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[Go Back](#)

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Low-BTU Generator Set runs on landfill-emitted methane.

GQ series runs on methane emitted from coal seams or dilute methane gas mixture produced by natural decay in landfills and sewage digesters. It produces continuous 1570 kW (50 Hz) or 1750 kW (50 and 60 Hz) and is powered by modified versions of QSV81G, 16-cylinder and QSV91G, 18-cylinder natural gas reciprocating engines. Series features double-safety gas shutoff valves and is suited for combined heat and power applications.



Cummins Power Generation Introduces New Low-BTU Genset

MINNEAPOLIS – Cummins Power Generation has introduced a new low-BTU generator set series that is specifically designed to run on the dilute methane gas mixture produced by natural decay in landfills, sewage digesters, or methane emitted from coal seams. The new GQ series generator sets produce a continuous 1570 kW (50 Hz) or 1750 kW (50 and 60 Hz) running

on landfill or digester gas containing very low thermal energy, while producing very low exhaust emissions. Multiple units can be paralleled for higher power production at larger landfill sites.

“Industry studies indicate that, globally, landfills represent an immense untapped energy resource,” says Trevor Passmore, General Manager for Energy Solutions – Cummins Power Generation. “In North America alone, candidate landfills can produce enough methane gas to support a total generating capacity of approximately 1500 MW. Currently, much of this potential energy is being flared off or vented into the atmosphere. This new generator set will provide landfill operators, utilities and independent power

producers with a proven generating solution to make use of this energy resource. In addition, since methane gas released to the atmosphere has about 20 times the greenhouse effect of carbon dioxide and hence global warming potential, burning methane in a generator set can reduce its environmental impact by a factor of about 20.”

Minimum pretreatment is required for the landfill gas to remove particulate matter and excess water vapor. Any additional pretreatment is dependent on the quality of the gas at a particular site, and project economics.

Powered by modified versions of the successful model QSV81G 16-cylinder and QSV91G 18-cylinder natural gas reciprocating engines, the new GQ series 1570 kW and 1750 kW low-BTU generator sets feature an enlarged fuel delivery system, double-safety gas shutoff valves, and special coatings and bearing materials to withstand the corrosive contaminants typical in landfill gas.

A Cummins low-BTU generator at a landfill site in Shrewsbury, England (UK) has accumulated more than 5,700 hours of operation. Future installations include a wastewater digester site in the Canary Islands later this year, and the Viridor Waste Management landfill near Edinburgh, Scotland (UK). At Viridor, Cummins Power Generation is developing a complete turnkey 3.5 MW power plant using two low-BTU generator sets running on methane from the landfill. The electricity produced at the site will be used to run a nearby cement works. An additional pair of low-BTU generators will be installed during the next two years to take advantage of the site’s estimated 20-year supply of methane. “Consistent with our goal of providing total energy solutions, Cummins Power Generation can deliver this new product in a number of ways,” says Passmore. “For example, we can deliver a Build-Own-Operate (BOO) power plant, or provide application design, installation and project management for a turnkey power plant. Supply of only the generator set, open or containerized, is also available.”

The new GQ series low-BTU generator sets are well suited for combined heat and power (CHP) applications, says Passmore. “For applications that can make use of electric generation plus steam or hot water produced by heat from the engine exhaust gases, CHP offers greater efficiencies and faster paybacks than electric generation alone,” he says.

Development of Landfill Gas To Energy (LFGTE) projects in the United States has been supported in the past by various government financial incentives such as tax credits and incentive payments through the Renewable Energy Production Incentive (REPI). Although tax incentives are no longer in effect for new installations, the LFGTE industry is pursuing reinstatement of these tax credits for projects. Other drivers of LFGTE projects are sales of “green power” to meet state-mandated utility Renewable Portfolio Standards (RPS) and sales of Tradable Renewable Credits (TRC).

In the United Kingdom, LFGTE projects are eligible for support through the government’s Renewables Obligation (RO) which demands that utilities derive a portion of their electricity from renewable sources. During the first year of RO eligibility, landfill gas made up half of the 5.56 billion kWh generated under the initiative, and together with

sewage gas contributed over 55 percent of the RO energy generated. The potential for landfill gas generation under the Renewables Obligation scheme totals a generating capacity of about 580 MW.

Cummins Power Generation, a subsidiary of Cummins Inc. (NYSE: CMI), is a major leader in increasing the availability and reliability of electric power around the world. With over 80 years' experience, our global distributor network delivers innovative solutions for any power need--commercial, industrial, recreational, emergency and residential. Products include alternators, generator-drive engines, and temporary or permanent pre-integrated power systems combining generator sets and power control and transfer technologies. Services range from system design, project management, financing, and operation and maintenance contracts to development of turnkey power plants. For more information, contact Eunice Kwei, Cummins Power Generation, 1400 73rd Ave. NE, Minneapolis, MN, 55432. Phone: 763-574-5571; Fax 763-574-5298. Or visit www.cumminspower.com.

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