

Prototype for an ultra-low-emission cargo vehicle

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- Electric cargo vehicles
- Freight distribution models
- Reduced energy consumption and emissions from urban goods delivery

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Location: Madrid, Spain

Organisations involved: [Ayuntamiento de Madrid](#)
[Universidad Politécnica de Madrid](#)

[FM Logistic](#)

[AVIA](#)



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What is the solution?

Within this measure, Madrid City Council will cooperate with AVIA, a vehicle manufacturer, to develop a prototype of a 12-ton electric cargo vehicle adapted to the specific needs of Madrid's urban delivery sector.

The aim of this measure is to test the prototype under real operation conditions in order to fine-tune its design and performance and promote the further uptake and commercialisation of the improved vehicle by other stakeholders.

How does it work?

The measure started with an analysis of the freight distribution models taking place in Madrid, and the most common vehicle typologies used, and a review of the existing policy framework: traffic regulations, traffic restrictions, municipal plans on freight etc.

Once the most suitable freight vehicle typologies for the existing distribution patterns were defined, and those not offered currently by car manufacturers were identified, the basic characteristics of the prototype were outlined: size, load capacity, gross vehicle weight, low emission technology. Based on a previous analysis of geographic conditions of the working area of vehicles (maximum slope, etc.) and analysis of freight operator needs (electric range) using data logger system in currently used freight vehicles, the engine and energy storage system's main features were defined. Finally, the designed chassis incorporated all the elements above mentioned.

The vehicle went through a homologation process according to current regulations. The performance of the electric vehicle will be tested and assessed under real conditions by FM Logistic, and will be operating from the consolidation centre described in another ECCENTRIC measure ('Consolidation centre with electric vehicles and local regulations for clean urban freight logistics'). The consolidation centre will be equipped with the necessary electric charging point. Operations will be conducted between July 2019 and July 2020.

Expected results

The measure aims at reducing energy consumption as well as CO₂ and main pollutant emissions associated to urban goods distributing fleets. It should also serve to promote the uptake of clean vehicles among the local logistics community. Furthermore, the measure should help to improve urban logistics processes in accordance with the enhanced performance offered by the electric prototype in terms of load capacity and noiseless delivery.

Business model

The measure budget amounts to €435,768. 77% of this amount will be financed by the European Commission. The demonstration stage will be conducted between July 2019 and July 2020.

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