data, based on the pilots, to showcase and demonstrate the benefits of energy improvements to multifamily housing resulting from the pilots.

CEFIA has prepared a detailed proposal and budget for CHFA to undertake the pilot on five (5) master-metered properties previously identified by CHFA, with 283 units in total. The Pilot process has proposed to include, for each property, energy benchmarking and auditing, definition of project scope to include all cost effective energy measures, financing, implementation, commissioning, and post project energy performance monitoring and verification. Work will be carried out by CEFIA's C-PACE and multifamily housing technical advisors, with oversight from CEFIA's MFAH and C-PACE teams. The implementation of energy improvements for all 5 properties is anticipated to take about 1 year, with 3 years of energy monitoring post commissioning.

Key Milestones and Next Steps

Pending the approval of CHFA's BOD, CEFIA will be funded by CHFA to oversee the Pilot initiative and CEFIA, in turn, will pay its C-PACE technical advisors to perform the bulk of the work. CEFIA hopes to have a contract in place with CHFA and to begin the project in Jan 2014. We will continue to update the CEFIA BOD as progress is made on this initiative.

ⁱ The following are specific priorities in the CT Comprehensive Energy Strategy that relate to CEFIA's MFAH initiatives (pp ii - v):

Energy Efficiency

- Reach all sectors and all buildings including houses, apartments, condos, and senior living centers – with special focus on groups that have not been fully reached by past efficiency programs such as small businesses and the low-income community
- Go beyond a traditional focus on upgraded lighting and weather stripping to deliver deeper efficiency gains in heating, air conditioning, ventilation, insulation, windows, furnaces, boilers, and other appliances such as refrigerators, as well as process efficiencies in the industrial sector
- Leverage private capital through innovative financing mechanisms including Connecticut's first-in-the-nation Green Bank (the Clean Energy Finance and Investment Authority), standardized energy efficiency performance contracts, and the state's new Commercial Property-Assessed Clean Energy (C-PACE) program
- Reinvigorate and broaden the existing Home Energy Solutions program to ensure that additional ratepayer dollars achieve maximum reach and impact with carefully established goals and metrics to ensure ongoing performance improvements
- Establish building efficiency standards for both new construction and retrofits as well as a mechanism for benchmarking building efficiency and disclosing efficiency scores at the time of rental or sale

Electricity

- Focus on the deployment of renewable energy at scale using limited government resources to induce private sector investment through the Connecticut Green Bank (CEFIA), Zero (and Low) Emissions Renewable Energy Credits, and other innovative financing mechanisms

Natural Gas

- Financing options for homeowners and businesses to eliminate the upfront burden of converting furnaces, boilers, and other appliances to natural gas Alternative financing for low-income homeowners through community banks and credit unions with the state providing incentives or financing through CEFIA