LOTTE PALACE HOTEL
NEW YORK CITY, USA

Objectives

The Lotte New York Palace Hotel in midtown Manhattan, featuring 813 guest rooms, 86 suites, a spa, fitness center, and 22,000 square feet of meeting space, sought to reduce operational expenses and fuel consumption, particularly during colder months, by transitioning away from city steam, the most expensive fuel source in NYC.

Solution

The Lotte New York Palace Hotel installed the largest cogeneration plant in a New York City hotel, with 12 dual-mode Capstone microturbines providing up to 780kW of electricity and 3.45 MMBtu/h of hot water. Operating year-round, the plant offers cooling in summer and heating in winter. The microturbines use the Integrated CHP system to offset 200 tons from electric chillers in warmer months and supply hot water to the hotel's heat exchangers in colder months, eliminating the need for city steam.

Results

The CHP system has cut the Lotte New York Palace Hotel's annual operating expenses by US $1.1 million, or 30-40% of its energy spend This, along with on-site deployment of recaptured thermal energy, reduced the hotel's carbon footprint by 481 tons per year, while also lessening reliance on the grid. The most significant impact is in winter, where recycled heat substantially reduces electric bills, with moderate savings observed in summer.

Funding from the New York State Energy Research and Development Authority (NYSERDA) covered 30% of the turnkey installation cost. The cogeneration plant, designed for a 4.5-year payback period, and will add millions of dollars to the hotels Profit & Loss statements over the next ten years.

© 2023 Inntelect Energy, LLC