PRESS RELEASE

Alstom joins the Spanish Hydrogen Association

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- Hydrogen trains have proven their commercial viability.
- Germany, Italy, United Kingdom, Holland and Austria already have initiatives to incorporate hydrogen in mobility
- In Spain, there are 5,000 km of non-electrified tracks where diesel trains run

12 November 2020 – Alstom has joined the Spanish Hydrogen Association, whose aim is to foster, promote and drive the technological and industrial development of hydrogen technologies in Spain. By joining, Alstom once again shows its commitment to sustainable mobility and the promotion of hydrogen as an energy vector in the decarbonization process of our society.

Pioneer in the use of hydrogen for mobility, Alstom is the only manufacturer to have fuel cell-powered trains into commercial service. Alstom's first hydrogen train, the Coradia iLint, began operating with passengers in September 2018, with two vehicles in regular service in Lower Saxony, Germany. After a year and a half of tests and more than 180,000 kilometres travelled, the manufacturing of 14 series trains has already begun, and will be delivered to the customer from 2022, to replace the current diesel units and meet the zero emission targets. In addition, Alstom will supply 27 hydrogen trains until the end 2022 for operations in the Rhine-Main region.

"Hydrogen technology is a sustainable, noiseless and emission-free alternative for non-electrified lines. The hydrogen train is a demonstration of Alstom's commitment to the development and implementation of innovative sustainable mobility solutions that contribute to the global energy transition and decarbonization", explains Leopoldo Maestu, Alstom in Spain Managing Director.

The tests conducted, both in Germany and in other European countries, have demonstrated the reliability, safety and feasibility of fuel cells as an alternative to diesel traction on non-electrified lines. Currently in Europe, around 40% of the main railway lines are not electrified (80,000 kilometres). Traffic on these lines is operated by about 12,000 diesel vehicles (5,900 diesel trains and 5,800 diesel locomotives). For this reason, many countries, such as Germany, France, Netherlands, Austria, Italy and the United Kingdom have plans to incorporate hydrogen technology in rail transport.

Spain, for its part, has more than 5,000 km of non-electrified lines, approximately 35% of the network, which are operated by diesel trains and locomotives. More than 200 diesel traction trains currently circulate on the Spanish railway network for freight and passengers transport. Hydrogen is a consolidated alternative for these lines in the mid-term, as reflected in the "Hydrogen Roadmap" recently approved by the Spanish Government. The objectives of this Roadmap for 2030 include the

commercial operation with hydrogen trains of at least two railway lines in Spain. Hydrogen, as a sustainable energy vector, will be key to achieve climate neutrality before 2050 with a 100% renewable electricity system.

About the Spanish Hydrogen Association

Since its foundation in 2002, the Spanish Hydrogen Association (AeH2), a benchmark agent in the hydrogen sector, has worked to encourage, promote and drive the technological and industrial development of hydrogen technologies in our country, and that their positive impact reverts to Spanish society and the economy. In fact, as a leading player in the sector, AeH2 works hand in hand with public institutions to promote the development of green hydrogen in Spain and, in coming months, will begin with the elaboration, in an agreed manner with all sector agents, of the Sectoral Agenda of the Hydrogen Industry at the request and with the support of the Ministry of Industry, Trade and Tourism (MINCOTUR).

AeH2 is made up of a group of companies, public and private institutions, and individuals, who share their interest in achieving the main purpose of the association. Among the initiatives promoted by AeH2 is the Spanish Technological Platform for Hydrogen and Fuel Cells (PTE HPC), a project supported by the Ministry of Science and Innovation.

About Alstom

Leading the way to greener and smarter mobility worldwide, Alstom develops and markets integrated systems that provide the sustainable foundations for the future of transportation. Alstom offers a complete range of equipment and services, from high-speed trains, metros, trams and e-buses to integrated systems, customized services, infrastructure, signalling and digital mobility solutions. Alstom recorded sales of €8.2 billion and booked orders of €9.9 billion in the 2019/20 fiscal year. Headquartered in France, Alstom is present in over 60 countries and employs 38,900 people.

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