Press release
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Alstom and ENGIE sign a partnership to supply a fuel cell system with renewable hydrogen for use in European rail freight

- **The partnership covers the implementation of renewable hydrogen logistics and refuelling solutions for a fuel cell system that can power electric locomotives on non-electrified sections of the railway network**
- **The joint ambition of the two companies is to provide a solution for decarbonising rail freight, combining Alstom's expertise in hydrogen rail solutions with ENGIE's expertise in renewable hydrogen production and distribution**

Alstom and ENGIE have signed a partnership agreement to offer the rail freight sector a solution for the decarbonisation of mainline operations by replacing diesel-powered locomotives with hydrogen versions.

Under the terms of this partnership agreement, Alstom, a pioneer in the field of hydrogen-powered rolling stock, is designing a hydrogen solution based on a high-power fuel cell system that can power electric locomotives on non-electrified sections. ENGIE, a leader in energy transition and renewable gases, is supplying the renewable hydrogen for this solution via the deployment of an innovative supply chain.

This partnership will provide a low-carbon, zero-emission solution in response to climate, environmental and public health issues, including on non-electrified branch lines and sidings. The target market is the major European rail freight countries.

A partnership that has already its worth

Alstom and ENGIE share the ambition to put hydrogen at the heart of rail industry decarbonisation. This has already been successfully demonstrated during the Coradia iLint train test, organised in March 2020 in the Dutch Province of Groningen, where renewable hydrogen was used to refuel a passenger train.

For Alstom, this partnership is in line with its strategic plan 'Alstom in Motion 2025' as well as its hydrogen strategy initiated in 2013 with the development of the Coradia iLint train and pursued with the acquisition of fuel cell manufacturer Helion Hydrogen Power in 2021.
"*Our ambition is to accelerate the adoption of hydrogen power in the rail industry by developing innovative solutions that help green heavy-duty mobility operations like rail freight. In order to help drive the evolution of the hydrogen rail sector we need to gather stakeholders, and this is exactly why we have decided to partner with ENGIE*".
Raphaël Bernardelli, Vice President, Corporate Strategy, Alstom.

For ENGIE, this partnership is in line with its aim to supply heavy-duty mobility markets with renewable hydrogen, thanks to its target production capacity of 4 GW by 2030.
"*After successfully supplying the Coradia iLint during tests in the Netherlands in 2020, we are delighted to continue our efforts with Alstom in decarbonising heavy-duty mobility by combining our respective expertise to serve European rail freight. This partnership marks a new step in the development of renewable hydrogen solutions and building a low-carbon economy*." **Sébastien Arbola,** Executive Vice President in charge of Thermal Generation, Hydrogen & Energy Supply, ENGIE.

ENGIE, a catalyst for the renewable hydrogen economy

ENGIE is a pioneer in the development of an industrial-scale hydrogen economy. Our ambition is to help industry and mobility players achieve their carbon neutrality objectives. With more than 200 experts fully dedicated to hydrogen, we are a long-term partner to our customers and secure every step of their multi-gigawatt projects from design to operation.
By 2030, we plan to:

- develop 4 GW of renewable hydrogen production capacity,
- have 700 km of dedicated hydrogen network and 1 TWh of storage capacity,
- manage more than 100 refuelling stations.

Our portfolio of renewable capacities, our expertise in hydrogen mobility and our industrial-scale renewable hydrogen production projects make us one of the most integrated energy companies in the hydrogen value chain.

In heavy-duty mobility, ENGIE has been working since 2019 on the decarbonisation of activities in the mining sector. This is the case, for example, with the Hydra consortium in Chile, or with Anglo American in South Africa, where we are developing global decarbonisation solutions based on renewable hydrogen for the first mining trucks running on this energy.

Alstom, a pioneer in zero emission mobility

Alstom, world leader in green and smart mobility, has been developing a portfolio of zero-emission mobility solutions for several years and has launched an ambitious programme of innovations in batteries and hydrogen. Alstom has been working since 2013 on the launch of a regional passenger train equipped with hydrogen fuel cells: the Coradia iLint. The first two 100% hydrogen iLint trains entered commercial service in 2018 in Germany and, to date, 41 trains have been ordered by two German Landers and successful trials have taken place in Austria, the Netherlands (in cooperation with ENGIE), Poland, Sweden, and France.

In 2021, France also joined the circle of "founding countries" with an order from SNCF for 12 Coradia Polyvalent Regiolis dual-mode (electric/catenary and hydrogen/fuel cell) trainsets (+ 2 options) for the regions of Auvergne-Rhône-Alpes, Bourgogne-Franche Comté, Grand Est and Occitanie.

In 2021, Alstom continued to build a complete ecosystem for its hydrogen rail offering, signing partnership agreements with players such as Liebherr – Aerospace & Transportation SAS, Hynamics, and Plastic Omnium.
Alstom also invested 6 million euro in a new hydrogen fuel cell manufacturing platform at the Alstom Hydrogen site in Aix-en-Provence.

A propos d'ENGIE

Our group is a global reference in low-carbon energy and services. Together with our 170,000 employees, our customers, partners, and stakeholders, we are committed to accelerating the transition towards a carbon-neutral world, through reduced energy consumption and more environmentally friendly solutions. Inspired by our purpose ("raison d'être"), we reconcile economic performance with a positive impact on people and the planet, building on our key businesses (gas, renewable energy, services) to offer competitive solutions to our customers.
Turnover in 2020: €55.8 billion. The Group is listed on the Paris and Brussels stock exchanges (ENGI) and is represented in the main financial indices (CAC 40, Euronext 100, FTSE Eurotop 100, MSCI Europe) and non-financial indices (DJSI World, DJSI Europe, Euronext Vigeo Eiris - Eurozone 120/ Europe 120 / France 20, MSCI EMU ESG, MSCI Europe ESG, Stoxx Europe 600 ESG, and Stoxx Global 1800 ESG).

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About Alstom

Leading societies to a low carbon future, Alstom develops and markets mobility solutions that provide the sustainable foundations for the future of transportation. Alstom's product portfolio ranges from high-speed trains, metros, monorails, and trams, to integrated systems, customised services, infrastructure, signalling, and digital mobility solutions. Alstom has 150,000 vehicles in commercial service worldwide. With Bombardier Transportation joining Alstom on January 29, 2021, the enlarged Group's combined proforma revenue amounts to €14 billion for the 12-month period ended March 31, 2021. Headquartered in France, Alstom is now present in 70 countries and employs more than 70,000 people.
Its employees in France total approximately 12,500, providing a pool of expertise to serve French and international clients. Approximately 30,000 jobs are created in France amongst its 4,500 French suppliers.
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