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## **Cummins and Navistar to Collaborate on Heavy-Duty Class 8 Truck Powered by Hydrogen Fuel Cells**

INDIANAPOLIS--(BUSINESS WIRE)-- Global power leader Cummins Inc. (NYSE: CMI) and Navistar International Corporation (NYSE: NAV) will work together on the development of a class 8 truck powered by hydrogen fuel cells.

The project will be funded in part through an award from the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) previously announced in August, as part of DOE's "H2@Scale" initiative to develop affordable hydrogen production, storage, distribution and use.

"This vehicle will feature our next generation fuel cell configuration and provides a springboard for us to advance our hydrogen technology for line haul trucks," said Amy Davis, Vice President and President, New Power at Cummins. "We are also excited to build on our strong relationship with Navistar, which dates back 80 years, and work together to lower costs and make hydrogen-powered vehicles more accessible for fleets to adopt."

The award is one of two DOE grants awarded to Cummins, totaling more than \$7 million, and will aid in the development of an integrated fuel cell electric powertrain for heavy-duty trucks with operational performance and total cost of ownership that supports near-term, rapid, and substantial penetration of the truck markets. This includes development of a solution that is highly manufacturable and scalable with a proven range of 300 miles or more and improved fuel economy over current heavy-duty trucks.

The powertrain will be integrated into an International® RH™ Series and uses two HyPM® HD90 power modules, made up of HD45 fuel cell stacks connected in series. Instead of having a single large fuel cell operate at an inefficient partial load, individual HD45 power modules can be turned on/off to provide adequate power at an efficient full load.

"Cummins is a trusted Navistar partner and collaborating with the company on this project is a milestone in learning integrations surrounding the functionality, adoption and scalability of hydrogen fuel cells as a power source for class 8 vehicles," said Darren Gosbee, Vice President Engineering at Navistar. "Hydrogen offers great opportunity in the commercial vehicle sector and we're proud to be part of the team working to develop a complete solution

for customers.”

The prototype fuel cell class 8 truck will ultimately see a year-long field test. The truck will be integrated into Werner Enterprises’ fleet of more than 7,700 tractors and operated in real-world local and/or regional delivery operation out of Fontana, California.

"This integration aligns with our Environmental, Social and Governance initiatives as we continually look for new ways to reduce our carbon footprint," said Scott Reed, Sr. Vice President of Fleet Purchasing & Maintenance, Werner Enterprises. "Testing the vehicle in real-world conditions will help paint a full picture of how the system performs over challenging road conditions, including both hot and cold climates. In addition to that performance data, we are excited about the opportunity to provide feedback from Werner professional drivers, mechanics and fleet management to help the project team develop a comprehensive total cost of ownership analysis."

Major objectives of the DOE award include achieving, meeting or exceeding conventional diesel powertrain performance requirements and reducing the upfront capital costs by 35 percent to make the adoption of zero-emission fuel cell technologies viable for commercial fleets.

### **About Cummins Inc.**

Cummins Inc., a global power leader, is a corporation of complementary business segments that design, manufacture, distribute and service a broad portfolio of power solutions. The company’s products range from diesel, natural gas, electric and hybrid powertrains and powertrain-related components including filtration, aftertreatment, turbochargers, fuel systems, controls systems, air handling systems, automated transmissions, electric power generation systems, batteries, electrified power systems, hydrogen generation and fuel cell products. Headquartered in Columbus, Indiana (U.S.), since its founding in 1919, Cummins employs approximately 61,600 people committed to powering a more prosperous world through three global corporate responsibility priorities critical to healthy communities: education, environment and equality of opportunity. Cummins serves its customers online, through a network of company-owned and independent distributor locations, and through thousands of dealer locations worldwide and earned about \$2.3 billion on sales of \$23.6 billion in 2019. See how Cummins is powering a world that’s always on by accessing news releases and more information at <https://www.cummins.com/always-on>.

### **About Navistar International Corporation:**

Navistar International Corporation is a holding company whose subsidiaries and affiliates produce International® brand commercial trucks, proprietary diesel engines, and IC Bus® brand school and commercial buses. An affiliate also provides truck and diesel engine service parts. Another affiliate offers financing services. Additional information is available at [www.Navistar.com](http://www.Navistar.com).

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