THE FRENCH POST OFFICE AND RENAULT TRUCKS JOINTLY TEST A HYDROGEN-POWERED TRUCK RUNNING ON A FUEL CELL

Renault Trucks and the French Post Office ("La Poste") are pursuing their commitment to a sustainable development strategy and will be introducing, on an experimental basis and as a first in Europe, an electric truck equipped with a hydrogen-powered range extender. This 4.5-ton Maxity Electric model now enjoys an autonomy raised to 200 kilometers and for a year will be tested under actual operating conditions in Dole (Jura Department).

Renault Trucks is for the first time ever demonstrating in partnership with La Poste a Maxity Electric model in Europe designed with a hydrogen-powered fuel cell, developed by Symbio FCell, that serves to double the vehicle's autonomy. This field test, scheduled to last a year, will enable Renault Trucks to explore all potential avenues of hydrogen technology under actual operating conditions. "This vehicle generates no noise impacts and only releases water vapor; 200 kilometers of autonomy make it the ideal choice for a daily schedule of urban and suburban routes", shares Karine Forien, Director of Energy Efficiency Strategy with Renault Trucks. She continues "Our purpose behind this project is to support European metropolitan areas in their goal of limiting air and noise pollution emissions, through testing innovative vehicles that produce zero emissions and that in the near term should become economically viable for our customers."

For La Poste, which at present owns the world's largest fleet of electric vehicles, this experiment is part of a continuous effort underway to extend the autonomy of its fleet. For nearly a year, in the Franche-Comté Region, the Post Office has been testing, during carriers' collection and distribution of mail and packages, clean vehicles running on hydrogen. "Hydrogen stands out today as an efficient solution for extending the possibilities of the electric vehicle product line and its autonomy. More broadly, the development of a hydrogen-based energy storage system is a linchpin to our energy transition", explains Frédéric Delaval, Technical Director of the Mail and Package Delivery Services Office at La Poste.
Renault Trucks has configured its 4.5-ton Maxity Electric vehicle to accommodate a fuel cell, with the development and vehicle integration steps being carried out in partnership with the firm Symbio FCell. As a result, Maxity Electric's average autonomy of approx. 100 kilometers has been bumped up another 100 kilometers thanks to energy supplied by the fuel cell. "When the vehicle is running, the electric motor is fed by two complementary energy sources; the fuel cell is capable of delivering a maximum power of 20 kW and, once that threshold has been reached, the batteries kick in to supply whatever power is still required. When idle, the fuel cell is available to recharge the battery as needed", points out Christophe Vacquier, supervising the project. The heat released by the cell is then reused to warm the passenger compartment, which avoids having to consume any energy stored in the batteries, thus helping ensure longer autonomy. Mr. Vacquier further highlights the cell's mode of operation: "The formation of water from oxygen in the air and hydrogen stored in the tanks triggers the production of electricity and heat, in accordance with the reverse principle of water electrolysis."

Certified and registered by Renault Trucks, Maxity Electric with a hydrogen-powered range extender will be operated in the city of Dole (France's Jura Department). Due to this region's especially harsh winter weather conditions, Dole will serve as the backdrop for the Post Office's entire experimental fleet.

By signing this contract, La Poste and Renault Trucks are combining their efforts in pursuit of launching in France a viable hydrogen-powered transport alternative. Like for conventional electric vehicles, the true emergence of this sector will require rallying industry, users and public policy behind these efforts.

Technical characteristics:
- Vehicle registered under the N2 category.
- Authorized gross weight: 4.5 tons, certified in France at 3.5 tons + 1 ton, by virtue of special regulations favoring "clean-burning vehicles" (operated with a "B" driver's license): the extra 1,000 kg has been authorized as a declared additional rated weight, owing to the deployment of a "clean" alternative technology.
- Payload: 1 ton.
- Heating of the cab: heat released by the fuel cell or a CTP type electrical resistance when the cell is idle.

Performance ratings:
- Average autonomy: up to 200 km (100 km contributed by the batteries + 100 km by the cell)
- Maximum speed: 90 km/h
- Robotized transmission
- Asynchronous electric motor: 400 V / 47 kW
- Maximum torque at startup: 270 Nm
Batteries:
- Harvested energy: 42 kWh
- Lithium-ion / iron phosphate technology (Valence Technology)
- 4 battery packs, weighing a total of 400 kg
- Complete recharging time, including battery balancing phase: 7 hours
- Charger embedded in the vehicle, to allow charging on a simple three-phase power socket.

Hydrogen kit:
- Harvested energy: 45 kWh
- Hydrogen cell: 20 kW
- 2 hydrogen tanks, with a 75-liter capacity each, making it possible to store 4 kg of H2 at 350 bar
- Total weight of this kit: 300 kg
- Kit user’s guide included.

Scope of this experiment:
- The Maxity H2 truck will be delivered to the Dole platform around mid-February. The test is scheduled to last one year so that the vehicle’s capacities can be fully assessed during all seasons and in order to generate pertinent feedback.
- The vehicle will be used on a mail and package collection route.
- This route is mainly rural and covers a distance of approx. 70 km.
- A postal employee and her substitute have both been trained to drive this vehicle.

About the La Poste Group

100% State-owned corporation since 1st March 2010, La Poste offers an original model of a group built around its branches of activity, which number five: Mail and Package Services, Postal Bank, Postal Network, GeoPost, and its Digital arm. The Group is present in more than 40 countries spanning 4 continents. Every day, the 17,000 La Poste contact points, making it France's leading neighborhood retailer, greets some 1.7 million customers. It delivers 25 billion pieces of mail a year the world over (letters, print advertising and packages), open 6 days a week. In 2013, the La Poste Group generated €22.08 billion in revenue, 17% of which through international business, with a workforce surpassing 266,000. In its strategic plan entitled "La Poste 2020: Conquering the future", the Group has committed to accelerating the development of its five branches and expanding into new territories. Its relations with customers are driven by human interactions and building trust. Through converging its networks, in providing accessibility for all, everywhere and everyday, La Poste accompanies its customers in simplifying their future.

About Renault Trucks

The Renault Trucks brand of industrial vehicles is present in over 100 countries. The Renault Trucks vehicles are produced in France at Blainville-sur-Orne (Calvados Department), Bourg-en-Bresse (Ain), Lyon (Rhône) and Limoges (Haute-Vienne). In 2014, Renault Trucks was awarded the label of Guaranteed French Origin for its vehicle models T, C, K, D and D Wide.

In 2001, Renault Trucks joined the Volvo Group, one of the world's largest manufacturers of trucks, buses, construction site machinery, and propulsion and drive systems for naval and industrial applications. The Volvo Group, with a workforce of some 100,000 employees, has plants in 19 countries and distributes its products in more than 190 markets. In 2014, the Group's total sales reached 283 billion Swedish Krona.
About Symbio FCell

Symbio FCell designs, produces and creates industrial applications relative to hydrogen fuel cells and their infrastructure, for integration into host platforms. Symbio FCell is seeking to establish itself as the European leader in transport applications. The innovative solutions it develops are intended to be installed in standard electric vehicles, as range extenders for battery systems to equip non-polluting vehicles with greater autonomy. These solutions are also targeted for use as new, high-powered propulsion systems entirely based on hydrogen cells for road, maritime and waterway transport applications, as well as special devices requiring high-power electrification. The systems deployed by Symbio FCell have been designed with assistance provided by the CEA Energy Commission and Michelin; all production takes place in Grenoble.

For any additional information:
http://corporate.renault-trucks.com

Carine Barbet - Phone: +33 (0)4 26 83 11 40 - carine.barbet@renault-trucks.com
Séveryne Molard - Phone: +33 (0)4 81 93 09 52 - severyne.molard@renault-trucks.com
Stéphanie Fraisse - Phone: +33 (0)1 55 44 22 39 - stephanie.fraisse@laposte.fr