



Press release
10 September 2020

ENGIE and ArianeGroup team up to develop renewable liquid hydrogen

ENGIE and ArianeGroup have just announced the signing of a cooperation agreement in the field of renewable liquid hydrogen to speed up the decarbonisation of heavy-duty and long-distance transportation.

Renewable liquid hydrogen is a zero-emissions alternative to fossil fuels and an answer to the specific storage and endurance requirements of sectors such as maritime and rail transport and aviation.

ENGIE and ArianeGroup will therefore leverage their expertise and cutting-edge technologies in hydrogen to:

- develop and test optimised liquefaction technology with the development of a hydrogen liquefier at ArianeGroup's industrial facility in Vernon (France);
- then develop a range of products and services on the liquid hydrogen line, primarily for maritime and inland waterway applications.

For more than forty years, ArianeGroup has been developing expertise in liquid hydrogen-based propulsion systems and related ground facilities. It employs over a thousand staff in France and Germany who work daily on hydrogen technologies. ArianeGroup also operates Europe's largest hydrogen test centre at its facility in Vernon, France.

André-Hubert Roussel, ArianeGroup CEO, explains: *"Thanks to the Ariane launch vehicles, ArianeGroup is one of the few companies in the world to have sound expertise in systems and solutions based on liquid hydrogen. We are honoured to have been chosen by ENGIE to take up this challenge with them. At a time when hydrogen is playing a key role in the recovery plans of France and Germany and for the European Green Deal, we are looking forward to working on concrete projects with our industrial partners, local authorities and institutional stakeholders. The ongoing innovations in the launcher sector, such as the Prometheus ultra-low cost launcher engine, will further increase ArianeGroup's ability to make 100%-European hydrogen technologies and solutions accessible to all."*

ENGIE is contributing its expertise in liquefied gases to this ambitious R&D programme. The aim is to develop technological solutions to achieve sustainable use of liquid hydrogen and provide innovative, integrated solutions to clients in the heavy-duty and long-distance transportation sector.

ENGIE is already involved in the development of renewable hydrogen-based solutions for intensive transport. The Group is working with global mining leader Anglo American to develop the first hydrogen-powered mine haul truck. ENGIE was also the first to fuel ALSTOM's regional passenger train with renewable hydrogen during tests in the Netherlands.



Claire Waysand, ENGIE's interim CEO said: *"We are delighted to be working with ArianeGroup. Renewable hydrogen is a vital component of the energy mix and is one of the key industrial tools that will help us bring about the transition over to carbon neutrality. France's recovery plan firmly supports the development of hydrogen, and the European Green Deal evidences the crucial role that it will play in the energy transition. ENGIE develops renewable hydrogen solutions with our partners for industrial uses, mobility and energy."*

About ENGIE

We are a global group that leads the world in the provision of low-carbon energy and services. ENGIE's purpose ("raison d'être") is to act to accelerate the transition towards a carbon-neutral economy, through reduced energy consumption and more environmentally friendly solutions, reconciling economic performance with a positive impact on people and the planet. We use our expertise in our key business areas (gas, renewable energies, services) to provide competitive and bespoke solutions. Our 170,000 employees, clients, partners and stakeholders work together to form a community of Imaginative Builders, constantly striving to achieve more harmonious progress - worldwide. Turnover in 2019: €60.1 billion. The Group is listed on the Paris and Brussels stock exchanges (ENGI) and is represented in the main financial indices (CAC 40, DJ Euro Stoxx 50, Euronext 100, FTSE Eurotop 100, MSCI Europe) and non-financial indices (DJSI World, DJSI Europe and Euronext Vigeo Eiris - World 120, Eurozone 120, Europe 120, France 20, CAC 40 Governance).

ENGIE Group press contact:

Tel.: France: +33 (0)1 44 22 24 35

Email: engiepress@engie.com

 [ENGIEpress](https://twitter.com/ENGIEpress)

Investor relations contact:

Tel.: +33 (0)1 44 22 66 29

Email: iir@engie.com

About ArianeGroup

ArianeGroup develops and supplies innovative and competitive solutions for civil and military space launchers, with expertise in all aspects of state-of-the-art propulsion technologies. ArianeGroup is lead contractor for Europe's Ariane 5 and Ariane 6 launcher families, responsible for both design and the entire production chain, up to and including marketing by its Arianespace subsidiary, as well as for the missiles of the French oceanic deterrent force. ArianeGroup and its subsidiaries enjoy a global reputation as specialists in the field of equipment and propulsion for space applications, while their expertise also benefits other industrial sectors. The group is a joint venture equally owned by Airbus and Safran, and employs approximately 9,000 highly qualified staff in France and Germany. Its 2019 revenues amounted to 3.1 billion Euros. – www.ariane.group

Press contacts:

Astrid EMERIT - T. +33.6.86.65.45.02

astrid.emerit@ariane.group

Julien WATELET - T. +33.6 88.06.11.48

julien.watelet@ariane.group