THE CIVITAS INITIATIVE IS CO-FINANCED BY THE EUROPEAN UNION

Consolidation centre and incorporation of clean vehicles in the last mile distribution

Summer 2019

© FM Logistics

- Consolidation and distribution centre for urban goods
- New freight local regulations and policies
- Reduced energy consumption and emissions

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

Location: Madrid, Spain

Organisations involved: Madrid City Council; Technical University of Madrid (UPM); FM Logistic

THE CIVITAS INITIATIVE
IS CO-FINANCED BY THE
EUROPEAN UNION

What is the solution?

Urban goods distribution remains one of the main challenges in the achievement of sustainable urban mobility at the local level. Heavy and light duty vehicles are responsible for a significant share of energy consumption and emissions at the city level. For many years, most efforts have been placed in understanding travel behaviour from individuals (or groups of individuals). But goods distribution behaviour has been analysed with less intensity.

Every day, more than 33,000 operations of freight distribution take place in Madrid, inside the M-30 ring-road. This activity produces an important part of the overall transport emissions of pollutants (14% of nitrogen oxide, NOx, emissions), and significantly contributes to traffic congestion and illegal parking.

The long-term objective of this measure is to promote a more sustainable and efficient urban goods distribution model, proposing changes in the logistics chain and increasing the presence of clean vehicles. Supported by new regulations and municipal mobility policies, the measure will test the advantages of urban freight distribution based on a new urban freight consolidation centre, using low emission and electric vans, compared to current practice, serving the logistics needs of shops located in the city centre.

How does it work?

The City of Madrid (through its Energy and Climate Change General Subdirection), in cooperation with the logistics operator, FM Logistics, will combine the implementation of an urban consolidation centre for last mile distribution, operated using clean vehicles, with regulatory measures, such as access regulations in traffic-restricted areas, applying time windows for goods delivery, or vehicle restrictions based on weight, size and technology (zero and ultra-low emissions vehicles).

The measure is in line with the Sustainable Urban Mobility Plan (SUMP) and the Air Quality and Climate Change Plan (Plan A) for the city of Madrid. All these policies aim at improving urban freight distribution, through a combination of regulations, and through the use of cleaner vehicles.

As an initial step, the measure is expected to provide a deeper understanding of the urban logistics sector in Madrid and its stakeholders. It will also support the design of new logistics services, taking advantage of emerging new technologies to fit the needs of a multiplicity of actors.

The measure's planning stage has included two relevant studies. A general research study about the characterisation of urban freight logistics in Madrid used as background information to set the framework of the measure. And a specific study for the choice and refurbishment of the consolidation centre among the facilities of the private partner FM Logistics. The logistics plans conception and the choice of delivery routes have been included in the planning process, whose milestones have been finally accomplished with the beginning of pilot action in September 2017. Currently, many vehicles are using the facility for urban freight distribution: 6 MITSUBISHI FUSO hybrid trucks for the low-impact distribution system, to which will be added the zero-emission electric prototype developed in measure 7.6.

THE CIVITAS INITIATIVE
IS CO-FINANCED BY THE
EUROPEAN UNION

Expected results

The main expected positive impacts of this measure is an improvement of the efficiency of the distribution chain and the reduction of emissions. The reduction of CO_2-equivalents is expected to reach 90 tonnes/year. Although not quantified, reductions are also expected for NOx and emissions of particulate matter (PM) and energy consumption. Furthermore, improvements in the quality of delivery services and increased awareness, acceptance and satisfaction of delivery recipients are expected.

At the strategic level, the measure is expected to generate results in reducing traffic (from goods distribution vehicles), illegal parking, energy consumption and emissions from urban goods distribution, as well as to promote and accelerate the uptake of clean vehicles in urban goods distribution.

Business model

The planned budget for this measure is €603,682.

The demonstration stage started in March 2018 and will continue until August 2019.

Contact details

Luis Tejero
Madrid City Council
E-mail: tejeroel@madrid.es
Website: http://civitas.eu/eccentric/madrid
Living lab area in Madrid: www.civitas.eu/eccentric/madrid