

Adaptive parking management based on energy efficiency and occupancy

Summer 2019



© Empresa Municipal de Transportes de Madrid (EMT)

- Smart parking management in peripheral business areas
- Parking priority to clean vehicles
- Parking priority to high occupancy vehicles (HOV)

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](#)

What is the solution?

Parking regulation as a demand management strategy has been mostly used in urban city centres, linked to commuting mobility. But the on-going metropolisation process in cities such as Madrid, with peripheral districts losing their residential character and an increasing number of companies and services moving into the outskirts, requires an utilization of parking management as a means to reduce car travel demand in these areas.

The objective is to design and implement a smart parking management scheme in those areas outside the city centre with a high density of office employment. This will be done by encouraging ride sharing among employees in order to increase car occupancy, and also prioritizing the use of clean vehicles to reduce energy consumption and emissions from traffic.

The following approaches will be tested:

- Technical solutions for the management of HOV Parking to high trip generation areas with compatible timetable options (e.g. business area, university campus).
- Positive discrimination for clean vehicles.

In order to guarantee the effectiveness of these actions, efforts will also be placed on the active engagement of the technical and management staff of the corresponding trip generators.

If the technology being tested has a satisfactory performance, the system will possibly be replicated in the municipal management parking areas.

How does it work?

The Municipality of Madrid has investigated and is testing a technology that enable a smart parking management scheme that will be tested in the headquarters of EMT, the municipal public transport company, located in the city lab (Vallecas).

The measure is expected to deliver:

- A fewer number of vehicles transporting a higher number of people. The scheme will allow a reduction in the number of vehicles that access the work centre, which should imply a reduction in the pollution levels.
- A reduction of parking indiscipline which should improve the quality of public space.

ECCENTRIC will develop an alternative management scheme for the parking space at EMT headquarters, providing priority to HOVs and clean vehicles. The new parking regulations will be monitored with the support of innovative tools provided by the project. The following activities have been carried out during the research phase:

- Five potential locations for the smart parking facility have been identified and thoroughly analysed with regard to infrastructure, alternative transportation, demand, user typology and expected impacts.
- Since it turned out during the assessment that none of the locations fulfils the measure requirements to an adequate extent, a site has been identified in an old industrial area in the Retiro District, next to large transport infrastructures, which meets all the conditions to be a good test area. The choice of location is essential to obtain conclusive results from the measure.



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Expected results

The following results are expected:

- To reduce the use of single occupancy private cars and to achieve a modal shift towards public transport and non-motorized modes.
- To reduce energy consumption and emissions from traffic.
- To decrease traffic levels in the affected area at peak hours.
- Reduction of the parking offences rate in the affected areas.
- A 6% reduction of car travel in the targeted group (EMT headquarters employees).

Business model

The research and planning phase of this measure started in September 2016 and ended in April 2017.

The budget for this measure is close to EUR 171,000. The operational stage is expected to run from September 2018 to August 2019.

BUDGET	Personnel	Travel	Equipment	Other direct	Indirect	Subcontract	Total Eligible Cost
1 AYTO MADRID (100%)	24.750,00 €	0,00 €	112.000,00 €	0,00 €	34.187,50 €	0,00 €	170.937,50 €

Find out more

EMT is also responsible for the management of 17 public parkings owned by the municipality, offering 6,300 parking places. Therefore, there are good opportunities for upscaling the innovative solutions developed by ECCENTRIC at the city level.

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