

PRESS RELEASE

4,000 decentralized INNIO gas engines help stabilize European power grid

- In January 2021, around 4,000 Jenbacher gas engines with an output of nearly 6 GW helped avert a European blackout
- European grids actively stabilized through a decentralized energy supply based on combined heat and power (CHP) plants
- Alternative fuels – biomethane and hydrogen – pave the way for a greener, more secure energy supply for the future

Jenbach, March 2, 2021 – On January 8, 2021, the European power grid experienced a sudden and critical drop in electrical frequency. However, a potential blackout was successfully avoided as a result of immediate steps taken by European grid operators, including further splitting up of Europe’s interconnected power system. A stable frequency was regained within a few minutes. An active part in the operation was played by around 4,000 flexible, fast-start, dispatchable Jenbacher* gas engines.

A frequency deviation from the normal 50 Hertz is a highly precarious situation and can, in extreme cases, lead to a large-scale and lengthy power failure known as a “total blackout.” To prevent this from happening, automated security systems have been put in place that can be enabled at short notice and, in this particular instance, these backup systems successfully swung into action. Thanks to a coordinated approach that quickly ramped up reserve capacities, for example through gas-powered plants, in addition to the deployment of stabilizing measures, the frequency was quickly restabilized and the worst-case scenario was avoided.

Grid stabilization thanks to INNIO Jenbacher gas engines

“Because of the recordings made by our myPlant* Asset Performance Management System, we know that at the time of the near-blackout in January 2021, almost 4,000 Jenbacher gas engines played a role in stabilizing the European grid,” explained Andreas Kunz, Chief Technology Officer at INNIO. The engines

responded to the frequency change within a few milliseconds and were able to help avert a damaging blackout by feeding around 6 GW into the European grid.

Gas engines – a perfect complement to renewable energies

The continuous expansion of renewable generating capacity in Europe also places increasing demands on energy supply systems. This is due to the volatile nature of renewables, since they only supply electricity when the wind is blowing or the sun is shining. To prevent blackouts from occurring, the grid therefore needs reliable power sources – namely centralized large-scale power plants and decentralized power plants – that can be called upon at any time to make up any shortfalls.

“The decentralized supply of energy based on cogeneration systems has a key role to play in securing the electricity and heat supply across Europe in the decades ahead and in putting the energy supply on a more sustainable footing,” added Andreas Kunz. “In the short and medium term, that means gas power plants that operate on natural gas. In the long term, these plants must also be made CO₂ neutral by running them on biomethane or even CO₂ free through the use of hydrogen, for example,” added Kunz.

Gas engines that form part of a decentralized supply system are particularly well-suited to rapid start-up and load balancing in the event of fluctuations in consumption levels, a factor that will continue to gain importance with ever-advancing electrification (e.g. through electric vehicles and heat pumps).

While the technology may not be changing as the world moves toward a greener energy supply, the fuel is. And this is something that highly efficient INNIO* Jenbacher gas engines are already prepared for since they can run on fossil fuel gases (natural gas or liquefied petroleum gas), on renewable gases (biogas or biomethane), or on up to 100% green hydrogen. The prerequisites for the flexibility for INNIO's highly efficient gas engines in terms of fuel choice, has been set in a cooperative development with the Large Engine Competence Center (LEC) in Graz.

*Indicates a trademark.

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 53,000 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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