

Fiscal Year 2014 CHP/FC Draft Program

Combined Heat and Power and Fuel Cells

For FY 2014, New Jersey's Clean Energy program will combine the existing small scale Combined Heat and Power (CHP) and Fuel Cell (FC) program managed by TRC and the existing large scale CHP and FC program managed by EDA into one program, the details of which are outlined below.

Program Description

New Jersey's Clean Energy Program offers a stand-alone Combined Heat and Power (CHP) and Fuel Cell (FC) Program. Program participants are eligible to receive financial incentives for Combined Heat and Power and Fuel Cell installations to further enhance energy efficiency in their buildings through on-site power generation with recovery and productive use of waste heat, and reducing existing and new demands to the electric power grid. The Program offers financial incentives for both fuel cells with and without waste heat recovery.

By installing CHP and Fuel Cell systems, participants will assist in reducing overall system peak demand, furthering the use of emerging technologies, reducing emissions, and using distributed generation to provide reliability solutions for New Jersey while supporting the State's Energy Master Plan. (Please note, the combination of incentives for Fuel Cells with those for CHP under the same Program is not meant to define fuel cells that do not utilize waste heat recovery as a CHP technology.)

Target Market and Eligibility

The CHP-FC program is open to all New Jersey-based commercial and industrial (C&I) customers paying into the Societal Benefits Fund. Applications are reviewed and funds committed on a first come, first serve basis provided all program requirements are met.

Equipment Eligibility

To qualify for incentives, CHP and Fuel Cell equipment must meet all of the following eligibility criteria:

- System must be sized to meet all or a portion of the customer's on-site load, not to exceed 100% of most recent historical annual consumption or peak demand, although any surplus power that may become available during the course of a given year may be sold to PJM.
- Only natural gas CHP and natural gas or hydrogen Fuel Cell equipment installed on the customer side of the utility meter is eligible.

- Equipment must be new, commercially available, and permanently installed.
- Expansion of an existing system with new equipment is also eligible, however, only the incremental expansion would be eligible for incentives.
- The following applies to CHP systems, including fuel cells that utilize waste heat:
 - The CHP system must achieve an annual system efficiency of at least 65% (Lower Heating Value – LHV), based on total energy input and total utilized energy output. Mechanical energy may be included in the efficiency evaluation.
 - Waste heat utilization systems or other mechanical recovery systems are required. Even though waste heat systems are produced with many configurations, they all perform the same task of capturing waste heat energy in the radiator or exhaust systems of a generator and delivering it to a heat load or cooling load. The captured energy is used in heating processes, such as water heating, pasteurizing, product preheating, etc. New electric generation equipment which captures waste heat or energy from existing systems is also allowed.
- The following only applies to Fuel Cells without waste heat utilization:
 - Fuel Cell systems must achieve an annual electric system efficiency of at least 50% (LHV).
- System shall have the ability to automatically island/disconnect and operate independent from the utility in the event of substantial grid congestion, interruption, or failure.
- Third party ownership (or leased equipment), such as those procured under Power Purchase Agreements, are permitted within the program with the following provisions:
 - Projects are subject to ten (10) year warranty requirements as stated in subsequent section.
 - Additionally, in order to ensure the equipment remains on site and is in operation for the term of the agreement, a binding agreement is required between the parties. A copy of this agreement shall be provided to the Market Manager prior to commitment of incentives. The agreement should state that the equipment could be transferred to new owners should the property be sold or otherwise have a buyout provision so the equipment remains on site and stays operational so the projected energy savings can accrue. The intent is to provide incentives for generating equipment, which is installed and functioning for the duration of its useful life. Under the Program, only permanently installed equipment is eligible for incentives and this must be physically demonstrable to the Market

Manager, upon inspection, prior to receiving an incentive. This can be demonstrated by electrical, thermal and fuel connections in accordance with industry practices for permanently installed equipment and be secured to a permanent surface (e.g. foundation). Any indication of portability, including but not limited to temporary structures, quick disconnects, unsecured equipment, wheels, carrying handles, dolly, trailer or platform will deem the system ineligible.

- The customer/applicant will be allowed to sign over the incentive to the third party owner. A valid project cost shall be demonstrated as part of the application in order to establish an appropriate incentive level.
- All other program rules apply.
- The following criteria may also apply during review of CHP and Fuel Cell project applications:
 - Environmental performance;
 - Projected system startup date;
 - Annual system utilization;
 - Alignment with programmatic goals;
 - Project clarity
 - Smart Growth (New Construction facilities only)
 - Facility's operation as an Emergency Management Center

Not Eligible for CHP or Fuel Cell Incentives

The following types of generating systems/equipment are not eligible for the program:

- Used, refurbished, temporary, pilot, demonstration, or portable equipment/systems.
- Back-Up Generators - systems intended for emergency or back-up generation purposes.
- Any system/equipment that uses diesel fuel, other types of oil and coal for continuous operation.
- Renewable fueled projects, including biodiesel and landfill gas, must be submitted through the renewable energy programs. Please refer to the FY 2014 Renewable Program Compliance Filing for requirements and funding details.

Incentives

Incentives vary based on CHP or Fuel Cell technology, type, project size and total project cost. Table 1 below summarizes the qualifying technologies and available incentives.

TABLE 1: CHP AND FUEL CELL TECHNOLOGY AND INCENTIVE LEVELS

Eligible Technology	Size (Installed Rated Capacity)	Incentive (\$/Watt) ⁽²⁾	P4P Bonus ⁽³⁾ (\$/Watt) (cap \$250,000)	% of Total Cost Cap per project	\$ Cap per project		
Combined Heat & Power Powered by non-renewable fuel source – Gas Internal Combustion Engine – Gas Combustion Turbine – Microturbine	≤500 kW	\$2.00	\$0.25	30-40% ⁽⁴⁾	\$2 million		
	>500 kW – 1 MW	\$1.00					
	>1 MW – 3 MW ⁽¹⁾	\$0.55		30%	\$3 million		
	>3 MW ⁽¹⁾	\$0.35					
Fuel Cells Powered by non-renewable fuel source. Incentives available for systems both with and without waste heat recovery.	≤1 MW w. waste heat	\$4.00		60%	\$2 million		
	≤1 MW	\$3.00					
	>1 MW w. waste heat	\$2.00				45%	\$3 million
	>1 MW	\$1.50					
Heat Recovery⁽⁵⁾ Powered by non-renewable fuel source. Heat recovery or other mechanical recovery from existing equipment utilizing new electric generation equipment (e.g. steam turbine)	≤1 MW	\$1.00	30%	\$2 million			
	>1 MW	\$0.50			30%	\$3 million	

- (1) Incentives for CHP systems greater than 1 MW are tiered. For example, a 4 MW CHP system would receive \$0.55/watt for the first 3 MW and \$0.35/watt for the last 1 MW. No other incentives are tiered.
- (2) In the past, utilities have offered incentives towards CHP and Fuel Cell technologies ranging from \$0 to \$1,000,000. Although no utility incentives are currently available, should they become available at a later time NJCEP incentives will subsidize utility incentives to bring the combined incentive up to the \$/Watt amount shown in the table above, up to the maximum caps listed, to ensure a consistent incentive is paid throughout New Jersey.
- (3) Any facility successfully participating in Pay for Performance prior to applying for CHP or Fuel Cell incentives will be eligible for an additional \$0.25 per Watt from the NJCEP, not to exceed \$250,000. This amount is in addition to the "\$ cap per project" listed above. The "% of project cost" caps listed above will be maintained.
- (4) The maximum incentive will be limited to 30% of total project. This cap will be increased to 40% where a cooling application is used or included with the CHP system (e.g. absorption chiller).
- (5) Projects installing CHP/FC and Heat Recovery generation will be eligible for incentives shown above, not to exceed the lesser of % per project cap or \$ per project cap of the CHP/FC.

Projects will receive program incentives in three partial payments. The first incentive will be paid upon proof of purchase of equipment. The second payment paid upon project installation and operation, including successful inspection. The remainder of the project incentive will be paid upon acceptance and confirmation the project is achieving the required performance thresholds based on twelve (12) months of operating data. The payment structure is summarized in Table 2 below:

TABLE 2: CHP AND FUEL CELL INCENTIVE PAYMENT SCHEDULE

Purchase	Installation	Acceptance of 12 months post-installation data
30%	60%	10%

In FY 2014, New Jersey's Clean Energy Program will continue to provide an incentive for CHP projects fueled by renewable resources eligible for incentives under New Jersey's Clean Energy Renewable Program. Please refer to the FY 2014 Renewable Program Compliance Filing for requirements and funding details.

Applicants will not be allowed to receive incentives for the installed generation equipment from other available SBC-funded programs.

Warranty Requirements

Systems installed must be covered by a minimum ten (10) year warranty, extended warranty or service contract.

Application Guidelines for CHP and Fuel Cell Projects

The following guidelines apply to all projects. Additional detail is provided in the CHP-FC Application:

- Prior to equipment installation, Participants must submit the required Application, Technical Worksheets, and Feasibility Analysis to the Market Manager. Upon review and approval of the Application, a commitment letter/letter of intent will be issued approving the eligibility of the system and reserving the incentive.
- The Application must include information demonstrating that the proposed system will meet all applicable technical and eligibility requirements as specified by the Program.
- Applicants must allow inspection of eligible systems. The Market Manager will inspect 100% of the installations prior to issuing the incentive.
- Funding will be reserved for eighteen (18) months from the date of the award letter after which Market Manager may cancel the funding. Any circumstances which will result in a delay past the 18-month timeframe must be reported to the Market Manager at least one month prior to the expiration of the funding award. Applicants must submit a request for extension in writing. The request must identify the reason for the request, and a schedule that identifies how much extra time is needed to complete the project. Requests for extensions may be granted by the Market Manager for up to twelve (12) months so long as applicant can demonstrate proof of significant project advancement. This could be in the form of copies of permits, equipment invoices, installation invoices indicating percentage complete, updated project schedules, etc. Any further requests for extension must be presented to the Market Manager for Board staff consideration. In addition, Market Manger reserves the right to conduct an inspection of the project to confirm project advancement. Approval of a request for extension will not change or modify any other program terms and conditions.
- Applicant must provide twelve (12) months of operational data demonstrating the equipment has:
 - Achieved at least the minimum required efficiency levels, and

- Annual generated kWhs are within 20% of that stated in the approved Application.

This shall be done by implementing appropriate metering as part of the system installation. Data collected should include, but not be limited to, fuel input (MMBtu), electrical output (kWh, MMBtu), recoverable and utilized thermal output (MMBTU). A detailed metering plan shall be included within the feasibility analysis. If the review of the twelve (12) months of operational data demonstrates the equipment is not achieving the required level of efficiency, the applicant may submit a request to the Market Manager for an extension. Requests for extensions may be granted by the Market Manager for up to twelve (12) months (two, six (6) month extensions). These extensions are in addition to any extension granted during project construction, as discussed in the previous section.

- All submittals must be signed by a New Jersey Professional Engineer (PE) certifying that the information is accurate to the best of their knowledge.

Program Goals

The Combined Heat and Power and Fuel Cell Program goals and measures of effectiveness will include the following:

- **Market Penetration/Cost Effectiveness:** Reach significant numbers of commercial and industrial customers with site conditions that would directly benefit from CHP or Fuel Cell installations.
Goal: Approve at least 25 CHP or Fuel Cell applications
- **Energy Savings and Generation:** Maximize total installed capacity.
Goal: 30 MW

Quality Control Provisions

Documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all CHP and Fuel Cell projects. All applications are reviewed upon receipt to verify adherence to eligibility requirements. Applicant eligibility information is verified, along with all technical information in support of energy efficient measure qualification and incentive calculation. Applicant supplied information and program administrator performed incentive calculations are entered into the database, and files are created for all documents and ongoing project correspondence.

Each awarded CHP or Fuel Cell project will be inspected by the Market Manager. A field inspection report will be prepared and kept in the project file for record purposes.

Upon completion of the project, the award recipient will submit documentation that the work is complete (i.e., As-Built Drawings, P and ID Drawings, if necessary) and certification that the project has been constructed in accordance with the accepted application. This may include, but not be limited to, the following:

- Review of documentation to support “Eligible Project costs” as defined above.
- Verification that the information stated in the application matches what was installed.
- Confirmation that the equipment is new and permanently installed and not used, refurbished, temporary, pilot or demonstration equipment.
- Confirmation that the installed system is covered by a minimum 10 year warranty, extended warranty, or service contract.
- Confirmation that the system does not use diesel fuel, other types of oil, coal, or renewable sources for continuous operation.

The Market Manager will review this documentation, and, in conjunction with the post installation inspection, will confirm the project has been installed per the specifications of the approved application as well as in line with all program requirements. A post inspection will be performed on 100% of projects which include CHP or Fuel Cell systems. The Market Manager may also request additional project information or documentation required to verify the project has met the program requirements based on the original application.

If the project has not been installed in accordance with the approved application, the Market Manager will review the project and assess the variances between the project as installed and as submitted. The Market Manager will request additional support documentation from the Applicant which may be helpful in evaluating the discrepancy. The Market Manager will review the discrepancies, perform a technical evaluation, and make a recommendation to the Program Coordinator and the OCE. Upon receiving approval of the recommendation, the Market Manager will notify the applicant and process the appropriate incentive.