

SMARTSET facilitates the introduction of cleaner fleets for last mile distribution in cities. By using modern low emission vehicles, local environment can be substantially improved in terms of greenhouse gas and particle emissions, road safety and congestion.

Cleaner vehicles in freight transport

SMARTSET partners have been testing various approaches to the introduction of cleaner fleets – electric cargo bikes used to bring home shoppers' trophies from a busy city centre; electric and methane-powered deliveries, from logistics centres and micro-terminals, to shops located in pedestrianised areas; consolidated deliveries via an electric truck to multiple locations across a large university campus; and an e-truck transporting heavy goods through a major European capital. All of these approaches have one thing in common: they are testing solutions that have a positive impact on health, congestion, safety, emissions and the general quality of life of Europeans.

Selecting cleaner vehicles

The SMARTSET project was unable to provide direct funding for the vehicles so, depending on local conditions, the project partners employed a number of different strategies to obtain their chosen vehicle(s) – ranging from private funds, to a mix of municipal, regional, national and European funding sources.

Research conducted in the project shows that, apart from the simple purchasing costs, the other most important factors in the selection of vehicles were the availability of vehicles, parts and servicing, and their technological maturity and functional specification, such as range, payload and monitoring capability. The environmental profile of a vehicle was paramount, which is linked to their privileged access to restricted city areas. Also – which may come as something of a surprise – it turned out that of high importance, and a key issue, was the ability to find qualified service staff for these technologically advanced vehicles.



Clean distribution in Padua, Italy

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Evaluating the vehicle tests

An important step for any trial is the assessment of the cleaner vehicle demonstrations. While this will be done towards the end of the project, partners have already agreed on assessment parameters, including the 'real-life' performance of the vehicles, in terms of range, reliability, emissions and total cost of ownership (as compared to the claims made in their advertised performance).

Other selected indicators include the compliance with policy goals and the financial sustainability of a tested solution. The full list of these parameters is available as a public deliverable, on the project's website at <http://smartset-project.eu/downloads>

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Newcastle University's double-award winning logistics pilot uses a clean, silent, all-electric van, with a 1,200 kg payload, an operational range of up to 160 km, an 8-hour full charge time and sophisticated on-board telemetry. So far it has driven more than 8,000 km, delivering more than 1,600 packages!

Vehicle selection

Newcastle University has a growing interest in reducing its environmental impact. The project presented **NewRail** and the University procurement department with the opportunity to explore this by taking greater control over inbound logistics activity, using clean vehicle technology, rather than conventional fuels. A 7.5 t, chassis cab, **fully-electric** vehicle was selected, for use in a 'live' business environment. The final choice of vehicle, for the demonstration and evaluation, was made by going out to tender with the requirements of the delivery operation, route, goods types, frequency and other logistics issues planned in the project.

The Smith Electric 'Smith Newton'

The selected **Newton** vehicle can be configured for use in a wide range of applications – in this case for parcel delivery. A university campus does not have normal boundaries between road and pedestrian spaces, plus students and staff routinely move around engaged with smartphones, in conversation, or listening to music. A large, virtually silent electric truck was therefore a potential hazard, overcome by selecting a vehicle fitted with an intelligent camera monitor, designed to assist low speed manoeuvrability, that provides the driver with a real-time, 360° view of the vehicle, in a single image.

Awards

The pilot scheme has won two awards in two months: first an internal University **Sustainability Award** and then, in June, a prestigious Times Higher Education Leadership Award (**THELMA**), for Outstanding Procurement Team.



The Smith Electric 'Newton' 7.5 t delivery van

© NewRail, Newcastle University

Are clean vehicles the future?

Smith Electric Vehicles report that, despite the range of models, reliability, cost benefits and available financial incentives, the UK shows only a token interest in electric freight vehicles. While many businesses are willing to buy one, to be seen to be taking part, converting fleets continues to be an uphill battle. As a consequence, Smith have now relocated their manufacturing facilities outside of Europe.

On a more positive note, Newcastle University is putting together a business plan to evaluate funding a permanent service, based on the project demonstration.

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