

ANALYSIS OF ELECTRIFICATION OF CITY LOGISTICS

Electrification of heavy-duty vehicles is key to decarbonising the transport sector and can help the EU be climate neutral by 2050. The following summarises recommendations for transport operators, power sector regulators and charging infrastructure stakeholders from our [study on this topic](#).

Recommendations for transport operators converting to an electric fleet:

- » **Optimising truck charging is vital for success.** In this process, it's important to calculate both the costs for electricity (energy prices) and its delivery (network costs), in addition to the depot's consumption, taxes and levies.
- » **Charging trucks overnight at the depot is the preferred option.** Fleet operators may find, however, that there are cost benefits in charging during the day as their schedules allow. Shifting charging by only a few hours can make a significant difference in cost.
- » **Faster charging is not a guarantee for cost reduction.** Longer charging at lower capacity may be cheaper, as operators can benefit from lower network costs.
- » **Optimisation strategies are likely to change with fleet size.** It may be relatively easy to optimise a smaller electric truck fleet around the depot's electricity consumption. Larger electric truck fleets, however, may need comprehensive load management solutions for their power use.
- » **Siting a depot where there is existing power infrastructure saves money.** Further comparative studies could help transport operators explore how existing capacities or local renewable energy production can be used, either in close proximity or on-site.
- » **Collaboration is key.** Logistics operators can collaborate with grid operators and mobility service providers to test fleet electrification and study the specific costs. Energy suppliers, municipalities and other stakeholders can be valuable partners by facilitating procedures and providing information.

Recommendations for power sector regulation:

- » **Network tariff reform is crucial.** Network charges based on the capacity provided, and not the amount of electricity consumed, are a barrier to optimising EV charging. Capacity-based network charges drive up costs more than energy prices.
- » **Time-varying network charges can help advance the decarbonisation of transport.** Electricity market regulators across EU Member States can accelerate the shift to electric vehicles by introducing time-varying, usage-based network fees that reflect the actual conditions on the power network. Member States can do this by implementing recent electricity market reforms ambitiously.
- » **Flexible delivery times for electric heavy-duty vehicles can support fleet electrification.** Local authorities can help by eliminating restrictions on time of delivery. These regulations, originally designed to protect inhabitants from the noise and air pollution from diesel trucks, do not necessarily apply to electric trucks.

Recommendations for building out charging infrastructure:

- » **Integrated planning of transport and power infrastructure cannot wait.** When planning charging infrastructure for electric heavy-duty vehicles, the costs for grid integration should be considered and optimised from the start.
- » **Member States can drive an essential charging network.** The ongoing review of the European legislative framework for vehicle charging, the Alternative Fuels Infrastructure Directive, presents an opportunity to require Member States to accelerate charging options for electric heavy-duty vehicles at depots, destination centres and public sites.
- » **The Alternative Fuels Infrastructure Directive can prepare all levels of government for electric heavy-duty transport.** Member States can use it to provide guidance and tools for grid-integrated planning for heavy-duty vehicle electrification jointly with regions, cities, consumers and stakeholders from all relevant sectors.