

MODERN POWER PLANT FOR THE FUTURE

Environmentally friendly heat and electricity from Saarbrücken

Background

As a member of the worldwide ENGIE Group and Stadtwerke Saarbrücken municipal utilities, Energie SaarLorLux AG supplies more than 160,000 private and business customers with electricity, gas, and district heating. The company has a workforce of about 170 and is strongly committed to culture, the environment, and social issues in the region. With its 177-meter chimney, the Römerbrücke thermal power plant has been a prominent feature of Saarbrücken's cityscape for more than five decades. Today, it also symbolizes the energy transformation as well as increased energy security. When Energie SaarLorLux AG switched to gas as the main energy source in 2013, coal was used only to cover peak demand. The company completely phased out coal in 2022, but the landmark structure, which is visible from afar, will act as a black start power plant to safeguard the city's water distribution infrastructure in an emergency.

Sustainable energy solution and backup in the event of a power failure

At the heart of the GAMOR gas-fired power station are five Jenbacher J920 FleXtra engines from the INNIO Group. Together, they have an electrical output of 53 MW, a thermal output of 52.5 MW, and an overall efficiency of over 92%. The Jenbacher J920 FleXtra engines are "Ready for H₂"* and can, in principle, be converted to operate with up to 100% hydrogen in the future. The plant can supply around 65,000 households in Saarbrücken with electricity and 13,000 households with environmentally friendly district heating. According to Energie SaarLorLux AG, the plant emits at least 60,000 fewer tons of CO₂ per year than the old coal-fired plant. Furthermore, GAMOR is configured to help restore the local power grid following a total power outage or blackout. In doing so, it serves as a backup power supply for critical infrastructure in the area. This includes the Blickweiler waterworks, located 40 kilometers away, which is responsible for maintaining Saarbrücken's water supply.

»Our gas engine power plant in Römerbrücke, Saarbrücken [GAMOR for short] is exemplary, not only in terms of its emissions savings. Compared to the former coal-fired power plant, we save more than 60,000 metric tons of CO₂ per year with the new Jenbacher combined heat and power system. In addition, the potential use of the new plant as a black-start ready power plant also enables us to safeguard critical infrastructure in the event of impending blackouts or total power outages.«

Joachim Morsch, chairman and spokesman for Energie SaarLorLux



With the successful commissioning of the entire solution in October 2022, GAMOR and all of the power plant's control systems also have passed the real-world tests for an emergency scenario.

* "Ready for H₂" = Details such as cost and time frame for such retrofitting may vary and must be clarified individually.

Results

Establishing an islanded network via the 'soft' magnetization of transformers and cables has long been a standard feature of the Jenbacher engine control software. For GAMOR, however, INNIO Group worked very closely with Energie SaarLorLux to extend this concept to a much larger high- and medium-voltage network in Saarbrücken.

In the event of an inter-area power outage, the Energie SaarLorLux control center sends a remote start command to the GAMOR power plant control system. This triggers the Jenbacher power station control system to automatically configure and operate the power plant so that the fast-start capable Jenbacher engines will gradually re-energize the islanded Saarbrücken power grid. Once the nominal voltage is reached, the GAMOR power station then can supply power to the Blickweiler waterworks, thus restoring the water supply to Saarbrücken. This arrangement also can be used to supply other essential energy consumers via the islanded system.

Key technical data

Installed engines	5 x J920 Flextra
Electrical output	53 MW
Thermal output	52.5 MW
Total efficiency	>92%
Energy source	Pipeline gas
Year of commissioning	2022



Customer benefits

- High-efficiency combined heat and power for CO₂ savings
- Black start power plant in the event of a blackout
- Ability to 'soft' energize the external power grid
- Reliable supply during total power outages and blackouts
- Fast-start capability for grid stabilization
- Flexible, climate-friendly energy solution
- Economical operation



INNIO is a leading energy solution and service provider that empowers industries and communities to make sustainable energy work today. With our product brands Jenbacher and Waukesha and our digital platform myPlant, we offer innovative solutions for the power generation and compression segments that help industries and communities generate and manage energy sustainably while navigating the fast-changing landscape of traditional and green energy sources. INNIO is individual in scope, but global in scale. With our flexible, scalable, and resilient energy solutions and services, we enable our customers to manage the energy transition along the energy value chain wherever they are in their transition journey.


INNIO is headquartered in Jenbach (Austria), with other primary operations in Waukesha (Wisconsin, U.S.) and Welland (Ontario, Canada). A team of more than 4,000 experts provides life-cycle support to the more than 55,000 delivered engines globally through a service network in more than 100 countries.

INNIO's improved ESG Risk Rating again secures the number one position across more than 500 companies globally in the machinery industry assessed by Sustainalytics.

For more information, visit the INNIO website at www.innio.com

Follow INNIO on Twitter and LinkedIn.

© Copyright 2023 INNIO.
Information subject to change without notice.

INNIO, INNIO, Jenbacher, , myPlant, and Waukesha are trademarks in the European Union or elsewhere owned by INNIO Jenbacher GmbH & Co OG or one of its affiliates. All other trademarks and company names are property of their respective owners.

Jenbacher is part of the INNIO Group

I JB-4 23 051-EN



Contact us:

www.jenbacher.com/en/contact