STATE OF NEW HAMPSHIRE
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Hampton Falls Received a Grant of $78,000 for an Energy Efficiency Project

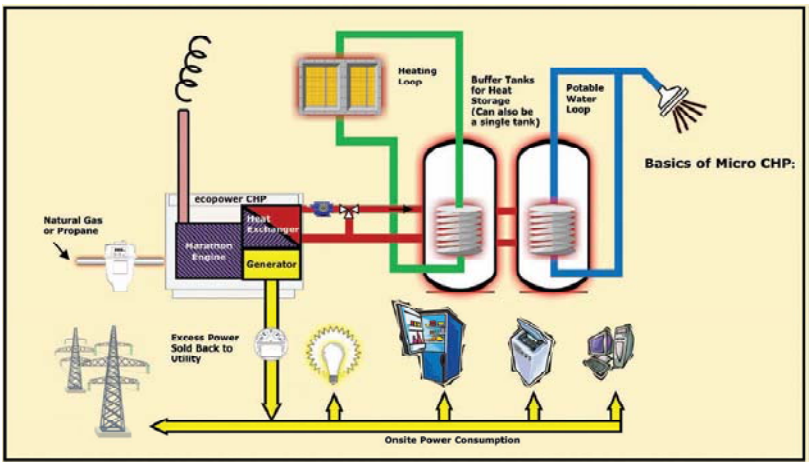
In May 2010, the New Hampshire Office of Energy and Planning (OEP) announced the recipients of grants under New Hampshire's Energy Efficiency and Conservation Block Grant Program. Over 270 grant applications from cities and towns all across NH were submitted to OEP to compete for available funding. Proposals covered a broad range of innovative and cost-effective solutions to save local dollars and forward the State's energy conservation and sustainability goals. To evaluate these proposals, OEP's competitive application scoring process focused on directing grants toward a broad array of projects and thoroughly evaluating the technical and financial merits of each project. Hampton Falls, which submitted a proposal to upgrade the heating system in the Public Safety Building, was ***awarded approximately $78,000***.

Public Safety Building Cogeneration/Energy Efficiency Project Summary

The Hampton Falls Energy Committee replaced a very inefficient oil fired furnace with a new high efficiency Ecopower microCHP cogeneration unit for building heat and solar thermal panels for hot water. Combined heat and power (CHP), also known as cogeneration, is an efficient, clean, and reliable approach to generating power and thermal energy from a single fuel source and has many benefits, including the following:

1. ***Efficiency-*** *CHP requires less fuel to produce a given energy output, and avoids transmission and distribution losses that occur when electricity travels over power lines.*
2. ***Economic****- CHP can save facilities considerable money on their energy bills due to its high efficiency and can provide a hedge against unstable energy costs.*
3. ***Reliability –*** *CHP can be designed to provide high-quality electricity and thermal energy to a site regardless of what might occur on the power grid, decreasing the impact of outages and improving power quality for sensitive equipment.*
4. ***Environmental****- because less fuel is burned to produce each unit of energy output, CHP reduces air pollution and greenhouse gas emissions.*

The new CHP cogeneration unit installed at the PSB will meet the thermal and electrical base loads of the building, greatly increase the facility's operational efficiency, and decrease energy costs. At the same time, the CHP unit and solar panels will reduce the carbon footprint of the Town by reducing the use of fossil fuels by the PSB heating system.



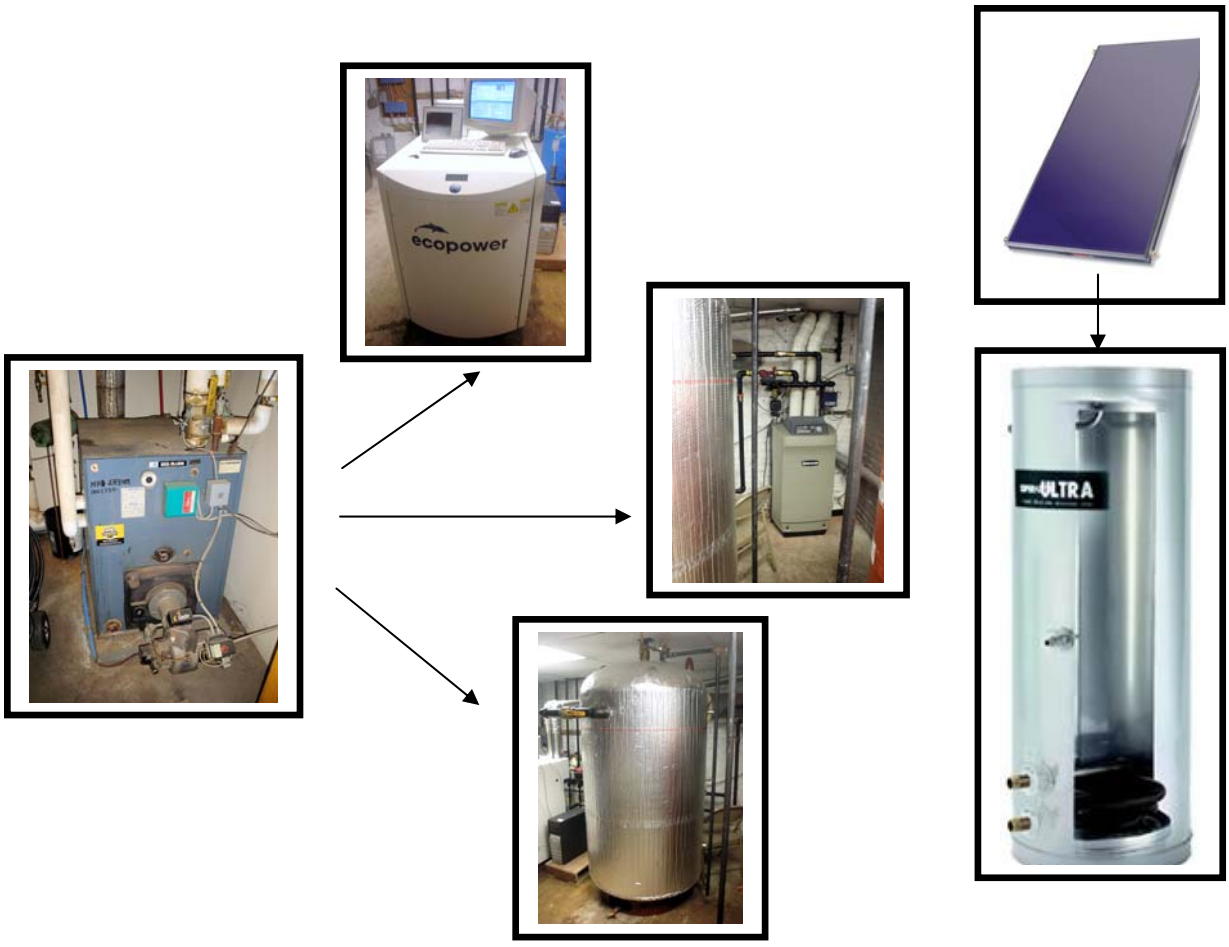
Old furnace (<70% efficient) New CHP system (94% efficient)

System Savings

This project is projected to produce 21,000 kWhs (equivalent to 2 to 3 homes) of electricity annually, while recovering 191 MMBTU's (million btus, equivalent to 1,400 gallons of fuel oil) of heating energy annually and has an estimated payback period of approximately 7 to 10 years based on ***yearly energy savings of $8,127***. This analysis was produced using RETScreen Clean Energy Software. This software is the world's leading clean energy decision-making software.

System Components

The previously existing heating system at the Public Safety Complex was an oil-fired furnace and forced hot water system. The new system consists of an Ecopower cogeneration unit, a backup boiler, a large buffer tank for heat storage, and a solar thermal hot water system. The Ecopower cogeneration unit is made by Marathon Engine Systems in East Troy, Wisconsin and has a "long life marathon Engine" that will run for 4,000 hours between maintenance needs. Below are photos of the system:



In addition to a high efficiency cogeneration boiler, the new heating system includes solar thermal panels which will heat water to be used as hot water supply. These panels will produce hot water that is generated by the sun's rays. During the non-heating season, this solar thermal system will allow the boiler to shut off completely, saving on fuel costs and wear and tear on the unit. This component of the system along will save a significant of fuel relative to the original system due to very high inefficiency associated with the operating oil fired boilers solely for hot water purposes during the summer months.