



PRATT & WHITNEY CANADA UNVEILS HIGH VOLTAGE BIDIRECTIONAL MOBILE CHARGING UNIT FOR HYBRID-ELECTRIC FLIGHT DEMONSTRATOR

News / Manufacturer



Pratt & Whitney Canada announced the development of an advanced mobile charging unit capable of charging high-power batteries at up to 1500 volts, making it compatible with Megawatt Charging System standards the industry is advancing for high voltage power applications. The MCU was developed in collaboration with the [National Research Council of Canada \(NRC\)](#) and the [Innovative Vehicle Institute \(IVI\)](#) as part of the [RTX hybrid-electric flight demonstrator project](#).

Alexandre Gagnon, vice president of corporate affairs, Pratt & Whitney Canada, commented: "This is the latest example of our hybrid-electric flight demonstrator project, driving collaboration and innovation within Canada's aerospace ecosystem to enable a more sustainable future for aviation. High voltage, bidirectional charging systems will be critical for a growing number of electric and

hybrid-electric systems including aircraft, as well as other transport applications."

The MCU is assembled from commercially available components and can deliver up to 280 kW and 1500 volts. In collaboration with IVI, Pratt & Whitney Canada developed a distributed control and protection strategy. The NRC focused on the hardware design, assembly, testing and delivery of two charger units, which will be used on the hybrid-electric flight demonstrator project. The charger's bidirectional capability enables it to both charge and discharge batteries, which creates opportunities to recycle unused energy back into the electrical grid.

Pratt & Whitney Canada continues to progress in testing the propulsion system for the RTX hybrid-electric demonstrator, which targets a 30% improvement in fuel efficiency and reduced CO₂ emissions compared to today's most advanced regional turboprops. In 2024, the propulsion system will be linked to batteries developed by H55, which will be charged using the new charger. Hybrid-electric propulsion is a critical component of RTX's strategy for enabling more sustainable aviation and supporting the industry's goal of reaching net-zero CO₂ emissions by 2050.

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