

DELIVERING EFFICIENT, GREENER POWER

through coalbed methane power generation

Background

Shanxi Jinju Coal-Power-Chemical Co., Ltd, is a subsidiary of Jinneng Holding Equipment Manufacturing Group, one of the largest enterprises in China to build and operate coalbed methane (CBM) power plants. The recovery of CBM—a form of natural gas extracted from coal beds—in advance of mining helps reduce methane emissions and lowers the risk of methane explosions during coal mine production. What's more, CBM is an important energy source with much lower greenhouse gas emissions than coal.

An efficient, and greener, solution

The Chengzhuang CBM Power Generation Project uses the energy-rich methane gas from coal mines to run 12 Jenbacher J620 gensets at one of INNIO's biggest CBM power generation projects in China. Running on CBM, each genset can efficiently deliver up to 3.4 MW of electricity, all with reduced greenhouse gas emissions compared to coal.

Located at the existing site of Shanxi Jinju Coal-Power-Chemical Co., Ltd.'s retired Chengzhuang thermal power plant, the new power plant makes full use of the original facility's legacy cooling tower and steam turbine workshop space to house the innovatively installed Jenbacher gensets along with two sets of 11-ton-per-hour waste heat steam boilers, which drive two sets of 3 MW combined condensing steam turbine gensets.



Results

Construction began in April 2016 and, thanks to a quick installation, the plant passed its 72+24-hour full-load trial operation in June 2017. At that time, it officially was transferred to commercial operation with a total capacity that reaches 40.5 MW. The contract also includes a multi-year service agreement.

In 2020, the site's Jenbacher gensets ranked No. 1 in contests for both "Yearly Max OPH" (maximum operating hours of 8,339) of individual gensets and "Yearly Max Avg. OPH" (8,175 OPH) of genset fleets among various CBM power plants, earning them two Industry POWER Awards from Shanxi Gas Power Generation Association.¹⁾

Customer benefits

- Centered on twelve 3.4 MW Jenbacher J620 gensets plus two 3 MW condensing steam turbine gensets in combined cycle, the project provides as much as 46 MW of secure power for the region.
- The J620 gensets deliver total efficiencies of around 80% operating on CBM.
- The plant helps reduce greenhouse gases in the region with much lower emissions than those of similar capacity coal plants while meeting the ever-increasing energy demand.

Key technical data

Installed engines	12 x J620
Electrical output	40.5 MW
Thermal output	36 MW
Total efficiency	80%
Energy source	Coalbed methane (CBM)
Year of commissioning	2017

About the Industry POWER Award

The Industry POWER Award was established by the Shanxi Gas Power Generation Association—the first gas power generation association in China—to commend companies that have made outstanding contributions toward the development of the gas power generation industry.¹⁾

¹⁾ <http://www.sgpga.com/news/show/310>



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, INNIO offers 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. We are individual in scope, but global in scale. With our flexible, scalable, and resilient energy solutions and services, we are enabling 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 3,500 experts provides life-cycle support to the more than 54,000 delivered engines globally through a service network in more than 80 countries.

INNIO's ESG Risk Rating places it number one of more than 500 worldwide companies in the machinery industry assessed by Sustainalytics.

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