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**CALL FOR APPLICATIONS**  
for  
On-site Renewable Energy Generation Projects

# APPLICATION INSTRUCTIONS

Program Opportunity # CCEF-OSDG-001  
Version 1

**ON-SITE RENEWABLE DG PROGRAM**  
FOR COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL USERS

*Program Release December 1, 2005*  
*Applications are accepted on a rolling submission basis*

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## Executive Summary

Connecticut is facing significant energy issues involving constraints on the transmission and distribution system and the emergence of federally mandated congestion charges. These issues will have a sizeable impact on electric ratepayers, especially in terms of electricity prices. The situation has drawn concern by state policymakers, agencies, and businesses. The Connecticut State Legislature has recognized these issues by undertaking legislation that includes the formation of the Connecticut Energy Advisory Board (CEAB), adoption of the Climate Change Action Plan, and promulgation of the Energy Independence Act (PA 05-01).

The increasing costs and awareness of the energy issues in Connecticut bring an increasing emphasis on the opportunity for clean distributed resources to assist in addressing these issues. In the past several years CCEF has developed several programs to encourage the installation of customer side installations of renewable energy. The CCEF On-site Renewable DG Program uses the lessons learned from past and current programs and the recent public policy framework as a basis to design a flexible, integrated technology program to stimulate demand for customer side-distributed generation at Commercial, Industrial, and Institutional (CI&I) sites.

CCEF's On-site Renewable DG Program is a \$21 million financial support program for renewable energy installations at Commercial, Industrial, and Institutional facilities in Connecticut. Through the On-site Renewable DG Program, CCEF will offer financial support to buy down the cost of renewable energy generating equipment. The level of support for individual awards will vary based on the specific economics of the installation. The total available grant amount for a given project will be limited to \$2 MM. An additional 1¢/kWh premium will be available for projects in southwestern Connecticut up to the \$2 MM limit.

Applications for this Program will be accepted on a rolling submission basis. CCEF encourages all Applicants to schedule pre-application discussions with the CCEF staff before submitting an Application under this Program. The Application Forms are available in a separate file on CCEF's Web site.

The Connecticut Clean Energy Fund (CCEF) was created by the Connecticut General Assembly in 1998. CCEF promotes the development and commercialization of clean energy technologies and stimulates markets for electricity from clean renewable sources. CCEF is administered and managed by Connecticut Innovations, a quasi-public state agency created by the General Assembly in 1989 to accelerate Connecticut's entrepreneurial technology economy by making risk capital investments in people, technologies, and emerging companies. CCEF's funding comes from a surcharge on electric ratepayers' utility bills.

## Section 1 - Introduction and Overview

### 1.1. *Background and Objectives*

CCEF, as administered by Connecticut Innovations, Inc., is the organization responsible for managing the investments of the Renewable Energy Investment Fund established under Conn. Gen. Stat. § 16-245n. As part of its comprehensive plan for the investment of these assets, CCEF has created an objective to have 5 MW of customer side-distributed generation projects contracted by mid-2007. The On-site Renewable DG Program is expected to deliver the bulk of the capacity identified in this goal.

The specific objectives of the On-site Renewable DG Program are to:

- Fund a geographically and size-diverse portfolio of on-site distributed generation projects from a variety of renewable resources;
- Select projects with a high probability of reaching successful installation and operation;
- Focus on projects that fully utilize the characteristics of the technology and capture unrealized value to the host site;
- Give special attention to projects that have potential to reduce the federally mandated congestion charges in Connecticut; and
- Select project hosts that will disseminate lessons learned, barriers overcome, and benefits of the installation to their peers.

The total funding allocated for all selected projects under this Program is \$20.55 MM. The Program will include targeted funding levels within the total allocation for fuel cells of \$9 MM and solar photovoltaic of \$9 MM.

## 1.2. Program Eligibility

### 1.2.1. Eligible Technologies

To be eligible, an Applicant must propose to install commercially available clean energy-generation equipment at a Connecticut host site. The installation must utilize technology that falls within one or more of the following categories:

- Solar,
- Wind,
- Fuel cells,
- Landfill gas,
- Low-emission advanced biomass conversion technologies, and
- Class I Hydropower.<sup>1</sup>

Additionally, the CCEF authorizing statute includes a provision allowing CCEF to fund “other energy resources and emerging technologies which do not involve the combustion of coal, petroleum or petroleum products, municipal solid waste or nuclear fission.” Resources and technologies not listed above will be addressed on a case-by-case basis, with substantial weight being given to those resources and technologies approved as a Class I renewable energy source by the DPUC.<sup>2</sup>

### 1.2.2. Minimum Requirements

All Applications must meet the minimum threshold requirements outlined below to be considered for eligibility.

- Host sites must be commercial, industrial, or institutional facilities. These may include offices, hospitals, municipal and government buildings, manufacturing facilities, universities, libraries, museums, and certain special-purpose educational facilities or centers, among others. Portable or mobile systems will not be considered under this Program. Seasonal, temporary, or limited-use facilities will be closely scrutinized for high value and visibility and may be excluded.
- The project must use an energy-generation device that is commercially available and offers warranties, spare parts, and service commensurate with commercial status.
- Applicants must be the owner and operator of the property or facility (host) where the project is to be located or a third-party energy services provider willing to own and operate the energy-generation equipment for the contract term.

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<sup>1</sup> See Connecticut Department of Public Utility Control, *DPUC Declaratory Ruling Concerning “Run-of-the-River Hydropower” As That Term Is Used In The Definitions of Class I and Class II Renewable Energy Source in C.G.S. § 16-1(A)(26) & (27)*, September 10, 2004.

<sup>2</sup> A decision can be obtained by filing a Request for Declaratory Ruling with the Connecticut Department of Public Utility Control. See their Web site at <http://www.state.ct.us/dpuc/> for further information.

- Facilities must be located in Connecticut within the Connecticut Light and Power (CL&P) or United Illuminating (UI) service territories.
- Energy must be generated by a renewable energy electric-generating resource within the scope of CCEF's funding authorization as defined by Conn. Gen. Stat. § 16-245n(a).
- The generating facility must intend to generate energy for the benefit of the host site.
- A specific site location must be identified at the host site.
- The energy generating device used must be ten (10) kilowatts or larger.
- Separate facility locations must be presented in separate Application submissions. They may not be combined into one proposal.
- Projects are expected to be installed and operating within twelve (12) months of an executed contract with CCEF.

**Applications not meeting all requirements outlined above may not be evaluated further under this Program.**

### **1.3. Terms and Conditions of CCEF Financing**

In the event of an award, Applicants must be willing to accept terms and conditions substantially similar to those found below. Definitive documents are expected to be negotiated and executed within ninety (90) days of award notification, after which time the financing offer from CCEF may be retracted. An outline of the basic terms and conditions of CCEF financing are provided in Sections 1.3.1–1.3.3.

#### **1.3.1. CCEF Funding and Disbursement**

The level of support for individual awards will vary based on the specific economics of the installation and the technology used up to a maximum funding cap. CCEF will provide funding only for that portion of the project that meets the requirements of Appendix A. The actual subsidy amount will be ascertained by assessment of the difference between the host site's cost of energy that would be displaced by the proposed on-site generating equipment and the total cost and value of the energy provided by the new clean energy-generating equipment. Each site will be individually analyzed by CCEF and each technology will be evaluated over the reasonable lifecycle of the equipment. A premium will be available for projects in the congested area of southwestern Connecticut. The total financing amount for a given project will be limited to \$2 MM. An example of the economic evaluation process can be found in Appendix B.

**Table 1 – CCEF Funding Limits**

Technology	Solar	Fuel Cells	Small Wind	Small Biomass	Landfill Gas	Hydro
Funding cap	\$5.00/W <sup>3</sup>	\$4.70/W	\$3.60/W	\$3.30/W	\$3.20/W	TBD
Evaluation timeframe	20 yrs	10 yrs <sup>4</sup>	15 yrs	10 yrs	10 yrs	20 yrs
SW CT premium <sup>5</sup>	1 ¢/kWh	1 ¢/kWh	1 ¢/kWh	1 ¢/kWh	1 ¢/kWh	1 ¢/kWh

The incentive funding for this program will be in the form of a grant. The grant monies (excluding the SWCT premium) will be disbursed in installments to the owner of the equipment based on project milestones according to the following schedule, regardless of technology. The facility must implement the minimum recommended level of efficiency improvements prior to installation of the generating equipment before any funding from CCEF is released. See Appendix A for details.

**Table 2 - Disbursement Schedule – Basic Grant**

Milestone	Payment
Delivery of generating equipment to site	50%
Startup, commissioning, and inspection	40%
After six months of successful operation	10%

The final grant payment, after the first sixth-month anniversary of the system commissioning, will be made provided that the system has produced at least 70% of the projected AC energy production during the first 6 months of operation, as verified by CCEF's independent consulting engineer.

If eligible, the SWCT premium will be paid in two installments, based on estimates of the net electric energy production over the expected lifetime of the project, and disbursed according to the following schedule:

**Table 3 - Disbursement Schedule – SWCT Premium**

Milestone	Payment
After six months of successful operation	50% of estimated value
One year from startup	Remainder of calculated value based on actual performance

Please refer to Appendix B for an explanation of the calculation method used for these premium payment amounts.

<sup>3</sup> PTC rating. PTC stands for "PVUSA Test Conditions." PTC watt rating is based on 1000 Watt/m<sup>2</sup> solar irradiance, 20 degree Celsius ambient temperature, and 1 meter/second wind speed. The PTC watt rating is lower than the "Standard Test Conditions" (STC), a watt-rating used by manufacturers. Ratings are available at the CEC Web site at [http://www.consumerenergycenter.org/cgi-bin/eligible\\_pvmodules.cgi](http://www.consumerenergycenter.org/cgi-bin/eligible_pvmodules.cgi).

<sup>4</sup> Subject to fuel cell manufacturer's specifications.

<sup>5</sup> Southwestern CT refers to the ISO-NE's Designated Congestion Area identified under Market Rule 1, Appendix A.

### 1.3.2. Key Terms and Conditions

In addition to the funding terms discussed above, successful Applicants will be required to:

1. Operate the equipment for at least eight (8) years;
2. Make available, in real time, limited operating data from the facility;
3. Provide CCEF with reasonable access to the site;
4. Be prepared to show proof of any contractor and subcontractor's insurance policies evidencing a minimum of \$1,000,000 liability insurance coverage;
5. Insure the equipment and list CCEF as an additional loss payee;
6. Repay the total grant amount plus interest from the date of disbursement in the event of a default; and
7. Provide prominent and visible signage at the project site and acknowledgment in any and all of the host and owner's promotional materials recognizing CCEF's contribution to the project in a form acceptable to CCEF.

### 1.3.3. Management and Reporting Requirements

All Awardees must agree to provide the following minimum management and reporting deliverables to CCEF:

- Invitation to CCEF representative to a "kickoff" meeting when Awardee begins project-specific activity.
- Periodic project status meetings with meeting minutes and action items written up and sent to CCEF.
- A letter certifying completion of the system commissioning and commencement of entry into operational service of the generating equipment.
- Annual reports to CCEF (1 page) regarding the economic and technical performance of the project.

## Section 2 - Program Logistics

### 2.1. *Schedule*

Applications under this Program Opportunity will be accepted and reviewed on a rolling basis. Each project that successfully passes the eligibility screen will receive a detailed evaluation, due diligence, and analysis. Following its detailed review, CCEF will determine the financial support level and notify the Applicant. Upon the Applicant's decision to proceed, CCEF will submit a recommendation for funding to its Advisory Board at the next scheduled monthly meeting, if practical.

Following CCEF Advisory Board recommendation, and CII Board Approval, Applicants will be notified of approval and will receive a funding offer including detailed terms and conditions. Documents are expected to be negotiated and executed within ninety (90) days of notification.

### 2.2. *Communications and Questions*

Questions or clarifications about this Program must be directed in writing to:

Project Manager, On-site Renewable DG Program  
200 Corporate Place, 3<sup>rd</sup> Floor, Rocky Hill, CT 06067

Or by electronic mail to [cefinfo@ctinnovations.com](mailto:cefinfo@ctinnovations.com)

Questions and comments must include the name of company and person submitting the question. CCEF will utilize comments and questions to continually improve the process as practical.

**Any oral communications in connection with the Program or this Program Opportunity are not binding and shall in no way alter a specification, term, or condition nor indicate any selection preference other than that identified herein.**

### 2.3. *Project Characteristics*

The projects selected under this solicitation must meet certain standards that include documentation, operational, warranty, and hardware requirements. The details of these requirements can be found in Appendix A.

## **2.4. Evaluation Process**

The CCEF will accept Applications for this Program Opportunity on a rolling basis. CCEF staff will initially assess incoming Applications against the program eligibility criteria within fifteen (15) business days of Application receipt.

Applications that pass the initial screening will be financially analyzed by CCEF and evaluated for their consistency with the Program's objectives and requirements based on information provided in the application. CCEF may use department staff, staff of other agencies, private consultants, industry experts, or other designated representatives to evaluate the Applications throughout the Application review and selection process at CCEF's discretion and without notice to the Applicant. During this review, CCEF will determine a specific subsidy amount and inform Applicants of the level. Notice of the subsidy amount will require an acknowledgment and commitment by the host to proceed with the project at the identified subsidy level.

Host sites that wish to receive indication of the approximate subsidy amount in advance can submit a letter of interest with the size, location, technology, and contact information for the project. CCEF staff will engage the potential Applicant in a dialogue to format the project and determine the data required to analyze the installation and determine the approximate subsidy.

For projects that respond favorably to the subsidy offer, CCEF staff may bring the Project to the Clean Energy Advisory Board's Projects Committee, and then to the Board itself, for approval.

A project can be rejected at any point in the process at the sole discretion of CCEF. Where appropriate, projects that do not receive a favorable review will be encouraged to resubmit a revised Application at a later date.

## **2.5. Evaluation Criteria**

The information in each Application will be evaluated initially for completeness and consistency with the Application submittal requirements outlined in Section 3 of this document, the eligibility criterion identified in Section 1.2, and the Project Characteristics discussed in Section 2.3. All Applications must meet these minimum requirements to be eligible for evaluation. Applications with substantial deficiencies will be rejected. CCEF may request that the Applicant promptly provide missing information or appropriate clarifications.

Projects that successfully meet the threshold eligibility screen will be further evaluated based on:

- Deployment of the technology, and
- Probability of project completion.

The following sections describe the types of questions CCEF will be looking to answer in each of these categories in its assessment of the Applications.

### **2.5.1. Deployment of the Technology**

- How well are the technology attributes matched with the host building's energy needs and requirements?
- Has the equipment proposed been appropriately sized to the host building's electrical and thermal loads?
- Are the costs of the equipment and installation reasonable?
- Does the proposed installation reflect a thorough understanding of the generating equipment's limitations and capabilities?
- Does the operating and maintenance program adequately address the manufacturer's recommended standards to allow eight (8) years of successful operation?
- Is the quality reliability and operational track record of the equipment adequate to assure reliable operation and ease of maintenance?
- How reliable is the fuel source or resource and how well matched is it with the proposed equipment?

### **2.5.2. Probability of Project Completion**

- Is the project economically sound?
- Is funding secured for the balance of the costs not funded by CCEF?
- What is the level of commitment from the project host?
- Does the project development and operation team have experience necessary to ensure success?
- What is the proposed operational date and how likely is the project to meet this date?
- Are the relevant permits identified and is the plan to obtain them appropriate?

## **2.6. *Application Conditions***

### **No Commitment; Reserved Rights**

This Program Opportunity is not an offer and neither this document nor any subsequent discussion shall give rise to any commitment on the part of CCEF or confer any rights on any Applicant unless and until a binding written agreement is executed by CCEF and the Applicant. CCEF reserves the right to reject any or all Applications; to waive defects or irregularities in any Application; to enter into discussions with selected Applicants; to discontinue discussions with any Applicant at any time and for any reason; to correct inaccurate awards; to change the timing or sequence of activities related to this Program Opportunity; to modify, suspend, or cancel this Program Opportunity; and to condition, modify, or otherwise limit awards pursuant to this Program Opportunity.

### **Applicant's Cost**

All costs to the Applicant associated with the preparation of an Application, material preparation for any related investigative or due diligence activities, other than the external review, and any resulting discussions or negotiations shall be borne by the Applicant.

### **Applicant Representations**

By responding, the Applicant shall be deemed to have represented and warranted: (1) that the Application is not made in connection with any competing Applicant submitting a separate response to this Program Opportunity and is in all respects fair and without collusion or fraud; provided, that this requirement shall not be construed to prohibit any person or entity from being involved in more than one project or Application; (2) that the Applicant did not participate in the Program Opportunity development process outside of CCEF's requested public comment period; (3) that the Applicant has not been convicted of bribery or attempting to bribe a public official or employee of the state, has not been disqualified for contract awards by any agency of the state, and is not in default under any contract with an agency of the state; (4) that the Applicant has not provided any gift or benefit to any state official or employee, other than as set forth on the gift affidavit included as part of the Application; (5) that the Applicant has disclosed all affiliates, partnerships, and relationships; and (6) that the information contained in the Application is true, accurate, and complete and includes all information necessary to ensure that the statements therein are not misleading.

### **Freedom of Information Act**

CII, which administers CCEF, is a "public agency" for purposes of the Connecticut Freedom of Information Act (FOIA). Accordingly, upon receipt at the office of CCEF, your Application will be considered a public record or file subject to disclosure under the FOIA. The FOIA includes exemptions for "trade secrets" and "commercial or financial information given in confidence, not required by statute." CII's legislation expands the FOIA exemption to include "all financial and credit information and all trade secrets . . . concerning any applicant, project, activity, technology, product or invention." Only the particular information falling within one of these exemptions can be withheld by CII if made the subject of a public records request under FOIA. CII will not withhold any information unless the Applicant specifically identifies the information that the Applicant considers confidential or proprietary and demonstrates how such information fits into one of the FOIA exemptions set forth above. Upon receipt of information so designated as confidential by an Applicant, CII will review the request and make a determination as to the confidentiality of such information. CII will provide the Applicant with its determination prior to releasing any such information to the public.

Applicants should be aware that (i) CII 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, (ii) the Applicant will have the burden of establishing the availability of any FOIA exemption in any such legal proceeding, and (iii) in no event shall CII or any of its officers, directors, or employees have any liability for disclosure of documents or information in the possession of CII that CII, or such officer, director, or employee, in good faith believes to be required pursuant to the FOIA or other requirements of law.

### **Use of Information and Ownership of Work Product**

Except for trade secret or other proprietary information identified as such pursuant to the section above dealing with the Freedom of Information Act, CCEF is not restricted in its right to use or disclose any or all of the information contained in any Application and can do so without compensation to the Applicant, notwithstanding any language in the Application to the contrary.

### **State Contracting Requirements**

This Program Opportunity and any contract awarded pursuant to this Program Opportunity shall be subject to and incorporate all applicable legal requirements arising under federal or state law, including applicable state statutes and Executive Orders relating to maintenance and examination of records, nondiscrimination, the Americans with Disabilities Act, violence in the workplace, and whistleblower protection. A more complete description of such state contracting requirements is available on request directed to CCEF in accordance with the communications protocol set forth above.

## Section 3 - Application Submission Requirements

This section outlines the content and format requirements for all Applications submitted in response to this Call for Applications for Operational Demonstration Projects.

### **3.1. Letter of Interest**

It is highly recommended that potential applicants submit a letter documenting their intent to apply approximately sixty (60) days before the intended submission date. This letter should briefly detail the envisioned project and should provide contact information for the project sponsor and future system owner.

### **3.2. Application Delivery**

The Application must be delivered personally, by U.S. Mail, or by courier service to the Connecticut Clean Energy Fund's offices.

### **3.3. Application Format, Length, and Copies**

Eligible parties must submit three (3) copies of their Application that are:

- Typed or printed using 12-point font on standard 8.5 X 11" paper, and
- Bound using staples, binder clip, GBC binding, or other soft method. Three-ring binders are not permitted.

There is no minimum or maximum length for the Application.

CCEF would appreciate an electronic copy of the Application.

### **3.4. Application Content Requirements**

An acceptable Application must consist of completed Application Forms A–H and the Additional Documentation listed at the end of the Application Form.

If an Applicant is proposing more than one project, the Applicant shall submit a separate set of Forms and Additional Documentation with each Application. A project may include multiple technologies or multiple units serving the same load at a single facility. Multiple units or technologies serving multiple loads or locations must be submitted as separate projects. The forms are provided in a separate file to this CALL FOR APPLICATIONS and are found on CCEF's Web site ([www.ctcleanenergy.com](http://www.ctcleanenergy.com)) or at the following link ([link](#)). Instructions for each form are provided at the top of the individual form.

## APPENDIX A

### *Standard Requirements*

The projects selected under this solicitation must meet the following requirements:

- The installation must be interconnected with the facility's electrical system on the customer's side of the utility's revenue grade electrical meter.
- The host facility must have completed, at minimum, a Connecticut Energy Efficiency Fund (CEEF) energy review or had an energy audit performed by an experienced evaluator within the past twenty-four (24) months. The facility must implement the minimum recommended level of efficiency improvements prior to installation of the generating equipment or provide explanation;
- The system owner must be provided with comprehensive manuals for the entire system, including a one-line electrical drawing, cut sheets on all major components (i.e., modules, inverters, charge controllers, batteries), as-built installation drawings, and operation and maintenance instructions;
- The installation should be configured so that the host can participate in the ISO-NE demand response program. In other words, the installation should have the capability to make the electrical output available to the grid system during system curtailment periods if the host chooses to curtail load at its facility; and
- The generating equipment should be installed in a manner that provides maximum reliability to the host given realistic economic considerations.
- Applicants should be aware of the Distributed Resource Incentives being pursued in CT DPUC Dockets 05-07-14PH02, 05-07-16, 05-07-17 and 05-07-20. CCEF may require that projects meet the qualification requirements for these incentives as determined in the final docket decisions.
- The system must meet the requirements for interconnection with the distribution system as defined in "Guidelines for Generator Interconnection" that were approved by the Connecticut DPUC in Docket 03-01-15 on April 21, 2004. The distribution company has adopted UL 1741 (including IEEE C62.41) as the relevant certification standard for equipment providing electrical protective functionality (such as inverters and protective relays). UL 1741 compliance is established by UL and other accredited, nationally recognized testing laboratories as approved by OSHA.
- The installation must include a VAEIS data logging system connected to a RS232 or CANbus communication capable power inverter or a meter with KYZ pulse outputs and access to appropriate communications platform for system

performance monitoring and/or renewable energy credit (REC) monitoring. In the event that CCEF retains ownership of the RECs, the VAEIS system must be connected to an ANSI C-12 certified revenue quality electrical meter with KYZ pulse outputs. Equivalent data logging systems will also be considered.

### ***Technology-Specific Requirements***

There are some requirements that will vary based on the technology employed. These additional technology-specific requirements are documented in the following sections.

#### **Solar**

- The installation's AC generation output shall not be sized greater than 80% of the facility's highest peak load in any one hour. Any equipment capacity above this amount will not be eligible for CCEF funding.
- PV modules and inverters must be on the approved list for the California Emerging Renewable Buy-Down Program. The approved list can be found at the following Web site: [www.consumerenergycenter.org/erprebate/equipment.html](http://www.consumerenergycenter.org/erprebate/equipment.html)
- A full manufacturer's warranty must be provided to cover major components of the generating system and inverter against breakdown or degradation in electrical output of not more than 10%<sup>6</sup> from their original rated electrical output over ten (10) years and 20% over twenty (20) years. The warranty shall cover the full costs, including labor and repair or replacement of defective components or systems. The warranty must be a minimum of five (5) years for the inverter(s) and twenty (20) years for the PV panels.
- Excess energy storage equipment is encouraged. Batteries can be used for excess energy storage but any funding required to cover their cost will not be considered as part of CCEF's economic analysis.

#### **Fuel Cells**

- The equipment shall be sized such that the electricity production from the unit is not greater than the minimum load demand of the facility based on the past twelve (12) months' usage data. Any equipment capacity above this amount will not be eligible for CCEF funding.
- The installation must provide for at least one of the following:
  - Use at least 50% of the available thermal energy from the waste heat of the equipment. The estimate for thermal use should be based on the past twelve (12) months' usage data or;
  - Provide enhanced electricity reliability or power quality to specifically identified loads at the host site for which the host is actively considering alternative options of enhancement and will avoid capital expenditures associated with that enhancement.

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<sup>6</sup> to match style of first bullet in this section.

- A full manufacturer's warranty must be provided to cover major components of the generating system, balance of plant, and inverter against breakdown or degradation in electrical output. The warranty shall cover the full costs, including labor and repair or replacement of defective components or systems. The warranty must be a minimum of one (1) year for all equipment.
- The project must secure delivery of natural gas or other appropriate fuel on a long-term basis (at least one [1] year).

### **Wind**

- The equipment shall be sized such that the electricity production from the unit is not greater than 80% of the average load demand of the facility based on the past twelve (12) months' usage data. Any equipment capacity above this amount will not be eligible for CCEF funding.
- The project must have acquired ALL approvals (local zoning and permits as well as any applicable state and federal requirements) prior to Application submission.
- The project must have collected at least three (3) months of wind resource data at the site OR have a wind resource assessment report from a qualified meteorologist.
- A full manufacturer's warranty must be provided to cover major components of the generating system, balance of plant, and inverter (if required) against breakdown or degradation in electrical output. The warranty shall cover the full costs, including labor and repair or replacement of defective components or systems. The warranty must be a minimum of five (5) years for all equipment.

### **Biomass**

- The equipment shall be sized such that the electricity production from the unit is not greater than 100% of the peak load demand of the facility based on the past twelve (12) months' usage data. Any equipment capacity above this amount will not be eligible for CCEF funding.
- The installation must use at least 50% of the available thermal energy from the waste heat from the equipment. The estimate for thermal use should be based on the last twelve (12) months' usage data.
- The project must have acquired ALL approvals (local zoning and permits as well as any applicable state and federal requirements), including water treatment, prior to Application submission.
- The fuel source must be identified and secured with, at a minimum, a letter of intent.
- A full manufacturer's warranty must be provided to cover major components of the generating system and balance of plant against breakdown or degradation in electrical output. The warranty shall cover the full costs, including labor and repair or replacement of defective components or systems. The warranty must be a minimum of five (5) years for all equipment.

**Hydro**

- The installation must have a current FERC license that requires operation in run-of-river mode or demonstrated FERC license exemption.
- A full manufacturer's warranty must be provided to cover major components of the generating system and balance of plant against breakdown or degradation in electrical output. The warranty shall cover the full costs, including labor and repair or replacement of defective components or systems. The warranty must be a minimum of five (5) years for all equipment.

**Landfill Gas**

- The equipment shall be sized such that the electricity production from the unit is not greater than 100% of the peak load demand of the facility based on the past twelve (12) months' usage data. Any equipment capacity above this amount will not be eligible for CCEF funding.
- The installation must use at least 50% of the available thermal energy from the waste heat from the equipment. The estimate for thermal use should be based on the past twelve (12) months' usage data.
- The fuel source must be identified and secured with, at a minimum, a letter of intent.
- A full manufacturer's warranty must be provided to cover major components of the generating system and balance of plant against breakdown or degradation in electrical output. The warranty shall cover the full costs, including labor and repair or replacement of defective components or systems. The warranty must be a minimum of five (5) years for all equipment.

## APPENDIX B

This section provides examples of the economic evaluation to be performed by CCEF. The starting point of the analysis is to determine what it would cost to make the host cost neutral over a specified period of time.

### A) Calculation of Overall Savings (Avoided Costs)

The level of funding eligible under this program will be determined by the type of technology deployed and the number of years in the analysis. The process is as follows:

1. Model the host site's current total energy costs, electric and thermal, and projection of total energy cost going forward.
2. Identify total avoided cost that the host will experience by installing clean on-site generation on a going forward basis.
3. Present Value all energy savings for the term of the analysis.
4. Subsidy amount will be determined based on the difference of the Present Value of total energy cost going forward minus the total avoided cost savings.

#### **Example:**

Present Value of energy cost over the next 10 years – minus Present Value of On-site Generation cost over the same time period – equals subsidy needed to breakeven.

### B) Calculation of Value of 1¢/kWh Premium

The following Table illustrates the calculation of the total value of the 1 ¢/kWh premium to be awarded to SWCT projects, based on a 10 KW installation of various technologies:

#### **SWCT 1 ¢/kWh Subsidy Calculation**

In accordance with the disbursement schedule described in Table 3, Section 1.3.1, CCEF will disburse the incentive in two installments. The initial payment will be based on 50% of the expected output (net kWh) of the installation over its expected lifetime, and will be paid after six months of operation, assuming the project meets the requirements of Section 1.3.1 and Appendix A. The final payment will be based on the difference between the initial payment and the calculated total incentive based on the actual kWh output in the first year.

The intent of CCEF is to provide the maximum incentive to the most productive projects. Because the SWCT incentive will be paid "up front" for the estimated lifetime production, all payments will reflect the Present Value of the incentive as if it were paid out in annual installments over the life of the project.

The table on the next page illustrates the assumptions CCEF will use in estimating the present value of the electrical energy production from a project.

SWCT Incentive Calculation (Examples)

<b>SWCT Incentive Calculation</b>			<b>Initial Payment</b>					<b>Final Payment</b>				
<b>Technology:</b>	Rated Capacity	Assumed Lifetime	Assumed Long-Term Capacity	Assumed Lifetime Output	Total Incentive Value	Present Value of Incentive	Initial Payment (50% of Present Value)	Actual First-year Capacity	Estimated Lifetime Output	Total Incentive Value	Present Value of Incentive	Final Payment (PV of Incentive minus Initial Payment)
	<b>KW</b>	<b>(Years)</b>	<b>Factor</b>	<b>kWh</b>	<b>(@1¢/kWh)</b>	<b>(@ 10%)</b>	<b>Value</b>	<b>Factor</b>	<b>kWh</b>	<b>(@1¢/kWh)</b>	<b>(@ 10%)</b>	<b>Initial Payment</b>
Fuel Cell	10	10	95%	832,200	\$8,322	\$5,114	\$2,557	88%	770,880	\$7,709	\$4,737	\$2,180
Photovoltaic (PV)	10	20	14%	245,280	\$2,453	\$1,044	\$522	15%	262,800	\$2,628	\$1,119	\$597
Biomass	10	10	80%	700,800	\$7,008	\$4,306	\$2,153	83%	727,080	\$7,271	\$4,468	\$2,315
Landfill Gas	10	10	80%	700,800	\$7,008	\$4,306	\$2,153	80%	700,800	\$7,008	\$4,306	\$2,153
Wind	10	15	30%	394,200	\$3,942	\$1,999	\$999	34%	446,760	\$4,468	\$2,265	\$1,266
Run-of-River Hydro	10	20	36%	630,720	\$6,307	\$2,685	\$1,342	40%	700,800	\$7,008	\$2,983	\$1,641

Key Assumptions:

Discount Rate	10%
SWCT Subsidy	1.0 ¢ per kWh