

Germany Launches One of Europe's Most Modern Gas-Fired Power Plants Replacing Coal-Fired Power Station

- *INNIO technology provides coastal power plant with gas engines that replace decommissioned coal-fired power plant, resulting in over 70% carbon dioxide reduction*
- *20 Jenbacher J920 FleXtra gas engines make up heart of coastal power plant, generating 190 megawatts of electrical power*
- *Coastal power plant overall efficiency exceeds 92%, setting new standards for fuel utilization combined with high operating flexibility*

Kiel, Germany – January 17, 2020 –German municipal utility, Stadtwerke Kiel, launched one of Europe's most modern and flexible gas engine-based combined heat and power (CHP) plants on the eastern shore of the Kieler Förde inlet in northern Germany. Representatives of Stadtwerke Kiel, Kraftanlagen München GmbH (KAM) and INNIO celebrated the launch with a ceremony marking the culmination of a five-year project. Collectively, the 20 Jenbacher J920 FleXtra gas engines provide a total electrical output of 190 megawatts (MW) and a thermal output of 192 MW. Both power and heat from the coastal power plant feed into the electricity grid and district heating network operated by Stadtwerke Kiel, helping maintain grid stability across North Germany.

The German government has embraced a comprehensive plan to reduce carbon emissions across the electricity sector. Two critical pillars of the government's plan for a cleaner electricity sector include increasing the adoption of renewable energy and eliminating coal-fired power plants. With the support of German policy, wind and solar power energy sources now exceed coal-fired electricity generation. The proliferation of renewable energy across the German power system has led to significant electricity supply variability. With the onset of renewable energy integration to the grid, natural gas-fired power generation has become pivotal to renewable energy development, leading to greater grid stability and reliability for energy consumers. Increasingly, natural gas has been the fuel of choice to support renewables in replacing coal in power and heat generation.

In 2015, Stadtwerke Kiel made plans to shutter its 323-MW coal-fired power station. The municipal utility kicked off its plans to transition from coal-fired electricity generation to that of natural gas with the signing of a contract to acquire 20 Jenbacher J920 Flextra gas engines. The Kiel order of INNIO Jenbacher's most powerful gas engines comprised the largest ever order for the gas engines product line in Jenbach. During the successful completion of a 20-day trial run of the power plant in November 2019, the 20 Jenbacher gas engines exceeded 92% overall efficiency. As compared to the previous coal-fired power plant – which was decommissioned in March 2019 – emitting over 70% less carbon dioxide.

Stadtwerke Kiel focused on achieving the greatest possible flexibility as a primary requirement of the plant. Given the high proportion of wind-generated electricity in the regional grid, the coastal power plant is able to feed full power into the local electrical grid within a short period to offset the volatility of the wind level, thereby ensuring stability of the grid. The Jenbacher J920 Flextra gas engines have proven results in excellently compensating for renewable energy fluctuations. The efficient state-of-the-art Jenbacher gas engines can achieve full capacity in less than five minutes, operating as complementing technology and application to support the implementation of the energy transition plan across Germany.

“INNIO is pleased to have been selected to provide Stadtwerke Kiel with our most advanced gas engine technology to support their phase out from coal. With Germany's plans to shutter all coal plants and rely primarily on renewable energy, our Jenbacher J920 gas engines will help balance the Kiel grid,” commented Carlos Lange, president and CEO of INNIO. “As renewable energy usage will continue to grow across Germany, INNIO will continue to make significant investments in research and development and will further expand its technological leadership in power generation based on regenerative gases-in specific, hydrogen and hydrogen carrier gases-to help build out 100% carbon neutral and carbon free power plants.”

INNIO and KAM engineered and implemented the coastal power plant. While INNIO provided the gas engines and engineering expertise, KAM operated as the general contractor responsible for engineering, procurement, construction and commissioning the turnkey power plant, including the auxiliary buildings and integrating the heat storage and electrode boiler. The team arranged the power plant in four units of five blocks each, with the advantage of being operable in slices.

“This construction was the largest investment in the history of Stadtwerke Kiel. It challenged us all and required a lot of strength, time and energy. Now the energy supply of the future is a reality in Kiel, and we look with a lot of pride at our coastal power plant,” says Frank Meier, CEO of Stadtwerke Kiel AG.

“On November 28th, 2019 I signed the acceptance protocol, and we now have seven weeks of operational experience with our coastal power plant, setting new standards in terms of flexibility, efficiency and sustainability. We are not only shaping the future of Kiel's energy supply, we are also contributing to a significant reduction in CO2 emissions,” adds Dr. Jörg Teupen, Board Member for Technology and Personnel at Stadtwerke Kiel AG.

The plant supplies over 73,000 households and facilities in Kiel with environmentally friendly district heating. Additionally, the electric power generated feeds into Kiel's 110-kilovolt power grid, which supplies electricity both to households in the state capital and some of the surrounding municipalities. Excess energy is passed on to the upstream power grid.

“Kraftanlagen München is committed to support our customers in the development and implementation of their most complex challenges,” said Stéphane Stoll, Chairman of the General Management of Kraftanlagen München GmbH. “Our team of engineers have worked diligently to support Stadtwerke Kiel in realizing their vision of a modern energy future for residents and businesses. The coastal power plant in Kiel will provide cleaner, flexible power and heat for many years to come.”

About Stadtwerke Kiel

Stadtwerke Kiel supplies the region with electricity, gas, water and heat. The energy supplier delivers its products to where private households and businesses need them and offers its customers security and reliability every day. The company is increasingly focusing on sustainable energy generation and expanding and upgrading its district heating network to supply the region securely and cost-effectively with energy and heat. By building the K.I.E.L. coastal power plant, Stadtwerke Kiel is ensuring the supply and expansion of district heating energy efficiently in the long term. www.stadtwerke-kiel.de

About the Kraftanlagen Group

Kraftanlagen München GmbH belongs to the French group Bouygues Construction and, together with its subsidiaries, forms the Kraftanlagen Group. As a versatile partner for industry, energy and real estate, Kraftanlagen München GmbH uses state-of-the-art processes and technologies throughout Europe. With its companies and investments in numerous locations, the Kraftanlagen Group offers an extensive service network with over 2,200 employees. It carries out major projects as a general contractor as well as individual trades in the following product areas: Energy and power plant technology, decentralised power generation, nuclear technology, industrial plants, utility services and fabrication.

About INNIO

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 50,000 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. For more information, visit the company's website at www.innio.com. Follow INNIO on [Twitter](#) and [LinkedIn](#).

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