

# DELIVERING ENERGY SELF-SUFFICIENCY WITH REDUCED EMISSIONS

## Combined heat and power plant harnesses sewage gas to generate greener power in India

### Background

The Indian government has overseen a major improvement in the scientific treatment of waste. As part of this effort, an autonomous water supply and sanitation utility in South India has implemented several water supply and sewage projects for the city of Bangalore, including the prestigious K&C Valley sewage treatment plant, which has the capacity to treat 60 million liters of sewage per day.

Over the years, the sewage treatment plant faced rising energy costs associated with meeting discharge permit requirements. To combat those costs, it was decided to initiate a project to harness the power of the site's sewage gas.

### A greener solution

A new combined heat and power (CHP) plant was commissioned in January 2018 to put the sewage gas to work generating greener energy that could run the sewage treatment plant. Because the plant sits 900 meters above sea level, a highly efficient power generation solution that could deliver excellent performance even at high altitude was needed. Key to the 1,067 kWel power plant's success is INNIO's proven Jenbacher J320 engine, which runs on sewage gas to generate power for the plant and recovers the exhaust flue gas waste heat for use in the plant's wastewater treatment process.

VA Tech WABAG, an Indian multinational company focused on water treatment for municipal and industrial users, has long employed INNIO's Jenbacher technology in its projects. VA Tech WABAG operates the new CHP plant, which was designed, supplied, installed, and commissioned by Clarke Energy, a global business specializing in distributed power plant solutions and

»At our K&C Valley sewage treatment plant, although the site conditions are challenging, the Jenbacher engine efficiently and reliably converts sewage gas to green power. This lets us operate within given emission limits, and even reduce greenhouse gases and associated air pollutants. We can offset purchased electricity and use the waste heat from exhaust flue gases and hot water circuit to meet the digester heat load.«

Rajneesh Chopra, Global Head Business Development,  
VA Tech WABAG Limited



INNIO's authorized Jenbacher distributor in the region. Clarke Energy provides 24/7 operation and maintenance services for the plant.

## Result

The K&C Valley sewage treatment plant treated on average 41.83 million liters of water per day between the period of May 2018 and July 2022, and the facility's CHP plant provided the power and heat needed for those operations, offsetting the need to buy power from the grid. The plant also plans to sell excess power to the grid in the future.

By converting city waste into renewable fuel, which is part of the short-term carbon cycle, the project has delivered additional environmental benefits to the community through its crucial role in protecting and rejuvenating the lakes in the region.



## Key technical data

Installed engine	1 x J320
Energy source	Sewage gas
Electrical output	1,067 kW
Thermal output	1,150 kW (hot water circuit and exhaust gas cooling)
Total efficiency	83.5%
Year of commissioning	2018



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## Customer benefits

The K&C Valley sewage treatment plant is greatly benefiting from the Jenbacher-driven CHP plant:

- Energy savings of about 40% compared to separate power and heat generation
- Proven performance operating on a renewable energy source—sewage gas
- High availability compared to other solutions
- A greener solution that significantly reduces CO<sub>2</sub> emissions
- Service team with fast response for spare parts and repairs as needed

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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