Jenbacher gas engines

Deutsche Börse Group
Eschborn, Germany

Cogeneration units power one of world's leading exchange organizations

Jenbacher cogeneration technology was installed atop 21 stories—on the rooftop of the new office tower for Deutsche Börse Group in Eschborn, near Frankfurt, Germany. These two JMS 412 cogeneration units provide 1.6 megawatts (MW) of electrical and thermal (heating and cooling) power to support one of the world's leading exchange organizations, ensuring a secure and efficient supply of energy. In warmer months, hot water from the cooling circuit of the two cogeneration plants will serve as drive energy for two absorption chiller devices. During cold seasons, this thermal power will be utilized to meet the building's heating requirements. The plant will be fueled by natural gas, a cleaner-burning alternative to other fossil fuels, to support Germany's environmental initiatives. And, surplus electricity will be sent to the regional grid to increase energy reliability for the Frankfurt area.

The initiative supports the European Commission's goal to adopt more stringent environmental targets for member countries to help Europe achieve a 20 % reduction in emissions by 2020. The European Union, in recent years, has begun urging member states to modernize their industrial and municipal cogeneration systems to improve energy efficiency and curtail regional emissions.

The new onsite power plant will also enhance the energy security of operations that play a vital role in supporting Germany's economy every day. This project is a prominent showcase of the progress being made by Germany's business and government sectors to support the European Union's (EU) emissions reduction and energy efficiency goals.

Customer advantages

- Reduces operational costs by generating onsite power
- Surplus electricity will be sent to the regional grid to increase energy reliability for the Frankfurt area
- Total use of available heat for hot water and steam generation, increasing return on investment
- Supports European Commission's goal to achieve a 20% reduction in emissions by 2020
- Onsite power plant will enhance the energy security of operations

Key technical data

Number of units and engine type	2 X JMS 412 GS-N.LC A09
Fuel	Natural gas
Electrical output	2x844 kWel, 2x 842 kWth
Electrical efficiency	43.1 %
Emissions	NOx <500mg/Nm³, CO <300mg/Nm³
Operator	Deutsche Börse Group
Commissioning	2010

Plant Features

- The patented LEANOX* lean mixture combustion ensure minimum emissions
- Long component life time allows long service intervals

Ecomagination qualified

Ecomagination is GE's commitment to provide innovative solutions that make measurable differences and create sustainable outcomes for our customers and our own operations across the globe. Ecomagination works to help build a world that is faster, cleaner and better for all of us. GE's Jenbacher gas engines stand for ultra-high-efficiency, low-fuel-consumption solutions able to achieve electrical efficiency in the range of 38 percent and 48.7 percent and total efficiency in the range of 80 percent to 90 percent in cogeneration mode, depending on application/project.

They also demonstrate excellent flexibility with fuels ranging from natural gas to biogas, landfill gas or coal mine methane and associated petroleum gas, resulting in reduced CO_2 emissions compared to typical traditional energy sources. GE's Jenbacher J620 spark-ignited gas engine for power generation is designed to produce approximately 2.7 MW of electricity per year. This is equivalent to the annual electricity demand of about 3,880 European households. To learn more about GE's work to build solutions for today's environmental challenges while driving economic growth, visit www.ge.com/ecomagination.

GE Power's Distributed Power business is a leading provider of engines, power equipment and services focused on generating power at or near the point of use. Distributed Power offers a diverse product portfolio that includes highly efficient, fuel-flexible, industrial gas engines generating 100 kW to 10 MW of power for numerous industries globally. In addition, the business provides life cycle support for more than 35,000 gas engines worldwide to help you meet your business challenges and success metrics - anywhere and anytime. Backed by our authorized service providers in more than 170 countries, GE's global service network connects with you locally for rapid response to your service needs. GE's Distributed Power business is headquartered in Jenbach, Austria.

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