



Bosch Greenstar Combi Boilers Cape Cod Community Development Partnership Case Study



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Energy Saving Greenstar Combi Boilers In Multi-Family Residential Application

Project Goals:

- ▶ Energy Savings
- ▶ Ecologically Friendly
- ▶ Reliability
- ▶ Ease of Installation & Maintenance

Background

The Cape Cod Community Development Partnership (CDP) in Eastham, Massachusetts is a non-profit corporation. One of its objectives is to increase the affordability and availability of safe, stable year-round housing for local residents. They do this through the development, ownership and management of 58 affordable rental units within eight towns on the Lower Cape. In 2011 the organization applied for a grant to install solar panels on some of their units, and was one of only 25 nonprofit agencies along the entire East Coast - from Maine to Florida - to secure a \$100,000 affordable housing grant through the TD Bank Charitable Foundation's "Housing for Everyone" competition. The grant-winning idea, called the Real Return Initiative, functions like an in-house fuel

assistance program. The unconventional part of the project is the CDP's use of solar panels as a 10-year source of revenue to help finance \$235,000 in repairs and energy-saving projects in 10 of its rental buildings, such as adding insulation, upgrading heating and hot water systems, and installing energy-efficient lighting and appliances. Revenue is realized from Solar Renewable Energy Certificates (SREC's) with electricity generated by the solar panels and sold back to the area's utility supplier, NSTAR.

Mission of Sustainability

"The Mission of the Cape Cod Community Development Partnership is to foster a vibrant Lower Cape region by promoting environmental and economic sustainability, expanding opportunities for low- and moderate-income residents, and preserving this unique area's cultural and historic character, with particular emphasis on ensuring that young families and those of low and moderate incomes have the opportunity to stay in the region," explains Executive Director Jay Coburn.

Specifications:

- ▶ 58 total housing units
- ▶ 26 units have had renovations
- ▶ Bosch Greenstar Combi boilers installed in 18 rental units
- ▶ Efficiency to 98.7%

Innovative Funding Provides Affordable, Energy-Efficient Housing Options

Mr. Coburn added, "The CDP wanted to maintain our own sustainable funding program to enable more energy-efficient housing for years to come." By leveraging grants, energy savings and rebates, public and private foundation funding and financing, the CDP has been successful in growing these grants to over a half-million dollars. As a result, 25 of their 58 affordable housing units have had renovation, energy efficiency upgrades and energy audits completed on behalf of their residents.

Greenstar Combi Boilers Provide Comfort and Efficiency

In October 2012, eighteen new Bosch Greenstar condensing combi boilers were installed in multiple housing units in the towns of Harwich, Wellfleet and Provincetown. Four of the boilers are fueled with natural gas, the remainder by propane. Greenstar combi boilers serve as a high-efficiency water heater and central boiler in one compact unit at up to 98.7% efficiency.

Mechanical work was done by PMG Mechanical Systems LLC of Sandwich, MA. President and owner Paul Gens remarked

"Overall, we have been very pleased with the comfort level and energy savings from heat and hot water provided by the Bosch Greenstar combination boilers."

- Abigail Chapman, CDP Director of Housing and Energy Efficiency Programs

that "Our challenge was doing all the installations in utility closets while the apartments were occupied. Once we completed the first couple of units, all the installations went smoothly. Setup and wiring were very user-friendly. The condensing combi boilers vent with PVC pipe, and the internal pump in Greenstar units provided satisfactory performance, so we didn't incur the additional cost of an external circulator pump."

Benefits and Conclusion

According to Abigail Chapman, CDP Director of Housing and Energy Efficiency Programs, "Overall, we have been very pleased with the comfort level and energy savings from heat and hot water provided by the Bosch Greenstar combination boilers. Projected annual revenue from solar electrical production is as much as \$34,000. With the benefit of this revenue stream, we can finance upgrades of energy-efficient appliances such as the Bosch combi boilers, ENERGY STAR dishwashers, low-flow toilets, compact fluorescent light bulbs, and insulation upgrades. Preliminary data show that one resident's natural gas bill has dropped an average of \$32 for the December through January period compared to last year's bills. The electric bill shows an average of \$22 savings over the same period. The Real Return has not only benefited our residents but also the local economy. Over the course of the program, our contractors from various trades have accrued over 3,000 hours of employment for over 40 workers."

The CDP's ideas may be a model for other nonprofits, as well as towns and state agencies searching for ways to lower energy expenses and to pay for affordable housing maintenance. Bosch Thermotechnology is pleased to have played a small part in its successful heating upgrades.



▶ Project Name:

▶ Cape Cod Community Development Partnership (CDP), Eastham, Massachusetts

▶ Bosch Greenstar Combi boilers installed in 18 housing units

Owner - Manager:

▶ Cape Cod Community Development Partnership (CDP)

Installer:

▶ PMG Mechanical Systems LLC, Sandwich, Massachusetts

▶ Greenstar Combi Boilers

Installation Location:

▶ Harwich, Wellfleet and Provincetown, Massachusetts

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