



CLEAN ENERGY

FINANCE AND INVESTMENT AUTHORITY

November 26, 2012

Dear Deployment Committee Members:

We are looking forward to spending the afternoon with you on Friday.

The Deployment Committee meeting will meet back in Rocky Hill after the Board of Directors meeting on Friday, November 30, 2012 from 12:00 to 2:30 p.m. (lunch will be provided. The meeting will be held at the offices of the Clean Energy Finance and Investment Authority at 865 Brook Street, Rocky Hill, CT 06067.

We have a really full agenda, which includes:

- **Repurposed ARRA-SEP Funds** – three (3) proposals from the Clean Energy Financial Innovation RFP that propose to use \$1.31 million of the repurposed ARRA-SEP funds and between \$500,000 to \$3.0 million of ratepayer funds, to attract nearly \$14.0 million of private sector capital. The proposals include a low income program with a Community Development Financial Institution, a utility and credit union financing program partnership on renewable energy, energy efficiency, and fuel conversion and equipment replacement, and a solar PV loan partnership with an institutional investor.¹
- **Residential Solar Investment Program** – as we near the end of Step 2 of the Residential Solar Investment Program, staff is proposing a portfolio of incentives and financing for Step 3 and beyond. In addition to the proposed new rebate and performance based incentives, there are also two new financing programs that we will be proposing: (1) a follow-on lease product from the award-winning Connecticut Solar Lease Program that will attract nearly \$50 million of private capital, and (2) a pilot, competitive, low-interest, long-term loan program.
- **Other Items** – there are several other items we will address, including a C-PACE transaction involving a multifamily property that will reach over 300 units in the towns of Simsbury and East Granby and provide them with energy efficiency retrofit measures and high efficiency heating/cooling equipment, wrapping up a transition program on workforce development in partnership with DEEP and the Connecticut Energy Efficiency Fund, and a proposal to allow CEFIA staff to move

¹ It should be noted, that we haven't provided a due diligence package for the solar PV loan partnership yet as we expect to negotiate with the institutional investor next week. We will provide the Deployment Committee members with a due diligence package next week contingent upon the outcome of those discussions.

forward on projects that are consistent with the strategic plan and budget and less than \$300,000.

Once we get through the entire agenda for Friday, then we will have put CEFIA in a position to use about \$15 million of ratepayer funds and nearly \$5 million of ARRA-SEP funds to attract \$70 million of private capital in the residential sector resulting in the production of about 325,000 MWh from solar PV and 2,600,000 MMBtus of energy savings from solar hot water systems and energy efficiency projects over the 20-year period of the financing programs.

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

Sincerely,

Bryan Garcia
President and CEO

Bert Hunter
Executive Vice President and CIO



CLEAN ENERGY

FINANCE AND INVESTMENT AUTHORITY

AGENDA

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

Friday, November 30, 2012 – Special Meeting
12:00-2:30 p.m.

Staff Invited: Mackey Dykes, Brian Farnen, Bryan Garcia, David Goldberg, Ben Healey, Bert Hunter, Alexandra Lieberman, and Dave Ljungquist

1. Call to order
2. Public Comments – 5 minutes
3. Approval of meeting minutes for August 24, 2012* – 5 minutes
4. Review and Approval of Repurposed American Recovery and Reinvestment Act State Energy Program – Clean Energy Financial Innovation Program
 - a. Review and approval of Residential Low Income Clean Energy Loan Program – Public-Private Partnership with the Bank of America, Housing Development Fund, and the Opportunity Finance Network (ARRA-SEP supported Financing Program)* – 20 minutes
 - b. Review and approval of Residential Energy Efficiency and Equipment Replacement Loan Program – Public-Private Partnership with Connecticut-Based Credit Unions and Community Banks (ARRA-SEP supported Financing Program)* – 20 minutes
 - c. Review and approval of Residential Solar PV Loan Program – Public-Private Partnership with Mass Mutual and Sungage (ARRA-SEP supported Financing Program)* – 20 minutes
5. Review and recommendation for approval of Step 3 and Step 4 of the Residential Solar Investment Program (Statutory Program)* and Financing Programs – 20 minutes
 - a. Review and approval of Residential and Commercial Solar PV and Solar Hot Water Lease Program – Public-Private Partnership with AFC First Financial and US Bank (Financing Program)* – 30 minutes
 - b. Review and approval of the Residential Solar Investment Program Capital Competition Pilot Loan Program (Financing Program)* – 10 minutes

6. Review and approval of C-PACE transactions (Financing Program)* – 10 minutes
 - a. FISH Properties* – East Granby and Simsbury
 - b. 542 Westport Avenue – Norwalk
 - c. Galleria – Middletown
7. Review and approval of Technical High School Training Program* (Transition Program) – 5 minutes
8. Proposed amendment and recommendation of approval to the Board of Directors of the CEFIA Bylaws Section 5.3.3. Deployment Committee* – 5 minutes
9. Review and approval of Deployment Committee regular meeting schedule for 2013* – 5 minutes
10. Adjourn

*Denotes item requiring Committee action

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

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Clean Energy Finance and Investment Authority, 865 Brook Street, Rocky Hill, CT



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RESOLUTIONS

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

Friday, November 30, 2012 – Special Meeting
12:00-2:30 p.m.

Staff Invited: Mackey Dykes, Brian Farnen, Bryan Garcia, David Goldberg, Ben Healey, Bert Hunter, Alexandra Lieberman, and Dave Ljungquist

1. Call to order
2. Public Comments – 5 minutes
3. Approval of meeting minutes for August 24, 2012* – 5 minutes

RESOLUTION #1

Motion to approve the minutes of the Deployment Committee of August 24, 2012 Special Meeting. Second. Discussion. Vote.

4. Review and Approval of Repurposed American Recovery and Reinvestment Act State Energy Program – Clean Energy Financial Innovation Program – 60 minutes
 - a. Review and approval of Residential Low Income Clean Energy Loan Program – Public-Private Partnership with the Bank of America, Housing Development Fund, and the Opportunity Finance Network (ARRA-SEP supported Financing Program)* – 20 minutes

RESOLUTION #2

WHEREAS, the Clean Energy Finance and Investment Authority (CEFIA) has entered into an Memorandum of Agreement (MOA) with the Department of Energy and Environmental Protection (DEEP) to repurpose American Recovery and Reinvestment Act State Energy Program (ARRA-SEP) fund for the undertaking of a project of mutual interest;

WHEREAS, the project of mutual interest set forth in the MOA is to provide funding for credit enhancements (i.e., loan loss reserves, interest rate buy-downs, third party loan insurance) for two financing programs administered by CEFIA. The two

programs supported by this funding are the Residential Clean Energy Financing Program and the Clean Energy Financial Innovation Program;

WHEREAS, the Clean Energy Financial Innovation Program shall be used to leverage additional public and private sector sources of capital through a competitive solicitation process designed and administered through CEFIA;

WHEREAS, the Housing Development Fund, Inc. submission of the Cozy Loans Program (Program) was down selected under CEFIA's competitive solicitation process for the Clean Energy Financial Innovation Program;

NOW, therefore be it:

- (1) Resolved, that funding be approved for the Program in an amount not-to-exceed \$360,000 for a Loan Loss Reserve (LLR) and \$50,000 for an Interest Rate Buydown (IRB) ("Credit Enhancements") through the use of repurposed ARRA-SEP program funds;
 - (2) Resolved, that the President of CEFIA; and any other duly authorized officer of CEFIA, is authorized to execute and deliver, any contract or other legal instrument necessary to effect the Credit Enhancements on such terms and conditions consistent with the term sheet dated November 21, 2012 and as he or she shall deem to be in the interests of CEFIA and the ratepayers no later than six months from the date of this resolution; and
 - (3) Resolved, that the proper CEFIA officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instrument.
- b. Review and approval of Residential Energy Efficiency and Equipment Replacement Loan Program – Public-Private Partnership with Connecticut-Based Credit Unions and Community Banks (ARRA-SEP supported Financing Program)* – 20 minutes

RESOLUTION #3

WHEREAS, the Clean Energy Finance and Investment Authority (CEFIA) has entered into an Memorandum of Agreement (MOA) with the Department of Energy and Environmental Protection (DEEP) to repurpose American Recovery and Reinvestment Act State Energy Program (ARRA-SEP) fund for the undertaking of a project of mutual interest;

WHEREAS, the project of mutual interest set forth in the MOA is to provide funding for credit enhancements (i.e., loan loss reserves, interest rate buy-downs, third party loan insurance) for two financing programs administered by CEFIA. The two programs supported by this funding are the Residential Clean Energy Financing Program and the Clean Energy Financial Innovation Program;

WHEREAS, the Clean Energy Financial Innovation Program shall be used to leverage additional public and private sector sources of capital through a competitive solicitation process designed and administered through CEFIA;

WHEREAS, the Next Step Living, Inc. (NSL) submission of the CT HELPS Program (Program) was down selected under CEFIA's competitive solicitation process for the Clean Energy Financial Innovation Program;

NOW, therefore be it:

- (1) Resolved, that funding be approved for the Program in an amount not to exceed \$600,000 for a Loan Loss Reserve (LLR) ("Credit Enhancement") through the use of repurposed ARRA-SEP program funds, of which \$300,000 will be set aside for a period of 18 months from the program's launch date to support financing provided to customers of NSL;
- (2) Resolved, that the President of CEFIA; and any other duly authorized officer of CEFIA, is authorized to execute and deliver, any contract or other legal instrument necessary to effect the Credit Enhancement with terms and conditions consistent with the term sheet substantially in the form included in the Deployment Committee Due Diligence package dated November 30, 2012 and as he or she shall deem to be in the interests of CEFIA and the ratepayers; and
- (3) 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.

- c. Review and approval of Residential Solar PV Loan Program – Public-Private Partnership with Mass Mutual and Sungage (ARRA-SEP supported Financing Program)* – 20 minutes

RESOLUTION #4

WHEREAS, the Clean Energy Finance and Investment Authority (CEFIA) has entered into an Memorandum of Agreement (MOA) with the Department of Energy and Environmental Protection (DEEP) to repurpose American Recovery and Reinvestment Act State Energy Program (ARRA-SEP) fund for the undertaking of a project of mutual interest;

WHEREAS, the project of mutual interest set forth in the MOA is to provide funding for credit enhancements (i.e., loan loss reserves, interest rate buy-downs, third party loan insurance) for two financing programs administered by CEFIA. The two programs supported by this funding are the Residential Clean Energy Financing Program and the Clean Energy Financial Innovation Program;

WHEREAS, the Clean Energy Financial Innovation Program shall be used to leverage additional public and private sector sources of capital through a competitive solicitation process designed and administered through CEFIA;

WHEREAS, Sungage, Inc.'s submission of the Solar Loan Program (Program) was down selected under CEFIA's competitive solicitation process for the Clean Energy Financial Innovation Program.

NOW, therefore be it:

- (1) Resolved, that funding be approved for the Program in an amount not-to-exceed \$300,000 for a Loan Loss Reserve (LLR) through the use of repurposed ARRA-SEP program funds;
 - (2) Resolved, that the Deployment Committee hereby recommends to the CEFIA Board of Directors that the Board of Directors grant approval for CEFIA to establish special purpose vehicles (limited liability companies, "SPVs") to facilitate the funding for the proposed Program;
 - (3) Resolved, that the Deployment Committee hereby recommends to the CEFIA Board of Directors that the Board of Directors grant approval for CEFIA to lend to the SPVs for the purposes of funding the loans to be granted to Connecticut homeowners under the Program subject to the following limits:
 - a. A maximum limit for all long term loans of \$500,000;
 - b. A maximum limit for revolving loan advances of:
 - i. \$1,500,000 in the event CEFIA is the sole senior lender to the SPV, or
 - ii. \$2,200,000 in the event CEFIA is a subordinated lender to the SPV with a senior lender providing not more than \$4,500,000 to the SPV;
 - (4) Resolved, that the President of CEFIA; and any other duly authorized officer of CEFIA, is authorized to execute and deliver, any contract or other legal instrument necessary to effect the Credit Enhancements, senior debt and subordinated debt on such terms and conditions consistent with the term sheet dated November 21, 2012 and as he or she shall deem to be in the interests of CEFIA and the ratepayers no later than six months from the date of this resolution; and
 - (5) Resolved, that the proper CEFIA officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instrument.
 - (6) Resolved, that the Deployment Committee action is consistent with CEFIA's purposes as codified in Section 16-245n(d)(1) of the Connecticut General Statutes (C.G.S.), its board approved Resolution of Purposes and CEFIA's Comprehensive Plan.
5. Review and recommendation for approval of Step 3 and Step 4 of the Residential Solar Investment Program (Statutory Program)* and Capital Competition Loan (Financing Programs)* – 20 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, 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; and

NOW, therefore be it:

RESOLVED, that the Deployment Committee hereby recommends to the Board of Directors for approval of the Schedule of Incentives for Step 3 to achieve 7.6 MW of solar PV deployment – 3.8 MW of Rebates and 3.8 MW of PBI;

RESOLVED, that the Deployment Committee hereby directs staff that at the point of the Step 3 of the Schedule where 2.0 MWs of committed capacity is reached, or earlier if staff deems it appropriate, for either the PBI or the Rebate models, CEFIA staff will analyze the date of the performance of the Program Plan and make a recommendation to the Deployment Committee on the Step 4 funding allocation and incentive level;

RESOLVED, that the Deployment Committee hereby recommends that by (a) the point of the Step 3 incentive where 3.0 MW of committed capacity is reached for either the PBI or the Rebate models or (b) January 1, 2014 whichever comes first, the Board will approve a Step 4 incentive and inform residential solar installers to ensure the sustained and orderly deployment of the residential solar market in Connecticut; and

RESOLVED, that the Deployment Committee hereby recommends to the Board of Directors for approval of the amount of solar PV deployment for Step 4 to achieve 10.0 MW of installed capacity – 5.0 MW of Rebates and 5.0 MW of PBI. The amount of incentive shall be determined at such time in the future as is appropriate.

- a. Review and approval of Residential and Commercial Solar PV and Solar Hot Water Lease Program – Public-Private Partnership with AFC First Financial and US Bank (Financing Program)* – 30 minutes

RESOLUTION #6

WHEREAS, the Clean Energy Finance and Investment Authority (CEFIA) has entered into an Memorandum of Agreement (MOA) with the Department of Energy and Environmental Protection (DEEP) to repurpose American Recovery and Reinvestment Act State Energy Program (ARRA-SEP) fund for the undertaking of a project of mutual interest;

WHEREAS, the project of mutual interest set forth in the MOA is to provide funding for credit enhancements (i.e., loan loss reserves, interest rate buy-downs, third party loan insurance) for financing programs administered by CEFIA. The program supported by this funding is the CT Solar Lease 2 Program (the Program);

WHEREAS, CEFIA proposes to reintroduce its Solar Lease program which builds on the success of the first Solar Lease program and achieves the additional benefits of enabling Connecticut homeowners to work with qualified installers of their choice, ensuring that Connecticut’s solar installer base remains robust, diverse and able to reach all Connecticut residents, permit homeowners to lease systems for a 20- year

period (5 years longer than the first program and competitive with the major national installers), permit financing of solar hot water systems and make a portion (20%) of the fund proposed available to non-residential end-users;

WHEREAS, CEFIA's Program Partners are desirous of moving to the capital raise phase of the program, having achieved a capital structure and program design that CEFIA staff and CEFIA's advisors believe will be successful;

NOW, therefore be it:

- (1) **RESOLVED**, that the Deployment Committee recommends that the CEFIA Board of Directors approve funding for the Program in the following amounts:
 - A. an amount not-to-exceed \$3.5 million for a Lease Loss Reserve (LLR) through the use of repurposed ARRA-SEP program funds;
 - B. an amount not-to-exceed \$7.2 million for Sponsor Equity to be invested into the SPV to be established for the Program; and
 - C. an amount not-to-exceed \$2.3 million for Subordinated Debt
- (2) **RESOLVED**, that the Deployment Committee authorizes CEFIA staff to work with the Reznick Group to manage a capital raise in an amount not to exceed \$60 million for the Program;
- (3) **RESOLVED**, that the President of CEFIA and any other duly authorized officer of CEFIA, is authorized to execute and deliver, any contract or other legal instrument necessary to secure a non-binding agreement with senior lender(s) and a tax equity investor and subject to final approval by CEFIA's Board of Directors on such terms and conditions consistent with the presentation in Staff's Program Qualification Memo dated November 30, 2012 and as he or she shall deem to be in the interests of CEFIA and the ratepayers no later than six months from the date of this resolution; and
- (4) **RESOLVED**, that the proper CEFIA officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instrument or instruments.

- b. Review and approval of the Residential Solar Investment Program Capital Competition Pilot Loan Program (Financing Program)* – 10 minutes

RESOLUTION #7

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; and

WHEREAS, CEFIA seeks to provide a \$1 million loan pilot program to the portfolio of incentives offered to support the residential solar PV program through a Request for Proposal competitive solicitation to provide a long-term and low-interest loan to the winning bidder for delivering the maximum amount of clean energy produced without the use of an expected performance-based incentive (Rebate) or performance based incentive (PBI).

NOW, therefore be it:

RESOLVED, that the Deployment Committee authorizes the issuance of a Request for Proposal competitive solicitation to provide a long-term and low-interest loan in an amount not to exceed \$1 million dollars to the winning bidder for delivering the maximum amount of clean energy produced without the use of a Rebate or PBI incentive pursuant to Section 106 of Public Act 11-80.

RESOLVED, that if the pilot loan program is successful, the Deployment Committee will recommend to the Board of Directors an expansion of funds up to \$10 million for full rollout of the program;

6. Review and approval of C-PACE transactions (Financing Program)* – 10 minutes
7. Review and approval of Technical High School Training Program* (Transition Program) – 5 minutes

RESOLUTION #8

WHEREAS, Clean Energy Finance and Investment Authority (CEFIA) Board of Directors Approved of a Comprehensive Plan and Budget for Fiscal Year 2013;

WHEREAS, workforce development is a “program in transition” in the Comprehensive Plan that is intended to support post-secondary green job training programs offered by the Connecticut Technical High School System, including professional development, curriculum materials, hands-on solar PV and solar hot water systems, diagnostic and troubleshooting equipment and materials to construct “E-Houses” as reiterated in the comprehensive plan.

WHEREAS, CEFIA focuses on financing the deployment of commercially available technologies, the workforce development programs will be transitioned to another government entity and/or the Energy Efficiency Fund;

WHEREAS, CEFIA has funded E-Houses through the Connecticut Technical High School System (CTHSS) that included clean energy technologies at six (6) technical high schools (E.C. Goodwin--New Britain, Oliver Wolcott--Torrington, Grasso--Groton, Norwich--Norwich, Kaynor--Waterbury, Henry Abbott—Danbury);

WHEREAS, the Energy Efficiency Fund will at a minimum match CEFIA’s funding commitment and take over the administration of the E-House program at twelve (12) new schools including, Platt—Milford, Bullard-Havens—Bridgeport, Cheney—Manchester, O’Brien—Ansonia, Windham—Willimantic, Vinal Regional—Middletown,

Bristol—Bristol, A.I. Prince—Hartford, Ellis—Danielson, H.C. Wilcox—Meriden, Eli Whitney Regional—Hamden, J.M. Wright—Stamford;

NOW, therefore be it:

RESOLVED:

- (1) that the CEFIA has determined that funding for the remaining twelve (12) E-House Projects (Project) in the form of a grant, is consistent with CEFIA's Comprehensive Plan's Programs in Transition, and that funding be approved for the Project in an amount not-to-exceed \$395,000.00;
 - (2) that the President of CEFIA; and any other duly authorized officer of CEFIA, is authorized to execute and deliver, not later than six months from the date of this resolution, any contract or other legal instrument necessary to effect the Grant on such terms and conditions as he or she shall deem to be in the interests of CEFIA and the ratepayers; and
 - (3) that the proper CEFIA officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instrument.
8. Proposed amendment and recommendation of approval to the Board of Directors of the CEFIA Bylaws Section 5.3.3. Deployment Committee* – 5 minutes

RESOLUTION #9

WHEREAS, pursuant to Section 5.3.3 of the Clean Energy Finance and Investment Authority (CEFIA) Bylaws, the CEFIA Deployment Committee has been granted the authority to evaluate and approve funding requests between \$300,000 and \$2,500,000;

WHEREAS, CEFIA staff requests that staff have the authority to evaluate and approve funding requests less than \$300,000, which are consistent with the CEFIA Comprehensive Plan and approved within CEFIA's fiscal year budget;

NOW, therefore be it:

RESOLVED, that the Deployment Committee recommends that the CEFIA Board of Directors hereby approves the authorization of CEFIA staff to evaluate and approve funding requests less than \$300,000 which are pursuant to an established formal approval process requiring the signature of a CEFIA officer, consistent with the CEFIA Comprehensive Plan, and approved within CEFIA's fiscal budget.

9. Review and approval of Deployment Committee regular meeting schedule for 2013 * – 5 minutes

RESOLUTION #10

Motion to approve the regular meeting schedule of the Deployment Committee for 2013 for the Clean Energy Finance and Investment Authority. Second, Discussion. Vote.

10. Adjourn

*Denotes item requiring Committee action

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

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Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #1

Call to Order

November 30, 2012



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Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #2

Public Comments

November 30, 2012



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Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #3

Approval of Meeting Minutes of August 24, 2012

November 30, 2012



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Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #4

Financing Programs –Repurposed ARRA-SEP Funds

November 30, 2012

Comprehensive Plan and Budget – Consistent with CES

Deployment Committee Meeting Overview



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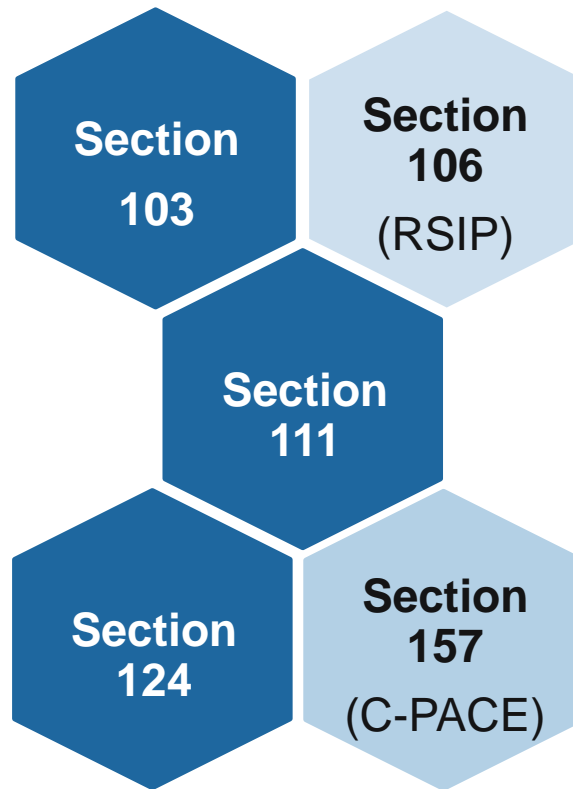
Transition Programs



Agenda Items

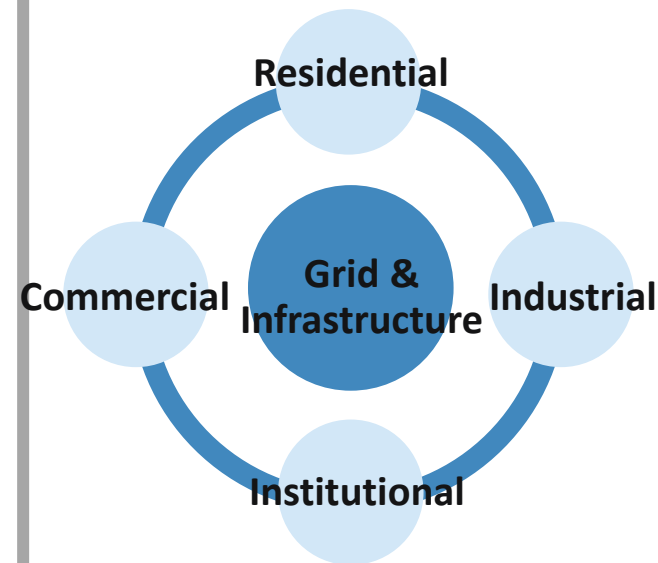
7

Statutory Programs



5, 6

Financing Programs



4a, 4b, 4c,
5a, 5b

ARRA-SEP Program

Overview



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- ▶ **ARRA-SEP grant to Connecticut** – \$38.50 million to DEEP to support renewable energy, energy efficiency, alternative fuel vehicles and infrastructure and building code and operator training
- ▶ **Clean Energy Fund (CCEF)** – \$20.00 million to support four grant programs
 - ▶ New Programs – solar thermal (\$4 million) and geothermal (\$5 million)
 - ▶ Existing Programs – solar PV (\$3 million) and fuel cells (\$8 million)
- ▶ **Clean Energy Finance and Investment Authority (CEFIA)** – worked with DEEP and repurposed \$8.25 million of CCEF grant programs to support credit enhancement programs – \$1.36 million is for the Clean Energy Financial Innovation Program (DEEP Contributed additional \$110,000 of original proposed \$1,250,000) and \$7.00 million for Residential Clean Energy Financing Program



- ▶ **Statute** – C.G.S. Section 16-245n(a)
- ▶ **Renewable Energy** – solar PV, solar hot water systems, geothermal, micro fuel cells, and micro CHP (does not include small wind)
- ▶ **Energy Efficiency** – lighting, duct and air sealing, insulation, furnace replacement, boiler replacement, window replacement, AC system replacement, heat pumps, and other energy efficiency measures (i.e. conversion of heating oil to natural gas)
- ▶ **Other** – EV recharging station

ARRA-SEP Program

Credit Enhancement



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- ▶ **Credit Enhancement** – anything that improves the chances that financing will be repaid. Comes in one of several forms:
 - **Interest Rate Buydown** – lowering of the interest rate to make the financing product more attractive
 - **Loan Loss Reserve** – sets aside (reserves) cash to cover potential losses (in case of default) cash in the reserve fund earns zero to minimal return. For instance, a 5% loan loss reserve on a \$60 million loan portfolio would cover up to \$3 million of a capital provider's losses on that loan portfolio.
 - **Third Party Insurance** – insurance that covers a portion of total defaults, up to a capped amount. Instead of setting funds aside in a reserve account to cover losses (as in a loss reserve), the CEFIA would pay an insurance premium to a private insurer. Loan loss insurance is not easy to secure at the moment.

To avoid DOE reporting requirements in perpetuity, DEEP and CEFIA **repurposed ARRA-SEP funds for credit enhancements and not revolving loan funds.**

Clean Energy Financial Innovation Program Process



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Program RFP Launched 04/12/2012



7 Proposals Submitted 05/30/12



4 Recommended by Evaluation Committee 06/29/12



3 Recommended for Approval to the Deployment Committee 11/30/12 – Note another to come later in 2013

Clean Energy Financial Innovation Program

Evaluation Committee



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- ▶ Bryan Garcia
- ▶ Dale Hedman
- ▶ Bert Hunter
- ▶ Teddi Ezzo
- ▶ Cindy Jacobs
- ▶ Shirley Bergert
- ▶ Jamie Howland
- ▶ Rich Steeves
- ▶ Merrian Borgeson

Residential Clean Energy Financing Programs

Overview of Programs



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	Launch Date	ARRA-SEP LLR/IRB* (M)	Type	CEFIA Senior or Sub Loan (M)	Private Capital (M)	Interest Rate	# of Loans (approx)	CEFIA Leverage	Estimated Energy Produced and Saved
Total Planned Programs		\$4.8		\$11.0	\$63.7	4.5%-10.99%	3,040	5.9x	12.7MW 80,000MMBtus

PROGRAM SPECIFICS									
Low Income Energy Loan Fund (Pilot)	Jan-2013	\$0.41	\$360K LLR and \$50K IRB	\$0.00	\$2.5	4.50%	200	N.M.	25,000 MMBtu
Equipment Replacement and Clean Energy Loan (Pilot)	Jan-2013	\$0.6	LLR	\$0.00	\$6.7	4.49%-6.99%	650	N.M.	50,000 MMBtu
Solar Loan (Pilot)**	Jan-2013	\$0.30	LLR	\$1.5	\$4.5	6.99-10.99%	240	3.0x	1.7 MW
Solar PV and Solar Hot Water Systems Lease/PPA	Mar-2013	\$3.50	LLR	\$9.50	\$50.0	Energy Price	1,950	5.3x	11.0 MW (solar PV)
									5,000 MMBtu (SHWS)

* ARRA SEP funds are not ratepayer capital. LLR – Loan Loss Reserve; IRB – interest rate buy down

**Amount of CEIA debt in Solar Loan will range from \$500K-\$2.5M, depending on deal specifics



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Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #4a

Residential Low Income Clean Energy Loan Program

November 30, 2012



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Cozy Loans

Leveraging ARRA-SEP funds to attract private capital into the low- to moderate-income space in Connecticut

November 30, 2012

Cozy Loans

Key Questions



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- ▶ **Strategic Plan** – is the Solar Loan Program 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?

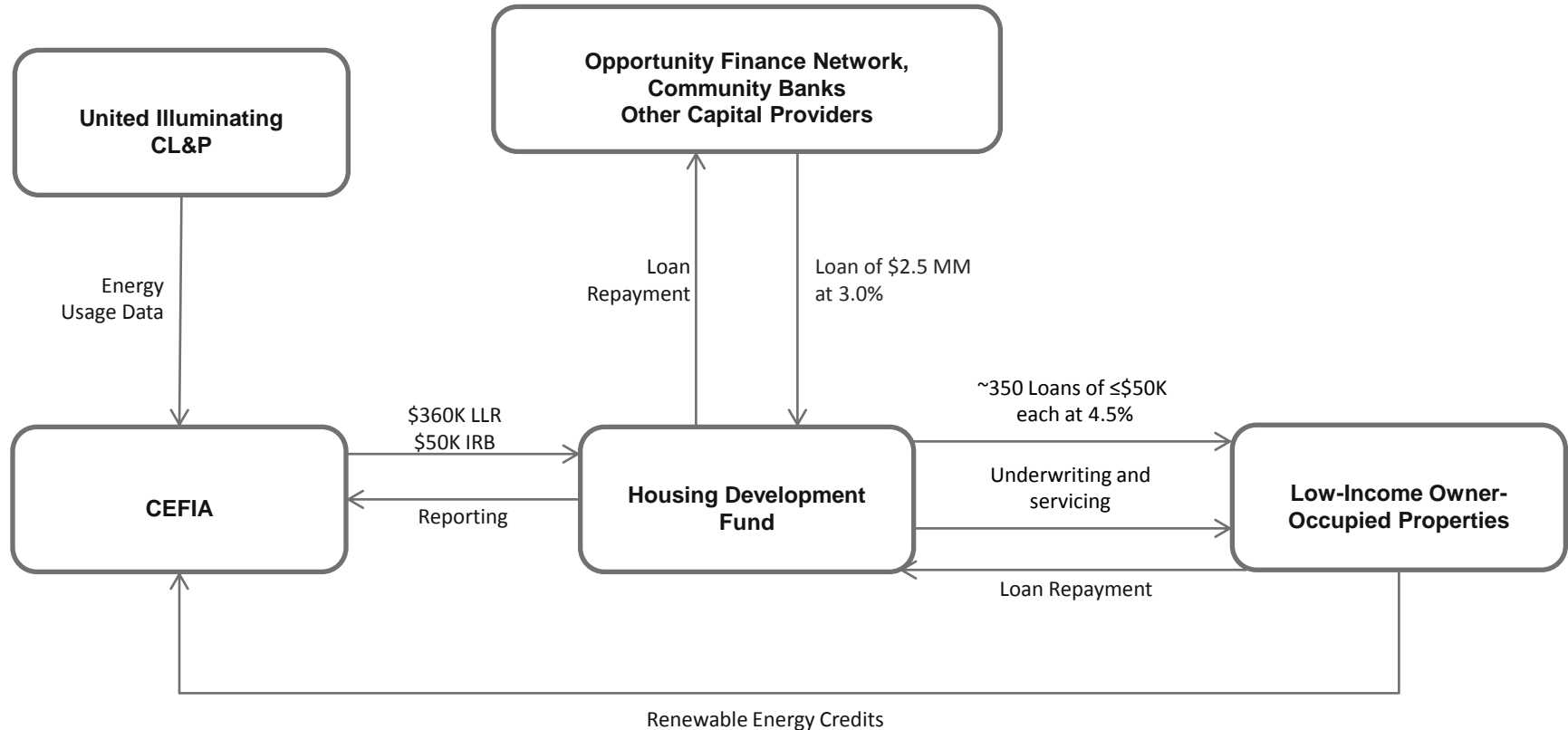
No Questions

Approve

Low Income Energy Loan Capital Structure



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY



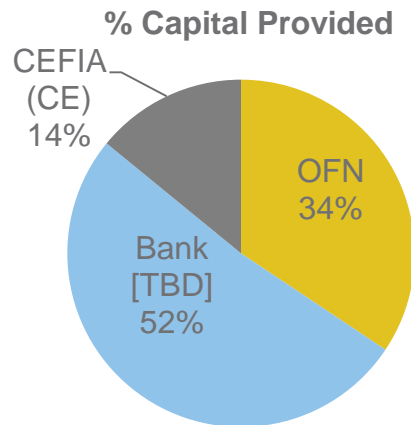
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Cozy Loans

Ratepayer Payback

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



- ▶ **\$6 third party capital per \$1 CEFIA capital**
 - ▶ HDF will use a combination CEFIA-provided Loan Loss Reserve and Interest Rate Buydown to attract \$2.5M of capital
- ▶ **Est 9-16MMBtu/year per \$1 CEFIA capital**

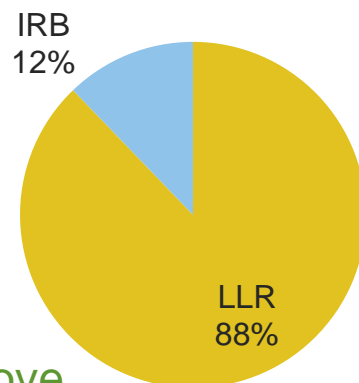


Terms and Conditions – What are the terms and conditions of the ratepayer payback, if any?

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?

CEFIA-provided
Credit Enhancement



- ▶ CEFIA will provide a \$410K credit enhancement through ARRA-SEP funds
 - ▶ \$360K **LLR expended only as loans enter default** (delinquent for 90+ days)
 - ▶ LLR covers up to 14.4% default rate
 - ▶ **HDF's current default rate for mortgages is 5%**
 - ▶ \$50K IRB payable at closing, but **only drawn down to match interest payments** to OFN and other Bank

Cozy Loans

Target Market



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

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

- ▶ Through current programs, HDF will have immediate and direct access to over 2,000 potential Cozy Loan participants per year for the pilot
- ▶ Total population <80% AMI represents a large, untapped opportunity for energy upgrades in Connecticut
 - ▶ **36%, or ~440,000 of Connecticut's households fall within 80% AMI or less**

Census Area	2011 AMI	80%AMI	Total Population in Area	Population Addressed by Cozy Loans	% Population (2012) Below 80% AMI
BRIDGEPORT-STAMFORD-NORWALK, CT	\$77,289	\$61,831	331,530	111,164	34%
HARTFORD-WEST HARTFORD-EAST HARTFORD, CT	\$64,508	\$51,606	464,933	164,678	35%
NEW HAVEN-MILFORD, CT	\$59,245	\$47,396	326,523	121,703	37%
NORWICH-NEW LONDON, CT	\$64,788	\$51,830	108,239	40,487	37%

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[Approve](#)

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Cozy Loans

Consistency with CEFIA Strategic Plan



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FINANCE AND INVESTMENT AUTHORITY

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

<u>CEFIA Comprehensive Plan</u> New Residential Program Requirements	<u>Cozy Loan Program</u>
Comprehensive program for clean energy upgrades	Many eligible measures, focused on energy efficiency
Long-term, low-interest loan and/or leasing program	4.5% rate 10 year tenor
Uses ARRA-SEP funds and/or ratepayer capital	Utilizes \$410,000 of repurposed ARRA-SEP funding
Creates a Loan and/or Credit Enhancement	Provides two types of credit enhancement to encourage financing to the low-income sector

[Approve](#)

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Cozy Loans Goals



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FINANCE AND INVESTMENT AUTHORITY

Attract private capital

- \$1.5M will come from a community bank or other capital provider
- OFN's \$1M loan is through a program related investment by Bank of America
- **3rd Party \$:CEFIA \$= 6:1**

Improve the quality of life for low-income homeowners

- **Qualify contractors:** ensure energy costs are reduced for homeowners that can benefit most
- **Reduce reliance on traditional fuels:** more predictable budgets
- Targets 80% Area Median Income (AMI)

“Prove the market” for cost-effectiveness of energy upgrades

- **Collect loan repayment and default data** to encourage more capital into the space
- **Collect utility bill information** to prove energy and cost savings

Create a replicable pilot program that encourages private investment into energy upgrades in the low- to moderate- income space, a key focus of the Connecticut Comprehensive Energy Strategy

Cozy Loans

How Implemented



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

HDF will initially market Cozy Loans to three groups, with whom they enjoy existing relationships



Existing HDF Client Homeowners (~1,500 total):

Although HDF's client base has income of 65.5% of Area Median Income, 95% of clients are current on their mortgages



Prospective Homebuyers:

HDF works with ~600 potential homebuyers each year



HDF's Landlord Entrepreneurship & Affordability Program Participants:

This new program helps first time homebuyers buy, renovate and become owner-occupants of small, multi-family properties in Connecticut's urban areas.

Cozy Loans

About HDF



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The HDF logo, consisting of the letters 'hdf' in a white, lowercase, sans-serif font, set against a green rectangular background.

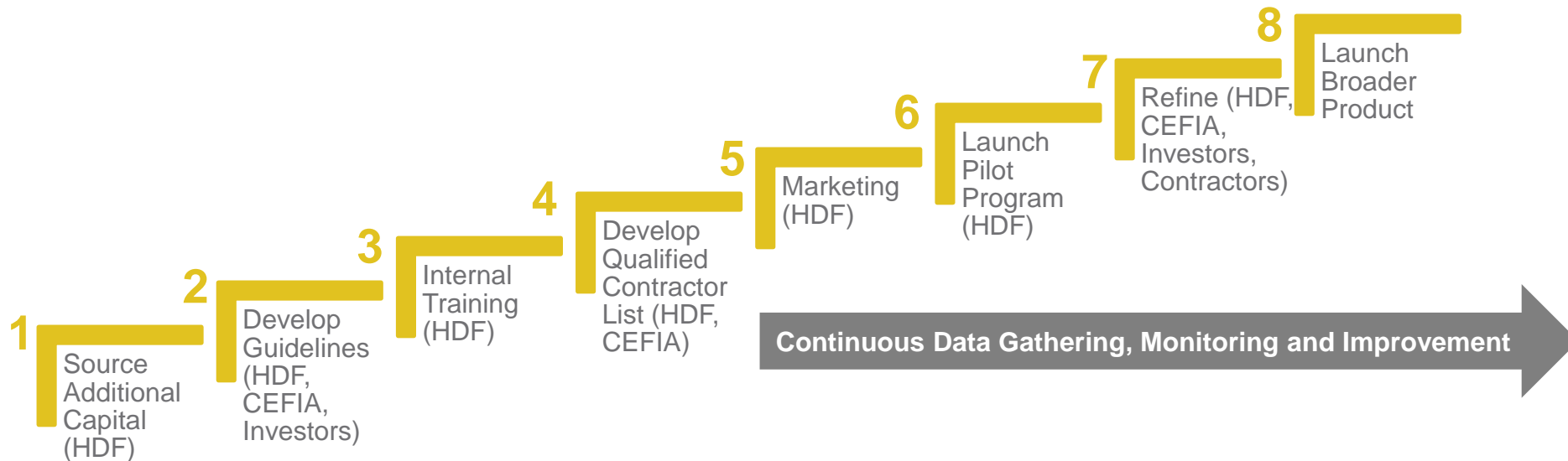
- ▶ Founded in 1989
- ▶ Serves all of Connecticut, offices in Stamford, Bridgeport and Danbury
- ▶ Certified Community Development Financial Institution
- ▶ Loan fund of \$45.7M in assets
- ▶ Strong relationships with regional and national banks
- ▶ Senior management has extensive finance, real estate, and affordable housing experience
- ▶ Since 1989, HDF has **invested \$43.8M** in affordable housing in CT, assisted **1,463 families** purchase their first homes, and attracted **\$230M of private bank capital** into the affordable housing space

Cozy Loans

How Implemented



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY



Individual Loan Characteristics

- Up to \$50,000 for broad energy improvements targeted to borrowers at 80% of Area Median Income
- Offered at an interest rate of 4.5% and 10 year term
- Up to 20% can be used for non-clean energy related improvements
- Borrowers required to sign data release to facilitate data gathering (financial performance and energy use)

Cozy Loans

CEFIA's Role



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

CEFIA Department

Technical and energy underwriting guidance

- Criteria for qualifying contractors
- Eligible measures
- Financing agreement language

Deployment, Finance,
General Counsel

Credit enhancements

- LLR and IRB enable HDF to attract third party capital
- Assist with capital provider discussions as needed

Finance, General Counsel

Data analysis

- Financial performance (default rate, repayment performance)
- Energy savings performance (costs, fuel displaced)

Finance, EM&V

Additional marketing support

- As needed
- Ensure DEEP, EnergizeCT, and utilities are represented in collateral

Marketing



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #4b

Residential Energy Efficiency and Equipment
Replacement Loan Program

November 30, 2012



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

CT HELPs

Leveraging ARRA-SEP funds to attract private capital into single-family residential energy efficiency

November 30, 2012

CT HELPs

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **Strategic Plan** – is the Solar Loan Program 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?

No Questions

Approve

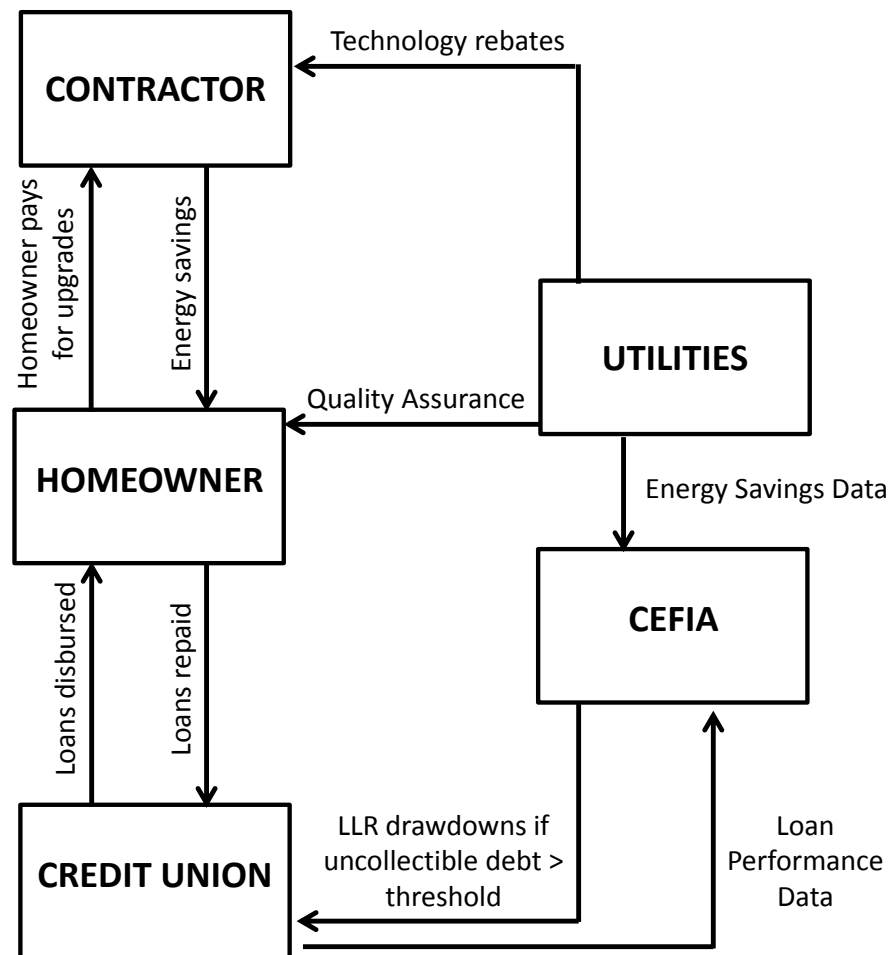
CT HELPs

High Level Summary



CLEAN ENERGY
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- ▶ The CT HELPs program will attract private capital (Credit Unions) to finance energy upgrades in single-family residences across the state
- ▶ Piloted in partnership with United Illuminating, **Next Step Living, Inc.** and other qualified contractors



CT HELPs

Ratepayer Payback



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FINANCE AND INVESTMENT AUTHORITY

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

- ▶ Ratepayers will not achieve a financial payback for the use of these funds, as they aren't contributing to the program.
- ▶ Program supports CEFIA's other goals:
 - ▶ Leverages private capital at a rate of 11:1
 - ▶ Program will save homeowners energy:
Estimated 9-16MMBtus/year per \$ CEFIA capital

[Approve](#)

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CT HELPs

Terms and Conditions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

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

No ratepayer funds are expended. ARRA-SEP funds for the loan loss reserve (\$600K) will only be expended as loans originated by CEFIA's partner lending institutions enter default and to the extent the "retained loss" threshold (1.8%) is exceeded

CT HELPs Financing Terms

Program Contractor	Next Step Living, and any HES, HPwES, BPI-certified, or other contractor authorized by utilities or CEFIA			
Next Step Living Participation	½ of the total LLR (\$300K) restricted to support NSL customers for initial 18-month period After 18 months, remaining funds flow into the general pool			
Borrower FICO Criteria	Class A: 680+ Class B: 640 to 679			
Term (years)	5	7	10	12
Interest rate	4.49%	4.99%	5.99%	6.99%
Eligible Homes	1-4 Units			
Loan Amount	Minimum \$3,000 Maximum \$25,000			

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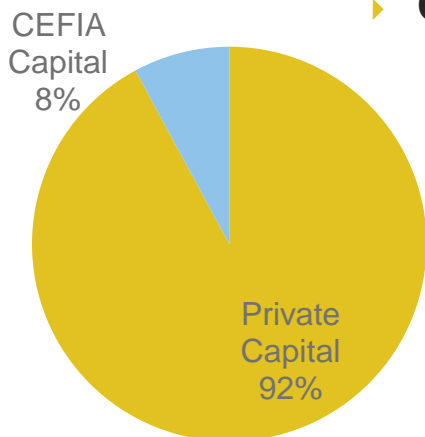
CT HELPs

Capital Expended and Risk



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **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?



- ▶ **CEFIA will provide a \$600K loan loss reserve through ARRA-SEP funds**
 - ▶ “Pool basis” – every loan booked will earn a credit in a CEFIA-held LRR account
 - ▶ Two buckets of customers, based on FICO
 - ▶ Class A: 680 & up
 - ▶ Class B: 640-679
 - ▶ LLR credit – 7.5% for Class A
 - ▶ LLR credit – 15% for Class B (up to 20% of portfolio)
 - ▶ LLR drawdowns – after 1.5% of Class A portion of portfolio uncollectible and after 3% of Class B portion of portfolio uncollectible
- ▶ **Total expenditures will range between \$0 (with no defaults) to \$600K (with all funds drawn down at a greater than 10.8% default rate)**

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CT HELPs

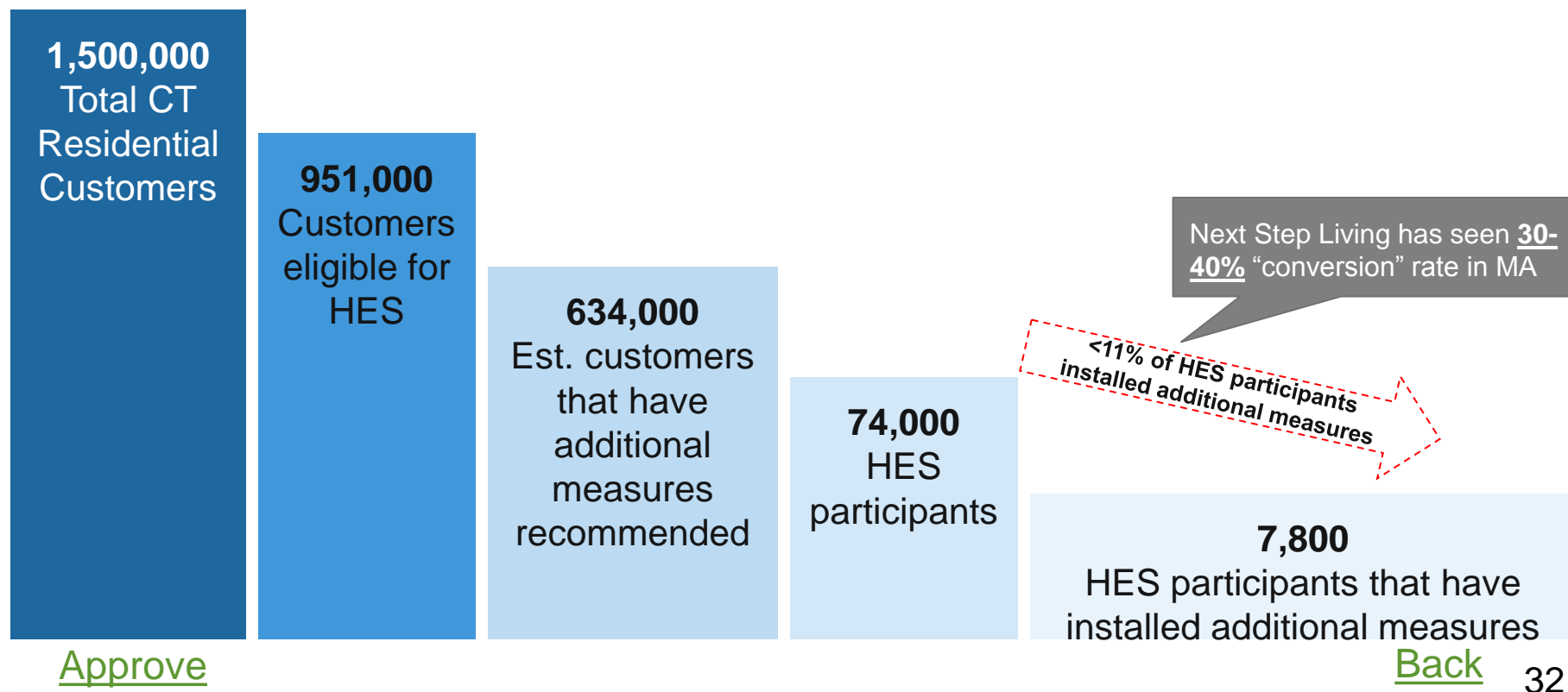
Target Market



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

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

CT HELPs aims to substantially increase the adoption rate of deeper and deeper retrofit measures (from the current average rate of 1,500 such projects per year)



CT HELPs

Consistency with CEFIA Strategy



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **Strategic Plan** – is the Solar Loan Program consistent with the Board approved Comprehensive Plan and Budget for the fiscal year?

<u>CEFIA Comprehensive Plan</u>	<u>CT HELPs Program</u>
New Residential Program Requirements	
Comprehensive program for clean energy upgrades	Many eligible measures, focused on equipment replacement and energy efficiency
Long-term, low-interest loan and/or leasing program	Starting at not-to-exceed rates of 4.49% over five years, up to 6.99% over 12 years
Uses ARRA-SEP funds and/or ratepayer capital	Utilizes \$600,000 of repurposed ARRA-SEP funding
Creates a loan and/or credit enhancement	Provides a loan loss reserve to encourage affordable private financing to single-family homeowners

CT HELPs

Goals



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Attract private capital

- Nearly **\$7M** will come from credit unions or community banks, leveraged by a CEFIA loan loss reserve of **\$600K**
- **Third Party \$::**
- **CEFIA \$ = 11::1**

Provide “deep retrofits” for homeowners

- **Support the NSL model:** use community-based marketing to drive uptake of fulsome energy efficiency and equipment replacement measures
- **Provide meaningful savings:** ensure that benefits outweigh costs and that homeowners are paying less from day one

“Prove the market” for cost-effectiveness of energy upgrades

- **Collect loan repayment and default data** to help drive more capital investment into the energy efficiency market
- **Collect utility bill information** to prove energy and cost savings

Create a pilot program that can serve as a foundation for growth and encourages private investment into energy upgrades for Connecticut homes, a key focus of the Connecticut Comprehensive Energy Strategy

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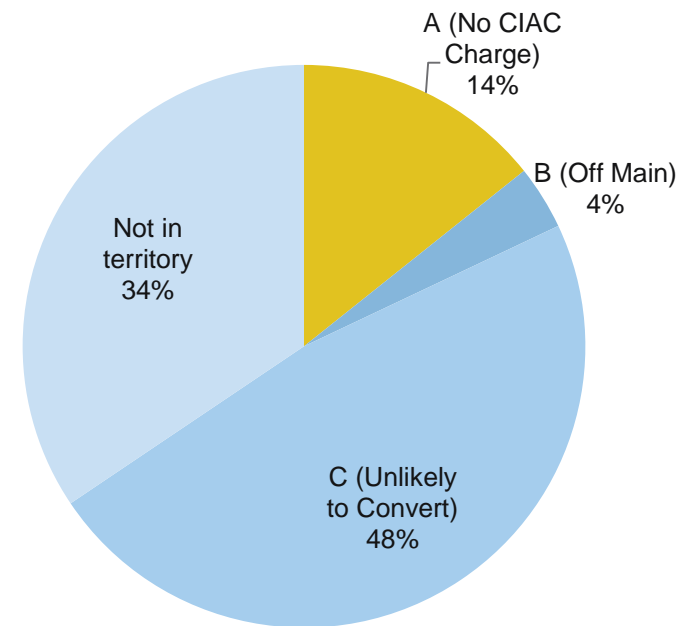
CT HELPs

Consistency with CES

CT HELPs will support natural gas conversion

- Many measures, including gas conversion, finance-able through CT HELPs
- This measure creates a market of 200K homes for CT HELPs
- CT's CES estimates that **converting these homes can result in \$2B NPV savings**

Addressable Gas Customers



CT HELPs

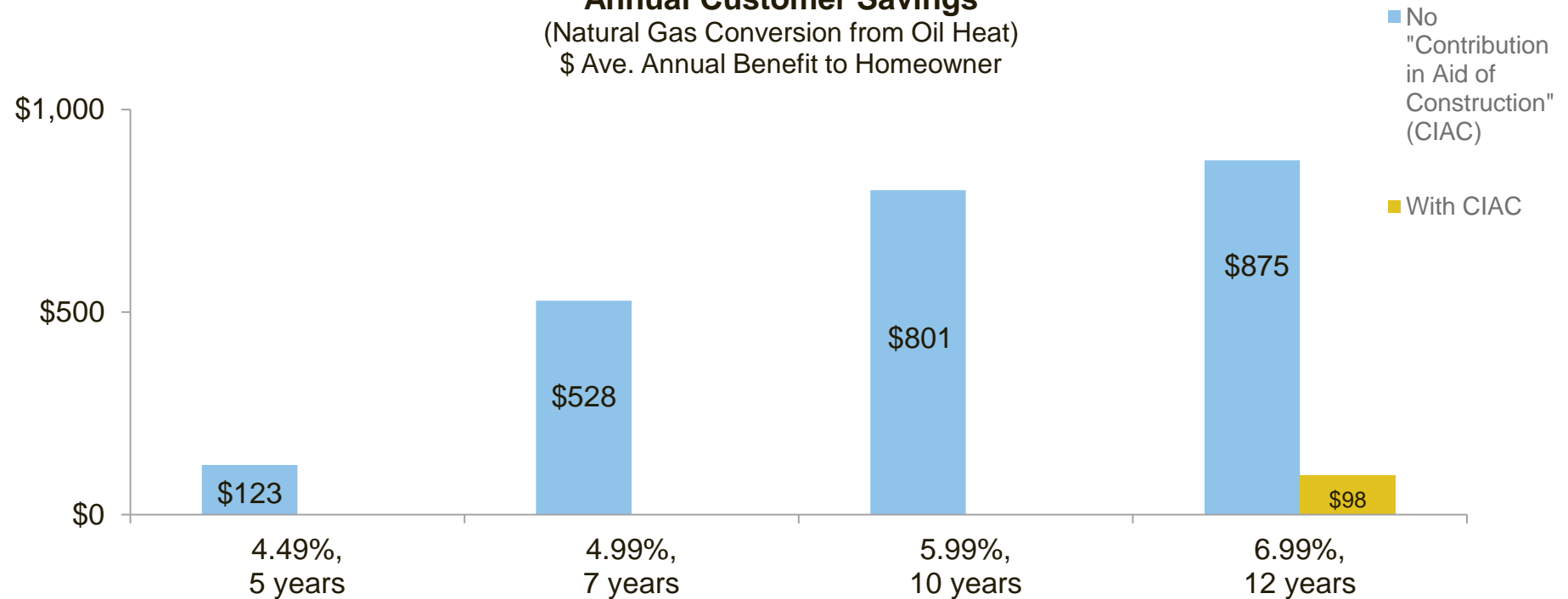
Consistency with CES



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In line with Chapter 4 of CT's Draft Comprehensive Energy Strategy, CEFIA has come up with a set of financing options to **enable fuel switching** for Connecticut homeowners that uses private capital to deliver on the promise of "gas choice" and **immediate savings** called for in the CES

Annual Customer Savings
(Natural Gas Conversion from Oil Heat)
\$ Ave. Annual Benefit to Homeowner



[Approve](#)

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CT HELPs

About Next Step Living



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FINANCE AND INVESTMENT AUTHORITY

next step living

2008

Founded in MA

Currently conducts

1,600

audits/month

Helps **100**

customers/month go solar

Locating

2 600

weatherization projects/month

Named Employer of the year in

2011

by New England Clean Energy
Council

CT offices

Has created **380** jobs in MA in **3** years

[Approve](#)

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CT HELPs

How Implemented



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

NSL will deploy their proven methodology to acquire customers. CEFIA believes other contractors can learn from NSL's success:



Targeting - Using Town Assessors' databases, census information, and technology performance data from its own historical installations, NSL will identify customers who fit an attractive energy savings profile



Marketing - NSL will then pursue its community-based sales approach, under the philosophy that people are more likely to take action to reduce their energy use and impact when invited to do so by someone that they know and trust



Financing - Based on its experience in the Mass Saves HEAT program, NSL will hand-hold their customers through the process of obtaining financing.



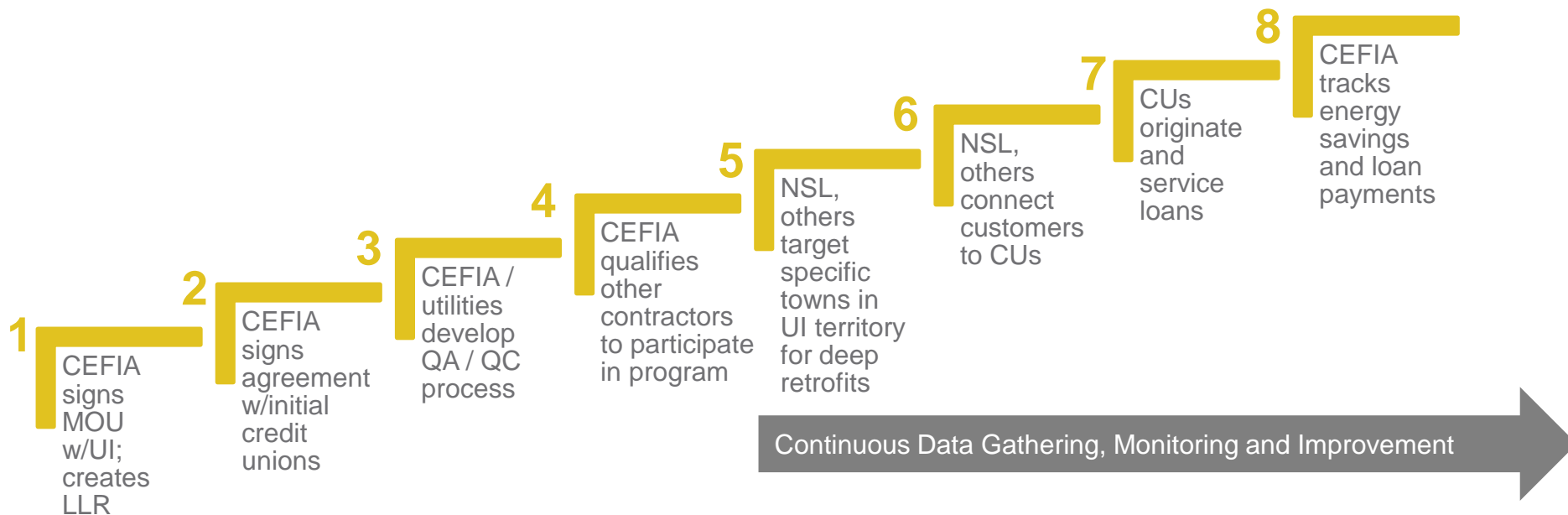
Implementing - Taking a data-driven, whole-house approach, NSL will perform deep retrofits to benefit CT homeowners

CT HELPs

How Implemented



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY



Individual Loan Characteristics

- Up to \$25,000 for broad energy improvements targeted to single-family homeowners
- Participating Credit Unions to offer “Not-to-Exceed” rates for 5-12 year terms
- Up to 20% can be used for related home improvements
- Borrowers required to sign release form to facilitate data gathering (financial performance and energy use)

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CT HELPs

CEFIA's Role



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

CEFIA Department

Technical and energy underwriting guidance

- Criteria for qualifying new contractors
- QA / QC protocols
- Financing agreement language

Deployment, Finance,
Legal

Credit enhancements

- LLR to support credit union lending, on a pool-basis

Finance, Legal

Data analysis

- Financial performance (default rate, repayment performance)
- Energy savings performance (costs, fuel displaced)

Finance, EM&V

Additional marketing support

- Connecting contractors to municipal leaders via the Communities Program
- Ensure DEEP, EnergizeCT, and utilities are represented in collateral

Marketing

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CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #4c

Residential Solar PV Loan Program

November 30, 2012



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Solar Loan Program

Leveraging ARRA-SEP and ratepayer funds
to deliver a low-cost residential solar PV
ownership option for CT homeowners

November 30, 2012

Solar Loan

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **Strategic Plan** – is the Solar Loan Program 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?

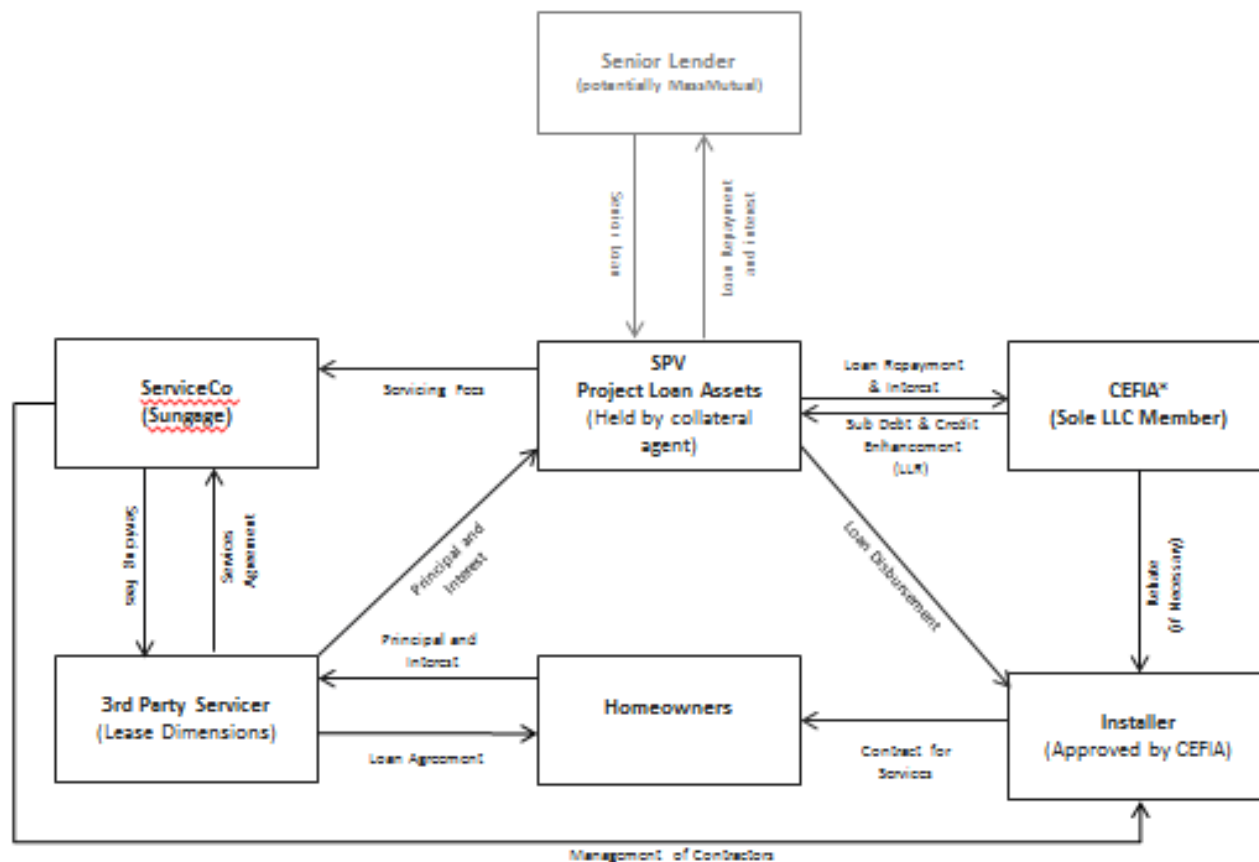
No Questions

Approve

Solar Loan Capital Flow Diagram



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*A to-be-incorporated subsidiary of CEFA

The solar loan program will provide **debt financing** to help homeowners **purchase and own** solar PV installations for single-family residences across the state, marketed via **Sungage, Inc.'s** unique platform

Solar Loan

Payback and Capital Expended



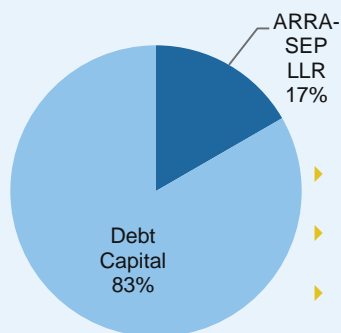
CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **Ratepayer Payback** – ratepayers will not achieve a financial payback for the use of the ARRA-SEP portion of the funds, but for the debt portion of the deal, CEFIA expects to receive a return of 5.56% IRR
- ▶ **Capital Expended** – How much of the ratepayer and other capital that CEFIA manages is being expended on the project?

Scenario A

(No Senior Lender):

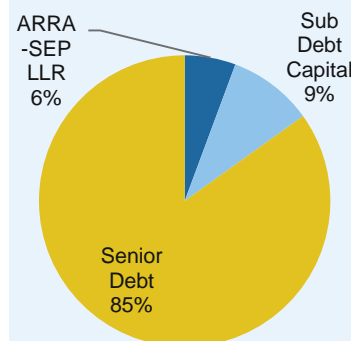
- ▶ CEFIA provides:
 - ▶ \$300K loan loss reserve through ARRA-SEP funds
 - ▶ Debt capital in the amount of \$1.5M
- ▶ Systems financed: 66
- ▶ No other sources of capital
- ▶ CEFIA IRR of 5.56% on ratepayer capital



Scenario B

(Senior Lender Secured):

- ▶ CEFIA provides:
 - ▶ \$300K loan loss reserve through ARRA-SEP funds
 - ▶ Subordinated debt in the amount of \$500K (as well as revolving loan fund)
- A Senior Lender Provides:**
 - ▶ \$4,500,000 financing facility
- ▶ Systems financed: 220
- ▶ CEFIA IRR of 3.49% on ratepayer capital



Solar Loan

Terms and Risk



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FINANCE AND INVESTMENT AUTHORITY

- ▶ **Terms and Conditions** – What are the terms and conditions of the ratepayer payback, if any?
- ▶ **Risk** – What is the maximum risk exposure of ratepayer funds for the project?

Financing Terms

Program Contractor	any CEFIA authorized solar PV installer		
Borrower Criteria	- borrowers with FICO 680-720: 45% DTI - borrowers with FICO > 720: no DTI requirement		
Initial Term	15-year, mortgage-style amortization		
Interest Rate		ITC Prepayment	No ITC Prepayment
	15-year term	6.49%	9.99%
	20-year term	7.49%	10.99%
Minimum Down Payment	5% of total construction cost, as invoiced and due to the CEFIA-approved contractor		
Prepayment Right	ability to prepay at any time without penalty		
Servicing Company	Sungage, Inc., with LeaseDimensions as sub-servicer		
Risk to ratepayers	20% of loans protected through LLR before ratepayer coverage begins		

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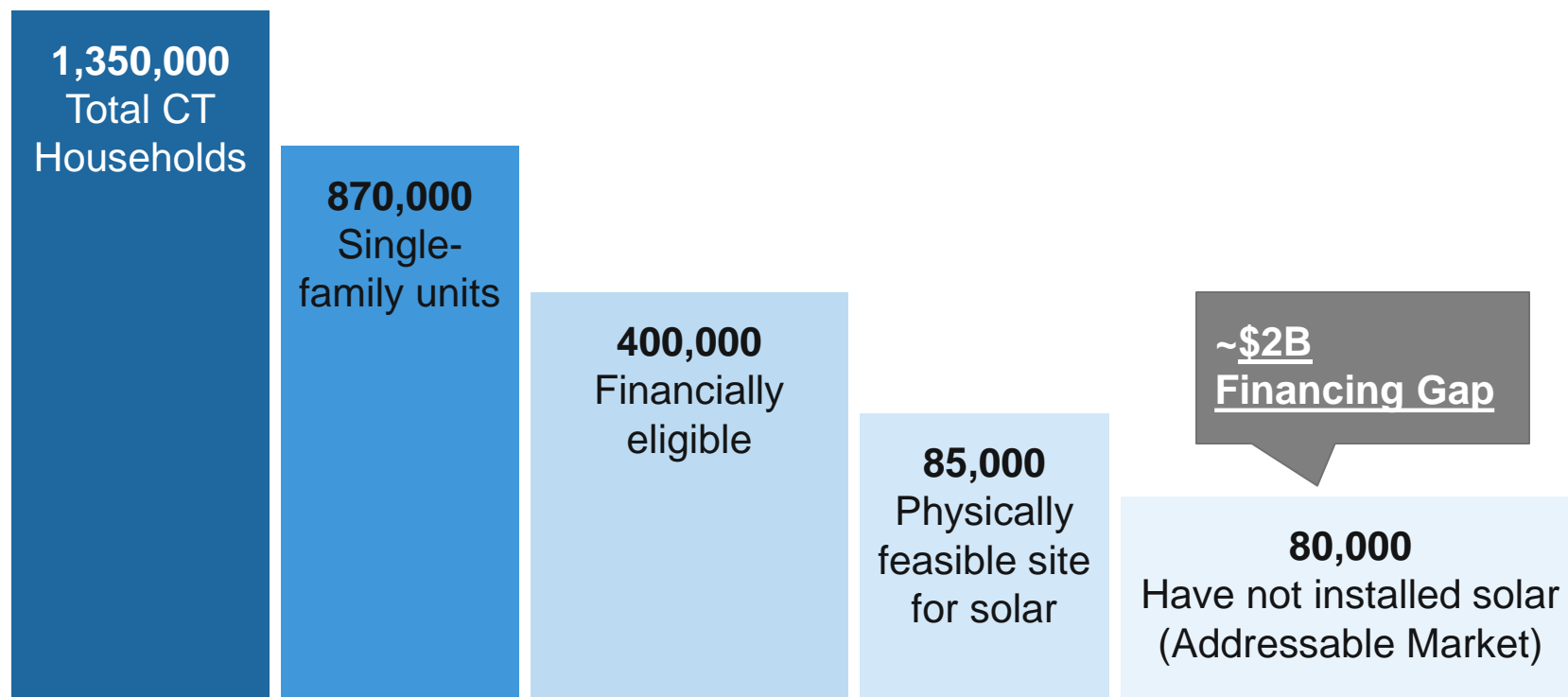
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Solar Loan Target Market



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FINANCE AND INVESTMENT AUTHORITY

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



Solar Loan

Consistency with Strategic Plan



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FINANCE AND INVESTMENT AUTHORITY

- **Strategic Plan** –is the Solar Loan Program consistent with the Board approved Comprehensive Plan and Budget for the fiscal year?

<u>CEFIA Comprehensive Plan</u> New Residential Programs	<u>Solar Loan Program</u>
Comprehensive program for clean energy upgrades	Financial product specifically for solar PV installations
Long-term, Low-Interest Loan and/or leasing program	6.49%-10.99% rate range, 15 or 20 year tenor
Uses ARRA-SEP funds and/or ratepayer capital	Utilizes \$300,000 of repurposed ARRA-SEP funding and a maximum of \$1.5M in ratepayer capital
Creates a Loan and/or Credit Enhancement	Provides a credit enhancement in the form of a loan loss reserve

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Solar Loan Goals



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FINANCE AND INVESTMENT AUTHORITY

Pilot innovative financing mechanism

- Use \$300K in repurposed ARRA-SEP funds to provide support for \$1.5M in ratepayer debt capital
- Ensure the return of ratepayer funds (at an **IRR of 5.56%**) and prove out the model in order to attract private capital into the segment over time

Make solar PV ownership widely accessible

- Through **long-term, low-cost financing**, as well as creative use of the federal ITC to re-amortize loans as part of the Sungage product, **make solar ownership available and affordable** for homeowners with a FICO score ≥ 680
- Market this offering as a **wealth creation vehicle** – Sungage solar loans will help homeowners realize an ROI $> 6\%$, in addition to adding certainty to their electric bills

Reduce dependence on incentives and subsidies

- Via Sungage's unique platform, demonstrate to installers the **value of marketing solar loans that are affordable due to financing**, rather than RSIP incentives
- Under this model, **provide homeowners with financing options** (i.e. a choice of rates and terms) to help balance financing costs against electric bill savings

Create a pilot program that can serve as a foundation for growth and that will encourage private investment to support solar PV ownership and wealth creation for Connecticut homeowners

Solar Loan

About Partners



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY



- ▶ Massachusetts-based start-up company
- ▶ **Sophisticated customer-oriented marketing and sales platform** that validates installer claims, educates homeowners about the value of solar PV ownership, and clarifies trade-offs amongst financing options
- ▶ **Installer support system:** on-boarding, sales training, ongoing support, etc.
- ▶ **Experienced origination and servicing platform via LeaseDimensions**, a company that has provided lease and loan services for over 100,000 contracts representing more than \$2 billion in asset value. (GE Capital, Ford, Volkswagen)
 - ▶ Funding systems through partnership with Piner Valley Photovoltaics (a CT and MA installer) closing on sixth customer
- ▶ **Deep financing expertise and IP**, including a proprietary asset underwriting scoring methodology, referred to as the Sungage Score

Solar Loan

How Implemented



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ Sungage will:
 - ▶ Train and educate contractors
 - ▶ Manage lease processing through online tools and in partnership with LeaseDimensions
- ▶ Trained contractors will market the product to customers, using Sungage's online tools and platforms. LeaseDimensions will service and originate loans
- ▶ CEFIA will seed the SPV with \$250K, and will continue to fund it in \$250K increments as needed
- ▶ As contractors / Sungage sell loans, LeaseDimensions will draw down funds from the SPV
- ▶ LLR will be placed in a separate account in the SPV. Funds will be released in the amount of principal outstanding once accounts are delinquent and 90 days past due

Solar Loan

CEFIA's Role



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

CEFIA Department

Technical guidance

- Qualifying new contractors
- QA / QC protocols
- Financing agreement language

Deployment, Finance,
Legal

Credit enhancements and debt

- LLR to protect ratepayers
- Long-term debt capital

Finance, Legal

Data analysis

- Financial performance (default rate, repayment performance)
- Production performance (kWh produced, electricity saved)

Finance, EM&V

Additional marketing support

- Connect Sungage to contractors to expand program reach
- Ensure DEEP, EnergizeCT, and utilities are represented in collateral

Marketing



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #5

Statutory Program – Residential Solar Investment Program

November 30, 2012

Residential Solar Investment Program

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **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

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **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 \$9,333,000 to support rebates and PBI for FY 2013.



Residential Solar Investment Program

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

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

For Step 3 of the RSIP, it is expected that **more than 9,000,000 kWh a year** (or about 180 GWh over 20 years) will be produced from the deployment of 7.6 MW of solar PV in the residential sector **from \$9,500,000 of ratepayer funds at risk.**



Residential Solar Investment Program

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **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 9,000 RECs will be created a year as a result of Step 3. RECs are sold into the Class I RPS. If RECs are sold at \$20 each – range of \$0 to \$55 – then \$180,000 of ratepayer payback a year is received or about \$3,500,000 over 20 years.



Residential Solar Investment Program

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **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 \$9,333,000**, the full one-third of the statutory allowance, for the RSIP for FY 2013. To date, \$3,242,000 has been allocated to the RSIP.

At a “Race to the Solar Rooftop” target of 7.6 MW, and an estimated incentive level of \$1.25/W, CEFIA estimates that **\$9,500,000 will be expended on the RSIP over a one-year period.**



Residential Solar Investment Program

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

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

Despite the potential for \$3,500,000 in revenue from the production and sale of RECs into the Class I RPS market over 20 years, staff expects that the **maximum risk exposure of the ratepayer funds for the RSIP is \$9,500,000.**

At a “Race to the Solar Rooftop” target of 7.6 MW, and an estimated incentive level of \$1.25/W, CEFIA estimates that \$9,500,000 will be expended on the RSIP.



Residential Solar Investment Program

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **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.



Residential Solar Investment Program

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **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.



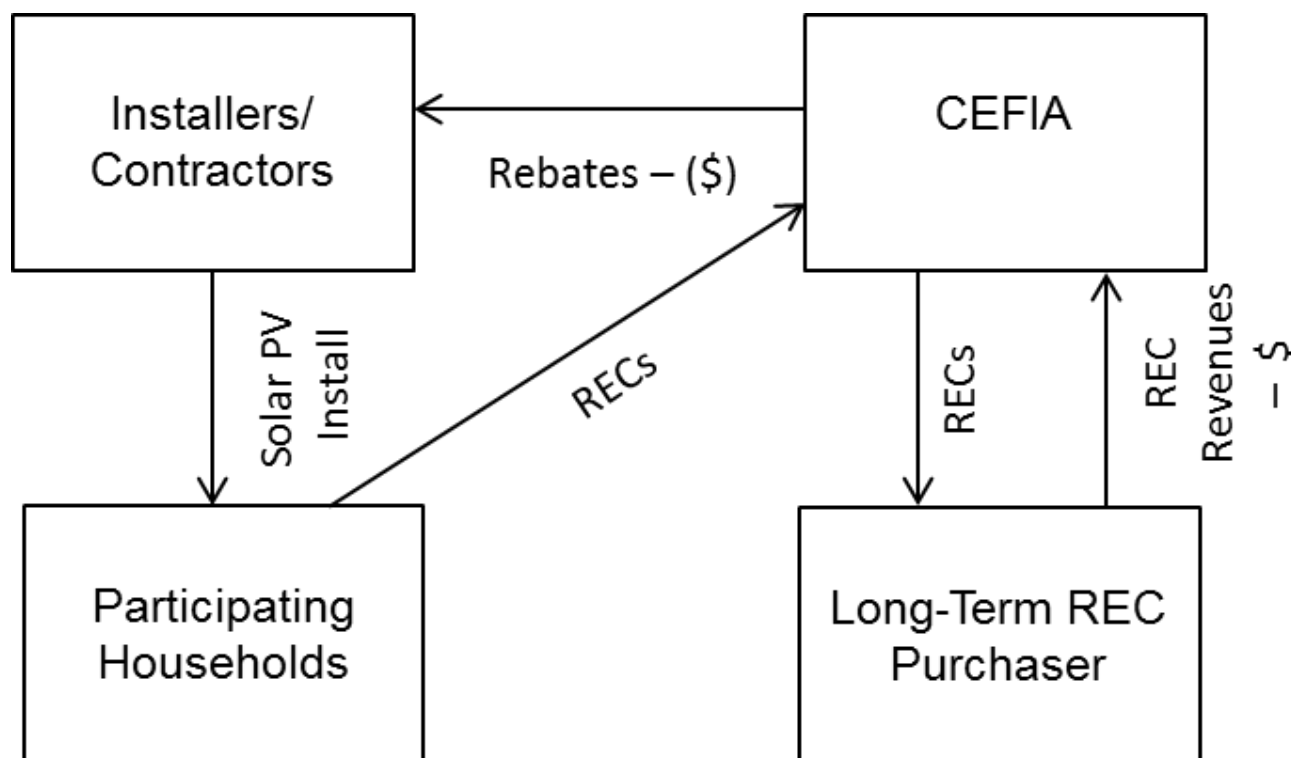
Residential Solar Investment Program

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

► Capital Flow Diagram



Residential Solar Investment Program

Key Questions



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FINANCE AND INVESTMENT AUTHORITY

► **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.

Approximately 15% of the projects supported in Step 1 and Step 2 are located in distressed communities.

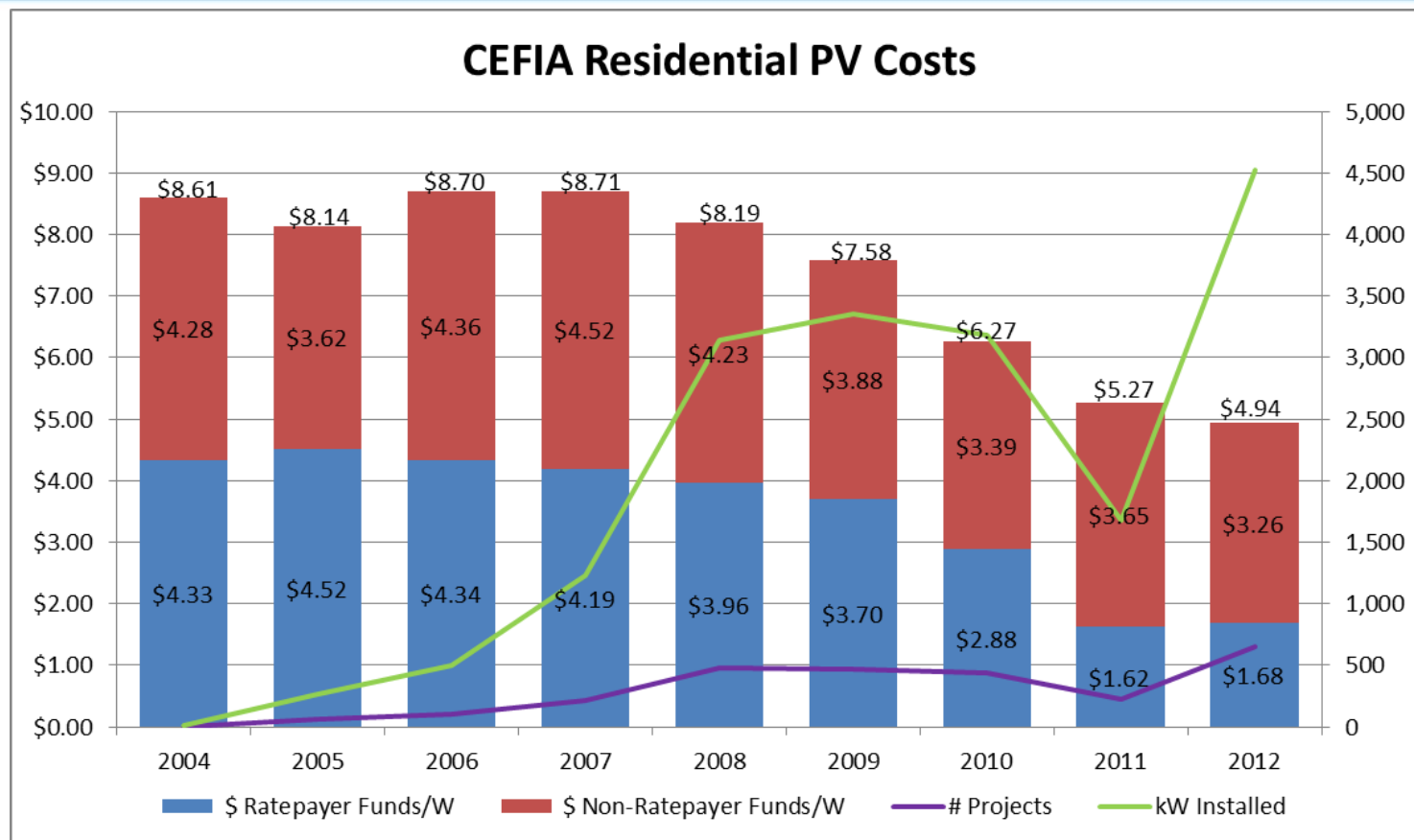


Residential Solar Investment Program

Program Performance



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



Residential Solar Investment Program

CEFIA Goals



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- ▶ **Sustainable Market Development** – avoid the stop-start nature of incentives that were experienced in the past by maximizing the amount of clean energy produced per dollar of ratepayer funds at risk
- ▶ **Leverage** – achieve a 3:1 (25%) leverage of non-ratepayer funds to ratepayer funds
- ▶ **Costs** – support strategies that make solar PV affordable and accessible
- ▶ **Financing** – shift from subsidy programs over time to low-cost and long-term financing
- ▶ **Energy Efficiency** – incorporate cost effective energy efficiency measures into solar PV projects



Residential Solar Investment Program

Step 3 and Step 4 Proposal



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FINANCE AND INVESTMENT AUTHORITY

- ▶ **Race to the Solar Rooftop** – 7.6 MW or 3.8 MW for rebate and 3.8 MW for PBI for Step 3; 10.0 MW or 5.0 MW for rebate and 5.0 MW for PBI for Step 4
- ▶ **Incentive Cap** – not to exceed 30% per project
- ▶ **Incentive Level** – weighted average of \$1.25/W from Step 3 or 29% of the installed cost estimate of \$4.25/W for 2013

	Rebate (\$/W)		PBI (\$/kWh)	Weighted Average (\$/W)
	≤5 kW	5 to 10 kW	≤10 kW	
Step 1	\$2.450	\$1.250	\$0.300	\$1.776
Step 2	\$2.275	\$1.075	\$0.300	\$1.679
Step 3 (Proposed)	\$1.500-\$1.900	\$0.400-\$0.600	\$0.210-\$0.230	\$1.250



Residential Solar Investment Program

Next Steps



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- ▶ **DEEP Commissioner** – met with Dan Esty on November 7 (complete)
- ▶ **Deployment Committee Chair** – call with Reed Hundt on November 16th (complete)
- ▶ **Solar Connecticut** – meet with the “Top 10” installers the week of November 19th (complete)
- ▶ **DEEP Staff** – brief staff the week of November 26th (complete)
- ▶ **Deployment Committee** – discuss with the Deployment Committee on November 30th (complete)
- ▶ **Board of Directors** – recommend for approval by the Board of Directors on December 21st
- ▶ **DEEP** – formal written approval of incentive on December 21st



Residential Solar Investment Program

8-Month Results – Step 1 and Step 2



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FINANCE AND INVESTMENT AUTHORITY

- ▶ **Number of Projects** – nearly 640 applications approved with over 420 projects in progress or completed in eight months. PBI projects are now at 37% in Step 2 vs. 10% in Step 1.
- ▶ **Installed Capacity** – 4.5 MW of installed capacity
- ▶ **Installed Costs** – decreased by almost 10% from Step 1 (\$5.30/W) to Step 2 (\$4.80/W) – expect \$4.25 to \$4.50/W for 2013
- ▶ **Investment** – about \$21.8 million of investment with \$7.5 million coming from CEFIA; achieving a leverage ratio of 2:1 (33%)
- ▶ **Number of Contractors** – more than 40 contractors have done a Step 2 project, however, the “Top 10” contractors for the most number of projects have completed over 70% of the installations.



Residential Solar Investment Program

Budget to Deployment



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FINANCE AND INVESTMENT AUTHORITY

	FY 2012	FY 2013	Total To Date
One-Third of Annual Ratepayer Resource Contributions	\$9,008,000	\$3,394,000	\$12,402,000
Residential Solar PV Incentives Approved	<u>\$3,614,658</u>	<u>\$3,242,000</u>	<u>\$6,856,377</u>
Variance between Ratepayer Resources and Incentives	(\$5,393,342)	\$152,000	(\$5,241,061)
Number of Solar PV Systems Approved	306	275	581
Capacity of Solar PV Systems Deployed (kW)	2,070	1,960	4,030

Program design and development year

1

Incentives matching contributions

2

17% of goal achieved

3



69

Residential Solar Investment Program

Willingness to Pay



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CalendarYear Approved	# Projects	kW Installed	\$ Ratepayer Funds/W	\$ Non-Ratepayer Funds/W	\$ Total Cost/W
2004	3	12.69	\$4.33	\$4.28	\$8.61
2005	63	266.25	\$4.52	\$3.62	\$8.14
2006	108	495.73	\$4.34	\$4.36	\$8.70
2007	217	1,028.81	\$4.19	\$4.52	\$8.71
2008	479	3,139.86	\$3.96	\$4.23	\$8.19
2009	470	3,354.86	\$3.70	\$3.88	\$7.58
2010	437	3,178.23	\$2.88	\$3.39	\$6.27
2011	224	1,678.08	\$1.62	\$3.65	\$5.27
2012	651	4,522.20	\$1.68	\$3.26	\$4.94
Grand Total	2,652	17,876.71	\$2.96	\$3.73	\$6.69

Residential solar PV customers are willing to pay between \$3.30/W and up to \$4.20/W after incentives. So if installed costs are \$4.50/W, then a \$1.00 to \$1.25/W subsidy shouldn't adversely impact demand.





CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #5a

Residential Solar Investment Program (Finance Program) –
CT Solar Lease (Version 2.0)

November 30, 2012



CLEAN ENERGY

FINANCE AND INVESTMENT AUTHORITY

Solar Lease II

Building on the success of Solar Lease I to support widespread adoption and sustained growth of solar in Connecticut

November 30, 2012

CT Solar Lease (Version 2.0)

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

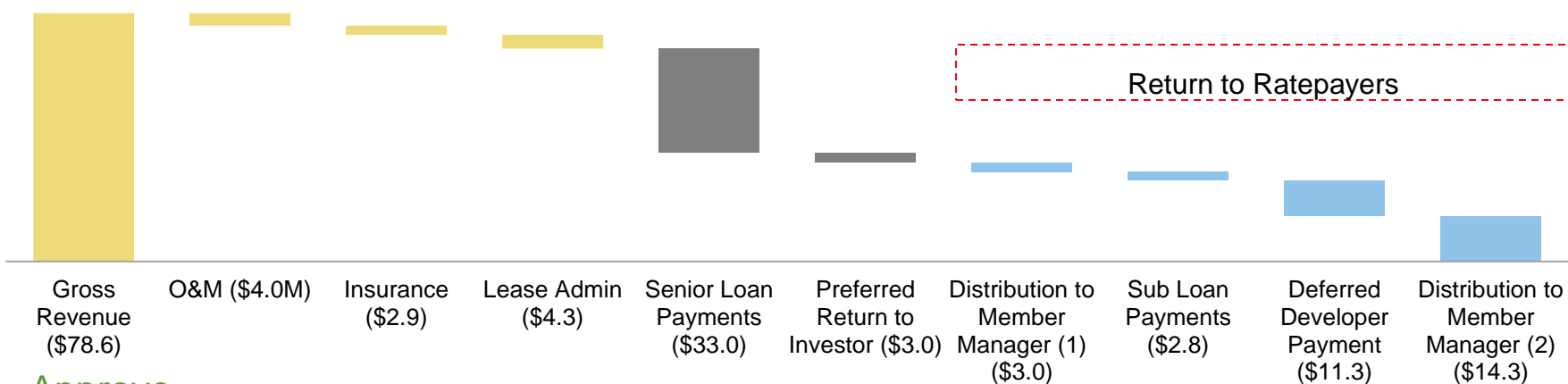
- ▶ **Strategic Plan** – is the CT Solar Lease (Version 2.0) consistent with the Board approved Comprehensive Plan and Budget for the fiscal year?
- ▶ **Ratepayer Payback** – How much clean energy is being produced from the project versus the dollars of ratepayer funds at risk?
- ▶ **Terms and Conditions** – 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?

Solar Lease II

Ratepayer Return

- ▶ CEFIA will receive Subordinated Loan Payments, and Deferred Developer Fee (DDF) Distributions starting in 2013 (with 70% received after 2025), and Managing Member (MM) distributions starting in 2028
- ▶ DDF & MM Payments returned to CEFIA for more clean energy deployment
- ▶ 1% of Preferred Return and Distribution to Investor will flow to CEFIA pre-Flip (1/1/2020), and 95% will flow to CEFIA post-Flip
- ▶ By completion in 2034, CEFIA expects to receive \$31.3M on \$24.6M, for an IRR of 2%

SL2 Cash Flow Waterfall (\$M), 2012-2034



[Approve](#)

[Back](#)

Solar Lease II

Terms, Risk and Target Market

Underwriting Criteria

Debt-to-Income	≤45%
FICO Score	≥640

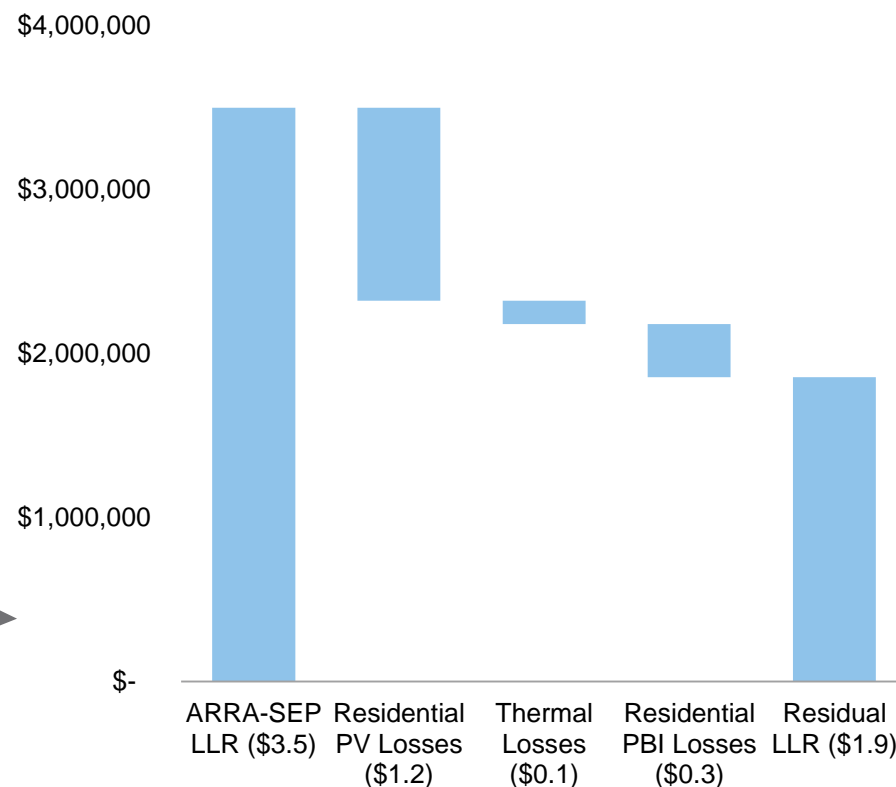
Lease Terms

Tenor	20 years
Monthly Cost	Total Lease Payment ≈ 10% below cost of electricity, including maintenance, with 2.9% yearly escalation

CEFIA believes an annual default rate of 0.5% is extremely high...

- Tax Equity Provider has seen **0.5% total** (not annual) default rate in similar Tax Equity Structures
- SLI, which closed in late 2011 currently has **0.12% default rate**

10-year LLR with 0.5% Annual Default Rate (\$M)



Solar Lease II

Attract Private Capital

CEFIA

- CEFIA participates at all levels of the capital stack

\$ 7.1M Managing Member and Developer Equity
\$ 2.3M Subordinated Debt at 2%
\$15.2M PBI – set at 25% below Step 2

\$24.6M Ratepayer Investment

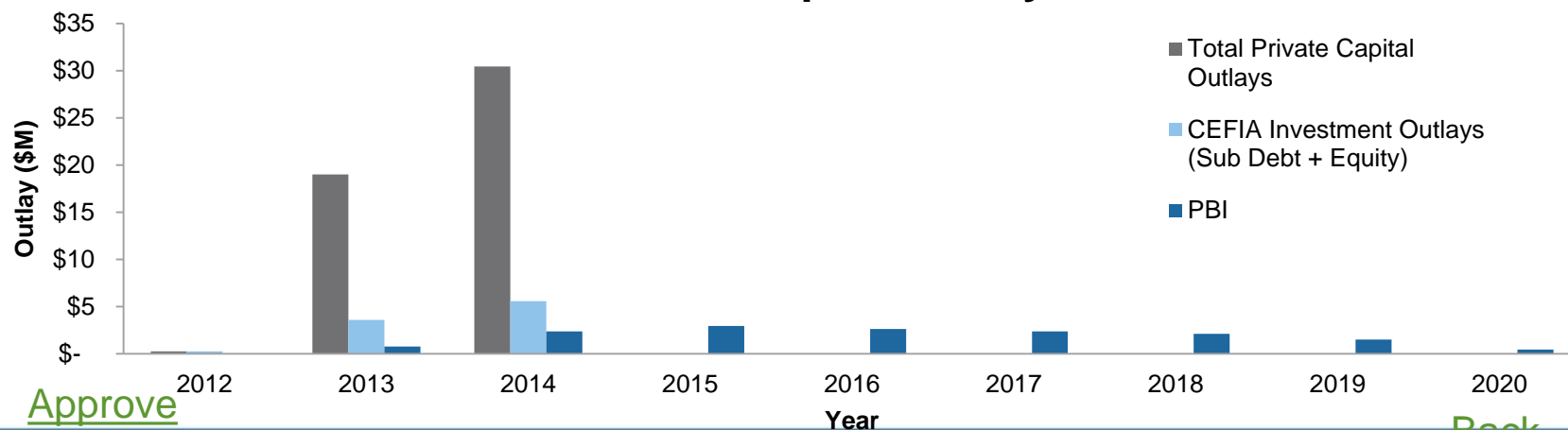
\$ 3.5M LLR (ARRA-SEP)

\$28.1M Total Public Funds Out

Private Capital

- \$25.1M [TBA] (Tax Equity)
- \$24.6M [TBD] Senior Lender
 - Reznick Capital Markets has been retained to source and secure senior lender(s)
- CEFIA is already in talks with a tax equity investor
- LLR will ensure Senior Debt Service Coverage Ratio is 220%+ or more, making SL2 highly attractive

SL2 Capital Outlays



Solar Lease II

Fit with Strategic Goals



Attract and deploy capital to finance Connecticut's ambitious clean energy goals

Help scale-up the deployment of renewable energy in the state



Develop and implement strategies that bring down the cost of clean energy in order to make it more accessible and affordable to consumers

Reduce reliance on grants, rebates and other subsidies and move towards innovative low-cost financing of clean energy deployment



Solar Lease I and II Comparison

Solar Lease I Award-Winning

\$44.3M Total Hard Costs
\$7.07/Watt Installed Cost

6.3MW Solar PV Installed
855 Leases

8% (\$4.7M)
Developer Fee to Gemstone

1 :: 1
Private :: Ratepayer Investment

Subsidy out: \$22.6M
Subsidy back: \$0

Solar Lease II

\$58.7M Total Hard Costs
\$4.21/Watt Installed Cost

14.1 MW PV and 5K MMBTU SHW
~2,000 Leases (& PPAs)

13% (\$8.6M) Developer (CEFIA) Fee
returned to Ratepayers

5 :: 1
Private :: Ratepayer Investment

Subsidy out: \$15.2M
Subsidy back: \$15.2M

Solar Lease II

Goals (1/2)



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Attract private capital

- [TBA] will provide Tax Equity of \$25.1M
- Another private capital provider (TBD) will provide \$24.6M Senior Debt
- LLR will ensure Senior Debt Coverage is attractive, enabling a new private capital provider to enter the space
- **Private :: Ratepayer investment = 5 :: 1**

Scale up deployment of solar in CT

- Structure allows pooling of many leases to take advantage of ITC for more affordable installations
- Builds on success of SL1 and Solarize to offer independent contractors, and homeowners a financing tool competitive with larger companies
- Will result in a great deal of new renewable capacity:
 - **11MW** Residential Solar
 - **3.1MW** Commercial PV,
 - **5,000MMBTU** Solar Thermal

Earn return for ratepayers

- CEFIA will earn an IRR of 2% on the **all Ratepayer funds invested (including PBI)**
 - CEFIA's IRR for funds invested (equity + debt) is 9%
- PBI only released as clean energy is produced, and spread over the first six years of a system's life (first eight years of fund life)
- Capital outlays of subordinated debt and equity spread over three fiscal years

Create an accessible financial tool for local, independent installers in order to support both the widespread adoption of residential and commercial solar photovoltaic (PV) and solar hot water (SHW) and the sustained growth of a clean energy industry in Connecticut

Solar Lease II

Goals (2/2)



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Strengthen and Enhance Supplier Diversity

- Federal Tax code and high transaction costs allows only enough taxable income can take advantage of solar incentives “at scale”
- CEFIA’s SL programs level the playing field
 - Contributes to a sustainable PV industry and supplier base in CT
- More competition will drive PV costs lower – faster!

Deepen Solar Access to more CT residents

- Open to FICO scores ≥ 640 and up (same as SLI)
 - SLI average FICO score was over 750
 - ARRA-SEP LLR enables expansion to lower FICO scores with private capital
- SL2 includes access for MUSH & Commercial market plus SHW systems
- No upfront cost, and results in cheaper energy

Manage the transition to less ratepayer support

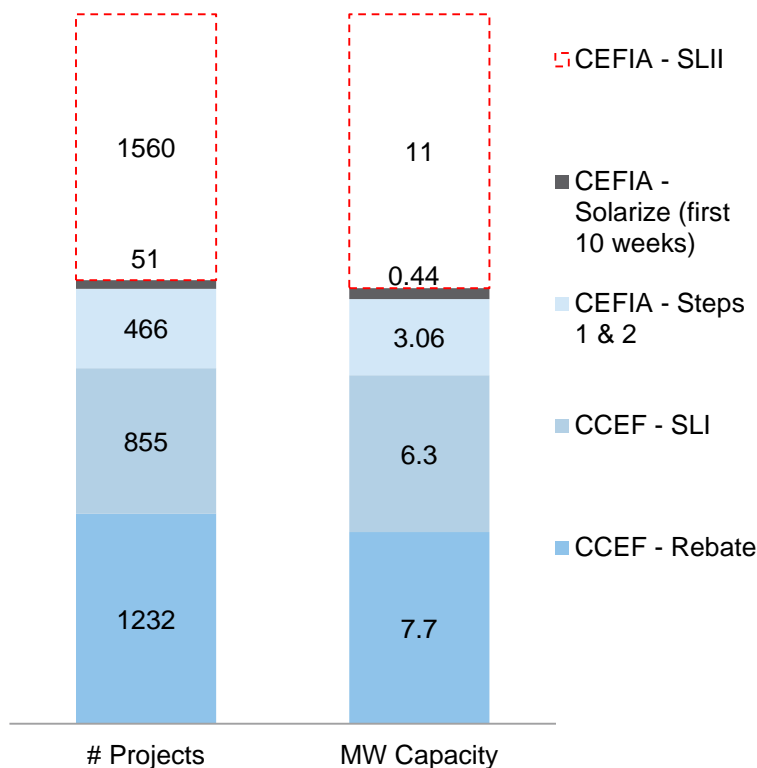
- Gather data on MUSH, Commercial, and residential financial performance
- Participate in capital stack as an investor – paves the way for private capital and lower incentives

Create an accessible financial tool for local, independent installers in order to support both the widespread adoption of residential and commercial solar photovoltaic (PV) and solar hot water (SHW) and the sustained growth of a clean energy industry in Connecticut

Solar Lease II

Scale up deployment

Total Residential PV Systems in Connecticut



- ▶ SL2 will increase installed residential capacity by 63% (from 17.5MW currently to 28.5 MW by end of 2014).
- ▶ The program will benefit from the recent Solarize program which drove down the installed cost of Residential Solar PV by 20-30% in the first 10 weeks of the program
- ▶ The product will also enable installers to offer financing for Solar Hot Water systems, which are already at or near cost-competitiveness for buildings that use oil or electric heating

Solar Lease II

CEFIA's Role



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

CEFIA Department

Technical and Energy Underwriting Input

- Criteria for qualifying contractors
- Financing agreement language

Deployment, Finance, General Counsel

Capital Stack Participation

- Provide Equity, Subordinated Debt, and PBI

Deployment, Finance, General Counsel

Credit Enhancements

- LLR to assist attracting senior debt from new sources

Finance, General Counsel

Data Analysis

- Financial performance (default rate, repayment performance)
- Energy savings performance (costs, fuel displaced)

Finance, EM&V

Additional Marketing Support

- Ensure DEEP, EnergizeCT, and utilities are represented
- Assist contractors in understanding and marketing product

Marketing, Outreach

Solar Lease II

How Implemented



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CEFIA

- Additional contractor qualification (if necessary)
- Develop marketing protocol with EnergizeCT
- Educate Contractors
- Develop financing agreements

AFC First

- Service Leases
- Develop application
- Maintain data

Installers

- Market to customers
- Maintain standards and qualifications

AFC First successfully partnered with CEFIA as the servicer for SL1, and has experience with many other clean energy programs, including KeystoneHELP

CEFIA already has qualified over 100 installers for PV and SHW, and will look to standardize the qualification process across all CEFIA programs

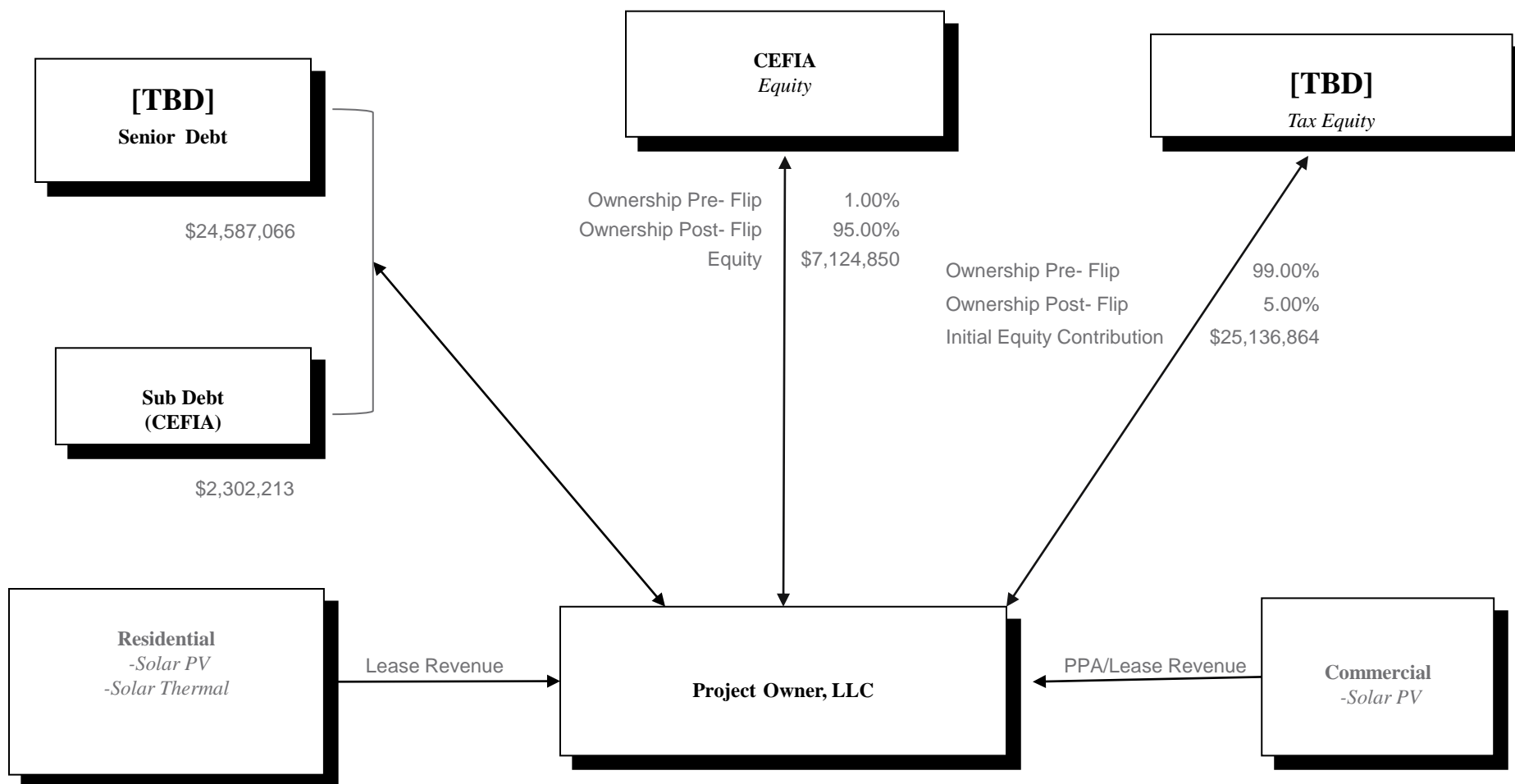
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Solar Lease II Structure



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CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #5b

Residential Solar Investment Program (Finance Program) –
Capital Competition
November 30, 2012

Capital Competition

Key Questions

- ▶ **Strategic Plan** – is the Capital Competition 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?

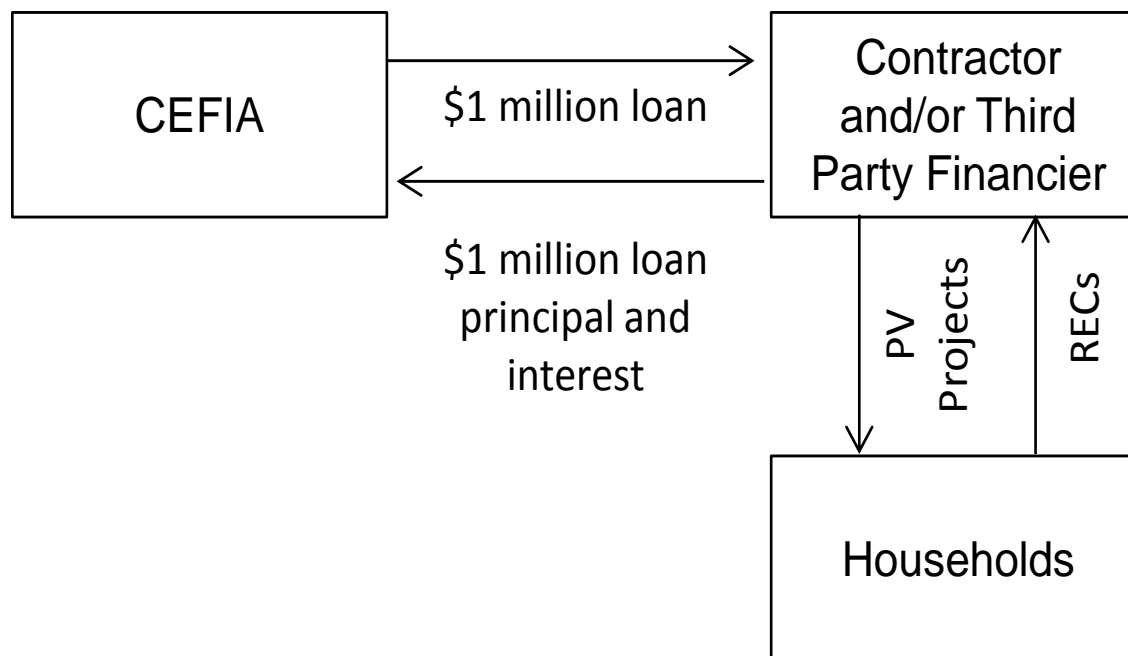
Capital Competition

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

► Capital Flow Diagram



Capital Competition Overview



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **“Green Bank” Pilot** – provide \$1 MM to start (i.e. up to \$10 MM if pilot successful) of low-cost (i.e. 2% interest rate) and long-term (i.e. 20 years) capital as a loan
 - ▶ Capital competition RFP to identify a developer-financier that can “deliver the most amount of clean electrons per dollar of ratepayer funds at risk”
 - ▶ Winning developer-financier will not be able to access the rebate or PBI, but will retain the RECs and other environmental attributes from the residential solar PV projects



CLEAN ENERGY
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Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #6

Finance Program – C-PACE Transactions

November 30, 2012



CLEAN ENERGY
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Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #7

Transition Program – E-House Program

November 30, 2012

E-House Program

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **Strategic Plan** – is the E-House Program 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?



E-House Program

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

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

As the funding support for the E-House partnership would be in the form of a grant, once paid this 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 "Grants and Programs," which will have the effect of reducing unrestricted net assets.



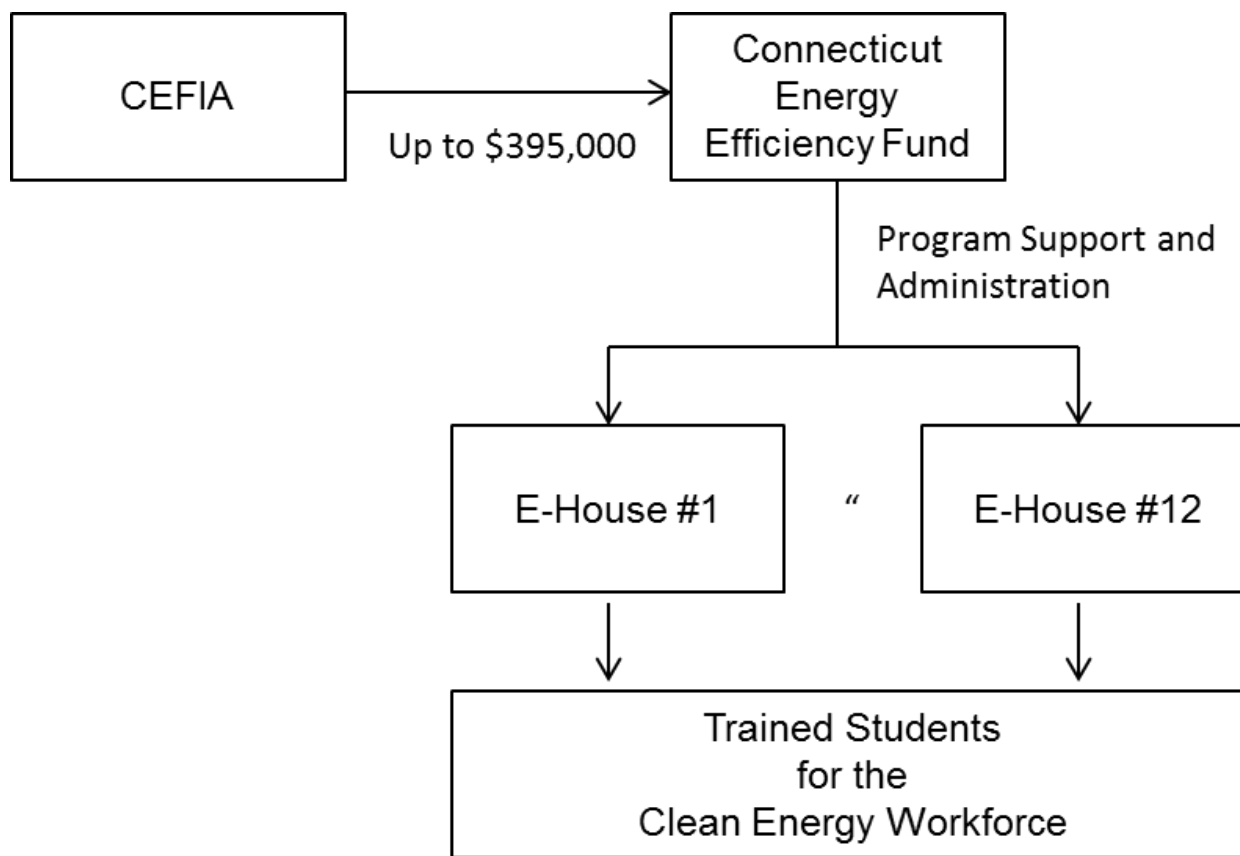
E-House

Key Questions



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

► Capital Flow Diagram



E-House Program

CEFIA Comprehensive Plan and Budget



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- ▶ Workforce Development recognized as a Program In Transition
- ▶ Budget Allocated to support the completion of CTHSS E-House Program
- ▶ Transitioning to CEEF and Administered by United Illuminating
- ▶ CEEF providing matching fund support—approved by CEEF BOD

E-House Program Overview



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **“E-Houses”** – Clean Energy Learning Laboratories for Technical High School Students
- ▶ **Partnerships** – a partnership between the CT Technical High School System, the Clean Energy Finance and Investment Authority and the CT Energy Efficiency Fund.

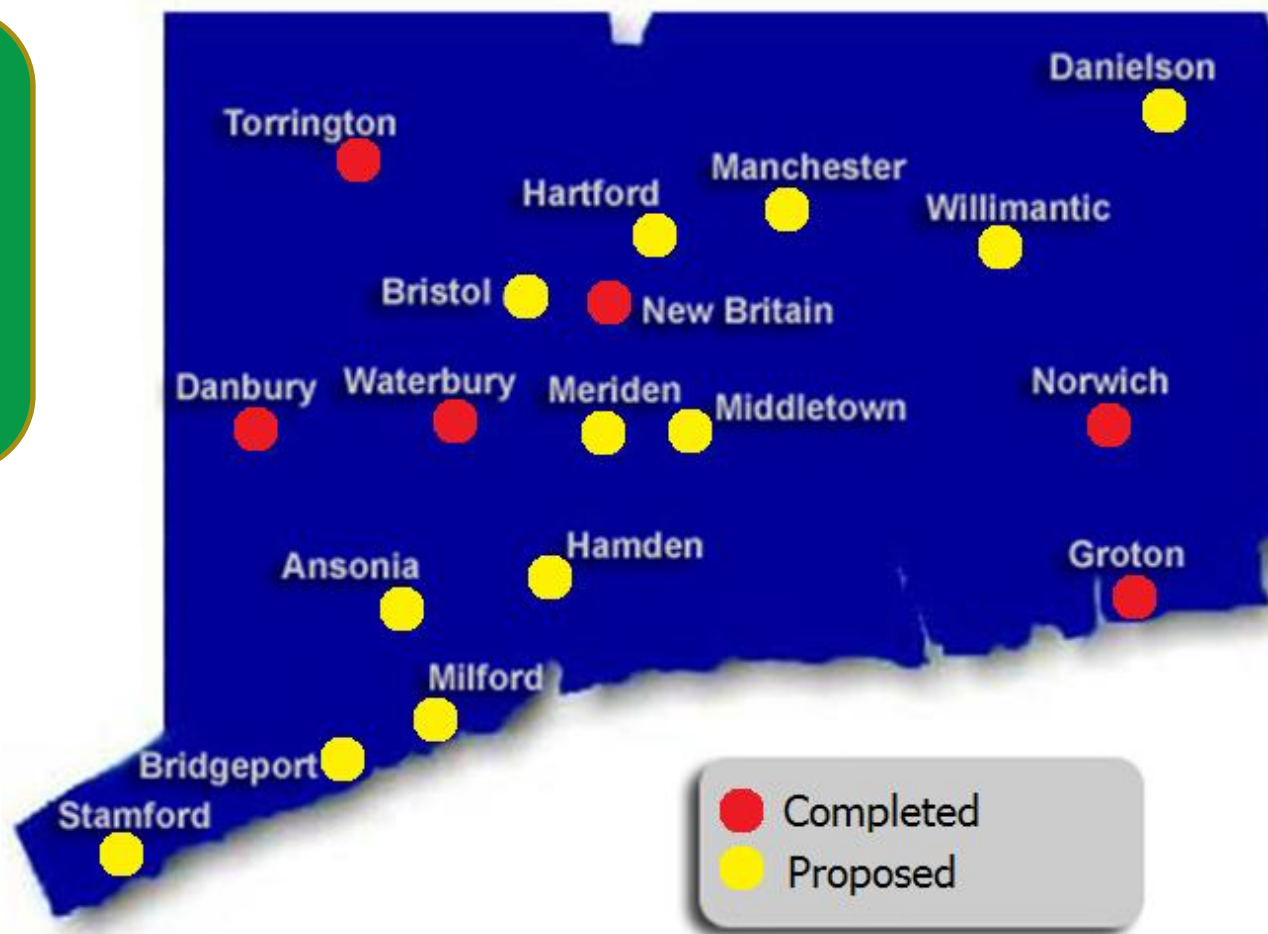
E-House Program

Overview of Technical High Schools



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FINANCE AND INVESTMENT AUTHORITY

- 18 schools
- 10,801 students
- 3,195 in construction trades



E-House Program

Goals



CLEAN ENERGY
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1. Increase knowledge of clean energy (i.e. energy efficiency, renewable energy, etc.) technologies
2. Offer “green” coursework & related hands-on equipment
3. Build blower-door testing, weatherization, energy-efficient building design and construction into training
4. Provide training on solar photovoltaic/thermal technologies.
5. Equip each school with high-efficiency ductless heat pumps, geothermal and/or energy recovery ventilators
6. Prepare students for emerging employment opportunities in energy efficiency, weatherization and clean energy fields



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #8

Funding Requests below \$300,000

Funding Requests below \$300,000

Deployment Committee



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- ▶ **Section 5.3.3 of Bylaws** - CEFIA Deployment Committee evaluates and approves funding requests between \$300,000 and \$2,500,000
 - ▶ By-Laws silent on approval requests below \$300,000
 - ▶ CCEF passed resolution to empower staff
- ▶ CEFIA Staff requests similar resolution that is:
 - ▶ pursuant to an established formal approval process
 - ▶ consistent with the CEFIA Comprehensive Plan
 - ▶ approved within CEFIA's fiscal budget



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Deployment Committee of the Clean Energy Finance and Investment Authority

Agenda Item #9

Regular Meeting Schedule for 2013

November 30, 2012

DEPLOYMENT COMMITTEE OF THE CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

**Draft Minutes –Special Meeting
Friday, August 24, 2012**

A special meeting of the Deployment Committee of the Board of Directors of the **Clean Energy Finance and Investment Authority (“CEFIA”)** was held on August 24, 2012, at the office of CEFIA, 865 Brook Street, Rocky Hill, CT.

1. **Call to Order:** Noting the presence of a quorum, Reed Hundt, Chairperson of the Deployment Committee, called the meeting to order at 3:00 p.m. Deployment Committee members participating: Reed Hundt; Donald Kirshbaum representing Denise Nappier, State Treasurer; and Matthew Ranelli (by phone).

Absent: Patricia Wrice.

Other Board Member Attending: Catherine Smith, Chairperson of the CEFIA Board (by phone).

Staff Attending: Mackey Dykes, Brian Farnen, Bryan Garcia, Dale Hedman, Bert Hunter (by phone), and Shelly Mondo.

2. **Public Comments:**

There were no public comments.

3. **Approval of Meeting Minutes:**

Mr. Hundt asked the Deployment Committee members to consider the minutes from the July 23, 2012 meeting.

Upon a motion made by Mr. Kirshbaum, seconded by Mr. Ranelli, the Deployment Committee members voted unanimously in favor of adopting the minutes from the July 23, 2012 meeting as presented.

4. **Review and Approval of Commitment Letter for HUD Energy Innovation Fund Grant Program:**

Staff was asked to clarify the action being requested by the Deployment Committee regarding the U.S. Department of Housing and Urban Development (“HUD”) Energy Innovation Fund Grant Program. Mr. Garcia noted that staff is asking the Deployment Committee to consider approving a conditional commitment letter for up to \$2,000,000 with the Connecticut Housing Finance Authority, HUD, Winn Development (“Winn”) and Local Initiatives Support Corporation (“LISC”) under HUD’s Energy Innovation Fund and to authorize staff to continue negotiating final terms and conditions for a pilot program. Staff would come back to the Deployment Committee for final approval of the terms and

conditions of a program at a later date. NRG, an affiliate of Winn, has been preliminarily selected by HUD to receive a federal grant of up to \$5,250,000 to pilot an innovative energy efficiency contract program to serve multifamily low-income housing developments. If staff is successful with the negotiations, Mr. Hundt stated that there may be a need to have a special Deployment Committee meeting to approve the final terms and conditions for a program. Attorney Farnen stated that the Deployment Committee can approve loans up to \$2,500,000, and the funding commitment for this proposed program is anticipated to be up to \$2,000,000.

In response to a question, Attorney Farnen indicated that he is not aware of any time limits from HUD regarding contract execution but noted that HUD's fiscal year ends September 30, 2012 and HUD has requested receipt of all third party commitment letters by the end of August to permit them time internally to complete their approval process. However, CEFIA's commitment is conditioned upon acceptable due diligence and the Deployment Committee's review and approval of the final agreement. CEFIA can decide not to proceed with the transaction if it is not deemed to be in its best interests.

Mr. Hunter explained the negotiation process between HUD and NRG and noted that HUD has indicated that it is confident that the negotiations with NRG will be successfully concluded. He noted that if any of the milestones are not completed under the work plan by NRG at any time to the satisfaction of HUD, HUD can terminate the transaction.

Mr. Garcia explained that following an internal meeting with staff and the Deployment Committee Chair, changes were made to the draft commitment letter to allow CEFIA to look at other financial instruments outside the loan loss reserve but still consistent with the needs of HUD. He stated that the changes give more flexibility to CEFIA with negotiating with WINN/LISC. Attorney Farnen reviewed the specific changes made to the draft commitment letter, noting that reference to "loan loss reserve" was changed to "credit enhancement." Mr. Hunter briefly explained that the credit enhancement could take the form of a loan loss reserve, whereby CEFIA would have risk exposure in providing support for the LISC/Winn loans following a 25% risk undertaking by HUD. Mr. Hunter explained the possible alternate structure which would involve CEFIA providing subordinated debt, noting that CEFIA's funds would be 25% of the proposed loan fund up to a maximum of \$2,000,000 and subordinated and second in priority to the LISC/Winn senior debt. However, CEFIA would still benefit from any insurance proceeds. In response to a question, Mr. Hunter stated that if the credit enhancement took the form of a loan loss reserve, the guarantee would be on both principal and interest.

Before disconnecting from the meeting, Ms. Smith indicated her support for moving forward with negotiations on the potential pilot program.

In response to a question, Mr. Hunter clarified that the HUD grant to Winn and its affiliate, NRG Solutions, is for \$5,250,000. The credit enhancement by CEFIA is up to \$2,000,000. Questions arose as to whether the leveraged amount of credit

enhancements of up to \$8,000,000 to be used for loans should be referenced in the commitment letter, but following clarification it was concluded that the reference to the \$8,000,000 facility in the term sheet, attached to the commitment letter, is sufficient.

Mr. Kirshbaum indicated his support for the pilot program and noted that this is a way for CEFIA to get into the multifamily housing area and learn more about energy retrofits and efficiency for multifamily housing. It was noted that the properties being considered are properties where the owners have the capacity to pay back the loans. There was general consensus that staff can learn from this pilot program and eventually expand to a broader audience and provide assistance to the multifamily tenants who pay energy bills themselves.

Upon a motion made by Mr. Kirshbaum, seconded by Mr. Ranelli, the Deployment Committee members voted unanimously in favor of adopting the following resolution approving a conditional commitment letter and authorizing staff to proceed with negotiations for the Pilot HUD Energy Innovation Fund Grant Program:

WHEREAS, NRG Solutions LLC, an affiliate of Winn Companies ("Winn"), with a letter of support from the Clean Energy Finance and Investment Authority ("CEFIA"), was awarded an Energy Innovation Fund grant in the amount of \$5,250,000 from the U.S. Department of Housing and Urban Development ("HUD") in support of the establishment of a Multifamily Energy Loan Fund Pilot Program; and

WHEREAS, the Board of Directors of CEFIA approved of a budget allocation through its strategic plan that included credit enhancement funds for a loan loss reserve to support a public-private partnership for the low-income multifamily market segment; and

WHEREAS, the Connecticut Housing Finance Authority and the Connecticut Department of Economic and Community Development have recently announced a \$300,000,000 10-year affordable housing initiative to strengthen communities through economic development, and CEFIA can support energy improvements for these efforts by attracting private capital for the deployment of energy efficiency and renewable energy technologies in these properties; and

WHEREAS, per Section 101 of Public Act 11-80, the Connecticut Department of Energy and Environmental Protection filed a report to the Joint Legislative Committee on Energy and Technology regarding the equitable distribution of conservation and renewable energy funds in Connecticut that found that CEFIA funds were not equitably distributed to economically disadvantaged communities in 2010.

NOW, therefore be it:

RESOLVED, that the Deployment Committee hereby approves of the execution and filing of a conditional commitment letter to HUD for the Multifamily Energy Loan Fund Pilot Program as set forth in the attached Exhibit A;

RESOLVED, that the Deployment Committee requests that the CEFIA staff present the final definitive terms and conditions of the Multifamily Energy Loan Fund Pilot Program for approval;

RESOLVED, that this Board action is consistent with CEFIA's Comprehensive Plan and Section 5.3.3 of CEFIA's Bylaws; and

RESOLVED, that the proper CEFIA officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect this Resolution.

5. **Adjournment**: Upon a motion made by Mr. Kirshbaum, seconded by Mr. Ranelli, the Deployment Committee members voted unanimously in favor of adjourning the August 24, 2012 meeting at 3:37 p.m.

Respectfully submitted,

Reed Hundt, Chairperson of the
Deployment Committee



CLEAN ENERGY

FINANCE AND INVESTMENT AUTHORITY

Memo

To: Deployment Committee

From: Bryan Garcia

CC: Mackey Dykes, Brian Farnen, Ben Healey, Dale Hedman, Bert Hunter, and Alexandra Lieberman

Date: November 23, 2012

Re: Repurposed American Recovery and Reinvestment Act State Energy Program Funds – Clean Energy Financial Innovation Program and the Residential Clean Energy Financing Program

BACKGROUND

As part of the American Recovery and Reinvestment Act State Energy Program (ARRA-SEP), the State of Connecticut received \$38.50 million of federal stimulus funds in 2009 to support renewable energy, energy efficiency, alternative fuel vehicles and infrastructure, and building code and operator training. \$20.00 million of these funds were appropriated to the Connecticut Clean Energy Fund (CCEF) to support four (4) grant programs:

- Commercial and Industrial Solar Photovoltaic – \$3,000,000
- Commercial and Industrial Fuel Cell – \$8,000,000
- Residential, Commercial and Industrial Ground Source Heat Pumps – \$5,000,000
- Residential, Commercial and Industrial Solar Hot Water Systems – \$4,000,000

On October 31, 2011, the new Board of Directors (Board) of the Clean Energy Finance and Investment Authority (CEFIA) asked staff to provide an update on the progress being made through the ARRA-SEP programs. Staff indicated that, with only six (6) months left in the program, there were still funds unallocated to projects – leaving the potential for funds to be sent back to Washington, DC. The Board asked me to develop a plan to ensure that all ARRA-SEP funds were expended by the closing date of the program on April 30, 2012.

At the next Board meeting on November 21, 2011, I presented a plan for fully expending the ARRA-SEP funds in a manner consistent with CEFIA's mission before the closing date of the program. The plan included repurposing ARRA-SEP funds from the grant programs noted above to financing programs¹ that would leverage federal funds and attract private capital investment. If ARRA-SEP funds are used for financing programs versus grant programs and they are appropriated from the state to an independent third party financier (i.e. CEFIA), then

¹ Financing programs are defined by the U.S. Department of Energy under ARRA-SEP guidelines as revolving loan funds and credit enhancements, including loan loss reserves, interest rate buy-downs, or third party insurance.

the federal government considers the funds to be immediately expended.² As a result of the plan presented, the Board directed me to work with the DOE and the Department of Energy and Environmental Protection (DEEP) to determine the feasibility of repurposing these funds towards financing programs and authorized me to immediately take the action steps necessary to begin and complete the transition process as quickly as possible.³

In discussions, DEEP and CEFIA decided that the use of the ARRA-SEP funds would be for credit enhancements and not revolving loan funds. The use of ARRA-SEP funds as a revolving loan fund would create a high administrative burden because it would DEEP to actively report on the progress of the program with the DOE in perpetuity – until all of the revolving loan funds were completely exhausted. It was also decided that the use of repurposed ARRA-SEP funds would be for the residential sector versus commercial and industrial sectors because there were several categorical exclusions for residential projects from other resource intensive federal requirements (e.g. NEPA). Working in close collaboration with the DOE and DEEP, CEFIA repurposed \$8.25 million of the \$20.00 million received by the CCEF from four grant programs into two financing programs:

- **Clean Energy Financial Innovation Program** (\$1,360,000 in program funding including a \$110,000 additional contribution from DEEP) – to create a competition to source innovative financial structures that attract private capital investment in clean energy through the use of credit enhancements; and
- **Residential Clean Energy Financing Program** (\$7,000,000 in program funding) – a pool of capital to be used for credit enhancements to attract private capital investment in Connecticut and support CEFIA's solar PV and solar hot water system lease and loan financing programs.

On February 1, 2012, DEEP submitted the request to the DOE to repurpose the ARRA-SEP funds from the original grant programs to the newly proposed financing programs. On February 27, 2012, the DOE approved of DEEP's request to repurpose the ARRA-SEP funds. And on April 11, 2012, DEEP and CEFIA engaged in a Memorandum of Understanding amending the original use of the ARRA-SEP funds into the new financing programs. CEFIA immediately invoiced DEEP in the amount of \$8.36 million, at which point DEEP wire transferred over the funds to CEFIA's bank account, and the ARRA-SEP funds for Connecticut were then considered fully expended with no funds going back to Washington, DC, per the Board's request.

Clean Energy Financial Innovation Program

On April 12, 2012, CEFIA released a Request for Proposals (RFP) for the Clean Energy Financial Innovation program. There were seven (7) proposals received through this RFP process (see Table 1) requesting \$2.65 million in credit enhancements that would attract nearly \$20.00 million in private capital – \$1.55 million in Interest Rate Buy-Downs (IRB) and \$1.10 million in Loan Loss Reserves (LLR) – see Table 1.

Table 1. Clean Energy Financing Innovation Program RFP Results

Proposal #	IRB	LLR	Total Credit	Private	Leverage
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² Pursuant to SEP Program Notice 10-008D revised on October 26, 2012 - http://www1.eere.energy.gov/wip/pdfs/sep_10-26-12.pdf

³ See Board of Director meeting minutes for October 31st and November 21st of 2011.

			Enhancement	Capital	Ratio
1	-	-	-	-	-
2	-	-	-	-	-
3	\$300,000	\$100,000	\$400,000	\$1,000,000	2.5:1.0
4	-	-	-	-	-
5	-	\$500,000	\$500,000	\$3,500,000	7.0:1.0
6	-	\$500,000	\$500,000	\$5,000,000	10.0:1.0
7	\$1,250,000	-	\$1,250,000	\$9,700,000	7.8:1.0
Total	\$1,550,000	\$1,100,000	\$2,650,000	\$19,200,000	7.3:1.0

The credit enhancements requested from these proposals ranged from financing electric vehicle recharging stations in partnership with auto dealerships to working with low income households to finance energy efficiency and healthy home improvements.

On June 29, 2012, the proposals were evaluated by a group of nine (9) experts – three (3) from CEFIA, two (2) from DEEP, three (3) from the Connecticut Energy Efficiency Fund (CEEF), and one from the Lawrence Berkeley National laboratory.⁴ The group selected four (4) of the seven proposals for CEFIA to follow-up with and begin negotiations and due diligence to bring a recommendation to the Deployment Committee for review and approval, including:

- **Housing Development Fund (HDF)** – development of an energy efficiency loan product targeting low-income, owner-occupied, single-family homes (1-4 units);
- **Connecticut Housing Investment Fund (CHIF)** – development of an energy efficiency loan product targeting low-income, non-owner occupied, single-family homes (1-4 units), and healthy homes;
- **Next Step Living (NSL)** – development of a loan product to support energy efficiency; and
- **Sungage** – creation of a public-private partnership with an institutional investor to support a loan product for solar PV.

Over the summer and into the fall, CEFIA staff followed up with each of these organizations, and is requesting the approval by the Deployment Committee of credit enhancements in the amount of \$1.31 million. These credit enhancements will attract nearly \$14.00 million of private capital investment at a leverage ratio of more than 10.0:1.0 – see Table 2. In comparison to the original CCEF grant programs of the ARRA-SEP program that received nearly a 2.0:1.0 funding leverage (or \$11.75 million of ARRA-SEP funds to attract 19.00 million of non-ARRA-SEP funds), the CEFIA financing programs, if successful, will achieve more than five times that amount leading to more clean energy deployment per dollar of ARRA-SEP funds at risk.

Table 2. Estimated Private Capital Leveraged from Credit Enhancements through the Clean Energy Financial Innovation Program

Program	IRB	LLR	Total Credit Enhancement	Private Capital	Leverage Ratio
Low Income	\$50,000	\$360,000	\$410,000	\$2,500,000	6.1:1.0

⁴ The evaluators of the RFP included: Bryan Garcia, Dale Hedman and Bert Hunter of CEFIA, Teddi Ezzo and Cindy Jacobs of DEEP, Shirley Bergert, Jamie Howland, and Rich Steeves of CEEF, and Merrian Borgeson of LBNL.

Loan					
Credit Union Loan ⁵	-	\$600,000	\$600,000	\$6,700,000	11.2:1.0
Solar PV Loan	-	\$300,000	\$300,000	\$4,500,000	9.0:1.0
Total	\$50,000	\$1,260,000	\$1,310,000	\$13,700,000	10.5:1.0

It should be noted that CEFIA staff expect to come back to the Deployment Committee in Q1 of 2013 for review and recommendation of approval for a credit enhancement for CHIF targeting low-income investor-owned properties.

The staff recommendations for review and approval of the above mentioned financing programs are detailed in separate due diligence packages in the Deployment Committee mailing.

Residential Clean Energy Financing Program

CEFIA staff have been developing a follow-on version to the original Connecticut Solar Lease program (the Program). Launched in 2008, the Program was the first in the nation to pair a ratepayer fund (i.e. CCEF) with a financial institution (i.e. U.S. Bank) to leverage federal incentives. The Program used a combination of rebates, investment tax credits and accelerated depreciation to help Connecticut residents gain access to less expensive solar energy without any upfront costs while locking-in electricity prices. The capital for the Program included approximately \$17 million of tax equity and \$40 million of ratepayer funds – \$15 million of loans and \$25 million of rebates – for a total of \$57 million. Over 850 households were able to participate in the Program, and to date, there have only been two defaults on the loan portfolio. This Program was recently honored with a national State Leadership in Clean Energy award.

CEFIA staff have continued to innovate from the Program and are proposing a follow-on Connecticut Solar Lease program that will include solar hot water systems alongside solar PV for the residential sector. The structure will include more private capital and less ratepayer capital, reach more households, and return most if not all of the ratepayer funds, including subsidies, back to CEFIA over the 20-year life of the lease program. Through a combination of private sector capital, including nearly \$22 million of commercial debt and \$22 million of tax equity – with ratepayer funds of \$22 million, including nearly \$7 million of managing member equity and subordinated debt (invested over a 3-year period and both protected by \$3.5 million of ARRA-SEP loan loss reserves) and \$15 million of performance-based incentives (contributed over a 9 year period), the new lease program is forecasted to return to CEFIA over \$27 million over a 20-year period – paying the ratepayers back for their investment. The new program will reach nearly 2,000 households delivering over 10 MW (or 235,000,000 kWh's over the 20-year life of the program) of solar PV and 5,000 MMBtu (or 125,000 MMBtu of energy savings over the 20-year life of the program) of solar thermal hot water systems.

The staff recommendations for approval of the above mentioned financing program is detailed in a separate due diligence package in the Deployment Committee mailing.

Financing Program Results

With the successful implementation of the financing programs involving the repurposed ARRA-SEP funds, the following results will be achieved – see Table 3.

⁵ CEFIA staff worked with Next Step Living, United Illuminating, and several credit unions to create a financing product that will be made available to all installers at low interest rates and for terms between 5 to 12 years in Connecticut.

Table 3. Estimated Performance of the Repurposed ARRA-SEP Funds in Financing Programs

Program	Credit Enhancement	Ratepayer Capital at Risk⁶	Private Capital	# of Loans	Annual Clean Energy Produced or Saved
Low Income Loan	\$410,000	-	\$2,500,000	350	25,000 MMBtu
Credit Union Loan	\$600,000	-	\$6,700,000	1,300	50,000 MMBtu
Solar PV Loan	\$300,000	\$500,000-\$2,500,000	\$4,500,000	240	1.7 MW
Solar PV and SHWS Lease	\$3,500,000	\$22,000,000	\$44,000,000	1,950	11.0 MW and 5,000 MMBtu
Total	\$4,810,000	\$22,500,000 - \$24,500,000	\$57,700,000	3,840	80,000 MMBtu and 12.7 MW

The successful implementation of these financing programs will demonstrate the new “green bank” model of CEFIA whereby the amount of clean energy electrons and energy savings are being maximized per dollar of ratepayer funds at risk.

⁶ CEFIA expects the ratepayer capital at risk will be returned through the various financing programs and is protected by the ARRA-SEP credit enhancements in the form of a loan loss reserve.



To: Bryan Garcia, President, Clean Energy Finance and Investment Authority
From: Commissioner Dan Esty, Department of Energy and Environmental Protection
Cc: Jessie Stratton, Tracy Babbidge, and Alex Kragie
Date: November 21, 2012
Re: Pilot Programs to Finance Energy Upgrades

Section 116 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*, (P.A. 11-80) requires the Department of Energy and Environmental Protection (DEEP) to establish a residential heating equipment financing program. This program will allow residential customers to finance, *through on-bill financing or other mechanism*, the installation of energy efficient natural gas or heating oil burners, boilers and furnaces to replace (1) burners, boilers and furnaces that are not less than seven years old with an efficiency rating of not more than seventy-five per cent, or (2) electric heating systems. I want to ensure that the most efficient equipment is being financed through this program.

Consistent with the Draft 2012 Connecticut Comprehensive Energy Strategy (Draft Strategy) and P.A. 11-80, DEEP requests that the Clean Energy Finance and Investment Authority (CEFIA) coordinate with DEEP to develop pilot programs(s) to finance equipment energy efficiency upgrades for the residential sector. These pilots should determine the most effective programs to attract sufficient private capital at low interest rates, to make residential clean energy investments—including investments to upgrade or replace inefficient furnaces and boilers—affordable on the scale needed to achieve Connecticut's overall energy goals. I request that you coordinate with United Illuminating, Connecticut Light & Power, and members of the Energy Efficiency Board to incorporate appropriate incentives and to prevent customer confusion with the Connecticut Housing and Investment Fund program – because all clean energy financing programs will be co-branded underneath the EnergizeCT marketing program.

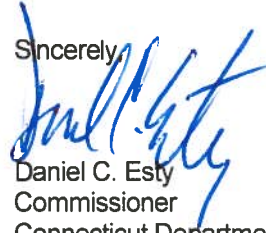
One of the pilot programs for financing residential energy efficiency measures CEFIA should develop and implement is a “low or no” interest rate loan program modeled on the zero interest HEAT loan offered by Mass Saves (Massachusetts’ utility-administered efficiency program). The HEAT loan program is administered directly by community banks and credit unions, with Mass Saves’ subsidy in the form of an upfront buy-down of the interest rate to 0%. The Draft Strategy proposes that CEFIA pilot a similar program with Connecticut banks and establish a loan loss reserve, interest rate buy down, or other credit enhancement mechanisms to support affordable interest rates and enable a payback period for the homeowner of up to twelve years. In the design of your financing program, I want to stress that your focus should be to attract and deploy private capital so as to reduce our reliance on ratepayer resources.

The second pilot program for financing residential energy efficiency measures CEFIA should develop and implement is “on-bill” financing. Through on-bill financing, homeowners can finance energy efficiency, heating equipment upgrades or conversions, and renewable energy improvements with little or no upfront costs by paying for those measures over an extended time on their monthly utility bills. Typically, the loan terms on these clean energy investments are structured so that savings from the efficiency or renewable energy improvements are greater than the loan repayment cost. As a result, the homeowner will have no increase in their monthly utility bill– and ideally gets some portion of the savings from day one. I ask that you begin to explore the merits of on-bill financing to determine whether or not it is a vehicle to attract low-cost private capital investment in Connecticut.

Lastly, I note that on April 4, 2012, DEEP and CEFIA engaged in a Memorandum of Agreement for the purpose of undertaking projects of mutual interest, which were specific to the use of federal funds for a "Clean Energy Financing Program" through the American Recovery and Reinvestment Act State Energy Program (ARRA-SEP). Those funds are to be used for credit enhancements to leverage additional public and private sectors sources of capital in support of residential energy efficiency and renewable energy financing programs. I would request that you use these federal resources to attract private capital from credit unions, community banks, or other sources to invest in the residential financing programs.

Please respond to Jessie Stratton, Director of Policy, at Jessie.stratton@ct.gov to confirm CEFIA's acceptance of this role. DEEP's goal is to complete programmatic design for both pilot programs this year, and also launch at least one of the pilot programs this year.

Sincerely,



Daniel C. Esty
Commissioner
Connecticut Department of Energy
and Environmental Protection



CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

Cozy Loans

A Low-Income Residential Financing Program

Due Diligence Package

November 30, 2012

Document Purpose: This document contains background information and due diligence on the Cozy Loan Program and the organizations involved, including the Housing Development Fund and the Opportunity Finance Network. This information is provided to the CEFIA Deployment Committee 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: CEFIA Deployment Committee
From: Bryan Garcia, Dale Hedman, Bert Hunter, and Alexandra Lieberman
Date: November 30, 2012
Re: Cozy Loans Program

Summary

The Cozy Loans Program has been proposed to CEFIA by the Housing Development Fund, Inc. (HDF) in response to CEFIA's Financial Innovation Request for Proposals (RFP) issued on April 12, 2012. This innovative pilot program enables CEFIA to leverage a \$410,000 credit enhancement mechanism, using repurposed ARRA-SEP funds, to support a \$2,500,000 fund of third party capital. HDF will administer the fund with the purpose of servicing and underwriting energy upgrade loans for low- and moderate-income owner-occupied households in Connecticut. This pilot will help lay the foundation to create a mainstream loan product that will reduce energy costs and enhance budget predictability for households that need it most. The program will also contribute to the creation of a stream of high-quality jobs for installers and contractors.

Program Description & Objectives

Through the Cozy Loan program, unsecured loans of up to \$50,000 per project will be provided at a bought-down rate of about 4.5% to borrowers that occupy residential 1-4 unit households and earn up to 80% of Area Median Income (AMI)¹ to finance comprehensive energy audit and home assessments.² CEFIA will work with HDF to develop a comprehensive list of eligible measures.

The Opportunity Finance Network (OFN) will provide \$1.0M of capital into the fund, through a program-related investment by Bank of America. Based on HDF's positive, pre-existing relationships with community banks and other capital providers, HDF will raise an additional \$1.5M upon approval of the credit enhancements.

The fund will exist within HDF. HDF will manage the fund and market, underwrite, service, and close the loan; and will develop underwriting and approval procedures for loans made through the fund. The guidelines, and any changes to them, will be subject to CEFIA's approval.

¹ 80% Area Median Income in Connecticut depends on the town, and is up to \$106,700 for Fairfield County. Median Income data can be found at <http://www.chfa.org/Rental%20Housing/for%20Developers%20and%20Sponsors/Tools,%20Calculators%20and%20Look-ups/HMFAlimits.aspx>

² Eligible upgrades will include: duct and air sealing, HVAC upgrades, insulation, window replacements, and Solar Thermal water domestic water heating

Strategic Plan

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

As a “New Program” in the Residential sector, Cozy Loans is consistent with CEFIA’s Comprehensive Plan:

<u>CEFIA Comprehensive Plan</u> <u>New Residential Program Requirements</u>	<u>Cozy Loan Program</u>
Comprehensive program for clean energy upgrades	Many eligible measures, focused on energy efficiency
Long-term, Low-Interest Loan and/or leasing program	4.5% rate, 10 year tenor
Uses ARRA-SEP funds and/or ratepayer capital	Utilizes \$410,000 of repurposed ARRA-SEP funding
Creates a Loan and/or Credit Enhancement	Provides two types of credit enhancement to encourage financing to the low-income sector

Additionally, the program proposed by HDF fits directly into the first of the four “market failures” CEFIA identified in the Financial Innovation RFP:

“Extend credit or offer micro-loans to currently underserved low and moderate income households to earn CRA credits”

CEFIA believes that HDF is uniquely qualified to extend credit for energy upgrades and improvements to this market. Since its founding in 1989, HDF has invested \$43.8M in affordable housing in Connecticut, and assisted 1,463 families purchase their first homes.³ Not only can HDF’s large borrower base serve as a starting point for loan origination, but the organization’s experience marketing home loans to this segment will also serve to expedite origination beyond its current borrower pool.

Through the pilot, CEFIA will collect repayment and energy use data on this market segment and make this data available in order for similar programs to be replicated by others. It will also assist in “proving the case” for using private capital to finance energy savings by providing financial performance in the low to moderate income segment – a key focus of the Draft Comprehensive Energy Strategy recently released by DEEP.⁴

Ratepayer Payback

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

³ Source: <http://hdf-ct.org/about-us>

⁴ Source: <http://www.ct.gov/energy strategy>

Given that the funds used for the Cozy Loan program are for credit enhancements (i.e. loan loss reserves and interest rate buy-downs) from repurposed ARRA-SEP funds from the U.S. Department of Energy and Connecticut Department of Energy and Environmental Protection, and administered by a third party financier (i.e. CEFIA), the Connecticut ratepayers will not achieve a financial payback for the use of these funds as they aren't contributing to the program. However, the Cozy Loans program helps CEFIA achieve its strategic goals of leveraging private capital at a rate of 6:1 and will result in a cost of \$22.5 per MMBTU saved.

Additionally, eligibility requirements encompass 45% of households in Connecticut, making the program far-reaching for households that have been previously un-addressed for energy upgrades.

Census Area	2012 Estimated AMI	80%AMI	Total Population in Area	Population Addressed by Cozy Loans	% Population (2012) Below 80% AMI
BRIDGEPORT-STAMFORD-NORWALK, CT	106,700	85,360	331,530	162,869	49.1%
HARTFORD-WEST HARTFORD-EAST HARTFORD, CT	87,700	70,160	464,933	229,906	49.4%
NEW HAVEN-MILFORD, CT	82,500	66,000	326,523	161,906	49.6%
NORWICH-NEW LONDON, CT	84,400	67,520	108,239	53,633	49.6%

http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_DP03&prodType=table

Total Below 80% AMI	608,314
Total Households in Area	1,231,225
% Households Affected in Areas	49.4%

Terms and Conditions

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

ARRA-SEP funds for the loan loss reserve (LLR) (\$360,000) will only be advanced to HDF as funds are acquired from its capital providers but will only be expended as originated loans enter default. HDF shall be entitled to payment from the loan loss reserve account on unrecovered losses on a loan only after the loan is at least 90 days past due and only if HDF has exercised commercially reasonable efforts to collect such loan. HDF shall also provide portfolio performance data within each Quarterly Report (defined below), which shall include but not be limited to repayment history, delinquencies, bad debts/defaults, etc.

The interest rate buydown (IRB) (\$50,000) component of the credit enhancement will be released to HDF at closing, but HDF will only draw down these funds to match interest payments to OFN.

Capital Expended

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

The deal structure does not require the expenditure of any ratepayer capital – all funds from CEFIA are through repurposed ARRA-SEP funds. The \$50,000 IRB will be released upon closing but the \$360,000

LLR will remain within CEFIA until loans enter default. Total expenditure will be between \$50,000 (with no defaults) to \$410,000 (with all funds drawn down and 14.4% default rate).

Risk

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

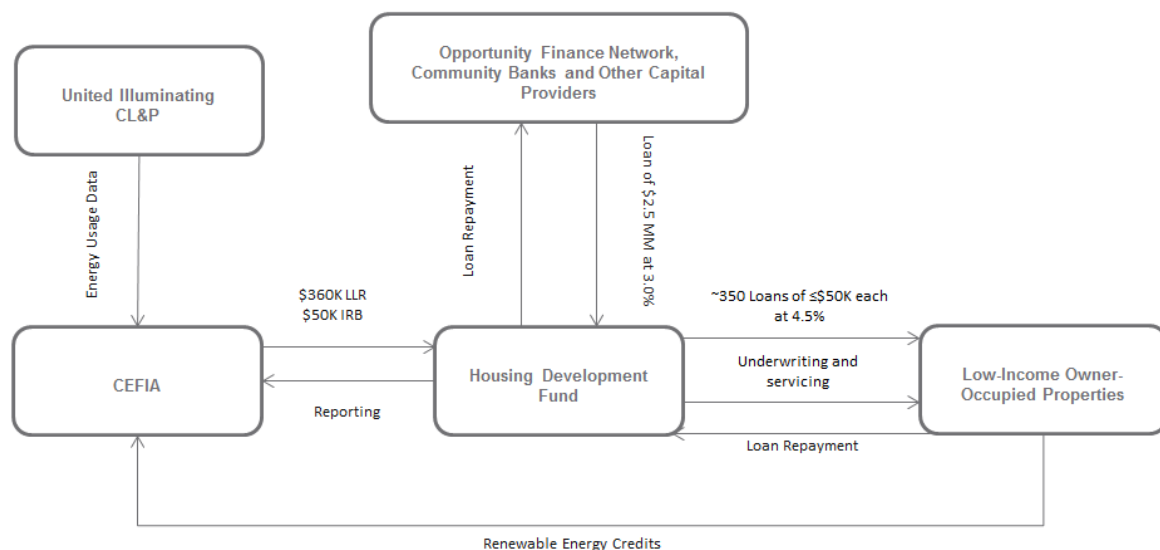
No ratepayer capital is at risk, but the maximum amount of ARRA-SEP funds supporting the program is \$410,000. This would imply origination of 100% of the \$2,500,000 loan pool and a 14.4% default rate, which is unlikely given that HDF will market originally to current and prospective homeowners, who have averaged 5% default rate. At a 5% default rate, the ARRA funds expended would be \$125,000.

Financial Statements

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

The use of the credit enhancements will result in the recognition of income on the income statement (Grant Income – ARRA) and a simultaneous reduction in “Deferred revenue – ARRA” on the liability side of the balance sheet. Also, there would be a reduction in the CEFIA Restricted Cash Account (Non-current Asset on the Balance Sheet) related to ARRA-SEP funds and a corresponding recognition of Grant Expense on the income statement, which will reduce Restricted Net Assets as the funds are distributed to HDF.

Capital Flow Diagram



Target Market

Who are the end-users of the project?

The abundance of older housing stock in the state offers remarkable potential for reductions in energy usage. There is significant potential for impact through a coordinated effort aimed at

increasing efficiency and reducing costs. As of 2000, 84% (approximately 1.1 million units) of Connecticut housing stock were built before 1980 and 35% (450,000 units) were built before 1950.⁵ Often, low income households can benefit most from energy upgrades, due to the fact that they spend a disproportionately large amount of income on energy.

Initially, HDF will market these loans to three groups with whom they already enjoy close relationships⁶, targeting specifically owner-occupiers of 2-4 unit households at first:

- a. **Existing HDF client homeowners:** HDF has provided financing to 1,463 Connecticut residents purchasing their first home since 1989, including lending for down-payment and closing cost assistance to help low- and moderate-income access affordable home financing. HDF requires buyers to attend post-purchase counseling events every three years, and thus has active communications and an existing trust relationship with this group.
- b. **Prospective Homebuyers:** HDF works with approximately 600 potential homeowners each year, and provides gap financing to around 150 households closing on their first home. HDF could market to this group immediately upon closing.
- c. **Participants in HDF's new Landlord Entrepreneurship and Affordability Program (LEAP):** Through LEAP, HDF will offer landlord training, financing for purchase and rehab of foreclosed, abandoned or otherwise available small multifamily properties (2-4 units) in Connecticut's urban core communities. HDF will specifically target inclusion of Cozy Loans as they assemble the details of LEAP.

CEFIA Role, Financial Assistance & Selection/Award Process

CEFIA issued a RFP for Financial Innovation programs on April 12, 2012, and received seven responses. HDF was one of four projects selected to negotiate the receipt of credit enhancements through repurposed ARRA-SEP funds, from the US Department of Energy.

In the proposed pilot, CEFIA will provide two different types of credit enhancements:

- \$360,000 in Loan Loss Reserve (LLR)
- \$50,000 in Interest Rate Buydown (IRB)

Additionally, CEFIA will provide technical and energy-specific financial input as HDF develops the program.

Program Partners

The Housing Development Fund (HDF): A Community Development Financial Institution with \$32.5M in assets. Founded in 1989, HDF is focused on providing financing for low- to moderate-income potential homeowners in Connecticut.

⁵ HDF Financial Innovation RFP Response, page 2

⁶ Ibid, 1-2.

Opportunity Finance Network (OFN): A national network of Community Finance Development Institutions (CDFI), investing broadly in programs and projects that benefit low-income or other disadvantaged communities nationally.

Community Bank(s) or other Capital Provider(s), TBD.

Risks and Mitigation Strategies

Underwriting risk: CEFIA will have input to the development of underwriting guidelines. This will help ensure that the loans will be of sufficient quality so that the structure can maximize the effectiveness of the proposed credit enhancement. Additionally, HDF had demonstrated organizational ability to develop highly successful underwriting criteria. While HDF's homebuyer clients average an income level of 65.5% AMI, over 95% are current on their mortgages. This compares favorably with typical bank mortgages, which average around 88% nationwide.⁷ It is worth noting that these homeowners live in an area with unusually high costs of living.

Concentration risk: As per the proposed term sheet, in the event of a loan in excess \$10,000, CEFIA has the option to require a UCC1/UCC1A⁸. For loans made in excess of \$20,000, CEFIA may require a third lien. This ensures that CEFIA's credit enhancement is not placed unduly at the risk of a few large loans.

Origination Risk: CEFIA believes that HDF will be able to market the program based on their demonstrated ability in originating housing loans to the low-income market. However, in the event that HDF is unsuccessful originating loans, CEFIA will not be liable for any undrawn or undue interest rate payments through the proposed IRB, nor will CEFIA be required to release LLR funds if loans are not originated and therefore do not default.

Operating Procedures

The program will be rolled out in the following steps:

1. Once CEFIA's Deployment Committee has approved the Credit Enhancement and staff has executed a financing agreement with HDF, then HDF will access \$1.0 million in capital from OFN and then begin sourcing additional capital from community banks to reach a \$2.5M pool.
2. HDF will work with financing partners and CEFIA to develop underwriting guidelines.
3. HDF will train internal counselors/loan officers, providing details of underwriting standards, program specifications and materials to communicate this opportunity to prospective borrowers.
4. HDF would market this program initially to three groups with whom they already have close relationships

⁷ HDF Financial Innovation RFP Response, p.1

⁸ UCC1/UCC1A forms act as a notice to the public that someone (i.e., a secured lender) has an interest in a property, typically collateral and serves to protect the secured party's first in time, first in line priority. Connecticut's form be found here: http://www.ct.gov/sots/lib/sots/commercialrecording/allforms/ucc/ucc-1_financing_statement.pdf

5. HDF will work with CEFIA to create a list of qualified contractors.⁹
6. HDF will launch pilot program by February 28, 2013.
7. CEFIA, HDF and financing partners will refine product terms and conditions.
8. HDF will launch product(s) in broader arena: prospective borrowers, LEAP borrowers, general public.
9. CEFIA and HDF will track implementation, results and lessons learned, and further refine implementation.

Fund operating procedures:

- HDF will market the new program.
- CEFIA will deposit Credit Enhancement funds as HDF draws down funding from OFN and other capital providers.
- OFN will provide \$1.0M with quarterly draws of at least \$200,000 for up to five quarters
- HDF will manage the loan fund, and underwrite, service and close individual loans.

Individual loan characteristics include:

- Up to \$50,000 for broad energy improvements
- Targeted to borrowers at ≤80% of Area Median Income
- Offered at an interest rate of 4.5%
- 10 year term
- Up to 20% can be used for non-clean energy related improvements, such as moisture or asbestos remediation, gas leak repair, roof repair, etc.
- Non-revolving
- Upon closing each loan, HDF will require borrowers to sign a data release agreement enabling HDF to share loan performance, energy use and utility information with CEFIA.
- HDF will release quarterly information on the fund, including a list of transactions closed each quarter that will be reported to the DOE per the ARRA-SEP grant reporting requirements.
- Pending the use of any Connecticut Energy Efficiency Fund rebates, CEFIA will be entitled to all Renewable Energy Certificates.
- In the event of a default, CEFIA will be entitled to replenish credit enhancement funds from any collateral securing the loans.

Resolutions

WHEREAS, the Clean Energy Finance and Investment Authority (CEFIA) has entered into an Memorandum of Agreement (MOA) with the Department of Energy and Environmental Protection (DEEP) to repurpose American Recovery and Reinvestment Act State Energy Program (ARRA-SEP) fund for the undertaking of a project of mutual interest;

WHEREAS, the project of mutual interest set forth in the MOA is to provide funding for credit enhancements (i.e., loan loss reserves, interest rate buy-downs, third party loan insurance) for two financing programs administered by CEFIA. The two programs supported by this funding are the Residential Clean Energy Financing Program and the Clean Energy Financial Innovation Program;

⁹ CEFIA already maintains a list of PV and Solar Hot Water Installers:

<http://www.ctcleanenergy.com/YourHome/ResidentialSolarInvestmentProgram/FindanApprovedContractor/tabid/85/Default.aspx>.

WHEREAS, the Clean Energy Financial Innovation Program shall be used to leverage additional public and private sector sources of capital through a competitive solicitation process designed and administered through CEFIA;

WHEREAS, the Housing Development Fund, Inc. submission of the Cozy Loans Program (Program) was down selected under CEFIA's competitive solicitation process for the Clean Energy Financial Innovation Program;

NOW, therefore be it:

- (1) Resolved, that funding be approved for the Program in an amount not-to-exceed \$360,000 for a Loan Loss Reserve (LLR) and \$50,000 for an Interest Rate Buydown (IRB) ("Credit Enhancements") through the use of repurposed ARRA-SEP program funds;
- (2) Resolved, that the President of CEFIA; and any other duly authorized officer of CEFIA, is authorized to execute and deliver, any contract or other legal instrument necessary to effect the Credit Enhancements on such terms and conditions consistent with the term sheet dated November 21, 2012 and as he or she shall deem to be in the interests of CEFIA and the ratepayers no later than six months from the date of this resolution; and
- (3) Resolved, that the proper CEFIA officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instrument.

Submitted by: Bryan Garcia, President and CEO, Bert Hunter, EVP and CIO, and Alexandra Lieberman, Manager of Clean Energy Finance



CLEAN ENERGY

FINANCE AND INVESTMENT AUTHORITY

CT HELPs (Home Energy Loan Program)

A Residential Financing Program

Due Diligence Package

November 30, 2012

Document Purpose: This document contains background information and due diligence on the CT HELPs program and the organizations involved, including Next Step Living, Inc., United Illuminating and its affiliated natural gas companies, and CEFIA's initial anticipated credit union partners (Connex, Mutual Security, Sikorsky, and United Shoreline). This information is provided to the CEFIA Deployment Committee 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: CEFIA Deployment Committee
From: Bryan Garcia, Bert Hunter, Ben Healey, and Alexandra Lieberman
Date: November 30, 2012
Re: CT HELPs Program

Summary

Through the new **Home Energy Loan Program** (CT HELPs), CEFIA proposes to leverage nearly \$7 million in private sector capital for investment into deep energy efficiency retrofits, renewable energy deployment, and fuel and equipment conversions in single-family homes across the state. In line with the State's Draft Comprehensive Energy Strategy, this program seeks to "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... through innovative financing mechanisms [sourced via] Connecticut's first-in-the-nation Green Bank (the 'Clean Energy Finance and Investment Authority')."¹

By creating a loan loss reserve of \$600,000, CEFIA will support local credit unions and community banks in providing capital for projects undertaken by Next Step Living, Inc. (NSL), a fast-growing, Massachusetts-based residential energy efficiency company, and other qualified contractors approved by United Illuminating (through the Connecticut Energy Efficiency Fund) and CEFIA. CEFIA will maintain this loan loss reserve on its books, and credit participating lending institutions will have a dedicated account with access to it on a pool-basis in respect of each lending institution's portfolio performance, while the lending institutions themselves will originate and service all loans offered through the program.

Since NSL successfully responded to a competitive Request for Proposals (RFP) that led to the creation of this financing program, the loan loss reserve will set aside \$300,000 to support financing for NSL customers over an initial 18-month period, after which remaining funds will flow into the general pool. The remaining \$300,000 of loan loss reserve funds will be made available to finance projects sourced through other qualified contractors. This pilot will lay the foundation for an expanded single-family energy efficiency and renewable energy finance offering, accessible through a broad network of qualified contractors, which will reduce energy costs for homeowners across the state while simultaneously driving business growth and job creation.

¹ Draft Comprehensive Energy Strategy, p. 2

http://www.ct.gov/deep/lib/deep/energy/cep/deep_draft_connecticut_comprehensive_energy_strategy.pdf

Program Description

Through the CT HELPs program, participating lending institutions will provide unsecured loans of up to \$25,000 to qualifying residential borrowers to finance comprehensive energy assessments and efficiency retrofits, in addition to qualifying renewable energy improvements and fuel and equipment conversions. The targeted loan mix will be a maximum of 20% of customers with FICO scores of 640-679 and a minimum of 80% of customers with FICO scores of 680 or above (both consumer classes must have debt-to-income ratios less than or equal to 45%). The rates and terms offered through the program will be as follows (on a not-to-exceed basis):

- Five years – 4.49%
- Seven years – 4.99%
- Ten years – 5.99%
- Twelve years – 6.99%

In partnership with the United Illuminating Company (UI) and its natural gas affiliates (i.e. Southern Connecticut Gas and Connecticut Natural Gas), CEFIA will launch this program with a select group of credit unions (likely to include one or more of the following – Connex, Mutual Security, Sikorsky, and United Shoreline), which will underwrite loans based upon the above criteria and their own lending standards. CEFIA will allow other lending institutions as well as Connecticut Light & Power and Yankee Gas customers to join the program on a rolling basis post-launch.

Participating credit unions and community banks will have access to the CEFIA loan loss reserve (LLR) on a pool-basis, in respect of each lending institution's portfolio performance, structured as follows:

- Class A (FICO 680+) loans earn a credit of 7.5% of the loan value toward the LLR;
- Class B (FICO 640-679) loans earn a credit of 15% of the loan value toward the LLR;
- To ensure strict underwriting standards, LLR drawdowns can take place only after 1.5% of the Class A portion of the lending institution's portfolio is deemed uncollectible, and after 3% of the Class B portion is deemed uncollectible;
- Under this LLR structure, with a weighted average overall reserve of 9% ($20\% * 15\% + 80\% * 7.5\%$), the \$600,000 in CEFIA-provided credit enhancement should support at nearly \$7 million in private lending.
- Half of the initial LLR will be restricted to support financing for NSL customers over an initial 18-month period, after which remaining funds will flow back into a common pool. (CEFIA staff will monitor the use of the LLR, and should the program prove successful and require additional funding, the intention would be to seek additional allocations.)
- The second half of the LLR will be made available to all Connecticut Energy Efficiency Fund (CEEF) and CEFIA qualified energy efficiency and renewable energy contractors

In addition, financing of related home improvements that do not contribute directly to enhanced energy efficiency (i.e., asbestos removal, lead abatement, etc.) will be allowed under the program, so long as they do not exceed 20% of a given loan's value.

Finally, subject to a yet-to-be drafted memorandum of understanding (MOU), CEFIA staff anticipates that UI and its natural gas affiliates will partner with CEFIA to assist with qualifying contractors for the program, as well as with quality assurance and quality control. All approved technology improvements installed under the program will be eligible for standard rebates through the CEEF and CEFIA.

Strategic Plan

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

As a new program in the residential sector, CT HELPs is consistent with CEFIA's Comprehensive Plan:

<u>CEFIA Comprehensive Plan</u> <u>New Residential Program Requirements</u>	<u>CT HELPs Program</u>
Comprehensive program for clean energy upgrades	Many eligible measures, focused on energy efficiency, renewable energy and fuel and equipment conversions
Long-term, low-interest loan and/or leasing program	Starting at not-to-exceed rates of 4.49% over five years, up to 6.99% over 12 years
Uses ARRA-SEP funds and/or ratepayer capital	Utilizes \$600,000 of repurposed ARRA-SEP funding
Creates a loan and/or credit enhancement	Provides a loan loss reserve to encourage affordable private financing to single-family homeowners

Moreover, CEFIA staff believes that Next Step Living, CEFIA's lead contractor partner for the CT HELPs program, is uniquely qualified to drive this program's success. Over the last three years, NSL has provided services to 25,000 Massachusetts customers, successfully taking advantage of and leading the loans originated by credit unions through the Mass Saves HEAT Loan program. Currently, NSL conducts 1,600 audits per month for Massachusetts residents, completes over 600 weatherization projects (insulation and/or air sealing) and helps over 100 customers per month go solar.

Thinking long-term, CEFIA staff plan to use this pilot to collect repayment and energy use data on the single-family residential market segment, and make this data publicly available in order for similar programs to grow without subsidy. Such data will assist in "proving the case" for using private capital to finance residential energy efficiency upgrades – a key focus of the State's Draft Comprehensive Energy Strategy:

The best way to ensure consistent funding for energy efficiency is to diversify the revenue sources that support it. Ratepayers cannot indefinitely support the bulk of

energy efficiency program budgets. Energy efficiency is a cost-effective investment, but more is needed—in terms of financing mechanisms, experienced vendors, consumer awareness, and funding from financial institutes, institutional investors and the capital markets, to reach a point where that investment is understood and valued in the marketplace. In the long term, the development of a market for energy efficiency is the best way to ensure that private capital can be leveraged to support programs that are currently funded by collections from electric and gas ratepayers.²

Ratepayer Payback

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

Given that the funds used for the CT HELPs program are for a credit enhancement (i.e., loan loss reserve) from repurposed ARRA-SEP funds from the U.S. Department of Energy and the Connecticut Department of Energy and Environmental Protection, and administered by a third party financier (i.e. CEFIA), the Connecticut ratepayers will not achieve a financial payback for the use of these funds, as they aren't contributing to the program. However, the CT HELPs program supports CEFIA's strategic goals of leveraging private capital at a rate of 11:1 and will result in energy efficiency upgrades that will save Connecticut homeowners nearly 52,000 MMBtu on an annual basis, as a result of the \$600,000 LLR.

Terms and Conditions

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

ARRA-SEP funds for the loan loss reserve (\$600,000) will only be expended as loans originated by CEFIA's partner lending institutions enter default and to the extent the "retained loss" thresholds are exceeded. These partner institutions shall be entitled to payment from their loan loss reserve account on unrecovered losses on a loan only after the loan is at least 90 days past due and only after commercially reasonable efforts to collect such loan have been undertaken. Partner lending institutions shall also provide portfolio performance data on a regular basis, which shall include but not be limited to repayment history, delinquencies, bad debts/defaults, etc.

Capital Expended

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

The deal structure does not require the expenditure of any ratepayer capital – all funds from CEFIA are through repurposed ARRA-SEP funds. The \$600,000 loan loss reserve will remain as an account on CEFIA's books, to be released only once a threshold of defaulted loans has been passed. Total expenditures will thus range between \$0 (with no defaults) to \$600,000 (with all funds drawn down at a greater than 10.8% default rate).

² *Ibid.* p. 20

Risk

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

No ratepayer funds are supporting the CT HELPs program. The maximum risk exposure CEFIA faces for this program is a complete loss of the LLR amount of \$600,000 (all ARRA-SEP funds), which would only occur under a heavily stressed scenario of total portfolio losses greater than 10.8%. Looking at other energy efficiency financing programs around the country, similar financing programs are experiencing low default rates, no matter their structure³:

Program	<i>Mass Save HEAT Loan</i>	<i>Michigan Saves</i>	<i>Clean Energy Works Oregon</i>
Program start	2006 (IRB began in Fall 2010)	Oct-2010	Aug-2009 (Pilot) Feb-2010 (OBR) Aug-2011 (Direct Loan)
Loan volume	3,371 loans, \$30.4 MM financed	About 1,700 loans, \$13.5 MM financed	2,000+, about \$20 MM financed
Interest rates	0% for residential loans	6.99% 1.99% origination fee required by Michigan Saves	Between 5.25%-5.99% depending on lender and geographic region \$125 flat fee for OBR projects currently paid by CEWO
Default rates	Less than 1%	Less than 1%	Less than 1%

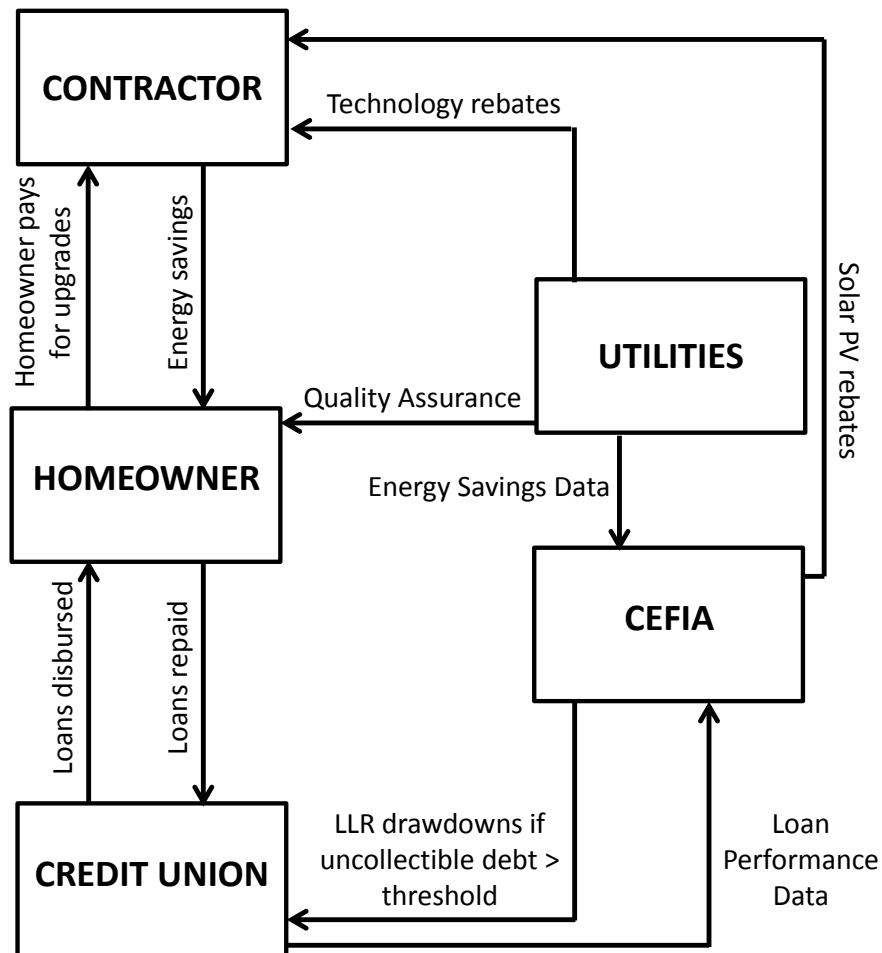
Financial Statements

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

The use of the credit enhancements will result in the recognition of income on the income statement (Grant Income – ARRA) and a simultaneous reduction in “Deferred revenue – ARRA” on the liability side of the balance sheet. Also, there would be a reduction in the CEFIA Restricted Cash Account (Non-current Asset on the Balance Sheet) related to ARRA-SEP funds and a corresponding recognition of Grant Expense on the income statement, which will reduce Restricted Net Assets as the funds are distributed to the participating credit unions.

³ <http://hdf-ct.org/PDFs/EnergySmartSolutionsMegacommunitiesStakeholderReport.pdf> (pp. xxxi and xxxiv)

Capital / Services / Data Flow Diagram



Target Market

Who are the end-users of the project?

In line with the State’s Draft Comprehensive Energy Strategy,⁴ the CT HELPs program aims to deploy affordable financing solutions and targeted, community-based and data-driven marketing to propel significant growth in the number of homeowners across the state who choose to upgrade their residences’ energy efficiency on an annual basis. Currently, the utilities support a residential retrofit financing solution through the Home Energy Solutions⁵ loan program – administered by the Connecticut Housing Investment Fund (CHIF) as its “Energy Conservation Loan” – which has originated in the neighborhood of 200 loans since the program’s post-pilot launch in June of 2011.⁶

⁴ All charts in this section taken from the State’s Draft CES, Ch. 1 (Energy Efficiency) and Ch. 4 (Natural Gas).

⁵ Under the HES program, a utility authorized contractor visits the home and makes on-the-spot improvements, including caulking and sealing of critical air leaks, and provides rebates on appliances, heating and cooling systems and more. A modest fee is collected at the time of service. For more information:

http://www.ctenergyinfo.com/home_energy_solutions_core.htm

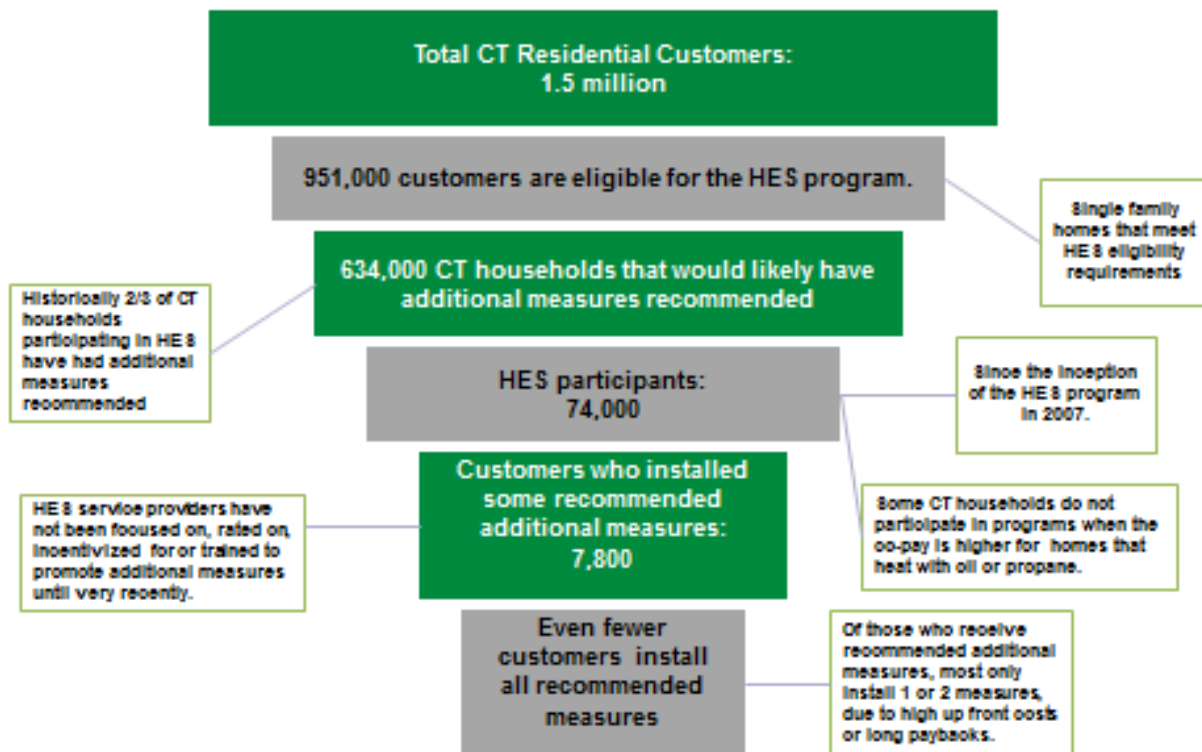
⁶ <http://www.chif.org/page/energy-conservation-loan-program>

Based upon the funnel analysis below, CEFIA staff believes that the CT HELPs program has the potential to achieve two key goals:

- 1) Through community-based marketing, drive a sizable increase in participation from the less than 8% of eligible homeowners who have participated in the existing Home Energy Solutions program since 2007; and
- 2) Of that increased HES participant pool, use privately sourced, low-cost and long-term financing to support the adoption of deeper and more fundamental retrofit measures (substantially growing that number from the existing rate of 1,500 such projects per year, on average).

To give a sense of the initial market scope, in the core territory of UI and its natural gas affiliates (which this program aims to target from day one), there are about 225,000 households, of which 54% heat with fuel oil. In general, Connecticut has a lower penetration of natural gas usage at the residential level not only than the U.S. at large, but also than New England specifically (31% in CT vs. 50% elsewhere).

Funnel analysis for Home Energy Solutions program in Connecticut



Based on 2012 Conservation and Load Management Plan

As such, CEFIA plans to deploy the CT HELPs program to assist the tens of thousands of households across UI territory for whom conversion to natural gas as a heating fuel is both possible and economical (with potential growth to roughly a quarter-million homeowners across the state if this program shows strong uptake). The charts below lay out the case.

Potential Number of Natural Gas Customers

Customer Type	Total Premises	Current Gas Customers	A		B	C
			Low Use	On Main	Off Main	Unlikely to Convert
Residential	1,400,000 (100%)	482,800 (34%)	39,000 (3%)	161,000 (12%)	51,500 (4%)	600,500 (48%)

Economic benefits from conversion, by customer segment and sector

Segment	Customer Type	Prospective Customers (Estimated)	20-year present value of fuel savings for a single conversion	Average NPV for a single conversion	20-year net present value for entire segment (\$million)	Total Savings(\$million)
A	Residential, Low Use	39,000	\$22,324	\$14,824	\$592	\$2,600
	Residential, On Main	161,000	\$22,324	\$10,541	\$1,696	
	Commercial	16,000	\$48,828	\$12,051	\$188	
	Industrial	600	\$304,727	\$252,624	\$144	
B	Residential	52,000	\$22,324	\$3,333	\$172	\$2,800
	Commercial	37,000	\$40,020	\$(919)	\$(34)	
	Industrial	400	\$304,727	\$165,248	\$71	

Finally, later in this memo, further background information on Next Step Living's unique approach to customer targeting will be provided.

CEFIA Role, Financial Assistance & Selection/Award Process

CEFIA issued a competitive RFP for Financial Innovation programs on April 12, 2012, and received seven responses. Next Step Living, Inc. was one of four projects selected to negotiate the receipt of credit enhancements through repurposed ARRA-SEP funds from the U.S. Department of Energy.

As previously stated, CEFIA will provide a loan loss reserve (LLR) in the amount of \$600,000 to support credit union and community bank lending into the single-family residential energy efficiency market, half of which will be restricted to financing support for NSL customers over the program's first 18 months.

Program Partners

Next Step Living: A three year-old residential energy efficiency company, providing home energy diagnostics and improvements to the greater New England area, dedicated to helping customers lower their energy bills, increase the comfort of their homes, and reduce their carbon footprint

Connex Credit Union: One of Connecticut's largest credit unions, serving more than 40,000 members at 6 branches throughout greater New Haven

Mutual Security Credit Union: A growing credit union with more than 34,000 members and an existing loan portfolio of nearly \$200 million

Sikorsky Credit Union: One of the largest credit unions in Connecticut with over 54,000 members and over \$600 million in assets

United Shoreline Credit Union: Originally serving employees of the United Illuminating Company, the current entity is the result of a merger with three other credit unions – Shoreline, Airpax, and Echlin

United Illuminating: A New Haven-based regional electric distribution company established in 1899, UI is engaged in the purchase, transmission, distribution and sale of electricity and related services to 325,000 residential, commercial and industrial customers in the Greater New Haven and Bridgeport areas

Southern Connecticut Gas: A natural gas transportation and distribution company serving approximately 178,000 customers in its service territory of approximately 512 square miles along the southern Connecticut coast from Westport to Old Saybrook

Connecticut Natural Gas: A natural gas transportation and distribution company serving approximately 160,000 customers in its service territory of approximately 716 square miles in the Greater Hartford-New Britain area and Greenwich, Connecticut

Risks and Mitigation Strategies

Underwriting risk: The draft term sheet (found on pages 16-19 of this memo) reflects several strategies to mitigate underwriting risk arising from the CT HELPs program:

- 1) Credit unions can only loan to borrowers with a FICO score greater than or equal to 640;
- 2) Loans to borrowers with FICO scores lower than 680 can constitute no more than 20% of each credit union's portfolio;
- 3) Credit unions are not able to draw down from the loan loss reserve until they have experienced losses of at least 3.0% of the 640 - 679 scored portion of their loan portfolio, and at least 1.5% of the 680+ scored portion of their loan portfolio. This aligns their interests with CEFIA's to ensure strong underwriting standards.

Origination risk: The CT HELPs program intends to incentivize homeowners towards fuel switching and deeper retrofits by partnering with firms like Next Step Living, which bring innovative and successful customer marketing strategies to the energy efficiency market, along with customer-driven and locally focused financial institutions (credit unions and community banks) to attract more affordable capital into the CT market. There is a risk that because CT HELPs does not subsidize energy efficiency improvements as generously as other programs currently available in the market, consumers will choose not to make use of the financing offered through the program. Partnering with Next Step Living is CEFIA's strategic response to this risk. NSL aims to reach all residents in its partner communities through

a low-cost, high-impact outreach program by partnering with municipalities, corporations and membership organizations to serve residents, employees, customers and members, operating under the philosophy that people are more likely to take action to reduce their energy use and impact when invited to do so by someone that they know and trust. NSL seeks to identify and empower influential institutions to promote access to public incentive programs via NSL's services. NSL has a very successful history of targeted, co-branded partnership-based customer acquisition; NSL has provided services to 25,000 Massachusetts customers in three years, while successfully taking advantage of and leading the loans originated by credit unions through the Mass HEAT Loan program. It currently implements programs in 20 communities. NSL has done dozens of e-mail campaigns and hundreds of events. These metrics give CEFIA confidence that NSL will be able to drive adoption of the CT HELPs program.

In addition, as part of the statewide EnergizeCT marketing campaign, the CT HELPs program will have the full support of State government, which will be dedicating resources to this effort and should help instill trust and drive uptake.

Operating Procedures

The program will be rolled out as followed:

1. CEFIA and UI / SCG & CNG will execute an MOU outlining the responsibilities of each party under the CT HELPs program.
2. CEFIA will establish a loan loss reserve of \$600,000.
3. CEFIA will sign a standard program financing agreement with participating lending institutions, beginning with at least one of the following credit unions – Connex, Mutual Security, Sikorsky, and/or United Shoreline.
4. CEFIA, together with the relevant utility companies, will establish procedures for quality assurance and quality control.
5. CEFIA will begin to qualify contractors beyond NSL to participate in the program. These contractors will be certified through the Home Energy Solutions program, the High Performance with Energy Star program, or the Building Performance Institute.
6. NSL (and qualifying contractors) will target communities in United Illuminating and Southern Connecticut Gas territory. CEFIA staff fully expects NSL to deploy their proprietary targeting algorithms and analyses of homeowner energy savings opportunities to acquire customers. In addition, partner lending institutions will market to their existing membership bases, including setting terms and rates at or below the not-to-exceed rates specified in a standardized program financing agreement.
7. As NSL and other contractors acquire customers, they will connect potential borrowers with financing through the CT HELPs partner lending institutions.
8. CT HELPs partner lending institutions will originate and service loans. Upon closing each loan, lending institutions will require borrowers to sign a data release agreement allowing them to share loan performance, energy use and utility information with CEFIA, which will be turned over on a regular basis.

9. As necessary and according to agreed-upon terms, lending institutions will draw down from the loan loss reserve established by CEFIA.
10. CEFIA will track energy savings and loan performance in order to support future efforts to raise private capital for investment into the residential energy efficiency sector, as well as to refine program guidelines and management.

Resolutions

WHEREAS, the Clean Energy Finance and Investment Authority (CEFIA) has entered into an Memorandum of Agreement (MOA) with the Department of Energy and Environmental Protection (DEEP) to repurpose American Recovery and Reinvestment Act State Energy Program (ARRA-SEP) fund for the undertaking of a project of mutual interest;

WHEREAS, the project of mutual interest set forth in the MOA is to provide funding for credit enhancements (i.e., loan loss reserves, interest rate buy-downs, third party loan insurance) for two financing programs administered by CEFIA. The two programs supported by this funding are the Residential Clean Energy Financing Program and the Clean Energy Financial Innovation Program;

WHEREAS, the Clean Energy Financial Innovation Program shall be used to leverage additional public and private sector sources of capital through a competitive solicitation process designed and administered through CEFIA; (1) On April 11, 2012, the Connecticut Department of Energy and Environmental Protection and CEFIA engaged in a Memorandum of Understanding amending the original use of \$8.36 million of State of Connecticut ARRA-SEP funds into new residential financing programs;

WHEREAS, the Next Step Living, Inc. (NSL) submission of the CT HELPS Program (Program) was down selected under CEFIA's competitive solicitation process for the Clean Energy Financial Innovation Program;

NOW, therefore be it:

- (1) Resolved, that funding be approved for the Program in an amount not to exceed \$600,000 for a Loan Loss Reserve (LLR) ("Credit Enhancement") through the use of repurposed ARRA-SEP program funds, of which \$300,000 will be set aside for a period of 18 months from the program's launch date to support financing provided to customers of Next Step Living, Inc.;
- (2) Resolved, that the President of CEFIA; and any other duly authorized officer of CEFIA, is authorized to execute and deliver, any contract or other legal instrument necessary to effect the Credit Enhancement with terms and conditions consistent with the term sheet substantially in the form included on the pages that follow and as he or she shall deem to be in the interests of CEFIA and the ratepayers; and
- (3) 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.

Submitted by: Bryan Garcia, President and CEO, Bert Hunter, EVP and CIO, Ben Healey, Senior Manager of Clean Energy Finance and Alexandra Lieberman, Manager of Clean Energy Finance.

Draft Term Sheet

United Illuminating, So CT Gas & CEFIA Residential Energy Efficiency Loan Pilot SUMMARY OF TERMS

Purpose of the structure	To provide financing for Eligible Residential Consumer Borrower loans underwritten by individual Lenders through the CT HELPs Program.
Parties	
Program	CT HELPs (Home Energy Loan Program) [subject to change]
Borrower	Individual Homeowners installing Energy Efficiency Measures pursuant to Home Energy Solutions (HES) Audit, HPwES or equivalent; and other agreed measures including oil-to-gas heating conversions, solar hot water and solar PV
Lender	Credit Unions
Sponsors	
Utility	United Illuminating
State Government	The Clean Energy Finance and Investment Authority (CEFIA)
Contractor	1) Insured Home Energy Solutions and Home Performance with Energy Star approved program vendors, Buildings Performance Institute certified staff or contractor on the job that is a registered home improvement contractor with the Connecticut Department of Consumer 2) CEFIA approved installers of solar PV and solar hot water systems, as well as ground source heat pumps and other relevant technologies
Credit Enhancement	
Loan Loss Reserve	CEFIA will offer "loan loss" protection on a pool basis, determined as follows: Every loan booked by the credit union will earn a credit to a loan loss reserve account held by CEFIA up to a maximum of 9% (1) of each credit union's loan portfolio from two risk baskets:
Applicant FICO Score	
(1) 680 & up	7.5% of each loan
(2) 640 - 679	15% of each loan (no more than 20% of all loans in the credit union's portfolio) Note - any loans in excess of the 20% limit will accrue credits to the loan loss reserve account at the rate of 7.5%
Use of the Reserve	Following the usual and customary loan collection process and upon being classified by the credit union as "uncollectible," the credit union will submit evidence to CEFIA that it has experienced an uncollectible loan and that it requests reimbursement from the Loan Loss Reserve. CEFIA will then pay the credit union: After experiencing in respect of the credit union participant a loss in excess of a) in the case of 640 - 679 Loans, 3.0% of the portion of the portfolio of these loans; and b) in the case of 680 & up Loans, 1.5% of the portfolio of these loans 100% of the principal balance of the loss, up to the amount standing to the account so as to limit losses under a heavily stressed scenario to 1.8% of the total portfolio If the Loan Loss Reserve is depleted, the credit union may withdraw subsequent credits to their account as new loans are booked. Any subsequent recovery on the loan will be shared in proportion to the loss taken.
Notes	(1) 9% = (7.5% x 80%) + (15% x 20%) (2) 1.8% = (1.5% x 80%) + (3% x 20%)

Funding Allowance

To encourage the Lending Institution to make Program Loans with longer term maturities, upon the written request of the Lending Institution, CEFIA shall make interest bearing deposits on a monthly basis equal to [fifteen percent (15%)] of the principal balance outstanding of such Program Loans having an original maturity in excess of 120 months and a remaining maturity of not less than [eighty four] months with the Lending Institution. The rate of interest that would be applied would be the same as that offered to other depository customers for such dollar amount deposited. Any such deposits with the Lending Institution shall be insured by the National Credit Union Administration Share Insurance fund and the total amount of such deposits by CEFIA with the Lending Institution shall not exceed two hundred

LOAN REQUIREMENTS

Loan Product Details	Structure/Minimum Standards
Loan type	Unsecured
Program Contractor	Program Contractors are defined as: <ol style="list-style-type: none">1. Home Energy Solutions contractors,2. Home Performance with ENERGY STAR contractors,3. Building Performance Institute contractors that are registered home improvement contractors with the Connecticut Department of Consumer Protection,4. or any other Connecticut utility or CEFIA authorized contractor.
Eligible improvements	(1) Residential "Clean Energy" improvements as defined by Connecticut General Statutes Section 16-245n Sec. 99, (2) Listed as categorically excluded from the National Environmental Protection Act and eligible activities under the American Recovery and Reinvestment Act of 2009 through the State Energy Program, and (3) Recommended by a Program Contractor.
Additional Improvements	20% of the loan amount may be used for related residential construction and home improvements
Loan amounts	\$3,000 to \$25,000
Loan term	For loan amounts up to \$5,000, 84 months. For loan amounts \$5,000 to \$25,000, lengths up to 144 months. Borrowers can select shorter terms.
Loan rates	(Not to exceed) 5 Years - 4.49% 7 Years - 4.99% 10 Years - 5.99% 12 Years - 6.99% Lending Institutions may offer rates below those shown. Fixed rate with no prepayment penalty.
Eligible properties	Single-family (1-4 unit) homes, primary residence or not used as income property.
Minimum FICO (credit score)	Minimum 640 680 and Above – CLASS A LOANS 640-679 – CLASS B LOANS

	Class B Loans limited to 20% of all loans issued by the Financial Institution
Bankruptcy, foreclosure, repossession	None in last 7 years
Unpaid collection accounts	Judgment of Lending Institution
Judgments and tax liens	Must be paid or in repayment
Income verification requirements	Subject to Lending Institution's usual underwriting requirements Required for maturities >84 months
Salaried employment income	One pay stub with YTD earnings dated within 30 days of the application.
Retirement income	* Award/benefit letter for SSI or pension showing income amount, payment frequency, and start and end dates or * A copy of a bank statement showing direct deposit of retirement income.
Self-employment income	Two most recent federal income tax returns (first two pages of 1040) plus Schedule C, if applicable.
Other income (if applicable)	When income other than primary income is being used to qualify for the loan, such as rental, alimony, or investment income, verification is required.
Debt to Income Ratio	
Total monthly obligations	* Any loan that has a remaining term of less than six months may be excluded from the calculation. * When revolving accounts do not show a minimum payment, use the greater of 3% per month or \$10. Real estate taxes and homeowners insurance (if not included in the mortgage payment) must be included in ratio.
Application Processing and Loan Closing	
Application	* The Lending Institution shall establish and implement a loan application intake system. The Lending Institution shall provide Customers the option to apply for the loans using an application form, via the Lending Institution's website (if available), or by telephone. * Once a Customer's Application is complete, the Lending Institution shall either approve or deny the application within [three] business days. * If the Program Loan is approved and accepted by the Customer, Lending Institution shall make available a closing date for the Program Loan within [five] business days.
Total monthly obligations to total monthly income	All qualifying FICO scores – 45% or less

LENDING INSTITUTIONS MAKE ALL FINAL UNDERWRITING DECISIONS. LOANS MAY BE APPROVED, DECLINED, OR SUBJECT TO FURTHER REVIEW IF UNDERWRITER DETERMINES THAT FICO SCORE OR OTHER FACTORS ARE INCONSISTENT WITH ACTUAL CREDIT PROFILE.

Next Step Living

Mission

Next Step Living is a residential energy efficiency company, providing home energy diagnostics and improvements to the greater New England area. NSL is a socially-conscious, environmentally focused, results-driven organization dedicated to helping customers lower their energy bills, increase the comfort of their homes, and reduce their carbon footprint. NSL was named Employer of the Year by the New England Clean Energy Council in 2011 and has created 380 jobs in Massachusetts in three years.

Programs/Programmatic Strengths/Service Area

CEFIA staff believes that NSL brings five key strengths to the CT HELPs program:

- A proven, targeted and community-based customer acquisition system;
- Demonstrated skill at converting simple audits into deeper retrofit opportunities;
- Integrated data management platforms that allow for consistent learning and improvement;
- A comprehensive approach to each home that simplifies the process for the customer and ensures that a higher percentage of leads translate into jobs than is true for any other competitor in this space; and
- Experience using financing programs offered by credit unions to support households that want to go deeper on energy efficiency and renewable energy.

Strategic Need(s) Addressed by the Proposed Program

Many of the existing financing programs in the United States don't work as well as they could because they are too complicated. Most require that homeowners research the best improvements, find contractors and go through multiple bids, work with multiple contractors, coordinate the work, pay upfront for the work, ensure that the projects are installed correctly, and have faith that the savings merit the upfront cost. Homeowners have neither the time nor the patience for this process.

Most programs are not penetrating the market of potential customers, and project bottlenecks sometimes occur due to burdensome and inflexible program requirements (per "What Have We Learned from Efficiency Financing Programs," Sara Hayes, Steven Nadel et al September 2011, Report Number U115, ACEEE).

Thanks to the five key strengths identified above, CEFIA staff has determined that NSL is best positioned to break through the existing barriers to residential energy efficiency and drive a significant uptake in deep retrofits.

Leadership

Geoff Chapin is CEO of Next Step Living, started NSL in 2009. Geoff has ultimate oversight over this program and ensures its successful operation. Prior to Next Step Living, Geoff served as a Senior

Manager of the Bridgespan Group, a strategy consulting firm for public entities and non-profits. Clients included the Energy Foundation, The City of San Francisco, The Portland Public School District, and the Packard Foundation. Prior to this Geoff led teams at Bain & Company in the New York and San Francisco offices where he advised clients in the consumer products, telecom, and online industries amongst others. Geoff served as a teacher at his Alma Mater the Roxbury Latin School and is a graduate of The Kennedy School of Government and MIT's Sloan School of Management. Prior to this he worked at a consulting firm in the healthcare, nonprofit, and financial services sectors. Geoff has also worked in the public housing sector at the Community Builders in Boston and advised the Housing Authority of San Francisco. Geoff is a native of the Boston area having grown up and lived in Westwood, Dedham, Wellesley, West Roxbury, Newton and Brookline.

Claire Broido Johnson is Chief of New Markets and Services at NSL, and will serve as the main point of contact for CEFIA. Claire Broido Johnson was Vice President at Serious Energy, managing the nascent commercial financing program. Prior to Serious, she was the Acting Program Manager of the Office of Weatherization and Intergovernmental Programs and an energy efficiency advisor to Secretary Chu at the Department of Energy, where she guided deployment of \$11 billion in stimulus funds for clean energy while also championing policies that expand the impact of public investment through engagement with private capital. Ms. Johnson was a Senior Advisor at Hannon Armstrong investment bank responsible for structuring energy efficiency financing. She is a Co-Founder of SunEdison, North America's largest solar energy services provider where she was responsible for market development, renewable energy credit portfolio management, sales, marketing, finance and operations. She worked as an electricity deal originator at Constellation Power Source, Enron North America and GE Capital. Mrs. Johnson holds a B.A. in Environmental Science & Public Policy from Harvard College, where she helped to create that major, and an M.B.A. from Harvard Business School.

Gabe Shapiro is the Director of Community Programs at NSL. Gabe has worked with cities to design high-impact residential energy efficiency programs to be used as part of Energy Efficiency and Conservation Block Grant proposals that will likely serve over 10,000 homes in two years. Gabe also leads NSL's efforts to collaborate with workforce development and community action groups to recruit and train residents in the communities in which NSL operates for green careers. Prior to NSL, Gabe spent four years as the Director of Finance of Citizen Schools, an innovative national nonprofit that provides after school programming to middle school students in low-income communities. Gabe managed all financial operations of the \$13 million dollar organization including, organizational and departmental budgeting, accounting, and federal grant reporting. Gabe designed accounting and reporting procedures for and oversaw the management of multi-million dollar federal AmeriCorps grants. Gabe also volunteered as the Co-director of the Boston chapter of Clean Power Now where he recruited and organized community members to support renewable energy development in general and the Cape Wind project specifically. Gabe also worked as a consultant for the Monitor Group and did his MBA internship with the Eco Responsibility Department of Sun Microsystems. Gabe received his MBA from MIT's Sloan School of Management and his BA from Brown University. Gabe is a native of Georgetown, Massachusetts.

Dave Boettcher, Building Analyst Certified is Director of Field Operations at NSL and will train and oversee the teams of energy advisors working in the CEFIA program. He will also evaluate and ensure the quality of the work done by NSL, its partners and subcontractors. Dave oversees all field operations of NSL including training new employees and evaluating and assuring the quality of the work NSL does in homes. Dave helped design NSL's unique home energy assessment and efficiency upgrade service and is an expert in home energy efficiency. Prior to joining NSL, Dave designed and worked on Massachusetts weatherization and efficiency programs while working at ICF International. Dave began his career as a Project Coordinator at Conservation Services Group where he conducted home energy assessments including completing HERS ratings and evaluating ENERGY STAR compliance.

Brian Greenfield is COO of Next Step Living and will be providing all financial reports and operations information. Prior to joining NSL, Brian served as General Manager of Vista Financial Inc. (VFI), a subsidiary of Performant Financial Corporation. Performant is a business process outsourcing firm with a focus on the higher education industry serving U.S. government and private agencies. VFI provides student loan counseling services for national lenders. After taking over the lead of VFI, Brian brought in numerous clients, including First Marblehead, Citibank, College Loan Corporation and American Education Services and grew the operations from 10 to over 120 employees in less than a year. Prior to Performant, Brian worked as an Associate at Parthenon Capital, a middle-market private equity firm. While at Parthenon, Brian focused on the financial services and business process outsourcing industries. Prior to Parthenon, Brian worked as an Analyst in the investment banking division of Morgan Stanley. Brian received his MBA from MIT's Sloan School of Management and his BA from Williams College. Brian is a native of Needham, Massachusetts.

Larry Aller is Head of Customer Experience, and joined Next Step Living in 2010. He is responsible for focusing on the quality of customer experience. Larry will be engaged on monitoring and ensuring the quality of customer experience and in helping customers move to action on their opportunities. Prior to NSL and during his years at Bain & Company, a leading strategy consulting firm, Larry worked in numerous roles, becoming a manager and developing experience in several areas, including customer loyalty and segmentation, M&A, and operations and strategy for global leaders in industrial and technology verticals. He is very much enjoying the opportunity to apply his experience and skills in building a strong business making society more sustainable. Larry received his MBA from Stanford with honors, and a B.S. Phi Beta Kappa from MIT in mechanical engineering.

Financial Condition/Funding Sources & Stability (CONFIDENTIAL)

See separate package, marked "Confidential."

Experience with Similar Programs

Currently, NSL conducts 1,600 audits per month for Massachusetts residents, completes over 600 weatherization projects (insulation and/or air sealing) and helps over 100 customers per month go solar. NSL is accredited by the Building Performance Institute, is EPA Lead Safe Certified, and its team members have been through an extensive training and certification process. Its staff serves 2,500 customers per month in the company's intake and call center. NSL has expressed confidence it can sell CT HELPS loans and the program more broadly.

United Illuminating Company & Affiliated Natural Gas Companies

Mission

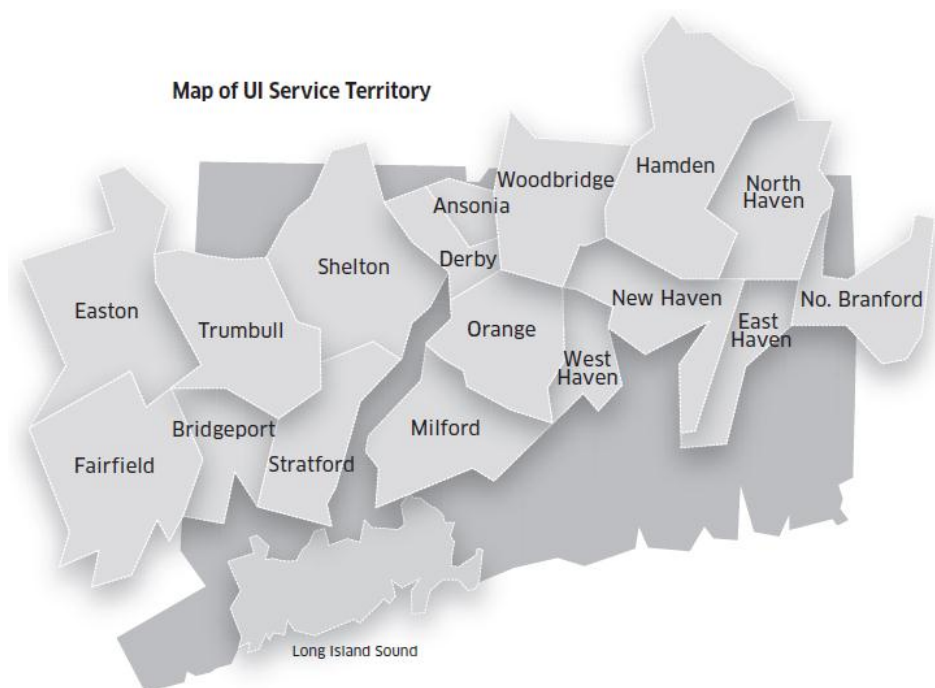
Currently, the utilities promote energy efficiency through their participation in and support of the Connecticut Energy Efficiency Fund (CEEF), which was created to address Connecticut's increasing energy needs—and rising costs. The CEEF is designed to help homeowners and renters, small and large businesses, and state and local governments alike get in the habit of using energy more efficiently. In the shared interest of implementing conservation measures that are energy-efficient, cost-effective, and easy to live with, the CEEF is the result of a partnership with the state's utility companies and funded by a small charge on customers' bills.

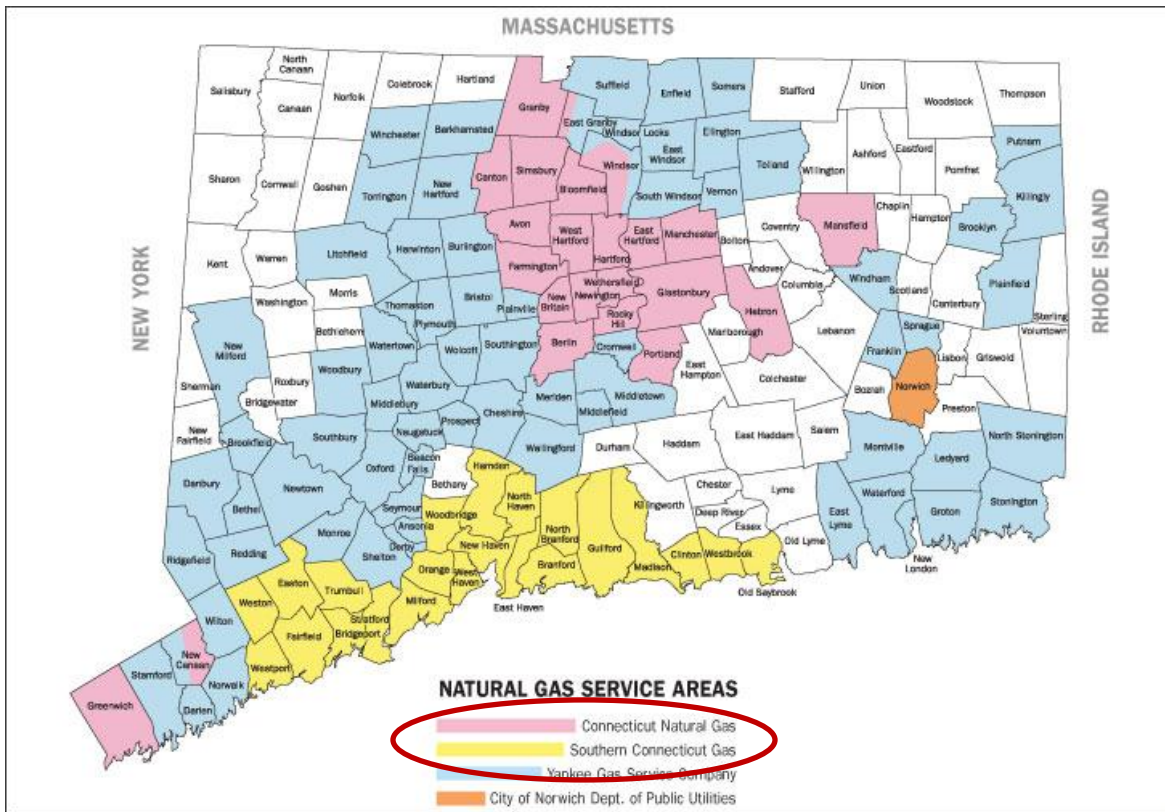
The Mission of the Connecticut Energy Efficiency Fund:

1. To advance the efficient use of energy.
2. To reduce air pollution and negative environmental impacts.
3. To promote economic development and energy security.

Programs/Programmatic Strengths/Service Area

Through the CEEF, the utility companies offer a variety of technology-specific rebates and incentives to encourage homeowners to upgrade their homes' efficiency. In addition, in partnership with the Connecticut Housing Investment Fund, the utilities currently offer a low-interest financing solution (with a heavily subsidized interest rate buydown) for residential customers seeking to make deeper retrofits. Since its inception in 2011, this partnership has originated in the neighborhood of 200 loans, which has only whetted the utilities' appetite to bring in private capital (as opposed to ratepayer or shareholder dollars) to support the anticipated growth of this market.





Strategic Need(s) Addressed by the Proposed Program

The support of UI and SCG is critical to this program's success. Among other items anticipated to constitute the meat of this partnership, CEFA staff expects to work closely with the utilities on the following key program components:

- **Marketing** – driving an increase in homeowner audits via the HES program;
- **Qualifying new contractors into the program** – consistent with utility standards; and
- **Quality assurance and quality control** – to ensure all work done under the program delivers meaningful energy savings to homeowners, as promised.

Programmatic Leadership

At this point, CEFA staff expects to work most closely with **Patrick McDonnell, Senior Director of Conservation and Load Management at UI**, as well as his staff (including Christopher Ehlert, Christine Koch, and Donna Wells, among others).

Financial Condition/Funding Sources & Stability

THE UNITED ILLUMINATING COMPANY BALANCE SHEET

	ASSETS (In Thousands) (Unaudited)	
	September 30, 2012	September 30, 2011
Current Assets		
Unrestricted cash and temporary cash investments	\$ 5,783	\$ 6,529
Restricted cash	3,145	5,891
Accounts receivable less allowance of \$3,400 and \$3,400, respectively	109,057	96,256
Unbilled revenues	39,704	41,749
Current regulatory assets (Note A)	59,469	43,315
Deferred income taxes	3,118	18,343
Refundable taxes	30,674	18,484
Current portion of derivative assets (Note A)	11,636	10,375
Prepayments	9,242	9,300
Other	16,279	17,915
Total Current Assets	<u>288,107</u>	<u>268,157</u>
Other Investments		
Equity investment in GenConn (Note A)	125,295	132,860
Other	6,580	5,364
Total Other Investments	<u>131,875</u>	<u>138,224</u>
Net Property, Plant and Equipment	<u>1,620,353</u>	<u>1,466,951</u>
Regulatory Assets (future amounts due from customers through the ratemaking process) (Note A)	<u>630,463</u>	<u>663,734</u>
Deferred Charges and Other Assets		
Unamortized debt issuance expenses	7,049	6,621
Other long-term receivable	1,275	1,279
Derivative assets (Note A)	68,792	74,359
Other	9,521	8,957
Total Deferred Charges and Other Assets	<u>86,637</u>	<u>91,216</u>
Total Assets	<u>\$ 2,757,435</u>	<u>\$ 2,628,282</u>

THE UNITED ILLUMINATING COMPANY
STATEMENT OF INCOME
(In Thousands)
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2012	2011	2012	2011
Operating Revenues	\$ 217,097	\$ 220,820	\$ 586,789	\$ 602,482
Operating Expenses				
Operation				
Purchased power	43,565	52,974	118,581	139,548
Operation and maintenance	52,440	59,234	160,863	169,811
Transmission wholesale	26,565	25,180	59,847	59,809
Depreciation and amortization	29,073	26,081	77,705	72,987
Taxes - other than income taxes	20,458	19,126	52,686	54,948
Total Operating Expenses	<u>172,101</u>	<u>182,595</u>	<u>469,682</u>	<u>497,103</u>
Operating Income	<u>44,996</u>	<u>38,225</u>	<u>117,107</u>	<u>105,379</u>
Other Income and (Deductions), net	<u>6,933</u>	<u>4,757</u>	<u>16,444</u>	<u>15,427</u>
Interest Charges, net				
Interest on long-term debt	9,829	9,885	28,796	29,896
Other interest, net	<u>198</u>	<u>1,286</u>	<u>1,898</u>	<u>1,202</u>
	<u>10,027</u>	<u>11,171</u>	<u>30,694</u>	<u>31,098</u>
Amortization of debt expense and redemption premiums	<u>362</u>	<u>415</u>	<u>1,079</u>	<u>1,244</u>
Total Interest Charges, net	<u>10,389</u>	<u>11,586</u>	<u>31,773</u>	<u>32,342</u>
Income Before Income Taxes, Equity Earnings	41,540	31,396	101,778	88,464
Income Taxes	<u>18,551</u>	<u>14,220</u>	<u>46,872</u>	<u>38,587</u>
Income Before Equity Earnings	22,989	17,176	54,906	49,877
Income from Equity Investments	<u>3,421</u>	<u>3,521</u>	<u>11,823</u>	<u>8,230</u>
Net Income	<u>\$ 26,410</u>	<u>\$ 20,697</u>	<u>\$ 66,729</u>	<u>\$ 58,107</u>

Connex Credit Union

Mission

Connex Credit Union is one of Connecticut's largest credit unions serving more than 40,000 members at 6 branches throughout greater New Haven. Headquartered in North Haven, Connecticut, Connex is a full-service member-owned credit union that offers members a full range of financial services and products, including savings and loans, Unbank Checking, Smart Score credit score range, free online banking, and more. Membership is open to anyone who lives, works, attends school or worships in New Haven, Hartford or Middlesex Counties.

Leadership

Board of Directors	Senior Management
Fred Heimann – Chairman	John R. Edwards – President / CEO
Kevin McNamara – Vice Chairman	Richard K. Boyd – Vice President, Lending
Dave Clark – Treasurer / Secretary	Dana Clark – Acting VP, Sales & Services
Luba Grossman	Francesco Mancini – VP, Finance / CFO
Janet Hand	Michelle Silva – VP, Human Resources
Paul Jenkins	
Mari Power	
Mary Semedo	
Kevin Wetmore	

Financial Condition/Funding Sources & Stability

Statements of Financial Condition (Unaudited)

As of December 31, 2011 and 2010

Assets	2011	2010
Loans- net (1,3)	\$241,948,820	\$245,643,189
Cash	7,976,634	2,967,549
Investments (1,2)	103,676,151	104,151,692
Accrued Interest Receivable	1,300,273	1,408,435
Property and Equipment - Net (1,4)	3,193,465	3,411,406
NCUSIF Deposit (5)	2,884,072	2,848,812
Other Assets	2,049,856	1,544,030
Total Assets	\$363,029,271	\$361,975,113
Liabilities		
Accrued Dividends Payable	\$178,292	\$248,537
Notes Payable	10,028,933	10,028,933
Other Liabilities	2,933,764	2,515,767
Total Liabilities	\$13,140,989	\$12,793,237
Equity		
Members' Share Accounts (6)	\$304,021,604	\$306,353,371
Regular Reserve (1)	5,626,342	5,626,342
Merged Equity (1)	63,425	63,425
Undivided Earnings	40,176,911	37,138,738
Total Equity	\$349,888,282	\$349,181,876
Total Liabilities and Equity	\$363,029,271	\$361,975,113

See Notes to Financial Statements.

Statements of Income (Unaudited)

For the Years Ended December 31, 2011 and 2010

Operating Income:	2011	2010
Interest on Loans	\$14,423,966	\$16,363,074
Interest on Investments	2,136,496	2,185,922
Other Operating Income	3,702,502	3,138,886
Total Operating Income	\$20,262,964	\$21,687,882
Operating Expenses:		
Compensation and Benefits	\$6,940,903	\$7,004,992
Other Operating Expenses	5,747,904	5,646,819
Total Operating Expenses	\$12,688,807	\$12,651,811
Non Operating Expenses:		
Provision for Loan Losses (1,3)	\$1,284,614	\$1,640,076
Total Expenses	\$13,973,421	\$14,291,887
Income Before Dividends	6,289,543	7,395,995
Dividend Expense	2,174,881	3,357,215
Interest on Borrowed Money	340,667	462,493
Non Operating Gains or Losses:		
Gain/Loss on Investments	38,801	
Gain/Loss on Disposition of Assets	(53,606)	(11,320)
NCUSIF Assessment	(721,018)	(737,702)
Net Income	\$3,038,172	\$2,827,265

See Notes to Financial Statements.

Mutual Security Credit Union

Mission

As a not-for-profit financial cooperative, MSCU is managed by a volunteer board of directors who are not paid for their efforts. Rather than creating high profits for paid directors and stockholders, MSCU returns earnings back to its members in the form of lower rates on loans, higher dividends on savings, and fewer and lower service fees. When credit union members pool their savings so that other members can borrow, they are supporting in the credit union philosophy of “people helping people.” Membership is open to anyone who lives, works, worships or attends school in Fairfield, Litchfield or New Haven Counties.

Leadership

Board of Directors

Bruce Likly	Chairman
Robert Marages	Vice Chairman; Finance Committee; Employee Relations Committee
Brigitta Smith	Treasurer
Linda Smitas	Secretary; Member Relations Committee
Robert Basta	Chairman; Supervisory Committee
Arnold Haydu	Finance Committee Member Relations Committee

The Credit Union's Management

Larry Holderman	President/CEO
Karen Levasseur	Chief Financial Officer/VP
Paul Anderson Jr.	VP Loan Services
Lynne McMahon	VP Marketing & Communications
Stephen Pianka	VP Operations
Brian Scavone	VP Branch Services & Sales
John DeBisceglie	Director, Mortgage Services
Barbara Ferrari	Director, Loan Services
Jeffrey Levesque	Director, Information Systems
David Amari	Manager, Marketing & Business Intelligence
Karen Deaver	Manager, Card Services
Lisa Thygerson	Manager, Training
Barbara Fortier	Business Development Officer
Krista Moran	Compliance Officer
Thomas Flynn	Manager, Call Center Shelton
George Ford	Branch/Operations Manager, Watertown
Shaun Mee	Branch Manager, Norwalk
Frederick Petrossi	Branch Manager, Danbury
Cathy Verrilli	Branch Manager, Stratford

Financial Condition/Funding Sources & Stability

STATEMENT OF FINANCIAL CONDITIONS

<i>(Figures in Thousands)</i>	12/31/11	12/31/10
ASSETS		
Indirect Loans to Members	\$39,140.1	\$39,636.6
Total Other Loans to Members	159,471.2	158,329.8
Less Allow Loan & Share Losses	(986.5)	(1,054.6)
Cash and Deposits	13,582.7	12,102.1
Investments	17,134.2	23,177.5
Total Fixed Assets	2,782.5	2,981.8
Total Other Assets	3,563.6	3,602.8
TOTAL ASSETS	\$234,687.8	\$238,776.0
LIABILITIES, SHARES AND EQUITY		
TOTAL LIABILITIES	\$1,922.2	\$2,697.9
SHARES		
Savings and Club Accounts	\$58,399.2	\$55,160.4
Checking Accounts	55,131.9	49,304.4
Share Certificates	50,282.4	62,657.8
IRA Deposits	20,964.5	22,167.3
Health Savings Accounts	1,213.4	997.0
Money Market Accounts	28,806.2	28,468.9
TOTAL SHARES	\$214,797.6	\$218,755.8
EQUITY		
Regular Required Reserves	\$2,755.2	\$2,755.2
Contingency Reserves	11,434.0	10,788.3
Undivided Earnings	3,778.8	3,778.8
Accum Loss/Gain Avail for Sale Inv		
TOTAL EQUITY	\$17,968.0	\$17,322.3
TOTAL LIABILITY, SHARES & EQUITY	\$234,687.8	\$238,776.0

STATEMENT OF INCOME AND EXPENSE

<i>(Figures in Thousands)</i>	12/31/11	12/31/10
OPERATING INCOME		
Interest on Loans	\$9,772.5	\$10,524.0
Income from Investments	262.3	558.5
Other Income	2,948.2	2,887.2
TOTAL OPERATING INCOME	\$12,983.0	\$13,969.7
OPERATING EXPENSES		
Compensation and Benefits	\$4,660.4	\$4,733.2
Office Operations	982.3	1,043.5
Marketing	267.0	269.3
Data Processing	619.6	617.7
Cost of Space	682.7	649.4
Supervision/Exam	94.2	111.0
Loan Servicing	43.1	68.4
Member Program Expenses	1,522.5	1,460.2
Other Expenses	9.7	9.7
TOTAL OPERATING EXPENSES	\$8,881.5	\$8,962.4
Provisions for Possible Loan Losses	855.0	1,307.3
Non-operating Gain (Loss)	(88.8)	(66.3)
INCOME/LOSS BEFORE DIVIDENDS	\$3,157.7	\$3,633.7
Total Dividends	1,978.5	2,939.4
NET INCOME BEFORE IMPAIRMENT	\$1,179.2	\$694.3
NCUA Member Insurance Expense	533.5	560.9
CCFCU Impairment Expense	-	-
NET INCOME with IMPAIRMENT	\$645.7	\$133.4

Sikorsky Credit Union

Mission

Sikorsky Credit Union has been serving the needs of the Connecticut community since 1948. At the end of 2000, the credit union converted to a state charter with a community field of membership. Their mission statement: *"We are committed to act in the best interest of our membership."* Sikorsky Credit Union is open to anyone who lives, works, worships or volunteers in Fairfield, New Haven or Hartford Counties (and also the towns of New Milford and Bridgewater in Litchfield County). Membership also extends to immediate family or household members.

Leadership

Requested

Financial Condition/Funding Sources & Stability

Sikorsky Financial Credit Union and Subsidiary

Consolidated Statements of Financial Condition
December 31, 2011 and 2010
(in thousands)

	2011	2010
ASSETS		
Cash and cash equivalents	\$ 42,579	\$ 10,437
Investments (Note 2):		
Available-for-sale	273,675	220,693
Other investments	20,443	41,342
Loans held-for-sale	471	3,557
Loans to members, net (Note 3)	294,648	310,545
National Credit Union Share Insurance Fund deposit (Note 1)	5,392	5,139
Accrued interest receivable	1,914	1,513
Property and equipment, net (Note 4)	2,777	2,714
Other assets	865	629
Total assets	\$ 642,764	\$ 596,569
LIABILITIES AND MEMBERS' EQUITY		
Liabilities:		
Members' shares (Note 5)	\$ 570,660	\$ 530,674
Accrued expenses and other liabilities	2,221	2,335
Borrowed funds (Note 6)	-	355
Accrued dividends payable	365	433
Total liabilities	573,246	533,797
Commitments and contingent liabilities (Notes 4, 6, 7, 8)		
Members' equity (Note 10)		
Retained earnings	68,624	64,935
Accumulated other comprehensive income (loss)	894	(2,163)
Total members' equity	69,518	62,772
Total liabilities and members' equity	\$ 642,764	\$ 596,569

Sikorsky Financial Credit Union and Subsidiary

Consolidated Statements of Income

Years Ended December 31, 2011 and 2010

(in thousands)

	2011	2010
Interest income:		
Interest on loans to members (Note 3)	\$ 18,417	\$ 19,822
Interest and dividends on investments and cash equivalents (Note 1)	4,714	4,234
Total interest income	23,131	24,056
Interest expense:		
Dividends on members' shares (Note 5)	4,851	6,044
Interest on borrowed funds (Note 6)	8	83
Total dividend and interest expense	4,859	6,127
Net interest income	18,272	17,929
Provision for loan losses (Note 3)	2,280	4,020
Net interest income after provision for loan losses	15,992	13,909
Noninterest income:		
Service charges and other fees	3,236	2,911
Interchange income	1,439	1,420
Other income	296	275
Total noninterest income	4,971	4,606
Noninterest expenses:		
Compensation and benefits	9,121	9,594
General and administrative	4,235	3,990
Occupancy	1,122	1,252
Professional and outside services	475	394
Education and promotion	501	310
Other	472	383
Member share insurance premium assessments	1,348	1,328
Total noninterest expense	17,274	17,251
Net income	\$ 3,689	\$ 1,264

United Shoreline Credit Union

Mission

In 1950, United Illuminating opened the single-branch New Haven UI Employees Federal Credit Union as a way to protect the financial stability and prosperity of its employees. Since then, that original credit union has merged with three others to create the current entity. In 2005, the credit union expanded its membership base by adopting a community charter that opened membership to anyone who lives, works, worships, attends school, or volunteers in the following towns:

- Branford
- Guilford
- Clinton
- North Branford
- Madison
- Essex
- New Haven
- Hamden
- East Haven
- North Haven

Leadership

Board of Directors	Senior Management
Warren Petroskey – President	Garrett R. Gizowski – CEO
John P. Simko – Vice President	
Charlie Stegner – Treasurer	
Marilyn Barba – Secretary	
Matt Maher	
Ben Deible	
George Zikos	
Mary Semedo	
Kevin Wetmore	

Financial Condition/Funding Sources & Stability

Requested

Due Diligence Questions

Question #1 – Can NSL successfully market the CT HELPs loans at the interest rates offered?

Why question asked:

In Massachusetts, NSL operates under the Mass Save HEAT loan program, which offers financing at 0%. Here in Connecticut, the utilities' existing energy efficiency financing program, offered through CHIF, also offers highly subsidized interest rates (below 5% for a 10-year term).

Response:

Using NSL's proprietary data management and targeting platforms, the company will market only to customers with the highest potential energy savings (20%-70%). In so doing, NSL will ensure that the value of the savings generated outweighs the all-in costs (including the costs of improvements, labor, administration, *and* financing) at the interest rates contemplated for this program. With a loan loss reserve helping to bring down the cost of financing to reasonable rates, NSL anticipates no problem selling CT HELPs loans to customers who are realizing significant energy savings. When asked whether or not NSL can sell a finance offering of between 4.49% and 6.99% for 5 to 12 years, the Director of Community Programs expressed strong support of their ability to sell the financing product.

Question #2 – Absent control of an integrated financing solution, can NSL maintain customer leads through closing?

Why question asked:

NSL's initial proposal imagined that CEFIA dollars would help leverage an internally managed fund, and that NSL would offer its customers financing through that integrated solution.

Response:

NSL has already demonstrated its ability to partner with external financiers and ensure that potential customers can make it through a multi-step process. Through a cumbersome structure in Massachusetts, NSL hand-holds its customers all the way, making use of a staff of account managers and energy advisors – in addition to a skilled contracting staff – to ensure that no one falls through the cracks. NSL's success in supporting customers through to financing is unparalleled within the Mass Saves HEAT program.

Furthermore, CEFIA staff has worked to ensure a streamlined process as CT HELPs rolls out here in Connecticut. For one, the proposed CT HELPs program contains one less layer of bureaucracy, removing a program administrator from the process to avoid lengthy approval delays. Just as importantly, the program financing agreement with CEFIA's partner lending institutions contemplates at most a three-day decision timeline for loan approvals.

Taken together, these factors make CEFIA staff confident that NSL can replicate and most likely improve on its success in Massachusetts, even without an integrated financing approach.

Question #3 – Will this program generate deep retrofits or simply replicate the superficial measures that are often performed at the residential level?

Why question asked:

Given the pattern of work in the residential sector, it is all too often the case that ratepayer dollars flow only into simple audit and quick-payback measures, rather than more substantive upgrades.

Response:

To quote NSL's initial proposal: "One example of a metric we track closely is our conversion rate from energy audit to additional weatherization work. That number in the winter has been as high as 45%, and has averaged 30% in the summer." These percentages are many multiples higher than historical average conversion rates in Connecticut, and CEFIA staff hopes that the NSL approach might in fact bleed over and inspire other contractors – who could soon qualify to participate in the CT HELPs program themselves – to perform at a similar level.

Program Implementation Plan

Human Resources

CEFIA's Legal Department will work with NSL, other qualifying contractors, the utilities, and partner lending institutions to oversee program documentation such as application forms, data release forms, loan agreements, etc.

CEFIA's Finance Department will track metrics and targets based on regular reporting, as well as drawdowns against the loan loss reserve.

CEFIA's Marketing Department will work with NSL, other qualifying contractors, the utilities, and partner lending institutions to ensure that Connecticut's Department of Energy and Environmental Protection (DEEP) and EnergizeCT, a pan-state agency coalition around energy, are represented appropriately. Since the program's loan loss reserve is provided through repurposed ARRA-SEP funding, all materials must acknowledge DEEP with the following statement:

The Department of Energy and Environmental Protection (DEEP) is an affirmative action/equal opportunity employer and service provider. In conformance with the Americans with Disabilities Act, DEEP makes every effort to provide equally effective services for persons with disabilities. Individuals with disabilities who need this information in an alternative format, to allow them to benefit and/or participate in the agency's programs and services, should call 860-424-3035 or e-mail the ADA Coordinator, at DEEP.aaoffice@CT.Gov. Persons who are hearing impaired should call the State of Connecticut relay number 711.

Further, the CEFIA Marketing Department will assist NSL and other qualifying contractors in connecting with appropriate local leaders through the CEFIA Communities Program to jumpstart targeted community-based marketing efforts.

CEFIA's Deployment Department will support the process of qualifying new contractors and vendors for the program going forward over time.

Financial Resources

CEFIA will create a loan loss reserve of \$600,000 through funds received from ARRA-SEP, with the expectation that this credit enhancement will leverage close to \$7 million in private investment via the CT HELPs program. CEFIA will not provide additional financial resources for the program.

Metrics, Targets, Measurement, Verification & Reporting

Metrics:

- Ratio of private to public capital leveraged
- Annual fuel savings for homeowners
- Annual dollar savings for homeowners
- Number of loans originated
- Loan repayment / default rates

Targets:

- The proposed CT HELPs program will seek to leverage third-party capital at a ratio greater than 11:1 vis-à-vis CEFIA funds.
- Based on an average loan size of \$5,200 (a figure extrapolated from analyses of similar residential EE financing programs in other states), CEFIA expects the program to result in nearly 52,000 MMBtu in annual fuel savings across the program, and over \$1.2 million in aggregated annual savings to approximately 1,500 homeowners.

CEFIA will collect data on the following:

- Loan acceptance and declination rate
- Average loan size
- Loan performance
- Installed measures and costs
- Actual energy savings

Financial Condition/Funding Sources & Stability (CONFIDENTIAL)

Next Step Living is a healthy three year-old start-up, with nearly \$6 million in assets as of their 2011 financial statements and significant ongoing revenues (both the company's balance sheet and income statement are shown below). In addition, over the last several years, NSL has raised considerable venture capital funding, most recently conducting a major capital raise in June of this year:

Venture Funding Total	\$7.3M
Series B 8/10	\$2.6M
Series C 4/11	\$1.5M
Series D 6/12	\$3.2M

NEXT STEP LIVING, INC.

Statements of Operations

Years ended December 31, 2011 and 2010

	2011	2010
Revenues	\$ 10,091,305	1,465,400
Direct expenses	8,997,010	1,901,171
Gross profit (loss)	1,094,295	(435,771)
Grant income	—	250,000
Selling, general, and administrative expenses	(6,461,281)	(2,021,181)
Operating loss	(5,366,986)	(2,206,952)
Other income (expense):		
Interest income	5,337	5,915
Interest expense	(75,651)	(3,402)
Other, net	(29,031)	—
Net loss	\$ (5,466,331)	(2,204,439)

See accompanying notes to financial statements.

NEXT STEP LIVING, INC.

Balance Sheets

December 31, 2011 and 2010

Assets	2011	2010
Current assets:		
Cash	\$ 738,738	931,523
Certificates of deposit	—	1,001,888
Accounts receivable, net of allowance for doubtful accounts of \$85,147 and \$18,776 in 2011 and 2010, respectively	3,016,689	550,971
Inventories	263,317	85,775
Deferred costs	579,580	—
Prepaid and other assets	374,863	76,247
Total current assets	4,973,187	2,646,404
Noncurrent assets:		
Property and equipment, net	693,376	253,859
Intangible assets, net	35,000	—
Other assets	57,118	—
Total assets	\$ 5,758,681	2,900,263
Liabilities and Shareholders' Equity		
Current liabilities:		
Note payable to related party	\$ 208,753	—
Line of credit	650,000	—
Accounts payable	1,389,926	220,203
Accrued salaries and benefits	735,417	187,399
Accrued expenses	350,612	47,339
Customer deposits	510,378	34,101
Deferred revenue	1,119,410	11,000
Total current liabilities	4,964,496	500,042
Noncurrent liabilities:		
Note payable to related party	—	208,753
Total liabilities	4,964,496	708,795
Commitments (note 8)		
Shareholders' equity:		
Series A convertible preferred stock – par value \$0.001 – 516,667 shares authorized; 516,667 shares issued and outstanding in 2011 and 2010 (liquidation preference: \$1,550,000)	1,550,000	1,550,000
Series B convertible preferred stock – par value \$0.001 – 1,903,079 shares authorized; 1,360,336 and 649,199 shares issued and outstanding in 2011 and 2010, respectively (liquidation preference: \$7,623,863)	7,576,922	3,591,423
Common stock – par value \$0.001 – 3,250,000 shares authorized; 957,000 shares issued	957	957
Additional paid-in capital	97,469	13,920
Treasury stock, 40,000 shares at cost	(200)	(200)
Accumulated deficit	(8,430,963)	(2,964,632)
Total shareholders' equity	794,185	2,191,468
Total liabilities and shareholders' equity	\$ 5,758,681	2,900,263

To be clear, a loss of the size outlined in the Statement of Operations is normal for an early-stage company, as this reflects an appropriate investment into the company's ongoing growth.



CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

Solar Loan Program

A Residential Solar PV Financing Program

Due Diligence Package

November 30, 2012

Document Purpose: This document contains background information and due diligence on the Solar Loan Program and the organizations involved, including Sungage, LeaseDimensions and (potentially) MassMutual or another long term senior lender. This information is provided to the CEFIA deployment committee 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: CEFIA Deployment Committee

From: Bryan Garcia, Bert Hunter, Dale Hedman, Ben Healey and Alexandra Lieberman

Date: November 30, 2012

Re: Solar Loan Program

Summary

The Solar Loan Program has been proposed to CEFIA by Sungage, Inc. (Sungage) in response to CEFIA's Financial Innovation Request for Proposals (RFP) issued on April 12, 2012. Sungage offers an innovative loan structure specifically targeted at residential solar ownership. The proposed pilot will enable CEFIA to promote solar ownership in Connecticut with a \$300,000 Loan Loss Reserve (LLR) from repurposed ARRA-SEP funds, a subordinated debt term loan component of \$500,000 and a revolving loan of a maximum of \$2,200,000 (such revolving loan limit reduced by any amount outstanding under the subordinated term loan). CEFIA's LLR and subordinated debt term loan will support \$4,500,000 of private capital.¹ The long-term structure (once the subordinated component reaches a "steady state") leverages private capital to public funds at a rate of nearly 6:1. Sungage will provide contractor training, financing tools, and administration of the program. Funds management and loan application / administration responsibilities will be handled by LeaseDimensions, an established major consumer loan administrator whose client list includes GE Capital, Volkswagen Credit, Coca-Cola, Hewlett-Packard, and Ford Credit.

Program Description

Sungage's innovative financing product allows Connecticut homeowners with FICO scores greater than 680 to own solar photovoltaic (PV) and take advantage of the Investment Tax Credit (ITC), previously out of reach for those who could not afford the entire upfront cost of PV installations. The standard loan rate will be 6.49%, and will rise to 9.99% if the homeowner does not use the ITC to pay down the loan (Tax Credit Recapture and Reamortization, "TCRR"). Individual loan tenor will be 15 years, and the homeowner can choose to extend to 20 years at any point during their loan, which will result in an additional 100 basis points (bps) added to the homeowner's current rate.

¹ The \$4.5M is still pending based on the participation of a proposed Senior Lender. Should no Senior Lender be secured by the launch of the program (January 2013), CEFIA is prepared to invest \$1,500,000 of ratepayer capital in lieu of the proposed subordinated debt.

Schedule of Solar Loan Rates

	TCRR	Non-TCRR
15-year term	6.49%	7.49%
20-year term	9.99%	10.99%

Sungage will market the loan to contractors and sub-contract the servicing and underwriting to LeaseDimensions. A senior lender will provide \$4,500,000 to fund the loan pool through senior debt.

Strategic Plan

As a “New Program” in the Residential sector, the Solar Loan Program is consistent with CEFIA’s Comprehensive Plan:

<u>CEFIA Comprehensive Plan</u> <u>New Residential Program Requirements</u>	<u>Solar Loan Program</u>
Comprehensive program for clean energy upgrades	Financial product specifically for Solar PV installations
Long-term, Low-Interest Loan and/or leasing program	6.49%-10.99% rate range, 15 or 20 year tenor
Uses ARRA-SEP funds and/or ratepayer capital	Utilizes \$300,000 of repurposed ARRA-SEP funding and a maximum of \$2,200,000 ratepayer capital
Creates a Loan and/or Credit Enhancement	Provides both a credit enhancement (LLR) and a subordinated loan at 6%

Ratepayer Payback

Given that \$300,000 of the funds used for the Solar Loan program are for credit enhancements (i.e. a loan loss reserve) from repurposed ARRA-SEP funds from the U.S. Department of Energy and Connecticut Department of Energy and Environmental Protection, and administered by a third party financier (i.e. CEFIA), the Connecticut ratepayers will not achieve a financial payback for the use of these funds as they are not directly contributing capital to this portion of the program.

For the subordinated debt portion of the deal, CEFIA expects to receive a return of 3.49% IRR.

Terms and Conditions

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

Prior to CEFIA achieving a 6% return on the long-term subordinated debt portion (\$500,000), cash flows from the portfolio of loans will be distributed in the following order (as per the proposed term sheet with the Senior Lender)²

² In the base case, CEFIA receives a return of 3.49%, so does not reach the required hurdle rate.

First, to Senior Note Holder for Senior Note Periodic Interest Payments;

Second, to CEFIA for Subordinated Note Periodic Interest Payments;

Third, to Senior Note Holder in order to reduce the Senior Note Notional Amount until such amount becomes zero; and

Last, to CEFIA in order to reduce the Subordinated Note Notional Amount until such amount becomes zero.

Ratepayer Capital is being used as subordinated debt. CEFIA has improved the attractiveness of the structure by matching required return to the senior note holder, despite an increased level of risk inherent in a subordinate position. To enhance the return to ratepayer capital at risk, cash flows after the hurdle rate has been achieved will be 75% to CEFIA as the subordinated note holder and 25% to the Senior Lender. The current base-case model does not reach this point of upside.

Capital Expended

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

CEFIA will expend \$500,000 of ratepayer capital with certainty and a \$300,000 LLR of repurposed ARRA-SEP funds.

The revolving loan amount varies. It serves two purposes in the structure: first, it enables Sungage to make large draws of \$500,000 (payable to LeaseDimensions), making the structure more efficient in terms of transaction costs for the Senior Lender; second, it maintains an acceptable Loan-to-Value (LTV) ratio for the Senior Lender of 90% plus the LLR protection.

Factor	Rationale	Assumption
Speed of Deployment	The faster the solar loans are deployed, the more of the revolving loan Sungage will need to fund installations until the next Senior Lender draw	18 month deployment
% of Portfolio Opting to "TCRR"	By using the ITC to pay down the amount borrowed, individual borrowers decrease their LTV. The more borrowers that opt to do this, the faster the overall LTV will decline. The fewer the number of borrowers that opt to do this, the more additional support required from CEFIA to protect the Senior Lender's 90% maximum LTV	75%
Timing of "TCRR"	The longer it takes for a borrower to pay down using the ITC proceeds, the higher the LTV will be for longer. Sungage gives borrowers a maximum of 18 months to pay down using ITC proceeds.	12 months from initial financing

Cost/Watt	A lower cost of installation will drive down the “Loan” (numerator) part of the LTV equation, resulting in a lower LTV overall	\$4.5
% of portfolio in CL&P territory	The “value” (denominator) portion of the LTV calculation depends on the avoided cost of electricity. Because CL&P territory has lower electricity rates, the greater the installations in CL&P territory, the larger the LTV	80%

CEFIA and Sungage assume the loan will not exceed \$2,200,000, which it reaches in Month 17 (May 2014), and begins to decline, reaching “steady state” (\$500,000) in Month 35 (October 2015).

Risk

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

The maximum exposure of ratepayer funds is \$2,200,000, the not-to-exceed amount for the revolving debt. This does not include the \$300,000 of repurposed ARRA-SEP funds, which are not ratepayer funds. Maximum CEFIA exposure is \$2,500,000.

CEFIA’s maximum risk exposure is expected to last only one month (until the LTV begins to decline and LeaseDimensions completes a \$500,000 drawdown from the Senior Lender)

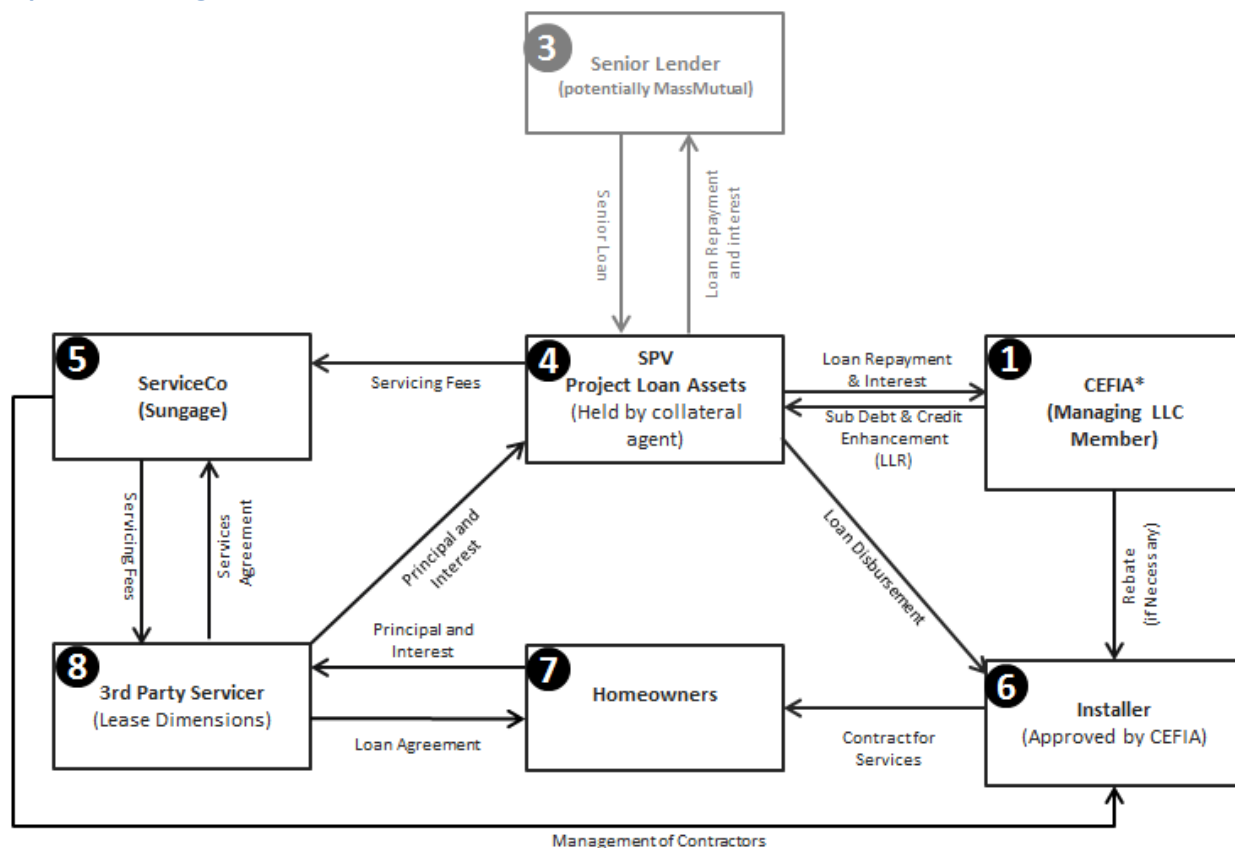
Financial Statements

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

The use of the credit enhancements will result in the recognition of income on the income statement (Grant Income – ARRA) and a simultaneous reduction in “Deferred revenue – ARRA” on the liability side of the balance sheet. Also, there would be a reduction in the CEFIA Restricted Cash Account (Non-current Asset on the Balance Sheet) related to ARRA-SEP funds and a corresponding recognition of Grant Expense on the income statement, which will reduce Restricted Net Assets as the funds are distributed to the Senior Lender.

As funds are advanced for subordinated loans, there would be a reduction in the CEFIA Cash and Cash Equivalents Account (Current Asset on the Balance Sheet) and a corresponding increase in “Subordinated Promissory Notes – Solar Loan Program” (Non-Current Asset on the Balance Sheet).

Capital Flow Diagram



*A to-be-incorporated subsidiary of CEFIA

Target Market

Who are the end-users of the program?

End-users are homeowners in Connecticut who prefer to own (rather than lease) solar PV systems but may not want to, or be able to, pay the full cost up front. Eligible homeowners will have FICO scores of 680 or above. Sungage estimates that over 90,000 homes in Connecticut alone will be eligible for solar (including roof orientation and condition), resulting in a \$2.3B financing gap.

CEFIA Role, Financial Assistance & Selection/Award Process

CEFIA issued a RFP for Financial Innovation programs on April 12, 2012, and received seven responses. Sungage was one of four projects selected to negotiate the receipt of credit enhancements through repurposed ARRA-SEP funds, from the US Department of Energy.

In the proposed pilot, CEFIA will provide two sources of financing:

- \$330,000 in Loan Loss Reserve (LLR) from the repurposed ARRA-SEP funds
- \$500,000 (term) - \$2,200,000 (revolving loan) in subordinated debt using ratepayer funds

Additionally, CEFIA will provide technical and financial input as Sungage develops the program.

Should CEFIA be unable to raise senior debt prior to the launch of the program, CEFIA is prepared to invest \$1,500,000 of ratepayer capital in lieu of the subordinated debt CEFIA is planning to provide.

Program Partners

Sungage: a Massachusetts-based start-up company that has developed a marketing and loan origination platform to make solar PV ownership accessible, affordable, and easy. Sungage will act as a general contractor to manage and educate a contractor base and the third party processor.

MassMutual (potential Senior Lender): Short for Massachusetts Mutual Life Insurance Company, MassMutual is a large mutual life insurance company founded in 1851 and headquartered in Springfield, MA. Revenue in FY 2011 was almost \$20B, and the Company is rated AA+ by both Fitch and S&P. Funds under management totaled \$470B as of June 30, 2012.³ If participating, MassMutual will provide \$4.5M of capital to fund solar PV system ownership in Connecticut.

LeaseDimensions: A leading lease and loan servicer to the equipment and vehicle industries founded in 1995, and based in Portland, OR. Since its founding, LeaseDimensions has serviced over 100,000 leases and loans, representing over \$2B in value. Clients include: GE Capital, Volkswagen Credit, Coca-Cola, Hewlett-Packard, and Ford Credit.⁴

Risks and Mitigation Strategies

Participation of MassMutual: CEFIA is currently in talks with MassMutual to secure their commitment; however, CEFIA is also prepared to invest \$1,500,000 of ratepayer capital (as senior debt) temporarily until a long-term senior lender is secured. This senior-level financing by CEFIA would be in lieu of the subordinated debt CEFIA will provide in the proposed MassMutual structure.

Company risk: Sungage is a startup with a light track record. CEFIA believes the proposed program is structured to limit the Sungage-specific risk: 1) the use of an experienced loan processor (LeaseDimensions) limits the risk of Sungage as a going concern to the origination period; 2) the limited origination period and small fund size further limits CEFIA's exposure to Sungage; 3) the use of a SPV will keep funds within the financing structure, and not with Sungage.

Origination risk: CEFIA believes that Sungage has developed interesting tools that make them stand out in the crowded residential solar financing landscape. Specifically, they have developed and tested online tools that make it easy for customers to own solar, and for contractors to sell solar. By plugging into existing contractor networks, Sungage also limits the risk of slow origination.

Underwriting risk: CEFIA has had input in determining the underwriting criteria. Borrowers will be required to have FICO scores of 680 or above, and borrowers with FICO between 680 and 720 must have DTI of 45%. To be competitive with other programs used by solar installers, FICO scores above 720 will have no DTI requirements. Part of Sungage's contribution to the program will be to educate contractors

³ http://www.massmutual.com/mmfg/pdf/2012Q2_financial_summary.pdf

⁴ <http://www.leasedimensions.com/about/>

in underwriting processes and criteria. Additionally, the SPV will be secured by the solar equipment as collateral in the event of default.

Operating Procedures

CEFIA will seed the SPV with \$250,000, and will continue to fund it in \$250,000 increments as needed. As LeaseDimensions issues loans, they will draw down funds from the SPV. CEFIA will receive written notifications from LeaseDimensions when funds are needed, which can be checked against PowerClerk data. CEFIA will be repaid from the \$500,000 draws from the Senior Lender, up to 90% portfolio LTV. As the subordinated note outstanding begins to decline, it will be returned to CEFIA until the note reaches a “steady state” of \$500,000.

The LLR will be placed in a separate account in the SPV. Funds will be released in the amount of the principal outstanding once accounts have been shown to be delinquent for more than 90 days.

Sungage will train and educate contractors. CEFIA will assist in identifying qualified contractors in Connecticut. Sungage will also manage lease processing through their online tools and through subcontracting with LeaseDimensions, an established processing company.

The trained contractors will market the product to customers, using Sungage’s online tools and platforms. LeaseDimensions will service and originate the loans.

CEFIA will be entitled to all Renewable Energy Credits (RECs) produced by the portfolio.

Resolutions

WHEREAS, the Clean Energy Finance and Investment Authority (CEFIA) has entered into an Memorandum of Agreement (MOA) with the Department of Energy and Environmental Protection (DEEP) to repurpose American Recovery and Reinvestment Act State Energy Program (ARRA-SEP) fund for the undertaking of a project of mutual interest;

WHEREAS, the project of mutual interest set forth in the MOA is to provide funding for credit enhancements (i.e., loan loss reserves, interest rate buy-downs, third party loan insurance) for two financing programs administered by CEFIA. The two programs supported by this funding are the Residential Clean Energy Financing Program and the Clean Energy Financial Innovation Program;

WHEREAS, the Clean Energy Financial Innovation Program shall be used to leverage additional public and private sector sources of capital through a competitive solicitation process designed and administered through CEFIA;

WHEREAS, Sungage, Inc.’s submission of the Solar Loan Program (Program) was down selected under CEFIA’s competitive solicitation process for the Clean Energy Financial Innovation Program.

NOW, therefore be it:

- (1) Resolved, that funding be approved for the Program in an amount not-to-exceed \$300,000 for a Loan Loss Reserve (LLR) through the use of repurposed ARRA-SEP program funds;
- (2) Resolved, that the Deployment Committee hereby recommends to the CEFIA Board of Directors that the Board of Directors grant approval for CEFIA to establish special purpose vehicles (limited liability companies, "SPVs") to facilitate the funding for the proposed Program;
- (3) Resolved, that the Deployment Committee hereby recommends to the CEFIA Board of Directors that the Board of Directors grant approval for CEFIA to lend to the SPVs for the purposes of funding the loans to be granted to Connecticut homeowners under the Program subject to the following limits:
 - A. A maximum limit for all long term loans of \$500,000;
 - B. A maximum limit for revolving loan advances of:
 - 1) \$1,500,000 in the event CEFIA is the sole senior lender to the SPV, or
 - 2) \$2,200,000 in the event CEFIA is a subordinated lender to the SPV with a senior lender providing not more than \$4,500,000 to the SPV;
- (4) Resolved, that the President of CEFIA; and any other duly authorized officer of CEFIA, is authorized to execute and deliver, any contract or other legal instrument necessary to effect the Credit Enhancements, senior debt and subordinated debt on such terms and conditions consistent with the term sheet dated November 21, 2012 and as he or she shall deem to be in the interests of CEFIA and the ratepayers no later than six months from the date of this resolution; and
- (5) Resolved, that the proper CEFIA officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instrument.
- (6) Resolved, that the Deployment Committee action is consistent with CEFIA's purposes as codified in Section 16-245n(d)(1) of the Connecticut General Statutes (C.G.S.), its board approved Resolution of Purposes and CEFIA's Comprehensive Plan.

Submitted by: Bryan Garcia, President and CEO, Bert Hunter, EVP and CIO, Dale Hedman, Director of Project Deployment, Benjamin Healey, Senior Manager of Clean Energy Finance and Alexandra Lieberman, Manager of Clean Energy Finance

Proposed Term Sheet with Senior Lender

Residential Solar Loan Portfolio Financing

Term Sheet

Purpose:	To fund a Portfolio of Loans in order to develop a long-term financing solution to promote solar ownership and increase the deployment of solar in the State of Connecticut
Loan:	A loan between Lender of Record and a homeowner for the purposes of installing a residential solar photovoltaic system (See Appendix A for Loan term sheet)
Program Sponsor & Subordinated Note Holder:	Clean Energy Finance and Investment Authority ("CEFIA")
Senior Note Holder:	MassMutual
Lender of Record & Obligor:	To be formed Special Purpose Entity administered by CEFIA for the exclusive purpose of making Loans
Portfolio:	One or more Loans originated and owned by Lender of Record
Portfolio Funding:	Senior Note and Subordinated Note (together Notes) to Lender of Record used to fund Loans.
Portfolio Funding Amount:	\$5,000,000
Senior Note Amount:	\$4,500,000, drawn in increments of \$500,000
Max Subordinated Note Amount:	\$2,200,000
Closing Date:	December 15, 2012
Origination Period:	Twenty four (24)-month period during which Loans will be originated
Maximum Term:	264 months after Closing Date
Restricted Use of Funds:	Loans may only be made to residents of Connecticut for solar photovoltaic systems installed in Connecticut by contractors approved by CEFIA on residential homes (1 to 4 units, owner occupied and no subdivided deeds)

Collateral:	A Portfolio of approximately 240 Loans. See Appendix A for underlying Collateral.
Collateral Qualification:	Loans must be underwritten according to underwriting standards approved by Senior Note Holder and CEFIA
Senior Note Max LTV:	At no time shall the Senior Note Amount funded exceed 90% of the Value of the underlying assets in the Portfolio
Credit Enhancement:	CEFIA will provide a loan loss reserve (LLR) account to reduce the cost of financing in connection with the Portfolio of Loans. The LLR administered by CEFIA shall not exceed \$300,000. The LLR will be drawn down in the event of a delinquency of more than 90 days to make payments in lieu of missed Repayment Obligations until the LLR exhausted.
Repayment Obligation:	Repayment obligation for the Notes shall be limited to the cash amounts collected from the Loans in the underlying Portfolio and funds drawn from the Loan Loss Reserve
Distributable Portfolio Cash Flows:	The total cash payments received from the Loans in the underlying Portfolio less servicing and other fees related to Portfolio management for a given period
Waterfall:	<p><i>During any period prior to Subordinated Note Holder achieving a return equal to the Subordinated Note Hurdle Rate, Distributable Portfolio Cash Flows shall be allocated as follows:</i></p> <p>First, to Senior Note Holder for Senior Note Periodic Interest Payments;</p> <p>Second, to Subordinated Note Holder for Subordinated Note Periodic Interest Payments;</p> <p>Third, to Senior Note Holder in order to reduce the Senior Note Notional Amount until such amount becomes zero; and</p> <p>Last, to Subordinated Note Holder in order to reduce the Subordinated Note Notional Amount until such amount becomes zero</p> <p><i>During any period following the period during which Subordinated Note Holder achieved a return equal to Subordinated Note Hurdle Rate, Distributable Portfolio Cash</i></p>

Flows shall be allocated as follows:

75% to Subordinated Note Holder, 25% to Senior Note Holder

Senior Note Interest Rate: 6.00% per annum

Subordinated Note Interest Rate: 6.00% per annum

Subordinated Note Hurdle Rate: 6.00% per annum

Senior Note Notional Amount: Total amount drawn under the Senior Note less all cash payments to Senior Note Holder, except for Senior Note Periodic Interest Payments

Subordinated Note Notional Amount: Total amount drawn under the Subordinated Note less all cash payments to Subordinated Note Holder, except for Subordinated Note Periodic Interest Payments

Senior Note Periodic Interest Payment: For each Payment Period, the amount equal to the Senior Note Notional Amount times the Senior Note Interest Rate times (days outstanding/365)

Subordinated Note Periodic Interest Payment: For each Payment Period, the amount equal to the Subordinated Note Notional Amount times the Subordinated Note Interest Rate (days outstanding/365)

Payment Period: Payments shall be made on a monthly basis based on the funds available from the collections of payments from the underlying Portfolio

Loan Servicer: Sungage, Inc. will be responsible for managing and/or servicing the billing, documentation, and remittance of payment processes and is subcontracting these duties to LeaseDimensions.

RECs: CEFIA will be entitled to all Renewable Energy Certificates ("RECs") and any other tradable energy- or environmental-related commodity produced by or associated with the Project, including but not limited to greenhouse gas credits, emissions credits, tradable carbon credits, and all other types of tradable project-related commodities however named that are presently known or designated or created in the future.

ARRA: CEFIA is utilizing funds provided under the American Recovery and Reinvestment Act of 2009 - State Energy Program ("ARRA

SEP”) to fund a portion of the loan loss reserve to encourage funding for qualified projects. This agreement will be subject to the federal requirements and restrictions imposed by ARRA SEP.

Non-Binding:

Any financing by CEFIA is subject to the execution of definitive documents. The transactions contemplated by this term sheet are subject to all necessary CEFIA approvals, including its board of directors or a duly authorized committee of the board.

Enabling Statute:

CEFIA is subject to the requirements outlined in Sections 16-245n of the Connecticut General Statutes.

Appendix A: Loan Term Sheet

Eligibility:	Homeowner for the purposes of financing the installation of a solar photovoltaic system at a primary residence (1 to 4 units) in Connecticut
Borrower Criteria:	Borrowers with FICO 680-720: 45% DTI Borrowers with FICO > 720: no DTI requirement
Initial Term:	15-year, mortgage-style amortization
Amount:	Cost of materials, construction, and finance and other fees less the Down Payment required, not to exceed the Initial Value amount.
Repayment:	Initially, 180 equal monthly installments with ability to extend up to a total maximum of 240 installments
Investment Tax Credit	Federal tax credit equal to 30% of the eligible project cost basis
Tax Credit Recapture & Re-amortization ("TCRR"):	Tax Credit Recapture: Partial prepayment by the Homeowner made during the first 18 months that the loan is outstanding. The prepayment amount must be equal to or greater than 80% of the Investment Tax Credit amount; Re-amortization: Partial prepayment of loan (equal to Tax Credit Recapture) while leaving the original term constant with the effect of lowering the monthly payment
Standard Interest Rate:	Fixed 6.49%, per annum
Non-TCRR Interest Rate:	In the event that the borrower does not complete a TCRR, the new interest rate beginning at the end of the 18-month period after the loan initially entered into repayment; Fixed 9.99%, per annum
Loan-to-Value (LTV):	Ratio of outstanding loan principal at any given time and Value
Value	At the time that the Loan is underwritten, Value shall be the Initial Value, where

Initial Value = System Value + Investment Tax Credit

Once a Loan is outstanding, Value shall be the **System Value**, where

System Value is defined as the present value (PV) of the solar photovoltaic system's future unlevered free cash flows (FCFs) discounted at the Standard Interest Rate. (See Exhibit A)

FCFs include the value of the electricity produced by the system plus the value of Renewable Energy Certificates (RECs), as applicable, less insurance costs, maintenance costs, and inverter replacement costs

Down Payment: Greater of the Minimum Down Payment or the down payment required such that the initial LTV is no greater than 1.0x the Initial Value.

Minimum Down Payment: 5% of total construction cost, as invoiced and due to the CEFIA-approved contractor.

Prepayment Right: Ability to prepay at any time without penalty

Maximum Term: Loan term may be extended at any point during the repayment period to a maximum maturity of 240 months. Extended-term loans shall bear interest at the Extended Loan Rate.

Extended Loan Rate: Applicable rate (Standard Interest Rate or Non-TCRR Interest Rate) plus 100 basis points; 7.49% or 10.99%, p.a., respectively (See Exhibit B)

Exhibit A: Standard Parameters for System Value Calculation Used in LTV

Free Cash Flow

<i>Parameter</i>	<i>Description</i>	<i>Source</i>
Energy Savings Value	Expected period production (kWh) x variable component of the retail price of electricity (\$/kWh)	Expected production provided by installer using PV Watts or similar system; price published by utility for each service territory
Energy Price Inflator	20-year average annual inflation in residential retail price of electricity by state	U.S. Energy Information Administration
Insurance Costs	Increase in homeowner's policy to insure system	Sungage estimate: 0.25% of the gross installed system cost annually
Maintenance Costs	Minor system servicing (e.g. performance check)	Sungage estimate: \$50 annually, escalating at 2.5%, p.a.
Inverter Replacement	Inverter useful life determined based on technology used; new inverter installed a fixed \$/w	Sungage estimate: \$0.40/watt (DC STC) occurring in project year 15
Discount Rate	Standard Interest Rate	
System Useful Life	25 years	

Exhibit B: Summary of Interest Rates, by Loan Type

	<i>TCRR</i>	<i>Non-TCRR</i>
<i>180-Month Maturity</i>	6.49%	9.99%
<i>240-Month Maturity</i>	7.49%	10.99%

Sungage

Mission

Sungage is a Massachusetts-based start-up company that has developed a marketing and loan origination platform to make solar PV ownership accessible, affordable, and easy. Sungage works with a channel of installers to provide consumer-oriented education, financing, and service for residential solar PV. Sungage's on-line tool, the Solar Wealth Calculator, engages consumers around the economics of a system for their own roof. The company uniquely provides a secured solar loan product to qualified borrowers to fund qualified projects. This loan product not only results in a similar monthly payment profile as lease options available in the market, but also allows homeowners to generate a meaningful financial return. Lastly, Sungage provides on-going services to support solar as a smart consumer investment.

Programs/Programmatic Strengths/Service Area

CEFIA staff believes that Sungage brings four key strengths to this solar loan pilot program:

- A sophisticated customer-oriented marketing and sales platform that validates installer claims, educates homeowners about the value of solar PV ownership, and clarifies trade-offs amongst financing options;
- An established installer support system that includes on-boarding, sales training, and ongoing collaboration;
- An experienced origination and servicing platform via LeaseDimensions, a company that has provided lease and loan services for over 100,000 contracts representing more than \$2 billion in asset value; and
- Deep financing expertise and IP, including a proprietary asset underwriting scoring methodology, referred to as the Sungage Score.

Strategic Need(s) Addressed by the Proposed Program

At present, there are no companies that offer products and services designed to support solar ownership. The market leaders in residential solar finance all serve consumers willing to "rent" solar. For consumers who wish to own solar, competition comes from cash or home equity purchases. Local banks offer financing through their PowerSaver loans, but these require a lien and do not give consumers a view to the financial attractiveness of the project.

Thus, versus a lease product, Sungage's ownership model passes on a lower cost of capital to homeowners, since tax equity availability does not constrain financing. Versus home equity, Sungage's approach does not require a real estate lien, nor is it constrained by a homeowner's ability to take advantage of what may be limited equity in his or her house. Versus a 100% cash purchase, the Sungage loan product provides for a reasonable down payment, making solar PV more broadly accessible, and the "sale" includes site-specific decision support that should help drive uptake. Overall, then, this offering should help grow the residential solar PV category to include consumers who not only want to

go green, but also those who seek protection from uncertain utility costs and those who are looking for a safe and secure long-term investment.

Leadership

Sara Ross, CEO and co-founder

Sara has worked previously for the City of New York, the University of Pennsylvania, Harvard University, USAID, and Abt Associates performing policy and economic analysis. Sara has expertise in the residential solar marketplace, developed initially as a consumer of solar herself. Sara was a speaker at the 2012 Building Energy Conference, and is a member of the New England Sustainable Energy Association (NESEA), Solar Connecticut and the Renewable and Energy Efficiency Business Association (REEBA). Sara holds an MPA/ID from the Harvard Kennedy School.

Sylvain Mansier, Chief Financial Officer

Sylvain has a range of experience in the renewable energy industry from corporate and project finance to business development and policy-making. Sylvain advised utilities and private companies on energy financing matters at UBS Investment Bank, worked on raising funds for renewable energy projects at First Wind, and undertook a strategic planning process at solar project developer Recurrent Energy. Sylvain also served as Assistant Secretary of Economic Development and Commerce within the Government of Puerto Rico, where he promoted renewable energy through adoption of new policies and was instrumental in delivering the Island's first Renewable Portfolio Standard and a new \$290 million Green Energy Fund. Sylvain holds an MBA from Harvard Business School.

Chris Foley Pilsner, Vice President of Marketing

Chris has over 15 years of marketing and advertising experience in New York, London, and Ann Arbor. Former employers include JWT, Deutsch, and Euro RSCG. She has managed brands and developed successful communication strategies across a wide range of consumer segments and product categories. Her portfolio of work includes Kraft Foods, Kao Brands, Unilever, Cadbury-Adams, Diageo, Olympus, Merrill Lynch, Novartis, and Merck. Chris graduated from Villanova University with a BA in English.

Ron Hoge, Advisor – Venture

Ron has been the CEO of Pinnacle Engines in early 2011 after serving on its Board since its inception. He has forty years of business experience with executive leadership roles in eight different companies, from Fortune 500 firms to venture-backed startups. His background includes positions as the President and Chief Executive Officer of Cummins Power Generation (Onan), President and Chief Executive of Magnetek, and President of a \$1.5 billion aerospace division of Allied Signal. Overall, he has led businesses on three continents through startup, growth, reorganization, and disposition challenges. He is currently a Director at two other cleantech startups, NovaTorque, Inc., and Glacier Bay, Inc. He is also on the President's Advisory Council of ACCION International, and a Trustee of the EARTH University Foundation. Ron has a BA in Mathematics from Amherst College and an MBA in Marketing from Stanford University.

Agustin Schapira, Advisor – Technology

Agustin advises Sungage, Inc. on issues related to its IT infrastructure. Agustin has twenty years of experience as a computer scientist, and is currently a Principal Architect for Comcast Corp., where he acts as technical lead for the companywide API infrastructure. Prior to Comcast, he founded a small consulting firm focused on problems of scalability and security of large computer systems, and was the head of software development for a research open-source platform for relational knowledge discovery funded and used in production by DARPA, NSF, Lawrence-Livermore National Laboratory, and NASD. Agustin holds a MS in Computer Science from the University of Massachusetts, Amherst.

Steven Strong, Advisory – Industry

Steven is regarded as the pre-eminent authority on integration of renewable energy systems in buildings in North America. He has earned a reputation for pioneering integration of renewable energy systems - especially solar electricity - with environmentally responsive building design. Over the past 25 years, Steven has designed dozens of homes and buildings powered by solar electricity. His work is notable for a long series of firsts: from the first solar panels on the White House, to the first solar-powered Olympics at the 1996 Summer Games, to the first fully solar powered academic facility at Oberlin College. Steven is the President of Solar Design Associates, North America's oldest and most respected renewable-energy design firm, with deep expertise in building-integrated design and sustainable systems engineering. Steven is also the US Representative to the International Energy Agency's expert working group on PV in Buildings. In the spring of 1999, TIME magazine named Steven an environmental "Hero for the Planet." In the spring of 2001, the American Solar Energy Society presented him with its Charles Greeley Abbot Award - the Society's highest honor, for outstanding achievement in the advancement of solar energy.

Financial Condition/Funding Sources & Stability (CONFIDENTIAL)

See separate package, marked "Confidential."

Experience with Similar Programs

Several types of consumer testing have informed the current suite of Sungage products and services. In particular, the company has performed testing on: (1) loan product design through its pilot in Massachusetts, (2) its Solar Wealth Calculator™ through on-line surveys, analytics and 1:1 interviews, and (3) its core brand message through focus groups and 1:1 interviews.

Massachusetts Pilot Program

Sungage conducted a pilot program in Massachusetts starting in the summer of 2011. Sungage worked with Pioneer Valley Photovoltaics to finance 6 residential installations. For the initial pilot, all lead generation was performed by Pioneer Valley Photovoltaics. The installer performed the site visit, system design and delivered an installation proposal to the customer. Sungage performed underwriting of the system and borrowers and provided approval notification. The installer prepared all necessary interconnection and rebate applications. Once rebate and interconnection applications were approved and installers were prepared to order equipment, Sungage closed on a loan with the consumer. All loan closings were performed in person. Sungage dispersed funds directly to the installer for work performed.

Sungage issues monthly invoices to consumers. Invoices detail current payments due, previous payments made, outstanding principal amounts, production and environmental attributes. Current customers pay via check.

Key learnings from the pilot are:

- the need to present a financing offer in close coordination with the installation proposal
- the value consumers and installers place on third-party validation of system economics
- consumers' sensitivity around loan tenor and interest rate.
- the willingness of consumers to contribute a down payment even in an environment with zero-down options
- consumers' desire to leave home equity unencumbered
- consumers desire to have the option to pre-pay at no penalty, and the value consumers place on the re-amortization option

Solar Wealth™ Calculator and brand message testing

Sungage has conducted extensive consumer research, including 15 1:1 focus groups and hundreds of online surveys. The company's research indicates that its educational approach and Solar Wealth™ Calculator make solar an attractive financial decision to more homeowners. The Solar Wealth™ calculator has been through usability testing with 65 consumers, and Sungage will be making small revisions before launch so that it is as simple and efficient as possible. Research indicates that the design, format and customized approach are highly appealing, and most described the experience as "informational," "useful" and "accessible." Sungage will continue to use several tools to monitor Solar Wealth™ Calculator performance for on-going optimization, including Google Analytics and ClickTale, a service that provides heat maps on mouse movement and clicks.

MassMutual

Mission

As a mutual company, MassMutual does not have shareholders. Instead, its policyowners and members are often described as sharing in its ownership. MassMutual seeks to generate long-term stable investment performance to support MassMutual's financial strength and ability to meet the company's financial commitment to policyowners. In constructing and maintaining its asset portfolio, MassMutual adheres to a disciplined investment approach, which is grounded in the tenets of diversification, prudent security selection and relative value. As a mutual company, MassMutual is able to take a long-term view when investing and focus less on short-term fluctuations in asset values.

Leadership

Executive Leadership	Board of Directors
Roger W. Crandall Chairman, President and Chief Executive Officer	Roger W. Crandall
David J. Brennan Chairman and Chief Executive Officer, Baring Asset Management Limited	James H. DeGraffenreidt, Jr.
Robert J. Casale Executive Vice President and Chief Information Officer	Thomas C. Barry
Susan M. Cicco Vice President and Chief of Staff to the CEO	Cristóbal I. Conde
M. Timothy Corbett Executive Vice President and Chief Investment Officer	Kathleen A. Corbet
Michael R. Fanning Executive Vice President, U.S. Insurance Group	Patricia Diaz Dennis
Thomas M. Finke Chairman and Chief Executive Officer, Babson Capital Management LLC	Robert A. Essner
William F. Glavin, Jr. Chairman, President and Chief Executive Officer, OppenheimerFunds, Inc.	Robert M. Furek
Debra A. Palermino Executive Vice President, Human Resources	Raymond W. LeBoeuf
Mark D. Roellig	Cathy E. Minehan

Executive Vice President and General Counsel	
Michael T. Rollings Executive Vice President and Chief Financial Officer	Marc F. Racicot
Douglas G. Russell Senior Vice President, Strategy and Corporate Development	Laura J. Sen
Elaine A. Sarsynski Executive Vice President, Retirement Services Chairman and Chief Executive Officer, MassMutual International LLC	William T. Spitz
Elizabeth A. Ward Executive Vice President and Chief Enterprise Risk Officer	H. Todd Stitzer

Financial Condition/Funding Sources & Stability

Summary of Financial Position

(consolidated statutory basis, in millions)

December 31:	2011	2010
Short-term investments and cash	\$ 1,788	\$ 1,590
Bonds	58,391	54,740
Other invested assets	38,677	34,457
Total Invested assets	\$ 98,856	\$ 90,787
Other assets	2,499	3,030
Separate account assets	47,245	47,285
Total assets	\$ 148,600	\$ 141,102
Policyholders' reserves	\$ 78,716	\$ 73,410
Policyholders' dividends	1,335	1,230
Other liabilities	8,164	7,379
Asset valuation reserve	1,731	1,459
Separate account liabilities	47,237	47,272
Total liabilities	137,183	130,750
Surplus	11,417	10,352
Total liabilities and surplus	\$ 148,600	\$ 141,102

Summary of Operations

(consolidated statutory basis, in millions)

Year ended December 31:	2011	2010
Premium income	\$ 13,893	\$ 11,617
Net investment income	5,127	4,748
Fees and other income	667	640
Total revenue	19,687	17,005
Policyholders' benefits	10,960	11,020
Increase in policyholders' reserves	5,001	2,066
Commissions and other expenses	2,017	2,065
Total benefits and expenses	17,978	15,151
Net gain from operations before dividends and taxes	1,709	1,854
Dividends to policyholders	1,313	1,209
Net gain from operations before taxes	396	645
Federal income tax benefit	(290)	(217)
Net gain from operations	686	862
Net realized capital losses	(227)	(268)
Net income	\$ 459	\$ 594

LeaseDimensions

Mission

LeaseDimensions, founded in 1995, is a full-spectrum lease and loan services provider located in Portland, Oregon. LeaseDimensions provides Third-Party Origination and Servicing, IT Outsourcing, Technology Consulting and Hosted-Software (ASP) services to companies in the vehicle and equipment finance industries. The company has provided lease and loan servicing to clients ranging from Fortune 500 companies to emerging-growth organizations, including GE Capital, Volkswagen Credit, Coca-Cola, Hewlett-Packard, and Ford Credit. LeaseDimensions' services encompass both commercial and consumer portfolios and include a wide array of equipment and vehicle assets.

LeaseDimensions' services encompass both commercial and retail customers and include a wide array of vehicle and equipment assets. To handle third-party servicing functions, LeaseDimensions engages highly experienced loan and lease servicing and processing personnel. They manage transactions on a secure state-of-the-art data platform and utilize the robust capabilities of the *LeasePak™* lease and loan management system.

Leadership

William D. Allen, President & CEO

Mr. Allen founded LeaseDimensions in 1995, using his experience in executive management and strategy development for financial institutions to develop the Company's unique outsourcing business model. Since the Company's inception, he has provided hands-on executive management of LeaseDimensions' business development, marketing, operations, accounting and finance functions.

Prior to founding LeaseDimensions, Mr. Allen served as Senior Vice-President of Operations and Chief Credit Officer for Industrial Leasing Corporation where he managed the company's credit, lease administration, collections, customer service and equipment management functions. Mr. Allen also spent five years as a management consultant for Edgar, Dunn and Company in San Francisco, where he specialized in operations improvement and strategy development consulting for financial institutions. He earned his MBA degree from the University of California at Berkeley.

Robert A. Hingst, Executive Vice-President & CIO

As a co-founder of LeaseDimensions, Mr. Hingst has developed the Company's Technology Consulting business and implemented LeaseDimensions' technology strategy. Mr. Hingst has particular expertise in large-scale data conversion projects. Since 1985 he has managed over 45 lease and loan system conversions for banks, captive leasing companies, independent lessors, and servicing organizations.

Mr. Hingst has more than 20 years of professional technical experience and has provided technology consulting services to more than 30 major finance companies since co-founding LeaseDimensions in 1995. Previously Mr. Hingst served in a variety of senior management and technical positions at Industrial Leasing Corporation, Paccom Leasing Corporation, and Pacific Telecom, Inc.

Mr. Hingst is Vice President of the Leasepak Users Group and User Chairperson of the Leasepak Technology Committee.

Kent R. Williams, Executive Vice President

Mr. Williams brings nearly 20 years of servicing expertise to LeaseDimensions, and is responsible for all servicing operations. During his career he has consistently produced superior servicing results for all types of portfolios: secured and unsecured; consumer and commercial; super-prime to sub prime. Asset classes for which he has run servicing operations include all types of vehicles, equipment, mortgages, credit-based lending, student lending, leisure craft, marine and other custom lending products.

Prior to joining LeaseDimensions, he was the founding operations partner of Loan Servicing Enterprise (LSE), one of the nation's largest third-party servicers of non-prime and sub-prime consumer auto loan portfolios. He was concurrently Executive Vice President and Chief Operating Officer at MSA Solutions, in Tempe, Arizona. In his 15-plus years at MSA, he pioneered MSA's entry into several diverse servicing arenas, helping MSA grow from a small servicer to one of the largest third-party service centers in the U.S.

Mr. Williams is nationally-recognized speaker on servicing and collection matters, and is invited to speak at a variety of conferences, including CBA, AFSA, ELA, and other independent conferences sponsored by IMN, SRI, WRG, etc.

Cindy L. Bullen, Vice-President, Operations

Bringing over 20 years of experience in managing collections and customer service functions for financial institutions, Ms. Bullen heads up LeaseDimensions' Customer Service, Collateral Administration and Lease Administration Departments. She also serves as a key liaison for the Company's servicing clients. Prior to joining LeaseDimensions, she served as Collections Manager and Team Leader for Portfolio Financial Servicing Company. Her responsibilities included managing collections, bankruptcy and litigation support as well as customer service functions for various portfolio-servicing clients.

Ms. Bullen has also served as Collection Supervisor for Industrial Leasing Corporation and as a Collection and Customer Service training coordinator for Nissan Motor Acceptance Corporation.

Financial Condition/Funding Sources & Stability

Current financials for LeaseDimensions are not available. Nonetheless, the company has converted and serviced portfolios of up to 25,000 lease contracts and \$1.4 billion in net asset value. Moreover, LeaseDimensions' management has direct experience servicing more than 300,000 accounts at a time, and their partners have the capacity and wherewithal to supplement their services, as needed, to service up to one million accounts. LeaseDimensions' servicing software is scalable to over a million contracts. The company's automation tools and management have demonstrated the ability to manage portfolios with large numbers of accounts and/or asset values. As references for LeaseDimensions' portfolio services encompassing larger portfolios, the company offers GE Capital, Navistar Financial, and

Wells Fargo Corporate Trust. Based on this list of clients, CEFIA staff feels very comfortable moving forward with LeaseDimensions as a sub-servicing partner.

Due Diligence Questions

Question #1 – as a start-up, what are Sungage’s current financing and business development prospects?

Why question asked:

Sungage must be a going concern for ramp-up and loan origination, especially over the first two-year period of the program.

Response:

Sungage’s business plan anticipates an initial market entry of its solar loan product in the State of Connecticut as of the beginning of 2013. The company has planned for limited additional market activity, and will focus primarily on Connecticut during this next calendar year. In addition, Sungage has assessed the resource requirements for a successful pilot. These considerations include the time and materials needed to train CT installers on the loan product, the provision of significant sales support for loans sold during the pilot, and ramping underwriting capacity in order to deliver quality and timely decisions on incoming applications.

Furthermore, risk mitigation is achieved through three elements of the program design: i) financing structure, ii) limited fund size and origination window, and iii) use of a long-established sub-servicer.

As contemplated, the financing structure will incorporate a CEFIA-managed SPV as the funding entity. Sungage expects to draw from the financing facility only upon a loan closing. All such closings will be completed through wire transfer and/or ACH mechanisms. Therefore, all funds will remain in an SPV-controlled account until payments are made directly to installers. Since CEFIA will have supervisory and managerial control over the SPV, ultimate control of deployment of funds will remain with CEFIA.

The initial pilot sizing is expected to be approximately \$5 million, which is expected to be deployed over an 18-month origination period. During this period, Sungage’s continued operational capacity is most crucial, as loan originating activities (i.e. marketing, sales, and underwriting) are executed by Sungage. The origination risk is mitigated through the limited sizing of the Pilot, the finite origination period, and the breadth of marketing efforts Sungage is undertaking, which is discussed further in the response to Question 2 below.

Following the origination of a loan, primary servicing activities (invoicing, billing, collections, and payment transfers) will be managed by Sungage’s sub-servicer LeaseDimensions. LeaseDimensions is a lease and loan servicing provider that serves many Fortune 500 companies that offer financing to commercial and retail customers. Notable customers include GE Capital, Volkswagen Credit, Coca-Cola, Hewlett-Packard, Fifth Third Bank, Key Bank, and Ford Credit among others. Founded in 1995, LeaseDimensions currently services 20,000 solar leases. Through partnership with LeaseDimensions, the servicing of the pilot loan fund can continue absent the Sungage origination platform.

Question #2 – can Sungage successfully market this solar loan program and drive sufficient uptake to prove the case?

Why question asked:

Sungage has a light track record, and may not be able to ramp up marketing fast enough to get the loans out in a timely manner.

Response:

Core components of the Sungage Platform

One of Sungage's primary innovations is a marketing innovation. The company seeks to sell solar as a smart consumer investment. In addition, in a highly competitive landscape dominated by a leasing model, Sungage knows it must offer an easy process for both installers and consumers. To that end, Sungage has made meaningful investments in consumer research and technology partnerships with the goal of developing an efficient and effective marketing and loan origination platform. To support a rapid deployment of funds, Sungage developed, tested, and refined the following tools:

- **Solar Wealth™ Calculator:** This tool is central to the company's sales process, as it gives homeowners the ability to understand the financial benefits of solar ownership and adjust key economic factors that influence an investment in solar for their roof.
- **Field Sales Materials:** To support those installers and customers who would prefer to have a paper brochure, Sungage has developed a simple two-sided sales card that provides basic information on Sungage products and services, and drives customers to our company website, Sungage.net.
- **Sungage.net:** This site includes information on products and services, as well as an extensive FAQ section and 'how it works' to educate consumers on the sales and loan application process.
- **Solar-Wealth.com:** This blog will enable members of the solar community to share their insights on solar ownership. Sungage already has 5 weeks of content prepared from homeowners, installers, policy makers, financial and economic experts.
- **Instantaneous Credit Pre-Approval:** Sungage's Solar Wealth™ Calculator will be integrated with LeaseDimensions' secure online application portal that enables instant loan pre-approval. Customers will be sent instant pre-approval decisions via email.
- **Installer Training:** Sungage plans to invest heavily in capacity building at Connecticut-based solar companies. To date, Sungage has several installers ready to offer products and services, including: Aegis Solar, Pioneer Valley Photovoltaics, Ross Solar Group, Waldo Renewables, and Litchfield Hills. The company has developed a three-step installer onboarding and training process: 1) introduce them to Sungage, the loan product, and the concept of Solar Wealth™, 2) familiarize them with the company's customer profile and sales tools; delineate the roles and responsibilities between Sungage, Installers and customers through the sales and loan application process, 3) specific training on Solar

Wealth™ Calculator and Installer Dashboard. Once an installer training is complete, Sungage will accompany installers on several customer “ride alongs.”

Market Integration

Rapid deployment of Sungage products will be affected not only by the quality of the company’s tools, network, and sales support, but also by market factors. Through Sungage’s active membership in industry groups such as REEBA and Solar Connecticut, Sungage stays abreast of relevant market developments. By maintaining an active presence in the CT solar market, Sungage will seek to leverage any complementary efforts such as the Solarize Connecticut and Energize campaigns.

The Sungage solar loan product has been design to be highly competitive with lease products currently in the marketplace. Sungage continues to perform market research and will adjust product features, to the extent possible, to maintain competitiveness in the marketplace.

Customer Relationship Management

In order to learn from early market response and make quick refinements to product and marketing strategy, Sungage will undertake several CRM activities. For example:

- Sungage has a web-based CRM which integrates with the Solar Wealth™ Calculator. This integration will allow the company to track customer and installer activity, send email reminders to inactive customers, and notify installers of customer loan application process.
- Sungage will issue exit interviews for customer feedback.
- Sungage will conduct weekly sales calls with installers.

Question #3 – can CEFIA support this program absent the participation of MassMutual?

Why question asked:

As of this writing, no formal agreement exists between CEFIA and MassMutual for the latter to serve as the senior debt provider for a Connecticut solar loan product.

Response:

CEFIA staff believes it is important to launch this product in a timely fashion in order to provide homeowners an ownership financing option alongside our new solar lease product, especially as direct incentives decline in Step 3 of the Residential Solar Investment Program. Although our goal is still to secure MassMutual’s participation as a senior debt provider, we have confidence that launching this product on our own would nonetheless make sense for the following reasons:

- The proposed loan loss reserve (funded via repurposed ARRA-SEP dollars) would remain in effect to protect ratepayer funds;
- Without a senior lender, staff proposes less overall exposure for CEFIA in the structure, with a fund capped at no more than \$1.5 million; and

- Most importantly, to date there has been no effort to market this opportunity to other financial institutions, and staff remains confident in our ability to find another senior lender due to the inherent quality of this offering:
 - A medium-term note with attractive yield;
 - Uncorrelated with other asset classes;
 - Providing exposure to consumer debt;
 - Secured by an earning asset; and
 - Carrying a credit enhancement to protect against losses.

That is to say, going forward without MassMutual does not mean carrying these loans on CEFIA's books forever. Rather, staff does not doubt that, if MassMutual chooses not to participate and we offer this opportunity up to the market more broadly, another senior lender will step forward.

Program Implementation Plan

Human Resources

CEFIA Office of General Counsel will work with Sungage to oversee program documentation such as application forms, data release forms, loan agreements, etc.

CEFIA Office of the Chief Investment Officer will track metrics and targets based on Sungage quarterly reporting. Staff will work with Sungage to refine loan documentation and processing, underwriting, and marketing/origination targets and plans.

CEFIA Marketing Department will work with Sungage to ensure that Connecticut's Department of Energy and Environmental Protection (DEEP) and EnergizeCT, a pan-state agency coalition around energy, are represented appropriately. Since the Credit Enhancements are provided through repurposed ARRA-SEP funding, Sungage is required to acknowledge DEEP on all marketing materials with the following statement:

The Department of Energy and Environmental Protection (DEEP) is an affirmative action/equal opportunity employer and service provider. In conformance with the Americans with Disabilities Act, DEEP makes every effort to provide equally effective services for persons with disabilities. Individuals with disabilities who need this information in an alternative format, to allow them to benefit and/or participate in the agency's programs and services, should call 860-424-3035 or e-mail the ADA Coordinator, at DEEP.aaooffice@CT.Gov. Persons who are hearing impaired should call the State of Connecticut relay number 711.

The Marketing Department at CEFIA will assist Sungage in ensuring the correct parties and language are represented on collateral pieces.

Deployment Department – will assist Sungage in identifying a qualified base of solar contractors.

Financial Resources

CEFIA will provide the structure with \$300,000 in Credit Enhancements, through funds CEFIA received for the ARRA-SEP program in order to assist Sungage in attracting capital from third-party sources.

CEFIA will also provide a maximum of \$2,200,000 in subordinated debt from ratepayer capital. This will be a short-term facility that will settle at \$500,000 for the long term of the fund.

Metrics, Targets, Measurement, Verification & Reporting

Targets:

- The proposed structure will leverage third-party capital to CEFIA funds at a 6:1 ratio.

- Assuming a 7kW system on average, translating to an average \$22,824 loan, the facility will result in 1,756 MWh of clean energy produced and \$268,660 saved annually for 220 homeowners (7.9MWh and \$1,221 gross savings per household).

Metrics: CEFIA will collect data on the following:

- Loan acceptance and declination rate
- Average loan size
- Repayment rate
- Actual energy savings (\$ and kwh)
- Repayment rate
- Number of housing units per loan
- Default rate
- Loan-to-Value
- % of borrowers using "TCRR"



CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

Residential Solar Investment Program

A Statutory Program

Due Diligence Package

November 30, 2012

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 Deployment Committee 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: November 23, 2012
Re: Residential Solar Investment Program – Step 3 and Step 4

Summary

The staff proposes the following portfolio of incentives for Step 3 and Step 4 of the Residential Solar Investment Program:

1. **Race to the Solar Rooftop** – continuation of the two separate tracks (i.e. rebate and PBI) for residential solar PV rooftop deployment aimed for a fixed volume of installations at 7.6 MW – 3.8 MW for rebate and 3.8 MW for PBI – by January 1, 2014, whichever is reached first, will define the end of Step 3. To demonstrate a long-term commitment to the sustainable development of the residential solar PV installer market, we propose that a fixed volume of installations of 10.0 MW for Step 4 be considered – 5.0 MW for rebate and 5.0 MW for PBI. We do not propose a rebate or PBI level.
2. **Capital Competition** – to continue to transition the market away from incentives and towards financing, we propose to launch a pilot capital competition through an RFP process to provide a contractor and/or third-party financier who can deliver the most amount of clean energy produced without the need for an incentive (i.e. rebate or PBI). CEFIA will provide a \$1 million loan at a low-interest rate (i.e. 2 to 3 percent) and a long-term duration (i.e. 20 years). If the pilot is successful, CEFIA staff will propose that additional funds be allocated in FY 2013 and FY 2014 to support a full rollout of the capital competition up to \$10 million in loan financing.
3. **Incentive Level** – we propose approximately a 25% reduction of the Step 2 incentive levels to between \$1.50 to \$1.90/W for systems up to 5 kW and an additional incentive of between \$0.40 to \$0.60/W for systems 5-10 kW for the rebate and between \$210 to \$230/MWh for the PBI in Step 3. With these incentive levels, CEFIA will achieve a leverage ratio target of between 25% to 30%¹ (an improvement from 34%) for the Step 3 portfolio of projects.
4. **Incentive Cap** – we propose an incentive cap of 30% per project.²

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

² No project will receive incentives that are greater than 30% of the total installed costs of a system. For example, households participating in Solarize are able to receive incentives greater than 30% as a result of the reduced costs of the system. This incentive cap will protect CEFIA's leverage ratio target of 25% to 30%.

With the successful implementation of Step 3, 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 deliver a payback to ratepayers.

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 and performance-based incentives (PBI) to support homeowners who install solar photovoltaic systems. Through eight-and-a-half months of the Program, CEFIA has approved nearly 640 projects that are installing approximately 4.5 MW of clean energy (see Table 1).

Table 1. Program Data as of November 16, 2012

	Rebate	PBI	Total
# Projects Approved	464	173	637
Total Installed Cost	\$15.7 MM	\$6.2 MM	\$21.9 MM
Installed Capacity (kW)	3.2 MW	1.3 MW	4.5 MW
Installed Cost (\$/W)	\$4.76	\$4.85	\$4.79
Total Incentive Amount	\$5.2 MM	\$2.3 MM	\$7.5 MM
Incentive (\$/W)	\$1.58	\$1.83	\$1.67
Equivalent ZREC Price (\$/REC)	\$105	\$115	

It should be pointed out that the incentives provided by CEFIA through the Program are between 25% to 35% less than the ratepayer supported incentives in the competitive Zero Emissions Renewable Energy Credit (ZREC) program.³ It should also be noted that nearly 100 projects, or approximately 15% of the projects, are located in distressed communities as defined by the Connecticut Department of Economic and Community Development.⁴

Projects underneath the Program have thus far sought approximately \$7.5 million in incentives leveraged by an additional \$14.4 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 incentives 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 is now the #1 residential solar PV installer in Connecticut – in the process of installing enough projects that total the next four (4) installers combined.

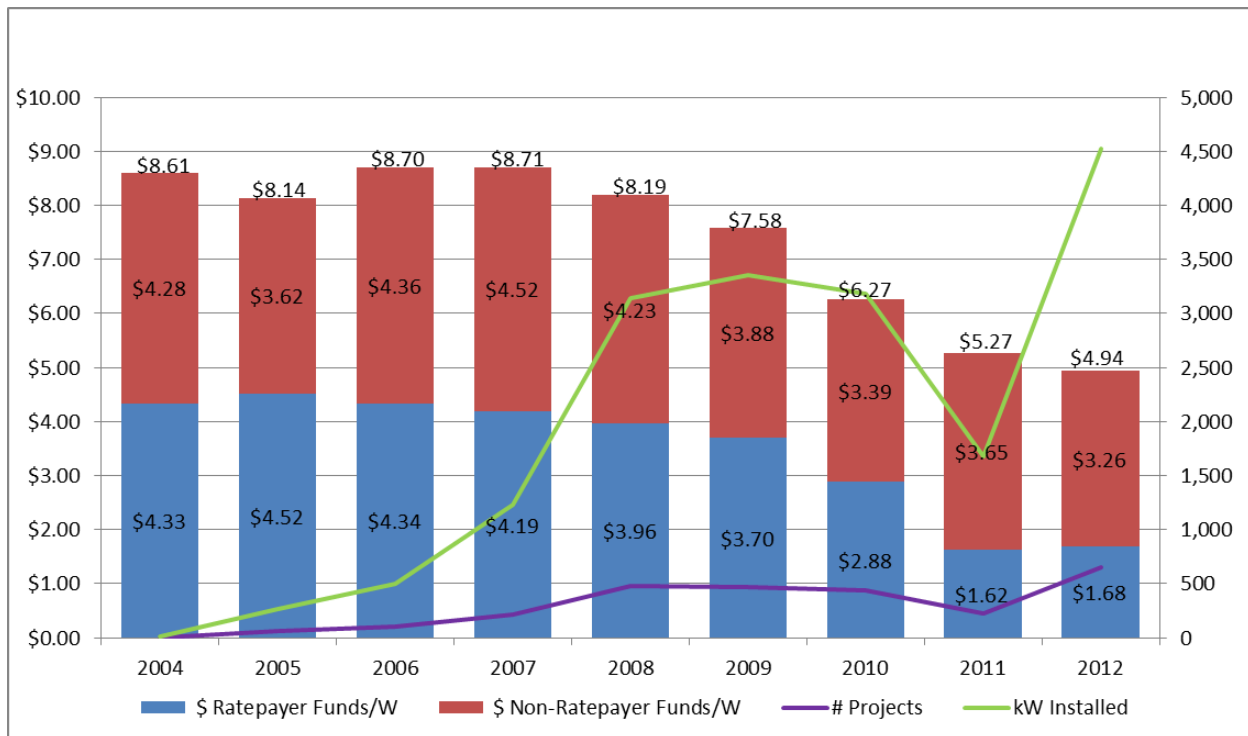
³ United Illuminating offers a 15-year ZREC price of \$145, while CL&P offers at \$160 for projects less than 100 kW.

⁴ 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>

- **Costs Declining** – as competition increases in the market, installed costs are decreasing by some 10% from Step 1 (of \$5.32/W) to Step 2 (of \$4.79/W). In 2013, CEFIA expects costs to continue to decline to between \$4.25 to \$4.50/W as a result of further competition in the market and an over-supply of solar PV panels.
- **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. Within a 12-month period, CEFIA expects demand for residential solar PV systems will more than double historic annual highs.
- **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 16, 2012 – see Figure 1.

Figure 1. Comparison of Installed Costs, Incentives, Projects and Installed Capacity (2004 through 2012)



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

CEFIA’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;
- **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%;
- **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 propose the following levels of incentives for Step 3 – see Table 2:⁵

Table 2. Proposed Incentive Levels for Step 3

	Rebate		PBI
	$x \leq 5 \text{ kW}$	$10 \text{ kW} \geq x > 5 \text{ kW}$	$10 \text{ kW} \geq x$
Current Step 2	\$2.275/W	\$1.075/W	\$0.300/kWh
Proposed Step 3	\$1.500-\$1.900/W	\$0.400-\$0.600/W	\$0.210-\$0.230/kWh
Total Reduction	\$0.375-\$0.775	\$0.475-\$0.675	\$0.070-\$0.090/kWh
% Reduction	15%-35%	45%-70%	25%-30%

If approved by the Deployment Committee, this proposal will require the Deployment Committee to recommend approval to the Board of Directors and the Department of Energy and Environmental Protection of the proposed portfolio of incentives for Step 3 and Step 4. CEFIA staff will consult with DEEP and receive their support for the proposal.

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 2013. This request of the portfolio of incentives for the Program is consistent with that plan and budget.

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

⁵ It should be noted that rebate levels from Step 1 to Step 2 for the rebate fell by 7% for up to 5 kW and 14% for 5 to 10 kW, whereas the PBI levels remained unchanged. With Step 3, CEFIA is pursuing a rebate and PBI level that is comparable on a present value basis.

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 7.6 MW for Step 3. At an average incentive of \$1.25/W for rebates and PBI, \$9.5 million of ratepayer capital will be used as incentives to support the deployment of 7.6 MW of solar PV which will produce nearly 10 million kWh of clean energy a year or about 200 GWh over a 20-year period as a result of Step 3.

For providing the rebate and PBI in Step 3, CEFIA owns the renewable energy credits (RECs) produced by the systems – which is equivalent to about 9,000 RECs a year or \$180,000 of value a year assuming a \$20 REC price. Over a 20-year period, it is estimated that \$3.5 million in REC revenue will be generated from 7.6 MW of residential rooftop solar PV systems.

Between the rebate and RECs, it is estimated that at least \$3.5 million of the \$9.5 million of ratepayer capital will be paid back – see Table 3.

Table 2. Ratepayer Funds at Risk = Step 3 Rebates and PBI Provided less Financing Program Returns less REC Revenue

Ratepayer Payback	(Expense)/Revenue	Period of Time
Step 3 Rebates and PBI	(\$9,500,000)	Paid out over 6 years
Renewable Energy Credit Revenue	\$3,500,000	Received over 20 years
Ratepayer Funds at Risk	(\$6,000,000)	

The Program also proposes that a “Race to the Solar Rooftop” target of 10.0 MW for Step 4 be considered. Given the dynamic changes in the solar PV market, the staff is not proposing a specific rebate or PBI level for Step 4. The approval by the Deployment Committee and the Board of Directors of a subsequent step of a portfolio of incentives will allow the solar installer community to better plan for and build their companies into the future.

Terms and Conditions

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

The rebate and PBI of \$9.5 million offered under Step 3 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.

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 \$3.5 million in revenues back to CEFIA. CEFIA is currently negotiating with an electric distribution company to engage in a long-term contract (i.e. allowable under Section 71 of PA 07-242 and Docket No. 07-06-61) for the sale of its RECs at a price of at least \$30 per REC.

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 \$9.5 million – the estimated value of the rebates and PBI provided through Step 3 of the program to achieve the “Race to the Solar Rooftop” target of 7.6 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.

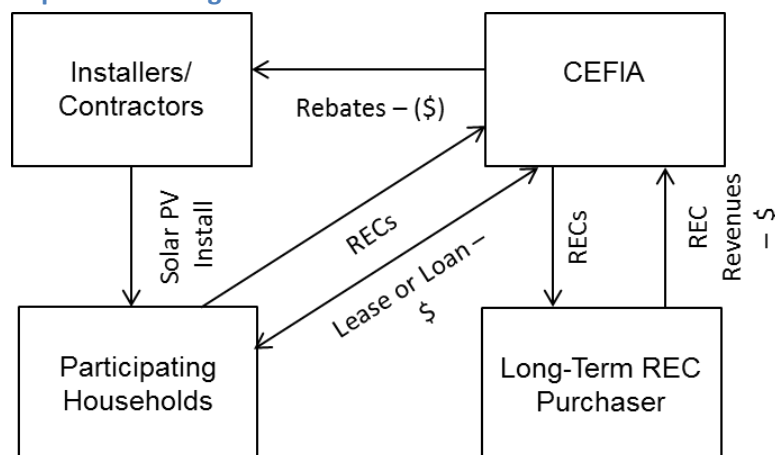
Financial Statements

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

As 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. At the conclusion of Step 1 and Step 2, CEFIA will work with Solar Connecticut and the households that have taken advantage of the program to better understand who the end-users are for rooftop solar PV in Connecticut.

CEFIA staff has not estimated the potential market for residential rooftop solar PV in Connecticut. However, DEEP is currently working on an RPS study that will attempt to quantify the potential for solar PV deployment in Connecticut.

It should be noted that nearly 100 of the 637 projects, or approximately 15% of the projects, are located in distressed communities as defined by the Connecticut Department of Economic and Community Development.

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 incentive levels approved by the Department of Energy and Environmental Protection.

Program Partners

The program partners are the more than 70 qualified solar contractors that support the installation of rooftop solar PV systems for residential ratepayers.⁶

Risks and Mitigation Strategies

Risk: Proposed incentives for Step 3 are too low to generate the number of new installations needed to meet the Step 3 installed capacity target of 7.6 MW by January 1, 2014.

⁶ <http://ctcleanenergy.com/YourHome/ResidentialSolarInvestmentProgram/FindanApprovedContractor/tabid/85/Default.aspx>

Mitigation Strategy: Staff will closely monitor the applications submitted and approved to the program during Step 3. If applications significantly lags what is expected, staff with proposed an adjustment to the Step 3 incentives to the Board to increase the number of applications to an acceptable rate.

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, 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; and

NOW, therefore be it:

RESOLVED, that the Deployment Committee hereby recommends to the Board of Directors for approval of the Schedule of Incentives for Step 3 to achieve 7.6 MW of solar PV deployment – 3.8 MW of Rebates and 3.8 MW of PBI;

RESOLVED, that the Deployment Committee hereby directs staff that at the point of the Step 3 of the Schedule where 2.0 MWs of committed capacity is reached, or earlier if staff deems it appropriate, for either the PBI or the Rebate models, CEFIA staff will analyze the date of the performance of the Program Plan and make a recommendation to the Deployment Committee on the Step 4 funding allocation and incentive level;

RESOLVED, that the Deployment Committee hereby recommends that by (a) the point of the Step 3 incentive where 3.0 MW of committed capacity is reached for either the PBI or the Rebate models or (b) January 1, 2014 whichever comes first, the Board will approve a Step 4 incentive and inform residential solar installers to ensure the sustained and orderly deployment of the residential solar market in Connecticut; and

RESOLVED, that the Deployment Committee hereby recommends to the Board of Directors for approval of the amount of solar PV deployment for Step 4 to achieve 10.0 MW of installed capacity – 5.0 MW of Rebates and 5.0 MW of PBI. The amount of incentive shall be determined at such time in the future as is appropriate.

Program Implementation Plan

Human Resources

Deployment Department – will lead in administering the program and collecting information on each project

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

CEFIA Office of the Chief Investment Officer and the Controller will track leases and loans for each project to track ratepayer payback

Financial Resources

1. Rebates up to 3.8 MW to households interested in owning a solar PV system and PBI up to 3.8 MW to households interested in leasing a solar PV system for Step 3;
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 \$30 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 10,000 MW hours of Class I renewable sources per year for 20-years
- Reduce installed costs from Step 2 to Step 3 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)



Market Watch Report

Residential Solar Investment Program

Program Data as of November 16, 2012

Race to the Rooftop

REBATE

75% of Goal



LEASE

41% of Goal



The **YELLOW BAR** at 1,600 kW represents a point in time when CEFA staff will make a recommendation on the Step 3 funding and incentive level to the Deployment Committee for consideration. The **GREEN BAR** at 2,000 kW represents a point in time when the Deployment Committee and CEFA staff will propose Step 3 funding and incentive level to the Board of Directors for consideration and approval.

Executive Summary

- **Environmental Benefits** – installations under the RSIP have led to a reduction of nearly 100 million lbs of CO2 emissions over the lifetime of those systems.
- **Installation Pace Accelerating / Costs Decreasing** – with only twice the dedicated resources, Step 2 installations are on pace to more than triple the number of installations approved under Step 1.
- **Investment Increasing** – more than \$14 million in private capital has been expended on residential solar PV under the RSIP thus far.

Step 2 - Effective 5/18/2012	Rebate	PBI	Total	Average
Applications Received	264	152	416	
Applications Approved	258	152	410	
Applications In Progress	91	54	145	
Applications Completed	68	17	85	
Total Cost	\$8,550,309	\$5,407,020	\$13,957,330	
Total kW STC	1,751.2	1,107.6	2,858.8	
Average System Size kW STC	6.8	7.3		7.0
Cost / kW STC	\$4,883	\$4,882		\$4,882
Average Total Cost	\$33,141	\$35,573		\$34,042
Total Incentive Amount	\$2,769,723	\$2,028,807	\$4,798,530	
Incentive / kW STC	\$1,582	\$1,832		\$1,679
ZREC Equivalent Incentive Price	\$0.104	\$0.112		
Rooftop Solar Capacity Remaining	1,048.8 kW	1,692.4 kW	2,741.2 kW	

Applications Received – the total number of applications submitted by installers and received by CEFA through PowerClerk.

Applications Approved – the total number of applications received and approved by CEFA staff for project incentives.

Applications In Progress – the total number of projects that have received 60% in upfront incentives for delivery of materials to the site.

Applications Completed – the total number of projects that have received 100% in incentives after inspection and completion of the project.

ZREC Equivalent Incentive Price - Given the total system cost, total incentive and total capacity (stc) of all Approved applications, the ZREC Equivalent Price is determined by calculating the net present ZREC Equivalent Price from a 15 years stream of payments that equals net present value of CEFA's incentive.

Note: Solarize kW's are included in 'The Race to the Rooftop' but excluded from pricing data until the program closes.

About the Clean Energy Finance and Investment Authority

CEFIA was established by Connecticut's General Assembly on July 1, 2011 as a part of Public Act 11-80. This new quasi-public agency supersedes the former Connecticut Clean Energy Fund. CEFIA's mission is to help ensure Connecticut's energy security and community prosperity by realizing its environmental and economic opportunities through clean energy finance and investments. As the nation's first full-scale clean energy finance authority, CEFIA will leverage public and private funds to drive investment and scale-up clean energy deployment in Connecticut.

Historical Program Data (Previous Steps)

Step 1 - Fully Subscribed	Rebate	PBI	Total	Average
Applications Received	151	16	167	
Applications Approved	151	16	167	
Applications In Progress	62	7	69	
Applications Completed	85	7	92	
Total Cost	\$5,350,694	\$594,599	\$5,945,293	
Total kW STC	991.3	125.5	1,116.9	
Average System Size kW STC	6.6	7.8		6.7
Cost / kW STC	\$5,398	\$4,737		\$5,323
Average Total Cost	\$35,435	\$37,162		\$35,601
Total Incentive Amount	\$1,753,340	\$229,999	\$1,983,339	
Incentive / kW STC	\$1,769	\$1,832		\$1,776
ZREC Equivalent Incentive Price	\$0.115	\$0.112		

Based on estimated lifetime system production under Step 1, current residential deployment represents an average levelized cost of solar energy within the range of \$0.223 - \$0.240 / kWh. Of that total, CEFIA's support accounts for \$0.074 - \$0.085 / kWh.

Estimated Environmental Benefits based upon all Approved Applications

Lifetime CO ₂ Reduction	Lifetime NO _x Reduction	Lifetime SO ₂ Reduction	Annual Cars off the Road	Equivalent Acres of Trees Planted
97,962,455 lbs.	44,400 lbs.	40,621 lbs.	326	653

Estimated Economic Development and Jobs Benefits based upon all Approved Applications¹

Direct Jobs Created	Indirect and Induced Jobs	Total Jobs Created
117	189	307

- ¹
- Direct jobs are jobs created in CT that are directly related to manufacturing and system assembly in CT, as well as installation of the PV systems.
 - Indirect jobs are jobs created at CT suppliers in order to meet demand resulting from the new systems coming on line. An example would be increased employment associated with metal bending or wiring supplied to integrate and install the units.
 - Induced jobs are jobs generated by spending from households that benefit from the additional wages and business income they earn through all of the direct and indirect activity. An example would be increased employment at a local restaurant, because installers are working overtime, have extra income and don't have time to eat at home.



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Memo

To: Bryan Garcia and Bert Hunter

From: Dale Hedman

CC: Lucy Charpentier, Mackey Dykes, Brian Farnen, David Goldberg, Ed Kranich, Dave Ljungquist, Neil McCarthy, John Murphy, Selya Price, Robert Schmitt, and Bob Wall

Date: August 20, 2012

Re: Summary, Findings and Recommendations from Stakeholder Feedback Provided by Solar Installers in the Residential Solar PV Investment Program

Summary

In March of 2012, CEFIA launched the Residential Solar PV Investment Program (RSIP), offering the first step of Expected Performance Based Buy-down (EPBB or rebates) and Performance Based Incentive (PBI) subsidies:

- EPBB incentive offered in Step 1 was a rebate of \$2.45/Watt for the first 5kW and \$1.25/Watt for capacity over 5kW up to 10kW
- PBI was set at a flat \$.30/kWh over a six-year period

Step 1 closed on May 18, 2012, supporting a total of 167 approved projects totaling 1,117 kW with an average incentive of \$1.77/Watt.

Currently, Step 2 which began at the close of Step 1 has supported 219 approved projects totaling 1,510 kW as of August 17, 2012, which is about 27% of the total goal for this step.

- EPBB incentive offered in Step 2 is \$2.275/Watt for the first 5kW and \$1.075/Watt for capacity over 5kW up to 10kW
- PBI remains at \$.30/kWh over a six-year period

The average incentive in Step 2 is about \$1.71/Watt, slightly lower than in Step 1. See attached August 17, 2012 Market Watch Report for further statistics on Steps 1 and 2.

Given the RSIP's first 5 months of operation, staff held a number of meetings with residential installers and third-party financiers to discuss a number of topics regarding the program's progress. The main topics discussed are listed below:

1. To review progress of the RSIP;
2. To hear their views of how the program is working and how their business is doing;

3. To hear what suggestions they have to improve the program in succeeding steps;
4. To provide them with an overview on the structure of a lease-loan financing program we are developing for their comment; and,
5. To discuss other issues including:
 - Solarize
 - Data transparency
 - Possible legislation for 2013

With the support and collaboration of Mike Trahan, Executive Director of Solar Connecticut, there were several meetings held with installers and third-party financiers in June and July, including:

- June 26, 2012 – met with 10 solar PV installers and 10 solar hot water system installers
- June 27, 2012 – met with 13 solar PV installers
- July 19-31, 2012 – met with 4 third party financiers, 2 of which are currently eligible solar installers and third party financiers in Connecticut (i.e. Solar City and Astrum)

In total, staff met with 29 solar PV installers and third-party financier companies having a total of 1,829 solar PV projects with over 12.5 Megawatt of capacity combine through the CCEF's Rebate Program and now CEFIA's RSIP (see Appendix I).

Findings

From the two-hour long meetings with the solar installers and third-party financiers, the findings on the financing programs were:

- **Installer Need** - The installers voiced a strong desire to have CEFIA offer another residential solar lease program (i.e. a follow-on to the CT Solar Lease), as well as to create a new residential solar loan program. Many of the independent installers rely solely on the ability of homeowners to finance the purchase of solar PV systems. As with the CT Solar Lease that closed at the end of December 2011, the program provided installers with a financing product that dramatically increased their number of installs over the 3-year term of the program. The installers were in unanimous agreement that another CEFIA solar lease program, along with a loan program, will better equip them to increase the deployment of solar PV systems.
- **Product Design** – Staff described the lease and loan financing structures currently in development.
- **Third Party Financier Input** – The third-party financiers still desire that the RSIP incentive structure contain more certainty regarding the long-term support for residential solar installations.

Based on the feedback from the installers and the third-party financiers, the following is a breakdown of the pros and cons for the lease and loan financing programs from CEFIA as they pertain to the homeowner, installer, and third party financier:

	Pros	Cons
Homeowner	<ul style="list-style-type: none"> • CEFIA's program can reach a wider customer market vs. third- 	

	<p>party financiers with minimum FICO scores of 640.¹</p> <ul style="list-style-type: none"> • Equipment offered by third party financiers is limited while the installers could provide access to a more diverse hardware mix • Should lead to lower installed cost and less exposure to a “strategic withdrawal” by third-party financiers dependent on the decisions of their corporate investors 	
Installer	<ul style="list-style-type: none"> • Additional financing products to offer homeowners, encouraging investment in solar PV system installations • Provides installers access to capital (tax equity and bank debt) that they currently do not have to offer homeowners 	<ul style="list-style-type: none"> • No specific objections, but concerns regarding the possibility that CEFIA will limit participation in such a program by capping applicants based on household income, size of the project, and ownership of multiple properties
Third-Party Financier	<ul style="list-style-type: none"> • The program would be accessible to third-party financiers that are also installing solar PV systems for homeowners that do not meet their credit and/or underwriting criteria 	<ul style="list-style-type: none"> • A “State product” will be considered preferable to homeowners due to the endorsement by the State • CEFIA program will limit the ability of third-party financiers to acquire private capital due to a limited number of tax-equity investors • CEFIA product would have a better customer price and therefore undercut prices offered by the third party financiers

There were several other comments and concerns raised by installers and third party financiers, including:

- Third-party financiers would like CEFIA to make low-cost long-term subordinated debt available to their companies
- Third party financiers believe that a small concentrated number of third-party providers will provide lower installed costs in the long-run rather than a diverse installer base
- CEFIA financing options should be made available to support solar hot water systems
- Both installers and third party financiers voiced concern that CEFIA has not provided a sufficient “runway” with additional incentive steps to fully commit company resources to

¹ Third-party financier companies generally have minimum FICO score threshold on average of 700

invest in Connecticut over the long-term (this echoes concerns raised at the onset of the program)

- All program participants agree that weekly reporting of program results through the Market Watch Report is very useful and they suggested that additional clarification of data be provided (i.e. footnotes of definitions, lease vs. PPA thermometer depicting progress of step goal, etc.)
- Installers and third-party financiers all expressed a desire to have the opportunity to provide feedback on the program on a regular basis

Based on these findings, there are several key take-away messages from these meetings with solar installers and third party financiers:

- Installers are very supportive of a new residential solar lease and loan program using CEFIA capital and appear to be indifferent as to whether the incentive is direct or embedded in lowering the financing rate
- Third-party financiers currently have reasonably low cost of capital but hurdle rates that require lessees to have FICO scores often greater than 680, which limits their ability to scale-up system installs by not offering financing to a significant CT population with FICO scores between 640 to 679
- To expedite the move from direct incentives (EPBB and PBI) to financing, independent installers are willing to embrace this change if they have financing products that will allow them to become less reliant on direct incentives
- Even though Steps 1 and 2 of the program have been fairly well received by the independent installers, they and the third party financiers still want future steps to be announced far in advance so that they can plan on how to approach the Connecticut residential market in the long-term
- All installers and third-party financiers would like to see CEFIA be more transparent with the data it collects

Recommendations

The following are recommendations for CEFIA consideration based on the feedback provided by the solar installers and third party financiers:

- **Long-Term Steps** – staff to develop an acceptable funding commitment (i.e. not specific incentive levels, but allocations) for succeeding steps that will result in financing solutions that can further scales-up residential installs
- **Financing for Installers** - in succeeding steps, subsidies used as a portion of the funds for a lease and/or loan program should be taken from the EPBB bucket versus the PBI
- **Urgency** – staff should endeavor to establish a residential lease and loan program as soon as possible

Appendix I
Solar Installer and Third-Party Financier Meeting Participants

Company	# of Residential Solar PV Projects	Residential Solar PV Project Capacity (kWstc)	# of Residential Hot Water System Projects
Aegis Solar	90	705	51
American Solar Partners	4	24	
*Astrum Solar	5	34	
BeFree	59	542	10
Bonner Electric	9	69	
C-Tec Solar	8	52	15
CT Electrical	32	215	
DCS-Energy	29	151	
DeBow Mechanical Services	-	-	1
Eco Smart Home Services	-	-	
Encon	39	251	
Evergreen Energy	12	91	2
Institute For Sustainable Energy	-	-	
Krannich Solar	-	-	
Litchfield Hills Solar	37	243	
LMG, Inc.	-	-	
Munger Construction	-	-	
Northeast Alternative Energy / Lenz Electric	4	27	
Northeast Smart Energy	-	-	
PTE-Energy	-	-	
PV Squared	45	259	
Real Goods Solar	649	4,557	
Ross Solar	183	1,384	
*Solar City	79	552	
Solar US	-	-	
Sun Wind Solutions	-	-	
*SunGen	-	-	
Sunlight Solar	545	3,351	50
*SunRun	-	-	
Total	1,829	12,507	129

*Third-Party Financier



CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

CT Solar Lease 2 Program

A Residential, Institutional & C&I Financing Program

Due Diligence Package

November 30, 2012

Document Purpose: This document contains background information and due diligence on the CT Solar Lease Program (2) and the organizations involved, including U.S. Bancorp (in negotiation), AFC First Financial Corporation, Reznick Capital Markets Securities, LLC, CohnReznick LLP and a To Be Announced senior debt provider. This information is provided to the Deployment Committee 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, Bert Hunter, Dale Hedman, Ben Healey and Alexandra Lieberman
Date: November 30, 2012
Re: CT Solar Lease 2 Program

Summary

CT Solar Lease 2 Program builds on the success of CT Solar Lease 1—the nation’s first residential PV financing program to combine rate payer funds —through the Connecticut Clean Energy Fund (CCEF)—with private capital provided by U.S. Bank to leverage federal incentives. The program used a combination of solar rebates, investment tax credits, and accelerated depreciation to help Connecticut residents gain access to less-expensive solar energy and lock in electricity costs. The first Solar Lease program ended in late 2011 – and ever since it ended the independent solar PV installer base in CT has been clamoring for CEFIA to reinstate the program, without which they are at a competitive disadvantage vs. the national solar PV leasing companies (e.g., SolarCity, Astrum, etc.). CT Solar Lease Program 2 is in the structural design and modeling phase and will shortly enter the capital raise phase of development. Structural design and modeling has proceeded well and CEFIA’s finance team together with Reznick Group, advisors to CEFIA for the financial structuring and capital raise portion of the program, have fashioned a program design that is as ground-breaking as Solar Lease 1 was four years ago. CEFIA staff is at the stage where a request for approval to move to the capital raise phase is timely and necessary in order for the capital providers to recognize that the program has the backing of CEFIA’s Board of Directors.

Program Description

The CT Solar Lease 2 Program is the successor to the original CT Solar Lease Program which at the time of its release in 2008 was a “first of its kind” program custom designed to meet the goals and objectives of the CCEF and Connecticut residents. That Program, funded by the CCEF and US Bank, was the first state sponsored residential solar leasing program in the United States. A special purpose entity, CT Solar Leasing, LLC contracted with AFC First Financial Corp and Gemstone Lease Management, LLC, to administer and manage the program. The CCEF provided solar rebates as well as debt capital for the CT Solar Lease 1 Program. CT Solar 1 Lease was active from mid-2008 through late 2011. A total of 855 solar PV systems were leased to Connecticut residents. CT Solar 1 Lease was honored by the Clean Energy States Alliance with a State Leadership in Clean Energy (“SLICE”) Award in 2012.

CT Solar Lease 1 provided eligible CT homeowners an affordable alternative to the outright purchase of a solar PV system. The CT Solar Lease turned a myriad of complex incentives and financing into a simple monthly payment without a large upfront outlay.

In addition to the advantages offered to Connecticut residents under the first program, CT Solar Lease 2 will offer the following benefits:

- Simple monthly payment without a large upfront outlay; however, to be competitive with other lease options in the market, the new program is expected to offer both a level payment lease AND an escalating lease with a lower starting price point.
- The program will again reach FICO scores as low as 640 – the national leasing companies do not lease below FICOs of 700 or 720. Under our first program which reached FICOs as low as 640, repayment experience has been practically without default (2 out of 855 leases). So, importantly, the program is designed to make solar energy systems available to low and moderate income Connecticut homeowners
- Homeowners will work with qualified installers of their choice, who design systems to meet their needs and will ensure that Connecticut’s solar installer base remains robust, diverse and able to reach all Connecticut residents, not just the populations targeted by the larger solar PV leasing companies.
- Homeowners will lease the system for a 20- year period (5 years longer than the first program and competitive with the major national installers) with an option to buy the system or extend the lease for another 5 years at a significantly reduced price.
- Solar hot water systems would be eligible under the program
- A portion (20%) of the fund proposed to be raised would be available to non-residential end-users:
 - Cities and towns would be eligible for power purchase agreements (PPAs) through the facility for solar PV and solar hot water systems
 - High credit quality companies would be eligible for the lease program

As noted above, ever since the first Solar Lease program ended, the independent solar PV installer base in CT has been at a competitive disadvantage vs. the national solar PV leasing companies (e.g., SolarCity, Astrum, etc.). These smaller firms are at a disadvantage not on the basis of the cost of their systems or the quality of their workmanship – but due to complex Federal tax incentives which favor large pools of capital that can take advantage of the 30% investment tax credit (which individual homeowners can also claim) but also accelerated (5-year) depreciation and other structural benefits that lower the cost of capital. The independent installer is unable to compete without an independent source of capital which, like the first Solar Lease program, can aggregate capital requirements and enable these companies to offer “no” or “low” capital outlay leases to homeowners, towns, cities and schools for solar PV and solar hot water systems.

The capital raise CEFIA is proposing will differ in three major respects from the first Solar Lease program:

1. In the first program, CEFIA (rather, its predecessor CCEF) provided 100% of the residual capital not provided by US Bank.
In Solar Lease 2 – CEFIA will provide **only 20%** of this residual capital requirement – commercial banks will provide the balance. CEFIA’s capital contributions will be subordinated to the senior lenders.
2. Another difference in the proposed structure is the ownership of the Special Purpose Vehicle (SPV), a de novo organized limited liability company – CT Solar Lease LLC in the first program – that has to be formed to hold the leases that the homeowners and businesses will enter into (as well as PPAs from cities, towns and schools) and to provide the structural mechanism for the capital to be raised from the capital providers, deployed into the solar assets, and for payments to be collected and distributed. In the first program, the ownership of the SPV was shared between US Bank, as tax equity provider and Gemstone Group. In the second program, we are proposing the ownership be shared between US Bank, as tax equity provider and a de novo

organized limited liability company to be owned almost entirely by CEFIA. This is an important development because this is the mechanism through which ***all ratepayer funds paid in under the performance base incentive (PBI) will be returned to the Connecticut ratepayers that provided these funds in the first instance.***

3. Using \$3.5 M of repurposed ARRA-SEP funds, CEFIA is able to achieve for the senior lenders a coverage ratio of over 220%. This Senior Debt Service Coverage Ratio should enable CEFIA to lower the cost of capital raised from the commercial banks.

Strategic Plan

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

As a “New Program,” the Comprehensive Plan specifies that a Residential Clean Energy Financing Program shall be a long-term comprehensive low-interest loan and/or leasing program for clean energy installations (i.e. energy efficiency and renewable energy). Through the use of a combination of repurposed ARRA SEP grant funds and ratepayer funds through the Clean Energy Fund, residential clean energy financing programs will be developed.

The CEFIA Board of Directors approved of \$10,000,000 of ratepayer funds and \$8,361,600 of ARRA SEP funds to support leases and loan financing programs in the residential sector FY 2013 budget. The CT Solar Lease Program (Version 2.0) request for a commitment of \$9,500,000 of ratepayer funds over three fiscal years (\$2.10M FYE 6/2013, \$4.85M FYE 6/2014 and \$2.55M FYE 6/2015) for financing program purposes and \$3,500,000 of ARRA-SEP funds for a loan loss reserve is consistent with the Board approved Comprehensive Plan and Budget for Fiscal Year 2013.

The CT Solar Lease Program will serve as a financing program to support the Residential Solar Investment Program – a statutorily required program.

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?

CEFIA proposes to make the following non-rebate/PBI investments:

- Sponsor Equity as the Managing Member of the LLC in the amount of up to \$7.2 M (Ratepayer Funds)
 - \$6.1 M for solar PV
 - \$1.1 M for solar hot water
- Subordinated Debt in the amount of up to \$2.3 M (Ratepayer Funds)

which is expected to produce over 20 years approximately 305 M kWh from the solar PV systems (residential and commercial) and save 125,000 MMBTUs from the solar hot water systems (compared to the fuel oil required to produce an equivalent amount of hot water).

Terms and Conditions

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

Subject to the development of the term sheet with the tax equity provider and the senior lender(s):

- Sponsor Equity in the amount of up to \$7,200,000 (Ratepayer Funds)
 - Repaid to CEFIA through the structure starting in 2014 through 2034
 - IRR of 9%
- Subordinated Debt in the amount of up to \$2.3 M (Ratepayer Funds)
 - Yield – 2%
 - Term – 20 Years
 - Level payments of principal and interest commencing in 2015
- Repurposed ARRA-SEP funds of up to \$3.5 M (Non-Ratepayer Funds)
 - Available to support senior and subordinated lenders
 - Achieves a Senior Debt Service Coverage Ratio of >220% (125% without ARRA)
- Performance Based Incentive of \$15.2 M over nine years
 - 25% below Step 2 (~\$1.25 / watt avg)
 - Repaid to CEFIA through the structure starting in 2029 through 2034
- Including “investment” of PBI, overall IRR (Sponsor Equity, Subordinated Loan and PBI) ≈ 2%

Capital Expended

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

CEFIA will provide the following financial resources for the Program:

1. Sponsor Equity in the amount of up to \$7.2 M (Ratepayer Funds)
2. Subordinated Debt in the amount of up to \$2.3 M (Ratepayer Funds)
3. Repurposed ARRA-SEP funds of up to \$3.5 M (Non-Ratepayer Funds)
4. Performance Based Incentive of \$15.2 M over nine years (Ratepayer Funds)

Risk

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

1. Sponsor Equity in the amount of up to \$7.2 M (Ratepayer Funds)
2. Subordinated Debt in the amount of up to \$2.3 M (Ratepayer Funds)

For a maximum of \$9.5 M at risk.

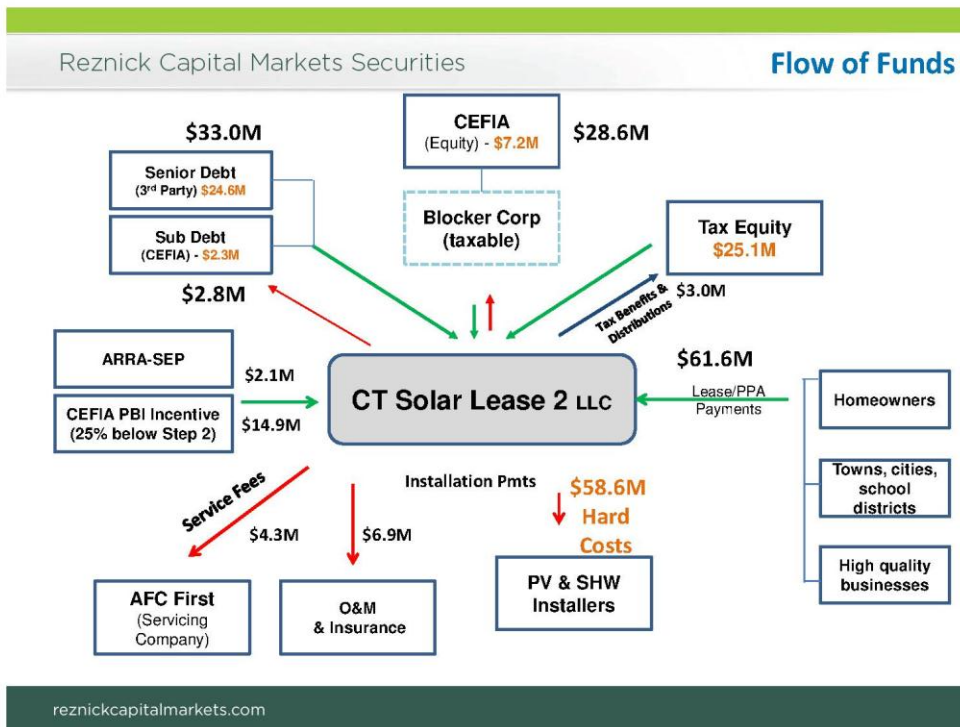
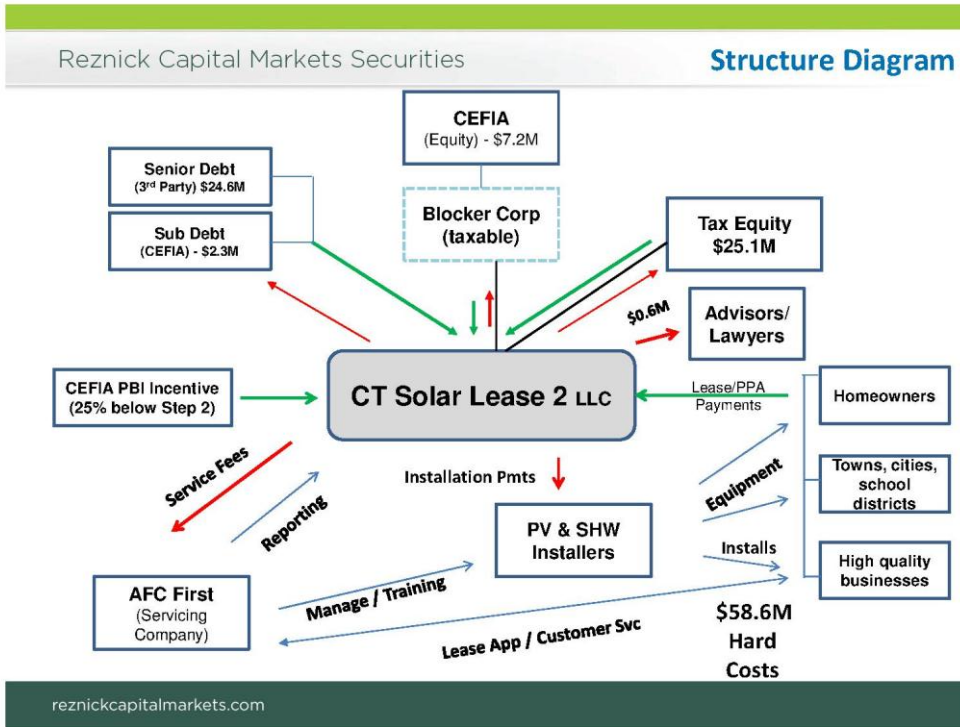
Financial Statements

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

The investment of sponsor equity is accounted for by a reduction in the CEFIA Cash and Cash Equivalents Account (Current Asset on the Balance Sheet) and a corresponding increase in Equity Investments (Non-Current Asset on the Balance Sheet)

Advances of subordinated debt is accounted for by a reduction in the CEFIA Cash and Cash Equivalents Account (Current Asset on the Balance Sheet) and a corresponding increase in “Subordinated Promissory Notes – Solar Lease Program” (Non-Current Asset on the Balance Sheet)

Capital Flow Diagrams



Target Market

Who are the end-users of the program?

1. State of Connecticut owners of single family homes with FICO scores ≥ 640 ;
2. Cities and towns would be eligible for power purchase agreements (PPAs) through the facility for solar PV and solar hot water systems;
3. High credit quality companies would be eligible for the lease program;
4. Installers of solar PV and solar hot water systems (independent installers AND national firms could BOTH refer applicants to the program) – but particularly useful to independent installers without access to tax equity financing.

CEFIA Role, Financial Assistance & Selection/Award Process

CEFIA's role is to assist its program partners in the overall design and implementation of the program, including capital support, communications and PR of the general program to the solar PV and solar hot water installer base, the general public, cities, towns and school districts.

Program Partners

- U.S. Bank (tax equity provider)
- AFC First Financial Corporation (lease application processing, lease servicing & contractor management)
- Reznick Capital Markets Securities, LLC (advisors for structuring and capital raising)
- CohnReznick LLP, special tax advisors and program financial model developer
- A To Be Announced senior debt provider (long term debt capital for the program)

Risks and Mitigation Strategies

Participation of US Bank and Senior Lender(s): CEFIA is currently in talks with US Bank for its investment of tax equity for the program and is commencing a calling program with Reznick. Because of the robust support by CEFIA and the success of the first Solar Lease Program, we anticipate a successful capital raise.

Lease Management risk: AFC First Financial has done an excellent job servicing the lease portfolio of the CT Solar Lease 1 Program and administers other loan programs which involve similar functions (managing contractors, taking applications from residents, managing collections, etc.). The company is, in our opinion, adequately capitalized for the business it operates and has been in business for decades.

Origination risk: CEFIA with the experience of the first Solar Lease Program understands all the issues involved with running a successful program. With AFC First Financial's participation and management of the contractor base, which went smoothly in the first program, combined with the pent-up demand for the Solar Lease product, CEFIA staff believes the next Solar Lease program will be as successful, if not more so.

Underwriting risk: CEFIA has had excellent experience with the first Solar Lease product. No parameters are being changed. We believe it is reasonable to assume the next Lease Program will be as successful as the first, however, the 2nd Solar Lease program will benefit from \$3.5 M of ARRA-SEP funds to protect against residential lease losses.

Operating Procedures

In accordance with CEFIA's Operating Procedures, the CT Solar Lease Program (Version 2.0) is considered as both a Strategic Selection and Award as well as a Competitive Selection and Award.

Strategic Selection and Award

CEFIA is selecting two key program partners for the CT Solar Lease (Version 2.0) – AFC First Financial as the originator and servicer of the leases and U.S. Bank as the tax equity provider.

The selection of AFC First Financial meets four (4) of the five (5) criteria for Strategic Selection and Award, including:

- **Special Capabilities** – AFC First Financial was the originator and servicer of the pilot CT Solar Lease program. They have not only designed and developed the processing systems for lease transactions, but they have also established working relationships with the installer community in Connecticut. This experience, expertise, and availability provide special value to CEFIA. AFC First Financial is providing support for the CT Solar Lease (Version 2.0) at half the cost of their original pricing in the first version of the program – a price that beats any competition in the marketplace.
- **Uniqueness** – AFC First Financial will provide origination and servicing support for the program. This support will leverage their prior expertise gained in Connecticut through the original lease program, providing unique attributes to the market that will enable the program a greater likelihood of success.
- **Strategic Importance** – AFC First Financial is a leader in residential energy efficiency and renewable energy lending programs. They operate in partnership with a number of states, utilities, and contractors demonstrating a broad market reach and strategic advantages that are important to CEFIA including promoting, installing, and servicing energy efficiency and renewable energy related home improvements through financing programs.
- **Multiphase Project** – with the successful CT Solar Lease pilot program, CEFIA is looking to expand into a next phase of the financing program with the CT Solar Lease (Version 2.0). Supporting an earlier initiative, AFC First Financial will help CEFIA rollout a larger financing program through the follow-on investment in the CT Solar Lease (Version 2.0).

It should be noted, that AFC First Financial was selected through a competitive solicitation by the CCEF in 2008 to design and support the CT Solar Lease.

The selection of U.S. Bank meets five (5) of the five (5) criteria for Strategic Selection and Award, including:

- **Special Capabilities** – U.S. Bank is a leader in providing tax equity investment in the renewable energy marketplace, having invested in the first public-private residential solar PV lease program with Connecticut in 2008. Having learned from the Connecticut experience, the bank is now the single largest tax equity investor in the residential solar PV market across the country, having now placed \$500 million of investment in private companies like Solar City and Sun Run. The experience, expertise, and availability of providing tax equity capital to support Connecticut’s follow-on CT Solar Lease (Version 2.0) program provides special value to CEFIA.
- **Uniqueness** – it is difficult to acquire tax equity investors the size of U.S. Bank. Their continued involvement with CEFIA in a larger residential solar PV lease financing program demonstrates their commitment to the state and will provide high visibility to our “green bank” efforts to attract and deploy private capital to finance the clean energy goals for Connecticut. CEFIA and U.S. Bank have a long-standing history working together, having co-created the original and award-winning CT Solar Lease. The CT Solar Lease (Version 2.0) will not only expand on the original program with solar PV investing in the residential sector, but it will also expand to the institutional sector and offer solar thermal hot water system financing as well – a new and unique element of this program.
- **Strategic Importance** – the investment of U.S. Bank in Connecticut will expand the availability of capital to solar PV installers that will result in increased job creation and environmental benefits stemming from the CT Solar Lease (Version 2.0) program. U.S. Bank is a leader and the industry when it comes to tax equity financing of renewable energy projects and their involvement provides Connecticut with high funding leverage potential.
- **Urgency and Timeliness** – U.S. Bank is ready to invest in Connecticut with CEFIA today. Every year, U.S. Bank makes decisions based on who they are going to partner with in terms of the various tax credit programs they access (i.e. new market tax credit, low income tax credits, renewable investment tax credits, etc.). They want to continue to build on the public-private partnership established with Connecticut through the CT Solar Lease (Version 2.0)
- **Multiphase Project; Follow-On Investment** – with the successful CT Solar Lease pilot program, CEFIA is looking to expand into a next phase of the financing program with the CT Solar Lease (Version 2.0). Investing in an earlier initiative, U.S. Bank will help CEFIA rollout a larger financing program through the follow-on investment in the CT Solar Lease (Version 2.0)

It should be noted, that U.S. Bank was selected through a competitive solicitation by the CCEF in 2008 to provide the tax equity capital for the CT Solar Lease.

Competitive Selection and Award

As part of the CT Solar Lease (Version 2.0), CEFIA, in partnership with the Reznick Group, will be raising between \$25-\$30 million of low-cost, long-term, private capital for debt financing within the capital structure of the program. CEFIA will be issuing a request for proposals (RFPs) to identify one (or more) financial institutions that is willing to provide private capital into the program at an interest rate target of ≤6% for a term of between 15 to 18 years.

Resolutions

WHEREAS, the Clean Energy Finance and Investment Authority (CEFIA) has entered into an Memorandum of Agreement (MOA) with the Department of Energy and Environmental Protection (DEEP) to repurpose American Recovery and Reinvestment Act State Energy Program (ARRA-SEP) fund for the undertaking of a project of mutual interest;

WHEREAS, the project of mutual interest set forth in the MOA is to provide funding for credit enhancements (i.e., loan loss reserves, interest rate buy-downs, third party loan insurance) for financing programs administered by CEFIA. The program supported by this funding is the CT Solar Lease 2 Program (the Program);

WHEREAS, CEFIA proposes to reintroduce its Solar Lease program which builds on the success of the first Solar Lease program and achieves the additional benefits of enabling Connecticut homeowners to work with qualified installers of their choice, ensuring that Connecticut's solar installer base remains robust, diverse and able to reach all Connecticut residents, permit homeowners to lease systems for a 20- year period (5 years longer than the first program and competitive with the major national installers), permit financing of solar hot water systems and make a portion (20%) of the fund proposed available to non-residential end-users;

WHEREAS, CEFIA's Program Partners are desirous of moving to the capital raise phase of the program, having achieved a capital structure and program design that CEFIA staff and CEFIA's advisors believe will be successful;

NOW, therefore be it:

- (1) **RESOLVED**, that the Deployment Committee recommends that the CEFIA Board of Directors approve funding for the Program in the following amounts:
 - A. an amount not-to-exceed \$3.5 million for a Lease Loss Reserve (LLR) through the use of repurposed ARRA-SEP program funds;
 - B. an amount not-to-exceed \$7.2 million for Sponsor Equity to be invested into the SPV to be established for the Program; and

C. an amount not-to-exceed \$2.3 million for Subordinated Debt

- (2) **RESOLVED**, that the Deployment Committee authorizes CEFIA staff to work with the Reznick Group to manage a capital raise in an amount not to exceed \$60 million for the Program;
- (3) **RESOLVED**, that the President of CEFIA and any other duly authorized officer of CEFIA, is authorized to execute and deliver, any contract or other legal instrument necessary to secure a non-binding agreement with senior lender(s) and a tax equity investor and subject to final approval by CEFIA's Board of Directors on such terms and conditions consistent with the presentation in Staff's Program Qualification Memo dated November 30, 2012 and as he or she shall deem to be in the interests of CEFIA and the ratepayers no later than six months from the date of this resolution; and
- (4) **RESOLVED**, that the proper CEFIA officers are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instrument or instruments.

Submitted by: Bryan Garcia, President and CEO, Bert Hunter, EVP and CIO, Dale Hedman, Director of Project Deployment; Benjamin Healey, Senior Manager of Clean Energy Finance and Alexandra Lieberman, Manager of Clean Energy Finance

Draft Term Sheet

Summary Draft Senior Debt Term Sheet

Borrower:	CT Solar Lease Program 2
Sponsor:	Clean Energy Finance & Investment Authority, ("CEFIA")
Lender:	[TBD]
Purpose:	To provide permanent financing for the CT Solar Lease Program 2, a fund to consist of residential solar systems, solar thermal systems and small-scale commercial solar systems (collectively, the "Portfolio").
Loan Amount:	Approximately \$[24,500,000]. The loan shall be sized to the amount that allows the Borrower to maintain a minimum debt service coverage ratio (DSCR) of [1.25]x on the Portfolio cash flows, but at least a [2.00]x on the portfolio cash flows plus the State Reserve Fund (as defined herein).
Funding Date:	[02/01/2013]
Term:	TBD – [15 years]
Amortization:	Loan shall be amortized on a sculpted basis with sixty (60) or greater quarterly payments of principal and accrued interest.
[Reserve Fund:	Borrower will establish a reserve account in an amount equal to the six (6) months of debt service payments, subject to ongoing replenishment. Excess reserve amounts will be released as the principal amortizes.]
Interest Rate:	The interest rate on drawn funds from the loan facility will be fixed at [6.00] %.
Commitment Fee:	The commitment fee on the undisbursed loan amount will be fixed at [1.0] %.
Loan Fees:	A one-time commitment fee of [1.0]% of the loan amount [(i.e, \$245,000)] will be payable at closing.
Prepayment:	The Borrower may prepay the Loan anytime during the Loan term with the following premiums: Year 1 __% Year 2 __%

Year 3 __%

Year 4 __%

Year 5 __%

No prepayment premium is due if prepaid during the last [90] days of such [5]-year period.

Collateral:

The loan will be secured by:

- A first priority security interest in all Portfolio assets including all Portfolio equipment and installations.
- A first priority security interest in and collateral assignment of all Portfolio contracts, permits and real property rights.
- A first priority security interest in all equity interests of the Borrower.
- [A payment guaranty from the Sponsor.]
- A first priority security interest in the Sponsor's equity interest of the Lessee.
- A first priority assignment of the solar lease payments therefrom.
- A cash management agreement (i.e., a lockbox agreement) with respect to all Portfolio revenues to be paid into a controlled account at the Bank, wherein the priority of payments therefrom shall first be used by the Lessee to make payments under the Lease.
- If Sponsor borrows additional loans from the Bank, revenues from each additional project will support related projects through a portfolio cash management agreement.

Additional collateral may be required by Lender as further due diligence is performed, including review and approval of the financial projections.

Conditions Precedent

To Closing:

- Review and approval of executed copies of all Portfolio contracts, including without limitation:
 - Solar Lease Agreement Template
 - Contracts with Servicing Company
 - EPC/Installer Contract
 - O&M Agreement
 - Performance Guaranty
 - Interconnection Agreement
- All necessary third party consents, including consents to collateral assignment of all material Portfolio documents containing Bank's standard lender protections.

- All necessary and relevant operating permits
- Evidence of equity funding commitment by Investor.
- Fund Management Agreement acceptable to Bank.
- [Appraisal of solar installations, if tax equity is provided to the Portfolio]
- [Independent engineering report and approval and other consultant reports/approvals as reasonably requested by Bank]
- Evidence of final completion and commencement of commercial operation date for each project.
- Financial statements of Sponsor
- Unaudited financial statements of the Borrower and operating budget for the Portfolio.
- Copies of lien releases delivered with respect to the Portfolio under applicable installer contracts
- An approved Portfolio financial model, using contractual revenue streams demonstrating a minimum debt service coverage to be mutually agreed by Lender and Borrower.
- No liens on equipment, real estate or other assets, other than permitted liens as described in the Loan Documents.
- Issuance of Insurance Policy.
- Issuance of Lender's Title Policy
- Customary legal opinions
- Evidence of clean title for interest under site lease and Lender's right to access and use each site.
- Non-disturbance Agreement from each third-party lender to Borrower and any other party holding a lien on any portion of Borrower's property.
- Receipt of executed Loan Documents satisfactory to the Bank in its sole discretion
- Payment of fees and expenses
- Accuracy of representations and warranties
- Loan documents, Portfolio documents and applicable permits in full force and effect
- Evidence of insurance coverage acceptable to the Bank
- No material adverse change in the financial condition of the Borrower
- Any other documents or information reasonably requested by Bank

Expenses:

The Borrower will be responsible for all fees and expenses associated with documenting, closing and monitoring of the facilities regardless of whether or not the closing of the loan actually occurs, including but not limited to the fees and expenses of Bank's legal counsel, accountants and consultants.

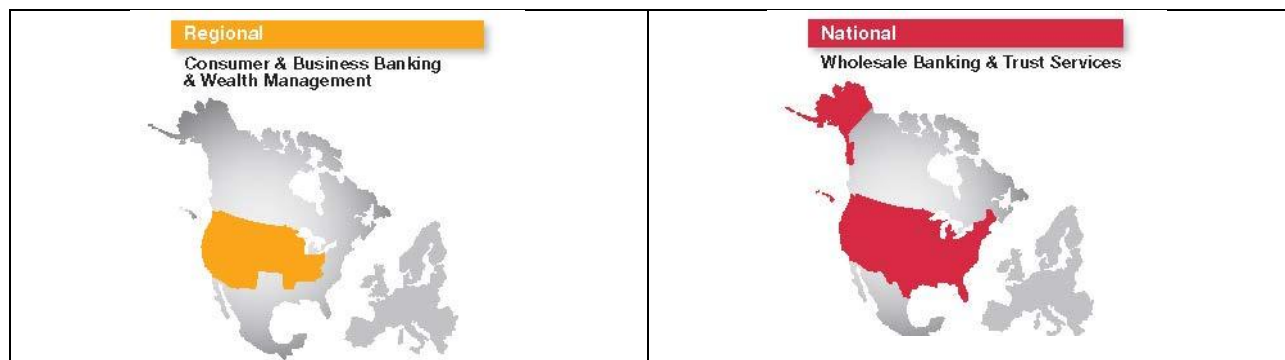
US Bank

Mission

One of the largest commercial banks in the US, focused on customer satisfaction while employing prudent risk controls, careful management and use of shareholders' capital and maintaining disciplined, efficient operations.

Programs/Programmatic Strengths/Service Area

U.S. Bancorp is a diversified financial services holding company and parent company of U.S. Bank National Association, the nation's fifth-largest commercial bank. U.S. Bancorp was named Fortune Magazine's 2011 Most Admired Superregional Bank and the fifth Most Admired company in management quality in the world. Recognized for its strong financial performance, prudent risk management, capital generation and product quality, U.S. Bancorp provides a wide range of financial services for consumers, businesses, government entities and other financial institutions. U.S. Bank's branch network serves 25 states, and they offer regional consumer and business banking and wealth management services, national wholesale and trust services and global payments services to more than 17.4 million customers. Headquartered in Minneapolis, U.S. Bank was founded in 1863 under National Charter #24 and is the nation's second oldest bank operating under its original charter. The company will celebrate its sesquicentennial in 2013. U.S. Bancorp employs 63,000 people.



Strategic Needs Addressed by the Proposed Program & Experience with Similar Programs

Renewable energy finance is a strategic focus for US Bank. US Bank has been active in the renewable energy space for the past four years, leveraging its expertise in other areas of tax credit investing, underwriting and asset management. Since 2008, they have committed more than \$700 million of tax equity in support of renewable energy projects and have made solar energy available to over 20,000 homeowners across the nation.

US Bank invests in a variety of solar projects: from large utility-scale installations to distributed commercial systems, and have also financed several wind developments. An important part of US Bank's business has been creating residential solar funds with national solar installers like Sunrun and SolarCity, but their first solar PV tax equity fund was the Solar Lease Program developed by CCEF.

Leadership & Board of Directors

Richard K. Davis

Chairman, President and Chief Executive Officer of U.S. Bancorp.

Andrew Cecere

Vice Chairman and Chief Financial Officer of U.S. Bancorp.

Richard J. Hidy

Executive Vice President and Chief Risk Officer of U.S. Bancorp.

Financial Condition/Funding Sources & Stability

U.S. Bancorp At A Glance

Ranking	U.S. Bank is 5th largest U.S. commercial bank
Asset size	\$340 billion
Deposits	\$231 billion
Loans	\$210 billion
Earnings per common share (diluted)	\$2.46
Return on average assets	1.53%
Return on average common equity	15.8%
Customers	17.4 million
Bank branches	3,085
ATMs	5,053
Consumer and business banking and wealth management	Regional
Wholesale banking and trust services	National
Payment services, merchant processing and corporate trust	International
NYSE symbol	USB
Year founded	1863

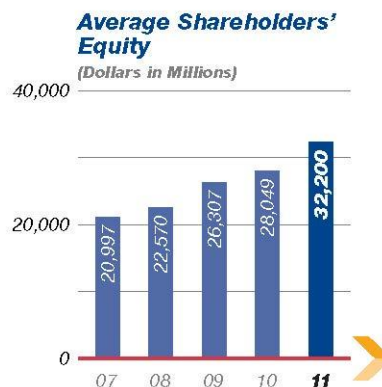
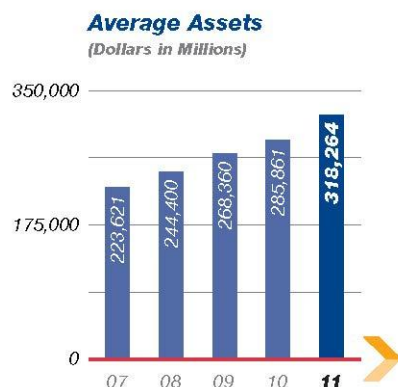


TABLE 20 Debt Ratings

	Moody's	Standard & Poor's	Fitch	Dominion Bond Rating Service
U.S. Bancorp				
Short-term borrowings			F1+	R-1 (middle)
Senior debt and medium-term notes	Aa3	A	AA-	AA
Subordinated debt	A1	A-	A+	AA (low)
Preferred stock	A3	BBB+	A	A
Commercial paper	P-1	A-1	F1+	R-1 (middle)
U.S. Bank National Association				
Short-term time deposits	P-1	A-1	F1+	R-1 (high)
Long-term time deposits	Aa2	A+	AA	AA (high)
Bank notes	Aa2/P-1	A+/A-1	AA-/F1+	AA (high)
Subordinated debt	Aa3	A	A+	AA
Senior unsecured debt	Aa2	A+	AA-	AA (high)
Commercial paper	P-1	A-1	F1+	R-1 (high)

TABLE 22 Regulatory Capital Ratios

At December 31 (Dollars in Millions)

	2011	2010
U.S. Bancorp		
Tier 1 capital	\$29,173	\$25,947
As a percent of risk-weighted assets	10.8%	10.5%
As a percent of adjusted quarterly average assets (leverage ratio)	9.1%	9.1%
Total risk-based capital	\$36,067	\$33,033
As a percent of risk-weighted assets	13.3%	13.3%
Bank Subsidiaries		
U.S. Bank National Association		
Tier 1 capital	9.6%	9.0%
Total risk-based capital	12.5	12.4
Leverage	8.1	7.7
U.S. Bank National Association ND		
Tier 1 capital	13.4%	14.1%
Total risk-based capital	16.4	17.2
Leverage	12.9	13.7
Bank Regulatory Capital Requirements		
	Minimum	Well-Capitalized
Tier 1 capital	4.0%	6.0%
Total risk-based capital	8.0	10.0
Leverage	4.0	5.0

AFC First Financial Corporation

Mission

AFC First Financial Corporation (AFC First), founded in 1947 and based in Allentown, PA, is a national leader in residential energy-efficiency and renewable lending and rebate programs. Nationally it operates its EnergyLoan® www.energyloan.net program, in partnerships with states, utilities, manufacturers and municipalities. Programs are offered through a network of over 3,000 Approved Contractors – companies involved in selling, installing and servicing high efficiency heating, air conditioning, weatherization and “whole house” remodeling and alternative energy related home improvements.

Programs/Programmatic Strengths/Service Area

AFC First presents a unique combination of historical consumer loan experience, energy industry knowledge and a highly regarded focus on contractor/dealer training and due diligence. It is qualified and experienced in consumer loan and rebate program development and underwriting and servicing of energy related loans and rebates. AFC First has worked regionally with HVAC and other energy related contractors for over sixty years. It expanded its EnergyLoan® program multi-state in 1999, when it became one of a handful of FannieMae Approved Energy lenders, and has developed a network of over 2,000 Approved EnergyLoan® contractors in twenty states. AFC has partnered with Nova Bank, a \$650 million commercial bank to facilitate the national expansion of its EnergyLoan® platform and can readily perform services in any state. The following services are offered:

- ■ Centralized loan approval and underwriting
- ■ 24/7 acceptance of consumer loan applications
- ■ Customer service call center
- ■ Loan funding & contractor disbursements
- ■ Qualifying improvement completion verification
- ■ Loan servicing monthly billing statements
- ■ Loan servicing including all payment processing and collections
- ■ Loan default management
- ■ Contractor recruitment, screening and approval
- ■ Maintenance of the contractor database
- ■ Maintenance of the consumer loan and incentive database
- ■ Contractor training and compliance
- ■ Creation and maintenance of the program website
- ■ Print marketing portal for contractor customization and fulfillment of program materials
- ■ Creative work for all contractor and consumer program marketing materials used in normal course of program marketing materials
- ■ Program public relations
- ■ Energy related program statistics and reporting (program specific)
- ■ Sponsor reporting
- ■ Rebate Processing

AFC First manages energy efficiency finance which are often integrated with rebate programs for several utility, manufacturers and other sponsors including:

- ■West Penn Power Sustainable Energy Fund Geothermal Rebate Program
- ■National Grid (New York, Massachusetts, Rhode Island)
- ■Duke Energy (Ohio)
- ■Progress Energy (South Carolina and North Carolina)
- ■UGI
- ■South Jersey Gas
- ■New Jersey Natural Gas
- ■Energy Kinetics
- ■CEFIA/Connecticut Clean Energy Funds
- ■Independent Connecticut Petroleum Association
- ■EPA/Energy Star (featured program)
- ■U.S. Department of Energy (model program)

Strategic Need(s) Addressed by the Proposed Program

AFC First has been selected due to its quality performance with the first Solar Lease Program. It has continue to grow and improve its infrastructure which has resulted in expanded national presence.

Leadership & Board of Directors

PETER J. KRAJSA is Chairman/CEO of AFC First Financial Corporation

JOHN M. HAYES, President/COO

JULIE A. UNGER, VP of Operations

Financial Condition/Funding Sources & Stability

See “Solar Lease 2 Program – Confidential – AFC First Financial Corporation”

Experience with Similar Programs

AFC First has successfully provided all lease administration services in the first CT Solar Lease Program. In addition, AFC First is one of three approved Fannie Mae Energy lenders in the U.S. It is the administrator for Pennsylvania’s Keystone HELP Energy Efficiency Loan and Rebate Program, the state’s official ENERGY STAR® and energy efficiency program, in cooperation with the Pennsylvania Treasury, DEP and PHFA. AFC First worked with DEP to create the rebate program which accompanied the expansion of Keystone HELP in 2009.

Reznick Capital Markets Securities, LLC

Mission

Reznick Capital Markets Securities provides access to a national network of investors, owners and operators. They help renewable energy and real estate project developers meet their goals and capital requirements.

Programs/Programmatic Strengths/Service Area

Reznick Capital Markets Securities, LLC, part of the Reznick Group, has extensive capabilities in helping renewable energy and real estate developers meet their financial needs and capital requirements. For energy developers, Reznick Capital Markets Securities helps to identify the best possible solutions for tax equity, equity, debt, asset sales or purchases (either directly or through sale-leasebacks). In commercial real estate, it connects clients with appropriate private equity funds, pension funds, family offices, foreign and domestic banks, life companies, and newly formed CMBS platforms.

Strategic Need(s) Addressed by the Proposed Program

CEFIA's need for an advisor with specialized expertise in tax equity and debt raising fits perfectly with Reznick's strategic focus helping renewable energy developers meet their financial needs and capital requirements. Reznick is a service organization who qualified to provide services to CEFIA through an RFP in August 2012.

Leadership & Board of Directors

Rob Sternthal, President

Michael Hartman - Managing Director

Conor McKenna, Vice President

Financial Condition/Funding Sources & Stability

Part of the Cohn/Reznick Group, the 11th largest accounting firm in the nation. See Cohn/Reznick section.

Experience with Similar Programs

Reznick's clients include investors, entrepreneurs, developers and independent power producers committed to the development of renewable energy infrastructure. Today, their technology focus is Wind, Solar, Geothermal, Biomass, and Energy Efficiency.

Reznick serves large investment groups and modest size investment syndications, major traditional energy firms desiring to enter the new renewable markets and smaller independent power producers with new technologies. Their work includes service to developers of all sizes, installers and various manufacturers in the renewable energy field. These industries and technologies include solar, geothermal, wind and biomass. They have done other energy-related work including advising clients on energy-related transactions including matching renewable projects with tax equity investors, raising capital, mergers and acquisitions within the renewable energy sector, and maximizing public policy to promote and reward low-carbon solutions as well as helping with energy tax credit financing with

current clients. Reznick Group's energy tax credit professionals are highly respected and possess national reputations with tax credit equity investors and tax credit project lenders who are increasingly interested in the growing market for renewable energy projects. Their professionals also assist clients with highly sophisticated energy deal structures, including deals that combine multiple federal tax credit incentives, such as new markets, low-income housing and historic/ rehabilitation tax credits. Examples of the types of organization served by their renewable energy and energy tax credit practice include:

Renewable Energy Equipment Suppliers and Installers

Organizations Seeking to Install Equipment

Renewable Energy Project Developers

Renewable Energy Investors

LIHTC Clients

GAAP-Driven SEC Companies Involved in Renewable Energy Projects

Electric Utilities

CohnReznick LLP

Mission

Public accounting, tax and advisory firm

Programs/Programmatic Strengths/Service Area

CohnReznick serves a large number of industries and offers specialized services for Fortune 1000 companies, middle-market firms, international enterprises, government agencies, not-for-profit organizations, and other key market sectors.

Strategic Need(s) Addressed by the Proposed Program

Cohn Reznick is a service organization who qualified to provide services to CEFIA through an RFP in August 2012.

Leadership & Board of Directors

Kenneth E. Baggett, CPA

Thomas J. Marino, CPA

Co-CEOs

Financial Condition/Funding Sources & Stability

J.H. Cohn LLP and Reznick Group, P.C., prior to the merger were two of the top-20 accounting and consulting firms in the U.S. In October, they announced the completion of their combination, forming CohnReznick LLP. CohnReznick is now the 11th largest firm in the country with 25 offices, 2,000 employees and combined revenues of more than \$450 million, 2,000 employees, 280 partners and 25 offices.

The combination establishes broad geographic reach for the new firm with headquarters in New York and offices from Boston to Atlanta on the East Coast; Sacramento, Los Angeles and San Diego on the West Coast; and a growing presence in Austin and Chicago. The firm also has offices in Chennai, India and Cayman Islands, and is a member of Nexia International, the 10th largest global accounting, tax and advisory network.

Experience with Similar Programs

See Reznick Capital Markets Securities, LLC

Reference Checks (if necessary)

Reznick Group is:

Registered with the Public Company Accounting Oversight Board (PCAOB);

A member of the Securities and Exchange Commission's (SEC) Practice Section and the Private Companies Practice Section of the American Institute of Certified Public Accountants (AICPA);

A member of the AICPA Major Firms Group, which includes firms with 50 or more AICPA members (excluding the “Big Four” firms);

A charter member of the International Group of Accounting Firms (IGAF);

Consistently named a “Best of the Best Firm” by Inside Public Accounting (formerly, Bowman’s Accounting Report) on its list of the Top 25 Best Firms;

Ranked 13th largest accounting firm in the US — Inside Public Accounting 2009

Rated Top 10 national firm — Public Accounting Report

Honored as “Fastest Growing Top 20 Accounting Firm”— Financial Week and Public Accounting Report

National “All Star” Accounting Firm for Best Long-Range Planning — Inside Public Accounting

2002 – 2009 “Best of the Best Firm” — Inside Public Accounting

A TBA Financial Institution as Senior Lender

Mission

Xxx

Programs/Programmatic Strengths/Service Area

Strategic Need(s) Addressed by the Proposed Program

Xxx

Leadership & Board of Directors

Xxx

Financial Condition/Funding Sources & Stability

Xxx

Experience with Similar Programs

Xxx

Due Diligence Questions

Question #1 – Will CEFIA be able to secure tax equity financing?

Why question asked:

CEFIA's structure requires that an equity provider be able to take advantage of the federal tax financing. CEFIA has not yet secured the participation of US Bank.

Response:

US Bank participated with SLI, with great success. Since 2008, and starting with the launch of SLI, USBank has invested over \$700M in renewable energy projects. Additionally, the new structure is very attractive for the tax equity provider, given the ability to take advantage of the ITC and the MACRS. With these tax advantages and the payments received through the structure up to the flip, Reznick projects that USBank will achieve an IRR of 118%.

Question #2 – Will CEFIA be able to secure senior debt?

Why question asked:

The Solar Lease II structure requires a Senior Lender to provide debt. The structure will be underfunded should no senior lender be secured.

Response:

CEFIA has retained CohnReznick to assist in securing a Senior Lender. The advisory firm has worked closely with CEFIA to develop a structure and has already received interest from several potential lenders. Additionally, CEFIA believes that the structure will be particularly attractive for a lender, given CEFIA's participation at all levels of the capital stack, the increased value retained by the structure by forgoing a traditional developer, and the success of SLI.

Question #3 – Will CEFIA be able to market the leases?

Why question asked:

Assumptions in the CEFIA model require over 1,500 residential solar leases to be written over two years. This is almost double Connecticut's current installed base.

Response:

While aggressive, CEFIA believes that a confluence of factors will contribute to the rapid uptake of residential PV. Solarize, now in its pilot phase, has resulted in price decreases per installed watt of 25% or more and has educated homeowners about the benefits of solar. This not only has allowed for more competitive pricing in the lease product but also will translate into greater customer awareness and easier customer acquisition for installers. Additionally, the approved contractor base has expanded by 340% since December 2008, and the number of installations has grown by an average of 303% year-over-year since 2004. These trends suggest a growing industry supported by increasing demand.

Program Implementation Plan

Human Resources

CEFIA Office of General Counsel together with **CEFIA Office of the Chief Investment Officer** will work with US Bank, AFC First Financial, Reznick and outside counsel to negotiate, draft and execute all investment, loan and program documentation.

CEFIA Office of the Chief Investment Officer together with the **Deployment Department** will track metrics and targets based on regular reporting from AFC First Financial.

CEFIA Marketing Department will work with AFC First Financial to ensure that Connecticut's Department of Energy and Environmental Protection (DEEP) and EnergizeCT, a pan-state agency coalition around energy, are represented appropriately. Since the Credit Enhancements are provided through repurposed ARRA-SEP funding, the program marketing collateral is required to acknowledge DEEP on all marketing materials with the following statement:

The Department of Energy and Environmental Protection (DEEP) is an affirmative action/equal opportunity employer and service provider. In conformance with the Americans with Disabilities Act, DEEP makes every effort to provide equally effective services for persons with disabilities. Individuals with disabilities who need this information in an alternative format, to allow them to benefit and/or participate in the agency's programs and services, should call 860-424-3035 or e-mail the ADA Coordinator, at DEEP.aao@CT.Gov. Persons who are hearing impaired should call the State of Connecticut relay number 711.

The Marketing Department at CEFIA will assist AFC First Financial in ensuring the correct parties and language are represented on collateral pieces.

Deployment Department – will continuously provide AFC First Financial a certified list of qualified solar contractors.

Financial Resources

CEFIA will provide the following financial resources for the Program:

1. Sponsor Equity in the amount of up to \$7,200,000 (Ratepayer Funds)
2. Subordinated Debt in the amount of up to \$2,300,000 (Ratepayer Funds)
3. Repurposed ARRA-SEP funds of up to \$3,500,000 (Non-Ratepayer Funds)

Metrics, Targets, Measurement, Verification & Reporting

Targets:

- The proposed structure will leverage third-party capital to CEFIA funds 5:1.
- Assuming a 7kW system on average, translating to an average \$22,824 loan, the facility will result in 11,750 MWh of clean energy produced and \$1.7 M saved annually for 1,560 homeowners (7.5 MWh and \$1,100 gross savings per household; 114MWh and \$13,500 gross savings per commercial installation)

Metrics: CEFIA will collect data on the following:

- Lease acceptance and declination rate
- Average lease size
- Repayment rate
- Actual energy savings (\$ and kwh)
- Default rate

AFC FIRST FINANCIAL CORPORATION

Financial Statements
December 31, 2011 and 2010

AFC FIRST FINANCIAL CORPORATION

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INDEPENDENT AUDITORS' REPORT

To the Stockholders

AFC First Financial Corporation
 Allentown, Pennsylvania

We have audited the accompanying balance sheet of AFC First Financial Corporation as of December 31, 2011, and the related statements of operations, changes in stockholders' equity, and cash flows for the year then ended. These financial statements are the responsibility of management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the AFC First Financial Corporation's internal control over financial reporting. Accordingly, we express no such opinion.

An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of AFC First Financial Corporation as of December 31, 2011, and the results of its operations and its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America.

The financial statements of AFC First Financial Corporation as of December 31, 2010 were audited by us in accordance with auditing standards generally accepted in the United States of America, and, in our report dated July 15, 2011, we expressed an unqualified opinion on those statements.

In accordance with *Government Auditing Standards*, we have also issued a report dated March 5, 2012, on our consideration of AFC First Financial Corporation's internal control over financial reporting. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and the results of that testing and not to provide an opinion on internal control over financial reporting. In accordance with *Government Auditing Standards*, we have also issued an opinion dated March 5, 2012, on AFC First Financial Corporation's compliance with certain provisions of laws, regulations, contracts, and grant agreements, and other matters that could have a direct and material effect on a nonmajor HUD-assisted program. Those reports are an integral part of an audit performed in accordance with *Government Auditing Standards* and should be considered in assessing the results of our audit.

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying supplementary information shown on page 24 is presented for purposes of additional analysis as required by the *Consolidated Audit Guide for Audits of HUD Programs* issued by the U.S. Department of Housing and Urban Development, Office of the Inspector General, and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

Regan Levin Bloss Brown & Savchak, P.C.

March 5, 2012

AFC FIRST FINANCIAL CORPORATION**Balance Sheets****December 31, 2011 and 2010**

Assets	2011	2010
Cash and cash equivalents	\$ 1,099,233	\$ 1,121,355
Finance receivables, net	596,533	532,114
Finance receivables held for sale	925,455	1,013,368
Loans and accounts receivable - related parties	290,523	1,237,764
Accrued interest receivable	184,964	169,931
Loan servicing assets	3,829,361	2,938,421
Recourse and other receivables from investors	788,927	160,214
Investments in affiliated companies	102,000	102,000
Equipment and leasehold improvements, net	1,204,810	348,170
Other assets	1,364	1,289
Limited-use assets - grant cash and loan advances	1,396,633	372,432
Total assets	\$ 10,419,802	\$ 7,997,058
Liabilities		
Senior debt	\$ 3,250,000	\$ 2,835,250
Amounts due on serviced loans	1,117,713	1,187,251
Subordinated debt	178,013	175,289
Demand thrift and employee saving accounts	407,033	382,873
Grants held for serviced loan losses	102,985	372,432
Funds held on work-in-process	900,562	1,079,076
Funds advanced for future loans	1,840,903	—
Funds advanced for rebate programs	277,109	71,635
Loan from shareholders	500,000	500,000
Deferred income taxes	216,600	64,600
Accrued expenses:		
Interest	18,472	14,927
Taxes and other	276,515	70,150
Total liabilities	9,085,905	6,753,483
Stockholders' Equity		
Common stock - par value \$100; 5,000 shares authorized; 2,631 shares issued and outstanding	263,100	263,100
Additional paid-in capital	1,136,900	1,136,900
Accumulated deficit	(66,103)	(156,425)
Total stockholders' equity	1,333,897	1,243,575
Total liabilities and stockholders' equity	\$ 10,419,802	\$ 7,997,058

See accompanying notes to financial statements.

AFC FIRST FINANCIAL CORPORATION**Statements of Operations****Years ended December 31, 2011 and 2010**

	2011	2010
Revenues:		
Interest and fees on loans	\$ 2,546,798	\$ 1,920,891
Gain and premium on sale of loans	1,458,627	1,866,007
Earnings of unconsolidated subsidiary	—	1,681
Grant income	61,495	53,553
Other income	61,606	13,164
Total revenues	4,128,526	3,855,296
Expenses:		
Advertising	169,194	161,729
Bank fees	183,016	77,657
Business development	—	390,432
Data processing	156,278	147,424
Depreciation and amortization	67,879	57,412
Employee benefits	117,938	82,036
Insurance	26,842	24,820
Interest	218,411	169,923
Legal and accounting	202,713	185,312
Meals and entertainment	1,121	—
Other operating expenses	347,129	233,264
Payroll taxes	111,751	93,341
Postage	106,997	111,155
Printing and office supplies	56,031	33,552
Provision for losses on receivables	64,849	199,149
Rent	310,243	310,343
Retirement plan contribution	22,117	15,423
Salaries	1,398,129	1,159,109
Sales expenses	44,293	94,513
Taxes other than income	2,507	1,749
Telephone	61,143	51,682
Travel	33,834	17,300
Utilities and maintenance	69,815	53,281
Total expenses	3,772,230	3,670,607
Income before tax provision	356,296	184,689
Provision for taxes on income	152,300	66,499
Net income	\$ 203,996	\$ 118,190

See accompanying notes to financial statements.

AFC FIRST FINANCIAL CORPORATION

Statements of Changes in Stockholders' Equity
Years ended December 31, 2011 and 2010

	Common Stock		Additional Paid-in Capital	Accumulated Deficit
	Number of Shares	Amount		
Balance, December 31, 2009	2,631	\$ 263,100	\$ 1,136,900	\$ (180,821)
Net income - 2010	—	—	—	118,190
Dividends paid	—	—	—	(93,794)
Balance, December 31, 2010	2,631	263,100	1,136,900	(156,425)
Net income - 2011	—	—	—	203,996
Dividends paid	—	—	—	(113,675)
Balance, December 31, 2011	<u>2,631</u>	<u>\$ 263,100</u>	<u>\$ 1,136,900</u>	<u>\$ (66,103)</u>

See accompanying notes to financial statements.

AFC FIRST FINANCIAL CORPORATION**Statements of Cash Flows****Years ended December 31, 2011 and 2010**

	2011	2010
Cash flows provided by operating activities:		
Interest and fees received	\$ 2,470,742	\$ 2,037,524
Proceeds from sales of loans (held for resale)	23,458,653	25,765,770
Acquisitions of loans for sale	(21,362,223)	(23,971,923)
Interest paid	(214,866)	(167,153)
Cash paid to suppliers and employees	(3,718,595)	(3,071,358)
Net cash provided by operating activities	<u>633,711</u>	<u>592,860</u>
Cash flows used in investing activities:		
Net (increase) decrease in loans to customers and others	13,070	518,428
Net increase in loan servicing asset	(890,940)	(960,980)
Capital expenditures	(105,922)	(145,075)
Distribution from unconsolidated subsidiary	—	118,284
Net cash used in investing activities	<u>(983,792)</u>	<u>(469,343)</u>
Cash flows provided by financing activities:		
Loan from shareholders	—	500,000
Dividends paid	(113,675)	(93,794)
Net increase in demand deposits and savings accounts	26,884	89,411
Net increase (decrease) in senior debt	414,750	(31,534)
Net cash provided by financing activities	<u>327,959</u>	<u>464,083</u>
Net increase (decrease) in cash and cash equivalents	(22,122)	587,600
Cash and cash equivalents, beginning	<u>1,121,355</u>	<u>533,755</u>
Cash and cash equivalents, ending	<u>\$ 1,099,233</u>	<u>\$ 1,121,355</u>
Reconciliation of net income to net cash provided by operating activities:		
Net income	\$ 203,996	\$ 118,190
Adjustments to reconcile net income to net cash provided by operating activities:		
Earnings of unconsolidated subsidiary	—	(1,681)
Depreciation and amortization	67,879	57,412
Related party receivable writedown	—	390,432
Deferred income taxes	152,000	64,600
Increase (decrease) in taxes and other payables	206,365	(38,894)
Increase in accrued interest	3,545	2,770
(Increase) decrease in other assets	(75)	31
Net cash provided by operating activities	<u>\$ 633,711</u>	<u>\$ 592,860</u>

See accompanying notes to financial statements.

**Notes to Financial Statements
December 31, 2011 and 2010**

AFC First Financial Corporation, the ("Company"), originates secured and unsecured loans and leases for energy-efficient home improvements under its EnergyLoan program, as well as residential mortgage, home equity and home improvements loans (altogether, the "finance receivables"). The Company funds certain of its finance receivables through the sale of those finance receivables to independent third parties, and state agencies on a service-released basis. The Company sells certain of its energy and other finance receivables while retaining the rights to service them for either a fee or an agreed-upon interest rate spread. The Company also funds its finance receivables through short-term bank borrowings.

On September 6, 2006, the Company signed a letter of intent with Great Bear Enterprises, LLC ("GBE"), the organizing group for Great Bear Bank, whereby the organizing group was to enter into an Agreement of Sale to acquire AFC First Financial Corporation and its EnergyLoan and customer lending businesses. This transaction was to be consummated when the Bank commenced operations upon receiving approval from the FDIC and a certificate of authority to do business from the Pennsylvania Department of Banking. AFC First was to continue to operate as a division of the Bank and its lending and administrative operations were to be integrated with the Bank's. Due to rapidly changing market conditions, in December 2008, the members of GBE voted unanimously to defer the formation of Great Bear Bank for an undetermined time. This action nullified the planned sale of the Company. These financial statements do not include the activities of Great Bear Enterprises, LLC.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

AFC FIRST FINANCIAL CORPORATION

Notes to Financial Statements December 31, 2011 and 2010

1. Nature of Operations and Summary of Significant Accounting Policies, Continued:

Finance Receivables Held for Sale and Finance Receivables, Net

Finance receivables held for sale are carried at lower of adjusted cost or market value, with gains and losses on loan sales (sales proceeds minus carrying value) recorded in gain and premium on sale of finance receivables. Finance receivables held for sale are generally sold into the secondary market with the servicing rights retained by the Company. The carrying value of finance receivables sold is reduced by the cost allocated to the associated servicing rights. Gains or losses on sales of finance receivables are recognized based on the difference between the selling price and the carrying value of the related finance receivable sold.

Finance receivables, net that management has the intent and ability to hold for the foreseeable future or until maturity or payoff are reported at their outstanding unpaid principal balances reduced by any chargeoff or specific valuation accounts and net of any deferred fees or costs on originated finance receivables.

Finance receivable origination fees and certain direct origination costs are capitalized and recognized as an adjustment of the yield of the related finance receivable.

Allowance for credit losses is increased by charges to income and decreased by chargeoffs (net of recoveries). Management's periodic evaluation of the adequacy of the allowance is based on the Company's past finance receivable experience, known and inherent risks in the portfolio, adverse situations that may affect the borrower's ability to repay, the estimated value of any underlying collateral and current economic conditions.

Interest income from finance receivables is recognized using the interest (actuarial) method.

Transfers and Servicing of Financial Assets

Transfers of financial assets are accounted for as sales when control over the assets has been surrendered. Control over transferred assets is deemed to be surrendered when (1) the assets have been isolated from the Company, put presumptively beyond reach of the entity, even in bankruptcy, (2) the transferee (or if the transferee is an entity whose sole purpose is to engage in securitization

**Notes to Financial Statements
December 31, 2011 and 2010****Transfers and Servicing of Financial Assets. Continued**

The Company acquires servicing rights through the sale of finance receivables it originates. Under the accounting guidance for transfers and servicing, the Company initially measures a servicing asset that qualifies for separate recognition, regardless of whether explicit consideration was exchanged, at fair value at the date of transfer. Changes in fair value are recorded in interest and fees on finance receivables.

To determine the fair value of servicing assets, the Company uses a valuation model that calculates the present value of estimated future net servicing income. The valuation model incorporates assumptions that market participants would use in estimating future net servicing income, such as the cost to service, the discount rate, the custodial earnings rate, an inflation rate, ancillary income, prepayment speeds and default rates, late fees and losses. See Note 4 for more information on the valuation of servicing rights.

The Company has elected to initially measure and carry its servicing assets using the fair value method. Under the fair value method, the servicing assets are carried in the balance sheet at fair value and the changes in fair value, primarily due to changes in valuation inputs and assumptions and to the collection and realization of expected cash flows, are reported in interest and fees on finance receivables in the period in which the change occurs.

**Notes to Financial Statements
December 31, 2011 and 2010**

Investments in Affiliated Companies

The Company's 40% share of ownership of Great Bear Home Settlements, LLC is carried at its initial investment. Although Great Bear Home Settlements, LLC is inactive, it was agreed to maintain the account for possible reactivation in the future.

Property and Equipment

Cash Equivalents

Funds Held on Work-In-Process

Funds held on work-in-process represent advances to the Company received from the Pennsylvania Housing Finance Agency ("PHFA") and the Maine PACE and are to be used for future finance receivable originations. Upon origination, ownership of the finance receivables is transferred to PHFA or Maine PACE. The Company does not acquire servicing rights on these finance receivables sold.

**Notes to Financial Statements
December 31, 2011 and 2010**

Funds Advanced for Future Loans

Funds Advanced for Rebate Programs

Concentration of Credit Risk

Income Taxes

Effective January 1, 2010, the Company terminated its Subchapter S election and reverted to a C corporation. Income taxes are provided for the tax effects of transactions reported in the 2011 and 2010 financial statements. Deferred taxes relate primarily to differences in accounting for certain items for book and income tax purposes. The resulting net deferred tax liability represents the future tax return consequences of those differences.

Advertising

The Company's policy is to expense advertising costs as incurred. Advertising expense amounted to \$169,194 and \$161,729 for the years ended December 31, 2011 and 2010, respectively.

**Notes to Financial Statements
December 31, 2011 and 2010**

Finance receivables as of December 31, were as follows:

Certain classes of loans are pledged to secure the Company's bank credit agreements.

The changes in the allowance for credit losses were as follows:

At December 31, 2011, the Company had finance receivables aggregating \$193,867 which were 90 or more days past due. The Company has discontinued accruing interest on these receivables.

**Notes to Financial Statements
December 31, 2011 and 2010**

Loans and accounts receivable from related parties at December 31, consist of:

Great Bear Bank organization group and Franklin Acquisition Advisors (“Franklin”) were related through common ownership until January 1, 2011 when Peter Krajsa relinquished his interest in Franklin. During 2011, the assets of Great Bear Bank, consisting of leasehold improvements, were acquired by the Company in return for elimination of the intercompany receivable of \$818,596.

4. Loan Servicing Assets:

Finance receivables serviced for others are not included in the accompanying balance sheets. The unpaid principal balances of loans serviced for others were \$50,716,277 and \$41,831,314 at December 31, 2011 and 2010, respectively.

The present value of the rights was determined using a discount rate of 8% (8% prior year), prepayment speeds ranging from 0% to approximately 36%, and an implied weighted average default rate of 2.5%.

Notes to Financial Statements
December 31, 2011 and 2010

The following summarizes the activity pertaining to loan servicing rights' fair values net of valuation allowances.

	<u>Year ended December 31,</u>	
	<u>2011</u>	<u>2010</u>
Balance at beginning of year	\$ 2,938,421	\$ 1,977,441
Loan servicing rights capitalized at fair market value, net	<u>890,940</u>	<u>960,980</u>
Balance at end of year	<u>\$ 3,829,361</u>	<u>\$ 2,938,421</u>

Investments in affiliated companies at December 31, consist of:

	<u>2011</u>	<u>2010</u>
Great Bear Home Settlements, LLC (40% owned)	\$ 2,000	\$ 2,000
Energyweb Solutions, Inc. (19.9% owned)	<u>100,000</u>	<u>100,000</u>
Balance at end of year	\$ <u>102,000</u>	\$ <u>102,000</u>

The Company's 40% ownership in Great Bear Home Settlements, LLC is carried at its initial investment of \$2,000.

The Company's 19.9% ownership of stock of Energyweb Solutions, Inc. (a development stage enterprise) is carried at its initial investment of \$100,000. Management has evaluated this investment for impairment and has determined that it is not impaired at December 31, 2011.

**Notes to Financial Statements
December 31, 2011 and 2010**

Equipment and leasehold improvements at December 31, consist of the following:

The equipment is pledged as security under the Company's bank credit agreement.

In June 2006, the Company moved its operating location to a new space and entered into an informal lease arrangement. No rent was charged for the first six months of occupancy after which the rent became \$6,700 per month. The Company sub-leased part of the space with aggregate sublet income of approximately \$3,200 per month.

In May 2007, in connection with the Company's expected acquisition by the Great Bear Bank, the Bank entered into a new lease agreement with the Company's same landlord. The Bank's lease agreement is for space as follows:

Space expected to be occupied by the Company	7,500 sq ft
Space expected to be occupied by Bank	6,000 sq ft

All space is leased at an initial rate of \$17.75 per square foot with annual 3% increases for the term, which is ten years with two five-year renewal options. During 2009, the minimum rent payments of \$126,922 due for the space to have been occupied by the Bank were paid by the Company and reported as increases in loans and accounts receivable-related parties in the balance sheet. Effective January, 2010, the minimum rental obligation of the Bank was assumed by the Company and is reported as rent expense in the statements of operations in 2011 and 2010.

**Notes to Financial Statements
December 31, 2011 and 2010**

Future minimum annual rental payments under the operating lease obligation are as follows:

2012	\$ 270,547
2013	278,866
2014	287,435
2015	296,058
2016	305,350
Thereafter	<u>314,713</u>
	\$ 1,752,969

7. Other Assets:

8. Limited-use Assets – Grant Cash and Loan Advances:

The Company is required to maintain the grant funds in a separate bank account and submit quarterly reports of losses charged to the grant funds. At December 31, 2011 and 2010, the Company had receivables in the amount of \$130,515 and \$160,214, respectively, representing reimbursements due for finance receivable losses.

The total limited use grant cash amounted to \$102,985 and \$372,432 as of December 31, 2011 and 2010, respectively.

AFC FIRST FINANCIAL CORPORATION

Notes to Financial Statements December 31, 2011 and 2010

8. Limited-use Assets – Grant Cash and Loan Advances, Continued:

The Company has entered into agreements with the states of Maine and Delaware during 2011 to operate their respective state home energy loan programs. The states have advanced funds to the Company to be used to provide for future finance receivables. The total of advanced funds amounted to \$1,293,648 as of December 31, 2011.

9. Income Taxes:

The income tax provision consisted of the following components for the years ended December 31, 2011 and 2010:

	<u>2011</u>	<u>2010</u>
Current:		
State	\$ <u>300</u>	\$ <u>1,899</u>
Deferred:		
Federal	114,700	48,700
State	<u>37,300</u>	<u>15,900</u>
	<u>152,000</u>	<u>64,600</u>
Income tax provision	\$ <u>152,300</u>	\$ <u>66,499</u>

The following temporary differences give rise to the deferred tax (assets) and liabilities as of December 31, 2011 and 2010:

	<u>2011</u>	<u>2010</u>
Fixed assets	\$ 13,800	\$ 21,900
Deferred servicing asset	751,600	390,000
Allowance for doubtful accounts	(29,000)	(63,100)
Net operating loss carryforwards	<u>(519,800)</u>	<u>(284,200)</u>
Total net deferred tax liability	\$ <u>216,600</u>	\$ <u>64,600</u>

At December 31, 2011 and 2010, the income tax provision differs from the amount computed by multiplying the statutory federal income tax rate times the income before taxes primarily because of state income taxes. The Company has federal and state loss carryforwards available at December 31, 2011 approximating \$1,232,000 and \$1,237,000, respectively, expiring in 2031.

Notes to Financial Statements
December 31, 2011 and 2010

The Company's net deferred tax liability results primarily from loan servicing assets which are not taxable until payment is received, the allowances for bad debts which are not deductible for tax purposes until losses are identified and accounts are written off, the use of accelerated depreciation methods for tax reporting purposes, and the net operating loss carryforwards which are not deductible until the Company has taxable income against which they can be offset.

In assessing the realizability of the deferred tax assets, management considered whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the future taxable income of the Company. Based upon historic income levels and anticipated future taxable income, management believes it is more likely than not that the Company will realize the benefits of these deductible differences.

The Company recognizes and measures its unrecognized tax benefits in accordance with ASC Topic 740, "Income Taxes". Under that guidance, the Company assesses the likelihood, based on their technical merit, that tax positions will be sustained upon examination based on the facts, circumstances and information available at the end of each period. The measurement of unrecognized tax benefits is adjusted when new information is available or when an event occurs that requires a change. As of December 31, 2011 and 2010, there are no unrecognized tax benefits.

The Company recognizes interest and penalties related to uncertain tax positions in the provision for income taxes. During the years ended December 31, 2011 and 2010, there were no interest or penalties recognized in connection with uncertain tax positions.

The Company is a taxable entity in federal and state jurisdictions. The Company is no longer subject to federal or state income tax examinations by tax authorities for years before 2008.

**Notes to Financial Statements
December 31, 2011 and 2010**

Senior debt consisted of the following at December 31, 2011 and 2010:

On March 26, 2009, the Company entered into a \$1,500,000 bank line of credit agreement which was subsequently increased to \$2,500,000 to provide for working capital needs. The line matures on February 1, 2012 and requires monthly payments of interest only at the bank's prime rate subject to a minimum of 5%, the rate in effect at December 31, 2011. The line is secured by all Company assets and is unconditionally guaranteed by the majority shareholder. The balance of this loan was \$2,500,000 as of December 31, 2011 and 2010.

The Company entered into a revolving line of credit agreement with Sustainable Energy Fund during 2011. The line provides for maximum borrowings of \$750,000, matures in April 2012 and requires monthly payments of interest only. Interest is payable at 6.5% per annum. The loan is collateralized by certain personal property of the officers of the Company. The loan is guaranteed by all stockholders holding an ownership interest of 20% or greater. The balance of this loan was \$750,000 at December 31, 2011.

**Notes to Financial Statements
December 31, 2011 and 2010**

The Company is obligated to investors for unsecured subordinated investment certificates with the following interest and repayment provisions:

	<u>December 31,</u>	
	<u>2011</u>	<u>2010</u>
Variable rate (max 16%) payable 30 months after issue	\$ 130,738	\$ 130,738
Variable rate (max 16%) payable 60 months after issue	<u>47,275</u>	<u>44,551</u>
	<u>\$ 178,013</u>	<u>\$ 175,289</u>

These investment certificates are subordinated to all present and future borrowings by the Company from financial institutions, including the indebtedness under Senior Debt, described in Note 10.

The Company discontinued the sale of these certificates in 2006.

The interest rate paid on demand thrift accounts and demand employee savings accounts is 2% and 6% per annum, respectively.

The Company sponsors a Simple IRA plan for employees with at least one year of service and who earn \$5,000 or more annually. The Plan allows employees to make annual elective deferrals up to \$11,000 or 100% of compensation, whichever is less. The Company contributes to the plan 2% of employee compensation. All contributions to the Plan are 100% vested to the employees. Company contributions to the Plan amounted to \$22,117 and \$15,423 for the years ended December 31, 2011 and 2010, respectively.

**Notes to Financial Statements
December 31, 2011 and 2010**

In September of 2004, Peter Krajša (Peter) acquired all shares from his brother John and became the owner of 100% of the Company. To finance the acquisition, Peter obtained a \$1,000,000 bank line of credit. Outstanding borrowings under the line of credit as of December 31, 2011 and 2010 were \$827,347 and \$882,341, respectively. The proceeds of the loan were used to purchase John's stock and retire other personal obligations. Peter's bank loan is guaranteed by the Company, but the guaranty is explicitly subordinated to the Company's senior bank debt and the Company's subordinated investment certificates. The Company's guarantee is not collateralized. The debt service is current as of December 31, 2011.

Finance receivables sold with recourse totaling \$2,567,193 at December 31, 2011 represent off-balance-sheet risk in the normal course of business. At December 31, 2011, a liability for credit losses amounting to \$71,371, applicable to finance receivables sold with recourse, is included in other liabilities.

In the normal course of business, the Company makes various commitments which are not reflected in the accompanying financial statements. These instruments involve, to varying degrees, elements of credit and interest rate risk in excess of the amount recognized in the balance sheet. The Company's exposure to credit loss in the event of nonperformance by the other parties to the financial instruments is represented by the contractual amounts as disclosed. Losses, if any, are charged to the allowance for credit losses. The Company minimizes its

**Notes to Financial Statements
December 31, 2011 and 2010**

exposure to credit loss under these commitments by subjecting them to credit approval, review procedures, and collateral requirements as deemed necessary. Commitments to extend credit are agreements to lend to a customer as long as there is no violation of any condition established in the loan agreement. These commitments are comprised primarily of available loan and lease commitments. The Company evaluates each customer's creditworthiness on a case-by-case basis. The amount of collateral obtained, as deemed necessary, is based upon management's credit evaluation in compliance with the Company's lending policy guidelines.

The Company has entered into a partnership with Lehigh Carbon Community College (“LCCC”) to establish the Green Energy Training Center (the “Center”) which will be used to educate and train individuals, businesses and contractors currently or potentially interested in becoming involved in energy efficiency and renewable energy improvements.

LCCC has obtained a grant from the Rockefeller Foundation to fund this project. The grant amount is \$150,000 which will be used to bring the Center into full operation, covering salaries, furniture and fixtures. Of the \$150,000, LCCC retained \$24,600 and the remaining \$125,400 was available to be used by the Company to offset related expenses.

The time period for the grant was July 1, 2010 to June 30, 2011; however, the expiration date was extended to August 31, 2011.

During the year ended December 31, 2011, \$61,495 was requested from the Foundation to meet the needs of the Center and is reflected as grant income in the statement of operations for 2011.

Notes to Financial Statements December 31, 2011 and 2010

On December 30, 2010, the majority shareholders of the Company borrowed \$500,000 from New Tripoli Bank and subsequently advanced the funds to the Company. The loan bears interest payable monthly at 2.90% per annum and is due on June 30, 2012. The loan is collateralized by a specific corporate deposit account maintained in the Company's name at the Bank.

The Company has evaluated events and transactions occurring subsequent to the balance sheet date of December 31, 2011 for items that could potentially be recognized or disclosed in these financial statements. The evaluation was conducted through March 5, 2012, the date these financial statements were available for issuance.

AFC FIRST FINANCIAL CORPORATION

**Computation of Adjusted Net Worth to Determine Compliance with
HUD Net Worth Requirements
December 31, 2011**

Stockholders' equity (net worth) per balance sheet	\$ 1,333,897
Less unacceptable assets:	
Due from related parties	(290,523)
Add subordinated shareholder debt:	
Due to shareholders	<u>500,000</u>
Adjusted net worth for HUD requirement purposes	\$ <u>1,543,374</u>



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INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL
(COMBINED REPORT APPLICABLE TO INTERNAL CONTROL OVER FINANCIAL
REPORTING BASED ON AN AUDIT OF FINANCIAL STATEMENTS AND INTERNAL
CONTROL OVER COMPLIANCE FOR HUD-ASSISTED PROGRAMS)

To the Stockholders
AFC First Financial Corporation
Allentown, Pennsylvania

We have audited the financial statements of AFC First Financial Corporation as of and for the year ended December 31, 2011, and have issued our report thereon, dated March 5, 2012. We have also audited the Corporation's compliance with specific program requirements that could have a direct and material effect on each of its nonmajor U.S. Department of Housing and Urban Development (HUD)-assisted programs for the year ended December 31, 2011, and have issued our reports thereon, dated March 5, 2012.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the *Consolidated Audit Guide for Audits of HUD Programs* ("Guide"), issued by the HUD Office of the Inspector General. Those standards and the Guide require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether AFC First Financial Corporation complied with the compliance requirements referred to above that could have a direct and material effect on a nonmajor HUD-assisted program.

Management of AFC First Financial Corporation is responsible for establishing and maintaining effective internal control over financial reporting and internal control over compliance with the compliance requirements referred to above. In planning and performing our audits of the financial statements and compliance, we considered AFC First Financial Corporation's internal control over financial reporting and its internal

control over compliance with the specific program requirements that could have a direct and material effect on a nonmajor HUD-assisted program to determine the auditing procedures for the purpose of expressing our opinions on the financial statements and compliance but not for the purpose of expressing an opinion on the effectiveness of AFC First Financial Corporation's internal control over financial reporting and internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of AFC First Financial Corporation's internal control over financial reporting and internal control over compliance.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct (1) misstatements of the entity's financial statements or (2) noncompliance with specific program requirements of a HUD-assisted program on a timely basis. A *material weakness* is a deficiency or combination of deficiencies in internal control such that there is a reasonable possibility that (1) a material misstatement of the entity's financial statements or (2) material noncompliance with specific program requirements of a HUD-assisted program will not be prevented or detected and corrected on a timely basis.

Our consideration of internal control over financial reporting and internal control over compliance was for the limited purpose described in the third paragraph of this report and was not designed to identify all deficiencies in internal control that might be deficiencies, significant deficiencies, or material weaknesses. We did not identify any deficiencies in internal control that we consider to be material weaknesses as defined above.

We noted certain matters that we reported to management of AFC First Financial Corporation in a separate letter, dated March 5, 2012.

This report is intended solely for the information and use of management, stockholders, others within the entity, and HUD and is not intended to be and should not be used by anyone other than these specified parties.

Regan Levin Bloss Brown & Savchak, P.C.

March 5, 2012



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**INDEPENDENT AUDITORS' REPORT ON COMPLIANCE WITH SPECIFIC
REQUIREMENTS APPLICABLE TO NONMAJOR HUD PROGRAM TRANSACTIONS**

To the Stockholders
AFC First Financial Corporation
Allentown, Pennsylvania

We have audited the financial statements of AFC First Financial Corporation as of and for the year ended December 31, 2011, and have issued our report thereon dated March 5, 2012.

In connection with that audit and with our consideration of AFC First Financial Corporation's internal control used to administer HUD programs, as required by the *Consolidated Audit Guide for Audits of HUD Programs* ("Guide"), issued by the U.S. Department of Housing and Urban Development (HUD), Office of the Inspector General, we selected certain transactions applicable to certain nonmajor HUD-assisted programs for the year ended December 31, 2011.

As required by the Guide, we performed auditing procedures to test compliance with the requirements governing management functions that are applicable to those transactions. Our procedures were substantially narrower in scope than an audit, the objective of which is the expression of an opinion on the Corporation's compliance with those requirements. Accordingly, we do not express such an opinion.

The results of our tests disclosed no instances of noncompliance that are required to be reported herein under the Guide.

This report is intended solely for the information and use of management, stockholders, others within the entity, and HUD and is not intended to be and should not be used by anyone other than these specified parties.

Regan Levin Bloss Brown & Savchak, P.C.

March 5, 2012

State Leadership in Clean Energy

Seven Exemplary Programs



October 2012



**California Energy Commission –
University of California, San Diego
Microgrid**

Fuel cell for heat and power:
A 2.8 MW fuel cell generates
electricity from biogas. Waste heat
feeds a thermal storage system.

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Introduction

The State Leadership in Clean Energy (SLICE) Awards recognize outstanding state and municipal programs that have accelerated adoption of clean energy technologies and strengthened clean energy markets.

Since the 1990s, states across the U.S. have implemented policy initiatives that have made clean energy technologies an increasing part of the nation's energy system and landscape—a visible reality in neighborhoods, on rooftops, at businesses, along highways, and in many other locations. State and municipal clean energy funds have been some of the most important entities to advance clean energy deployment. Clean Energy States Alliance (CESA) and its clean energy fund members are at the center of this state clean energy activity. States are driving renewable energy markets. They are pioneering new investment models, fostering research and development, and embracing innovative new technology commercialization strategies.

The policies and programs that CESA members are implementing have significantly increased public and private investment in renewable energy deployment. Since 1998, the clean energy funds and agencies that comprise the membership of CESA have invested more than \$3.4 billion in renewable energy projects and leveraged an additional \$12.5 billion. In 2011 alone, these organizations supported nearly 33,000 clean energy projects across the country.

CESA was formed in 2002 to assist state and other sub-federal efforts related to renewable energy technologies and markets. Over the past ten years, the 27 state, quasi-state, and municipal agencies that have been members of CESA have combined their efforts to develop more effective strategies and joint initiatives.¹ CESA facilitates multi-state collaborations, real-time learning, and strategic public-private partnerships. Put simply, CESA is dedicated to supporting state leadership, activities, and innovation in the clean energy sector.

The State Leadership in Clean Energy Awards

CESA established the SLICE Awards in 2008 to provide greater recognition and visibility for exemplary state programs. By identifying and publicizing excellent programs, the SLICE Awards help states learn from each other and encourage the spread of worthy program models.

Programs are nominated for SLICE Awards by state funds and agencies from across the country. The nominated programs are reviewed by a team of independent judges, who select the best programs for recognition. The winning entries exemplify the ground-breaking work being done by states in the arena of clean energy development and deployment.

For the 2012 SLICE Awards, the six judges selected seven winners from among the nominated programs. This year's winners are:

- **California Energy Commission (CEC):** *Enabling Renewable Energy, Energy Storage, Demand Response, and Energy Efficiency with a Community-Based Controller-Optimizer at the University of California, San Diego Microgrid.* With \$2.4 million from the CEC Public Interest Energy Research (PIER) program and support from other state and federal sources, the University of California, San Diego (UCSD) Microgrid has integrated a diverse set of distributed energy technologies into an effective microgrid that has sharply reduced the university's energy costs, while providing valuable services to the larger utility grid and helping the state meet its energy and environmental goals.
- **California Energy Commission (CEC):** *Synchrophasor Research and Development Program.* The CEC PIER program significantly improved the ability of the California Independent System Operator (CAISO) to manage the regional electricity grid by supporting development of the Real Time Dynamics Monitoring System, which provides grid system operators with better, more complete and instantaneous information about grid operations. This improves

¹ Current and former members of CESA include: The Alaska Energy Authority; Arizona Department of Commerce – Energy Office; California Energy Commission; Colorado Governor's Energy Office; Connecticut Clean Energy Fund (now CEFIA); District Department of the Environment, Energy Administration; Energy Trust of Oregon; Illinois Clean Energy Community Foundation; Long Island Power Authority; Maryland Energy Administration; Massachusetts Clean Energy Center; Metropolitan Edison Company – Sustainable Energy Fund of The Berks County Community Foundation (PA); New Hampshire Public Utilities – Sustainable Energy Division; New Jersey BPU – Clean Energy Program; New Mexico Energy Conservation and Management Division; New York State Energy Research and Development Authority; Ohio Department of Development – Office of Energy; PA Electric Company – Sustainable Energy Fund of the Community Foundation of the Alleghenies; Rhode Island Renewable Energy Fund; Puerto Rico Energy Affairs Administration; Sacramento Municipal Utility District; Sustainable Energy Fund of Central Eastern Pennsylvania; TRF-Sustainable Development Fund (PA); Vermont Clean Energy Development Fund; West Penn Power Sustainable Energy Fund; Wisconsin Focus on Energy; Xcel Energy Renewable Development Fund (MN).

grid reliability, reduces the chances and impacts of outages, and makes it easier to incorporate intermittent renewable energy sources into the transmission and distribution system.

- **Clean Energy Finance and Investment Authority (CEFIA):** *CT Solar Lease Program.* The CT Solar Lease Program, the first residential solar lease financing program in the nation supported by a public organization, was developed at a time when private solar lease financing was not yet available. The program has provided loans for 845 solar PV systems totaling 6.2 MW, while helping to pioneer and popularize the concept of third-party financing for residential solar. In addition, CEFIA's program brought U.S. Bancorp into the solar financing market; it subsequently became the single largest tax equity player in the residential solar PV market. CEFIA is also making valuable data from its solar lease program publicly available so that it can inform the design of future residential solar programs.
- **Massachusetts Clean Energy Center (MassCEC):** *Commonwealth Solar Hot Water Pilot Program.* This program awarded rebates to 320 residential, multi-family and commercial-scale construction projects, and funded feasibility studies for 38 commercial-scale projects. It supported residential systems serving domestic hot water or space heating loads, and commercial systems serving those functions as well as process and pool heating loads. MassCEC used information collected through the pilot program to develop a full-scale, long-term program, which launched in July 2012.
- **New Hampshire Public Utilities Commission:** *Residential Wood-Pellet Boiler Rebate Program.* This first-in-the-nation rebate program for residential bulk-delivery wood-pellet furnaces and boilers was a joint effort of the state's Public Utilities Commission and Office of Energy and Planning. It was designed to stimulate a new market for whole-house wood-pellet heating systems and, as importantly, to bolster the infrastructure for bulk delivery of wood pellets. With an initial budget of \$500,000, the program subsidized installation of 100 whole-house biomass heating systems, which almost always substituted for fuel oil systems. Approximately 30 installers participated in the program.

- **New York State Energy Research and Development Authority (NYSERDA):** *Clean Energy Incubator Program (CEBI).* NYSEDA's CEBI program aims to create a robust, long-lasting capacity for cleantech business mentoring and support. The program supports six incubators that collectively offer a portfolio of technical and business services designed to transform commercially promising clean energy technologies into scalable businesses that can attract additional investment.
- **New York State Energy Research and Development Authority (NYSERDA):** *On-Site Wind Market Development Program.* In 2003, NYSEDA implemented a standardized approach to providing incentives for the installation of behind-the-meter wind turbines (those up to 2 MW nameplate capacity). Each subsequent solicitation has incorporated program modifications based on experience and changes in the marketplace. The current round of the program has \$13,800,000 available through December 31, 2015. NYSEDA's small wind program has prompted manufacturers and installers to meet performance and safety criteria, playing a central role in the development of wind turbine installer training and certification programs, turbine eligibility criteria, and performance modeling software. These pioneering efforts have influenced and benefitted other states that support behind-the-meter wind installations.

These seven programs were judged exemplary on the basis of their public benefits, leadership and innovation, cost effectiveness, and replicability. They represent outstanding state efforts to overcome the barriers to greater clean energy use. The judges were impressed by the creative thinking, new ideas, and bold innovations that are embodied in the winning programs.

CESA is proud to honor these seven state programs and will present the SLICE Awards at its 2012 Fall Membership meeting in October. Although these programs reflect well the range of activities being undertaken by CESA members, there are dozens of other excellent programs that CESA members are carrying out to advance their states' and cities' goals towards a clean energy future. We at CESA admire our members' dedication, commitment, and resourcefulness. Full descriptions of the winning programs follow, along with short bios of our distinguished judges. CESA will offer several webinars on the winning programs this fall.

More information on upcoming webinars and on past SLICE Award winners may be found on the CESA website, at <http://www.cleanenergystates.org>.

Program Highlights

- ▶ Funding from the California Energy Commission has provided \$2.4 million in support to UCSD's Microgrid.
- ▶ The UCSD Microgrid operates low-carbon, self-generation serving 92% of the campus' electricity load and 95% of its heating and cooling loads.
- ▶ The UCSD microgrid control system integrates and manages a wide-range of systems in real-time based on pre-defined operation priorities, including a 2.8 MW fuel cell, 1.2 MW of photovoltaics, 27 kW of concentrating photovoltaics, a 30 kW-hour photovoltaic-integrated storage system, 5 electric vehicles, 4 re-purposed electric vehicle batteries, a 27 MW combined-heat-and-power plant, and a 3.8 million gallon thermal storage system.



California Energy Commission

UNIVERSITY OF CALIFORNIA, SAN DIEGO MICROGRID

The California Energy Commission's Public Interest Energy Research (PIER) program is the state's premier energy RD&D program, advancing science and technology in the fields of energy efficiency, renewable energy, advanced electricity technologies, energy-related environmental protection, transmission and distribution, and transportation technologies. With \$2.4 million from the PIER program and support from other state and federal sources, the University of California, San Diego (UCSD) Microgrid has integrated a diverse set of distributed energy technologies into an effective microgrid that has sharply reduced the university's energy costs, while providing valuable services to the larger utility grid and helping the state meet its energy and environmental goals.

The Benefits of Microgrids

A microgrid is a smaller-scale version of the traditional power grid. It consists of distributed energy resources, with renewable or other generation, that are integrated together as a single power generation source that can operate independently from, but still remain tied to, the main utility power grid. Microgrids represent an energy infrastructure model that can help achieve energy independence, mission assurance, and environmental sustainability. Microgrids have the potential to help California achieve several of its important energy policies and goals, including increasing renewable electricity generation to 33% by 2020, reducing carbon dioxide emissions, and accelerating the adoption of clean energy technologies.

The UCSD Microgrid self-generates 92% of its own annual electricity load and 95% of its heating and cooling load. By operating as a microgrid, the UCSD facility can manage a



Solar panels provide shade for parked cars and will eventually serve to charge electric vehicles.

© University of California, San Diego ©2008

variety of energy resources as an integrated system, expand the amount of renewable energy in the system, as well as accept and implement new and creative energy efficiency measures. It can also provide time-critical services, such as demand response, that assist the larger utility grid and bring in revenue to the university.

Cost Effectiveness

Because UCSD conducts approximately \$1 billion per year in research, houses a national supercomputer center, and manages two patient care facilities, it needs mission-critical, low-cost, secure, reliable, and quality power. Using the micro-grid configuration, UCSD has proven it can reduce consumption from the utility grid for its 13 million square feet of buildings from 11 MW to 2 MW (an 80% reduction) within a two-hour period without impacting any critical loads. Energy is the university's second largest budgetary item. It now saves more than \$800,000 per month by providing for the vast majority of its own electricity, heating, and cooling needs. The high-speed integrated management of the microgrid allows the UCSD operator to address critical energy issues such as excess generation, renewable supply load balancing, and power outages.

The PIER program's \$2.4 million in support to the UCSD Microgrid has enabled: (1) the microgrid master controller to be capable of hourly re-optimization based upon dynamic market price signals; (2) the microgrid to be a live test bed for some of the most innovative and important technologies on the energy market today; and (3) the project to become the flagship microgrid in both California and the nation.

UCSD leveraged PIER funds by obtaining additional project co-funding through San Diego Gas & Electric, the US Department of Energy, the United States Treasury's Clean Renewable Energy Bonds, the California Public Utility Commission's Self-Generation Incentive Program, the California Solar Initiative, and the Statewide Energy Partnership.

Leadership and Innovation

The microgrid serves as a "lab to market" living laboratory for numerous innovative grid-integrated demonstration projects from the global private sector. Because UCSD is a self-regulated entity, the private sector gains a substantial reduction in commercializing the products used in this project because UCSD is able to rapidly install and evaluate these new clean energy technologies. UCSD has been the launching pad to bring new renewable energy technology manufacturing capability to California.

The UCSD Microgrid provides insight into how the future California smart grid can operate with higher penetrations of renewable resources, integrate more distributed energy resources, and achieve higher levels of energy efficiency (including demand response) into a smooth operating electrical system. Understanding how and when microgrids draw from and sell back to the grid is essential for an evolving energy paradigm. By working with the California Energy Commission and other partners, the UCSD microgrid has become a superior advanced-knowledge transfer system that can educate others about the value of an integrated and functioning microgrid for years to come.

Judges' Comments

This program is a solid example of what could and should be done at a public university around RD&D and implementation of renewable energy technology; it demonstrates how renewable energy technologies can be used and provides valuable insights on how to advance the concept. We need advanced thinking and leadership like this to advance new technologies and gain valuable experience and learning.



About the California Energy Commission

The California Energy Commission is the state's primary energy policy and planning agency. It was created by the Legislature in 1974; its responsibilities include forecasting future energy needs, licensing thermal power plants, promoting energy efficiency, supporting the renewable energy market, administering the American Reinvestment and Recovery Act funding through the state energy program, and more. Within the last two years, the most important development in California's energy policy has been two landmark pieces of legislation for energy policy that focus on climate change and transportation.

For more information:

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Program Highlights

- ▶ The California Energy Commission's PIER program funded the Real Time Dynamics Monitoring System software that allows operators of the electricity grid to have better, more complete and instantaneous information, improves operations, and allows operators to visualize system status in real time.
- ▶ According to research completed by the PIER program benefits team, better control of the electrical grid has the potential to avoid outage costs by 2020 that are conservatively estimated to range from \$210–\$360 million annually.
- ▶ The synchrophasor research and development program initiated by the CAISO and supported by the PIER Program has been replicated by the US Department of Energy in its national synchrophasor program.



California Energy Commission

SYNCHROPHASOR RESEARCH AND DEVELOPMENT PROGRAM

The California Energy Commission's Public Interest Energy Research (PIER) Program significantly improved the ability of the California Independent System Operator (CAISO) to manage the regional electricity grid through funding the synchrophasor research and development program. The Real Time Dynamics Monitoring System developed provides grid system operators with better, more complete, and instantaneous information about grid operations, improves grid reliability, reduces the chances and impacts of outages, and makes it easier to incorporate intermittent renewable energy sources into the transmission system.

The Need for Reliable Information to Manage the Grid

Operators of regional electricity grids face new challenges because of the increasing penetration of renewable energy and distributed generation, addition of electric vehicles to the grid, and difficulty in obtaining permits and funding to install transmission lines to address growing congestion problems.

PIER, the state's premier energy RD&D program, has been helping the California Independent System Operator (CAISO) to address these challenges. Over the past decade, PIER provided the CAISO synchrophasor program with \$11.4 million in research and development funding. CAISO also leveraged funds from other sources such as the US Department of Energy.

CAISO was an early leader in realizing the potential of using synchrophasor technology and in developing the first industry prototypes of a dynamic system that takes the high-resolution synchrophasor data and converts it into useful, real-time information that can be used by system operators to manage the electric grid. A phasor measurement unit (PMU) or synchrophasor is a device that measures the electrical waves on an electricity grid, using a common time source for synchronization. Time synchronization allows



The CAISO control room utilizes synchrophasor data to manage the electric grid.
Source: CAISO

synchronized real-time measurements of multiple remote measurement points on the grid. The synchrophasor data, when properly used, provides CAISO operators more accurate system status information, allows the operator to better control the grid in real-time, and increases overall system reliability.

CAISO's involvement with synchrophasor technology began a decade ago when it began working with Electric Power Group to move the technology from an experimental setup into the control room. The Real Time Dynamic Monitoring System software, developed with funding from PIER, compiles high quality electrical system information from synchrophasors and allows CAISO operators to visualize the system status in real-time, transitioning from a system that updates data every few seconds to a system that updates data 10 to 30 times a second. Not only do synchrophasors provide a much more accurate status of the electric grid system to the grid operators, but software can be enabled to provide automatic feedback and system correction when disturbances are detected.

This improved technology is especially valuable for renewable energy technologies, such as solar and wind, which are intermittent and highly variable. Synchrophasors installed alongside renewable generation sources can provide instantaneous data to the system operator. Such data aids in acquiring generation resources that can be ramped up or down to meet energy balance requirements, and smoothes the variability of renewable resources. By enabling CAISO operators to control the grid with greater precision, transmission capacity has been increased, and the critical information being provided to the grid operator is available faster and with more detail.

Cost-Effectiveness

Although the cost of developing and implementing synchrophasors has been considerable, so are the benefits of the grid operator being able to more effectively manage the grid and avoid potential disturbances or outages. According to research completed by the PIER Program benefits team, better control of the electrical grid by 2020 has the potential to avoid outage costs that are conservatively estimated to range from \$210–\$360 million annually. The greatest benefits accrue to small businesses and manufacturers who face the highest costs for each kilowatt-hour not delivered due to power interruptions. California ratepayers are also expected to save \$90 million annually by 2020 through lower electricity costs associated with increased transmission capacity that implementing synchrophasor technology will provide.

Leadership and Innovation

The synchrophasor research and development program supported by PIER has already been replicated by US Department of Energy in its national synchrophasor program. The lessons learned from the CAISO implementation of synchrophasors will allow the grid operators in other regions across the country to rapidly implement these solutions. Further adoption of synchrophasor technologies by other states and jurisdictions will allow the nation to erect the smart grid sought by so many, and will validate the impact of this leadership role played by the CAISO and the PIER program to bring synchrophasor technology to the grid operation control room.

Judges' Comments

This technology addresses a major barrier to increased use of renewable energy—the Grid. Putting synchrophasor technology online in California and documenting its results has helped the region and the country to use the grid better and more efficiently, and has served as a stepping stone to a smart grid. The Synchrophasor Program has added significant capabilities to the general operation of the grid and the lessons from this program have advanced the ability to maintain grid reliability nationwide.



About the California Energy Commission

The California Energy Commission is the state's primary energy policy and planning agency. It was created by the Legislature in 1974; its responsibilities include forecasting future energy needs, licensing thermal power plants, promoting energy efficiency, supporting the renewable energy market, administering the American Reinvestment and Recovery Act funding through the state energy program, and more. Within the last two years, the most important development in California's energy policy has been two landmark pieces of legislation for energy policy that focus on climate change and transportation.

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Program Highlights

- ▶ The CT Solar Lease Program helped pioneer the concept of solar leasing and was the first residential solar lease financing program supported through a public-private partnership.
- ▶ The program served as one of U.S. Bancorp's first tax equity investments in the solar market. Since that time, U.S. Bancorp has become one of the nation's largest tax equity providers for residential solar.
- ▶ As a public entity involved in the solar lease market, CEFIA has collected and disseminated information on its experiences with solar leasing, thereby providing valuable information for private sector players and government agencies involved with residential solar programs in other states.



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Clean Energy Finance and Investment Authority

CT SOLAR LEASE PROGRAM

The CT Solar Lease Program was the first residential solar lease financing program in the nation to be financed through a public-private partnership. Its guiding mission was to make it possible for homeowners to install solar electricity systems without having to make the large up-front payments that had proved prohibitive for middle-income homeowners. The CT Solar Lease Program helped pioneer and popularize the concept of third-party financing for residential solar PV systems. To date, this particular program has provided loans for 845 systems totaling 6.2 MW of solar capacity.

The Financing Barrier to Solar Installations

Homeowners who want to install a solar photovoltaic (PV) system have historically faced the hurdle of coming up with the money to purchase the system. Even if the system will ultimately save money over time, the initial purchase price can be a daunting barrier. For that reason, in the mid-2000s, several private and public parties began exploring creative financing options to reduce the need for a large up-front payment on the part of the homeowner. The Connecticut Clean Energy Fund, the predecessor agency of the Clean Energy Finance and Investment Authority (CEFIA), in partnership with several private sector entities, developed solar lease programs that would provide homeowners with a low-cost alternative. This and similar programs have collectively transformed the residential solar market as most installations across the country now include third-party financing.

How the Program Works

When the CT Solar Lease Program was launched in 2008, the installed cost of residential PV was just over \$8.70 per watt. The Connecticut Clean Energy Fund provided a rebate covering nearly 50% of the installed cost leaving \$4.35 per watt remaining. The Fund worked with



Connecticut Solar Leasing, LLC (a non-bank subsidiary of U.S. Bancorp), AFC First Financial Corporation (AFC First), and Gemstone Lease Management, LLC (Gemstone) to design a residential solar lease program that would finance the remaining installed cost.

Under the program, CT Solar Leasing offers a zero down-payment lease with a 15-year initial term. Lease payments are fixed for that term and paid monthly. After the 15 years, the homeowner can extend the lease for an additional five years at a reduced rate, purchase the system, or have it removed.

To qualify for a lease, homeowners need a FICO score of at least 620 and their maximum family income can be no more than 200 percent of the state’s median family income.

CT Solar Lease Customer Statistics

Variable	Mean	Range	Sample Size
Primary Applicant Age	50 years	23 to 90 years	845
Household Income	\$97,290	\$3,694 to \$234,472	839
Applicant’s FICO Credit Score	769 pts	620 to 850 pts	838
Co-Applicant’s FICO Credit Score	772 pts	594 to 850 pts	565
Debt to Income Ratio	31.5%	1.0 to 53.6	845
System Size	7.40 kW	1.80 to 12.30 kW	845

Solar incentives in Connecticut have evolved over time. As PV hardware and installation costs declined rapidly after 2008, Connecticut reduced rebate levels. CEFIA is now working on modifying the solar lease program so that it will work without a subsidy and to attract additional debt financing into the capital structure.

Spreading the Solar Lease Model

In 2007 Connecticut began looking for ways to make solar power available to households with moderate income levels. CEFIA, Gemstone and AFC First, developed the concept of a solar lease program, which was financed and owned by CT Solar Leasing, LLC, a non-bank subsidiary of U.S. Bancorp that provided tax equity financing in support of the solar installations. When Connecticut began developing the solar lease program, few such institutions had considered such investment in the residential solar market. Since that initial partnership, U.S. Bancorp has become not only a committed supporter of renewable energy developments broadly, but a market leader in the financing of residential solar PV.

Although solar leasing outside Connecticut is normally handled entirely by the private sector, the Connecticut program is nevertheless important to those states seeking to move towards a market that relies less and less on subsidies and rebates. Private companies are understandably reluctant to share data on their leasing experiences, but the CT Solar Lease Program, as a public-private partnership, views information sharing as part of its mission. For example, to help the National Renewable Energy Laboratory analyze customers’ experiences with solar leasing, CEFIA has shared non-personal data on its solar lease customers, along with information on late payments, defaults, assignments, and impacts on home sales. The resulting analysis, which will come out in the next few months, should help the financial community and state agencies across the country better understand the solar leasing market and will likely inform the design of future solar programs.

Judges Comments

The CT Solar Lease Program was creative in tackling one of the most important barriers to widespread adoption of solar energy by homeowners. It has stimulated financial institutions to enter the residential solar financing market in Connecticut and elsewhere.



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

About the Clean Energy Finance and Investment Authority

CEFIA was created by the Connecticut General Assembly in 2011. It is the successor organization to the Connecticut Clean Energy Fund. CEFIA’s mission is to promote, develop and invest in clean energy and energy efficiency projects in order to strengthen Connecticut’s economy, protect community health, improve the environment, and promote a secure energy supply for the state. CEFIA is governed by an 11-member board of directors appointed by the governor and the leadership of the State Legislature. As the nation’s first full-scale clean energy finance authority, CEFIA will leverage public and private funds to drive investment and scale up clean energy deployment in Connecticut.

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Program Highlights

- ▶ Funding for commercial-scale feasibility studies helped to standardize the methodology for site assessment, increase installer expertise, provide stakeholders with complete information on which to base siting and investment decisions, and increase the ultimate performance of the solar hot water projects.
- ▶ The CSHW Pilot program is replicable nationwide; several states have already consulted with MassCEC about the performance monitoring program to gain guidance on technical requirements, cost considerations, and implementation issues.
- ▶ Data from metered systems will be shared following validation and analysis, in an effort to advance the solar thermal industry as a whole.



Massachusetts Clean Energy Center COMMONWEALTH SOLAR HOT WATER PILOT PROGRAM

The Massachusetts Clean Energy Center (MassCEC) designed its Commonwealth Solar Hot Water (CSHW) Pilot Program to encourage solar hot water installations at residential, multi-family, and commercial-scale buildings in Massachusetts. The program ran from February 2011 through June 2012, during which time it awarded rebates to 320 residential and commercial-scale construction projects, as well as funded feasibility studies for 38 commercial-scale projects. The program supported residential systems serving domestic hot water or space heating loads, and commercial systems serving those functions as well as process and pool heating loads. Systems could supplement any fuel type. MassCEC has utilized information collected through the pilot program to develop a full-scale, long-term program, which launched in July 2012.

Addressing Barriers to Solar Hot Water

More than one third of total US energy consumption stems from thermal uses. Renewable thermal technologies, like solar hot water (SHW), present significant opportunities for job creation, economic development, reduction of greenhouse gas emissions, and improved energy security—all key goals of MassCEC. While MassCEC had previously focused on supporting electricity producing renewable technologies, the CSHW Pilot Program represented a first step towards incentivizing cost-effective renewable thermal technologies.

Studies on the adoption of solar thermal technology indicate two primary barriers: 1) lack of awareness of the technology and its associated economic and environmental benefits, and 2) large upfront capital costs. The CSHW Pilot Program directly addressed these two challenges by providing 1) marketing, education and training for the public and building and plumbing inspectors and 2) financial assistance in the form of feasibility study grants for commercial systems and construction rebates for residential and commercial systems to help ease the substantial upfront capital investment.



Multi-family flat plate solar domestic water heating system in Beverly, Massachusetts.

Accomplishing a Lot with a Little

Within a program budget of \$2 million, the CSHW pilot program has accomplished a lot: hundreds of SHW systems have been installed, dozens of contractors and inspectors have been trained, and many important performance monitoring lessons have been learned. In this multi-faceted program, \$900,000 was awarded in the form of rebates. Because the average construction rebate covered about 15% of total installed costs, MassCEC leveraged more than \$3.2 million in total project investments. MassCEC's administrative costs were less than 15% of the total program budget. On a levelized cost of energy basis, installed costs for solar hot water equate to about \$0.09/kWh, making it one of the most cost-effective renewable energy technologies in MassCEC's portfolio.

A distinguishing feature of the CSHW Pilot Program was its performance monitoring program, which collected performance data for at least 12 months on a large subset of the solar hot water residential and commercial systems funded through the program. Participation in the monitoring program was voluntary for residential installations, but all commercial entities were required to participate. The program provided additional funding to system owners to cover the costs of installing metering equipment.

The data collected through this program will form a basis for educating future customers on the expected performance of the technology in this region; equally important, it will significantly contribute to the development of performance-based incentives and third-party ownership models for solar hot water systems, by standardizing the design of monitoring systems and data collection. MassCEC plans to use the performance data collected to create case studies and other educational materials in an effort to showcase actual performance of solar hot water systems in Massachusetts. The goal will be to use concrete, quantitative results to generate positive public awareness about the economic and environmental benefits of appropriate SHW applications. Additionally, through troubleshooting the installed systems and validating the performance data, Massachusetts is leading the way in understanding design, installation, and other common issues associated with monitoring SHW projects. Through this work, Massachusetts aims to standardize the monitoring of SHW systems, encouraging the development of third-party financing and production-based incentive programs.

Judges' Comments

This targeted program had all the right components. It laid out and executed a game plan to address a technology that is trying to find its place.



Residential evacuated tube solar domestic water and space heating system on Martha's Vineyard, Massachusetts.



About the Massachusetts Clean Energy Center

Massachusetts is leading the way in innovative and comprehensive energy reform that will make clean energy a centerpiece of the Commonwealth's economic future. The Green Jobs Act of 2008 created the Massachusetts Clean Energy Center (MassCEC) to accelerate job growth and economic development in the state's clean energy industry. This new quasi-public agency serves as a clearinghouse and support center for the clean energy sector, making direct investments in new and existing companies, providing assistance to enable companies to access capital and other vital resources for growth, and promoting training programs to build a strong clean energy workforce that capitalizes on the job opportunities created by a vital new industry.

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Program Highlights

- ▶ This program is highly replicable; program administrators have received inquiries from other states and Canadian provinces interested in developing similar programs.
- ▶ Project rebates are 30% of system cost including labor, with a cap of \$6,000, meaning that outside financial leverage is more than 2:1, and in some cases significantly more.
- ▶ The success of this program helped provide a catalyst for policy improvements to New Hampshire's renewable portfolio standard (RPS).



New Hampshire Public Utilities Commission

RESIDENTIAL WOOD-PELLET BOILER REBATE PROGRAM

In April 2010, New Hampshire established a first-in-the-nation rebate program for residential, bulk-delivery, wood-pellet furnaces and boilers. A joint effort of the state's Public Utilities Commission (PUC) and Office of Energy and Planning (OEP), the program was designed to stimulate a new market for whole-house, wood pellet heating systems and, as importantly, to bolster the infrastructure for bulk delivery of wood pellets. With an initial budget of \$500,000, the program subsidized installation of 100 whole-house biomass heating systems, which almost always substituted for fuel oil systems. Approximately 30 installers participated in the program.

Displacing Fuel Oil

More than 60% of New Hampshire homes are heated with fuel oil, propane, or kerosene. Natural gas is only available in limited urban areas, and at the time of this program's inception, the New Hampshire wood pellet industry primarily produced bagged wood pellets for use in small stoves. At that time, only a handful of residential wood-pellet systems used bulk-delivery storage and conveyance in New Hampshire, meaning that the five pneumatic wood-pellet bulk-delivery trucks that existed in the state overwhelmingly sat idle. With this as a starting point, the program's challenge was to break through a chicken-and-egg barrier: consumers will not invest in innovative systems if they are unsure of the maturity of the fuel delivery infrastructure, while fuel supply chains will not mature in the absence of sufficient demand.

To overcome this challenge, program designers involved pellet delivery firms in discussions from the outset. They learned that existing fuel suppliers could service the entire state so long as customers used three-ton bulk delivery bins, which would ensure that



A typical storage bin and wood-pellet boiler. A bin is usually about 6' X 6', about the size of an old coal bin.

fuel deliveries were of sufficient size to be worthwhile for suppliers. The program adopted the three-ton bin as a requirement, with the result that customers were assured of the reliability of fuel supplies regardless of their location within New Hampshire. This validated wood pellets as a primary heating fuel for consumers, policymakers, energy delivery companies, and entrepreneurs. Additionally, it increased the credibility of wood pellet fuel and whole-house, wood pellet heating systems with insurance companies, lenders, appraisers, and real estate professionals. As a result of this program and in less than a year, New Hampshire experienced a market transformation. System manufacturers have retooled their products to meet the program's storage, conveyance, efficiency, and emissions requirements, and dozens of installers have been trained.

Before the launch of this program, the NH PUC offered rebates solely for residential small wind and photovoltaic systems, and the state's RPS provided renewable energy credits almost exclusively for renewable electricity generation. Incentivizing wood-pellet central heating systems advanced the state's desire to also support thermal renewable energy, culminating with a renewable thermal carve-out recently added to the state's RPS.

Renewable Energy for Impoverished Communities

A public-private collaboration supported clustered "neighborhood" installations in the economically struggling community of Berlin. Through the Model Neighborhood Project, participating homeowners had most project costs paid for, with the result that they enjoyed immediate economic benefits due to lower heating costs. The Model Neighborhood Project also benefited the wood pellet industry by providing a stable, geographically clustered consumer base in the northern part of the state.

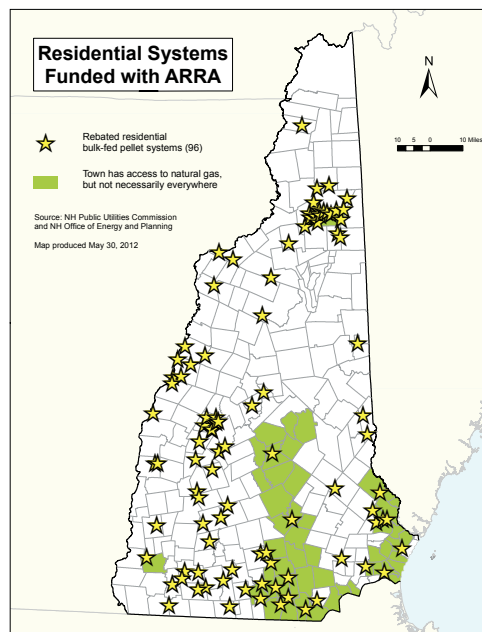
Persistence Pays Off

Although central wood pellet heating systems are very popular in Europe, this technology has not penetrated the market in the United States. As such, this program was considered risky but with significant potential. Incentive programs are meant to spur innovation, and this program addressed a significant consumer need for renewable, local, less expensive, and safer/cleaner heating fuel for homeowners. With approval by the US Department of Energy to target this market and sector and by maximizing a limited funding opportunity (the program was funded with State Energy Program funds from the American Recovery and Reinvestment Act), OEP, PUC, and the industry patiently pushed for the market to transform. Despite a slow start, the two-year program ended with a waiting list. The New Hampshire PUC is now seeking to continue funding the program for another cycle.

Judges Comments

This program did a lot with a small budget. It put stranded assets (pellet delivery trucks) to work and developed a market. New Hampshire demonstrated leadership in finding a clever way to solve a problem.

Residential wood-pellet boiler systems have been installed throughout the state.



The Sustainable Energy Division (SED) was created in 2008 to assist the NH Public Utilities Commission in implementing specific state legislative initiatives focused on promoting renewable energy and energy efficiency and on advancing the goals of energy sustainability, affordability and security. The Division administers two clean energy funds, implements the state's renewable electricity portfolio standard law, and manages the statewide energy code program for residential and commercial buildings. Currently the SED manages three residential rebate programs (Solar Photovoltaic & Wind Turbine, Solar Water Heating, and Wood-Pellet Boilers). SED also manages a Commercial & Industrial Solar Incentive Program and issues an annual RFP for commercial and industrial renewable energy projects.

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Program Highlights

- ▶ NYSERDA's Clean Energy Business Incubator program seeks to create a long-lasting capacity for cleantech business mentoring and support.
- ▶ NYSERDA investment of \$5.3 million has enabled 94 client companies at the incubators to attract over \$74 million from private investors, another \$20 million in federal grants, and create over 190 new jobs since joining the incubator program.
- ▶ New York and its citizens benefit from the introduction of new technologies and the economic development that comes from commercializing those technologies by strong new businesses.

NYSERDA

CLEAN ENERGY BUSINESS INCUBATOR PROGRAM

Start-up businesses can be an important vehicle for job creation, innovation, and economic growth, but entrepreneurs face significant challenges in transforming a commercial opportunity into a viable business. NYSERDA's Clean Energy Business Incubator (CEBI) program aims to create a robust, long-lasting capacity for cleantech business mentoring and support. The program is supporting six incubators that collectively offer a portfolio of technical and business services designed to transform commercially promising clean energy technologies into scalable businesses that can attract additional investment.

NYSERDA's Investment in Innovation

NYSERDA created the CEBI program in 2009 and has four-year performance-based contracts (\$1.5 million each) with six clean energy business incubators. The program provides guidance and technical assistance to early-stage companies to help them develop and commercialize clean energy technologies. Among the services offered through the six participating incubators are technical assistance, mentorship and entrepreneurial development, opportunity assessment, business planning, marketing and business development support, legal and financial planning support, networking and introductions to investors, strategic partners, and key hires.

The program targets an important weakness in the process of bringing new technology to market. By working with experienced business incubators that add a strong cleantech focus, start-up companies are able to receive critical mentoring and support as they bring their technology to market. This increases the likelihood that the business will succeed and accelerates the availability of clean energy technologies.



With a few workstations and a lot of business support, startups like Sollega, a manufacturer of PV racking systems, can begin to thrive in NYSERDA's clean energy business incubators.

NYSERDA funding of the CEBI incubators will eventually total \$9 million. Each incubator is required to develop a sustainability plan to demonstrate its ability to continue supporting start-up cleantech companies beyond the availability of NYSERDA funding. The incubators are geographically dispersed around the state: iCLEAN at the College of Nano-scale Science and Engineering in Albany; Clean Energy Business Incubation Program (CEBIP) at the Long Island High Technology Incubator in Stony Brook; NYC Accelerator for a Clean and Renewable Economy (NYC-ACRE) at Polytechnic Institute of New York University in New York City; Clean Energy Incubator at the Rochester Institute of Technology; The Clean-Tech Center at The Tech Garden in Syracuse; Directed Energy at the University at Buffalo. To learn more about them, see <http://www.nyserdera.ny.gov/en/Innovation-and-Business-Development/Ways-NYSERDA-Supports-Growth-Essentials.aspx>.

As of June 2012, after three years of operation and a NYSERDA investment of \$5.3 million, the incubators have served 94 client companies, which have been able to attract more than \$74 million in private capital investments and secure nearly \$20 million more in federal grants, and have created 193 jobs since joining the incubator programs.

The ultimate benefits of the program are the introduction of new technologies and the economic development that comes from building strong new businesses to commercializing those technologies. For example, NYC-ACRE has graduated 22 companies from the incubator in the last three years.

NYSERDA expects each incubator to become a hub for other business innovation activities. By helping young companies plant roots in New York, the incubators will increase the likelihood that the companies will stay in the state as they grow. NYSERDA believes that the visible success of the businesses aided by the incubators will encourage further innovation and entrepreneurship in the clean energy sector.

A unique element of this program is that two-thirds of the funding provided to each incubator is directly tied to client success. Incubators are paid by NYSERDA as their clients complete business plans, formulate financial plans, introduce new products, raise private capital, and achieve revenue milestones on the way to viability. To earn these payments, the six incubators must offer a portfolio of technical and business services designed to transform a commercially promising clean energy technology into a scalable business that can attract enough investment to enter a market.

Opportunities for New York

For New York to realize the opportunities and benefits of innovation in the clean energy market there will need to be increased emphasis on the creation of a more entrepreneurial environment; increase of early-stage capital for technology startups; encouragement of networking and connection among innovation actors; and promotion of an innovation-friendly legal and regulatory environment. The NYSERDA CEBI program demonstrates a results-oriented model to foster clean technology innovation and new product development in New York State and provides valuable assistance to business startups that will increase their chances of success.

	NYSERDA Funding	New Clients	Private Capital Raised	Non-State Gov't Funds Received	New Products	Jobs Created
2009–1Q11	\$2,700,000	64	\$22,400,000	\$6,800,000	26	94
2Q11	\$732,000	3	\$13,299,000	\$3,766,000	4	20
3Q11	\$437,500	10	\$5,263,000	\$1,187,000	3	18
4Q11	\$520,000	1	\$7,169,000	\$2,424,364	3	18
1Q12	\$492,500	2	\$15,496,400	\$3,365,000	1	19
2Q12	\$476,500	14	\$10,435,000	\$2,352,000	10	24
TOTAL 3 Years	\$5,358,500	94	\$74,062,400	\$19,894,398	48	193



About NYSERDA

New York State Energy Research and Development Authority, NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise and funding to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce their reliance on fossil fuels. NYSERDA professionals work to protect our environment and create clean energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York since 1975.

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Judges' Comments

The Clean Energy Business Incubator Program provided support for a wide variety of new clean energy products and greatly leveraged NYSERDA funding resulting in numerous new clean energy products entering the market. The program can be easily replicated by any state or region wishing to encourage entrepreneurial enterprise in virtually any area of technology.

Program Highlights

- ▶ To ensure turbine quality and performance, the program relies on pre-qualified eligible installers installing pre-qualified eligible turbines, following performance modeling of the specific turbine at a specific site and height.
- ▶ The program has been continuously improved, and is one of the first in the US to base incentives on predicted performance instead of installed capacity.
- ▶ NYSERDA has supported firms and organizations devoted to installer training and certification, turbine testing and certification, and product development and analysis.
- ▶ Knowing the predicted performance, the small turbine owner can compare what was predicted with actual performance and provide feedback on the overall value of the program.



NYSERDA

ON-SITE WIND MARKET DEVELOPMENT PROGRAM

In 2003, NYSERDA implemented a standardized approach to provide incentives for the installation of behind-the-meter wind turbines (those up to 2 MW nameplate capacity). Each solicitation had a sunset date to allow program modifications based on experience and changes in the marketplace. The program was revised for the third time on October 1, 2010 and this program was in place until December 31, 2011. During that round, the program provided funding for 73 installations that are expected to generate 4,232,000 kWh annually. NYSERDA contributed \$4,243,000 towards these projects, which leveraged an additional \$8,000,000 in direct construction investments. The fourth and current round has \$13,800,000 available through December 31, 2015.

A Multifaceted Program

To ensure quality and reliability for customers, NYSERDA's incentive program offers funds only when a pre-qualified eligible turbine is installed by a pre-qualified eligible installer. The incentive is based on modeled performance. NYSERDA's small wind program has supported manufacturers and installers to meet these criteria, playing a central role in the development of wind turbine installer training and certification programs, turbine eligibility criteria, and performance modeling software. NYSERDA's pioneering efforts have influenced and benefitted other states that support behind-the-meter wind installations.



Rogues' Roost Country Club in Bridgeport, NY, operates a 10 kW wind turbine as part of its green community initiative.



Ledge Farm in Bascom, NY, operates a 50 kW turbine that generates almost all of the farm's electricity.

To establish and grow the list of pre-qualified eligible installers, NYSERDA offered early assistance to the North American Board of Certified Energy Practitioners (NABCEP), and has assisted community colleges within the state to develop and offer courses in wind site assessments, small wind energy workshops, and small wind installer training. To achieve qualification, installers must either attend an in-depth wind-related course, such as the one provided by the community colleges, or become a NABCEP Certified Small Wind Installer.

To develop policies and procedures necessary to pre-qualify eligible turbines, NYSERDA supported the Small Wind Certification Council (SWCC) and helped Intertek, a product testing laboratory, to build and operate an open-air test site for small wind turbines in Otisco, NY. Effective September 30, 2012, the NYSERDA incentive program will require small turbines to be certified to the American Wind Energy Association (AWEA) 9.1 Standard for performance and safety, and SWCC and Intertek are the only two organizations accredited to certify to that standard. In addition, NYSERDA funding is supporting Intertek to partner with Clarkson University, AWS TruePower of Albany, Rochester Institute of Technology, Alfred State College, and Binghamton University. Together, the project partners will create the Center for Evaluation of Clean Energy Technology (CeCeT), an organization that will provide product development and analysis expertise to client manufacturers, helping to increase product performance and reliability.

To enable modeling of turbine performance at specific sites and heights, NYSERDA contracted with AWS Truepower to develop the “New York State Small windExplorer” (<http://nyswe.awstruepower.com>), a wind resource assessment tool. Wind Analytics, a Brooklyn-based company, was awarded NYSERDA funding to develop an accurate yet affordable wind resource assessment tool for small wind turbines. NYSERDA is also in the process of requesting proposals to competitively select a wind resource assessment tool that the incentive program will use for the next three years. In addition, NYSERDA is also a charter member and jump-start funder of the Interstate Turbine Advisory Council (ITAC), established through the Clean Energy States Alliance, to create a multi-state unified list of small turbines that meet stringent performance requirements. (See www.cleanenergystates.org/projects/ITAC for more information.)

Continuous Improvements

NYSERDA's on-site wind program has been continually adapted and improved. In the first round, incentives were based on a percentage of the installation cost; the second round incentives were based on turbine capacity (kW) with an adder for tower height, and sites were required to have a minimum average annual wind speed of 10 mph. The third round was one of the first wind programs in the US to base the incentive on predicted performance instead of installed capacity. The use of a single estimating tool allowed for consistency across multiple installers.

In addition, NYSERDA has routinely solicited feedback from the marketplace in search of further opportunities to improve the program. In early 2011, stakeholders highlighted the significance of available opportunities in the mid-size, community-wind scale market in New York State. This inspired NYSERDA to successfully advocate that the New York State Public Service Commission increase the program cap from 600 kW to 2 MW.

Judges' Comments

A focal point of this program is the training aspect—getting people trained, having standards, testing the units, and developing an assessment tool. This is a holistic approach and it seems well balanced. NYSERDA has been learning and evolving the program to take care of problems. It really helped to raise the standard for small wind installations.



About NYSERDA

New York State Energy Research and Development Authority, NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise and funding to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce their reliance on fossil fuels. NYSERDA professionals work to protect our environment and create clean energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York since 1975.

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The 2012 SLICE Award Judges

State Leadership
in Clean Energy

The CESA State Leadership in Clean Energy Awards are made possible by the generous donation of time and expertise of the SLICE Award judges. These individuals represent federal agencies, national associations, and non-government organizations. They collectively represent an impressive wealth of expertise and experience related to clean energy. We would like to express our sincere thanks for their participation and enthusiasm.

Glen Andersen

Glen Andersen is director of the National Conference of State Legislatures Energy Program, which provides outreach and policy analysis for state legislators on a wide range of energy issues, including fossil fuels, nuclear energy, renewable energy and energy efficiency. Glen has worked for more than 10 years assisting state legislators in their efforts to create effective energy policy and has testified before numerous state legislative committees on a variety of energy policy topics. He has authored many articles and publications on renewable energy, energy efficiency and climate change. Glen received his Master's of Science degree in environmental health from the University of Michigan and his bachelor's degree from the University of Minnesota.

Rusty Haynes

Rusty Haynes has managed the Database for State Incentives for Renewables and Efficiency (DSIRE) project since 2007. In addition to coordinating and overseeing the project's research, tasks and budget, he participates in conferences and on committees and boards; leads policy research in New Hampshire and Rhode Island; and collaborates with the federal government, businesses and other organizations to improve and expand DSIRE and its resources. Rusty is currently working with the National Renewable Energy Laboratory and the Indian federal government to help create an Indian version of DSIRE. He has worked on all aspects of the DSIRE project since joining the N.C. Solar Center at N.C. State University in 2001. Rusty received an M.A. from UNC-Chapel Hill and a B.A. from the University of Georgia, where he graduated summa cum laude.

Carrie Cullen Hitt

Carrie Cullen Hitt serves as Vice President of State Affairs for Solar Energy Industries Association (SEIA), and is a member of the advisory councils of the Interstate Renewable Energy Council (IREC) and the North Carolina Sustainable Energy Association (NCSEA). She previously served as President of the Solar Alliance and Vice President of Renewable Products for Constellation Energy. In this role, she developed programs and capabilities to help customers manage their business impact on the environment through greenhouse gas reducing activities, including purchasing renewable power. She also served as Vice President of Government and Regulatory Affairs for Constellation Energy from 2002-2007. From 1999-2001, she worked at Green Mountain Energy Resources as Director of Regional Business Development. She has also held energy related positions at the Massachusetts Legislature and Harvard University. Carrie holds an undergraduate degree from Clark University and an MA from the School of Advanced International Studies of Johns Hopkins University.

Steve Lindenberg

Steve Lindenberg serves as a Senior Advisor to the Deputy Assistant Secretary of Renewable Energy at the U.S. Department of Energy. In that position he is responsible for coordinating efforts to expand deployment of wind, solar, water, geothermal, hydrogen and biomass energy resources across the nation, through collaboration within the Energy Efficiency and Renewable Energy offices and across the Department of Energy from Policy to Electricity Delivery and Energy Reliability. Steve also works with other federal agencies where their missions either support or constrain renewable market expansion. He is responsible for working with communities having high energy costs to help inform decision-makers on renewable and efficiency opportunities and to expand adoption of DOE developed technologies. He has directed environmental compliance and business line research and development in the electric utility industry for more than thirty years. Steve was previously employed with the National Rural Electric Cooperative Association, the *Electric Power Research Institute* and Cooperative Power Association.

Susan Sloan

Susan Williams Sloan is Director of State Relations at the American Wind Energy Association (AWEA). She leads a team working on state policy issues including market development, taxes, siting, transmission, distributed and community wind. The State Relations team works with AWEA member companies and nine Regional Partner organizations covering 40 states across the country, in legislative and regulatory affairs. Susan promotes state and federal policies, educates policy makers and allied organizations about the wind industry, and addresses issues related to social acceptance and support of wind energy. Prior to joining AWEA, Susan worked for wind and solar interests, promoting renewable energy policies in Austin and to the Texas legislature; these efforts helped convince the Austin City Council to adopt significant climate goals, and the Texas legislature to establish Competitive Renewable Energy Zones (CREZ). Susan has also worked for elected officials in Texas, and for cable and broadcast media interests Texas and Hong Kong. She holds a B.A. from Austin College.

Robert Thresher

Bob Thresher joined NREL in 1984 and has provided leadership for the growth and development of wind energy and the formation of the National Wind Technology Center, where he is an NREL Research Fellow. He has published extensively and is recognized internationally as one of the leading experts in research, development and commercialization of wind technologies. Bob has received an Honorary Doctor of Engineering from University of Glasgow in 2009, the Pioneer Award from the World Renewable Energy Network at the World Renewable Energy Congress VIII in 2004, a Lifetime Achievement Award from AWEA in 2001, recognition as 1997 Person of the Year by AWEA, and was inducted into the Academy of Mechanical Engineering and Engineering Mechanics at Michigan Technological University in 1996. He holds a Ph.D. in Mechanical Engineering from Colorado State University, an M.S. in Mechanical Engineering from Michigan Tech University, and a B.S. in Mechanical Engineering from Michigan Tech University.

State Leadership in Clean Energy



About CESA

Clean Energy States Alliance (CESA) is a national nonprofit organization that works with state leaders, federal agencies, industry players, and other stakeholders to promote renewable energy and energy efficiency. CESA's mission is to support state and sub-federal leadership, policies, and innovation in the clean energy sector.

At CESA's core is a national network of public agencies that are individually and collectively working to advance clean energy. Most of CESA's members are state agencies, but there are also independent nonprofits and municipal utilities. These organizations administer funds for clean energy deployment, business expansion, and research and development. CESA members include many of the most innovative, successful, and influential public clean energy funders in the country.

CESA Strategies

CESA works to advance programs and policies that effectively address financing challenges, drive technological innovation, grow green jobs and industry development, and raise public support and demand for clean energy. Among its many activities, CESA:

- provides up-to-date information about clean energy programs and developments to its members and other audiences.
- creates forums for the exchange of information and best practices among state policymakers and other clean energy stakeholders.
- pursues numerous multi-state initiatives and projects designed to improve the overall effectiveness of individual programs, as well as to advance the interests of clean energy programs as a whole.
- frames and addresses key issues facing clean energy market development by working with federal agencies, regulators, and industry participants.
- provides technical support to its members (and to non-members, by request), assisting with program development and assessment.
- represents the interests of state and municipal clean energy programs in federal and industry forums.



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CLEAN ENERGY

FINANCE AND INVESTMENT AUTHORITY

Memo

To: Deployment Committee

From: Bryan Garcia, Dale Hedman and Bert Hunter

CC: Mackey Dykes

Date: November 26, 2012

Re: Residential Solar Investment Program –\$1 Million Capital Competition Pilot Loan Program

As part of the Residential Solar Investment Program (RSIP), a statutorily mandated program and key component of the CEFIA comprehensive plan and budget for FY 2013, staff is proposing a complementary financing program as part of the portfolio of incentives to support residential solar PV deployment in Connecticut. The Capital Competition Loan Program seeks to demonstrate the application of low-interest long-term loan financing that is repaid over time in lieu of the need for subsidies (i.e. rebates and PBI). In an attempt to continue to transition the market away from subsidies and towards financing where ratepayer capital is returned, we propose to launch a pilot capital competition through an RFP process to provide a contractor and/or third-party financier who can deliver the most amount of clean energy produced per dollar of ratepayer funds at risk.

In this pilot, CEFIA will provide a \$1 million loan for 20-years at an annual interest rate of 2%. If the pilot is successful, CEFIA staff will propose that additional funds be allocated in FY 2013 and FY 2014 to support a full rollout of the capital competition up to \$10 million in loan financing – with loan allotments being provided at \$1 to \$2 million each.

Strategic Plan

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

As a “New Program,” the Comprehensive Plan specifies that a Residential Clean Energy Financing Program shall be a long-term comprehensive low-interest loan and/or leasing program for clean energy installations (i.e. energy efficiency and renewable energy). Through the use of a combination of repurposed ARRA SEP grant funds and ratepayer funds through the Clean Energy Fund, residential clean energy financing programs will be developed.

The CEFIA Board of Directors approved of \$10,000,000 of ratepayer funds and \$8,361,600 of ARRA SEP funds to support leases and loan financing programs in the residential sector FY 2013 budget. The \$1 million Capital Competition Pilot Loan Program is consistent with the Board approved

Comprehensive Plan and Budget for Fiscal Year 2013 for the use of ratepayer funds and supports the implementation of a statutory program.

Ratepayer Payback

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

A competitive request for proposals (RFP) will be issued to determine what contractor and/or third-party financier can deliver the most clean energy for the \$1 million of loan financing being put at risk. The bidder that is able to maximize the amount of clean electrons that are being produced while assuring that the ratepayer funds are returned, will win the capital competition.

It should be noted that the winning bidder will not be able to use any rebate or PBI incentive from the RSIP. This pilot program is intended to demonstrate how low-cost long-term financing can be a substitute for subsidies. However, the winning bidder will own the renewable energy credits (RECs) and can monetize them in the Connecticut Class I RPS market.

Terms and Conditions

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

A \$1 million, 20-year loan, at a 2% annual interest rate will be offered through the Capital Competition Pilot Loan Program. The winning bidder will be able to use these financial resources to:

1. maximize the amount of clean energy produced; and
2. retain the renewable energy credits (RECs) generated from the systems financed.

The winning bidder will not be able to use these financial resources and access the rebate or PBI incentives offered through the RSIP. CEFIA will work with the winning bidder to assist them in monetizing the value of the RECs produced from the systems financed.

Capital Expended

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

\$1 million of capital would be expended in loan financing at a 2% annual interest rate paid back over 20 years.

Risk

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

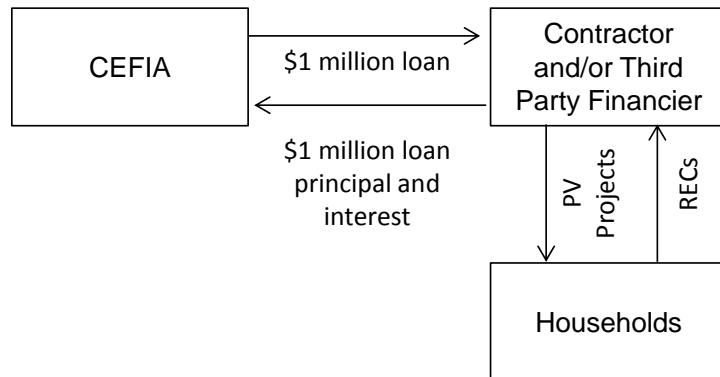
Up to \$1 million of ratepayer funds are at risk for the program. As part of the RFP, CEFIA staff will be looking for bidders with a strong credit and a history of financial health in order to ensure repayment over the 20-year term of the loan.

Financial Statements

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

As funds are advanced for loans, there would be a reduction in the CEFIA Cash and Cash Equivalents Account (Current Asset on the Balance Sheet) and a corresponding increase in “Promissory Notes – Capital Competition Pilot Loan Program” (Non-Current Asset on the Balance Sheet)

Capital Flow Diagram



Target Market

Who are the end-users of the program or project (i.e. rich, poor, middle class, etc.)?

The end-user of the program is a contractor and/or third-party financier who wins the RFP. The winner of the Capital Competition RFP will then use the \$1 million in low-cost long-term financing to maximize the amount of clean electrons being produced from residential solar PV installations per dollar of ratepayer funds at risk.

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 Plan”) that results in a minimum of thirty (30) megawatts of new residential PV installation in Connecticut before December 31, 2022; and

WHEREAS, CEFIA seeks to provide a \$1 million loan pilot program to the portfolio of incentives offered to support the residential solar PV program through a Request for Proposal competitive solicitation to provide a long-term and low-interest loan to the winning bidder for delivering the maximum amount of clean energy produced without the use of an expected performance-based incentive (Rebate) or performance based incentive (PBI).

NOW, therefore be it:

RESOLVED, that the Deployment Committee authorizes the issuance of a Request for Proposal competitive solicitation to provide a long-term and low-interest loan in an amount not

to exceed \$1 million dollars to the winning bidder for delivering the maximum amount of clean energy produced without the use of a Rebate or PBI incentive pursuant to Section 106 of Public Act 11-80.

RESOLVED, that if the pilot loan program is successful, the Deployment Committee will recommend to the Board of Directors an expansion of funds up to \$10 million for full rollout of the program;



CLEAN ENERGY

FINANCE AND INVESTMENT AUTHORITY

Memo

To: Deployment Committee

From: David R. Goldberg and Bryan Garcia

CC: Mackey Dykes, Bert Hunter, and Bob Wall

Date: November 23, 2012

Re: Connecticut Technical High School System E-House Program – A Transition Program

Pursuant to the CEFIA FY13 Comprehensive Plan CEFIA has a variety of “Programs in Transition”. Among those programs are Workforce Development Programs. This memo requests funding support in the form of a grant to complete our E-House partnership with the Connecticut Energy Efficiency Fund and the Connecticut Technical High School System. The funding request, seeks an authorization of up to \$395,000.00 to support the development of E-Houses at twelve (12) technical high schools.

E-Houses are model homes constructed by students of Connecticut’s Technical High Schools. They provide hands-on training on clean energy technologies (i.e. solar photovoltaic, solar hot water, ductless heat pumps, weatherization, etc.) that are important for the state’s achievement of its Comprehensive Energy Strategy. The program offers green coursework to prepare students for employment opportunities in the field of clean energy in Connecticut.

CEFIA’s funding support will go towards the purchase and installation of various clean energy systems (i.e. solar photovoltaic and solar hot water systems) within each of the proposed twelve (12) E-Houses. Per the Board-approved strategic plan and budget, this funding will close out CEFIA’s education programs and transfer all further funding and administration to the Connecticut Energy Efficiency Fund.

Strategic Plan

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

As a “Program in Transition”, CEFIA’s Comprehensive Plan (Plan) specifies that CEFIA is to support post-secondary green job training programs offered by the Connecticut Technical High School System offering solar photovoltaic and solar thermal (hot water) education and training. As CEFIA focuses on financing the deployment of commercially available technologies, the workforce development programs will be transitioned to another government entity and/or the Connecticut Energy Efficiency Fund (CEEF). The Plan states that CEFIA will complete its existing funding obligations with matched funds from CEEF.

The CEFIA Board of Directors approved of \$400,000 of ratepayer funds to support workforce development programs with the expectation that these programs will be transitioned to CEEF. The E-House Program request of \$395,000 of ratepayer funds is consistent with the Board approved Comprehensive Plan and Budget for Fiscal Year 2013.

Ratepayer Payback

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

There is a modest amount of clean energy being produced at each model E-House, however, it is for demonstration purposes only as part of the workforce development program and shouldn't be considered as production. The support of this project is not as an electric generation project, but rather carry-on support of workforce development and green job training. This investment would support our partners at the Energy Efficiency Fund in completion of the E-House initiative.

Up to \$395,000 of ratepayer funds are at risk with this workforce development and education program.

Terms and Conditions

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

There is no ratepayer payback of the E-House program as this support is in the form of a grant. CEFIA's strategic plan and budget identify the E-House program as a transition program.

Capital Expended

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

Up to \$395,000 will be expended to support the E-House workforce development and education program.

Risk

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

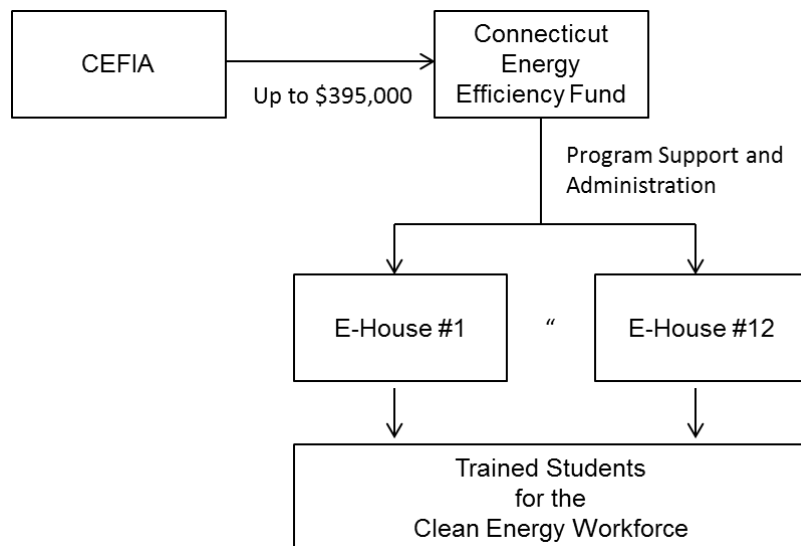
Up to \$395,000 of ratepayer funds in the form of a grant will be used to support the workforce development and education program.

Financial Statements

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

As the funding support for the E-House partnership would be in the form of a grant, once paid this 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 "Grants and Programs," which will have the effect of reducing unrestricted net assets.

Capital Flow Diagram



Target Market

Who are the end-users of the program or project (i.e. rich, poor, middle class, etc.)?

Students ages 14-19 from Connecticut's Technical High Schools will have access to the learning opportunities provided by the E-House workforce development and education program. Currently there are over 3,100 students in relevant tracks (i.e. construction, plumbing, electrical, etc.) at the twelve (12) technical high schools proposed within. The development of these E-Houses will support green job training for students for at least the next ten (10) years.

RESOLUTION

WHEREAS, Clean Energy Finance and Investment Authority (CEFIA) Board of Directors approved of a Comprehensive Plan and Budget for Fiscal Year 2013;

WHEREAS, workforce development is a "program in transition" in the Comprehensive Plan that is intended to support post-secondary green job training programs offered by the Connecticut Technical High School System, including professional development, curriculum materials, hands-on solar PV and solar hot water systems, diagnostic and troubleshooting equipment and materials to construct "E-Houses" as reiterated in the comprehensive plan;

WHEREAS, CEFIA focuses on financing the deployment of commercially available technologies, the workforce development programs will be transitioned to another government entity and/or the Energy Efficiency Fund;

WHEREAS, CEFIA has funded E-Houses through the Connecticut Technical High School System (CTHSS) that included clean energy technologies at six (6) technical high schools (E.C. Goodwin--New Britain, Oliver Wolcott--Torrington, Grasso--Groton, Norwich--Norwich, Kaynor--Waterbury, Henry Abbott--Danbury);

WHEREAS, the Energy Efficiency Fund will at a minimum match CEFIA's funding commitment and take over the administration of the E-House program at twelve (12) new schools including, Platt—Milford, Bullard-Havens—Bridgeport, Cheney—Manchester, O'Brien—Ansonia, Windham—Willimantic, Vinal Regional—Middletown, Bristol—Bristol, A.I. Prince—Hartford, Ellis—Danielson, H.C. Wilcox—Meriden, Eli Whitney Regional—Hamden, J.M. Wright—Stamford;

NOW, therefore be it:

RESOLVED:

- (1) that the Board of Directors of CEFIA has determined that funding for the remaining twelve (12) E-House Projects (Project) in the form of a grant, is consistent with CEFIA's Comprehensive Plan's Programs in Transition, and that funding be approved for the Project in an amount not-to-exceed \$395,000.00 (the "Grant");
- (2) that the President of CEFIA; and any other duly authorized officer of CEFIA, is authorized to execute and deliver, not later than six months from the date of this resolution, any contract or other legal instrument necessary to effect the Grant on such terms and conditions as he or she shall deem to be in the interests of CEFIA and the ratepayers; and
- (3) that the proper officers of CEFIA are authorized and empowered to do all other acts and execute and deliver all other documents as they shall deem necessary and desirable to effect the above-mentioned legal instrument.

Submitted by David Goldberg, Director of Government and External Relations



CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

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Memo

To: Deployment Committee
From: Bryan Garcia and Bert Hunter
CC: Brian Farnen, Mackey Dykes, Dale Hedman and Jessica Bailey
Date: November 23, 2012
Re: Funding Requests below \$300,000

BACKGROUND

Pursuant to Section 5.3.3 of the Clean Energy Finance and Investment Authority (CEFIA) Bylaws, the CEFIA Deployment Committee has the authority to evaluate and approve project and programmatic funding requests between \$300,000 and \$2,500,000. The CEFIA Board of Directors retains sole authority to approve funding requests in excess of \$2,500,000. The By-Laws are silent on the approval of project and programmatic approval requests below \$300,000. This was previously addressed by the Connecticut Clean Energy Fund (CCEF), which passed a CCEF Board resolution permitting CCEF staff to approve funding requests below \$300,000 (See Attached Exhibit A). CEFIA staff recommends that the Deployment Committee support the approval of a similar resolution with the addition of a formalized staff approval process utilizing the attached Exhibit B Staff Approval Form. By authorizing CEFIA staff to approve funding requests below \$300,000 that are (1) pursuant to an established formal approval process requiring the signature of a CEFIA officer and monthly notification to the Board of any expenditure in excess of \$150,000, consistent with the CEFIA Comprehensive Plan, and approved within CEFIA's fiscal budget, CEFIA staff is further empowered to manage the day to day operations of CEFIA consistent with the broader vision of the CEFIA Board.

RESOLUTION

WHEREAS, pursuant to Section 5.3.3 of the Clean Energy Finance and Investment Authority (CEFIA) Bylaws, the CEFIA Deployment Committee has been granted the authority to evaluate and approve funding requests between \$300,000 and \$2,500,000;

WHEREAS, CEFIA staff requests that staff have the authority to evaluate and approve funding requests less than \$300,000, which are consistent with the CEFIA Comprehensive Plan and approved within CEFIA's fiscal year budget;

NOW, therefore be it:

RESOLVED, that the Deployment Committee recommends that the CEFIA Board of Directors hereby approves the authorization of CEFIA staff to evaluate and approve funding requests less than \$300,000 which are pursuant to an established formal approval process requiring the signature of a CEFIA officer, consistent with the CEFIA Comprehensive Plan, and approved within CEFIA's fiscal budget.

**Renewable Energy Investments Board
Minutes - Regular Meeting
Monday, November 19, 2007**

A regular meeting of the **Renewable Energy Investments Board hereinafter referred to as “the Connecticut Clean Energy Fund Board”** (the “Board”) was held on November 19, 2007, at the Inn at Middletown, 70 Main Street, Middletown, CT.

7. Creation of Standing Committees: Mr. Bowles recommended that wherever possible, CCEF’s standing committees mirror the standing committees of CI. He specifically discussed the need to create an executive committee consisting of the three officers of the Board (the Chairperson, Vice Chairperson and Secretary) in addition to Ms. Healey and Mr. Bowman to meet periodically to work out and discuss issues that may arise. Another committee discussed was a Projects Committee to review and make decisions on projects under an approved funding limit. Ms. Dondy discussed the authorizations and limits that were effective for the Clean Energy Advisory and Investment Committees. Discussion ensued on an appropriate level of funding to authorize a committee and staff to take action on projects without requiring Board approval. Ms. Dondy noted that the commercial projects with funding requests of less than \$2,500,000 are typically routine projects.

Upon a motion made by Mr. Bowman, seconded by Mr. Mengacci, the Board voted unanimously in favor of creating a Projects Committee authorized to make decisions on projects with funding requests between \$300,000 and \$2,500,000.

Mr. Mengacci, Ms. Glover, Mr. Maddox agreed to serve on the Projects Committee. Mr. Olsen will also be invited to participate as a member of the committee.

Upon a motion made by Mr. Bowman, seconded by Mr. Mengacci, the Board voted unanimously in favor of authorizing staff to make funding decisions on the projects with funding requests less than \$300,000.

The staff and/or the Projects Committee Chair will provide the Board with reports on the projects that receive funding; and any projects requesting over \$2,500,000 will be brought to the Board for consideration.

Further information on the specific committees will be provided to the Board for consideration at a future meeting.

Clean Energy Finance & Investment Authority

Staff Approval Form

version 11/14/2012

Project Name:

Sector: Select Sector from list

Applicant:

Installer: Select Installer from list or type name

Street Address:

Municipality:

Zip Code:

Project Code:

Class Code & Desc: Select Class Code from list

Strategic Plan Program: Select Strategic Plan Program from list

Describe Other:

Transition Programs: Select Transition Program from list

Describe Other:

Statutory Programs: Select Statutory Program from list

Describe Other:

Financing Programs: Select Financing Program from list

Describe Other:

Technology: Select Technology from list

Describe Other:

Annual Peak Demand kW:
(estimated)

Annual kWh Usage:

kW_{AC}:

kW_{PTC}:

kW_{STC}:

MMBtu/Hr:
(Fuel Cell Gas Usage)

FINANCIAL & LOAN DATA

Project Cost:

Cost/kW_{STC}: #DIV/0!

Recommended Incentive:

Incentive/kW_{PTC}: #DIV/0!

Incentive % of Cost: #DIV/0!

Project IRR:
(Net Capital w/incentive)

Payback on Net Capital:
(years)

Interest Rate:

Term:

Principal:

APPROVALS

Recommended By: Select Name from list

Signature & Date _____

Approved By: Select Name from list

Signature & Date _____

Approved By: Bryan Garcia

Signature & Date _____

Recorded By: George Bellas

Signature & Date _____

Notes:



CLEAN ENERGY

FINANCE AND INVESTMENT AUTHORITY

REGULAR DEPLOYMENT COMMITTEE MEETING SCHEDULE

The following is a list of dates and times for regular meetings of the Clean Energy Finance and Investment Authority's Deployment Committee through **2013**.

- Tuesday, February 26, 2013 – Regular Meeting from 2:00 to 3:00 p.m.
- Tuesday, April 30, 2013 – Regular Meeting from 2:00 to 3:00 p.m.
- Tuesday, July 2, 2013 – Regular Meeting from 2:00 to 3:00 p.m.
- Tuesday, September 3, 2013 – Regular Meeting from 2:00 to 3:00 p.m.
- Tuesday, October 29, 2013 – Regular Meeting from 2:00 to 3:00 p.m.

All regular meetings will take place at:

Clean Energy Finance and Investment Authority
865 Brook Street
Rocky Hill, CT 06067