

SUSTAINABLE ENERGY FOR A DATA CENTER

Dual-gas capability for a lower carbon footprint—and a plan for hydrogen use—put NorthC on a greener pathway

Background

NorthC Datacenters (NorthC) operates 26 local data centers across Europe—with 10 in the Netherlands, two in Germany, and four in Switzerland. With sustainability top of mind, the company has implemented a strategy with the aim of becoming carbon neutral by 2030, accomplishing this through four commitments: working toward 100% green energy use, adopting modular construction methods, making efficient use of residual heat, and integrating green hydrogen into its operations.

When NorthC built its data center in Eindhoven, Netherlands, in 2023, it powered it with solar and wind energy from the grid. However, because data centers are classified as critical infrastructure, a reliable emergency backup power solution also was required. Traditionally, diesel generator systems have served this purpose—but they conflict with NorthC's goals for a carbon-free solution. As a result, the company looked for a cleaner alternative.

»INNIO has a great deal of experience and a proven track record with special gases such as hydrogen. INNIO's Jenbacher technology supports our sustainable initiatives. With the dual-gas capabilities of the Jenbacher engines, we plan to decarbonize our backup power supply in Eindhoven.«

Ronald van den Bosch,
Chief Technology Officer, NorthC Datacenters B.V.

Carbon-free emergency power

NorthC selected six of INNIO's Jenbacher "Ready for H₂" engines to provide emergency backup power in case of electricity grid outage. The Jenbacher Type 4 engines, delivered as a containerized package, generate a total power output of 6 MW. Configured as dual-gas units, the engines operate on natural gas but can switch seamlessly during operation to run on 100% hydrogen. The greenfield project in Eindhoven also includes on-site hydrogen storage, which NorthC plans to use to fuel the Jenbacher engines in the future. The plant will be expanded with two additional Jenbacher engines, further strengthening the site's backup power capabilities.



Results

INNIO's myplant Performance cloud-based digital platform enables secure, real-time monitoring of the Jenbacher emergency backup solution. With this advanced digital tool, NorthC gains intelligent plant management capabilities. According to NorthC, once the engines begin operating on hydrogen, emissions are expected to be reduced even further.

In addition to supporting NorthC's sustainability goals, the project also contributes to the Netherlands' broader national objective of achieving carbon neutrality by 2050.

Customer benefits

- Jenbacher gas generators that can handle 100% hydrogen serve as an alternative to diesel generators and help enable the transition toward carbon-neutral goals.
- Dual-gas capability with on-site hydrogen storage for smooth transition to green hydrogen
- Reliable backup power for critical operations in the Eindhoven innovation region
- Containerized solutions enabling quick installation and one-to-one diesel replacement
- Real-time monitoring and management of engine performance via myplant Performance platform



Key technical data

Installed engines	6 x J420
Electrical output	6 MWe
Electrical efficiency	40%
Energy source	Dual gas (natural gas, hydrogen)
Commissioning	2024



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