



The Westin Jersey City Newport Saves With Tri-generation System



Starwood Hotels & Resorts Worldwide, Inc. is one of the world's leading hotel and leisure companies with brands including Westin®, Le Méridien® and Sheraton®. In 2009, Starwood launched an environmental sustainability program that pledged to reduce energy consumption by 30% and water consumption by 20% per built hotel room by 2020 — referred to as 30/20 by 20 — across all 1,200 of its owned, managed and franchise hotels.

"It's through partnerships and programs like New Jersey's energy-efficiency incentives that The Westin Jersey City Newport is better able to reduce its environmental impact, while saving money and supporting Starwood's environmental goals,"

Andrea Pinabell, Vice President of Starwood Hotels & Resorts

In 2013, the company added a complementary goal to reduce greenhouse gas emissions by 30% within the same timeframe.

In 2015, The Westin Jersey City Newport took steps to meet this standard by installing a tri-generation system from Tecogen Inc.

Comprised of three of Tecogen's InVerde® 100kW combined heat and power modules, the ultra-efficient system runs on inexpensive natural gas and provides electricity, heating and hot water to the hotel.



By incorporating two absorption chillers, the system became an elegant tri-generation solution.

The Tecogen CHP units supply energy to the facility throughout the year at a much higher efficiency than the utility while also lowering the building's carbon footprint. With best-in-class efficiency, the InVerde units will save the hotel, on average, 367,209 kWh of electricity per year, resulting in annual savings of \$123,000—\$212,000.

Technology: Tri-Generation System including 3 natural-gas powered InVerde 100kW CHP units and 2 absorption chillers
Estimated Annual Cost Savings: \$ 123k—\$212k
Carbon Reduction: 3.58 million pounds annually
Equivalent to removing 343 cars from the road or planting over 42,000 trees per year!

This fuel efficient solution also cuts the Westin's energy related carbon footprint nearly in half—effectively eliminating 3.58 million pounds of carbon dioxide annually. That is equivalent to eliminating the annual carbon emissions produced by 343 passenger vehicles or planting over 42,000 trees per year.

During the winter months, heat from the CHP engines is transferred to hot water boilers, helping to maintain even water temperatures and reduce the amount of energy needed to provide space heating and hot water throughout the building. In the summer, the heat is transferred to two absorption-chiller units to provide about half of the hotel's cooling needs. The incorporation of the absorption chillers transformed the Westin project into a tri-generation system.

Equipped with Tecogen's patented inverter technology, the units also may serve as a backup power source in the event of a blackout. This so

called "blackstart" capability is an important feature for property managers, especially in the hospitality industry, providing peace of mind guests will never be left in the dark.

To ensure seamless operation, The Westin elected a long-term service agreement. Through proprietary software, powered by GE Equipment Insight, Tecogen's experienced maintenance and service personnel monitor the equipment

and provide hassle-free and proactive maintenance for the customer, ensuring the longevity of the CHP units while ensuring optimal equipment performance and maximum efficiency.



For more information about Tecogen's **InVerde, 100kW, Inverter-Based Cogen Module** or our other Natural Gas Engine-Driven Products please visit www.tecogen.com

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