



Turn waste into wealth with biogas-fuelled power generation

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Gas Engine Pioneers Deliver Renewable Energy

Jebsen Industrial has pioneered the use of gas-fuelled engines in Greater China over the past decade, using [GE Jenbacher](#) technology to deploy:

- Landfill gas-driven engines at all five Hong Kong landfills since 1996;
- China's first sewage biogas engine in Qingdao Licunhe in 1991;
- Gas engines at the Xieqiao and Shentangzui coal mines in 2005 and 2006 to improve safety, reduce emissions, and produce clean power for the grid; and
- China's first tri-generation natural gas plant at the Beijing Jinhui Garden Hotel in 2008, helping fulfil the Olympic green initiatives.

Jebsen Industrial turns waste into wealth in China

Two poultry farms in China are saving money and making the world a cleaner, greener place with biogas-fuelled power generation solutions based on equipment and services from Jebsen Industrial.

The Challenge: A Clean, Green China How does a modern nation find new sources of clean energy? How does it power its cities, control emissions, and dispose of biological waste? Taking up this challenge in China, Jebsen Industrial has been championing advanced gas-fuelled engine technology for more than a decade. As the industry pioneer and leader in China, it has successful installations in landfills, coal mines, and luxury hotels. It also recently advised two poultry farms on using biowaste as an economical energy source.

- **Beijing Deqingyuan Agricultural Technology** raises 2.6 million chickens and produces 212 tonnes of manure per day.
- **Shandong Minhe Animal Husbandry**, the sixth largest poultry farm in the world and the largest poultry farm in Asia, has 5 million chickens, which produce 500 tonnes of waste each day.



Biogas Digesters and Gas Holder at the Beijing Deqingyuan poultry farm

The Solution: Renewable Energy from the Ground Up

Jebsen Industrial recommended that these two farms make biogas from their organic waste, and then turn this renewable fuel into electricity, heat, and fertiliser. This not only brings economic and environmental benefits to the farm itself, but also: Improves the local environment;
Reduces the load on the regional electricity supply;
Lessens national dependence on coal power generation.

Advanced Technologies from the World Leader The Jebsen Industrial biogas solution uses advanced technology from Austrian-based [GE Jenbacher](#), the world's leading producer of gas-fuelled engines. Its innovative technology uses biogas from the anaerobic digestion of organic waste, such as manure or food scraps, to generate electricity and heat. This energy can be used to run the anaerobic digester itself, with additional supplies feeding the public power grid. What remains in the digester is a rich bio-fertiliser suitable for crops fields and orchards. To operate a Jenbacher cogeneration plant with an electrical output of 500 kW, the dung of about 2,500 cows, 15,000 hogs, or 300,000 laying hens is required. This would generate enough electricity to supply about 2,700 homes in rural China for a year.

Expert Support from Planning to Operation

To ensure that each client is matched to the biogas solution that best meets its requirements, each project begins with a thorough needs assessment by experts from Jebsen Industrial.

In the case of the two poultry farms, biogas-fuelled gas engines from [GE Jenbacher](#) (JMS 320 GS-B.L) were recommended. A team of 13 staff from Jebsen Industrial supported the clients, providing overall project supervision and technical support, handling plant layout and interface design, overseeing implementation and testing, and providing training for the farms' operational staff.

Jebsen Industrial also tailored a maintenance programme for each farm, and continues to supply the highest



standards of after-sales support.

“Our commitment to our customers in Greater China goes well beyond simply delivering the cleanest and most efficient gas cogeneration and gas engines available today,” said Mr Lorenz Zimmermann, Director of Jebsen Industrial. “The highest standard of pre- and after-sales support, rapid spares availability, tailored maintenance programmes, and customer training form the basis of a close partnership between Jebsen Industrial, our end-user customers, and [GE Jenbacher](#).”

With implementation and operational support from Jebsen Industrial, the biogas-fuelled solutions it customised for the farms have produced impressive results*:

Beijing Deqingyuan poultry farm:

Equipment used: Two JMS 320 GS-B.L engines (installed 2007)

Biogas source: 212 tonnes of chicken manure per day from 2.6 million chickens

Power generated: up to 16 million kWh annually

Emissions reduction: 60,000 tonnes of CO2 equivalent per year

Bio-fertilizer produced: 180,000 tonnes per year

The Shangdong Minhe poultry farm:

Equipment used: Three JMS 320 GS-B.L engines (installed 2009)

Biogas source: 500 tonnes of chicken manure per day from 5 million chickens

Power generated: up to 24 million kWh annually

Emissions reduction: 90,000 tonnes of CO2 equivalent per year

Bio-fertilizer produced: 300,000 tonnes per year

*Figures are theoretical values

For More Information To learn how Jebsen Industrial can help you use [GE Jenbacher](#) gas engine technology to profitably turn organic waste into an economical energy supply, please send the email to inquiry@jebsen.com or visit the website at: www.jebsenindustrial.com

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