



Pair of Jenbacher gas engines provide reliable, efficient energy to industrial park in Beijing

Huadian Industrial Park CCHP, Fengtai District, Beijing, China



Background

The Huadian Industrial Park, completed in 2014, is an enormous complex that covers 170,000 square meters aboveground and 80,000 square meters underground and includes seven commercial buildings and business hotels. To heat and cool such a huge and varied complex in a clean and cost-effective manner, the China Huadian Corporation used a multi-faceted and technologically advanced power plant design.

This is the mission of China Huadian Corporation, one of the five state-owned, sole-proprietor power generation corporations created in 2002 by the Chinese government to reform its electrical power system.

Solution

Since the plant site requires substantial heating, cooling and electrical power demands, China Huadian Corporation opted for a distributed power energy station that became its pilot venture into combined cooling, heating and power (CCHP). As such, it developed a plant based on two of GE's J620 Jenbacher* natural gas-fired engines to achieve a cascaded delivery of heat, cooling and electrical power.

GE provided the J620 gas engines to China Huadian Corporation through its distributor, Yumon-Solomon, which also performs regular maintenance for the gas engines.



Key Technical Data

Number of units	2 x J620 gas engines
Electrical output	6.7 MW
Total efficiency	~ 87 %
NOx emissions	< 500 mg/Nm ³ at 5% O ₂
Fuel	Natural Gas
Commissioning	October, 2014

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Result

The installed trigeneration system is providing every year about 18 million kWh of electricity to the industrial park as well as heat and cooling with a total efficiency of around 87 %. That translates into an annual power savings of about 23 %. Also, the gas engines are designed to meet the latest international emission standards. The power plant with its highly efficient solution and low emissions therefore complies with China's strategic goal of developing clean and low carbon cities.

"This project fully aligns with China's intention to create an efficient energy supply system that is a foundation of the nation's energy development efforts," said Zhao Shengguo, general manager of Huadian Distributed Energy Engineering Technology Company. "By conforming to the strategic goal of clean, low-carbon urban development, our energy station embodies the concept of rigorous environmental protection in modern industrial parks."

Customer Benefits

- High total efficiency of around 87 %
- Low emissions
- The CCHP plant generates about 18 million kWh electricity annually
- Highly integrated solution to provide economical heating, cooling and power

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