



REQUEST FOR QUALIFICATIONS FROM INTERESTED ENERGY AUDITORS & CONTRACTORS

COMMERCIAL AND INDUSTRIAL PROPERTY ASSESSED CLEAN ENERGY PROGRAM (C-PACE)

Request For Qualifications

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**REQUEST FOR QUALIFICATIONS FROM INTERESTED ENERGY AUDITORS & CONTRACTORS
COMMERCIAL AND INDUSTRIAL PROPERTY ASSESSED CLEAN ENERGY PROGRAM (“C-PACE”)**

I. PURPOSE

The Clean Energy Finance and Investment Authority (“CEFIA”) is seeking qualified energy auditors, contractors, and energy service companies, hereafter referred to as Energy Contractors (ECs) interested in sourcing quality energy efficiency and renewable energy projects for C-PACE financing. The information provided by ECs will be used to link ECs, project sponsors, property owners, and capital providers to develop well-structured transactions to finance energy projects through CEFIA’s Commercial and Industrial Property Assessed Clean Energy program (C-PACE). Becoming qualified will also enable the ECs to access training, market research, and marketing materials from CEFIA.

CEFIA will not provide exclusivity to ECs. Property owners retain the right to work with whichever auditor, contractor, or energy services firm works best for them. Whether or not an EC is selected through this RFQ to respond to CEFIA sourced deals, any EC will be able to submit C-PACE applications for CEFIA’s approval.

II. CEFIA BACKGROUND

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 (CCEF). 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. For more information about CEFIA, please visit www.ctcleanenergy.com.

III. PROGRAM BACKGROUND

In June 2012, the Connecticut General Assembly passed Public Act 12-2 “[AN ACT IMPLEMENTING CERTAIN PROVISIONS CONCERNING GOVERNMENT ADMINISTRATION](#)”, which enabled the creation of the C-PACE program by empowering CEFIA to administer, design, and assist in financing the program.

C-PACE is an innovative financing structure that enables **commercial, industrial, and multi-family** property owners to access 100% upfront, long-term financing for qualified energy upgrades that they repay through a benefit assessment on their property.

To be eligible for C-PACE financing:

- the building must be located in a C-PACE-enabled municipality [[see current list here](#)];
- the C-PACE applicant must legally own the building, and all the legal owners of such property agree to participate;
- the property must be used for commercial, industrial, or multi family (over 5 units) purposes. (Properties owned by non-profit entities may be eligible, provided the property has a property tax identification number with the municipality);
- mortgage lien holders on the property consent to the C-PACE assessment;

- property tax and assessment payments are current on the property;
- the property is subject to the appropriate jurisdiction's (county, city, or town) permitting and inspections and all other applicable federal, state, and local codes and regulations;
- properties must be "existing" and not "in development." This is not yet an exact definition, so CEFIA will address this as specific situations arise, and a clearer definition of "existing" and not "in development" will be provided.
- the energy upgrades or renewable energy system must meet a savings-to-investment > 1 ratio;
- the energy upgrades or renewable energy system must be permanently affixed to the property;

Please see the C-PACE Technical Standards attached to this RFQ for a full list of qualified energy improvements and renewable energy systems.

IV. ROLE OF ECs

CEFIA seeks to qualify ECs interested in sourcing deals for C-PACE financing, and will collect the information provided through this RFQ to prequalify interested ECs on an ongoing basis. Prequalified ECs will be knowledgeable about the C-PACE eligibility criteria and approval process and will be prepared to source quality energy upgrade and renewable energy deals for CEFIA.

Property owners interested in pursuing C-PACE that require the services of an EC will be provided access to the full list of prequalified ECs. Note that as a public agency, CEFIA may not recommend or endorse one prequalified EC over another. Any property owner who contacts CEFIA will be provided with the most current list of prequalified ECs and will not be offered a recommendation or endorsement by CEFIA staff. CEFIA will expect prequalified ECs to actively market the C-PACE program and will furnish them with marketing collateral that ECs may co-brand and utilize for this purpose.

A prequalified EC's primary responsibilities are as follows:

- Developing projects suitable for C-PACE financing.
- Following C-PACE program guidelines to determine project eligibility, size and cost
- Completing and submitting applications on behalf of the property owner
- Conducting energy efficiency and/or renewable energy audits, recommending and/or implementing qualified energy upgrades or renewable energy systems
- Collaborating with CEFIA's third-party administrator to complete applications and provide project supporting documentation.
- Utilizing CEFIA's data management platform for project development, implementation and measuring and verification
- Coordinating with the property owner's utility (UI, CL&P, SCNG, CNG, Yankee Gas, or municipal utility) to identify and obtain relevant incentives/rebates.
- Complying with national, state and local codes and standards

Benefits

For ECs, CEFIA, as the program administrator, offers:

- legal infrastructure and cooperation from participating municipalities;
- access to commercially attractive financing for energy conservation measures (ECMs) due to longer term and tax lien security;
- facilitated expansion into C&I deep energy retrofit market;
- technical underwriting process incorporating industry protocols for energy performance assessment to identify ECMs & project energy savings with high degree of confidence;

technically sound, standardized, reliable & fully-transparent measurement & verification methodology Selected ECs have access to CEFIA produced and sourced C-PACE material, including eligible technical upgrades and financial standards, and building market research commissioned by CEFIA. Selected ECs will also receive marketing collateral that they may co-brand. ECs will also have the benefit of a training program to further educate them on the application and review process for C-PACE.

Additionally, in conjunction with the C-PACE Third Party Administrator, Buonicore Partners, CEFIA has developed technical standards to ensure the quality of projects undertaken through C-PACE (see **Appendix A**). These standards include evaluating projects, defining eligible conservation and renewable energy measures, monitoring and verifying the energy savings, determining the necessity of insurance, and managing data. These standards would be shared with selected ECs.

V. SUBMISSION PROCESS

Schedule:

ECs must register online at <http://www.c-pace.com/application/contractor>. EC responses are accepted on a rolling basis. Complete applications will be processed within four (4) weeks by CEFIA staff. If an Application is missing information it will cause a delay in processing the Application.

Please submit responses and/or questions to:

Genevieve Sherman
Manager, Commercial and Industrial Property Assessed Clean Energy
Clean Energy Finance and Investment Authority
Direct: (860) 257 2897
genevieve.sherman@ctcleanenergy.com

Content of Response:

- **All respondents MUST respond to this RFQ online at <http://www.c-pace.com/application/contractor>.** This online application form covers steps 1 – 4 described below.

***The following ECs have already met these qualifications and do not need to include them:**

- Auditors, contractors and energy service companies currently authorized under the EnergizeCT Small Business Energy Advantage or Energy Opportunities programs. [[see the full list here](#)]

- ESCOs approved through DEEP's Lead by Example Energy Savings Performance Contracting Program.
- Solar Contractors approved through CEFA's Residential Solar programs. [[see the full PV list here](#)] For approved solar hot water contractors [[see the full list here](#)].
- **All respondents MUST create an Honest Buildings profile through the C-PACE website.** www.c-pace.com, powered by Honest Buildings, provides contractors with a unparalleled platform to post information on succesful energy projects and market their services to potential C-PACE customers. Project information submitted to Honest Buildings as part of this RFQ response will remain live on the 'Featured Projects' search engine on www.c-pace.com for ECs that become prequalified. Respondants should submit the information prescribed below in step 5 for a minimum of three projects.
- **All respondents MUST attend a C-PACE training** with the C-PACE third party administrator, Buonicore Partners, to become familiar with the program eligibility requirements, technical standards, application process, financing process, and M&V procedures. Trainings are held on a rolling basis. All respondents to this RFQ will be informed about upcoming dates, and eligible to attend trainings, regardless of status of RFQ approval. Respondents will not be approved until the training is complete.

Application

1. **Terms and Conditions** [please see Sec. VI of this RFQ]
2. **Company Information:**
 - Company Name
 - First Name
 - Last Name
 - Email
 - Primary Phone
 - Fax
 - Website
 - Address
 - Services Performed
 - Number of years in business
 - Average number of energy efficiency/clean energy projects per year
 - Provide a brief description of assurance/quality control program for the products/services offered. Include insurance capabilities as applicable.
3. **References**

Enter in three references for successfully completed energy efficiency audits and/or building retrofit projects or renewable energy systems that demonstrate relevant experience.

 - Reference Name
 - Phone

- Email
- Project Name (please enter a name for the project you worked on for this)

4. Licensing & Certifications

ECs must meet Connecticut’s occupational and professional licensing requirements, such as a Connecticut E-1 license.

- License Number
- Expiration Date
- Are you bonded? (Y/N)
- What types of Licenses do you hold?

**Pre-qualified applicants must have at least one licensed Connecticut Professional Engineer and depending on the services being offered: at least one of the following:

- Certified Energy Manager (CEM certification by the AEE)
- Building Energy Assessment Professional (BEAP certification by ASHRAE)
- Certified Measurement & Verification Professional (CMVP certification by the AEE)
- Building Performance Institute, Inc. (BPI)
- Certified Energy Auditors (CEA)
- (check all that apply)
- Please upload a maximum of three resumes of licensed in-house staff or project team members. (Auditors must show minimum (3) years of experience performing energy audits on commercial or industrial buildings and demonstrate knowledge and experience using the ASHRAE energy audit. Solar contractors should provide a copy of the NABCEP Entry Level Passing Score Achievement Certificate, or full NABCEP certification for at least one permanent employee, and one staff personnel holding the PV-1 or ST-1 license is encouraged.)

5. Create your Honest Buildings project portfolio

Get started creating your project portfolio here for reference evaluation: honestbuildings.com/login

- Project Information
- Building Name
- Building Address
- Building Size (sq. ft.)
- Building Type (list of uses on c-pace.com)
- Project details (describe the energy conservation measures and/or renewable energy system recommended and/or installed in the building).
- Total recommended and/or installed project cost
- Estimated annual savings (dollars)
- Estimated annual savings (kbtu)
- Actual energy savings (kbtu) (If savings were measured)
- Energy performance guarantee (If energy performance guarantees were provided, identify description of guarantee, where and the current status.)

Applications will not be approved until all required documents have been submitted to CEFIA’s satisfaction.

VII. TERMS AND CONDITIONS

Terms and Conditions of RFQ Participation:

State Contracting Obligations. EC understands and agrees that CEFIA will comply with Conn. Gen. Stat. Sections 4a-60 and 4a-60a. EC agrees to comply with these state contracting obligations and the term EC and contractor may be used interchangeably.

Conn. Gen. Stat. § 4a-60(a):

“Every contract to which the state or any political subdivision of the state other than a municipality is a party shall contain the following provisions:

(1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut; and the contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved;

(2) The contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission;

(3) The contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the commission advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(4) The contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e and 46a-68f; and

(5) The contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56.”

Conn. Gen. Stat. § 4a-60a(a):

“Every contract to which the state or any political subdivision of the state other than a municipality is a party shall contain the following provisions:

(1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or of the state of Connecticut, and that employees are treated when employed without regard to their sexual orientation;

(2) The contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(3) The contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to section 46a-56; and

(4) The contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor which relate to the provisions of this section and section 46a-56."

Contractor represents and warrants that, prior to becoming a qualified CP, Contractor has provided CEFIA with documentation evidencing Contractor's support of the nondiscrimination agreements and warranties of the statutory nondiscrimination sections, above.

Choice of Law/Jurisdiction. This RFQ shall be governed by, construed, and enforced in accordance with the laws of the State of Connecticut, without regard to its principles relating to conflicts of law. EACH PARTY HEREBY CONSENTS TO THE EXCLUSIVE JURISDICTION OF THE COURTS OF THE STATE OF CONNECTICUT FOR THE PURPOSES OF ALL LEGAL PROCEEDINGS ARISING OUT OF OR RELATING TO THIS RFQ AND THE TRANSACTIONS CONTEMPLATED HEREBY. EACH PARTY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, (a) ANY OBJECTION TO THE LAYING OF VENUE OF ANY SUCH PROCEEDING BROUGHT IN SUCH A COURT; AND (b) ANY CLAIM THAT ANY SUCH PROCEEDING BROUGHT IN SUCH COURT HAS BEEN BROUGHT IN AN INCONVENIENT FORUM.

Limitation of Liability. Each Party shall not be liable to the other Party for any special, indirect, incidental, consequential, punitive, or exemplary damages of any kind whatsoever, whether based on contract, warranty, tort (including negligence or statutory liability), or otherwise, in connection with this RFQ.

FREEDOM OF INFORMATION ACT AND CONFIDENTIAL MATERIAL. CEFIA is a public agency for purposes of the Connecticut Freedom of Information Act. This RFQ and any files or documents associated with the RFQ, including e-mails or other electronic files, will be considered a public record and will be subject to disclosure under FOIA. Under C.G.S. §1-210(b) and §16-245n(D), FOIA includes exemptions for, among other things, trade secrets and commercial or financial information given in confidence. Only the particular information falling within a statutory exemption can be withheld by CEFIA.

Further, EC should be aware:

(i) CEFIA has no obligation to notify any EC of any FOIA request received by CEFIA, although it may make an effort to do so;

(ii) CEFIA may disclose materials claimed to be exempt if in its judgment such materials do not appear to fall within a statutory exemption;

(iii) CEFIA may in its discretion notify EC of FOIA requests and/or of complaints made to the Freedom of Information Commission concerning items for which an exemption has been claimed, but CEFIA has no obligation to initiate, prosecute or defend any legal proceeding or to seek to secure any protective order or other relief to prevent disclosure of any information pursuant to an FOIA request;

(iv) EC will have the burden of establishing the availability of any FOIA exemption in any such legal proceeding; and

(v) in no event shall CEFIA or any of its officers, directors or employees have any liability for the disclosure of documents or information in CEFIA's possession where CEFIA, or such officer, director or employee in good faith believes the disclosure to be required under FOIA or other law.

General Terms and Conditions:

If EC elects to respond to this RFQ, submission of your proposal assumes the acceptance of the following understandings:

- a. CEFIA reserves the right to reject any or all of the submissions received in response to the RFQ, to waive irregularities or to cancel or modify the RFQ in any way, and at any CEFIA chooses, in its sole discretion, if CEFIA determines that it is in the interest of CEFIA.

Submissions will be opened at CEFIA's convenience. Note that all the information submitted in response to this RFQ is subject to Connecticut's Freedom of Information Act. All questions regarding this RFQ must be submitted **in writing** to Genevieve Sherman, by email genevieve.sherman@ctcleanenergy.com.

- b. CEFIA reserves the right to make selections under this RFQ without discussion of the proposals received.
- c. Submissions must be signed by an authorized officer of the EC. Submissions must also provide name, title, address and telephone number for individuals with authority to negotiate and contractually bind the EC, and for those who may be contacted for the purpose of clarifying or supporting the information provided in the submission.
- d. CEFIA will not be responsible for any expenses incurred by any EC in conjunction with the preparation or presentation of any submission with respect to this RFQ.
- e. CEFIA's selection of ECs through this RFQ is not an offer and CEFIA reserves the right to continue negotiations with ECs on any given project.

CEFIA IS SUBJECT TO THE REQUIREMENTS OUTLINED IN SECTIONS 16-245N OF THE CONNECTICUT GENERAL STATUTES. CEFIA SHALL HAVE NO LIABILITY OR OBLIGATION OF ANY SORT HEREUNDER, INCLUDING, WITHOUT LIMITATION, IF FOR ANY REASON OR NO REASON A BINDING AGREEMENT IS NOT ENTERED INTO WITH ANY

PROPOSER. IN MAKING ITS SELECTION OF A SUCCESSFUL BIDDER, CEFIA MAY CONSIDER ANY AND ALL FACTORS AND CONSIDERATIONS WHICH CEFIA, IN ITS SOLE DISCRETION, DEEMS RELEVANT, THE RELATIVE IMPORTANCE OF WHICH SHALL BE IN THE SOLE DISCRETION OF CEFIA.

BY SUBMISSION OF A RFQ, ECS AGREE TO THE FOLLOWING:

Limitation on Recourse. All liabilities and obligations of CEFIA to the EC under this Program are subject and limited to the funding provided to the EC by CEFIA. CEFIA shall not be liable to the EC for any special, indirect, incidental, consequential, punitive, or exemplary damages of any kind whatsoever, whether based on contract, warranty, tort (including negligence or statutory liability), or otherwise, in connection with this RFQ. EC shall indemnify CEFIA, and its officers, directors, employees, agents, and affiliates against, and defend and hold each of them harmless, from any and all claims or liabilities related to or arising in any manner from the C-PACE Program.

Available Funding. CEFIA shall not be obligated to provide payment under this Agreement. ECs will have access to certain deal flow through CEFIA, and CEFIA may, but is not obligated to, provide a credit enhancement mechanism in any given deal.

Freedom of Information Act. CEFIA is a “public agency” for purposes of the Connecticut Freedom of Information Act (“FOIA”). This Agreement and information received pursuant to this Agreement will be considered public records and will be subject to disclosure under the FOIA, except for information falling within one of the exemptions in Conn. Gen. Stat. Sections § 1-210(b) and § 16-245n(d).

Because only the particular information falling within one of these exemptions can be withheld by CEFIA pursuant to an FOIA request, Consultant should specifically and in writing identify to CEFIA the information that Consultant claims to be exempt. Consultant should further provide a statement stating the basis for each claim of exemption. It will not be sufficient to state generally that the information is proprietary or confidential in nature and not, therefore, subject to release to third parties. A convincing explanation and rationale sufficient to justify each exemption consistent with General Statutes §1-210(b) and § 16-245n(d) must be provided.

Consultant acknowledges that (1) CEFIA has no obligation to notify Consultant of any FOIA request it receives, (2) CEFIA may disclose materials claimed by Consultant to be exempt if in its judgment such materials do not appear to fall within a statutory exemption, (3) CEFIA may in its discretion notify Consultant of FOIA requests and/or of complaints made to the Freedom of Information Commission concerning items for which an exemption has been claimed, but CEFIA has no obligation to initiate, prosecute, or defend any legal proceeding, or to seek to secure any protective order or other relief to prevent disclosure of any information pursuant to an FOIA request, (4) Consultant will have the burden of establishing the availability of any FOIA exemption in any such legal proceeding, and (5) in no event shall CEFIA or any of its officers, directors, or employees have any liability for the disclosure of documents or information in CEFIA’s possession where CEFIA, or such officer, director, or employee, in good faith believes the disclosure to be required under the FOIA or other law.

Appendix A: Technical Standards

Prepared for:

Clean Energy Finance and Investment Authority
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Sustainable Real Estate Solutions, Inc.
Sustento Group, LLC

Glastonbury, CT
Birmingham, MI
Oakland, CA
Trumbull, CT
Los Angeles, CA

Technical Standards

Version 2.0

February 1, 2013

I. Overview

II. Project Evaluation and Review Process

III. Energy Audit & Renewable Energy Feasibility Requirements

IV. Eligible / Ineligible Measures

V. Performance Measurement & Verification of Energy Savings VI. Energy Savings Insurance

VII. Data Management, Program Information Management, Reporting and Analytics

I - Overview

The methodology in these technical standards is designed to provide a flexible framework within which to qualify and manage the myriad eligible energy improvement projects applying for C-PACE financing. It is also designed to ensure that projects financed through the C-PACE program perform as predicted.

Energy improvements are defined in the C-PACE statute as “any renovation or retrofitting of qualifying commercial real property to reduce energy consumption or installation of a renewable energy system to service qualifying commercial property, provided such renovation, retrofit or installation is permanently fixed to such qualifying property.” A qualifying commercial real property includes any commercial (including multifamily with five or more units) or industrial property, regardless of ownership.

These proposed standards envision a dual track for application review to be conducted by CEFIA or its designated representative. A FAST TRACK review, explained in Section II, will likely be chosen for:

- less technically complex projects that may involve, for example, only one or two targeted ECMs (such as replacement of an old inefficient boiler past its useful life with a new high efficiency boiler); or,
- projects where a recent comprehensive energy audit has already been conducted by a qualified professional; or,
- Connecticut Energy Efficiency Fund (CEEF) approved projects.

A more comprehensive review (“Full Assessment”) will be required for all other project submittals (refer to Section II).

In all cases, information obtained from the responsible parties including the application, application review, project implementation, and energy savings measurement and verification (M&V) will be entered into a web-based CEFIA Data Management Platform (CDMP). The CDMP platform will facilitate uploading of key project data from responsible parties via excel spreadsheets and appending supporting documents in PDF file format. This data will also support the technical and financial underwriting process required to meet the reporting requirements of the multiple interdependent stakeholders, including but not limited to CEFIA management, lenders, building owners/managers and/or insurers (refer to Section VIII).

The technical methodology incorporated into the review process relies upon three established industry protocols:

1. ASTM E2797-11, Building Energy Performance Assessment (BEPA) Standard directed at data collection and baseline calculations for the energy audit;
2. ASHRAE Level I, Level II and Level III Energy Audit Guidelines; and
3. International Performance Measurement and Verification Protocol (IPMVP) for measurement and verification of the energy savings.

II – Candidate Project Evaluation and Review Process

Candidate project proposals submitted to CEFIA will be classified into one of the following four categories:

- 1) project proposals based upon the results from a recent (less than 3 years old) ASHRAE Level II or Level III (or equivalent) energy audit;
- 2) project proposals focused on replacement/upgrading of a specific building energy-using component (“targeted ECM”);
- 3) CEEF-approved projects seeking C-PACE financing;
- 4) project proposals without a specific plan, but with a goal to improve the building’s energy efficiency and take advantage of C-PACE financing.

Project proposals in categories (1) through (3) will likely be eligible for CEFIA’s FAST TRACK review process. Project proposals in category (4) are required to undergo a full assessment. Final approval on the candidate’s project review path is the responsibility of CEFIA or a program administrator working at the direction of CEFIA.

Full Assessment

Projects undergoing comprehensive review (refer to Figure 1) will begin with a screening step conducted by CEFIA to cost effectively eliminate projects where potential energy savings are not acceptable. This determination will be based on the applicant’s submittal of building energy use and cost data collected according to the ASTM E 2797-11 (“ASTM BEPA”) standard protocol in conjunction with an ASHRAE Level I audit. CEFIA, using its CDMP, will assess how the building’s current energy use intensity (kBtu/ft²) and energy cost (\$/ft²) compares with relevant peer buildings (“benchmarking”). If the results determine the project savings do not meet CEFIA’s minimum requirements, it will be rejected.

If benchmarking indicates there is potential to achieve an acceptable level of energy savings, CEFIA will advise the applicant to conduct an ASHRAE Level II or Level III energy audit or equivalent (refer to Section III). The audit, conducted by a CEFIA-approved energy auditor, will identify and recommend ECMs, determine project cost and expected energy savings, and evaluate key financial metrics. It is expected that most energy audits will be ASHRAE Level II. However, the final decision on audit level (ASHRAE Level II or Level III or equivalent) rests with CEFIA. In making this determination, CEFIA may consider a number of factors, including but not limited to, a project’s anticipated total capital investment and/or financing and insurance partner requirements.

Assuming the ECMs are eligible under the C-PACE program (refer to Section IV) and the energy savings and financial metrics meet CEFIA’s minimum requirements, the project will be deemed qualified.

Qualified projects then proceed to securing C-PACE financing. Depending upon the nature of the project and stakeholder requirements, CEFIA will assess whether energy savings insurance, if available, is appropriate for the project (refer to Section VI).

Once financing is in place, a CEFIA-approved energy contractor or energy service company (refer to Section VII) is retained by the applicant to execute the project. Once the ECMs are installed, the contractor will also measure and verify the energy savings (refer to Section V).

All key project data is entered in the CEFIA Data Management Platform (CDMP) by those responsible for the various tasks (refer to Section VIII). At the minimum, this platform will contain information collected from the applicant’s submittal, the project development and review process, project installation and energy savings

M&V. The platform will also facilitate reporting to stakeholders, including, but not limited to, CEFIA management, lenders, building owners/managers and/or insurers.

FAST TRACK Review

If an ASHRAE Level II or Level III energy audit (or equivalent) was conducted within the previous three (3) years and specific recommendations were provided on ECMs, including a projection of energy savings, or if a targeted inefficient energy-using system is being replaced (for example, an old unit that is past its useful life or if the facility is proposing to install a renewable energy system), or if the project already has been approved by CEEF, then CEFIA may employ the FAST TRACK review process.

The FAST TRACK process reduces the level of “soft costs” incurred by the applicant and accelerates the review process to reach C-PACE financing. The process differs from the full assessment process in two ways (refer to Figure 1). First, the screening step is replaced with a step designed to confirm the applicant’s proposal. Second, there is no need for a comprehensive energy audit. Assuming the applicant’s proposal is confirmed, the remaining steps are the same as in a full assessment.

The applicant’s proposal is reviewed and confirmed by CEFIA’s technical team. additional information may be requested from the applicant to facilitate the review process. For example, updated building energy use data may be requested and input into the CDMP. CEFIA, or a third party contracted by CEFIA, would review the project and make a determination on whether or not the project is qualified for C-PACE funding.

III -Energy Audit and Renewable Energy Feasibility Requirements

As a condition of financing, C-PACE legislation requires performance of an energy audit or renewable energy feasibility analysis that assesses the expected energy cost savings of the energy improvements over their useful life. CEFIA, in consultation with the applicant, and after the submission of the initial application on-line, will determine the minimum required energy audit scope of work (ASHRAE Level I, Level II or Level III) consistent with the C-PACE program technical standards. Regardless of the audit level, energy use data collection and analysis should be in substantial compliance with the ASTM E2797-11 standard. The principal objectives of the energy audit are to:

- identify and recommend, in collaboration with the property owner/manager, C-PACE-eligible ECMs (see Section IV);
- estimate the useful life of each ECM;
- assess total project capital cost;
- determine the energy savings that can confidently be achieved (energy savings should be determined by the difference between projected energy use after the ECMs are installed and the projected baseline energy use under similar conditions); and
- determine the project’s key financial metrics, including ROI, IRR, NPV and payback time based on the anticipated term of the C-PACE loan (the financial analysis performed should reflect any rebates or incentives offered by utilities operating in the State of Connecticut).

The principal objectives of the renewable energy feasibility study are to:

- Identify major building energy-use systems;
- Identify electricity metering (number of boxes, location, etc.);
- Identify the utility electricity rate structure for property;
- Collect historic (past three years) electricity use and cost (in accordance with ASTM E2797-11);
- Describe the proposed renewable energy system;
- Identify and evaluate site suitability for the renewable energy system;
- Assess system expected performance and requirements to maintain optimized operation;
- Identify guaranteed performance and useful life;
- Assess total project capital cost;
- Analyze building energy savings including assumptions on avoided future utility electricity costs and any rate escalation (specifically discussing demand charge reduction and electricity cost savings basis);
- Determine the project's key financial metrics, including ROI, IRR, NPV, life cycle savings, savings-to-investment ratio and payback time based on the effective useful life of the renewable energy system (the financial analysis performed should reflect any rebates or incentives offered by utilities operating in the state, REC credits/sale, potential excess electricity sale back to the grid).

In estimating the total project cost eligible for C-PACE funding (from upfront energy audits or renewable energy feasibility studies, to the design and installation of the energy improvements, to verification of the energy savings achieved), the energy auditor may also include the cost of a preventive maintenance contract for the energy improvements, up to but not exceeding a five (5) year contract.

Completed energy audit data is to be populated in CEFIA's Data Management Platform (CDMP) to enable CEFIA to validate that the scope of work met the required technical standards, ECMs met C-PACE program eligibility requirements, the recommended ECMs were technically and financially feasible, and all stakeholder underwriting data needs were satisfied.

ASHRAE Level I Energy Audit

An ASHRAE Level I energy audit consists of 1) a walk-through analysis to assess a building's energy cost, 2) a utility bill analysis to assess its efficiency (using ASTM BEPA Methodology to establish the building's baseline energy use), and 3) conducting a brief on-site survey of the building. The walk-through may be targeted at a specific building component that is intended to be replaced or upgraded or added (such as in the case of installing a solar energy system) or may include checking all major energy-using systems. Operational metrics of building equipment are typically limited to data collection of nameplates, but may be more detailed if that data are readily available. Level I energy analysis should at the minimum identify ECMs and the associated potential energy savings, the estimated cost of the ECMs, and specify where further consideration and more rigorous investigation is warranted.

ASHRAE Level II Energy Audit

An ASHRAE Level II energy audit is a more detailed investigation and includes a more comprehensive building survey and energy analysis than a Level I audit. It also includes more detailed financial analysis. In addition to

nameplate data collection, empirical data may also be acquired through various field measurements using handheld devices. The Level II audit should at the minimum identify and provide the investment and cost savings analysis of all recommended ECMs that meet CEFIA's and the owner's constraints and economic criteria, along with a discussion of any changes to operation and maintenance procedures. Detailed financial analysis includes ROI, IRR, NPV and payback period determination reflecting C-PACE financing. Sufficient detail on projected energy savings is provided to justify project implementation.

ASHRAE Level III Energy Audit

The ASHRAE Level III energy audit (often referred to as an "investment grade audit") is generally applicable to projects that are very capital intensive and demand more detailed field data gathering as well as more rigorous engineering analysis. The Level III energy audit provides even more comprehensive project investment and cost savings calculations to bring a higher level of confidence that may be required for major capital investment decisions. Data collection may involve field measurements acquired through data loggers and/or an existing energy management system.

ASTM BEPA

The ASTM Building Energy Performance Assessment (BEPA) protocol established a standardized methodology for building energy use data collection, compilation and analysis. The methodology is intended to fill data collection and analysis gaps in the ASHRAE energy audit guidelines and establish a sound building energy use baseline. The ASTM BEPA methodology standardized a number of major variables associated with data collection and analysis. This overarching methodology dictates the data and history that should be collected at each site.

CEFIA has the ultimate responsibility and sole discretion to approve the appropriate level of energy audit for a particular project, depending upon the nature of the proposed project and supporting information. CEFIA will make the determination after the initial screening process is complete.

IV – Eligible / Ineligible Measures

Common Eligible Energy Conservation Measures

Pursuant to C-PACE legislation, eligible measures must at the minimum achieve an energy savings (over the useful life of the energy improvements) to [total project] investment ratio greater than one and be permanently affixed to the property. In addition to the ECM eligibility review, CEFIA will also review projected improvements in energy efficiency to ensure that the uppermost practically achievable and commercially acceptable improvement is attained.

The following list of predominant, long-standing, proven energy efficiency technologies is intended as a reference list for C-PACE applicants. If not included on this list, CEFIA will review proposed ECM(s) and accept them on a case-by-case basis.

- High efficiency lighting
- Heating ventilation air conditioning (HVAC) upgrades
- New automated building and HVAC controls
- Variable speed drives (VSDs) on motors fans and pumps
- High efficiency chillers
- High efficiency boilers and furnaces
- High efficiency hot water heating systems
- Combustion and burner upgrades
- Fuel switching
- Water conservation measures to the extent they save energy
- Heat recovery and steam traps
- Building enclosure/envelope improvements
- Building automation (energy management) systems
- Renewable energy systems

The following end use savings technologies are generally more applicable to industrial facilities:

- New automated process controls
- Heat recovery from process air and water
- Cogeneration used for peak shaving
- Process equipment upgrades
- Process changes

Shown below are key aspects of some of the most commonly applied technologies listed above, with their typical simple payback range. These payback periods are only provided for informational purposes and should not be construed as a requirement for C-PACE funding eligibility.

Lighting (typical 2 to 3 year simple payback):

- Daylight controls and natural day lighting designed to reduce energy and improve visual comfort
- Upgrades for existing fluorescent fixtures including electronic ballasts, T8 lamps, and reflectors
- Meeting rooms and other intermittently occupied spaces can garner significant energy savings with the use of timers and occupancy sensors
- Smaller impact opportunities including security lighting, stairwell lighting, exterior night-time security lighting and exit signs.

Motors (typical 3 to 5 year simple payback):

- High efficiency electric motor replacements usually pay back when a motor is running for long periods at high load, or at the end of motor life
- The cost premium over standard motors normally can be recovered in less than 2 years
- Motor sizing to the actual load profile to improve efficiency and control electrical power factor.

Variable Speed Drives (typical 3 to 5 year simple payback):

- Applied to motors, pumps and fans
- Matches motor use to variable operating load
- Can save up to 40 percent in power consumption
- Can be packaged with controls
- Extends motor life.

HVAC (typical 2 to 8 year simple payback)

- New packaged units can increase efficiency and indoor comfort
- Proper sizing of HVAC equipment is a major opportunity, since full-load operation is more efficient than part load operation - consider fan capacity reduction or staging of 2 smaller units rather than partial loading of one large unit
- Install VSDs on HVAC motors
- Balance air and water supply systems to remove trouble spots demanding inefficient system operation
 - Improve maintenance
 - Eliminate simultaneous heating and cooling
 - Install economizers and direct digital controls
- Variable air volume conversions versus constant air flow
- Ventilation reduction
- Unoccupied shutdown or temperature setback/setup (controls).

Chillers (typical 5 to 10 year simple payback):

- New chiller models can be up to 30-40 percent more efficient than existing equipment.
- Upgrade lead chiller(s) (base load) to high efficiency
- Manage chiller and condenser settings to minimize compressor energy
- Optimize pumping energy for distribution of chilled water
- Optimize HVAC operation to:
 - Improve temperature/humidity control
 - Eliminate unnecessary cooling loads
- CFC reclamation program/inventory - chiller replacement may achieve both CFC management and energy efficiency objectives.

Boilers (typical 3 to 5 year simple payback):

- Replace steam with hot water boilers for hot water heating loads
- Improve maintenance
- Optimize operation/staging in multiple boiler plants
- Optimize boiler controls
- Tune or replace burners
- Add small “pony” boilers for low loads:
 - Reduced fuel consumption/energy costs
 - Reduced emissions

- Reduced maintenance costs
- Higher reliability.

Heat Recovery (typical 2 to 4 year simple payback):

- Heat recovery devices to capture waste heat from water, process heat and exhaust air to re-use it for preheating:
 - Building intake air
 - Boiler combustion air
 - Boiler feed-water
 - Inlet water for domestic hot water.

New Automated Building and HVAC Controls (typical 3 to 5 year simple payback):

- Old controls may still be pneumatic systems based on compressed air - new electronic controls are more precise and reliable, with greater capabilities.
- Can automate lighting, chiller, boiler and HVAC operation:
 - Load shedding
 - Optimal start/stop/warm up
 - Ventilation control.
- Whole-building energy management systems may come with other advanced control technologies:
 - Security, fire and life safety
 - Alarm monitoring and report generation
 - Preventive maintenance scheduling
- Remote monitoring/metering capabilities may be attractive.

Building Shell and Fenestration (typical 3 to 10 year simple payback):

- Roof insulation, combined with reflective roof coatings in warm climates, reduces energy consumption
- Review building pressurization for proper ventilation:
 - Balance exhaust and intake air quantities
 - Add weather-stripping on doors and windows
 - Seal cracks and unnecessary openings
- Window films to reduce solar heat gain and/or heat loss
- Replace windows with more energy efficient glazing.

Renewable Energy Technologies for Commercial Property (PA 11-80)

The following are the described Class I and Class II renewable technologies per Public Act 11-80. Class I renewable energy sources applicable to commercial and industrial property upgrades - energy derived from:

- Solar power
- Wind Power
- Geothermal Power

- Fuel Cell
- Methane Gas from landfills
- Low emission advanced renewable energy conversion technologies
- A run-of-the river hydropower facility with operation after 7/1/2003*
- Sustainable Biomass Facility*.

Class II renewable energy sources applicable to commercial and industrial property upgrades - energy derived from:

- Trash-to-Energy facility
- Biomass Facility with operation before 7/1/98*
- A run-of-the river hydropower facility with operation prior to 7/1/2003*.

*See PA-11-80 for additional details

Ineligible Measures

All C-PACE related improvements must be permanently affixed to the commercial property and part of a retrofit to existing infrastructure. The following items will not be considered as efficiency measures under the C-PACE program:

- Appliances, e.g., refrigerators, dishwashers, etc.
- Plug load devices
- Vending machine controls
- Any package of measures with a weighted average effective useful life (EUL) that does not meet or exceed the life of the loan
- Any package of measures that does not achieve an energy savings (over the life of the loan) to total project investment ratio of greater than one
- Any measure that is easily removed or not permanently installed
- Any measure that does not result in improved water or energy efficiency or renewable energy generation
- Extending natural gas lines to the property line to enable a PACE-eligible gas conversion project.

V - Performance Measurement & Verification of Energy Savings

The purpose of performance measurement and verification (M&V) is to ensure that baseline and normalized energy use and cost performance is calculated in a technically sound, consistent and transparent manner, which in turn is used to determine energy savings. To accomplish this goal, CEFA requires all C-PACE applicants to incorporate in their projects an M&V plan directed at project commissioning, and be responsible for its execution. Further, depending upon stakeholder reporting requirements (including CEFA, the building owner/manager, lender and/or insurer), recurring M&V may also need to be performed.

To accomplish this goal, CEFA may require C-PACE applicants to base their M&V plan on the International Performance Measurement and Verification Protocol (IPMVP). The IPMVP's fundamental concept stems from

the fact that energy savings cannot be measured directly. Savings in this context are the absence of energy use (or “avoided energy use”) that would have occurred without the ECMs installed.

The IPMVP provides four options for determining energy savings. These include:

Option A. Retrofit Isolation: Key Parameter Measurement

Option B. Retrofit Isolation: All Parameter Measurement

Option C. Whole Facility

Option D. Calibrated Simulation.

Options A and B focus on the performance of specific ECMs that can be measured in isolation from the rest of the building. In Option A, the key energy use parameter is measured, but other minor effects can be estimated. For example, Option A might include a lighting retrofit, where an electric meter can isolate and measure electricity use for the lighting, but where the relatively minor interactive effect of less cooling in summer and more heating in winter is estimated. Reduced lighting loads will reduce air conditioning energy consumption (a cooling bonus), but increase heating consumption (a heating penalty). In Option B, all parameters necessary to evaluate energy use are measured. This might, for example, be the case with installation of a variable speed drive and controls to a motor, with a power meter installed on the electrical supply to the motor.

Options C and D are used when energy use of the ECMs installed is not easily measured in isolation from the rest of building operations, or there is little measured baseline energy data, among other reasons. The Option C approach assesses savings at the whole facility level. The measured and verified energy savings in the desired reporting period (e.g., 12 months after the ECMs have been installed) is determined from the difference between the actual (measured) energy use in the reporting period and the projected energy use in this same reporting period assuming the ECMs had not been installed. The analysis reflects changes in the independent variables impacting building energy use (such as weather, occupancy, operating hours, etc.) for each month in reporting period as compared to the baseline. Option C is commonly applied for whole building retrofits involving multiple ECMs that may be interactive. Option D uses computer simulations and building modeling (e.g., U.S. DOE 2.2- based software), and is usually applied when baseline year energy data are not available or considered reliable.

While it is expected that contractors will rely substantially on IPMVP Options A, B, C or D for M&V, CEFIA may approve exceptions depending on the specific nature and size of the project. For example, in cases where a targeted ECM is being installed (such as sole replacement of an existing inefficient unit that is past its useful life with a new high efficiency unit), CEFIA may also approve M&V using a methodology based on calculations and supported, as appropriate, with field measurements, to verify the energy savings.

For all C-PACE funded projects, contractors are to prepare an energy savings M&V plan that at the minimum provides a description of the required commissioning activities to ensure the ECMs are operating as projected by the manufacturer and as projected in the energy audit.

Within the pre-agreed upon period after ECM installation, the party responsible for project implementation (or any subsequent party approved in advance by CEFIA) is to collect post-project energy use data and other

pertinent data in accordance with the M&V plan. The responsible party is required to enter such data into the CDMP. Recurring M&V reporting may be required by project stakeholders (CEFIA, building owner/manager, lender, or insurer). If so, the applicant will submit at the agreed upon frequency (and as also specified in the M&V plan) an energy savings verification report that describes the resultant actual energy savings in the reporting period compared to the projected energy savings.

VI - Energy Savings Insurance

CEFIA has determined that for certain projects energy savings insurance (ESI) may serve as a strategic risk transfer tool that can aid in the underwriting, funding and success of a proposed project. As such, it may provide the following important benefits:

- Underwriting can provide a third party check on projected energy savings;
- Insurance may result in a credit enhancement in the project funding process;
- ESI can provide a building owner or operator with confidence that projected energy savings will be realized.

While ESI may not be appropriate for all projects, CEFIA has developed the following guidance for the C-PACE program.

Project scenarios where it is unlikely that ESI would be applicable:

- For relatively small projects such as projects involving costs of less than approximately \$300,000.

Rationale: For such small projects, the cost of ESI may represent to large a burden on total project cost. For projects with relatively short payback periods, such as those with payback periods of less than approximately 3 years.

Rationale: CEFIA will have determined that energy savings for such projects will be significant and minor variations in the final outcome will not be significant.

- For projects solely involving fuel switching, i.e., oil to natural gas.

Rationale: CEFIA will have determined from relatively straight forward calculations that at current and projected prices for natural gas, combined with high efficiency newer equipment, backed by a reputable manufacturer's guarantee, the need for ESI would be unlikely.

- If a single and targeted ECM is being installed, e.g., lighting upgrade, accompanied by a reputable manufacturer's performance guarantee.

Rationale: Similar to fuel switching, such projects generally involve technically straight forward calculations that can provide confidence in the projected energy savings.

- If an energy savings performance guarantee is obtained from an investment grade energy services company.

Rationale: Such companies have the financial resources to back their energy savings guarantee.

Project scenarios where CEFIA may determine that ESI could be appropriate:

- Where the payback period is relatively long.
- Where the project cost is significant and therefore the potential risk much greater.
- For projects involving the installation of multiple energy conservation measures that may have interactive energy use implications, e.g., where the measurement and verification of the projected energy savings will be more difficult and complex.
- If the project developer (ESCO) lacks sufficient financial resources to provide or back their energy savings performance guarantee.
- If a capital provider is considering requiring ESI as a condition to fund the project.
- If a capital provider considers ESI as a credit enhancement that can make the project more financially attractive.
- If the credit enhancement provided by ESI will offset a significant portion or all of the insurance premium cost.

VIII: Data Management, Program Information Management, Reporting and Analytics

To ensure the success of the C-PACE program, data needs to be uniformly collected over the full life cycle of a project, from initial building screening, through energy auditing, project development, project implementation and post-implementation energy savings measurement and verification. Projects undergoing both full assessment and FAST TRACK will be tracked in the CDMP.

- Sample data that will be collected in the CDMP includes, but is not limited to:
- Candidate project information
- Performance baseline determination consistent with ASTM BEPA methodology
- Benchmarking results comparing candidate performance to peer buildings
- Key energy audit data consistent with ASHRAE guidelines
- ECM data
- Key financial metrics
- Contractor information
- Project implementation data
- M&V data
- Scheduling information
- CEFIA project approval/denial information.

The CDMP platform will facilitate uploading of key project data (see above) via excel spreadsheets, appending supporting documents, e.g., ECM data sheets, onsite photographs, modeling and data logging results, etc., in PDF file format. The platform will also have report generation and analytics capabilities across the project life cycle to keep CEFIA management informed and to support as necessary the technical and financial underwriting process needed to meet the reporting requirements of the multiple interdependent stakeholders.

To facilitate this critical C-PACE objective, CEFIA will deploy, and require all stakeholders to use the CDMP. Standardizing on the CDMP ensures that all program interdependent stakeholders (CEFIA, building owners/managers, energy service companies, energy auditors, installation contractors, lenders and insurers) maintain cost effective access to the key performance analytics needed to facilitate project success and drive continuous C-PACE program improvement by all participants.

Appendix B: Frequently Asked Questions

- I. C-PACE Project Eligibility
- II. Application Process
- III. Measurement & Verification
- IV. Financing

I. C-PACE Project Eligibility

Are there guidelines for average deal size?

Although there is no financing minimum for C-PACE, it is best suited for capital improvements above \$150,000. The amount financed depends on the depth of retrofit and expense of measures to be implemented. While not expected, owners and project developers may also choose to fund a project using multiple sources of capital.

Can non-capital costs be wrapped into C-PACE financing?

Eligible non-equipment costs of the energy efficiency and renewable energy improvements may include, but are not limited to the cost of surveys and audits, permits and inspections, equipment, installation from licensed, approved professionals, and follow-up inspections. Installation costs may include, but are not limited to, energy audit consultations, labor, design, drafting, engineering, permit fees, and inspection charges. The specific eligible non-equipment costs will be included in the C-PACE program guidelines.

Can non-energy saving building upgrade measures be financing under C-PACE?

Non-energy efficiency measures that support the completion of an energy efficiency upgrade or renewable energy system may be financed under C-PACE as long as total costs and savings meet the savings-to-investment >1 ratio.

Would new construction qualify for PACE financing?

New construction potentially qualifies in unique circumstances, such as an improvement or renovation that exists within an already planned development. CEFIA would need two designs for the property to demonstrate that the clean energy renovation or retrofit is a separate and distinct undertaking from the original build-out. Additionally, the building would need to be in development before the assessment is placed on the property. The existing mortgage holder would also be involved in the process because their consent to the C-PACE financing is required. It may be more cost effective to include such clean energy improvements in the original development financing plans.

Are solar power purchase agreements (PPAs) covered?

Yes, CEFIA has determined that this is permissible ([click here](#) – and view the “C-PACE Presentation for Contractors” to learn more).

Does a ballasted PV system meet the "permanently fixed" requirement?

Yes, so long as the system has been designed specifically for this property and the roof can handle the additional weight.

After you have done an EE project through PACE, can you do another a few years later?

Yes. You can also do more than one project at the same time.

Does C-PACE require some level of energy efficiency (EE) be included in all renewable energy (RE) projects?

The program does not have any requirement for a minimum level of energy efficiency for a project. The requirement is that the energy savings over the financing term must be greater than the investment (SIR>1).

II. Project Application Process

Who will do the Savings-to-Investment Ratio calculation?

The contractor will provide an audit to CEFIA and CEFIA will verify the calculations as part of its application approval process. It is a Time 0 analysis, meaning the SIR will not be recalculated at some future point in time during the loan period. Construction could commence once the application is approved.

What do you estimate for timeframes standard (full assessment) and fast track approvals?

The timeframes will be project-specific, and, as you can realize, include dependence upon a number of parties outside of CEFIA, e.g., the energy auditor, the ESCO, etc. who will establish their own schedules with the building owner to complete tasks.

What will be an acceptable way in the energy audit to project what the energy savings will be for the recommended ECMs?

Please refer to C-PACE Program Guidelines, *Audit Requirements*, for a full explanation. However, the exact methodology (excerpt below) for the projection of savings will be determined during the project development. However, it must follow ASHRAE audit guidelines and the ASTM E2797-11 standard. As is the case for all new innovative programs like C-PACE, we foresee a brief “learning curve” period for firms who haven’t conducted many energy audits previously. Once the engineering community and CEFIA have reviewed and negotiated the first dozen or so deals, the “lessons learned” regarding technical submissions will be shared with all market participants, further streamlining the project submission, review, and approval process.

“As a condition of financing, C-PACE legislation requires performance of an energy audit or renewable energy feasibility analysis that assesses the expected energy cost savings of the energy improvements over their useful life. CEFIA, in consultation with the applicant, and after the submission of the initial application on-line, will determine the minimum required energy audit scope of work (ASHRAE Level I, Level II or Level III) consistent with the C-PACE program technical standards. Regardless of the audit level, energy use data collection and analysis should be in substantial compliance with the ASTM E2797-11 standard.”

III. Measurement and Verification

How will CEFIA's Program Administrator verify the energy savings once the ECMs are installed?

Please refer to C-PACE Program Guidelines, *Performance Measurement & Verification of Energy Savings*, for a full explanation. However, the exact methodology (excerpt shown below) for measurement & verification of savings will be determined during project development, the post-installation energy use and cost data must be entered into the CDMP, for CEFIA's and the TPA's review.

“For all C-PACE funded projects, contractors are to prepare an energy savings M&V plan that at the minimum provides a description of the required commissioning activities to ensure the ECMs are operating as projected by the manufacturer and as projected in the energy audit. Within the pre-agreed upon period after ECM installation, the party responsible for project implementation (or any subsequent party approved in advance by CEFIA) is to collect post-project energy use data and other pertinent data in accordance with the M&V plan.

The responsible party is required to enter such data into the CDMP. Recurring M&V reporting may be required by project stakeholders (CEFIA, building owner/manager, lender, or insurer). If so, the applicant will submit at the agreed upon frequency (and as also specified in the M&V plan) an energy savings verification report that describes the resultant actual energy savings in the reporting period compared to the projected energy savings.”

What are the O&M and M&V periods and can they be capitalized into the financed amount?

As recommended to CEFIA by the utilities, the O&M period is up to five years. During this time, the cost can be capitalized into the amount financed through PACE. We will not consider a lack of O&M an event of default. Please review our technical standards on enforcement. M&V costs can be capitalized, and the M&V reporting period and costs required varies, depending on the energy measures involved in the project.

If an ECM results in O&M savings other than the direct energy savings, are these also included in the savings calculations?

No, C-PACE legislation specifies it is the energy cost savings that are to be included in the financial analysis, including the C-PACE requirement that the savings (over the financing term) must exceed the investment, or in short, the SIR > 1.

Could you elaborate on the CEFIA data management platform that all stakeholders will have access to?

After reviewing the operating experience gained in other PACE programs and leading CRE energy retrofit finance programs around the country, it was evident that to ensure C-PACE program success all stakeholders would need transparent access to key project data across the entire project life cycle. To meet this need, CEFIA relies on its data management platform (CDMP). The CDMP provides visibility to project performance data from initial project development through recurring measurement and verification to validate project success. The platform is powered by Sustainable Real Estate Solution’s cloud-based software and is able to provide all interdependent stakeholders (including CEFIA management, building owners/managers, energy auditors, ESCOs, installation contractors, capital providers and insurers) with cost effective access to the key performance analytics needed to facilitate project success and drive continuous improvement. Moreover, standardizing on the CDMP ensures all interdependent stakeholders’ interests are aligned and we believe will considerably reduce barriers that might adversely impact the deal.

How does M&V approach limit the expense for small projects? Are standardized factors allowed instead of actual measured savings? How are weather adjustments done?

Please refer to C-PACE Program Guidelines *Performance Measurement & Verification of Energy Savings*, for a full explanation. However, the exact methodology (excerpt below) for measurement & verification of savings will be determined during project development. This process will include consideration of project size, complexity, risk profile (e.g., lighting retrofit vs. cogeneration), etc. These and other factors will affect the cost of measurement & verification of the savings.

We are assuming the standardized factors “standardized factors” you are referring are things like kW ratings of lighting systems, etc. Yes, some standardized factors will be considered. We will be flexible in consideration of standardization of certain items in order to balance “M&V cost vs. savings confidence”. However, “stipulation” of savings versus measurements will be allowed on a very limited basis. Weather adjustments will be made according to the 2012 IPMVP Guidelines - Concepts and Options for Determining Energy and Water Savings - Volume I. All of these items will be worked out with the contractor/owner during CEFIA’s and the TPA’s review.

If the energy asset (PV/CHP) is producing output of power/heat that is clearly within the energy demand 365*24 of the building, can we simplify the verification, by using verified output/runtime etc upfront rather than looking to the actual delta in energy use after the fact over the life?

No. The M&V of an energy producing asset will be measured according to the IPMVP Guidelines, just like that of a straight energy efficiency project. In fact, it is typically much simpler to conduct M&V on an energy supply asset, as it can be directly metered. This strategy is used now for all projects which secure RECs, or bid into the ISONE's Forward Capacity Market, so it is common industry practice.

IV. Financing

What are typical financing terms for C-PACE deals?

Connecticut will initially use an "owner-arranged" C-PACE financing model whereby property owners have the flexibility to independently structure and secure financing with a capital provider of their choice. All terms, rates, and structures are determined between the lender and building owner, subsequent to C-PACE application approval. The term is dependent on the the useful life of the ECMs undertaken. CEFIA may establish certain credit enhancement options depending on the nature of a transaction on a case by case basis.

How does C-PACE financing interact with utility incentives?

CEFIA has worked closely with utilities on our technical standards, and on wrapping in and coordinating incentives. The interests of the utilities are very much aligned with CEFIA, and they can buy down costs of eligible energy measures prior to C-PACE financing - this would help improve the Savings-to-Investment Ratio of a given project.

If different ECMs have different Effective Useful Life ratings, how is length of financing determined?

A weighing methodology has been developed internally to deal with ECMs having different useful lifetimes. The methodology is now being discussed with capital providers to obtain their view.

Will CEFIA be able to keep a building's financial and other sensitive data confidential?

The C-PACE program is structured to allow owners to keep sensitive building and project data confidential.

If energy audits or RE feasibility studies are financed through PACE, how does that work? Does the contractor perform the audit for free assuming that they will be paid when the rest of the project is financed?

The contractor works for the building owner and likely will prepare the renewable energy feasibility study. The cost of this study can be incorporated into the financing assuming the C-PACE deal proceeds. If the deal does not proceed, the building owner remains responsible for payment of the study.

Is the energy savings for C-PACE factored into the savings required to meet CT's energy efficiency resource standard? Which party owns the Renewable Energy Certificates associated with the renewable energy investments?

If the C-PACE project is taking rebates from CT Energy Efficiency Fund (CEEF), then for those activities CEEF will take 75% and the project will get 25%. If the C-PACE project is leading to measures that are outside of CEEF rebates, then the project could claim them, generally the owner of the equipment generating the RECs, but the ownership can be negotiated between the capital provider and building owner.

As most solar installs have a SIR < 1, whose discount rate is used in the financial analysis?

CEFIA is developing guidelines in this regard. Please contact Benjamin.healey@ctcleanenergy.com