

PHINIA takes a Big Leap Towards Sustainable Transportation with Successful 1,000+ km, 12-Hour Endurance Run

- *PHINIA's H₂ICE engine conquers 1,000+ km journey, showcasing potential for cleaner, high-performance transport*
- *Technology offers rapid refueling, durability & scalability, paving the way for a more sustainable future for the transportation industry*

XX June 2024 – PHINIA Inc., a leader in premium fuel systems, electrical systems, and aftermarket parts, today announced the results of a high-performance durability test undertaken by one of its Hydrogen Internal Combustion Engine (H₂ICE) vehicles.

The test, conducted in Q1 2024, was a rigorous assessment of the H₂ICE vehicle's capabilities, subjecting it to a challenging 1,000+ km journey in just 12 hours, enduring challenging winter conditions, reaching lows of -4 degrees Celsius, all while fully loaded. This ground-breaking achievement showcases the potential of H₂ as a cleaner and viable alternative to internal combustion engines that use traditional fuels, with particular focus on high-intensity applications in the transportation industry.

The 1,056km round trip starting and ending in Blois, France, demonstrated the capability of the H₂ICE powertrain for transient drivability, practical performance, and adherence to stringent emissions and safety standards. The rigorous examination also gives confidence for H₂ICE's viability for additional practical applications, including backup power supply and motor sports.

"This experiment is just a glimpse into the potential that H₂ICE technology has to change the face of sustainable transportation," commented Todd Anderson, Chief Technology Officer, PHINIA. He continued: "The success of this 1000+ km on-road demonstration clearly illustrates that H₂ICE engines can deliver the power, durability, performance, and range necessary for demanding applications, all while producing near-zero CO₂ emissions."

Making the Case for H₂ICE

The transportation industry is under increasing pressure, through both societal and regulatory developments, to reduce vehicle emissions. While significant investment has been made to curtail emissions, extraneous variables can impact the performance of a vehicle on the road.

For example, heavy-duty transport often requires continuous high-power operation, with factors like extreme temperatures, heavy loads, continuous operating cycles, and dirty operating environments posing additional challenges. H₂ICE systems are emerging as a viable solution, particularly for applications where range, payload capacity, and refueling times are critical factors, thanks to several key benefits:

- **Rapid Refueling:** Compared to battery electric vehicles (BEVs) that typically require lengthy charging times, H₂ICE vehicles can be refueled in minutes, minimizing downtime and maximizing operational efficiency for many freight use-cases.
- **Durability and Reliability:** H₂ICE builds upon over a century of ICE development, ensuring a robust and reliable powertrain.
- **Lower Weight:** PHINIA's innovative rail, injector, and control systems allow for efficient use of H₂, resulting in a lighter powertrain compared to BEVs with bulky batteries. This is a critical factor for the transport and haulage industry where maximizing payload capacity is essential.

PHINIA's H₂ICE technology is engineered to excel in demanding applications. Its effective cooling system makes it ideal for vehicles operating in harsh environments. This translates to both optimal performance and durability for off-road machinery, racing cars, and high-power light commercial vehicles.

The flexible system can be optimized for cost, power, or efficiency depending on the application. This, along with H₂ICE's resilience to varying ambient conditions and its ability to leverage existing manufacturing infrastructure, presents PHINIA's technology as a viable and scalable solution for accelerating the transition towards a cleaner and more sustainable transportation future.

A Range of Applications

PHINIA is strategically deploying its H₂ICE technology across diverse applications to help maximize its impact on sustainable development. This multi-faceted approach positions PHINIA as a leader in the transition to cleaner and more sustainable mobility.

One focus area is light commercial vehicles (LCVs). Through collaborations with leading manufacturers, PHINIA has developed H₂ICE LCVs that deliver an impressive 500km range, performance on par with diesel counterparts, and significantly reduced NOx emissions.

Furthermore, PHINIA's technology is poised to disrupt the world of motorsports. The exceptional power-to-weight ratio offered by H₂ICE paves the way for cleaner and more sustainable participation in endurance racing events.

Extending beyond the transportation sector, H₂ICE demonstrates remarkable capabilities in stationary power generation. H₂ICE gensets are capable of 24-hour continuous operation with high-load efficiency and rapid cold starts, making them an ideal solution for backup power applications.

For more information about PHINIA's hydrogen fuel solutions, please visit:

<https://www.phinia.com/technologies/hydrogen-solutions>.

About PHINIA

PHINIA is an independent, market-leading, premium solutions and components provider, with over 100 years of manufacturing expertise and industry relationships and a strong brand portfolio that includes DELPHI®, DELCO REMY® and HARTRIDGE®. With over 13,000 employees across 44 locations in 20 countries, PHINIA is headquartered in Auburn Hills, Michigan, USA.

Across commercial vehicles and industrial applications (heavy-duty and medium-duty trucks, off-highway construction, marine, aviation, and agricultural), and light vehicles (passenger cars, trucks, vans and sport-utility), we develop fuel systems, electrical systems, and aftermarket solutions designed to keep combustion engines operating at peak performance, while at the same time investing in advanced technologies to unlock the potential of alternative fuels.

By providing what the market needs today to become more efficient and sustainable, while also developing innovative products and solutions to contribute to lower carbon mobility, we are the partner of choice for a diverse array of customers – powering our shared journey toward a cleaner tomorrow.

(DELCO REMY is a registered trademark of General Motors LLC, licensed to PHINIA Technologies Inc.)