

# ENMAX Energy introduces Canada's first Hybrid Electric Gas Turbine

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- ENMAX is the first utility in Canada to introduce a Hybrid Electric Gas Turbine.
- The unit combines an existing LM6000 natural gas turbine with a 10 MW/4.3 MWh lithium-ion battery from GE Renewable Energy.
- The hybrid system is expected to result in the natural gas turbine running upwards of 80 per cent less and avoiding 45,000 tonnes of GHG emissions per year – the equivalent of taking 10,000 cars off the road.
- This innovative technology is an advancement towards Alberta's lower carbon future and can serve as a model for other natural gas facilities throughout Canada.
- The total cost of the project was \$14.6 million, with \$7.3 million funded by Emissions Reduction Alberta as part of its Industrial Efficiency Challenge.

Calgary, ALTA – ENMAX Energy, in collaboration with Emissions Reduction Alberta, is proud to bring Canada's first Hybrid Electric Gas Turbine to Alberta. Located at ENMAX's Crossfield Energy Centre, this unique technology provides enhanced flexibility in how electricity is provided to market while lowering greenhouse gas emissions.

Traditionally, power plants like Crossfield Energy Centre must idle their natural gas-fuelled turbines to remain ready to provide power to the grid when there's a change in supply or demand. By combining one of Crossfield's existing natural gas-fuelled LM6000 turbines with a 10 MW/4.3 MWh lithium-ion battery energy storage system from GE Renewable Energy, the hybrid facility can provide on-demand electricity without the turbine idling. When longer duration power is required, the battery provides the initial demand, giving the turbine time to seamlessly start up and take over.

A hybrid electric gas turbine operates much like a hybrid car. When stopped at a red light, the hybrid car engine doesn't burn fuel while it waits. As soon as the light turns green, the battery kicks in and the car starts running instantly while the engine subsequently starts up and takes over. In hybridizing the facility at Crossfield, the same type of process takes place, enabling the gas turbine to run less, avoiding an expected 45,000 tonnes of greenhouse gas emissions per year – the equivalent of taking approximately 10,000 cars off the road.

The Crossfield hybrid electric gas turbine was one of 11 winners in Emissions Reduction Alberta's (ERA) Industrial Efficiency Challenge, a provincial funding initiative to support projects with potential to reduce greenhouse gas emissions in Alberta. As a challenge winner, ENMAX received \$7.3 million in funding, approximately 50 per cent of the project's overall cost.

*“As Alberta’s leading provider of electricity services, ENMAX is proud to have the lowest-emitting power generation fleet in Alberta. Through advancements like Canada’s first hybrid electric gas turbine, we continue to take a leadership role in building Alberta’s lower carbon future. We believe battery storage will play an increasingly important role in providing safe, clean and reliable energy to Albertans, and the hybrid technology deployed at Crossfield can serve as a model for other natural gas facilities across Canada.” – Lonnie Enns, Senior Vice President, ENMAX Energy.*

*“The Government of Alberta knows that technology can help industry reduce emissions and operating costs. That’s why funding was delivered through Emissions Reduction Alberta for first-of-its-kind demonstrations and deployment to bring ground-breaking solutions for real emissions reductions to our industry.” – Honourable Jason Nixon, Minister of Environment and Parks.*

*“The idea of starting to use utility-grade storage solutions like hybrid batteries allows us to bring more renewables into the system, it allows us to be able to provide effective and reliable electricity and it’s cutting edge. Calgary should be the centre of the clean energy revolution and I’m thrilled that ENMAX is the first in Canada to implement this kind of technology.” – Naheed Nenshi, Mayor of Calgary.*

*“ENMAX’s leading-edge battery energy storage system will help shape the future of the electricity industry. The knowledge gained from this successful project will influence the utilization and reliability of electricity resources not only in Alberta, but well beyond our borders.” – Steve MacDonald, CEO, Emissions Reduction Alberta.*

*“As demand for electricity increases globally and the energy industry goes through a transition to more renewables, hybrid systems will help shape the future of the electricity industry. This project represents forward-thinking vision and technical innovation that will help the industry move forward.” – Prakash Chandra, CEO, Renewable Hybrids, GE Renewable Energy.*

## **About ENMAX Corporation**

Headquartered in Calgary, Alberta, with operations across Alberta and Maine, ENMAX Corporation (ENMAX) is a leading provider of electricity services, products and solutions. Through its subsidiaries, ENMAX Power Corporation and Versant Power, ENMAX owns and operates transmission and distribution utilities in Calgary, Alberta and northern and eastern Maine, safely and reliably delivering electricity to all Calgary homes and businesses and more than 159,000 customers in Maine. Through ENMAX Energy Corporation, ENMAX owns and operates 1,509 MW of generation and offers a range of innovative electricity, natural gas and energy services to more than 690,000 residential, commercial and industrial customers across Alberta. ENMAX is a private corporation and The City of Calgary is its sole shareholder.

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