



Distribution of freight using e-cargobikes in inner city

Smart solution 9 & 11

Sustainable delivery & alternative fuel driven vehicles for decarbonizing and better air quality

Measured impacts

95.9%

reduction in CO₂ emissions

97.5%

reduction in energy (kwh) use

21.7%

reduction in noise (dB)



Barcelona

Technical partners

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What is it?

A last-mile delivery service using e-cargo bikes from a micro-consolidation centre in a central location in the city. The solution is suited to neighbourhoods, where traffic restrictions mean cars and trucks can only make deliveries in the morning and night, whereas cycle delivery is possible throughout the day.

What did GrowSmarter do?

GrowSmarter facilitated the launch of a last-mile delivery service in the old town of Barcelona. Temporary premises for the micro-consolidation centre, charging infrastructure for the e-bikes, and permits for operation in the old town was all secured in order to launch.


On- bike sensors were used to assist with routing, and monitoring of the service and environmental conditions along the routes.



Lessons learnt

Last-mile delivery is an emerging market segment which with creative support from the city administration could be rolled out more widely. Support would include designating entire zones within densely populated areas of the city as only accessible for e-bike delivery; monitoring non-compliance; and – in this case – identifying premises for the micro-consolidation centre and agreeing a tenancy arrangement to enable implementation.

The main challenges were related to identifying a suitable location for the service, agreeing the terms of operation, and ensuring a suitable installation of the sensor units on the bikes were. It was important to reach a trade-off between robustness, safety and functionality.



This solution offers emission-free deliveries in parts of cities where it is most needed, such as historical centers and areas with high traffic volumes.

Upscaling & replication potential

This measure can be adapted and replicated in most European cities. Cities need flexible spaces that emerging businesses can use as premises. Municipal processes may need to speed up to keep pace with markets and clarify issues – such as the formal relationships between service providers, data ownership or the need for additional support mechanisms, e.g. restrictions on delivery times or use of delivery bays – in order to creatively change framework conditions in favour of sustainable parcel delivery.

Delivery volumes play an important role, therefore contracts with logistics companies are necessary to upscale the solution. Regulation from the municipal side can be a strong driver; for example, last-mile deliveries in city centres could be required to be only by bike.

How did the measure work?

Technical feasibility ● ● ●

No major problems occurred, but data collection was challenging from the technical perspective.

Economic feasibility ● ● ●

Emerging market segment, but the high initial investment costs can be a barrier to further expansion. Large volume of deliveries needed to ensure optimal economic implementation which is best achieved through partnerships with large distributors providing a steady income.

Replication potential ● ● ●

Possible to replicate in cities with similar infrastructure requirements. The policy and administrative barriers discussed above should be alleviated though.