



National Grid's Rhode Island Combined Heat and Power (CHP) Program

Program Description

National Grid is the largest electric and natural gas utility in Rhode Island, serving approximately 500,000 electric customers and 270,000 natural gas customers. In support of Rhode Island's Comprehensive Energy Conservation, Efficiency, and Affordability Act of 2006, National Grid seeks to reduce energy costs, reduce greenhouse gas emissions, and improve electrical system reliability for commercial, industrial, and municipal customers via National Grid's Cogeneration Program, aka the Combined Heat and Power (CHP) Program. National Grid's CHP Program includes:

- Funding for up to **50% of the costs of a CHP feasibility study**
- Tiered incentives for any CHP system with efficiencies > 55%:
 - **Tier 1: \$900/kW** for CHP systems with efficiencies between 55% and 60%
 - **Tier 2: \$1,000/kW** for CHP systems with efficiencies greater than 60%
 - **Tier 3: \$1,125/kW** for CHP systems with efficiencies between 55% and 60% if the site reduced energy consumption by at least 5% in the preceding five years
 - **Tier 4: \$1,250/kW** for CHP systems with efficiencies greater than 60% if the site reduced energy consumption by at least 5% in the preceding five years
- **Additional \$20/kW/year** incentives for up to ten years for CHP systems **greater than 1 MW**
- Additional incentives for sites that increase natural gas loads during off-peak periods via the **Advanced Gas Technology** program. Advanced Gas Technology incentives are available for projects that qualify for gas-driven projects.

The total incentive for any project may not exceed 70% of the cost of the CHP system. National Grid's CHP Program is fuel- and technology-agnostic and incentivizes all systems, including fuel cells, internal combustion engines, micro-turbines, gas turbines, and steam turbines. Lastly, the CHP Program has provisions to support existing facilities adding CHP, existing facilities replacing existing CHP systems at the end of system life, and new construction sites. (Note: New construction site incentives are capped at 75%, not 70%.)

Program Development

Couched upon Rhode Island's Comprehensive Energy Conservation, Efficiency, and Affordability Act of 2006 (Rhode Island General Laws [RIGL] § 39-2-1.2), National Grid's CHP Program was enacted by a June 2012 amendment to Rhode Island's System Reliability and Least-Cost Procurement Statute (RIGL § 39-1-27.7). The statute recognizes CHP's value as a clean and efficient means to produce electrical and thermal energy. National Grid files annual and three-year plans to estimate future activities (e.g., the [2017 Plan](#) and [2018–2020 Plan](#)).

Stakeholders

This policy affects five key sets of stakeholders:

- Rhode Island citizens who benefit from reduced energy costs and greenhouse gasses
- Private companies participating in the program
- National Grid
- Rhode Island state legislature
- Rhode Island Public Utilities Commission (PUC)

Summary of Program Results and Outcomes

Since 2013, more than 18 MW of CHP has been installed at five facilities in Rhode Island as part of National Grid's Rhode Island CHP Program. The installed CHP systems include steam turbines, micro-turbines, and reciprocating engines. Fuel sources include natural gas, wood, and digester gas.

Per National Grid's 2014 report *Macroeconomic Impact of Rhode Island Energy Efficiency Investments: REMI Analysis of National Grid's Energy Efficiency Programs*, CHP has an economic multiplier of \$2.73. Thus, Rhode Island's lifetime gross state product increases \$2.73 for every \$1.00 invested in CHP in Rhode Island.

Moving forward, National Grid's 2018–2020 plan anticipates approximately 3.1 to 3.5 MW (or approximately 25,000 MWh/year) of CHP systems will be installed in 2020, representing approximately 15% of the total energy savings National Grid seeks to achieve by 2020. Of particular interest, National Grid's 2018–2020 plan anticipates that CHP build-out will include "smaller and medium opportunity CHP projects with customers like nursing homes, multi-family projects and health centers."

Existing CHP System



TPA facility in North Kingstown, Rhode Island

In 2014, Toray Plastics America (TPA) installed two reciprocating CHP systems producing a total of 12.5 MW, with significant support from National Grid's Rhode Island CHP Program. The two new systems are in addition to a 7.5 MW CHP system the company installed in 2002. The three CHP systems increase resilience while reducing greenhouse gas emissions by approximately 25,000 tons/year.

Resources to learn more about National Grid's Rhode Island CHP Program:

[Energy Savings Program Cogeneration](#)

[A Guide to Submitting CHP Application for Incentives in Rhode Island](#)

[Energy Efficiency Program Plan for 2017](#)

[National Grid 2018-2020 Energy Efficiency and System Reliability Procurement Plan](#)

Lessons To Share

- CHP has been recognized as a means to reduce operating costs, reduce emissions, increase resilience, and increase gross state product by more than the sum invested.
- Partnerships between legislative bodies, public utilities, and the private sector have a track record of producing results.

For More Information

U.S. DOE NEW ENGLAND CHP TECHNICAL ASSISTANCE PARTNERSHIP (CHP TAP)

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Date produced: June 2019