Press release
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Hydrogen mobility:
A well-planned roll-out of hydrogen-refuelling stations is necessary to accelerate user uptake

France Hydrogène and PFA have collaborated with SystemX IRT to conduct a model-based study of the on-road hydrogen infrastructure network in French metropolitan areas through 2030, with an initial review in 2026. The study outlines several strategic options for the number, location and size of H2 refuelling stations for Light Goods Vehicles (LGVs) and Heavy Goods Vehicles (HGVs).

Hydrogen mobility solutions are crucial to the decarbonisation of road transport. They are particularly well-suited to the energy-intensive use of LGVs, but they can also meet the operational and environmental requirements of lorries. Hydrogen cars and LGVs are already on the market; the demonstration phase for HGVs is underway, and pre-commercialisation for these vehicles will begin by 2026.

To solve the *chicken and the egg* quandary which hydrogen mobility is often faced with, a well-thought-out geographical network of refuelling stations is crucial to roll-out.

The model-based study takes European and French regulations into consideration

Study analyses are based on motor vehicle fleet data from the French Ministry of Ecological Transition and PFA studies[1]. Demand focuses on vehicles for professional use, mostly LGVs, which are currently commercialised and particularly well-suited to hydrogen. Timewise, the study includes an initial review by 2026, an appropriate near-term target for LGVs. A later 2030 target for HGVs accounts for their subsequent commercial roll-out. Furthermore, the study aims to establish refuelling stations within EPCIs[2] and within 43 LEZs[3]. Since some of these priority areas must already comply with existing regulations, they need a readily available solution. When it comes to HGVs, the infrastructure network caters to the French motor vehicle fleet, but also takes into account foreign-registered vehicles that use the Trans-European Transport Network (TEN-T). Finally, the study complies with requirements set forth in the

[1] WAPO Green Growth scenario, PFA for LGVs, and Vision'air study, FFC-PFA for HGVs, in collaboration with BDO

[2] *Etablissements publics de coopération intercommunale*; public inter-municipality co-operation establishments.

[3] Zone Faible Emission mobilité; Low-emission Zone (LEZ)

European Alternative Fuels Infrastructure Regulation (AFIR), which establishes a minimum distance between two stations.

Several model-based studies and noteworthy scenarios

The near-term model is based on a **fleet of 50,000 LGVs** and over **210 stations**; **by 2030, the model estimates** over **340,000 vehicles and nearly 750 stations**. Eighty percent of these motor vehicle fleets are LGVs and located mainly on priority EPCI areas. There will be over **11,000** HGVs and 170 stations in France **by 2030**. The hydrogen refuelling infrastructure for LGVs and HGVs combined will be close to 1,000 stations throughout the country. This estimate is in keeping with the standard scenarios of France's hydrogen strategy, and prospective studies carried out by France Hydrogène: *Trajectoire pour une grande ambition hydrogène*[4].

Taking into account current and future regional projects

The initial modelling phase provides insights on how to best deploy a hydrogen refuelling infrastructure based on national supply and demand. These analyses, however, need to be fine-tuned according to ongoing or future projects, and to specific regional characteristics or strategies. For example, this means adjusting the model to operating stations or those being built, to convene with EPCIs, to prompt discussions with regions that have their own strategies, or to ensure that the station network is suitable for both LGVs and HGVs.

"The challenge to hydrogen mobility is ensuring that vehicle demand coincides with the roll-out of a sound refuelling infrastructure. The initial construction phase, as part of the government's National Hydrogen Council, has provided a geographical network of refuelling stations in accordance with current demand. Hydrogen mobility requires visibility for well-informed infrastructure planning and roll-out, in order to accelerate the decarbonisation of heavy and/or intense road freight. The model-based infrastructure study, which is set to continue in the coming months, is our contribution", said Valérie Bouillon-Delporte, First Vice-President of France Hydrogène and Mobility Group Coordinator.

"The European Commission's goal to reduce CO_2 emissions and its ban on new fossil-fuel LGVs from 2035 requires a significant acceleration in the shift to electric vehicles, mainly battery-run cars but also hydrogen-powered vehicles, two complementary technologies. Hydrogen fuel cell electric vehicles (FCEVs) are well suited to the intensive use of LGVs, taxis, buses, and heavy and long-haul trucks, by ensuring zero-emission mobility, rapid refuelling, long driving range, and increased freight-hauling and payload capacities. A concurrent deployment of a well-designed infrastructure, with over 1,000 stations in France, is necessary to fuel vehicles currently commercialised by manufacturers; nearly 350,000 vehicles will be on the road by 2030", added Jean-Luc Brossard, PFA Programme Director.

"SystemX IRT has developed modelling tools to analyse hydrogen demand and thus examine different infrastructure deployment scenarios. SystemX aims to drive the advancement of the H2 industry by providing visibility — market dynamics, contexts and indicators — in order to deploy infrastructure in line with local and national strategies", explained Paul Labrogère, CEO of SystemX IRT.

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[4] https://www.france-hydrogene.org/publication/trajectoire-pour-une-grande-ambition-hydrogene-a-2030-industriels-et-territoires-concretisent-les-ambitions/

About France Hydrogène

A 460-member organisation, France Hydrogène brings together players in the French hydrogen industry in order to drive the deployment of hydrogen solutions along the entire value chain: large industrial groups who are working on major projects, small and medium-sized businesses and innovative start-ups in collaboration with laboratories and centres of research excellence, associations, schools, competitiveness clusters and local authorities. France Hydrogène provides territorial support through its 12 regional delegations. The organisation's goal is to pave the way towards the energy transition: jointly accelerate the development of renewable and low-carbon hydrogen, reindustrialise territories and create local value in order to improve everyone's quality of life.

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About PFA

The Automotive Platform (PFA) represents the French automobile industry. On behalf of its partners (manufacturers, suppliers, subcontractors and mobility players), it sets forth and implements the industry's strategy in terms of innovation, competitiveness, employment and skills. It voices the industry's common positions and organizes the Paris Motor Show. PFA represents the country's 4,000 companies and works in conjunction with the Regional Automotive Industry Association (ARIA) and competitiveness clusters.

About SystemX IRT

SystemX, a French Institute for Technological Research (IRT), specialises in digital systems engineering. It provides expertise in analysis, modelling processes, and decision-making simulations of complex systems. SystemX coordinates partnered research projects, and promotes work relations between academia and industry, and across disciplines and fields. This means jointly tackling technological and scientific challenges in four top IT industries: autonomous transport and mobility, industries of the future, defence and security, and environment and sustainable development. Through use-case projects, SystemX research engineers address major societal and technological challenges in order to accelerate the digital transformation of industries, services and territories. Since its creation in 2012, SystemX has launched 62 research projects (38 of which are ongoing), as part of the Paris-Saclay research and university cluster, which is driving the revival of French and European industries. These projects involve over 100 industrial partners and 55 academic laboratories, 181 full-time employees (ETP schemes) and 134 individuals who rely on their own resources. SystemX also has project teams in Lyon and Singapore. For more information: www.irt-systemx.fr | @IRTSystemX | LinkedIn | YouTube