

Efficiency Maine

Combined Heat and Power Support and Incentives

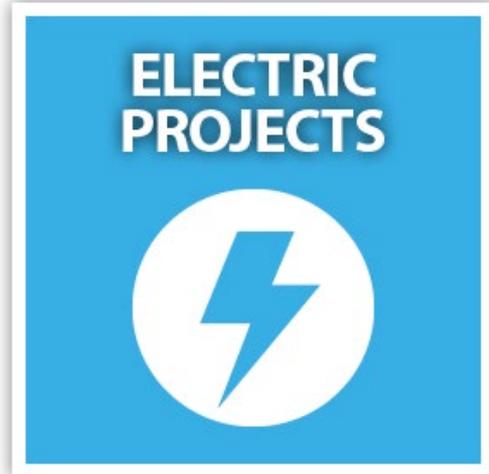
New England Combined Heat and
Power Technical Assistance Partnership

April 3, 2019

Agenda

- Efficiency Maine C&I Custom Program
- CHP Projects – Eligibility & Incentives
- Process
 - Feasibility Assessment
 - Technical Assistance Studies
 - Incentive Application
- Successful Projects
- More Information

C&I Custom Program



Types of Qualifying Combined Heat and Power Installations



Including but not limited to:

- Reciprocating Engines
- Micro Turbines
- Back Pressure Steam Turbines

Efficiency Maine CHP Project Rules

- Focus on reduction of grid-supplied electricity
- Only “behind the meter” impacts are recognized, no “exporting” to the grid or net metering
- Forward capacity market benefits to Efficiency Maine Trust (EMT)
- Contract required for all projects
- Continuous metering and reporting requirements

Incentive Levels

- Efficiency Maine can provide incentives for qualifying distributed generation projects.
- Incentives will be capped at the **lessor of**
 - \$1,000,000
 - 50% of the project cost
 - \$.28 per kWh of first years generation
 - Buy the project down to a 1 year payback

Project Requirements

- Offset existing grid-supplied electricity (generation not for export to the grid or other customers)
- Operating efficiency of 60% or greater
- Must pass EMT's Total Resource Cost test
- Must pass EMT's Participant Cost test

Total Resource Cost Test

- **Must be cost effective**

All projects must have a TRC benefit-to-cost (B:C) ratio of **1.0 or higher**

$$B:C \text{ Ratio} = \frac{\text{Total Benefit}}{\text{Total Cost}}$$

- *Total Benefit* = NPV of the predicted lifecycle electric avoided energy supply cost
- *Total Cost* = Overall installed cost + NPV of the predicted lifecycle net fuel avoided energy supply cost

What Leads to a “Cost Effective” CHP Installation

- 24-hour electric demand that exceeds the nameplate electric output rating of the unit
- Thermal loads that allow for close to 100% utilization of the thermal output
- Favorable “Spark Spread” - driven by relationship between CHP fuel and electric energy unitary cost

Process to Obtain Efficiency Maine Incentive

- Feasibility Assessment
- Investment Grade Analysis - Technical Assistance Funding
- Application, Validation, and Pre-Approval
- Implementation and Incentive Payment

Feasibility Assessment

- Provides high level assessment of economic potential
- Spreadsheet based tool with inputs reflecting
 - Historical electric and fuel data
 - General facility schedule and description of thermal end uses
- Output includes
 - Preliminary system sizing
 - Annual operating cost impact (including electric fuel and O&M)
 - Budgetary cost estimate
 - Estimated magnitude of EMT incentive
- Completed by EMT rep with input from applicant / vendor
- No cost to the participant

Technical Assistance Funding

- Efficiency Maine offers cost sharing for investment grade analysis of DG projects where an initial feasibility assessment predicts incentive eligibility.
- The TA process is a collaborative effort between the participant, the TA provider, and ERS/EMT.
- Deliverable to include
 - Preliminary design documents
 - Well documented derivation of installed cost
 - Rigorous analysis of energy impacts

Incentive Application & Pre-Approval

- Application cover page signed by the customer.
- Supporting documents including project narrative, measure cost derivation, and rigorous evaluation of energy impacts.
- ERS completes independent validation of energy impacts and confirms that all costs are reasonable and eligible under EMT rules.
- Pre-approval by EMT required prior to final commitment or issuing of purchase orders

Implementation and Funding

- Contract includes terms of incentive, description of project scope, and milestone payment schedule for incentive.
- Applicant must provide documentation of milestone completion and as-built cost
- Final incentive payment after 100% project completion and site inspection by EMT representative

Successful CHP Projects with EMT Funding

- Acadia Hospital – 75 kW Aegis
- Cumberland Cty. Jail – (2) 75 kW TecoGen
- CMMC – 250 kW CoEnergy America
- Town of Scarborough – 150 kW Kraft
- Home2Suites – (2) 35 kW Yanmar
- Famous Dave's – 35 kW Yanmar
- St Mary's – 150 kW Co-Energy America

Additional DG Projects with EMT Funding

- Irving Forest Products – 725 kW Back Pressure STG
- Hancock Lumber – 470 kW Back Pressure STG
- Bowdoin College – 400 kW Back Pressure STG
- Exeter Agri Energy – 1 MW Anerobic Digester
- Village Green Ventures – 800 kW Anerobic Digester
- Lewiston - Auburn Pollution Control Authority – 350 kW Anerobic Digester

Additional Information and Contacts

Efficiency Maine Website

<https://www.energymaine.com/custom-distributed-generation-projects/>

Richard Doughty (207) 779-7940

rdoughty@ers-inc.com

Chuck Porter (207) 400-6916

cporter@ers-inc.com