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CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

November 23, 2012

Dear Clean Energy Finance and Investment Authority Board of Directors:

We hope that everyone enjoyed the Thanksgiving Holiday.

The Board of Directors will have a special meeting on Friday, November 30, 2012 from 9:00 to 11:00 a.m. in the Russell Room of the Connecticut Department of Energy and Environmental Protection at 79 Elm Street, Hartford, CT 06106.

We have a full agenda, which includes:

- **Bridgeport Fuel Cell Project** – a 15-MW fuel cell farm that is one of the last remaining Project 150 projects moving forward. The team has worked with the project developers and put together a due diligence package that results in a recommendation for the Board approval of a loan to support the project subject to the satisfaction of various conditions precedent.

- **Committee Updates** – each of the committees of the Board will be providing an update, including the recommendation by the Budget and Operations Committee of three (3) director-level position descriptions to support the successful implementation of our strategic plan and specifically financing programs.

- **Draft Comprehensive Energy Strategy** – in an effort to support the implementation of the draft Comprehensive Energy Strategy, I am recommending approval from the Board to allow me, with the Chair's approval, the authority to draft and submit comments into the Department of Energy and Environmental Protection by December 14, 2012.

Note – there will be a meeting of the Deployment Committee in the afternoon from 12:00 to 2:30 p.m. back at the offices of CEFIA in Rocky Hill. The Committee will be taking up a number of staff recommendations for approval of several financing programs that are consistent with the Board approved comprehensive plan and budget. Board members that aren't a part of the Deployment Committee are welcome to attend.

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

We look forward to the meeting next week. Enjoy the weekend.

Sincerely,

Bryan Garcia
President and CEO

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

AGENDA

Board of Directors of the
Clean Energy Finance and Investment Authority

Department of Energy and Environmental Protection
Russell Room
79 Elm Street, Hartford, CT 06106

Friday, November 30, 2012 – Special Meeting
9:00-11:00 a.m.

Staff Invited: Jessica Bailey, Mackey Dykes, Brian Farnen, Bryan Garcia, David Goldberg, Dale Hedman, Bert Hunter, and Kim Stevenson

1. Call to order

2. Public Comments – 5 minutes

3. Approval of meeting minutes for September 28, 2012* – 5 minutes

4. Update from the President – 5 minutes

5. Project 150 Bridgeport Fuel Cell Project* – 60 minutes

6. Budget and Operations Committee financial statement updates and recommendations for approval* – Position Descriptions for Director of Residential Programs, Director of Institutional Programs, and Director of Statutory and Infrastructure Programs and Additional Budget for Move and Lease at 865 Brook Street – 15 minutes

7. Audit, Compliance and Governance Committee updates – 5 minutes

8. Technology Innovations Committee updates – 5 minutes

9. Deployment Committee updates —– 5 minutes

10. Approval of CEFIA staff to draft and file public comments in support of the Comprehensive Energy Strategy with review and approval by the Chair of the Board of Directors* – 15 minutes

11. Adjourn

*Denotes item requiring Committee action

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

Join the meeting online at https://www4.gotomeeting.com/join/649047543
Dial +1 (805) 309-0014 Access Code: 649-047-543 Meeting ID: 649-047-543

Next Regular Meeting: Friday, December 21, 2012
Clean Energy Finance and Investment Authority, 865 Brook Street, Rocky Hill, CT

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

REVISED RESOLUTIONS

Board of Directors of the
Clean Energy Finance and Investment Authority

Department of Energy and Environmental Protection
Russell Room
79 Elm Street, Hartford, CT 06106

Friday, November 30, 2012 – Special Meeting
9:00-11:00 a.m.

Staff Invited: Jessica Bailey, Mackey Dykes, Brian Farnen, Bryan Garcia, David Goldberg, Dale Hedman, Bert Hunter, and Kim Stevenson

1. Call to order

2. Public Comments – 5 minutes

3. Approval of meeting minutes for September 28, 2012* – 5 minutes

RESOLUTION #1

Motion to approve the minutes of the Board of Directors of September 28, 2012 Special Meeting. Second. Discussion. Vote.

4. Update from the President – 5 minutes

5. Project 150 Bridgeport Fuel Cell Project* – 60 minutes

RESOLUTION #2

Resolutions

WHEREAS, Bridgeport Fuel Cell Park, LLC ("BFCP"), a limited liability company wholly-owned by FuelCell Energy, Inc. ("FCE") has a long history with CEFIA and its predecessor, the Connecticut Clean Energy Fund ("CCEF");

WHEREAS, in early 2008, the CCEF released a Request for Proposals in the third round of solicitations for renewable energy projects to participate in statutorily mandated Project 150, an initiative aimed at increasing clean energy supply in Connecticut by at least 150MW of installed capacity and the program is designed to

encourage financing of renewable energy projects through the stability of long-term energy purchase agreements for grid-tied projects;

WHEREAS, BFCP submitted the Bridgeport Fuel Cell Park proposal in response to develop in the City of Bridgeport a 15MW fuel cell project and, after a thorough review, was ultimately selected and ranked by CCEF as the number one project out of the nine projects submitted in the third round.

WHEREAS, CCEF, by Board resolution dated October 27, 2008, approved grant funding for the BFCP project in the amount of $1,550,000 subject to conditions set forth in the Project 150 Program.

WHEREAS, CEFIA has maintained its commitment to Project 150 and to the success of the BFCP project and to this end budgeted in Fiscal Year 2013 for additional financial support to the BFCP project up to $5.0 million in loan financing;

NOW, therefore be it:

RESOLVED, that the Board of Directors hereby approves the Bridgeport Fuel Cell Project as a Strategic Selection and Award pursuant to the CEFIA Operating Procedures Section XII given the special capabilities, uniqueness, strategic importance, urgency and timeliness, and multi-phase characteristics of the Bridgeport Fuel Cell Project;

RESOLVED, that the Board of Directors authorizes the CEFIA staff to execute definitive grant documentation based on (1) the term sheet set forth in the Project Qualification Memo submitted by the CEFIA staff to the Board of Directors and dated November 30, 2012 and the (2) the previously CCEF Board of Directors resolution for financial support in the form of a $1,550,000 grant;

RESOLVED, that the Board of Directors authorizes the CEFIA staff to execute definitive loan documentation based on the term sheet presented during the meeting of the Board of Directors on November 30, 2012 for financial support in an amount not to exceed $5.8 million in loan financing;

RESOLVED, that the Board of Directors' approval is conditioned upon the completion of CEFIA staff's due diligence review, including CEFIA's review and reasonable satisfaction with all project documentation that CEFIA is not a party to;

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 these Resolutions; and

RESOLVED, that the Board of Directors 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.

6. Budget and Operations Committee financial statement updates and recommendations for approval* – Position Descriptions for Director of Residential Programs, Director of Institutional Programs, and Director of Statutory and Infrastructure Programs and Additional Budget for Move and Lease at 865 Brook Street – 15 minutes

RESOLUTION #3

RESOLVED, that the Board of Directors of the Clean Energy Finance and Investment Authority (CEFIA) as required by the Operating Procedures of CEFIA, approved of the new director-level position descriptions for the Director of Residential Programs, Director of Institutional Programs, and Director of Statutory and Infrastructure Programs.

RESOLUTION #4

WHEREAS, the current office space at 865 Brook Street shared between the Clean Energy Finance and Investment Authority (CEFIA) and Connecticut Innovations (CI) is not large enough to support the increased personnel from the recent CI and Connecticut Development Authority (CDA) merger;

WHEREAS, CEFIA has an offer on adjacent office space at 845 Brook Street that will save money over the term of the lease but requires approximately $260,000 for upfront construction, furniture and moving expenses (Expenses);

NOW, therefore be it:

RESOLVED, that the CEFIA Board of Directors approves an amendment to the Fiscal Year 2013 budget of $260,000 to cover the Expenses; and

RESOLVED, that the proper CEFIA officers are authorized and empowered to amend the Memorandum of Understanding with CI to reflect any necessary changes due to CEFIA moving to 845 Brook Street location and the merger between CI and CDA.

7. Audit, Compliance and Governance Committee updates – 5 minutes

8. Technology Innovations Committee updates – 5 minutes

9. Deployment Committee updates —- 5 minutes

10. Approval of CEFIA staff to draft and file public comments in support of the Comprehensive Energy Strategy with review and approval by the Chair of the Board of Directors* – 15 minutes

RESOLUTION #5

WHEREAS, Governor Malloy announced the release of the Draft Comprehensive Energy Strategy on October 5, 2012 for public comment;

WHEREAS, the Draft Comprehensive Energy Strategy identifies the Clean Energy Finance and Investment Authority (CEFIA) to play a significant role in various aspects of the strategy, including leveraging private sector capital to create long-term, sustainable financing for energy efficiency and clean energy to support residential, commercial, and industrial sector implementation of energy efficiency and clean energy measures;

WHEREAS, CEFIA's strategic plan and budget are consistent with the Draft Comprehensive Energy Strategy;

NOW, therefore be it:

RESOLVED, that the Board of Directors authorizes the President to draft public comments on behalf of the Board of Directors of CEFIA that are reviewed and approved by the Chair of the Board of Directors, and submitted to the Department of Energy and Environmental Protection before the December 14, 2012 due date.

11. Adjourn

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

Join the meeting online at https://www4.gotomeeting.com/join/649047543
Dial +1 (805) 309-0014 Access Code: 649-047-543 Meeting ID: 649-047-543

Next Regular Meeting: Friday, December 21, 2012
Clean Energy Finance and Investment Authority, 865 Brook Street, Rocky Hill, CT

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #1

Call to Order

November 30, 2012

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #2

Public Comments

November 30, 2012

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #3

Approval of Meeting Minutes of September 28, 2012

November 30, 2012

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #4

Update from the President

November 30, 2012

Update from the President

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

- **Ethics Training** – Board of Directors are required to complete annual ethics training by year-end. There will be an in-person training prior to the next board meeting in December or you can take an online course that takes 30-45 minutes.
- **State Leadership in Clean Energy Award** – Dale Hedman, on behalf of CEFIA, received a SLICE Award on behalf of the Clean Energy States Alliance for the CT Solar Lease Program
- **Fuel Cell Expo** – CEFIA co-hosted the Fuel Cell Seminar and Expo at the Mohegan Sun. CEFIA exhibited with DECD, CI, and the CHFCC and provided a statewide fuel cell site tour in DOT fuel cell bus. Senator Blumenthal, Congressman Larson, and Commissioner Smith spoke. There were nearly 1,200 attendees from 38 states (200 attendees from CT) and 27 countries (i.e. Russia, India, China)

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #5

Project 150 Bridgeport Fuel Cell Project

November 30, 2012

Bridgeport Fuel Cell Project
Executive Session Discussion

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Bridgeport Fuel Cell Project
Fit with Strategic Goals

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

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

Bridgeport Fuel Cell Project
High Level Summary

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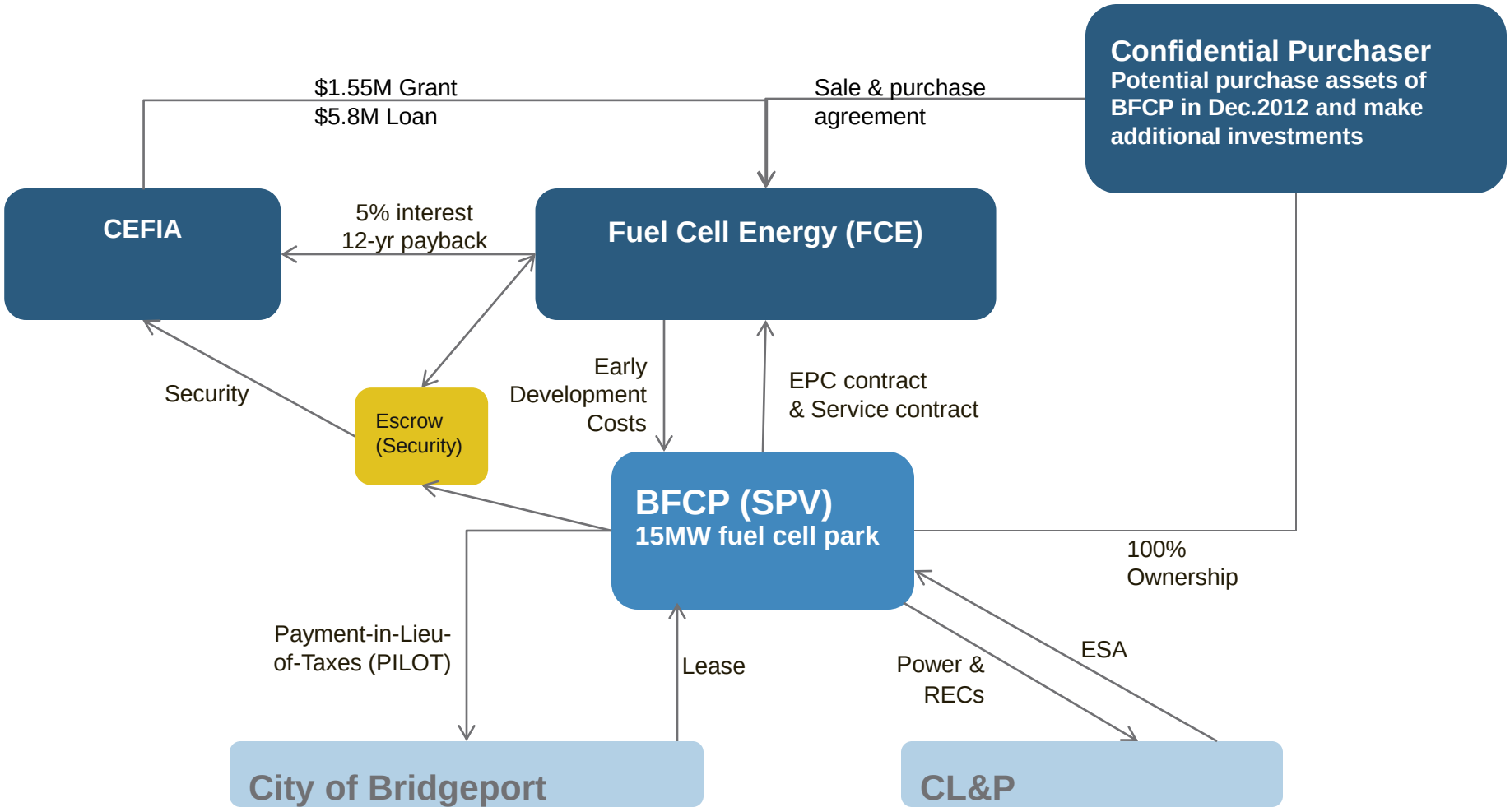

Google earth

miles 1
km 2

Bridgeport Fuel Cell Project
Goals

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Diversify Connecticut's energy base

- BFCP won CCEF's 2008 RFP issued pursuant to Project 150
  - Project 150 aimed to increase clean energy in CT by 150MW
  - **BFCP will supply 10% of Project 150 goals**
  - Now fully subscribed (including FCE)
- Increased scale will continue to drive down fuel cell costs

Support growth of clean energy industry in Connecticut

- FCE based in Danbury
  - 90MW of manufacturing capacity in Torrington
  - Received $60M of equity investment through two 2012 equity sales (public + POSCO)
- BFCP will be the largest Fuel Cell project in the United States
- Est. jobs created or retained by project: 161

Attract private capital

- A third-party owner will purchase the BFCP assets
- FCE has incurred out-of-pocket expenses to-date, and a third party investor will invest additional amounts (EPC contract and Interconnect)
- Total project cost ~$69M
- **Private $:CEFIA $= 9:1**

Support large fuel cell installation to demonstrate innovative modular design, significantly increase clean energy base in Connecticut, and fortify other State goals (such as Brownfield Redevelopment and Economic Development)

Fuel Cell Installation
South Korea

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- **Currently the worlds largest operating fuel cell power plant is 11.2 MW, located in Daegu City, South Korea (in photo).**
- **Largest US installations are:**
  - 2.8 MW at IEUA Waste Water Treatment facility in CA.
  - 4.8 MW at Freedom Tower in NYC – under construction, anticipated to be completed in 2013.

The proposed Bridgeport 14.84 MW Fuel Cell Park power plant, would be the largest in the world.

Bridgeport Fuel Cell Project
Attract Private Capital

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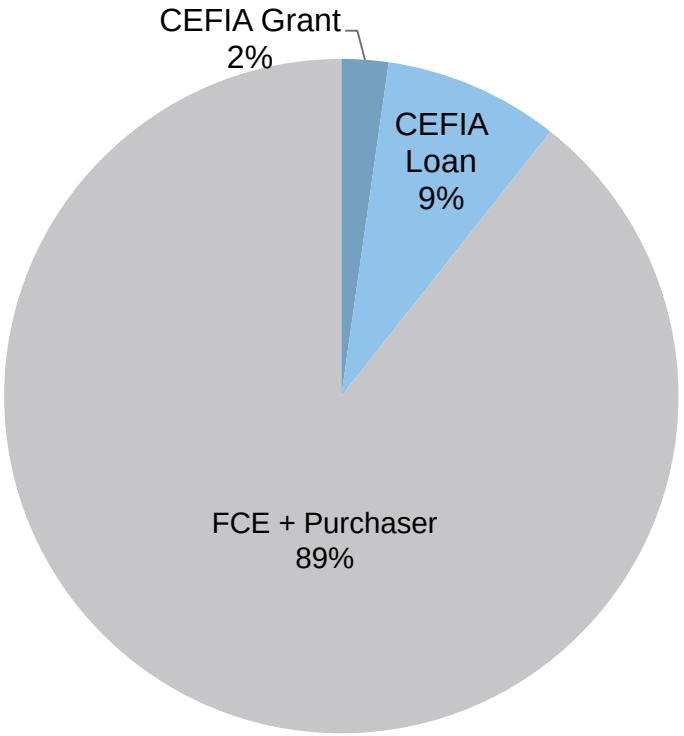
% of Project Financed



Timeline

- 2006 CCEF lent BFCP $500K Pre-Development Loan (PDL)
- 2008 CCEF agreed to provide BFCP with $1.55M grant, payable upon commencement of commercial operations
- 2012 FCE asks CEFIA to fund debt of $5.8M, including capitalization of PDL, to support a total installed cost of ~$69M

Bridgeport Fuel Cell Project

Grow Local Clean Energy Industry

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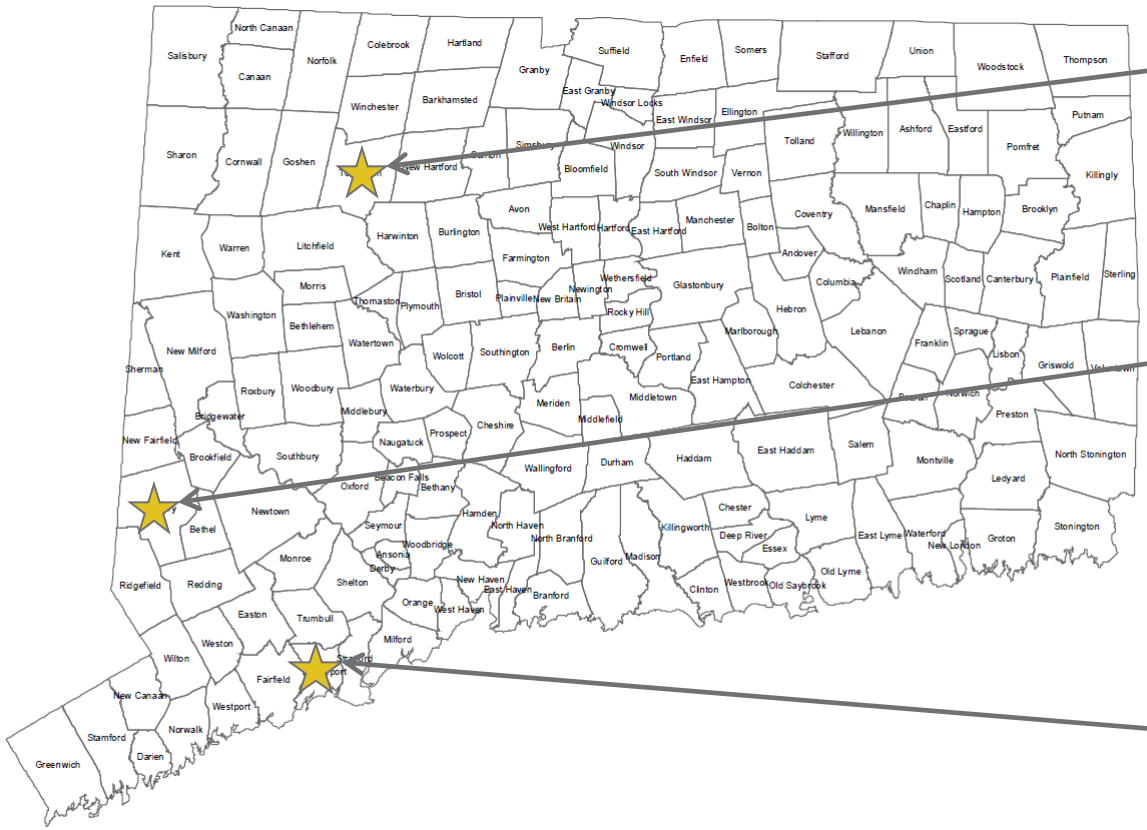

Torrington, CT

- Location of FCE's 90MW/yr manufacturing facility
- DECD "Distressed Community" since 1999
- Employs 240 CT residents

Danbury, CT

- Location of FCE's Global Headquarters
- Employs 235 CT residents

Bridgeport, CT

- Location of proposed 15MW site
- DECD "Distressed Community" since 1999
- Will create 50 CT manufacturing jobs
- Part of national Sustainable Communities Consortium
- Located on highly visible Brownfield

Bridgeport Fuel Cell Project
Grow Local Clean Energy Industry

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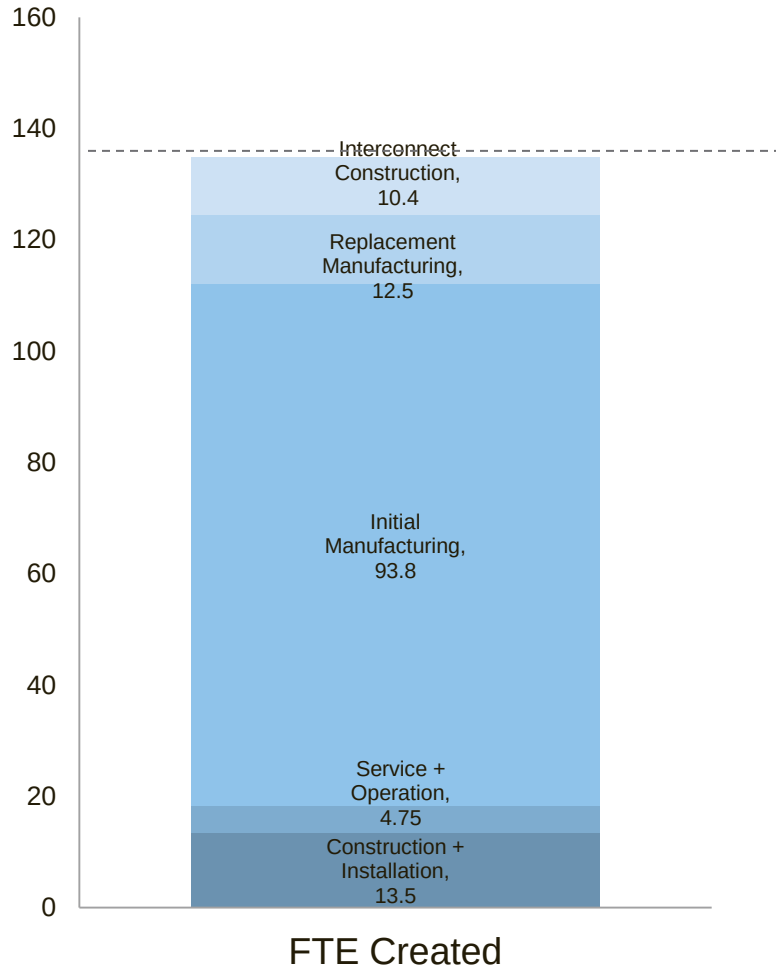

FCE estimates that BFCP will create or retain **>135 CT jobs**

BFCP & Economic Development

- BFCP will directly create or maintain over 135 FTE jobs
  - Does not include non-fuel cell electrical or mechanical FTE (estimated by FCE at 30 FTE)
- Most (~100) will be located at FCE's Torrington plant
  - Torrington local unemployment rate is 8.7%

Bridgeport Fuel Cell Project
Diversify CT Energy Base

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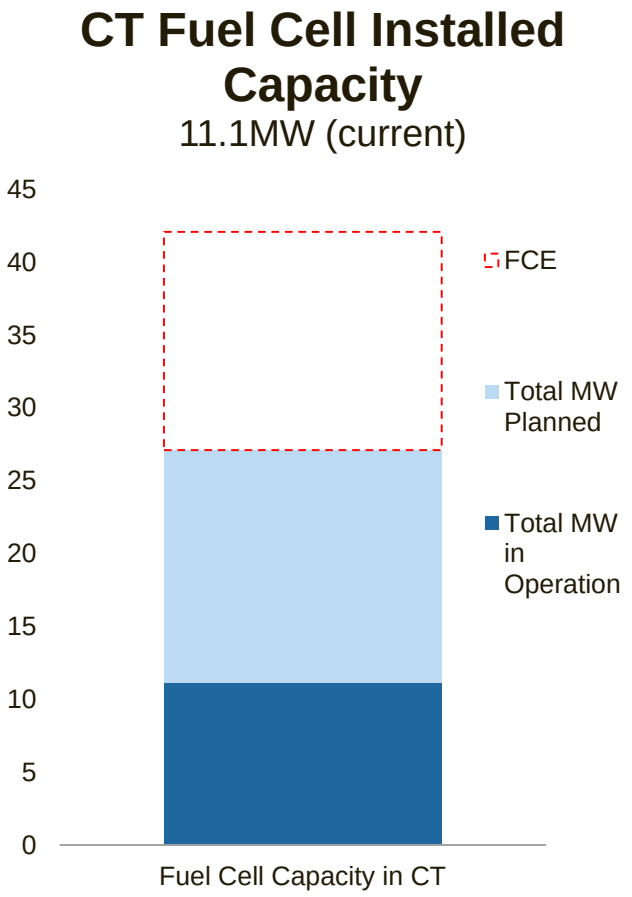

Source: CT Hydrogen-Fuel Cell Coalition http://www.chfcc.org/

- BFCP will **expand Connecticut's current planned and installed Fuel Cell capacity by 55%**
- The project will produce est. 2% of total RPS required in 2020
- The planned installation is in a highly visible location (to Amtrak and i-95), and will be the largest fuel cell installation in the U.S
- CL&P will enter into a 15 year PPA to purchase the energy produced by the project

Bridgeport Fuel Cell Project
About FCE

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FuelCell Energy
Ultra-Clean, Efficient, Reliable Power

- Reincorporated as a Delaware Corporation in 1999, with history tracing back to 1969
- Publicly listed (NASDAQ:FCEL) since 1992
- Manufactures fuel cells, with an installed base and backlog of 180MW
- HQ in Danbury, manufacturing facility in Torrington
- $62M capital raised in 2012
  - 2012 public offering of $32M, at $1.5/share
  - 2012 Strategic $30M ($1.5/share) investment by POSCO, a South Korean energy company (16.6% ownership)

Bridgeport Fuel Cell Project
Expected Project Schedule

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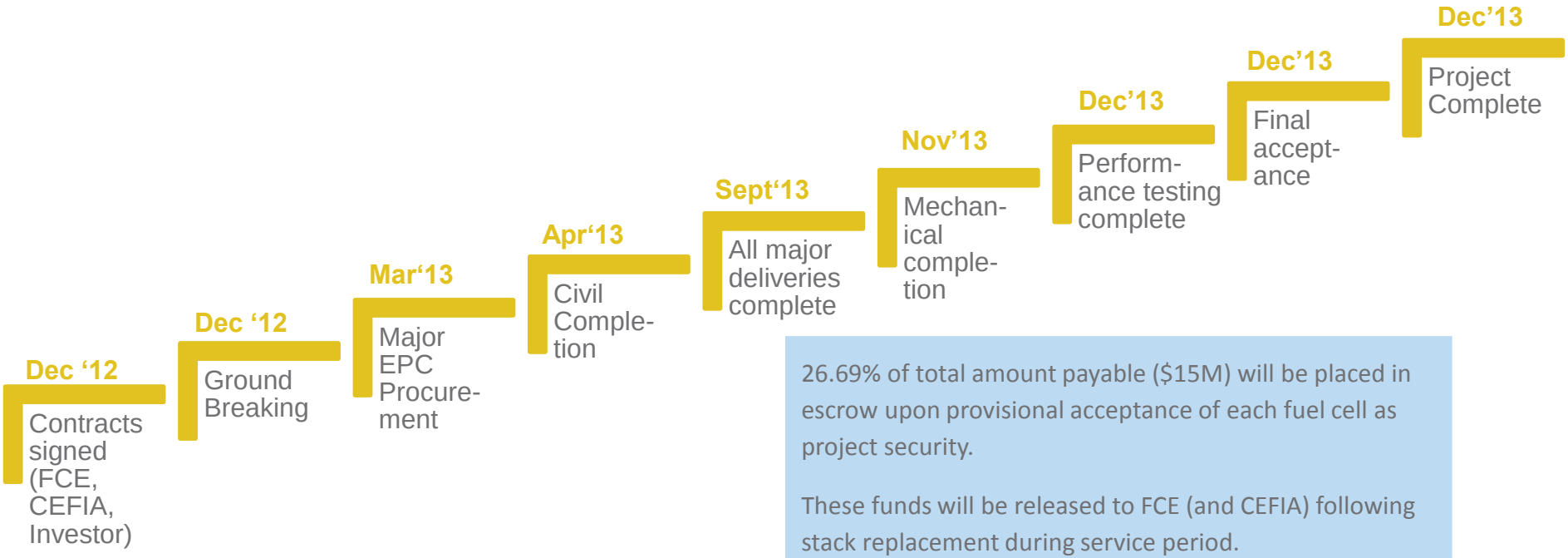

26.69% of total amount payable ($15M) will be placed in escrow upon provisional acceptance of each fuel cell as project security.

These funds will be released to FCE (and CEFIA) following stack replacement during service period.

Cumulative amount paid to FCE based on milestones

4.51%	7.19%	9.87%	10.94%	55.90%	63.54%	64.62%	69.62%	71.21%

Bridgeport Fuel Cell Project
Loan description

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Principal	$5,800,000 Includes $800,000 capitalization of $500,000 PDL, with interest
Disbursement	$5,000,000 Advanced during construction period [in negotiations]
Interest Rate	5% p.a.
Interest payments	Monthly, in arrears
Principal repayment	Begins on eighth anniversary of Placed in Service Date
Insurance	FCE will offer purchaser a 10-year guarantee through energy production insurance provided by Energi (Hannover Re)

Escrow account

- Serves as a security for FCE's performance under this contract
- Will be released to FCE (and CEFIA) upon confirmation that replacement modules are performing within 5% of desired output and heat rate
- CEFIA will receive a second priority interest on Investor's claim to the Escrow funds as security

Bridgeport Fuel Cell Project
CEFIA Security

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- **CEFIA's investment in BFCP are secured by:**
  - Pledge of 100% of FCE's interest in all future cash flows from BFCP
  - Second Priority Interest in Investor's rights to the Escrow Account ($15M)
  - First Priority security interest in FCE's right to receive interest payments on the Escrow Account

Bridgeport Fuel Cell Project
Risks & Mitigants

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Risk: Site Remediation

- **Mitigants**:

•CEFIA Grant is payable sixty days after commercial operation date
•Loan is not disbursed until site remediation is complete

Risk: EPC Execution or Termination by Purchaser

- **Mitigants**:
- In the event of termination, CEFIA's loan will accelerate, and CEFIA will have first priority security interest in termination payments

Risk: Stack Replacement, Performance, or Output Issues

- **Mitigants**
- FCE undertaking and self-insurance retention
- Energi insurance
- Retainage portion of amount payable (in escrow)

Bridgeport Fuel Cell Project
Target Market

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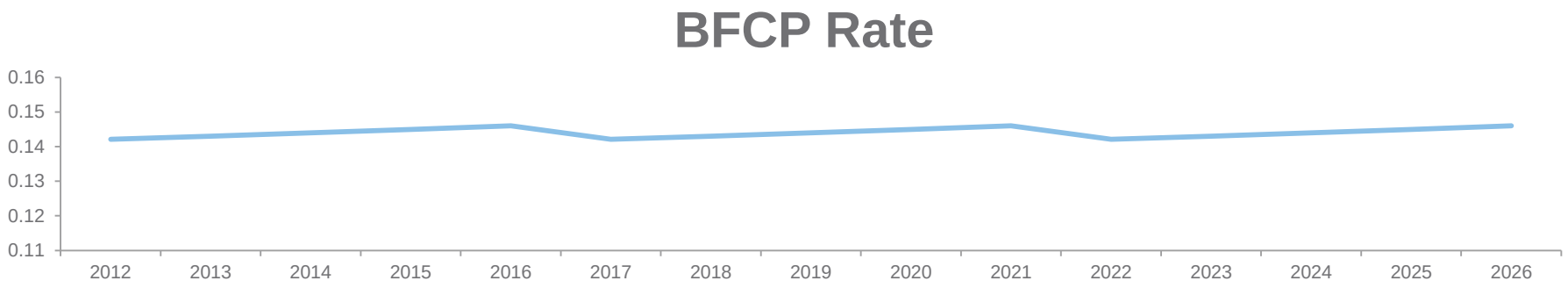
- Power will be purchased by CL&P
- Price per KWh starts at $0.142 in 2012, and only increases 3% over the life of the project
- The fuel cell installation will have additional benefits to ratepayers:
  - Creation and retainage of 161 jobs
  - Use of a Brownfield site in a DECD Distressed Community
  - Use of cleaner energy
  - Hedge against increasing or volatile power prices



Bridgeport Fuel Cell Project
Executive Session Discussion

CLEAN ENERGY
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Bridgeport Fuel Cell Project
Executive Session Discussion

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Bridgeport Fuel Cell Project
Executive Session Discussion

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Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #6

Budget and Operations Committee

November 30, 2012

Budget and Operations Committee
Position Descriptions

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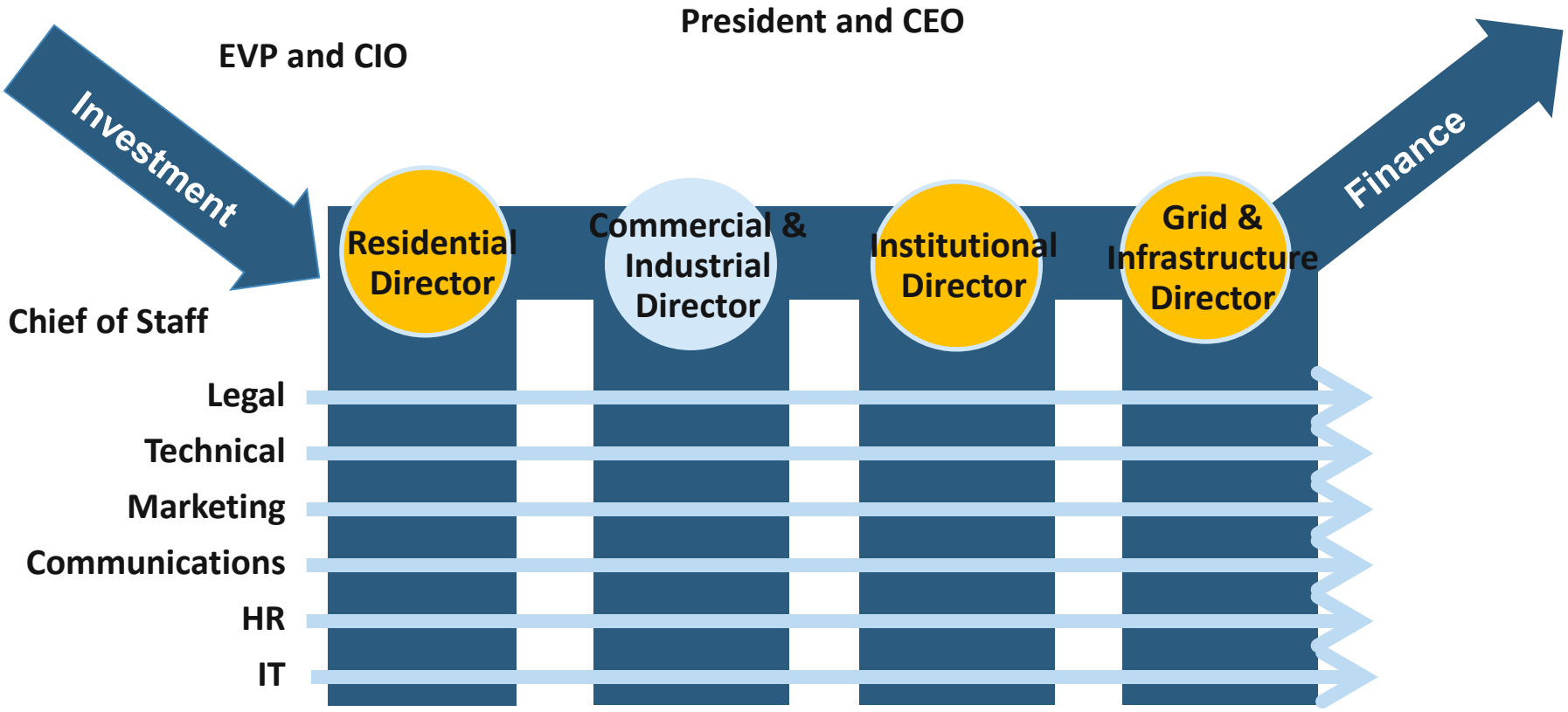

Budget and Operations Committee
Additional Budget Allocation Request

CLEAN ENERGY
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- **$260,000 in Fiscal Year 13 to cover construction, furniture and moving expenses.**
- **$160,000 will be reimbursed by CI**
- **Reduces office size to accommodate staff shifting to Stamford**
- **Saves CEFIA nearly $150,000 over the 8 year term of the lease**

Budget and Operations Committee
Overview of Financial Statements

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- **Revenues $11.7m ($11.4 budget)**
- **Expenses**
  - General operations $946 ($1m budget)
  - Programs $1.8m ($2m budget)

- **Net assets increased $6.7m to $88m**
- **Commitments will increase as new residential and commercial programs are rolled out early next calendar year**

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Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #7

Audit, Compliance and Governance Committee

November 30, 2012

Audit, Compliance and Governance Update

CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

- Legislative Update
  - Expand Residential Clean Energy property tax exemption to include commercial and industrial clean energy projects administered or supported by the state
    - Without these State Programs, many Projects would likely not become a reality
    - Exploring options –
      - Property Tax Exemption
      - Property Tax Exemption with Opt-in Provision
      - Standardized rate across municipalities
    - Unclear on whether Hartford would be supportive in current economic environment
- **Annual Ethics Training Required**
  - State Ethics Office has stated that “state personnel” is not limited to State Employees, it also applies to others covered by the Code of Ethics.
  - Training at 8:00 a.m. before next Board meeting as a convenience; otherwise online training available

CLEAN ENERGY
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Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #8

Technology Innovations Committee

November 30, 2012

Technology Innovations Committee
Update

CLEAN ENERGY
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- **Alpha Program – company achievements**
  - Seldera, a finalist developing energy monitoring and management systems, was funded/ purchased by Ameresco, a large national energy services company, as a direct result of the competitive selection process. The group will remain in CT. (Share letter.)
  - Anchor Science has been recommended for SBIR funding and is well positioned to raise private funding and expand the executive team.
- **Op Demo Program**
  - 2 of 4 pending Op Demo Projects are ready for TIC review (RPM: FOG to biodiesel conversion and NEHC: small hydropower technology)
  - A 3rd TI Committee member is needed to review these proposals
- **Other Transition Items**
  - The Center for Clean Energy Engineering at UCONN has made significant progress in building corporate R&D relationships. CEFIA staff met with the Center's Director to solicit input on how CEFIA can best support the C2E2 as it evolves
  - Staff continues to execute on the TI transition as planned

CLEAN ENERGY
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Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #9

Deployment Committee

November 30, 2012

Deployment Committee
Update

CLEAN ENERGY
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- **Deployment Committee Meeting** – this afternoon from 12:00 to 2:30 at the CEFIA offices in Rocky Hill
- **Action Agenda**
  - Repurposed ARRA-SEP Grant – Residential Financing Programs
    - CDFI low income energy efficiency pilot loan
    - Credit union energy efficiency and renewable energy pilot loan – including fuel conversion, equipment replacement, and EV recharger and natural gas fueling
    - Institutional investor solar PV pilot loan
  - Residential Solar Investment Program
    - Tax equity and commercial lender solar PV and solar hot water system lease and PPA program (i.e. CT Solar Lease – Version 2.0)
    - Capital competition for $1 million loan at a 2% annual interest rate for 20 years
  - Transition Program – E-House with Connecticut Energy Efficiency Fund

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Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #10

Draft Comprehensive Energy Strategy

November 30, 2012

Draft Comprehensive Energy Strategy
Comments by CEFIA

CLEAN ENERGY
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- **Release Date** – CES released on October 5, 2012 at the CBIA Business Energy Conference
- **Due Date** – CES comments due December 14, 2012 by 4:30 p.m.

The foundation for this Draft Strategy's goal of ***transitioning programs away from government-funded grants, rebates, and other subsidies, and towards deploying private capital*** to finance energy efficiency has begun to be built. The enactment of Public Act 11-80 in 2011 established new institutions and policies that are already helping to diversify funding for energy efficiency. CEFIA was established in 2011 to develop programs that will ***leverage private sector capital to create long-term, sustainable financing for energy efficiency and clean energy to support residential, commercial, and industrial sector implementation of energy efficiency and clean energy measures.***

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Board of Directors of the Clean Energy Finance and Investment Authority

Agenda Item #11

Adjourn

November 30, 2012

CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY
Board of Directors
Draft Minutes –Special Meeting
Friday, September 28, 2012

A special meeting of the Board of Directors of the **Clean Energy Finance and Investment Authority (the "CEFIA")** was held on September 28, 2012, at the office of CEFIA, 865 Brook Street, Rocky Hill, CT.

1. Call to Order: Since Catherine Smith, Chairperson of CEFIA, will be arriving late, Mr. Esty, Vice Chairperson of CEFIA, called the meeting to order at 3:38 p.m. Board members participating: Mun Choi (by phone); Daniel Esty, Vice Chairperson of CEFIA and Commissioner of the Department of Energy and Environmental Protection ("DEEP"); Tom Flynn arrived at 4:00 p.m.; Norma Glover; Reed Hundt (by phone); Sharon Dixon-Peay, State Treasurer's Office; John Olsen; Matthew Ranelli; and Catherine Smith, Chairperson of CEFIA and Commissioner of the Department of Economic and Community Development ("DECD") arrived at 3:45 p.m.

Member Absent: Patricia Wrice.

Staff Attending: Jessica Bailey, George Bellas, Mackey Dykes, Brian Farnen, Bryan Garcia, Dale Hedman, Bert Hunter, Dave Ljungquist, Cheryl Samuels, Shelly Mondo, and Kimberly Stevenson.

Others Attending: Chris Bernard, Northeast Utilities; Eric Brown, CBIA; Phil Suita, CI; John Schuyler from Marcum; Peter Tavino; and Frank Wolak, FuelCell Energy.

2. Public Comments:

Peter Tavino stated that he is very interest in discussions about the geothermal program. He indicated that he and the Connecticut Geothermal Association are willing to work with CEFIA. Mr. Tavino noted that the geothermal installers are unhappy that the commercial geothermal program did not meet expectations. He indicated that the geothermal industry could not handle paying prevailing wages that were required with ARRA funding. Mr. Tavino expressed concern with paying for a geothermal study but noted the importance of understanding the geothermal system. He stated that he is looking forward to advancing geothermal in Connecticut and helping Connecticut residents with solutions.

Ms. Smith arrived at this time.

3. Approval of Minutes of Meeting of July 27, 2012:

Ms. Smith asked the Board to consider the minutes from the July 27, 2012 meeting.

Upon a motion made by Mr. Olsen, seconded by Ms. Glover, the Board members voted in favor of adopting the minutes from the July 27, 2012 meeting as presented (Mr. Flynn was not present for the vote).

4. Update from the President:

Mr. Garcia introduced and welcomed Ms. Dixon-Peay who is representing the treasurer's office for today's meeting. He recognized Ms. Peay's efforts along with Ms. Sanders, Mr. Harris and Mr. Kirshbaum in amending CEFIA's statutes regarding bonding and the use of the special capital reserve fund. Mr. Garcia mentioned that CEFIA is attempting to modernize meetings with online capabilities through GoToMeeting.

Mr. Garcia provided an update on the Residential Solar Investment Program. He indicated that the program continues to drive down costs which have been reduced by approximately 5 percent over the last two to three months, and the payback for homeowners has been reduced by about one year. Mr. Garcia stated that step 2 progress is continuing and staff will begin work soon on a step 3 recommendation for the Deployment Committee and then the Board. He indicated that approximately $16,000,000 has been invested so far in residential solar PV with approximately $5,000,000 of incentives provided by CEFIA to support the implementation of over 3 megawatts. Mr. Garcia mentioned that staff will be working with Mr. Hundt and the Deployment Committee to discuss step 3.

Mr. Garcia mentioned that the first phase of the Solarize Connecticut Pilot Program was recently launched in connection with funding from CEFIA and the John Merck Fund to SmartPower. Four communities will participate in the first phase of the pilot program to help drive down the costs of PV. Mr. Garcia stated that customers are required to get energy assessments as part of the installation of PV systems.

Ms. Bailey provided an update on the Commercial and Industrial Property Assessed Clean Energy ("C-PACE") Program which is moving rapidly. She indicated that staff has been working on the design of the program. CEFIA has been working with towns to opt into the program by passing resolutions to collect property tax assessments. To date, two towns have passed resolutions (i.e. Bridgeport and Norwalk), and approximately six others will be ready in the next several weeks. Ms. Bailey noted that CEFIA wants to be responsive to property owners, and the goal is to close on several deals so that when the program is publicly launched in the beginning of 2013, there is proof of concept. She indicated that a Request for Qualifications has been released for program administrative support to work with CEFIA to manage the pipeline and attract projects. Additionally, a Request for Information has been released for capital providers. Ms. Bailey mentioned that the technical standards have been finalized and include questions and answers about eligibility and financing. She mentioned that Attorney Farnen has been instrumental in helping to standardize the process for the

entire state. She noted that the process needs to be robust enough to attract private capital. The Board discussed some of the benefits and value of having a standardized process. The Board also expressed an interest in standardizing energy efficiency performance contracts. Mr. Hunter indicated that staff is working actively on financing for two projects and that the program has a pipeline of $5 million in transactions at this time. He noted that staff has met with regional financial institutions and a money-center bank which are very excited about the program.

Mr. Garcia mentioned that Ben Healey has been hired as the Senior Manager of Clean Energy Finance and Ali Lieberman has been hired as the Manager of Clean Energy Finance.

5. Audit, Compliance and Governance Committee ("Audit Committee") Updates and Recommendations for Approval:

Mr. Olsen, Chairman of the Audit Committee, mentioned that the Audit Committee met on September 20, 2012 with members of the audit team from Marcum, CEFIA's independent auditor, to discuss the Audited Financial Statements and the Federal Single Audit Report of CEFIA for the Fiscal Year Ending June 30, 2012. In summary, Mr. Olsen stated that CEFIA received a clean audit, and there is nothing unusual to report. He indicated that the Audit Committee recommends that the Board accepts the audit. Mr. Schuyler mentioned that Marcum issued an unqualified opinion on CEFIA's financial statements in accordance with auditing standards generally accepted in the United States of America and Government Auditing Standards issued by the Comptroller General of the United States. He stated that Marcum reported on the internal controls, compliance and other matters required under Government Auditing Standards.

Upon a motion made by Ms. Glover, seconded by Mr. Esty, the Board members voted unanimously in favor of adopting the following resolution regarding the acceptance of the Audited Financial Statements and Federal Single Audit Report of CEFIA for the Fiscal Year Ending June 30, 2012.

WHEREAS, Article V, Section 5.3.1 (ii) of the Clean Energy Finance and Investment Authority ("CEFIA") Operating Procedures requires the Audit, Compliance and Governance Committee (the "Committee") to meet with the auditors review the annual audit and formulation of an appropriate report and recommendations to the Board of Directors (the "Board") with respect to the approval of the audit report; and

WHEREAS, the Committee met with the auditors on September 20, 2012 to review and recommend for approval the Audited Financial Statements and the Federal Single Audit Report of CEFIA for the Fiscal Year Ending June 30, 2012.

NOW, therefore be it:

RESOLVED, that the Board hereby accepts the Committee's recommendations for approval of the Audited Financial Statements and the Federal Single Audit Report of CEFIA for the Fiscal Year Ending June 30, 2012.

6. Budget and Operations Committee ("Budget Committee") Updates and Recommendations for Approval—Revised FY2013 Budget and Program Metrics:

Mr. Esty, Chairman of the Budget Committee, noted that the Budget Committee has met several times to go through CEFIA's budget elements associated with the program elements to ensure that staff and the Board has clear quantified targets and metrics for tracking progress and benchmarks over time. He noted that a positive statement was made in the report from the Brookings Institute on the state clean energy finance banks. Mr. Esty noted that the report indicates that Connecticut is breaking new grounds.

Mr. Dykes mentioned that several months ago the Board directed staff to come back with an updated fiscal year 2013 budget and to adjust the format to conform to the new financing direction of CEFIA. He mentioned that since that time, a lot of progress has been made to shape new programs and put targets in place.

Mr. Hunter noted that a detailed description of each of the programs that CEFIA will undertake in fiscal year 2013 was provided. He reviewed the program investments which are broken out by the transitional (nonrecurring programs), the new programs and the provisions for loan losses. Mr. Hunter mentioned that the amounts in the fiscal year 2013 budget for some of the new programs, (i.e. solar lease, solar loan and energy efficiency loan program) will be significantly higher for fiscal year 2014. He noted that it is the intent of staff to have a two to three year budget in the future so that the Board can see the larger picture and better gauge CEFIA's goals and their impact on CEFIA's balance sheet and capital position.

Mr. Hunter explained that since CEFIA is more like a financial institution, it is appropriate to set aside funds in the budget for potential loan losses. He noted that this issue was discussed with the Budget Committee, and the Budget Committee agreed on an adequate amount of reserves for loan losses. This will be done over a two year cycle, and approximately $2,500,000 is allocated in the 2013 fiscal year for loan losses; and it is likely that a similar amount will be included in the 2014 fiscal year. Mr. Hunter explained the difference between loan loss reserve and interest-rate buy downs. He stated that the loan loss reserve acts as a credit enhancement mechanism provided for private capital to incentivize their participation in the energy efficiency and clean energy market. Interest-rate buy downs are payments to financial institutions to enhance the yield to the lender on a transaction so that the end user pays a lower interest rate. He explained how the total incentives are calculated with the loan loss reserves, interest rate buy downs, grants and financial incentives. In response to a question about the provision for loan loss, Mr. Hunter explained that a higher percentage of reserve is being taken in fiscal year 2013 even though there will not be as much activity as is

expected in fiscal year 2014 so there is a more balanced impact on the profit and loss statement.

With respect to Project 150, staff was asked to notify the Board immediately if the projects are not going to move forward.

Mr. Hunter discussed the proposed income for fiscal year 2013. At the request of the Budget Committee, Mr. Hunter mentioned that staff revisited the estimates for customer utility assessments and verified the projections with the Conservation and Load Management Plan issued by the Public Utilities. As a result of this further analysis, Mr. Hunter stated that the customer utility assessment amount that was presented to the Budget Committee has been reduced by $150,000. In response to a question, Mr. Esty indicated that $2,000,000 is a fair estimate for the Regional Greenhouse Gas Initiative ("RGGI") funding proceeds. Staff was asked to inform the Board if the actual RGGI proceeds are under budget projections. Mr. Hunter reviewed the budget projections for expenses, and summarized that CEFIA is projecting to be close to a breakeven point with income and expenses for fiscal year 2013. The Board discussed projected administrative fees. A suggestion was made to allocate certain expenses to programs where appropriate and to make it clear that CEFIA is also managing approximately $25,000,000 of past commitments. It was noted that it is difficult to compare the budget with the audited financial statements for fiscal year 2012 because of the differences with reporting. Mr. Hunter reviewed the Projected Profit and Loss Statement, Projected Statement of Cash Flows and Projected Balance Sheet.

Questions arose regarding the American Recovery and Reinvestment Act ("ARRA") funds. Mr. Garcia explained that the former Connecticut Clean Energy Fund ("CCEF") received $20,000,000 of the $36,000,000 allocated to the State of Connecticut under ARRA. CCEF's funds were used to provide support for fuel cells, solar PV, geothermal and thermal solar. Mr. Garcia explained that two new programs had to be created and the project development cycles for fuel cell projects is quite extensive. As a result, last fall, rather than risking the loss of approximately $8,300,000 of potential unspent funds, CEFIA asked and received approval from the Federal Department of Energy ("DOE") to repurpose the funds as financing programs. Mr. Garcia stated that the ARRA funds, for purposes of the DOE, are considered spent; and CEFIA will use the ARRA funds under newly developed financing programs that are consistent with its new mission. Those funds will attract private capital through credit enhancements, a strategy that is more consistent with CEFIA's new financing mission. It was noted that while waiting for approval to repurpose the funds, the projects in the ARRA pipeline received CEFIA funding through the Clean Energy Fund (i.e. 1 mil surcharge on ratepayer bills), which are less restrictive and a better match for the projects in the pipeline. It was noted that CEFIA's funds were used in substitute of some of the ARRA funds to help stimulate the economy. Mr. Hunter noted that $3,000,000 of CEFIA's funds were being used in new programs to leverage approximately $50,000,000 of private capital; whereas, the ARRA funds were matched dollar for dollar.

In response to a question, Mr. Bellas explained the independent valuation process performed every year to determine the value of assets. With respect to OptiWind, Mr. Bellas explained that the company had been written down, and staff and CEFIA's independent auditors receive the company's financial statements. Mr. Schuyler confirmed that Marcum participated in the valuation process for CI and CEFIA.

Mr. Esty mentioned that staff has been asked to present financial statements to the Board on a quarterly basis. The Budget Committee will receive the Statement of Income and General Operations and Program Expenses; Statement of Revenues, Expenses and Change in Net Assets; Statement of Cash Flows; Statement of Net Assets; Statement of Program Investments; and Statement of Incentives, Grants and Rebates on a monthly basis. If there are significant changes, Mr. Esty stated that the Board will be notified immediately.

Mr. Dykes explained that the program budget has been broken into four different categories—1) the loan programs, 2) the programs to be transitioned, 3) the programs to be maintained and 4) the statutory programs. He noted that 37 programs have been reduced to 4 programs. Mr. Dykes noted that the operational/support category includes operational expenses and staff salaries and benefits. He reviewed the performance metrics, noting that the first metrics is the "amount of clean energy deployed per dollar of ratepayer capital invested." A recommendation was made to include "jobs" to the list of metrics. Mr. Dykes noted that the loan program is for two calendar years. He talked about the targets for the loan programs. Mr. Garcia explained how CEFIA over two years will be able to leverage significantly more private capital and produce more megawatts with fewer dollars than CCEF did over 10 years.

Mr. Dykes spoke about the budget and targets for the residential loan programs through calendar year 2014. It was noted that the targets will be embedded in the performance goals of the staff. Management will ensure that staff understands the goals of CEFIA. A discussion ensued on the Governor's Comprehensive Energy Strategy that will be announced in the near future. It was noted that CEFIA is working to demonstrate its transition to a new financing model that produces more, cheaper and faster, leveraging more private capital.

Staff reviewed the budget and targets for the commercial/industrial programs; the Municipal, University, School and Hospital ("MUSH") Loan Program; grid-tied Renewable Energy projects; Transition programs; programs to be maintained; and statutory programs.

Upon a motion made by Mr. Esty, seconded by Mr. Olsen, the Board members voted unanimously in favor of adopting the following resolution accepting the revisions to the FY2013 Budget and Program Metrics:

WHEREAS, Article V of the Clean Energy Finance and Investment Authority ("CEFIA") Operating Procedures requires the CEFIA Board of Directors ("Board") to adopt an Annual Operating Budget for each forthcoming fiscal year; and

WHEREAS, Article V, Section 5.3.2 of the CEFIA By-laws charges the Budget and Operations Committee to recommend to the Board the annual operating budget; and

WHEREAS, the Board directed CEFIA staff to provide an updated Fiscal Year 2013 budget; and

WHEREAS, the CEFIA staff provided an updated Fiscal Year 2013 budget to the Budget and Operations Committee on September 21, 2012; and

WHEREAS, the Budget and Operations Committee recommends to the Board for approval the updated Fiscal Year 2013 Budget.

NOW, therefore be it:

RESOLVED, that the Board hereby approves the Budget and Operations Committee recommendation of the updated Fiscal Year 2013 budget.

7. Technology Innovations Committee Updates:

Mr. Choi, Chairman of the Technology Innovations Committee, reported that contracts have been executed with Apollo Solar and Anchor Science under the Alpha Program. He mentioned that staff is performing due diligence for four projects under the Operational Demonstration Program, including RPM, New England Hydropower, Fuel Cell Energy and Owl Power Company. Staff is in the process of closing out existing non-performing investments and has transitioned existing investments to CI to manage. In response to a question, it was noted that the assets and equipment at Tallon Lumber will be auctioned.

8. Deployment Committee Updates:

Mr. Garcia mentioned that under the Campus Efficiency Now program, the contracts have been closed and the Energy Savings Agreement Program has been launched. Several colleges and universities are helping to identify projects for Energy Savings Agreements (ESA). Mr. Garcia reported on the Multifamily Energy Loan Fund and indicated that a letter has been submitted to the U.S. Department of Housing and Urban Development in support of an innovative financing program with Winn Development, LISC and CHFA that uses ESAs and credit enhancements to finance energy efficiency at multifamily properties. Staff was asked to determine whether loans can be provided for enhanced energy efficiency measures in new construction.

9. Approval of the 2013 Board Meeting Schedule:

Ms. Smith asked the Board to consider the 2013 Board meeting schedule for the 2013 calendar year.

> Upon a motion made by Ms. Glover, seconded by Mr. Ranelli, the Board members voted unanimously in favor of approving the regular meeting schedule of the Board of Directors for 2013 for the Clean Energy Finance and Investment Authority as follows:
>
> - March 15, 2013
> - June 21, 2013
> - September 20, 2013
> - December 20, 2013

and the following list of dates if necessary:

- January 18, 2013
- February 15, 2013
- April 19, 2013
- May 17, 2013
- July 19, 2013
- August 16, 2013
- October 18, 2013
- November 15, 2013

10. **Adjournment**: Upon a motion made by Ms. Glover, seconded by Mr. Ranelli, the Board members voted unanimously in favor of adjourning the September 28, 2012 meeting at 5:05 p.m.

Respectfully submitted,

Catherine Smith, Chairperson

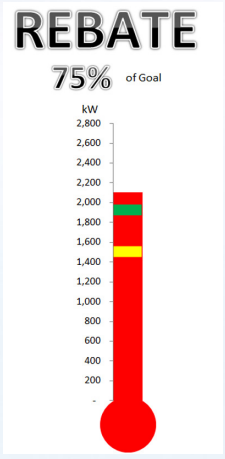
CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

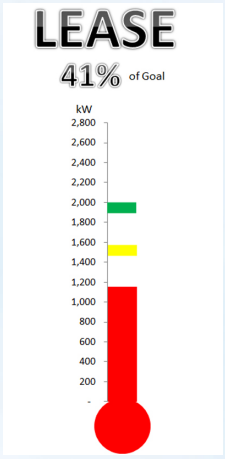
Market Watch Report

Residential Solar Investment Program

Program Data as of November 16, 2012

Race to the Rooftop





The **YELLOW BAR** at 1,600 kW represents a point in time when CEFIA 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 CEFIA 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 CEFIA through PowerClerk.

Applications Approved – the total number of applications received and approved by CEFIA 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 CEFIA's incentive.

Note: Solarize kWs 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 Applications[1]

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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FINANCE AND INVESTMENT AUTHORITY

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State Leadership in Clean Energy

Seven Exemplary Programs

CleanEnergy States Alliance

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.

Contents

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)*. NYSERDA'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, NYSERDA 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. NYSERDA'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.

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.

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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 synchophasor 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 synchophasor 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.

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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

Solar PV panels displayed on Connecticut residence

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.

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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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Massachusetts Clean Energy Center

COMMONWEALTH SOLAR HOT WATER PILOT PROGRAM

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.

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.

MASSACHUSETTS CLEAN ENERGY CENTER

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.

MASSACHUSETTS CLEAN ENERGY CENTER

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.

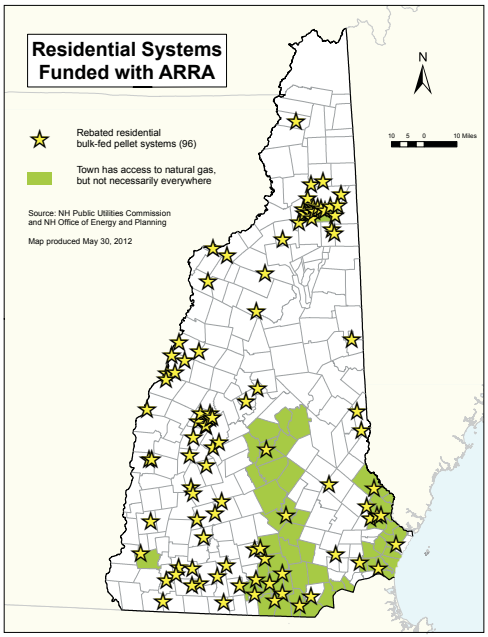
Before the launch of this program, the NH PUC offered rebates solely for residential small wind and photovoltaic systems, and the state's RPS provided renewable energy credits almost exclusively for renewable electricity generation. Incentivizing wood-pellet central heating systems advanced the state's 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.



Residential wood-pellet boiler systems have been installed throughout the state.

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.

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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NYSERDA

CLEAN ENERGY BUSINESS INCUBATOR PROGRAM

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.

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
Energy. Innovation. Solutions.

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 theLong 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.nyserda.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**

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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.

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 addition $8,000,000 in direct construction investments. The fourth and current round has $13,800,000 available through December 31, 2015.

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.

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.

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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.

State Leadership in Clean Energy Award Winner • 2012
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About NYSERDA

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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

Financial Analysis

Executive Summary

For the four months ended October 31, 2012

Statement of Income and General Operations and Program Expenses

Revenues for the period totaled $11,665,800 compared to a budget of $11,406,400. Utility customer assessments totaled $10,181,400 and were $43,600 under budget. As of the date of the preparation of the financial statements, October's actual results had not been reported to CEFIA so the budgeted October amounts are reflected in the actuals (see page 7 for a detailed analysis). It is anticipated that storm Sandy will have a negative impact on October's results. RGGI auction proceeds from the September auction totaled $773,800, and were $273,800 over budget for this auction. The next auction will take place the first week in December. Other income of $52,200 included a $44,000 penalty payment from an energy reseller as a result of not having met its RPS requirement for 2009. We anticipate receiving an additional $70,000 in the coming month from additional resellers as well.

Expenses associated with the general operations of CEFIA totaled $946,600 as compared to a budget of $1,015,300 for the period. Generally expenses for operations were in line with budget. The only line item with a variance greater than $10,000 was for temporary employees although the amount incurred, $21,000, was still within the toal budget for the year of $25,000. Due to organizational changes at CI, a temporary employee has been utilized to support some accounting functions rather than CI staff as originally budgeted for. The overage in the temporary employee line item is offset by a favorable budget variance for salaries for CI shared services. All other operating expenses were within $5,000 of the budgeted amount

Expenses associated with supporting CEFIA's programs totaled $1,790,000 as compared to a budget of $2,042,300. The favorable variance to budget can be found within compensation and the associated benefits for CEFIA employees supporting these programs. The refinement of new CEFIA programs being developed resulted in positions being filled later than anticipated in the budget and vacancies that still exit for some programs . It is anticipated that these vacancies will be filled within the next two months as CEFIA's new financing programs are implemented.

Statement of Assets and CashFlows

Net assets as of October 31, 2012 were $87,915,300 an increase of $6,727,100 from June 30, 2012. Cash balances of $78,912,100 increased $5,698,600 since the beginning of the year. These cash balances are offset by $23,608,600 of program commitments as of October 31st(see page 6 for a detailed analysis of commitments by programs). It is anticipated that commitments for the residential solar PV investment program and CEFIA's new residential,commercial and nonprofit financing programs will increase significantly in the next quarter.

Clean Energy Finance and Investment Authority

Financial Analysis

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For the four months ended October 31, 2012

Clean Energy Finance and Investment Authority

Comparison of FY 2013 Budget to Actual

Statement of Income and General Operations and Program Expenses

For the four months ended October 31, 2012

(000's)

	Actual FY2013 Gen. Ops	Actual FY2013 Programs	Actual FY2013 Total	Budget FY2013 Gen. Ops	Budget FY2013 Programs	Budget FY2013 Total	(Under) Over Budget	%
Utility customer assessments	$ 10,181.4	$ -	$ 10,181.4	$ 10,225.0	$ -	$ 10,225.0	$ (43.6)	(0%)
RGGI auction proceeds	$ 773.8	$ -	$ 773.8	$ 500.0	$ -	$ 500.0	$ 273.8	
Interest on bank deposits	$ 46.8	$ -	$ 46.8	$ 40.0	$ -	$ 40.0	$ 6.8	17%
Renewable Energy Credits,net of fees	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Interest income-Solar Lease Notes,net of fees	$ 30.3	$ -	$ 30.3	$ 35.0	$ -	$ 35.0	$ (4.7)	(14%)
Grant income (LBE,N2N,Sunrise)	$ 581.4	$ -	$ 581.4	$ 581.4	$ -	$ 581.4	$ (0.0)	(0%)
Grant income (ARRA SEP)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Other income	$ 52.2	$ -	$ 52.2	$ 25.0	$ -	$ 25.0	$ 27.2	109%
Total revenues:	$ 11,665.8	$ -	$ 11,665.8	$ 11,406.4	$ -	$ 11,406.4	$ 259.4	2%
Expenses								
Compensation & Benefits:								
-Salaries & Wages-CEFIA employees	$ 335.4	$ 370.0	$ 705.4	$ 335.4	$ 535.9	$ 871.3	$ (165.9)	(19%)
-Salaries & Wages-CI shared services	$ 89.9	$ 1.3	$ 91.1	$ 111.2	$ 2.0	$ 113.2	$ (22.1)	(20%)
-Employee Benefits-CEFIA employees	$ 207.9	$ 247.1	$ 455.0	$ 207.9	$ 332.3	$ 540.2	$ (85.2)	(16%)
-Employee Benefits-CI shared services	$ 62.2	$ 0.8	$ 62.9	$ 68.8	$ 1.3	$ 70.1	$ (7.1)	(10%)
Consulting and professional fees								
- Legal	$ 3.5	$ 27.7	$ 31.2	$ 11.0	$ 27.7	$ 38.7	$ (7.5)	(19%)
- Accounting & Audit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
- Consulting fees	$ 26.0	$ 83.3	$ 109.3	$ 28.0	$ 83.3	$ 111.3	$ (2.0)	(2%)
- Project inspection fees	$ -	$ 43.3	$ 43.3	$ -	$ 43.3	$ 43.3	$ -	0%
Marketing/External relations	$ 37.6	$ 50.0	$ 87.6	$ 50.0	$ 50.0	$ 100.0	$ (12.4)	(12%)
EM&V	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Rent and location related expenses								
-Rent/Utilities/Maintenance	$ 56.8	$ -	$ 56.8	$ 67.0	$ -	$ 67.0	$ (10.2)	(15%)
-Telephone/Communications	$ 14.2	$ -	$ 14.2	$ 13.0	$ -	$ 13.0	$ 1.2	9%
-Equipment & storage rentals	$ 0.8	$ -	$ 0.8	$ 4.0	$ -	$ 4.0	$ (3.2)	(80%)
-Depreciation FF&E	$ 20.4	$ -	$ 20.4	$ 28.0	$ -	$ 28.0	$ (7.6)	(27%)
Office, computer & other expenses								
-Office expense	$ 16.2	$ -	$ 16.2	$ 16.0	$ -	$ 16.0	$ 0.2	1%
-Computer operations	$ 10.8	$ -	$ 10.8	$ 16.0	$ -	$ 16.0	$ (5.2)	(32%)
-Subscriptions	$ 5.0	$ -	$ 5.0	$ 6.0	$ -	$ 6.0	$ (1.1)	(18%)
-Training and education	$ 4.1	$ -	$ 4.1	$ 9.0	$ -	$ 9.0	$ (4.9)	(54%)
-Temporary employees	$ 21.0	$ -	$ 21.0	$ 8.0	$ -	$ 8.0	$ 13.0	163%
-Travel,meetings & related expenses	$ 17.5	$ -	$ 17.5	$ 18.0	$ -	$ 18.0	$ (0.5)	(3%)
-Insurance	$ 17.5	$ -	$ 17.5	$ 18.0	$ -	$ 18.0	$ (0.5)	(3%)
Grant expenses(LBE/N2N/Sunrise)	$ -	$ 476.3	$ 476.3	$ -	$ 476.3	$ 476.3	$ 0.0	0%
Financial Incentives-Grants & Rebates	$ -	$ 490.3	$ 490.3	$ -	$ 490.3	$ 490.3	$ -	0%
Interest rate buydown-HDF/CHIF	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Provision for Loan loss -Grid Tied Loan Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Provision for Loan loss - Op Demo Loans	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Provision for Loan loss - Alpha Loans	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Provision for Loan Loss - GreenerU	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Provision for Loan Loss - WINN LISC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Provision for Loan Loss -CPACE Loans	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Provision for Loan Loss - Lease Programs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Provision for Loan Loss -Res. Solar Loans	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Provision for Loan Loss - Res. EE Loans	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Provision of Loan Loss - Clean Energy Bus Sol Loans	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Total expenses:	$ 946.6	$ 1,790.0	$ 2,736.7	$ 1,015.3	$ 2,042.3	$ 3,057.6	$ (321.0)	(10%)
FY13 revenues over FY13 expenses:			$ 8,929.2			$ 8,348.8	$ 580.4	
Financial Incen.:Grants/Rebates Paid - FY12 Commitments:			$ (2,214.0)					
Revenues over expenses:			$ 6,715.2					

Clean Energy Finance and Investment Authority
Statement of Revenues, Expenses
and Changes in Net Assets
For the four months ended October 31, 2012
(000's)

Total Net Assets	**6/30/2012**		$	81,188.2
FY 2013 expenses over income:				8,929.2
Utility customer assessments	10,181.4			
Inrest income	77.0			
RGGI auction proceeds	773.8			
Grant income	581.4			
Other income	52.2			
		11,665.8		
Compensation	(1,314.4)			
Consulting and professional fees	(183.8)			
Marketing/External relations	(87.6)			
EM&V	-			
Rent and location related expenses	(92.2)			
Office, computer & other expenses	(92.0)			
		(1,770.0)		
Provision for Loan Loss - New Programs	-			
Interest Rate Buydowns - New Programs	-			
Residential Solar PV rebates	(466.8)			
Anaerobic Digestor Pilot	-			
CHP Pilot	-			
Condo Renewable Energy grants	-			
Maintained Programs	(23.5)			
		(490.3)		
NOTE: Subtotal, Recurring Programs		9,405.5		
Clean Energy Business Solutions	-			
Transition & Other	-			
Federal Grants	(476.3)			
Loan Loss Reserve - Grid Tied, Op Demo & Alpha Loans	-			
NOTE: Subtotal, Non-Recurring/Special Programs		(476.3)		
Expenditures grants and rebates approved prior to FY13			$	(2,214.0)
PROGRAM GOAL 1 PROJECT 150 & PRE DEVELOPMENT PROGRAM		$ -		
CI&I ON SITE GENERATION PROGRAM - Strategic Investments		-		
CI&I ON SITE GENERATION PROGRAM - COMM. SOLAR		(265.0)		
Residential Solar PV -Pre Sec 106, PA 11-80		(74.0)		
RESIDENTIAL SOLAR PV INVESTMENT PROGRAM (Section 106,PA 11-80)		(1,063.0)		
CI&I On Site Generation - Solar NFP/Govt		(239.0)		
CI&I On Site Generation -Fuel Cell		(75.0)		
GEO THERMAL,SOLAR THERMAL AND HOT WATER PROJECTS		(253.0)		
CI&I ON SITE GENERATION PROGRAM - FEASIBILITY STUDIES		(54.0)		
Operational Demonstration Program		(39.0)		
TECHNOLOGY AND DEVELOPMENT STUDIES		-		
Education & Outreach Programs		(149.0)		
Other		(3.0)		
Other (change in other balance sheet components)			$	11.9
Total Net Assets	**10/31/2012**		$	87,915.3

Clean Energy Finance and Investment Authority

Financial Analysis

For the four months ended October 31, 2012

Statement of Net Assets

(000's)

	Actual 6/30/2012	YTD 10/31/2012
Assets		
Current assets		
Cash and cash equivalents (Unrestricted)	$ 64,672.9	$ 70,543.0
Utility receivables	$ 2,580.0	$ 2,693.8
Accounts receivable	$ 725.3	$ 52.8
Other current assets	$ 350.3	$ 110.5
Total current assets	$ 68,328.5	$ 73,400.0
Noncurrent assets		
Investments		
Promissory notes - solar lease program V1	$ 12,036.6	$ 11,871.7
Loan loss reserve - solar lease program V1	$ (300.9)	$ (300.9)
Promissory notes - solar lease program V2	$ -	$ -
Loan loss reserve - solar lease program V2	$ -	$ -
Promissory notes - solar loan program	$ -	$ -
Loan loss reserve - solar loan program	$ -	$ -
Promissory notes - WIN LISC program	$ -	$ -
Promissory notes - GreenerU program	$ -	$ -
Promissory notes - EE Loan program	$ -	$ -
Loan loss reserve - EE loan program	$ -	$ -
Promissory notes - CPACE program	$ -	$ -
Loan loss reserve - CPACE program	$ -	$ -
Promissory notes - Alpha program	$ -	$ 45.0
Loan loss reserve - Alpha program	$ -	$ -
Promissory notes - Grid tied program	$ -	$ -
Loan loss reserve - Grid tied program	$ -	$ -
Promissory notes - Op Demo program	$ -	$ -
Loan loss reserve - Op Demo program	$ -	$ -
Equity/Debt investments (pre FY13)	$ 2,155.5	$ 2,155.5
Investments-REC's	$ 1,324.6	$ 1,324.6
Cash and cash equivalents (Restricted)	$ 8,540.6	$ 8,369.1
Capital assets		
Furniture,Equipment & L/H Improvements	$ 91.3	$ 84.5
Total non current assets	$ 23,847.7	$ 23,549.6
Total assets	$ 92,176.2	$ 96,949.6

	Actual 6/30/2012	YTD 10/31/2012
Liabilities and Net Assets		
Accounts,grants payable and accrued expenses	$ 2,624.9	$ 628.7
Deferred revenue-ARRA	$ 8,363.1	$ 8,405.6
LLR- outside debt solar loan program	$ -	$ -
LLR- outside debt EE loan program	$ -	$ -
Total libilities	$ 10,988.0	$ 9,034.3
Net Assets:		
Investment in capital assets	$ 91.3	$ 84.5
Restricted net assets	$ 8,540.7	$ 8,369.1
Unrestricted net assets	$ 72,556.2	$ 79,461.7
Total Net Assets	$ 81,188.2	$ 87,915.3
Total Liabilities and Net Assets	$ 92,176.2	$ 96,949.6

Clean Energy Finance and Investment Authority

Statement of Cash Flows

as of October 31, 2012

(000's)

Cash flows from operating activities		
Utility customer assessments	$	8,056.9
Other income	$	71.7
Proceeds received from RGGI auctions	$	1,499.0
Proceeds received from private foundation & federal grants	$	440.2
Return of principal on investments	$	164.3
Interest on deposits,investments, solar lease notes	$	157.0
Cash paid for federal grants	$	(476.0)
Cash paid for CEFIA grants and rebates	$	(2,726.0)
Cash paid for general & admin expense	$	(1,488.5)
Net change in cash and cash equivalents	$	5,698.6
Cash and cash equiv., beginning of period	$	73,213.5
Cash and cash equiv., end of period	$	78,912.1

Clean Energy Finance and Investment Authority
Statement of Program Investments
As of October 31, 2012
(000's)

Loan/Investment Date	Loan No.	Issuer	Project	Board Approved Commitment	Investment/ Advances to date	Reserve	Current Valuation	Interest Rate	Termination/ Maturity Date	Notes
Pre Development Program (1)										
4/13/2006	PD -001	Bridgeport Fuel Cell Park, LLC	Fairfield County Fuel Cell Park	$ 500	$ 499	$ (499)	$ -	8.75%	See Notes	LOC. Note matures upon the earlier of: closing of permenant financing,12 months after comercial operation of project,sale,acquisition or merger of interest. Terminates upon event of default.
4/30/2009	PD-002	Chestnut Hill BioEnergy CT, LLC	Biomass generation project, Waterbury,CT	$ 500	$ 237	$ (237)	$ -	4.25%	See Notes	LOC. Note matures upon the earlier of: closing of permenant financing,12 months after comercial operation of project,sale,acquisition or merger of interest. Terminates upon event of default.
02/19/09	PD-003	BNE Energy Inc.	Colebrook Wind - Phase 1	$ 120	$ 120	$ (120)	$ -	4.25%	See Notes	LOC. Note matures upon the earlier of: closing of permenant financing,12 months after comercial operation of project,sale,acquisition or merger of interest. Terminates upon event of default.
02/19/09	PD-004	BNE Energy Inc.	Prospect Wind - Phase 1	$ 102	$ 102	$ (102)	$ -	4.25%	See Notes	LOC. Note matures upon the earlier of: closing of permenant financing,12 months after comercial operation of project,sale,acquisition or merger of interest. Terminates upon event of default.
06/24/10	PD-005	BNE Energy Inc.	Colebrook Wind - Phase II	$ 380	$ 380	$ (380)	$ -	4.25%	See Notes	LOC. Note matures upon the earlier of: closing of permenant financing,12 months after comercial operation of project,sale,acquisition or merger of interest. Terminates upon event of default.
06/24/10	PD-006	BNE Energy Inc.	Colebrook Wind - Prospect II	$ 398	$ 398	$ (398)	$ -	4.25%	See Notes	LOC. Note matures upon the earlier of: closing of permenant financing,12 months after comercial operation of project,sale,acquisition or merger of interest. Terminates upon event of default.
Op Demo Program (1)										
8/8/2007	ODP-001	Mechatronic Energy Systems, LLC	Low Head Run-of the-River Hydro Turbine Technology Project, Mansfield,CT	$ 557	$ 501	$ (501)	$ -	TBD	8/7/2017	Non Recourse Loan. Repayment based on commercial success ($541,000/m) of technology. No repayment of loan is required if commercial success is not achieved after ten years from the execution date of the agreement. (10 yr amortization)
7/1/2009	ODP-002	Optiwind, inc.	Compact Wind Accelerated Turbine, Torrington,CT	$ 750	$ 413	$ (412)	$ -	TBD	6/30/2019	Non Recourse Loan. Repayment based on commercial success ($2,000,000/m) of technology. No repayment of loan is required if commercial success is not achieved after ten years from the execution date of the agreement. (10 yr amortization)
4/5/2010	ODP-003	LiteTrough, LLC	Concentrated Solar Water Heater Technology,Milford,CT	$ 81	$ 31	$ (31)	$ -	4.25%	4/4/2020	Non Recourse Loan. Repayment based on commercial success ($500,000/m) of technology. No repayment of loan is required if commercial success is not achieved after ten years from the execution date of the agreement.(5 yr amortization)
6/28/2010	ODP-004	Avalence, LLC	High pressure multipurpose electrolyer technology, Hamden,CT	$ 500	$ 350	$ (350)	$ -	TBD	6/27/2020	Non Recourse Loan. Repayment based on commercial success ($1,000,000/m) of technology. If no commercial success company repays amount advanced. If commercial success company pays 2 times amount advanced or amortizes over 5 yr period at applicable interest rate.
Other Investments										
		Company	**Security**							
3/27/2002		Acumentrics Corporation	Series B Preferred Stock		$ 4,000	$ (2,000)	$ 2,000			Fuel Cell Technology
6/30/2010		Optiwind Corporation	Series B Preferred Stock		$ 272	$ (204)	$ 68			Wind Turbine Technology
6/29/2011		Optiwind Corporation	Promissory Note		$ 350	$ (263)	$ 88			
					$ 7,654	$ (5,498)	$ 2,156			

(1) Due to the nature of the Pre Development and Op Demo Loans, the loans are currently fully reserved for.

Clean Energy Finance and Investment Authority
Statement of Incentives, Grants and Rebates
As of October 31, 2012
(000's)

Program	FY12 Programs Commitments Outstanding 6/30/2012	Fundings YTD FY13	Withdrawn	Commitments Outstanding 10/31/2012
Project 150	$ 7,224	$ -	$ (3,950)	$ 3,274
Pre Development Loans	$ 263	$ -	$ -	$ 263
Strategic Investments	$ 35	$ -	$ -	$ 35
Commercial Solar (for profit)	$ 2,215	$ (265)	$ -	$ 1,950
Commercial Solar (not for profit/government)	$ 2,719	$ (239)	$ -	$ 2,480
Fuel Cell program	$ 5,870	$ (75)	$ -	$ 5,795
CI&I On Site Generation -Feasibility Studies	$ 195	$ (54)	$ -	$ 141
Residential Solar PV Program (pre Solar PV Investment Program)	$ 87	$ (74)	$ -	$ 13
Residential Solar PV Investment Program	$ 2,945	$ (1,063)	$ -	$ 1,882
Solar Thermal & Geothermal Programs	$ 1,017	$ (195)	$ -	$ 822
Solar Hot Water Program - Residential	$ 283	$ (58)	$ -	$ 224
Solar Hot Water Program - Commercial	$ 2,000	$ -	$ -	$ 2,000
Operational Demonstration & Alpha Programs	$ 948	$ (39)	$ -	$ 909
Education & Outreach Programs	$ 1,209	$ (148)	$ (59)	$ 1,002
FY11-FY12 CP Goal 4: advocacy & public policy support	$ 102	$ (3)	$ -	$ 99
	$ 27,112	$ (2,214)	$ (4,009)	$ 20,890

Program	FY 13 Programs FY13 Budget	FY13 Commitments	Fundings YTD FY13	Withdrawn	Commitments Outstanding 10/31/2012
Transition					
Education & Training Programs	$ 400.0	$ -	$ -	$ -	$ -
Maintain					
Clean Energy Communities	$ 650.0	$ 73.5	$ (23.5)	$ -	$ 50.0
Community Innovation Grants	$ 200.0	$ -	$ -	$ -	$ -
Project Opportunities Fund	$ 500.0	$ -	$ -	$ -	$ -
Strategic Investment Fund	$ 100.0	$ -	$ -	$ -	$ -
Statutory					
Residential Solar PV Investment Program	$ 9,333.0	$ 3,135.4	$ (466.8)	$ -	$ 2,668.6
Anaerobic Digestor Pilot	$ 2,000.0	$ -	$ -	$ -	$ -
CHP Pilot	$ 2,000.0	$ -	$ -	$ -	$ -
Condo Renewable Energy Grants	$ 50.0	$ -	$ -	$ -	$ -
Commercial & Industrial					
Clean Energy Business Solutions	$ 2,500.0	$ -	$ -	$ -	$ -
Federal Grants - InKind payments					
Sun Rise New England	$ 48.0	$ -	$ -	$ -	$ -
	$ 17,781.0	$ 3,208.9	$ (490.3)	$ -	$ 2,718.6
			$ (2,704.02)		

Clean Energy Finance and Investment Authority
Financial Analysis
Utility Customer Assessment Analysis
For the four months ended October 31, 2012
(000's)

	FY 13 Actual	FY13 Budget	(Under) Over FY 12	
July	$ 2,709.4	$ 2,700.0	$ 9.4	
August	$ 2,815.0	$ 2,825.0	$ (10.0)	
September	$ 2,457.0	$ 2,500.0	$ (43.0)	
October	$ 2,200.0	$ 2,200.0	$ -	A
November	$ -	$ -	$ -	
December	$ -	$ -	$ -	
January	$ -	$ -	$ -	
February	$ -	$ -	$ -	
March	$ -	$ -	$ -	
April	$ -	$ -	$ -	
May	$ -	$ -	$ -	
June	$ -	$ -	$ -	
Total assessments:	$ 10,181.4	$ 10,225.0	$ (43.6)	
			-0.4%	

A. Data on actual activity had not been received from the utility companies as of te date this report was prepared. Current month actual results will be reflected in next month's financial report.

CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

DIRECTOR OF RESIDENTIAL PROGRAMS

Class Title: Director of Residential Programs
Direct Reports: Managers, Associates, Assistants
Salary Range: $116,536-$164,588
Career Series: Director II

Reports to: President and CEO
Wage Hour Class: Exempt
Hours Worked: 40

SUMMARY:

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.

The Director of Residential Programs oversees the development and implementation of all CEFIA programs focused on the residential sector. The director will lead CEFIA's solar lease, solar loan and energy efficiency loan efforts. The director will coordinate with the state and other stakeholders to implement clean energy policy recommendations from the Comprehensive Energy Strategy including on-bill financing and natural gas conversion.

Qualified candidates must have a Bachelor's Degree (but a Master's degree is preferred and at least seven years of experience in energy policy and/or clean energy finance. Experience supervising staff and working across departments is preferred.

DUTIES AND RESPONSIBILITIES:

- Initiates and manages the design of CEFIA's residential programs;
- Works with the Chief Investment Officer to design residential clean energy financial products to attract private capital;
- Works with the Director of Marketing and Outreach to develop strategies to increase participation in CEFIA residential programs and uptake in financial products;
- Works with the President, General Counsel, Director of Government & External Affairs, and Chief Investment Officer to develop on-bill repayment policies and procedures for residential clean energy financing
- Works closely with financiers, property owners, municipalities and other key stakeholders to create programs that attract their interest and secures their participation;
- Works with state agencies, utilities, the Connecticut Energy Efficiency Fund, as well as other key stakeholders, to align programs where possible and assure Connecticut's energy finance program takes advantage of shared resources and programmatic synergies;

- Ensures all operational (i.e. staff and policies) and organizational (i.e. contracting and reporting) requirements are being implemented and carried out;
- Manages the selection of consultants, where necessary, to support the program in areas where CEFIA does not have specific in-house expertise;
- Works in collaboration with the President, General Counsel, Director of Marketing and Outreach, and Director of Government and External Affairs to integrate comprehensive strategies to advance clean energy;
- Contributes to the development and implementation of CEFIA's comprehensive plan with a particular emphasis on strategy related to the residential sector;
- Works with the Board of Directors and the President to lead the development of clean energy programs and initiatives;
- Regularly updates the Board of Directors, with support from the President and Executive Vice President and CIO on the development and progress of residential programs;
- Represent CEFIA on appropriate task forces, committees, and boards relevant to clean energy finance;
- Represents CEFIA to the public in speaking engagements; and
- Supervises CEFIA staff including managers, associates, and assistants.

MINIMUM QUALIFICATIONS REQUIRED
KNOWLEDGE, SKILL AND ABILITY:

- Strong knowledge and experience in clean energy finance and/or policy;
- Familiarity with the finance and energy industries;
- Considerable experience in program/project management;
- Ability to work in a team environment as a lead contributor, manager, and facilitator;
- Strong knowledge of business operations and general management including supervisory experience;
- Considerable ability to develop programs, manage stakeholder processes toward results, and interpret energy policy;
- Understanding of the interaction in clean energy markets between finance and demand;
- Demonstrated ability to understand various scientific and energy-related technological principles and applications, and integrate those concepts into the overall project, program, or CEFIA;
- Expertise in scalable models for financing building upgrades through a variety of financial products (ie ESAs, ESCOs, PPAs);
- Ability to work with external stakeholders including strong facilitation, negotiation, and coordination skills;
- Considerable interpersonal skills, as well as oral and written communications skills;
- Ability to market the benefits of residential clean energy financing products to potential customers;
- Knowledge of State and Federal energy policies and regulations that support clean energy finance; and
- Familiarity with energy efficiency issues and energy efficiency service contracts.

EXPERIENCE AND TRAINING:

General Experience:
A Bachelor's Degree (but a Master's degree is preferred) in finance, environmental science, engineering, economics, political science, business administration, or related field is preferred.

Seven years of experience in energy policy and clean energy finance. Experience supervising staff and working across departments is preferred. Experience working with and facilitating collaborative outcomes with various stakeholder groups in energy policy design and project development.

Special Experience:
Two years of the general experience must have been supervising staff involved in project development.

Substitutions Allowed:

1. A Master's Degree in finance, environmental science, engineering, economics, business administration or other related field may be substituted for one additional year of the general experience
2. A professional certification in a relevant field may substitute for one additional year of experience

CAREER SERIES

The career series for this classification is:

- Assistant
- Associate
- Manager
- Senior Manager
- Associate Director
- Director I
- Director II

CUSTOMER SERVICE DELIVERABLES

- Responds promptly to stakeholder, Board of Directors, and staff requests for information or assistance;
- Acts as a lead member of the CEFIA team and pitches in and assists other staff members as requested
- Provides a work product that is well conceived, developed, complete, and useful to scale-up clean energy deployment

APPOINTMENT

Appointed by the Clean Energy Finance and Investment Authority Board of Directors in accordance with Sec. 99. Section 16-245n (d) of the Connecticut General Statutes.

CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

DIRECTOR OF INSTITUTIONAL PROGRAMS

Class Title: Director of Institutional Programs
Direct Reports: Managers, Associates, Assistants
Salary Range: $116,536-$164,588
Career Series: Director II

Reports to: President and CEO
Wage Hour Class: Exempt
Hours Worked: 40

SUMMARY:

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.

The Director of Institutional Programs oversees the development and implementation of all CEFIA programs focused on the municipal, university, school and hospital (MUSH) sector. The Director will provide support to municipalities and the state for financing projects under Connecticut's new Energy Savings Performance Contracting Program, which is part of the Lead by Example initiative. The director will oversee the Campus Efficiency Now program and develop an expanded program using lessons learned from the pilot program.

Qualified candidates must have a Bachelor's Degree (but a Master's degree is preferred) and at least seven years of experience in energy policy and/or clean energy finance. Experience supervising staff and working across departments is preferred.

DUTIES AND RESPONSIBILITIES:

- Initiates and manages the design of MUSH's residential programs;
- Manages CEFIA's existing MUSH programs, including Campus Efficiency Now
- Works with the Chief Investment Officer to design MUSH clean energy financial products to attract private capital;
- Works with the Director of Marketing and Outreach to develop strategies to increase participation in CEFIA MUSH programs and uptake in financial products;
- Works with the Department of Energy and Environmental Protection to develop strategies for financing of the state's Lead By Example program and provides financing advice, assistance, and support to municipalities on the financing of Energy Savings Performance Contracting projects;
- Works closely with financiers, property owners, municipalities and other key stakeholders to create programs that attract their interest and secures their participation;

- Works with state agencies, utilities, the Connecticut Energy Efficiency Funds, well as other key stakeholders, to align programs where possible and assure Connecticut's energy finance program takes advantage of shared resources and programmatic synergies;
- Ensures all operational (i.e. staff and policies) and organizational (i.e. contracting and reporting) requirements are being implemented and carried out;
- Manages the selection of consultants, where necessary, to support the program in areas where CEFIA does not have specific in-house expertise;
- Works in collaboration with the President, General Counsel, Director of Marketing and Outreach, and Director of Government and External Affairs to integrate comprehensive strategies to advance clean energy;
- Contributes to the development and implementation of CEFIA's comprehensive plan with a particular emphasis on strategy related to the MUSH sector;
- Works with the Board of Directors and the President to lead the development of clean energy programs and initiatives;
- Regularly updates the Board of Directors, with support from the President and Executive Vice President and CIO on the development and progress of MUSH programs;
- Represent CEFIA on appropriate task forces, committees, and boards relevant to clean energy finance;
- Represents CEFIA to the public in speaking engagements; and
- Supervises CEFIA staff including managers, associates, and assistants.

MINIMUM QUALIFICATIONS REQUIRED
KNOWLEDGE, SKILL AND ABILITY:

- Strong knowledge and experience in clean energy finance and/or policy;
- Familiarity with the finance and energy industries;
- Considerable experience in program/project management;
- Ability to work in a team environment as a lead contributor, manager, and facilitator;
- Strong knowledge of business operations and general management including supervisory experience;
- Considerable ability to develop programs, manage stakeholder processes toward results, and interpret energy policy;
- Understanding of the interaction in clean energy markets between finance and demand;
- Demonstrated ability to understand various scientific and energy-related technological principles and applications, and integrate those concepts into the overall project, program, or CEFIA;
- Expertise in scalable models for financing building upgrades through a variety of financial products (ie ESAs, ESCOs, PPAs);
- Ability to work with external stakeholders including strong facilitation, negotiation, and coordination skills;
- Considerable interpersonal skills, as well as oral and written communications skills;
- Ability to market the benefits of clean energy financing products to potential MUSH market customers;
- Knowledge of State and Federal energy policies and regulations that support clean energy finance; and
- Familiarity with energy efficiency issues and energy efficiency service contracts.

EXPERIENCE AND TRAINING:

General Experience:
A Bachelor's Degree (but a Master's degree is preferred) in environmental science, engineering, economics, political science, business administration, finance or related field is preferred. Seven years of experience in energy policy and clean energy finance. Experience supervising staff and working across departments is preferred. Experience working with and facilitating collaborative outcomes with various stakeholder groups in energy policy design and project development.

Special Experience:
Two years of the general experience must have been supervising staff involved in project development.

Substitutions Allowed:
1. A Master's Degree in finance, environmental science, engineering, economics, business administration or other related field may be substituted for one additional year of the general experience
2. A professional certification in a relevant field may substitute for one additional year of experience

CAREER SERIES
The career series for this classification is:
- Assistant
- Associate
- Manager
- Senior Manager
- Associate Director
- Director I
- Director II

CUSTOMER SERVICE DELIVERABLES
- Responds promptly to stakeholder, Board of Directors, and staff requests for information or assistance;
- Acts as a lead member of the CEFIA team and pitches in and assists other staff members as requested
- Provides a work product that is well conceived, developed, complete, and useful to scale-up clean energy deployment

APPOINTMENT
Appointed by the Clean Energy Finance and Investment Authority Board of Directors in accordance with Sec. 99. Section 16-245n (d) of the Connecticut General Statutes.

CLEAN ENERGY FINANCE AND INVESTMENT AUTHORITY

DIRECTOR OF STATUTORY & INFRASTRUCTURE PROGRAMS

Class Title: Director of Statutory & Infrastructure Programs **Reports to: President and CEO**
Direct Reports: Managers, Associates, Assistants **Wage Hour Class: Exempt**
Salary Range: $116,536-$164,588 **Hours Worked: 40**
Career Series: Director II

SUMMARY:

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.

The Director of Statutory & Infrastructure Programs oversees the development and implementation of:

(1) CEFIA programs that are required by stature
(2) CEFIA programs and projects that are focused on infrastructure or grid-tied.

Qualified candidates must have a Bachelor's Degree (but a Master's degree is preferred) in environmental science, engineering, economics, political science, business administration, or related field, and seven years of experience in energy policy and/or clean energy finance. Experience supervising staff and working across departments is preferred.

DUTIES AND RESPONSIBILITIES:

- Initiates and manages the design of CEFIA's statutory, infrastructure, and grid-tied programs and projects, including the Residential Solar PV Investment Program, the Anaerobic Digestion Program, and Combined Heat and Power Program;
- Works with the Chief Investment Officer to attract private capital to statutory, infrastructure, and grid-tied programs and projects;
- Develops and implements strategies to reduce the cost of residential solar PV systems and ratepayer incentives for the systems;
- Works with the Director of Marketing and Outreach to develop strategies to increase participation in CEFIA statutory, infrastructure, and grid-tied programs and projects;
- Works closely with financiers, property owners, municipalities and other key stakeholders to create programs that attracts their interest and secures their participation;
- Works with the Department of Energy and Environmental Protection and the Energy Efficiency Board, as well as other key stakeholders, to align programs where possible

and assure Connecticut's energy finance program takes advantage of shared resources and programmatic synergies;
- Ensures all operational (i.e. staff and policies) and organizational (i.e. contracting and reporting) requirements are being implemented and carried out;
- Manages the selection of consultants, where necessary, to support the program in areas where CEFIA does not have specific in-house expertise;
- Works in collaboration with the President, General Counsel, Director of Marketing and Outreach, and Director of Government and External Affairs to integrate comprehensive strategies to advance clean energy;
- Contributes to the development of CEFIA's comprehensive plan with a particular emphasis on strategy related to the statutory, infrastructure, and grid-tied programs and projects;
- Works with the Board of Directors and the President to lead the development of clean energy programs and initiatives;
- Regularly updates the Board of Directors, with support from the President and Executive Vice President and CIO on the development and progress of statutory, infrastructure, and grid-tied programs and projects;
- Represent CEFIA on appropriate task forces, committees, and boards relevant to clean energy finance;
- Represents CEFIA to the public in speaking engagements; and
- Supervises CEFIA staff including managers, associates, and assistants.

MINIMUM QUALIFICATIONS REQUIRED
KNOWLEDGE, SKILL AND ABILITY:

- Strong knowledge and experience in clean energy finance and/or policy;
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- Strong knowledge of business operations and general management including supervisory experience;
- Considerable ability to develop programs, manage stakeholder processes toward results, and interpret energy policy;
- Understanding of the interaction in clean energy markets between finance and demand;
- Demonstrated ability to understand various scientific and energy-related technological principles and applications, and integrate those concepts into the overall project, program, or CEFIA;
- Expertise in scalable models for financing building upgrades through a variety of financial products (ie ESAs, ESCOs, PPAs);
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- Considerable interpersonal skills, as well as oral and written communications skills;
- Ability to market the benefits of clean energy financing products to potential customers;
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- Familiarity with energy efficiency issues and energy efficiency service contracts.

EXPERIENCE AND TRAINING:

General Experience:
A Bachelor's Degree (but a Master's degree is preferred) in environmental science, engineering, economics, political science, business administration, or related field. Seven years of experience in energy policy and clean energy finance. Experience supervising staff and working across departments is preferred. Experience working with and facilitating collaborative outcomes with various stakeholder groups in energy policy design and project development.

Special Experience:
Two years of the general experience must have been supervising staff involved in project development.

Substitutions Allowed:
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- Provides a work product that is well conceived, developed, complete, and useful to scale-up clean energy deployment

APPOINTMENT
Appointed by the Clean Energy Finance and Investment Authority Board of Directors in accordance with Sec. 99. Section 16-245n (d) of the Connecticut General Statutes.

865 Brook Street
Rocky Hill, Connecticut 06067-3444
T: 860.563.0015
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www.ctcleanenergy.com

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Memo

To: CEFIA Board of Directors

From: Bryan Garcia

CC: Mackey Dykes, George Bellas, Bert Hunter, Claire Leonardi, and Phil Siuta

Date: November 21, 2012

Re: Office Space at 865 Brook Street – Building #2

With the merger of the Connecticut Development Authority (CDA) and Connecticut Innovations (CI), the Clean Energy Finance and Investment Authority (CEFIA) and CI have attempted to develop space options for merging the staff of all three organizations in the current Building #1 at 865 Brook Street. The space was determined to be too small so CEFIA entered into negotiations for 8,496 square feet of space in the adjacent building – Building #2. The resulting offer would save CEFIA an estimated $46,600 over eight years, the term of the lease, as detailed in table #1. The build-out of the new space requires an upfront investment of approximately $260,000, $60,000 of which will be reimbursed by CI to compensate for improvements made to 865 Brook Street. CEFIA therefore requests an amendment to the Fiscal Year 2013 budget of $260,000 to cover these expenses. The new space, in addition to saving money over the term of the lease, will give CEFIA its own space while remaining close to CI and the support services they provide. The move will also allow a physical merger of CI and the former CDA into 865 Brook Street – Building #1 to support their integration.

Resolution

WHEREAS, the current office space at 865 Brook Street Building 1shared between the Clean Energy Finance and Investment Authority (CEFIA) and Connecticut Innovations (CI) is not large enough to support the increased personnel from the recent CI and Connecticut Development Authority merger;

WHEREAS, CEFIA has an offer on adjacent office space at 865 Brook Street Building 2 that will save money over the term of the lease but requires approximately $260,000 for upfront construction, furniture and moving expenses (Expenses);

NOW, therefore be it:

RESOLVED, that the CEFIA Board of Directors approves an amendment to the Fiscal Year 2013 budget of $260,000 to cover the Expenses.

Table 1. CEFIA Move Cost Comparison

	CURRENT BUILDING	**MOVE TO BUILDING #2**	**SAVINGS / (EXPENSES)**
ANNUAL RENT: YEAR 1	174,311	146,556	
FULL 8 YEARS OF RENT	1,535,960	1,291,392	244,568
ONE -TIME COSTS:			
TENANT IMPROVEMENT	-	67,968	(67,968)
ESTIMATED MOVING EXPENSE	-	15,000	(15,000)
ESTIMATED FF & E EXPENSE		150,000	(150,000)
OTHER		25,000	(25,000)
CI REIMBURSEMENT FOR FF&E		(60,000)	60,000
ESTIMATED SAVINGS TO CEFIA OVER 8 YEARS			46,600
ESTIMATED ANNUAL SAVINGS			**5,825**

865 Brook Street
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T: 860.563.0015
F: 860.563.4877
www.ctcleanenergy.com

CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Memo

To: Board of Directors

From: Bryan Garcia

CC: Mackey Dykes, Brian Farnen, David Goldberg, and Bert Hunter

Date: November 23, 2012

Re: Draft Comprehensive Energy Strategy – Public Comments by CEFIA

On October 5, 2012, Governor Malloy released the Draft Comprehensive Energy Strategy (CES) for public comment, which ends on December 14, 2012. The CES, prepared by the Department of Energy and Environmental Protection (DEEP), provides a foundation for better informed policy, regulatory, and legislative decisions for addressing energy opportunities and challenges in Connecticut. The CES covers all fuels (i.e. electricity, natural gas, oil, gasoline, etc.) in all sectors (i.e. residential, commercial, industrial, etc.) with a planning horizon out to 2050. It offers analysis of Connecticut's current energy circumstances and offers a set of recommendations designed to advance the Governor's agenda of moving the state towards a cheaper, cleaner, and more reliable energy future.

One of the key foundations of the CES is *transitioning programs away from government-funded grants, rebates, and other subsidies, and towards deploying private capital*. CEFIA's mission to support the Governor's and the legislature's energy strategies. CEFIA is developing and implementing programs that *leverage private sector capital to create long-term, sustainable financing for energy efficiency and clean energy to support residential, commercial, and industrial sector implementation of energy efficiency and clean energy measures.*

There are many areas of the CES that directly involve CEFIA, including, but not limited to:

- **Residential Financing Programs** – developing credit union financing programs and advancing the use of on-bill repayment for equipment conversions (i.e. oil to natural gas); and

- **Commercial and Industrial Financing Programs** – administering commercial and industrial property assessed clean energy (C-PACE) in municipalities throughout the state;

Since the CEFIA Board next meets on December 21, 2012, I would like to request approval from the Board to develop and submit public comments to DEEP to address the specific areas noted in the CES that involve CEFIA.

RESOLUTION

WHEREAS, Governor Malloy announced the release of the Draft Comprehensive Energy Strategy on October 5, 2012 for public comment;

WHEREAS, the Draft Comprehensive Energy Strategy identifies the Clean Energy Finance and Investment Authority (CEFIA) to play a significant role in various aspects of the strategy, including leveraging private sector capital to create long-term, sustainable financing for energy efficiency and clean energy to support residential, commercial, and industrial sector implementation of energy efficiency and clean energy measures;

WHEREAS, CEFIA's strategic plan and budget are consistent with the Draft Comprehensive Energy Strategy;

NOW, therefore be it:

RESOLVED, that the Board of Directors authorizes the President to draft public comments on behalf of the Board of Directors of CEFIA that are reviewed and approved by the Chair of the Board of Directors, and submitted to the Department of Energy and Environmental Protection before the December 14, 2012 due date.