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Accelera fuel cells power locomotive in Austrian project HY2RAIL

COLUMBUS, Ind.--(BUSINESS WIRE)-- Accelera™ by Cummins, the zero-emissions business segment of Cummins Inc. (NYSE: CMI), has reached a significant milestone by successfully commissioning its first fuel-cell-powered locomotive for freight rail applications. Replacing typical diesel generators, Accelera fuel cells now serve as the primary power unit in the conversion project of a light On Track Machine (OTM) Vehicle in Austria developed for the HY2RAIL project.

This press release features multimedia. View the full release here:

<https://www.businesswire.com/news/home/20240313776335/en/>



In partnership with the Austrian railway authority ÖBB, recognized for managing one of Europe's most advanced railway systems, the HY2RAIL project demonstrates how fuel cells can sustainably meet the power needs of heavy-duty freight locomotives.

Freight locomotive powered by Accelera fuel cells. (Photo: Business Wire)

To power the locomotive, m.ZERO, an Austrian engineering consultancy, integrated Accelera fuel cell power modules into a strong 120kW system. This customized system meets strict rail vehicle standards, including the European standard EN 61373, which outlines testing requirements for railway applications, focusing on shock and vibration.

Furthermore, m.ZERO oversaw the integration of all balance-of-plant components and interfaces in collaboration with Accelera. The fuel cell system was then combined with a

ternary battery system to create a hybrid propulsion system that includes cutting-edge power electronics, on-board hydrogen storage technology, a vehicle control unit, and software. This integration was led by m.ZERO in partnership with project leaders Hy2RAIL.

ÖBB's technical service arm, TrainTech, played a pivotal role in overseeing the railcar's modernization. The transformed locomotive was previously an OBB X534-type catenary construction and maintenance railcar, reliant on a diesel-electric propulsion system. Following installation of the new fuel cell electric system, it now runs emissions free.

"Expanding our fuel cell technology into locomotives for freight reinforces our standing as a premier fuel cell provider in the European market, particularly for the railway sector," said Alison Trueblood, General Manager of Fuel Cell and Hydrogen Technologies at Accelera. "Alongside our experience with passenger trains, this project enhances our ability to support the dynamic rail market, further demonstrating the viability of hydrogen technology for zero-emissions heavy-duty transport."

"We made the right decision with our choice of fuel cells for the project as Accelera's units are delivering exactly as specified," said Herbert Wancura, CEO of m.ZERO. "Modernizing to zero-emission technology isn't just feasible, it's an economically and environmentally savvy choice. We are ready to support rail OEMs in their zero-emission endeavors and eager to collaborate with Accelera again on any upcoming projects."

The H2Rail project brought together the strengths and expertise of leading rail organizations and received co-financing from the Austrian Research Promotion Agency.

About Accelera™ by Cummins

Accelera by Cummins provides a diverse portfolio of zero-emissions solutions for the world's most economically vital industries, empowering them to accelerate the transition to a sustainable future. Accelera, a business segment of Cummins Inc., is both a components supplier and integrator, focused on batteries, hydrogen fuel cells, e-axles, traction drive and electrolyzers. Accelera currently has operations in North America, across Europe and in China.

Cummins, a global power technology leader, is a corporation of complementary business segments that design, manufacture, distribute and service a broad portfolio of power solutions. Headquartered in Columbus, Indiana (U.S.), Cummins employs approximately 75,500 people committed to powering a more prosperous world. It operates a robust distribution and support network in more than 190 countries and territories. Cummins reported net sales of approximately \$34.1 billion for the year ended December 31, 2023.

To learn more about Accelera by Cummins, visit accelerazero.com.

About m.ZERO OG

m.ZERO is an engineering consultancy based in Graz, Austria and working on advanced technology solutions for off-highway applications. They combine decades of expertise in alternative powertrains – both fuel cells and battery technology – with equally extensive rail industry background. For more information visit their website www.m-zero.at.

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Accelera by Cummins:

Jon Mills – Director of External Communications

jon.mills@cummins.com

+1 317-658-4540

mZERO OG:

Herbert Wancura (CEO)

herbert.wancura@m-zero.at

+43 676 848 15610

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