

An Efficient Policy Mix for Electric Freight Vehicles

Purpose

Alongside new opportunities, there are significant infrastructure, vehicle technology, policy and market related barriers to the uptake of electric freight vehicles (EFVs). These need to be addressed in order to make the wider uptake of the vehicles possible. The FREVUE project assessed the interventions that can be made by public authorities to support the further introduction of EFVs.

Conclusion

Political leadership and vision are key in providing market certainty and providing the necessary infrastructure for a large-scale uptake of EFVs. A good mix between fiscal and regulatory (operational) incentives is necessary, supported by planning as well as communication and awareness raising efforts.

Context

Several factors currently hinder the uptake of EFVs. The most critical ones are:

- limited vehicle offer from OEMs, especially for the segment of medium and heavy-duty vehicles
- high vehicle purchase prices
- long vehicle depreciation times
- required technological improvements in vehicles (range, payload, performance of auxiliaries in extreme conditions)
- availability of charging infrastructure and the potential for its technological improvement

A significant deployment of electric vehicles is unlikely to occur until the right combination of vehicles, infrastructure, services, financial incentives and environmental awareness is in place, and many different stakeholders are required to make this happen.

The EU has set specific targets to progressively implement zero-emission city transport. The burden of switching to cleaner vehicles is on transport and logistics operators. Public authorities provide support by helping with vehicle procurement or providing charging infrastructure. Although these efforts encourage confidence in electric freight, they are not currently sufficient to trigger the wider uptake of EFVs and make the business model of EFVs self-sustaining.

Policy measures

There are several policy options through which municipalities can assist the uptake of EFVs, the principal among which are communication and awareness measures, economic and fiscal measures, legal and regulatory measures and planning measures.

Economic/fiscal measures

Economic and fiscal measures improve the total cost of ownership (TCO) of EFVs. These are, for example, congestion charge, road pricing, tax incentives, tolls, road user charges, vehicle tax and fuel duty. An example in practice is the exemption of EFVs from the congestion charge in London, which supports the business case for their use.

Figure 1 shows that over 10 years, the TCO for EFVs and conventional freight vehicles (CFVs) is broadly similar when travelling 60 km per day, and positive for a vehicle travelling 120 km. The congestion charge – or more specifically the exemption for EFVs – contributes to the positive business case for EFVs in city logistics.

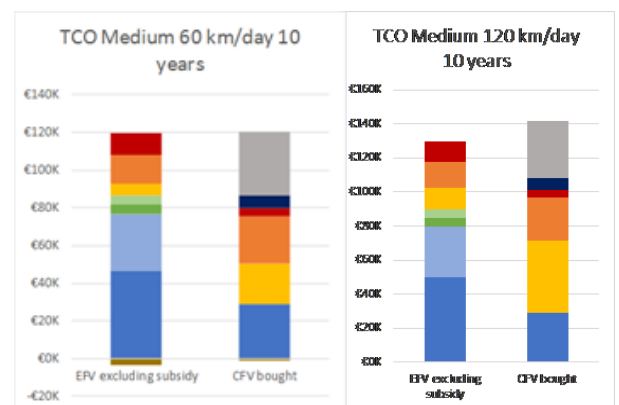


Figure 1. TCOs of a medium EFV. Source: FREVUE Deliverable 3.2

Legal and regulatory measures

Non-monetary incentives to use EFVs are necessary, as financial ones are not sustainable in the long term. A better way to support the mass adoption of EFVs is to give them a long-term competitive advantage. Legal and regulatory measures are examples of such operational incentives, where restrictions are introduced and must then be monitored. Examples of such legal and regulatory measures are:

- Access regulations: pedestrian zones, low emission zones and zero emission zones
- Parking and loading/unloading permissions: granting permission for EFVs to park and (un)load for free or use privileged loading areas
- Allowing EFVs to use bus and tram lanes
- Time limitations for conventional vehicles, such as permitting the use of only EFVs in peak times
- Noise restrictions

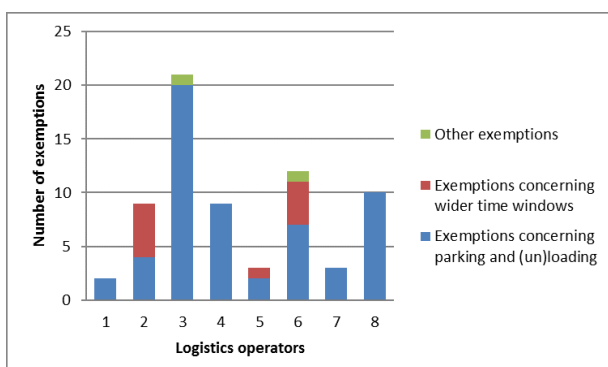


Figure 2. EFV exemptions in Amsterdam

The City of Amsterdam, a FREVUE partner, conducted a pilot with traffic regulation exemptions for operators using electric freight vehicles from March 2015 to April 2017. This applied to both vans and trucks, with approximately 20 vehicles from seven companies exempted from parking prohibitions in tailored designated areas.

The evaluation results from this pilot included the following positive feedback:

- There was a reduction in walking time and distance for drivers – (varying from 15-30 min per day to about 45 minutes), making more drops possible
- It was easier to bring heavy loads to their destination
- Less time was needed to find an empty (un)loading bay or parking space
- There was a reduction in stress, resulting in fewer mistakes

Less illegal parking resulted in fewer fines, there were fewer discussions with enforcement officers and other road users, and a more relaxed working environment for drivers. While providing operational incentives from which EFVs will benefit, is it also necessary to implement stricter enforcement of fines for conventional vehicles.

Planning measures

Public authorities can play a role in the take-up of EFVs through planning measures related to infrastructure, the built environment and business activities. Electric grid updates and charging standardisation largely depends on public authorities. Procurement and own fleet replacement are also powerful tools municipalities can use as an example to other organisations and to increase EFV purchase demand. Examples of this in practice include Rotterdam, where the city has set a target of 50% EFVs in its municipal fleet by 2018, Copenhagen where there is a target of 100% EFVs in the municipal fleet by 2025, and Stockholm where fossil-fuel vehicles are no longer used by the city authority.

The public sector is responsible for procuring around 575,000 vehicles a year when purchasing goods and services, so introducing green public procurement criteria in the tendering process for public contracts can encourage the use of EFVs, as is already the case in the City of Stockholm.

Communication and awareness measures

Communication and awareness measures address the lack of information about EFVs, at the same time as targeting potential new users. Their purpose is to disseminate experiences of EFV performance, and explain costs and benefits to transport operators. They can take the form of dissemination strategies and the promotion of new innovations. Examples of communication and awareness measures are: Logistics networks, dissemination of information and research and development. "Koffie elektrisch" and "Green deal 010 Zes" are examples of logistics networks created in City of Amsterdam and City of Rotterdam.

What is an efficient policy mix?

Urban regions often present distinguishing and unique features and policy measures must be chosen accordingly. There is no policy that fits all. Selecting appropriate policies depends on the nature of challenges in the city, objectives, physical properties of the urban area, legislation in effect and the nature of logistics and transport chains. A lot depends on the existing level of EFV usage, as well as the legal and cultural context. Also measures have to be combined wisely, considering the cross-effects of impacts.

Lessons learnt

Importance of government support

The development and uptake of EFVs is a responsibility shared by all market players. In its current stage, however, appropriate government policy is crucial to achieve a wider uptake of EFVs.

Learnings from FREVUE:

- An efficient policy mix is needed, combining both direct support for vehicles and infrastructure, as well as the creation of long-term operational advantages for EFVs.
- Measures both supporting the usage of EFVs and discouraging the usage of CFVs are required.
- Different incentives based on the size of a business need to be developed.
- The context of the individual country or city, the current level of electromobility development, and other context-specific elements should be considered.
- Cross-impacts between the chosen measures within a policy mix should be carefully investigated.

Further information

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