FOR IMMEDIATE RELEASE

DelHyVEHR – (**Del**ivery of Liquid **Hy**drogen for **V**arious **E**nvironment at **H**igh **R**ate)

Paris, France - February 28, 2024 – The DelHyVEHR project has officially kicked off its start with the goal to make liquid hydrogen distribution viable and therefore making it accessible as a clean energy carrier across various industries. Hosted at ENGIE Lab Crigen in Paris on January 29th and 30th, the project's Kick-Off brought together the consortium of 13 partners, mainly from the industry.



This 3-years project, coordinated by ENGIE Lab Crigen, the ENGIE Group's research centre on energy transition, is funded by the European Union and supported by the Clean Hydrogen Partnership with a budget of € 5M and a European contribution of € 3.7M. Additionally, this project has received CHF 840k (~€ 866k) funding from the Swiss State Secretariat for Education, Research and Innovation (SERI) and € 1.3M from UK Research and Innovation.

Liquid hydrogen usage could substantially lead to carbon reduction, particularly within heavy-duty applications such as aviation, maritime, and railroad transportation. While existing technologies have paved the way for gaseous hydrogen refuelling for light vehicles, DelHyVEHR aims at addressing the gap in liquid hydrogen distribution infrastructure.

Key objectives of the DelHyVEHR project include the development of a liquid hydrogen (LH2) high-rate refuelling station dedicated to maritime, aviation and railroad applications with delivery flowrate exceeding 5 tons per hour and zero boil-off losses. The project is expected to achieve its demonstration by end 2026. Alongside with market maturity the costs are expected to be divided by 2 by 2030.

The DelHyVEHR consortium, comprising 13 leading partners from 4 countries across the European Union, the United Kingdom and Switzerland spans the entire value chain from component development to system demonstration and assessment. Additionally, the project benefits from the guidance of a distinguished advisory board comprised of global leaders in hydrogen end-user industries. The team consists of the following partners:

ENGIE is historical leader in gas marketing in France and is the first operator of gas infrastructure in Europe with a portfolio comprising transport networks, distribution networks and storage. ENGIE is a demonstrator of green hydrogen injection into the gas distribution network in France and coordinating the project. ENGIE has contributed to the construction and maintenance of the hydrogen station for 100% hydrogen buses in the North of France. As operator of future stations, ENGIE will be key for the future deployment of LS-LHRS for HDV applications. https://www.engie.com/en

Elengy, an expert in the LNG sector for more than 50 years, operates three regulated LNG terminals in France. It also develops its services, innovates, and paves the way for the use of tomorrow's sustainable energies for and with its clients. Elengy already offers services for the operation of LNG terminals for HDV transport. https://www.elengy.com/en

Ariane group is a world leader in access to space, working for its institutional and commercial customers and Europe's strategic independence. AGS counts over 7,000 employees (FR, DE) to design and create innovative and competitive launch systems offering civil and military space solutions for customers. AGS has 50 years of experience in Liquid Hydrogen Technologies. AGS leverages its expertise for space, defence, energy and other industrial sectors with high added-value products, equipment and services. https://www.ariane.group/en/

Fives designs and manufactures machines, process equipment and production lines for the world's largest industrial groups. From the first railway lines to the Eiffel Tower lifts and factory 4.0, for over 200 years Fives has been designing the disruptive solutions and technologies that make up industry. By responding to the specificities of each market locally, Fives combines economic and environmental performance in 25 countries thanks to its +8,500 employees. For the project DelHyVEHR, Fives will supply the Cryomec® cryogenic pump at the heart of the refuelling station. www.fivesgroup.com

Absolut Systems is a French industrial engineering SME founded in 2010 and based in Grenoble. A subsidiary of the Groupe Absolut, AS is a major player in the development and supply of innovative cryogenic systems and provides technological solutions to create a new ecosystem around liquid hydrogen, particularly in the energy and mobility sectors. AS develops and markets customized cryogenic equipment for a wide range of applications, including superconductivity, detection systems, on-board applications (aeronautics, marine, space), cryogenic space launchers and space propulsion. https://absolut-system.com/home/

DEKRA, a company founded in 1925, has been active in the field of safety for almost 100 years. The company currently employs over 48,000 people in approximately 60 countries on all continents. With qualified and independent expert services, they work for safety on the road, at work and at home. These services range from vehicle inspection and expert appraisals to claims services, industrial and building inspections, safety consultancy, testing and certification of products and systems, as well as training courses and temporary work. https://www.dekra.es/es/

Benkei is a French consultancy company supporting its clients in defining, financing, and implementing their R&I projects and innovation strategy. Benkei has particular expertise in open and collaborative innovation, and in setting up and managing collaborative projects (H2020, Horizon Europe, EIC accelerator, EUROSTARS, France 2030, etc.). https://www.benkei.eu/en/

TRELLEBORG: Trelleborg, founded in 1905, is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Trelleborg is located in 40 countries with almost 17,000 employees. Trelleborg brings to the project expertise in cryogenic liquid transfer, sealing solutions, hose and coupling technologies. https://www.trelleborg.com/en

CESAME EXADEBIT SA is the French designated institute for medium and high gas flows metering. Cesame holds, maintains and develops national standards in this field. Cesame is involved in EURAMET hydrogen projects (e.g., JRP 16ENG01 MetroHyVe, 19ENG04 MetroHyVe 2 and 20IND11 MetHyInfra) and brings its expertise in hydrogen flow measurement to the project. https://www.cesame-exadebit.fr/en/

Ulster University, a multi-campus university, the largest in Northern Ireland is composed of 15 research institutes including Engineering research institute with excellent research profile and strong international collaborations. Their research focuses on development of nanotechnology, clean technology, tissue engineering, composites, metal forming and connected health technologies. The HySAFER centre is carrying out research, consultancy, knowledge and technology transfer in the area of safety of hydrogen as an energy carrier and fuel cell technologies. https://www.ulster.ac.uk/

The **Energy Policy Group** (EPG) is a Bucharest-based non-profit, independent think-tank specializing in energy and climate policy, market analytics and energy strategy, grounded in February 2014. EPG promotes a technologically advanced, secure, environmentally friendly and socially acceptable energy system. EPG's views are self-standing and science-based. It relies on the best available data sources, as well as on its own research into energy security and strategy, technology, markets, geopolitics and political risk. https://www.enpg.ro/

ERIG: European Research Institute for Gas and Energy Innovation is a European research and development organisation with the objective to guide gas in the transition process towards a future renewable based energy system. It is a non-profit association for European cooperation in research and innovation in the field of sustainable and innovative gas technologies and the use of natural gas with renewable energies. https://erig.eu/

With plans to complete demonstration activities by 2027, DelHyVEHR aims to commercialize its technologies by 2029, ultimately establishing 15 refuelling stations by 2030 and scaling up to 81 stations by 2040 to cater to the shipping, aviation, and railroad markets.

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