

# Commercial Efficiency Program

## Combined Heat and Power (CHP)

### Frequently Asked Questions (FAQs) v1.0



#### 1. What is CHP?

*A Combined Heat and Power (CHP) System is an advanced and highly efficient electric power generator that uses the thermal energy created by the generation of electricity to heat something else, like generating steam for use in a manufacturing process or serving the thermal load (heating) of a facility. The CHP equipment simultaneously produces electricity and useful thermal energy to replace or supplement conventional separate heat and power (SHP) systems such as central station electric via the grid and an onsite boiler or heater.*

#### 2. What makes a CHP system financially appealing?

*A constant or nearly constant electric and thermal load would make CHP a cost effective option. CHP project cost effectiveness largely depends on effective utilization of the waste heat. Every application involves recovering otherwise-wasted thermal energy and putting it to use for heating, cooling, process thermal energy, or electricity.*

#### 3. What should customers consider about their energy usage before implementing CHP?

*We encourage customers to consider implementing other energy efficiency measures first, like Lighting, HVAC, Building Envelope, & EMS upgrades, to minimize energy consumption and get maximum value from the proposed CHP system. Thereafter, doing a feasibility study and existing load analysis is recommended. In addition, future rebates for efficiency measures may be pro-rated according to the amount of load diverted from the PSEG Long Island system.*

#### 4. Is there any financial assistance available for the CHP feasibility & engineering study?

*Yes. PSEG Long Island may assist customers who are interested in evaluating the potential of CHP for their facility with our Technical Assistance Program. Visit the link below for more information on the Technical Assistance Program.*

<https://www.psegliny.com/page.cfm/Commercial/Efficiency/CEPartners>

#### 5. Who can apply for the CHP rebate?

*PSEG Long Island's commercial, industrial, governmental, institutional, not-for-profit and multi-family (i.e. non-residential) electric customers*

#### 6. Is a CHP rebate available on New Construction and Existing Building applications?

*Yes. CHP is part of our Custom component and would be offered under both New Construction and Existing Building applications.*

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**7. Does the retrofit/replacement of an existing CHP system qualify under this program?**

*No. The CHP rebate is currently limited to only new CHP capacity installations that offset utility load for the customer.*

**8. Can a Waste Heat to Power (WHTP) project qualify for a rebate under this program?**

*No. Please note that waste heat to power (WHTP) projects are currently excluded from the scope of the CHP program and may be handled as separate Custom projects in the future.*

**9. If a CHP system is installed today, will future rebates for energy efficiency upgrades be prorated?**

*Yes, future rebates will be prorated according to the portion of your load that is diverted from the grid due to the CHP system. For that reason, it is important to upgrade the facilities to more efficient equipment before installing a CHP system.*

**10. Is there a rebate cap for CHP systems?**

*Projects can receive a maximum rebate up to 70% of the total project cost or \$2,000,000, whichever is less. The total project cost includes material (including absorption chillers, if applicable) and labor costs.*

**11. How are CHP rebate projects processed?**

*CHP system rebates are processed as Custom projects. Rebates are disbursed at one time, after plant commissioning and PSEG Long Island's verification.*

**12. What happens when a CHP system is pre-approved and the project scope subsequently changes?**

*Scope changes require re-submittal of a new proposed feasibility study and associated Required Documents that reflect all changes. The project is then subject to a new pre-approval.*

**13. If a project was pre-approved at 500 kW and the nameplate of the newly installed system states a rated capacity of 400 kW, how is the rebate affected?**

*Final rebate payments are based upon nameplate capacity of the installed CHP system and may be lower than pre-approved amounts. The rebate would be adjusted from approximately \$800K (500kW system) to approximately \$660K (400 kW system). Conversely, if a project was pre-approved at 500kW and the newly installed system's rated capacity is 900kW, the rebate would remain \$800K (not \$1.26M). For this reason, it is imperative that scope changes be analyzed by PSEG Long Island as they occur.*

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**14. Will PSEG Long Island allow CHP projects to export power to the grid?**

*No. PSEG Long Island will not allow any type of export/sale of excess electricity to the utility distribution system when a CHP system is installed.*

**15. What is the difference between the contractor and the project developer?**

*The contractor is responsible for project management, including the build out and installation of the CHP system. The project developer is the entity that installs the system. The developer may be the manufacturer as well. The contractor and project developer may also be the same entity.*

**16. What is the time frame for installation?**

*Project developer will have 2 years after pre-approval to complete the installation and submit completion documents. If applicants are unsure that installation will be complete within that time frame, they should keep PSEG Long Island informed.*

**17. Can a CHP project be located at one facility and export excess electricity to another facility owned by the same customer?**

*Energy produced from the CHP project(s) must be fully utilized on site. Projects will be ineligible for rebates if there is any export from the installed site to another customer facility or multiple facilities owned by the CHP customer unless the facilities are all part of a campus site or a master metered account and submitted documents demonstrate the same.*

**18. NYSERDA requires black start capability. Does PSEG Long Island?**

*No, PSEG Long Island does not require black start capability. However, system must conform to PSEG Long Island's interconnection requirements.*

**19. NYSERDA has Target Zone and critical infrastructure rebates. Is this the same for PSEG Long Island?**

*No, the PSEG Long Island program currently does not include bonus incentives for target zones or critical infrastructure.*

**20. Is data monitoring required after installation and commissioning?**

*Real time data monitoring and transmittal is not required. However, the customer/project developer may be asked to provide the net-generation data on a monthly basis for the first 24 months after project's installation. The reporting data collected should include, but is not limited to, fuel input (MMBtu), electrical output (kW & kWh), and recoverable and utilized thermal output (MMBtu).*

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#### 21. Is there any specific format for the feasibility study?

*Yes. The feasibility study must include all the deliverables listed on the CHP Required Documents Check Sheet. We encourage customers/project developers to refer to industry resources – some of them listed on the Helpful Resources document – to conduct the feasibility study and compile the report accordingly. The combined heat and power project feasibility studies are expected to include, but not be limited to, the following sections: project summary, facility description, existing electrical and thermal load analysis, fuel availability details, CHP system description, plant schematic and electrical diagrams, expected operation and performance, parasitic load, expected load profiles (Hourly Analysis), energy analysis model/tool outputs, waste heat recovery schemes, expected operation and performance estimates, financial plan and breakdown, installation schedule, and CHP emissions profile. The CHP system description should include details on all major components.*

#### 22. Which standards and regulations are required to be followed?

*All applicable Industry Standards. Please check interconnection requirements for more details. All installations must meet all appropriate environmental regulations, and the owner must attest that the facility is in compliance with all local, state and federal regulations.*

#### 23. Once a project application has been submitted for a PSEG Long Island CHP rebate, what entities must the customer contact for permitting, etc.?

*The customer is responsible for obtaining and paying for all necessary permits for their CHP project. Customer is responsible for initiating the interconnection process and is recommended to start it simultaneously as they submit the application for a rebate. Please note that a preliminary review and CESIR cost estimate (if applicable) from the interconnection team is required before pre-approval, and final interconnection approval is required before rebate payment.*

#### 24. What are the performance criteria for a CHP system to be eligible for a rebate?

*CHP projects must have an overall annual efficiency of at least 60% (based on higher heating value (HHV)), and comply with all applicable health, safety, and environmental regulations. Suggestion: For optimal cost-effectiveness, CHP systems should be designed and sized to meet the facility's year-round base load thermal demand, which can include steam, hot water, chilled water, process heat, refrigeration, and dehumidification. CHP systems generate electricity, and waste heat can be recovered to meet some or all of these demands.*

#### 25. How is the overall efficiency of the CHP system calculated?

*All CHP projects installed under the program must have an efficiency of at least 60% (HHV) to qualify for the rebate. The efficiency should be calculated using the following method:*

$$\frac{\text{Annual Net Electrical Output (MMBtu)} + \text{Annual Thermal Energy Saved (MMBtu)}}{\text{Annual HHV Fuel Energy Input (MMBtu)}}$$

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#### 26. What is “parasitic load”?

*Parasitic load is electricity consumption by a component that, in the absence of the CHP system, would not be required at the facility. This includes controls, pumps, fuel compressors and fans associated with the generator, used to provide heat recovery to the load, or used to reject unneeded heat. Parasitic power can be the sum of several power measurements, or be derived from one-time power readings with component runtime information. Net generation = Total output – Parasitic Load. The overall efficiency rating is based upon net generation, not total output.*

#### 27. Are fuel cells permitted as CHP systems?

No. Fuel cell systems are not part of this program.

#### 28. Is the rebate calculated using the worksheet guaranteed?

*No. The CHP worksheet tool is designed solely to obtain a rough estimate on the CHP system rebate. Project rebate will be determined / confirmed after the project review.*

#### 29. Can the CHP system waste heat be used for process load?

*Yes, the CHP system waste heat can be used towards the facility’s thermal process load.*

#### 30. Are Organic Rankine Cycle (ORC) generators eligible for a rebate?

*Yes, ORC generators are eligible for the CHP rebate.*

#### 31. Why does a customer need to apply for interconnection?

*Whether the CHP plant is selling power back to the utility or using it all on-site, a distributed generation system will alter the electric load and the one-way flow of electricity from the utility to the customer. This presents potential risks to the safety of utility workers, performance of the grid and power quality for other customers. To ensure these risks do not exist or are sufficiently mitigated for a specific project, the local utility must review and approve each proposed grid-connected distributed generation project before it is installed.*

#### 32. Does the program require any O&M contract to qualify for the rebate?

*The CHP system is required to have at least a five-year all-inclusive warranty or operation and maintenance (O&M) service contract to qualify for the rebate.*

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#### 33. Does submitting an application for a CHP rebate automatically initiate the interconnection process?

*No. Customer/contractor is responsible for initiating the interconnection process and acquiring the final approval before rebate payment. It is recommended to start the interconnection review and approval process simultaneously as you submit the rebate application. Please follow this link for detailed information on the interconnection process:*

<https://www.psegliny.com/page.cfm/AboutUs/CompanyProfile/Powering/SGIP>