



Stevenson Commons reduces energy costs with the help of Aegis

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Stevenson Commons is an affordable housing community, which consists of three, 24-story buildings and six, six-story buildings, for a total of 948 residential units. Because energy costs are a large portion of the operating budget of these master-metered buildings, the management of the community continually seeks ways to reduce these expenses to help maintain reasonable rents.

Responding to NYC Local Law 43, which bans the burning of No. 6 heating oil by 2015, and No.4 oil thereafter, Stevenson Commons joined forces with CHP project developer Aegis Energy Services, Inc. to explore the option of using Combined Heat and Power systems to both replace their existing oil-burning systems and reduce their overall energy costs. A detailed energy analysis, performed by Aegis Energy Services, demonstrated compelling energy savings and reduced environmental impact with CHP. Unable to aggregate financial resources to install the proposed system, Stevenson Commons entered into a 15-year Shared Savings Agreement with Aegis Energy Services, which provided for installation of a complete CHP system in each of the three large buildings at no upfront cost to the community. Likewise, under this agreement, Stevenson has no operating costs, since Aegis, owns and operates the small, on-site "utility," and sells discounted electricity and heat/hot water back to the buildings. In this way, Aegis and Stevenson Commons share the substantial energy savings achieved by the CHP systems. Stevenson Commons has the option to outright purchase the system at its depreciated value, anytime along during the contract life, and thereby realize greater savings.

The CHP system, designed and installed by Aegis Energy Services, consists of seven Aegen ThermoPower 75LE Cogeneration Modules across three buildings, which feature natural gas-fired engines, supplying a total of 525kW of electricity.

The systems are located in each building's mechanical room. The main electrical distribution panels in the building receive the cogenerated electricity, which is then distributed to meet 50% of the total building load. Electricity from the grid services the remaining load.

The turnkey system also included a boiler conversion, which helped the buildings comply with NYC Local Law 43. Each CHP system is equipped with a state-of-the-art Windows-based microprocessor for automatic, unattended and remote monitoring by Aegis Energy Services to ensure operation at optimum parameters.

Use of Recovered Heat

Heat produced in the Aegen ThermoPower unit's engine and engine exhaust is captured through various heat exchangers including the oil cooler, engine jacket, and exhaust manifold heat exchangers. This captured useable heat is then transferred to Stevenson Commons' domestic hot water and comfort space heating loops. The CHP systems meets 47% of the buildings' total space

heating and domestic hot water demand.

Maintenance and Operational History

The Aegen ThermoPower units were installed and began operation in 2012, and have been running 24 hours per day. Stevenson Commons' systems are maintained by Aegis Energy Services, which includes remote monitoring of the system around the clock. This monitoring allows Aegis to detect and correct any disturbances before they can impact the savings from the CHP system.

Costs and Benefits

As mentioned earlier, there was zero cost to Stevenson Commons for the high-efficiency Combined Heat and Power system. Likewise, there is no ongoing operating cost for the community as well. The buildings are contractually obligated for 15 years to purchase the electricity and the heat/hot water produced by the on-site systems at a significant discount to utility market rates. Because Stevenson Commons is also sensitive to reducing its environmental impact, it appreciated the 4000 ton annual reduction in carbon dioxide emissions which resulted from installing the high-efficiency CHP systems, which is equivalent to removing 706 cars from the road (source:EPA calculator).

Managing an Affordable housing community has multiple challenges, which includes keeping energy expenses in check. Faced with pressure to both control rents and comply with city requirements to switch out of #6 fuel oil, Stevenson Commons explored multiple options. CHP provided the most efficient option for meeting its goals. Employing the Aegis Energy Services Shared Savings concept allowed them to achieve significant energy-saving results without any upfront capital or ongoing maintenance expenses. Simultaneously, this initiative also helped improve the buildings' environmental impact by reducing its emissions.

For More Information

Visit Aegis Energy Services' website at www.aegisenergyservices.com or call (413) 536-1156 Stevenson Commons

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