

Jenbacher J420 trigeneration technology plays a lead role in increasing energy security and reducing emissions

Barts NHS Hospital, London, UK

“The organization selected INNIO’s reciprocating engines due to their reduced environmental impact along with Clarke Energy’s excellent services support. This collaboration highlights numerous energy-efficiency opportunities throughout the NHS and other power-intensive industries.”

Fiona Daly
Barts NHS Trust Hospital



Background

The oldest hospital in the UK has existed on the same site since its founding in the 12th century. To modernize the hospital’s aging energy supply system while improving overall power generation resilience and reducing environmental impact, Barts NHS Trust turned to Jenbacher* trigeneration technology from INNIO*. The decision was part of a larger effort to help the NHS Confederation increase the energy security of regional hospitals while reducing emissions by as much as 25%.

Funded by Sustainable Development Capital LLP (SDCL), this on-site trigeneration project was the first of its kind with strategic collaboration under SDCL’s “Powering Health” initiative to deliver lower-carbon, fully funded CCHP solutions to NHS Trusts, including those that are part of a private finance initiative (PFI) structure.

Solution

Through Skanska—one of the world’s leading project development and construction groups—Barts NHS Trust contracted with Clarke Energy to install a CCHP plant powered by a Jenbacher gas engine from INNIO.

Based in the UK, Clarke Energy is a longtime authorized sales and services provider for the Jenbacher reciprocating engine product line. For the Barts NHS Trust project, Clarke Energy supplied Skanska with a 1.4 MW J420 cogeneration unit that provides electricity and heat. The system also includes a 250 KW absorption chiller to deliver chilled water for cooling.

Result

Today, the UK's oldest hospital is using modern CCHP technology to generate reliable onsite power in the form of electricity, heat and cooling.

The hospital's new energy center provides Barts NHS Trust with increased energy efficiency, reliability and durability. At the same time, the CCHP plant enhances London's energy security while helping to reduce the area's carbon emissions.

In addition, the combination of INNIO's gas engine technology and Clarke Energy's equipment and services help Barts NHS Trust face external challenges—such as a natural disaster or an interruption of power. Best of all, the CCHP plant helps the hospital cut energy costs so that it can boost spending on cancer research.

Customer Benefits

Ideal for trigeneration applications, INNIO's J420 technology provides:

- Combined onsite power in the form of electricity, heat and cooling
- Energy security with flexible and reliable power in island mode
- Reduced emissions by up to 25% and environmental impact
- Lower energy costs

Key Technical Data

Number and type of units	1 x J420
Electrical output	1.4 MW
Thermal output	1.6 MW
Fuel	Natural gas
Commissioning	2015



INNIO* is a leading solutions provider of gas engines, power equipment, a digital platform and related services for power generation and gas compression at or near the point of use. With our Jenbacher* and Waukesha* product brands, INNIO pushes beyond the possible and looks boldly toward tomorrow. Our diverse portfolio of reliable, economical and sustainable industrial gas engines generates 200 kW to 10 MW of power for numerous industries globally. We can provide life cycle support to the more than 48,000 delivered gas engines worldwide. And, backed by our service network in more than 100 countries, INNIO connects with you locally for rapid response to your service needs. Headquartered in Jenbach, Austria, the business also has primary operations in Welland, Ontario, Canada, and Waukesha, Wisconsin, US.



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