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**NEDO Project Leads to a New High-efficiency 2 MW Gas Generator — Demonstration Testing Begins in September to Confirm the World’s Highest Level of Power Generation Efficiency —**

As part of a project under the auspices of the New Energy and Industrial Technology Development Organization (NEDO), Mitsubishi Heavy Industries, Ltd. has developed a 2 MW 16 cylinder high-speed gas engine power generator that achieves one of the world’s highest ratings for power generation efficiency.¹ By employing technologies, such as two-stage turbocharging² and the Miller cycle,³ this new gas engine’s power generation efficiency exceeds a lower heating value (LHV)⁴ of 44.7%, which is one of the highest ratings for high-speed gas engine power generators used in combined heat and power cogeneration systems and applications.

Starting in September, demonstration testing using a prototype of this new gas engine will be conducted with the goal of verifying practical application for decentralized power generation, emergency and backup power generation, microgeneration, and cogeneration.

Exterior view of 2 MW 16 cylinder gas engine high-speed power generator prototype
Notes
1 This project was funded by the Strategic Innovation Program for Energy Conservation Technologies.
2 Two-stage turbocharging is a system that achieves high-efficiency and high-pressure ratios by arranging turbochargers in a series, with intercoolers placed in between them, within the high-pressure and low-pressure stages of the engine.
3 The Miller cycle is a system that aims to improve thermal efficiency by utilizing a cam-shaped valve and staggered valve timing to enable an expansion ratio that is larger than its compression ratio. This distinguishes it from a normal (Otto) cycle’s cylinder compression and expansion ratios which are equal to each other.
4 Lower heating value (LHV) is a method used to express an internal combustion engine’s net thermal efficiency. It is equal to the percentage of a fuel’s total caloric value that can be converted into heat energy as it is burned.