GenH2 and ITP Interpipe Validate Thermal Performance of Soft-Vacuum Pipe-in-Pipe Insulation for Liquid Hydrogen Pipelines

Cryostat CS900 platform testing validates insulation technology under real liquid hydrogen conditions for commercial infrastructure applications.

Titusville, FL— August 4, 2026 — GenH2 Corp., a subsidiary of Path2 Hydrogen AG (XETR: PTHH), and ITP Interpipe, a global specialist in thermally insulated pipe-in-pipe systems, today announced the successful thermal qualification of ITP Interpipe's Izoflex® insulation system for liquid hydrogen pipe-in-pipe pipelines.

The testing, conducted on GenH2's Cryostat CS900 Liquid Hydrogen Simulation Test Platform in Titusville, Florida, validated the insulation system's thermal performance under representative liquid hydrogen operating conditions using the ASTM C1774 industry standard. The results represent an important milestone toward full-scale qualification of ITP Interpipe's liquid hydrogen pipe-in-pipe technology and support the growing need for reliable, high-performance infrastructure across the emerging hydrogen economy.

The results were jointly presented at the ICEC30/ICMC2026 Conference by Aurélien Damour, Innovation Expert at ITP Interpipe, and James E. Fesmire, Executive Vice President and Chief Architect at GenH2.

Supporting the Next Generation of Liquid Hydrogen Infrastructure

As investment in liquid hydrogen production, transportation, and storage accelerates worldwide, minimizing heat ingress into cryogenic pipelines is essential for improving efficiency, preserving product quality, and reducing hydrogen losses throughout the supply chain.

The successful thermal qualification demonstrates that ITP Interpipe's Izoflex® insulation system delivers the thermal performance required for liquid hydrogen pipeline applications and validates GenH2's ability to provide standards-based testing under real-world liquid hydrogen operating conditions.

A Critical Milestone in ITP Interpipe's Qualification Program

This thermal qualification represents the third of four phases in ITP Interpipe's liquid hydrogen pipe-in-pipe qualification program. Previous phases included metallic material qualification for liquid hydrogen service, including hydrogen embrittlement characterization, and Izoflex® compatibility testing with liquid oxygen (LOx). The final phase will include full-scale system testing. This project was supported by the French State as part of the Investments for the Future Programme, now integrated into France 2030, and operated by ADEME.

ITP Interpipe's pipe-in-pipe technology builds upon its field-proven LNG pipeline expertise while incorporating optimized components, like the insulation, specifically engineered for liquid hydrogen service. Unlike conventional high-vacuum insulation systems, Izoflex® operates under soft-vacuum conditions, providing low thermal conductivity and sufficient structural support to eliminate the need for internal spacers between the inner and outer pipes. The use of a 36% Ni steel inner pipe with a low coefficient of thermal expansion enables ITP Interpipe's pipe-in-pipe system to be installed underground, subsea, or above ground without the need for expansion loops.

Standards-Based Testing Under Real Liquid Hydrogen Conditions
Testing was performed using GenH2's Cryostat CS900 platform integrated with the company's LS20 liquefaction and refrigerated storage system. The platform provides precise thermal measurements under controlled vacuum, temperature, and gas-environment conditions in accordance with ASTM C1774, enabling accurate characterization of insulation performance across cryogenic operating conditions.

Testing was conducted using representative pipeline operating conditions, including a 20 K cold boundary, 293 K warm boundary, controlled soft-vacuum pressure, and a four-layer Izoflex® insulation configuration wrapped around a pipe representative of field installation.

Results Confirm Pipeline-Grade Performance
The measured heat ingress met the thermal performance specifications required for liquid hydrogen pipeline applications, validating the experimental thermal qualification of the Izoflex® insulation system. Beyond liquid hydrogen, the companies believe the technology also shows promise for additional cryogenic applications, including liquid nitrogen systems for superconducting power cables, liquid oxygen infrastructure, and LNG pipelines.

"These results provide standards-based validation of how our Izoflex® insulation performs under the real operating conditions a liquid hydrogen pipeline will experience," said Aurélien Damour, Innovation Expert at ITP Interpipe. "This milestone significantly advances the qualification of our pipe-in-pipe technology and brings us one step closer to commercial deployment."

"As the hydrogen industry scales toward commercial deployment, standards-based validation becomes increasingly important," said James E. Fesmire, Executive Vice President and Chief Architect at GenH2. "This qualification with ITP Interpipe demonstrates how rigorous testing helps validate new technologies and accelerate deployment of reliable liquid hydrogen infrastructure."

The next phase of the qualification program will involve full-scale testing of the complete pipe-in-pipe system, building upon the material- and component-level validation achieved to date.

About GenH2
GenH2 Corp. is a subsidiary of Path2 Hydrogen AG (XETR: PTHH), a German company listed on the Frankfurt Stock Exchange. GenH2 is a technology leader in liquid hydrogen infrastructure systems, including Zero-Loss Controlled Storage and advanced hydrogen liquefaction. The company focuses on producing standardized equipment to accelerate midstream hydrogen infrastructure buildout for hard-to-decarbonize sectors. The technology team includes former NASA Hall-of-Fame scientists with decades of experience researching, engineering, and deploying hydrogen solutions. Learn more at genh2.com.

About ITP Interpipe

Founded in 1992, ITP Interpipe is a recognized leader in highly insulated pipeline systems, with offices in Paris and Houston and fabrication facilities in Normandy, France. Combining engineering excellence with innovative cryogenic technologies, the company delivers reliable solutions for onshore and offshore projects through a flexible business model ranging from engineering and procurement (EP) to full EPCI delivery. With more than 1,000 km of pipelines installed worldwide, ITP Interpipe has pioneered industry-first technologies, including the world's first subsea, LNG, and electrically heat-traced pipe-in-pipe flowlines. Learn more at itp-interpipe.com