

# PROVIDING HEAT WITH A SUSTAINABLE, INNOVATIVE ENERGY CONCEPT

## Initiative combines Jenbacher CHP technology with a solar installation and heat exchanger

### Background

Global climate change is upon us, and immediate solutions are needed for a successful energy transition. With that in mind, energy provider Bürger.Energie.Neckar.Enz (B.E.N.E.) GmbH & Co. KG is on a mission to deliver reliable, future-proof, and sustainable heat to homes in the Stuttgart area.

This pioneering initiative began in the community of Möglingen, which is home to 11,000 residents. In cooperation with the Bietigheim-Bissingen engineering firm IBS Ingenieurgesellschaft mbH, B.E.N.E. GmbH & Co. KG implemented the entire project independently, from development to construction to operation. In the process, B.E.N.E. GmbH & Co. KG has become a role model for environmentally friendly energy production.

### A trailblazing energy concept using CHP and heat pump technology

In addition to its existing energy sources, B.E.N.E. GmbH & Co. KG wanted to build a completely new local heating network to provide the community with reliable, quiet, and highly efficient heat. When it came to implementing the "Energy made in Möglingen" initiative, B.E.N.E. GmbH & Co. KG opted for maximum flexibility, combining a Jenbacher cogeneration plant, a heat pump, a heat storage unit, a solar installation, and a 50 kW CHP unit for self-sufficient supply.

The project kicked off in 2020 in a residential area of Möglingen with the installation of a Jenbacher J320 CHP plant with an electrical output of 999 kW and a thermal output of 1,384 kW. Building the plant so close to the people it serves was designed to maximize its energy density. To extract as much heat as possible, three heat exchangers were installed along with a 440 kW heat pump. The heat pump provides additional sustainable power

»We operate a completely new heating network in Möglingen, and we opted for the latest technology so that we can deliver environmentally friendly heat across the network. The future will be all about energy efficiency. And the Jenbacher CHP plant is an excellent choice that we can combine with heat pump technology and solar power.«

Jürgen Gözl, Technical Director, B.E.N.E. GmbH & Co. KG



by using the CHP plant's radiated heat and low-temperature exhaust gas.

The large heat storage unit can hold 750,000 liters of water and gives the plant operational flexibility in response to electricity prices.

The heat supplies the new heating network and also can be banked temporarily in the storage unit. Two reserve boilers, one in the power plant and one off site, complete the new installations. The solar installation on the roof of the building and the 50 kW CHP unit produce power for in-house use.

## Results

With smart energy management and comprehensive monitoring of both production and consumption, B.E.N.E. GmbH & Co. KG now can keep downtime and servicing to a minimum while also stabilizing the security of its supply. The result: optimized, transparent, and sustainable power generation.

Combining INNIO's Jenbacher J320 CHP unit with the high heat extraction from three heat exchangers—two feeding straight into the heating water network and one for the heat pump—plus the heat pump, has maximized the plant's overall efficiency. Excess power is sent to the grid at attractive feed-in tariffs.

As of 2022, all energy management at the plant is fully digital and operates under hybrid customer care with on-site and remote service. Thanks to these hi-tech systems and full monitoring, uptime is almost 100%. And with downtimes of 30 minutes or less, operations are extremely agile.

INNIO's tailored service offering has been another key success factor in the Möglingen energy project, with optimized on-site technical support proving to be a winning formula in conjunction with pioneering Jenbacher energy solutions.



## Key technical data

Installed engines	1 x J320
Electrical output	999 kW
Thermal output	1,384 kW
Total efficiency	106.3% (with heat pump)
Heat storage unit	750 m <sup>3</sup>
Energy source	Pipeline gas
Year of commissioning	2021

## Customer benefits

- Reliable supply with minimal downtime
- Efficient power and heat provision thanks to a combination of innovative technologies
- A sustainable, efficient, and secure overall concept that leaves the plant ideally placed for the future



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 INNIO's website at [www.innio.com](http://www.innio.com)

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