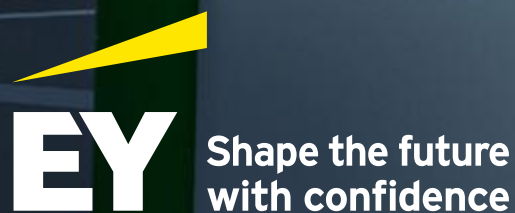


Fleet forward: powering the transition to electric mobility

A collaboration between:



About the report

Corporate fleet electrification presents the next industrial and climate inflection point for transport in Europe. Decisive action can help to secure a leading role for Europe in clean mobility, delivering tangible benefits for citizens and businesses, and ensuring a competitive and resilient transition.

This report provides a cross-European perspective of the opportunities and challenges ahead. It is anchored around the proposed Regulation on Clean Corporate Vehicles, published on 16 December 2025, as part of the European Commission's Automotive Package. The proposal is designed to accelerate new zero and low emission vehicle uptake by large companies from 2030.

Alongside regulation, economic gains and incentives are critical levers to secure industry buy-in across corporate cars and light, medium and heavy commercial vehicle fleets. This report also offers actionable recommendations to help stakeholders realise the transformation potential of e-mobility.

Curated by EY professionals with extensive experience in the energy, automotive, government and technology sectors, this study is supported by interviews with fleet operators, automakers, charge point operators, flexibility providers, energy retailers, distribution system operators, leasing companies and industry bodies. It also draws on the insights of experts at the European energy industry body Eurelectric and its members.

With thanks to ACEA, ALICE, Ayvens, AB Volvo, BDEW, ChargeUp Europe, Colruyt Group, DG ENER, EDF, EDP, Edison, Einride, E-Mobility Europe, Enel, Energiföretagen Sverige, Energy UK, Engie, ESB, EV100, Hitachi Energy, IKEA, Milence, Mobi.E, National Grid Group, Novuna, Octopus EV, Plug, PPC, Regulatory Assistance Project, Transport & Environment, Virta, Welch Group and Wien Energy.



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Glossary of terms

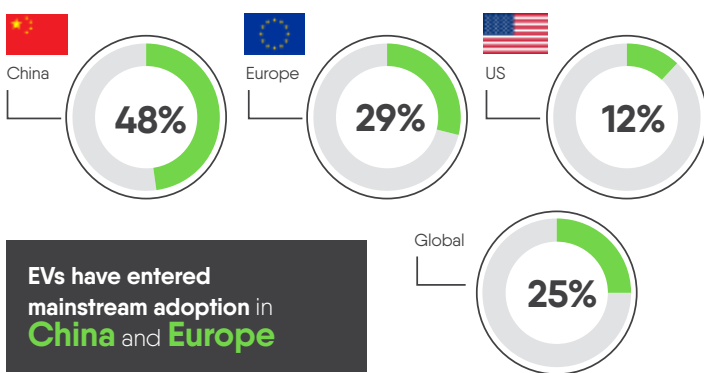
AC	Alternating current
AFIR	Alternative Fuels Infrastructure Regulation
API	Application programming interface
BEV	Battery electric vehicle
BiK	Benefit in kind tax
CaaS	Charging-as-a-Service
Capex	Capital expenditure
CEE	Certificats d'Économies d'Énergie (French energy savings certificates)
CO₂	Carbon dioxide
CPO	Charge point operator
DC	Direct current
DSO	Distribution system operator
eHCV	Electric heavy commercial vehicle
eLCV	Electric light commercial vehicle
eMCV	Electric medium commercial vehicle
EMS	Energy Management System
ETS2	EU's new carbon-pricing mechanism
EV	Electric vehicle
FaaS	Fleet-as-a-Service
GDP	Gross Domestic Product
HCV	Heavy commercial vehicle
ICE	Internal combustion engine

KWh	Kilowatt-hour
LCV	Light commercial vehicle
LOM	Loi d'Orientation des Mobilités (French mobility strategy law)
MCS	Megawatt Charging System
MCV	Medium commercial vehicle
MRB	Motorrijtuigenbelasting (Dutch motor vehicle tax)
OEM	Original equipment manufacturer
Opex	Operating expenditure
PPA	Power purchase agreement
ROI	Return on investment
SLA	Service level agreement
SME	Small and medium-sized enterprise
SoH	State of health certification (battery)
TCO	Total cost of ownership
TEN-T	Trans-European Transport Network
TSO	Transmission system operator
TWh	Terawatt-hour
VED	Vehicle Excise Duty (UK tax)
VIG	Unidirectional managed charging
V2G	Vehicle-to-grid
ZEV	Zero emission vehicle
ZEZ	Zero emission zone

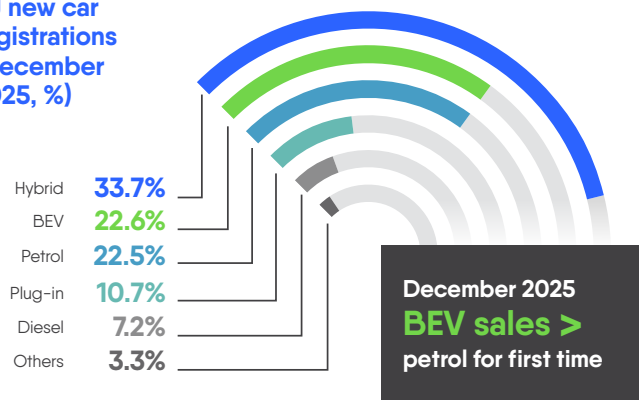
Fleet forward: fact sheet

EV progress — Europe has crossed the EV tipping point

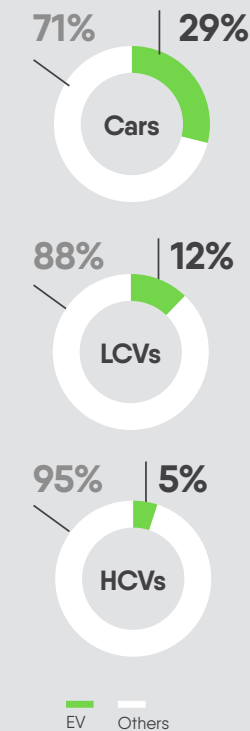
EV passenger vehicle sales by region (2025, %)



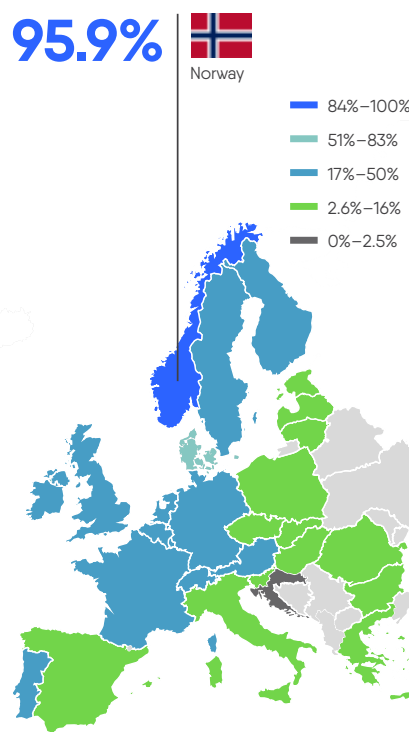
EU new car registrations (December 2025, %)



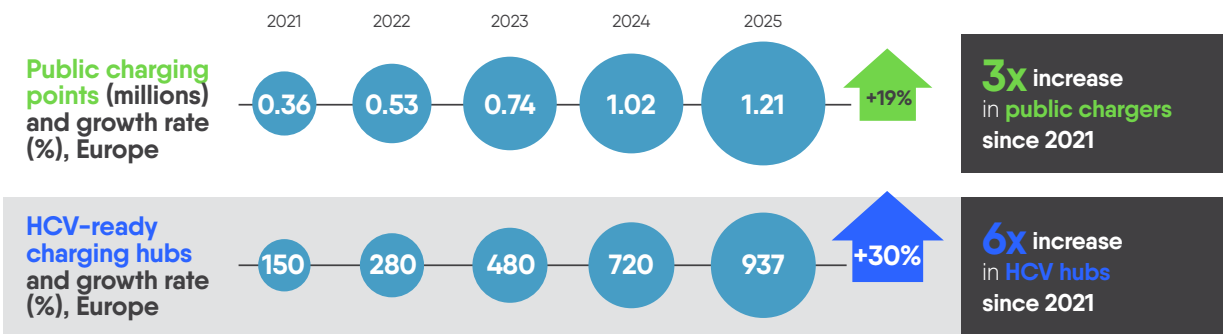
Share of European vehicle registrations by segment (2025, %)



European BEV car sales (2025)



Europe's public charging network surpasses ~1.2mn



WHY FLEET, WHY NOW — fastest lever to scale EV adoption

Demand concentration	Emissions leverage	Economics inflection	Electrification targets
60% of new vehicle sales in the EU come from fleets.	71% of new-car CO ₂ emissions are generated by fleet vehicles.	~20%–50% lower opex vs. ICE for fleet vehicles.	2mn potential boost in demand for new EV cars by 2030.

Fleet electrification delivers system-wide benefits by 2030



Note: Heavy duty vehicle (HDV)-capable public charging locations, including direct current (DC) fast charging (<350 kW and ≥350 kW AFIR-compliant power classes).
Source: EY analysis, <https://www.acea.auto/>, <https://alternative-fuels-observatory.ec.europa.eu/reports/statistics>, <https://www.transportenvironment.org/articles/corporate-fleets-and-the-eu-automotive-industrial-plan>

Executive summary

- 
- **Economics is the critical lever that will secure fleet industry buy-in to electric vehicles (EVs). Based on expected EV uptake, transitioning Europe's fleet vehicles has the potential to save up to €246bn in operating costs by 2030.**
 - **Full fleet electrification could cut one billion tonnes of carbon dioxide (CO₂) emissions by 2030; approximately 5% of the combined projected emissions from the EU and the UK over the same period.**
 - **The EU's proposed fleet electrification mandates could drive demand for more than two million electric cars by 2030. That is nearly half the numbers needed to meet carmakers' emissions targets.**

The transformative potential of fleet electrification

The automotive industry is undergoing a radical transformation as powertrains shift from internal combustion engines (ICE) to electric. It is reshaping factories, supply chains and business models. However, it is corporate fleets that are positioned to become one of the most powerful levers in this transition.

Corporate fleets comprise different vehicle types and business models. They include company cars, rentals, taxis and ride-hailing vehicles, last-mile and urban-delivery vehicles, buses and coaches, and specialised vehicles, as well as long-haul freight and logistics.

In Europe, corporate fleets represent around 60% of new car sales, and virtually all sales of vans, buses and trucks.¹ And they already make a sizeable contribution to the electrification tally. While mandates are now being considered to boost demand, targeted measures, such as

taxation in Belgium and the UK, quotas and penalties in France, access restrictions in urban areas in the Netherlands, and preferential parking and bus lane use in Norway, are proven to be effective in prompting the switch from ICE equivalents to EVs.

Corporate fleets matter because they drive the most kilometres. Fleet cars account for around 45% of direct road transport CO₂ emissions. Light commercial vehicles (LCVs) are responsible for approximately 12%, while trucks and buses make up 27%.² Full fleet electrification can cut around one billion tonnes of CO₂ by 2030,³ approximately 5% of the combined projected emissions from the EU and the UK between 2025 and 2030. It is a critical step towards meeting the targets set in the EU's Fit for 55 and Green Deal legislative framework.

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52025DC0096>.

² <https://www.destatis.de/Europa/EN/Topic/Environment-energy/CarbonDioxideRoadTransport.html>. Assume 50% of LCVs re business-owned.

³ EY analysis. Avoided CO₂ emissions are calculated on a tailpipe (tank-to-wheel) basis assuming the current vehicle fleet is fully electrified by 2030. Annual avoided emissions are estimated by multiplying fleet stock for cars, vans and trucks by segment-specific annual mileage and diesel fuel consumption assumptions, using a diesel emission factor of 2.70 kgCO₂/L.

But the case for fleet electrification is not only environmental. It is economic and strategic too. And it benefits all stakeholders.

- For fleet operators, fleet electrification could deliver up to €246bn in cumulative savings by 2030, through 50% to 70% lower energy costs and 20% to 40% reductions in scheduled servicing and maintenance expenditure. These savings are significant, as operating costs make up 60% to 75% of the total cost of ownership (TCO). By addressing other barriers – high acquisition costs, uncertain residual values – with targeted subsidies and risk management mechanisms, economic benefits can be even higher.
- For infrastructure providers and financiers, there is promise of predictable, high-volume demand and long-term revenue streams.
- For leasing companies, bundled e-mobility packages, such as vehicle-plus-charger at a fixed monthly fee, could hold the key to a decade or more of growth.

- For EU carmakers, fleet electrification could be a big game-changer. According to a recent Transport & Environment study, the EU's proposed fleet electrification mandates could drive demand for an estimated two million electric cars by 2030.⁴ That is nearly half the volumes that automakers need to meet their emissions targets.
- For charge point operators (CPOs), fleet charging is expected to generate three to five times more volume than is possible from public charging. Long-term corporate charging contracts will also provide secure and predictable revenue streams.
- For Europe's energy system, EVs can offer a flexible load to absorb renewable energy generation. In this way, fleets can help to stabilise grids, reduce the need for network investment, and become, in turn, cornerstones of Europe's clean and secure energy future.

Momentum is real. But for now, it is fuelled by tax subsidies and other incentive programmes, which influence the natural forces of supply and demand.

In Norway, around 90% of new sales in the corporate car market are zero emissions.⁵ In Germany, more than 70% of all battery EV (BEV) registrations are made by company or leasing fleets, and more than 60% in Sweden.⁶ In the Netherlands, driven by the end of tax exemptions for ICE vans and the rollout of zero emission zones (ZEZs), electric vans accounted for 44% of new LCV sales as of January 2025.

Belgium's market is accelerating too. In 2024, 40% of company car registrations were fully electric, four times the rate of private-buyer sales.⁷ From 2026, only electric company cars will qualify for tax breaks, while ICE vehicles will lose deductibility and face higher Benefit inKind (BiK) tax.

Policy signals are mixed but evolving. On the positive side, the proposal for a Regulation on Clean Corporate Vehicles, part of the European Commission's Automotive Package, would place binding national targets for large companies to accelerate the uptake of zero and low emission vehicles, starting in 2030. This sits within a broader ambition to cut transport emissions significantly, expand ZEZs and mobilise multibillion-euro investments in charging infrastructure. Combined with the new European Grids Package, which

strives for grid readiness through strategic planning and streamlined permitting, these measures mark a decisive shift towards electrified mobility.

At the same time, the prospect of expedited revisions to core frameworks, such as the CO₂ regulation,⁸ introduces uncertainty at a critical moment. As electrification scales, it is essential that supply-side and demand-side policy measures remain coherent, predictable and mutually reinforcing, sending clear and consistent signals to manufacturers, investors and customers alike.

Economics and innovation are converging. New business models, such as bundled e-mobility packages, shared mobility and flexibility services, are becoming more mainstream. Digital platforms, smart charging, which allows the rate and time of charge to be managed intelligently, and the emerging potential of energy management, on-site battery storage, innovative energy contracts and vehicle-to-grid (V2G) technologies stand to create alternative revenue opportunities.

Meanwhile, state of health (SoH) certification programmes are enhancing confidence, safety, value and sustainability across the battery lifecycle, from purchase and use to reuse and recycling.

⁴ <https://www.transportenvironment.org/articles/corporate-fleets-and-the-eu-automotive-industrial-plan>.

⁵ <https://www.acea.auto/news/incentives-not-knee-jerk-mandates-key-to-boosting-uptake-of-corporate-zero-emission-cars/>

⁶ <https://www.ctek.com/ctek-magazine/how-fleet-benefits-are-powering-ev-adoption-across-europe>.

⁷ <https://theicct.org/belgiums-tax-incentives-drive-electric-vehicles-in-corporate-fleets-may25/>

⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02019R0631-20231203>.

TCO and opex: why they matter

TCO measures the full lifetime cost of a vehicle: what you pay to buy it (capital costs), run it (operating costs) and what you recover when you sell it (residual value). Operating costs, e.g., fuel, maintenance, insurance and taxes, typically account for 60% to 75% of TCO and continue throughout the vehicle's lifetime.

$TCO = [\text{acquisition cost} + \text{financing costs}] + [\text{fuel/energy} + \text{maintenance and repair} + \text{insurance} + \text{taxes/fees} + \text{downtime}] - \text{residual value}$

■ Buying it: capital expenditure (capex)

- Vehicle acquisition cost (purchase price or lease)
- Financing costs (interest on loans, lease fees)
- Initial infrastructure (charging equipment installation)
- Upfront taxes and fees (registration, delivery)

■ Running it: operating costs (opex)

- Fuel or energy costs (diesel, petrol or electricity)
- Service, maintenance and repair
- Insurance (annual premiums)
- Taxes and fees (annual road tax, tolls, permits, annual incentives)
- Downtime costs (lost productivity, replacement vehicle rental)
- Administrative costs (driver costs, fleet management, compliance)

■ Selling it: the money you get back at the end (residual value)

- Depreciation (loss in value over ownership period)
- Residual value (resale/trade-in value – subtracted from total)

TCO is the critical metric for fleet operators. If TCO is favourable, it will influence operators' economic decisions to electrify.

Governments can support TCO with targeted measures. They include subsidies to lower the upfront cost of EVs and insurance-backed solutions, independent battery health certification, buyback commitments from original equipment manufacturers (OEMs) and second-hand markets to help stabilise residual values.

While TCO is fast becoming favourable for car-based fleets and LCVs, support is needed for the more nascent electric truck segment.

On opex, EVs are already demonstrating clear advantage compared with ICE vehicles. This is largely a consequence of reduced energy costs, servicing and maintenance.



Opportunity meets challenge

Despite strong levers, fleet electrification could move faster. In France, for instance, only one quarter of companies required to comply with the Loi d’Orientation des Mobilités (LOM) were meeting their EV renewal quotas by 2025⁹ but, once the new tax/penalty regime took effect in 2025, fleet EV uptake visibly accelerated. BEVs reached 27% of fleet registrations by December 2025, helping lift BEVs to 20% of the full-year market.¹⁰

Persistent barriers remain. They include fragmented policy and incentives, upfront vehicle costs and higher prices for public vs. private charging. Other obstacles come from uncertain second-hand demand, residual value dilution and operational complexities. Meanwhile, some countries experience challenges with the speed of grid reinforcement and access to support the rollout of charging infrastructure.

If Europe is to seize the competitive advantage, it must scale already-proven fleet solutions. This means well-designed incentives, which pair fiscal and economic levers, robust regulation to provide long-term certainty, and innovative financing with practical enablers to make electrification work. Charging hubs along major road networks, integrated data platforms, prioritisation of zero emission vehicles (ZEVs) in public procurement tenders, and flexibility services are the core enablers urgently needed to deliver confidence and corporate fleet electrification at scale.



The trigger point for the transition to zero emission vehicles is when all conditions align: vehicle; infrastructure; total cost of ownership with diesel; and ultimately the ability to earn money.

Thomas Fabian
Chief Commercial Vehicles Officer, ACEA

The rewards are clear: lower costs, stronger global market positioning and major emissions cuts. The question is not whether to act, but how fast we can move. In conversations with industry stakeholders, we identified the critical priorities that will accelerate and shape corporate fleet electrification across Europe.

Figure 1: Next-step actions for fleet electrification

	Accelerate	Initiate
Fleet operators	- Identify business case for electrification - Implement schedule-aware charging (align with routes and dwell times)	- Open depots for public/third-party charging where feasible - Integrate Energy Management Systems (EMS) with reimbursement and flexibility (demand response/ V1G/V2G modules)
Energy companies	- Provide transparent data if technically available and cost-efficient - Enable consumers to assess connection capacity down to low voltage - Scale flexible connection agreements (e.g., non-firm access) with incentives - Roll out time-of-use tariffs and EV flexibility programmes	Digitalise and integrate grid-connection workflows for faster approvals
OEMs	- Lock in Megawatt Charging System (MCS) timelines - Educate fleets on SoH, charging strategies and operational impacts	- Publish duty-cycle energy curves and enable battery SoH transparency - Co-develop smart-charging application programming interface (APIs) with CPOs/EMS vendors
CPOs and hub developers	Provide education on EV tech, charging operations, and total cost benefits	- Build reservation-based truck hubs near logistics clusters - Co-locate storage/renewables; standardise driver amenities and uptime service level agreements (SLAs)
Financing and leasing companies	Scale charger leasing and Flexibility-as-a-Service bundles	- Include uptime guarantees and performance-linked pricing - Support small- and medium-sized enterprise (SME) depots with grant-backed kits and simplified financing
Policymakers and regulators	- Incentivise EVs and reduce electricity surcharges - Fast-track permits and grid upgrades for TEN-T truck charging - Apply Eurovignette toll exemptions for ZEVs	- Mandate ZEV fleet targets - Harmonise heavy commercial vehicle (HCV) charging standards; publish a near-term truck strategy - Set V2G and battery recycling rules

Source: EY analysis.

In accelerating the electrification of fleet, and accruing system, environmental and society-wide benefits, economics will be the critical driver. If all participants in the emerging ecosystem can identify

value – whether their “currency” is TCO, opex, return on investment (ROI), emissions curtailment or capex reduction – the business case for electrification becomes, surely, irrefutable.

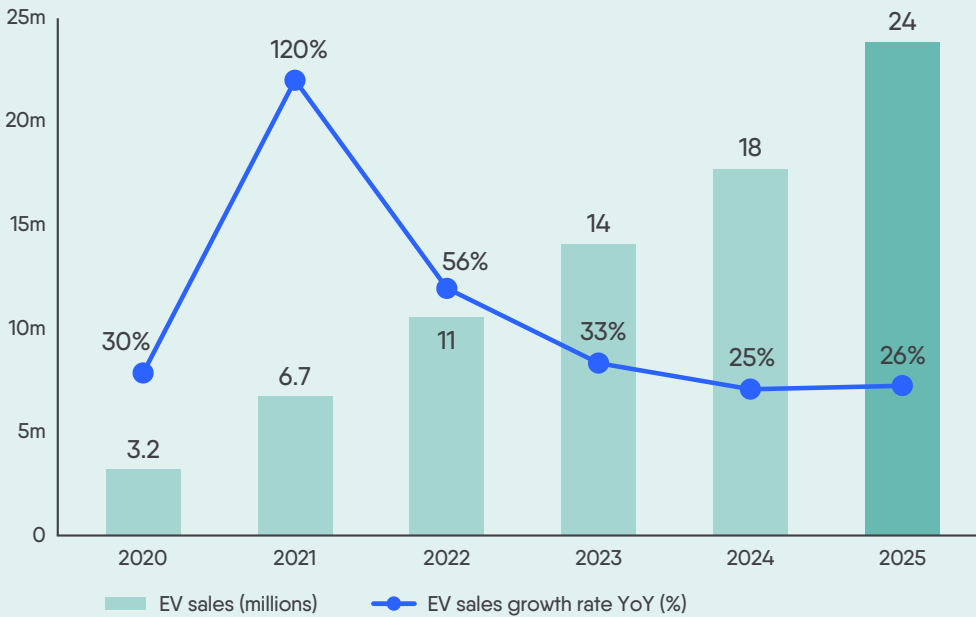
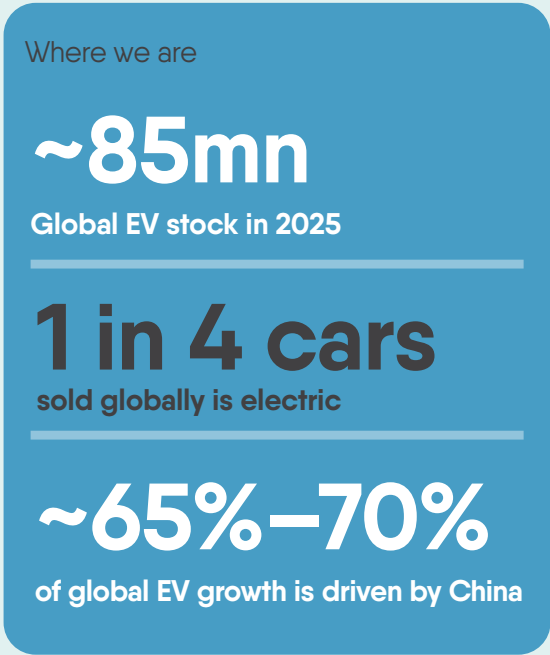
⁹ https://www.transportenvironment.org/uploads/files/TE_202502_Bilan-LOM.pdf
¹⁰ https://www.aaa-data.fr/wp-content/uploads/2026/01/CP_1er_janvier-2026_AAA_DATA.pdf

Status report: global snapshot of e-mobility

Why 2025 was a tipping point for EV adoption

- 2025 marked a global tipping point for electric mobility. EV sales climbed to ~23.7 million (26% share), confirming the shift is structural despite a weak global auto market. Europe led the acceleration. The battery electric car share jumped from 15.4% to 19.4% (+30% year on year),¹¹ and December delivered a symbolic breakthrough as BEVs overtook petrol in EU registrations for the first time (22.6% vs. 22.5%), with the UK reaching 32.2% (petrol, 22.1%). Major markets (Germany (+43% BEVs), the Netherlands (+18.1% BEVs), Belgium (+12.6% BEVs) and France (+12.5% BEVs))¹² all expanded in 2025, while European OEMs surged ahead, with BEV sales up +32%, and VW becoming Europe's top EV brand.¹³ By comparison, North America held around 10%, emerging markets reached ~7%, and China pushed past 50%, underscoring Europe's position as the fastest moving mature EV market globally.
- Electrification also accelerated across commercial transport. Electric LCVs (eLCVs) rose to 12% of Europe LCV registrations in 2025 (from 6.5% in 2024),¹⁴ even as total van sales declined. Medium and heavy commercial electric trucks nearly doubled, reaching 4.8% of European registrations driven by strong adoption in Germany, the Netherlands and France, while electric buses reached 25.9% of new registrations. Together, these trends show EV uptake is rapidly expanding beyond passenger cars, positioning Europe as the global frontrunner in zero emission commercial mobility.

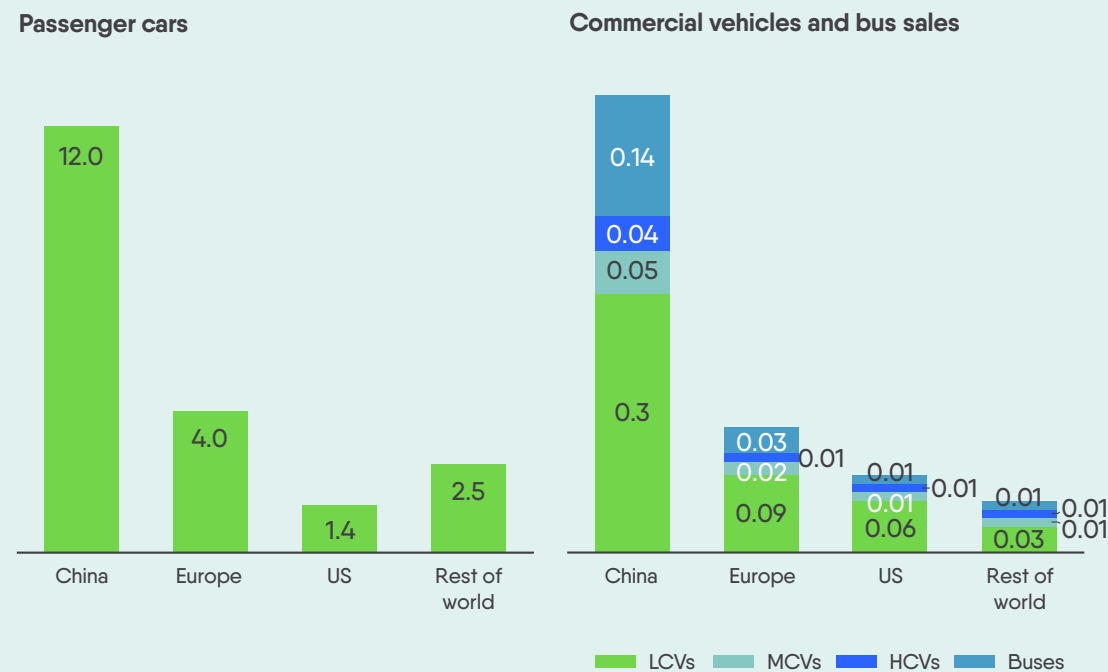
Figure 2: Global EV sales (millions) and market share (%) 2020–25¹⁵



- China accounts for more than 60% of global EV sales, driven by strong EV penetration (>50% of new car sales), cost parity and aggressive policy support.

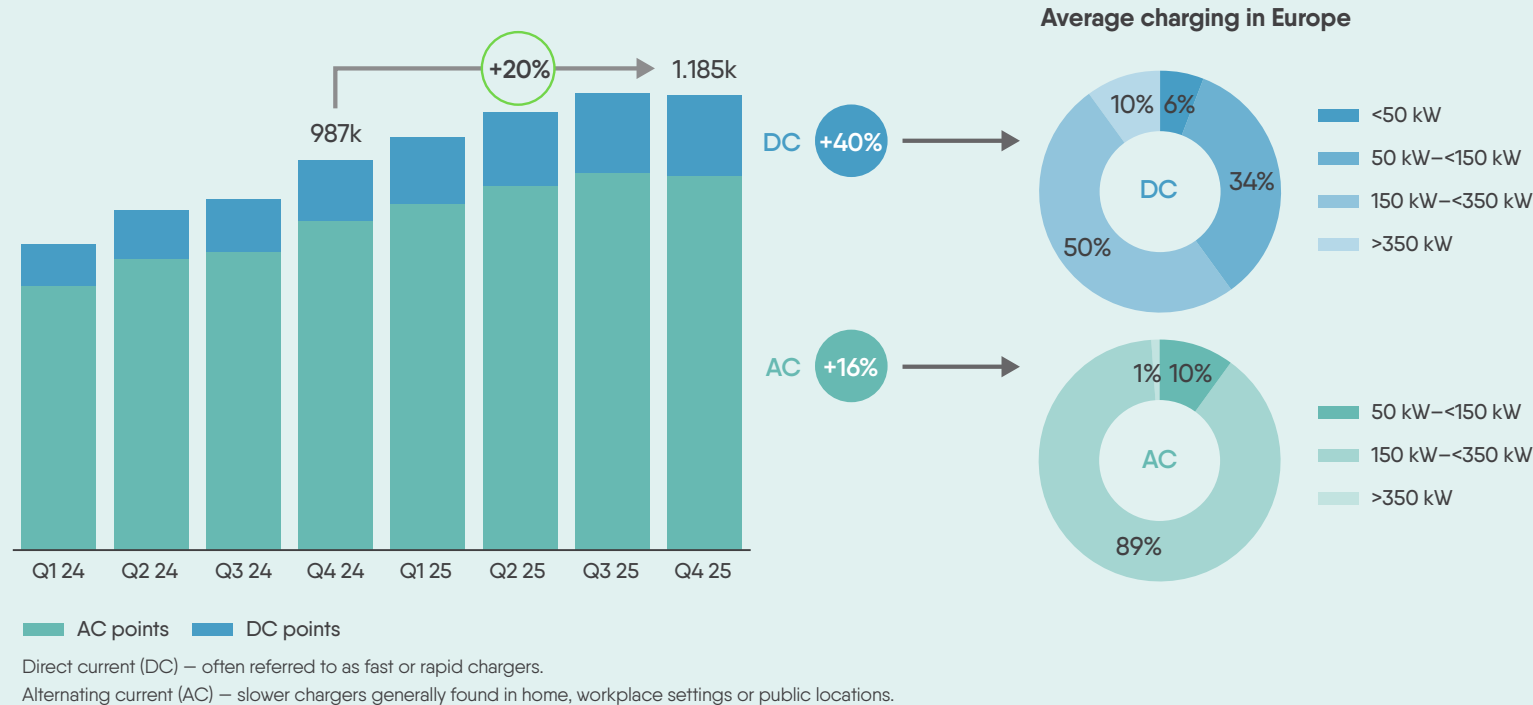
¹¹ https://www.acea.auto/files/Press_release_car_registrations_December_2025.pdf
¹² <https://www.acea.auto/pc-registrations/new-car-registrations-1-8-in-2025-battery-electric-17-4-market-share/>
¹³ <https://insideevs.com/news/785136/volkswagen-beats-tesla-ev-sales-europe-2025/>
¹⁴ <https://www.acea.auto/cv-registrations/new-commercial-vehicle-registrations-vans-8-8-trucks-6-2-buses-7-5-in-2025/>
¹⁵ <https://ev-volumes.com/>

Figure 3: Total vehicle sales (million) by region Jan-Oct 2025¹⁶



■ The Alternative Fuels Infrastructure Regulation (AFIR)¹⁷ imposes legally binding targets across the EU. Electric charging stations for cars and vans are now mandatory at 60-kilometre intervals along the core Trans-European Transport Network (TEN-T), with full coverage expected by 2030.

Figure 4: Total number of publicly accessible charging points in Europe 2024–25¹⁸



¹⁶ <https://www.cpcauto.com/>; <https://www.coxautoinc.com/>; <https://carnewschina.com/2025/01/17/electrified-cars-make-up-nearly-9-of-chinas-total-car-fleet/>; <https://www.fortunebusinessinsights.com/china-electric-vehicle-market-107692>; https://theicct.org/wp-content/uploads/2025/09/ID-463-%E2%80%93-China-ZE-MHDVs-H1-2025_market-spotlight_final-1.pdf

¹⁷ <https://eur-lex.europa.eu/eli/reg/2023/1804/oj/eng>

¹⁸ <https://alternative-fuels-observatory.ec.europa.eu/reports/statistics>

- The pace of deployment is strong. Public charging infrastructure has grown rapidly, and most EU Member States are on track to meet their car and van coverage and power output requirements.^{19,20} By late 2024, around 70% of the TEN-T core network was equipped with ultra-fast chargers. Eleven Member States had already met AFIR's requirement for passenger cars and vans.²¹ Progress continued through 2025, closing the gaps in Southern and Eastern Europe.
- For trucks and buses, fast-charging stations are now mandatory at 120-kilometre intervals on TEN-T core routes, tightening to 60 kilometres by 2030. By the end of 2025, at least 15% of the TEN-T core network had to be equipped with publicly accessible charging infrastructure for heavy commercial vehicles (HCVs), increasing to 50% by 2027. Though significant progress has been made for HCVs, coverage remains uneven, with Western and Northern Europe ahead of Eastern and Southern regions.²²

What works: proven successes in fleet electrification

Fleet electrification moves fastest when policy provides certainty on costs, compliance, access and infrastructure.

Belgium – fiscal certainty removes decision risk

Company car taxation structurally favours ZEVs, with full deductibility until the end of 2026, and a clearly signalled phase-down thereafter. This multi-year visibility puts the focus on minimising fiscal and residual value risk, making EVs the safest default choice for fleet managers. This has pushed BEVs to ~85% to 90% of new company car registrations.

France – penalties increase the economic advantage

Binding fleet renewal quotas under LOM, backed by €4,000 penalties per non-compliant vehicle impacting TCO, increase the economic advantage of EVs for fleets. The EV uptake across corporate cars and, increasingly, LCVs has pushed new BEV sales up 40% year on year.

The Netherlands – access restrictions drive behaviour

ZEZs link the right to operate delivery fleets in urban areas directly to electrification. It becomes an operational necessity rather than the means to optimise costs, and forces early fleet replacement. It makes zero-emission vans the fastest-electrifying segment in urban logistics.

The UK – personal tax incentives steer driver behaviour

A low and predictable BiK trajectory makes EVs the most attractive choice for company car drivers. They base their decisions on a monthly tax liability, rather than vehicle list prices. Because fleets dominate new registrations, aligning individual incentives with corporate procurement quickly translates into high EV penetration.

China – system-wide policy alignment enables scale

China combines fiscal incentives, mandates, public procurement and charging rollout into a single framework. This reduces both cost and operational uncertainty across cars, vans and trucks, allowing fleets to electrify at scale rather than through pilots.

¹⁹ Under AFIR Article 3.1, Member States must ensure 1.3 kW per BEV and 0.8 kW per PHEV through public infrastructure. Monitoring data from Q3 2025 shows most countries are close to or exceeding these targets, thanks to rapid charger deployment aligned with EV uptake.

²⁰ <https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road/european-union-eu27/target-tracker>

²¹ <https://www.transportenvironment.org/articles/how-to-close-the-afir-funding-gap-in-2026-2027>

²² <https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road/european-union-eu27/country-comparison>

Lessons from China

- **EVs** = ~31.4 million, ~9% of China's car fleet; BEVs alone ≈ 22 million.
- **eLCVs** = ~10% of new sales, with rapid growth in urban delivery fleets.
- **Zero-emission trucks reached** ~22% of new HCV sales in H1 2025.

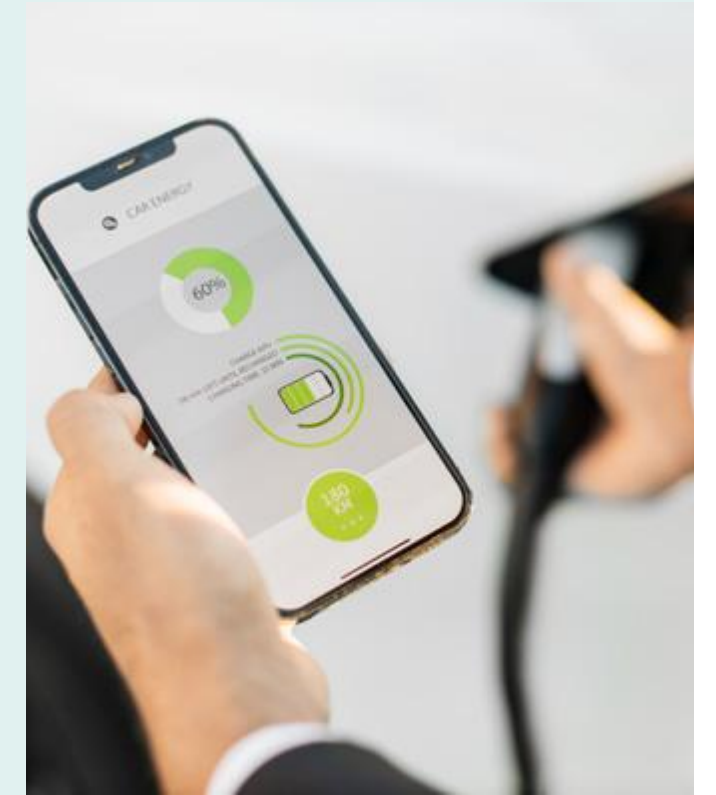
China leads global fleet electrification with a state-driven strategy that combines policy mandates, infrastructure investment and industrial coordination. Clear targets include electrifying HCVs and buses, achieving 12% penetration of new-energy heavy trucks by 2025 and 20% by 2030, backed by subsidies, ZEZs and carbon mandates. Unlike fragmented approaches elsewhere, China aligns transport, energy and digital ecosystems under one roadmap, anchored by incentives:

- **Financial:** purchase tax exemptions through 2027, local rebates, toll breaks and diesel truck trade-in programmes
- **Mandates:** EV quotas under the dual-credit system; government fleets ≥30% EV
- **Industrial:** heavy investment in battery R&D, megawatt charging and battery-swapping tech
- **Infrastructure:** 100,000 ultra-fast chargers by 2027, plus thousands of swap stations
- **Long-term:** EV dominance by 2035; carbon neutrality by 2060

China's success rests on deep collaboration between automakers, battery giants and logistics operators – BYD, CATL, SinoTruk – bundling vehicles, megawatt charging, battery-swapping technology and integrated EV platforms for rapid deployment. With 20% of Europe's new BEVs already made in China, European OEMs face margin pressure and risk losing leadership unless they match China on speed and scale.

Lessons for Europe

- **Integrated strategy:** Europe needs more coordinated planning across transport, energy and digital systems – China's success comes from alignment, not fragmented efforts.
- **Policy certainty:** Set clear binding targets and predictable incentives to de-risk investment and counter China's speed advantage.
- **Infrastructure:** Accelerate megawatt charging corridors. Pilot battery swapping for heavy-duty fleets.
- **Close cost gap:** Chinese trucks land in Europe at €80,000 to €120,000 vs. €250,000+ for European models. Address the cost gap with local supply chains and modular designs, without compromising payload and durability.
- **Digital integration:** Invest in software-driven fleet management and interoperability standards to enable flexibility revenues, first with smart charging and later with V2G, once the technology matures.



A blue articulated electric bus is parked at a charging station. A red robotic arm is positioned above the bus, likely for charging. The bus has "ELECTRIC" written on its side. The background shows green trees and a clear blue sky.

1

Far-reaching benefits of fleet electrification



- **The 2030 case for electrification: €246bn business savings; 140 terawatt-hours (TWh) of electricity replaces 95 billion litres of diesel; €140 billion total fuel expenditure saving; one-billion-tonne reduction in CO₂ emissions.**
- **Car-based fleets stand to achieve 10% to 20% opex advantage over petrol and diesel equivalents when driven more than 25,000 kilometres per year.**
- **eLCVs could cut fuel costs by up to 60% and maintenance costs by 20% to 30%, improving opex for high-utilisation fleets.**
- **Electrifying the largest and most energy-intensive fleet archetypes creates huge opportunity for grid flexibility and load balancing.**

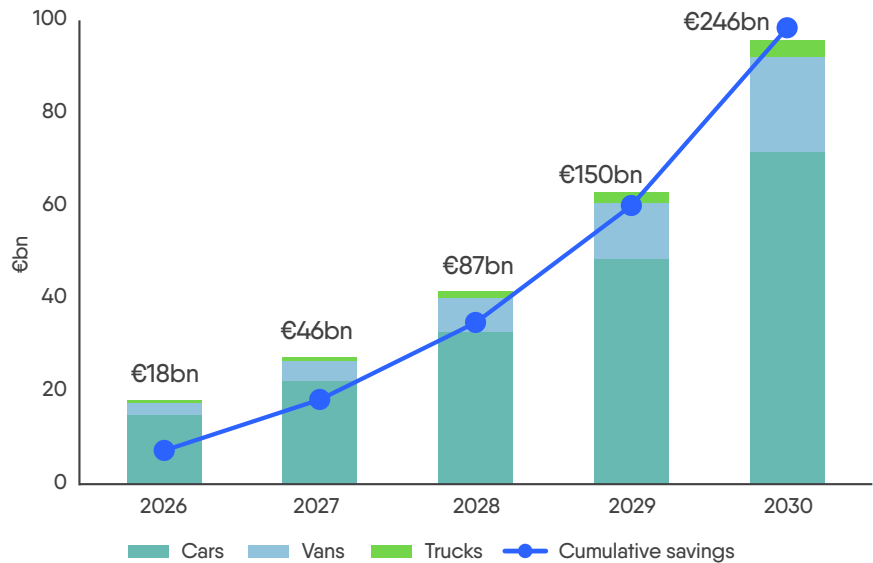
The big picture: opportunities for the wider ecosystem

The electrification of corporate fleet — defined by the European Commission as vehicles registered by a legal entity rather than a person — is set to be the “force multiplier” for decarbonisation and competitiveness. Its impact is far greater than the electrification of private vehicles alone. If we get fleet electrification right, it offers far-reaching upsides for all stakeholders.

Business impact — €246bn savings by 2030

Transitioning Europe’s corporate car, LCV, medium commercial vehicle (MCV) and HCV fleets to electric will unlock substantial economic value. Based on projected electrification rates, EY analysis estimates that potential savings of €246bn are achievable on fleet operating costs by 2030, equating to approximately €49bn per year for fleet operators.

Figure 5: Projected annual and cumulative fleet opex savings 2026–30 (€bn)



Source: EY analysis.

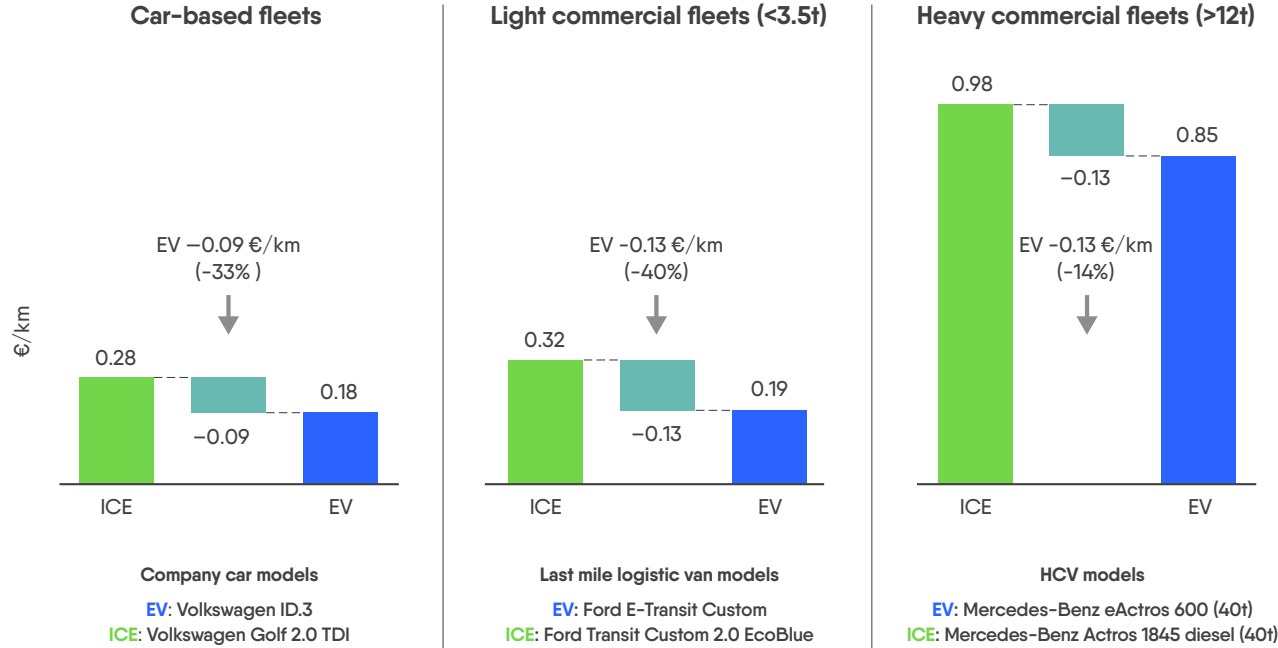
Operating costs account for around 60% to 75% of TCO for trucks, 25% to 40% for cars, and 45% to 65% for LCVs. Right now, operational savings are driven primarily by lower fuel and preventative maintenance costs for EVs over ICE vehicles. In some instances, EVs also avoid or receive discounts on tolls and road taxes, which further lowers their operating costs. Even though opex varies by fleet archetype and by market, it is already much lower for EVs than ICE vehicles.

For instance, in France:

- **Car-based fleets:** EVs already achieve 33% (0.09 €/km) operating cost advantage over ICE, due to cheaper electricity, BiK and road tax relief.
- **LCV fleets:** eLCVs have a 40% (0.13 €/km) operating cost advantage compared with diesel equivalents, mainly due to higher depot charging and lower energy prices, maintenance costs and cheaper road tolls. The new carbon-pricing mechanism, ETS2, starting in 2028, is expected to push diesel prices higher (+€0.10 to +€0.15 per litre), shifting the economics for LCVs even further towards electric.²³

■ **HCV fleets:** Economics are highly route- and charging-strategy dependent, with operating costs driven by tolls, electricity tariffs, utilisation and maintenance. For instance, analysis for fleet operators relying predominantly on public fast charging indicates meaningful opex reductions – 14% per kilometre for intra-France long-haul routes, 20% on France to Germany routes and 7% for France to Romania, reflecting different toll exposures and energy cost structures. Savings can be higher where fleets can shift most of the energy to depot charging, avoiding the cost premium and downtime of public high-powered charging. Scheduled maintenance costs for electric trucks can be up to 30% to 40% cheaper than for diesel, but realised benefits depend on service network maturity, parts availability and early-life reliability.²⁴

Figure 6: Opex analysis by fleet archetype (car-based, LCV and HCV, €/km – France)²⁵



Source: EY analysis.

The business case for electrification comes down to more than just opex, since the EV purchase price is often higher than for ICE equivalents. For instance, an electric truck can cost two to three times more than a diesel truck. Though subsidies are available in most markets, they can vary from

€53,000 in France to €139,000 in the UK, for trucks over 26 tonnes.²⁶ Residual value is also a critical variable, because EVs currently retain around 10% to 20% less value at the end of the leasing period, compared with ICE vehicles.

²³ ETS2 is the EU's carbon pricing mechanism for road transport fuels starting in 2028, which will raise diesel costs and make EV adoption more financially attractive for fleets.

²⁴ https://theicct.org/wp-content/uploads/2023/11/ID-54-%E2%80%93-EU-HDV-TCO_paper_final2.pdf

²⁵ Operating costs reflect per-km variable opex only (energy/fuel, maintenance, insurance, tyres, road taxes, tolls and EV incentives) and exclude vehicle purchase price, financing, residual value and one-off capex. Analysis uses standardised benchmarks for cars (VW ID.3 vs. VW Golf 2.0 TDI), vans (Ford E-Transit Custom vs. Ford Transit Custom 2.0 EcoBlue), and trucks (Mercedes-Benz eActros 600 vs. Mercedes-Benz Actros 1845 diesel (40t)) at representative French utilisation levels. Electricity costs use a weighted charging mix with France-specific prices; diesel costs reflect prevailing pump prices.

²⁶ Current HCV grants in the UK are phased over four weight categories (>4.25t–12t €23,000, >12t–18t €69,000, >18t–26t €93,000, >26t €139,000) and are available until 31 March 2026.

Energy-system impact – electricity to replace 95 billion litres of diesel in the EU

Electrifying Europe's fleets will add significant electricity demand by 2030. EY analysis, based on projected EV fleet sales, estimates that around 140 TWh of electricity will be required in 2030 to support electrified corporate cars, vans and trucks. It will displace approximately 85 billion to 95 billion litres of fuel previously consumed by ICE vehicles. Based on average EU fuel pump prices (€1.45 to 1.55/litre), this is equivalent to total fuel expenditure savings of €130 billion to 140 billion by 2030.

Smart charging, which is already operational and proving scalable, aligns EV charging with the availability of low-cost, renewable power. Energy Management Systems (EMS) and behind-the-meter storage can also turn depot charging from a grid constraint into a controllable energy asset, reducing peak demand and upgrade capex, cutting electricity costs, improving operational reliability, and enabling faster scale-up of both LCV and HCV electrification. V2G, which is at a much earlier stage of maturity, and currently a lower priority for fleet operators, is designed to support

bidirectional flow to balance supply. Together, these technologies offer scalable solutions to grid constraints. They optimise network investment and deliver near-zero emissions when powered by renewables, making fleets a potential cornerstone of Europe's clean energy future.



If depots optimise smart charging, their fleet charging bills could reduce to zero. And, if pushed to the limit, it might not only make fleet charging completely free but could even amortise capital expenditure.

Christian Girardeau
CSO, Virta

Emissions impact – one-billion-tonne reduction in CO₂ emissions

Fleets are a major lever for tackling the decarbonisation of road traffic. Though they make up only 28% of vehicles, they drive the most kilometres, and account for 60% of new car sales and more than 70% of new-car CO₂ emissions.²⁷ In commercial markets, fleet operators, including small and medium-sized enterprises (SMEs), buy

80% of vans and all new trucks. HCVs, though they make up just 2% of vehicles, produce around 27% of road transport emissions.²⁸

The potential is huge. By maintaining the current pace of electrification, fleets could avoid over 416 million tonnes of CO₂ emissions cumulatively by the end of this decade.²⁹ Full fleet electrification could cut around one billion tonnes of CO₂ by 2030, a critical lever in helping to meet the EU's Fit for 55 and Green Deal targets.



²⁷ EY analysis, <https://www.transportenvironment.org/state-of-european-transport/state-of-transport-2025/fleets>

²⁸ EY analysis, https://transport.ec.europa.eu/transport-themes/clean-transport-urban-transport/CO2-emissions-heavy-duty-vehicles_en

²⁹ EY analysis. Avoided CO₂ emissions are calculated on a tailpipe (tank-to-wheel) basis relative to a diesel ICE baseline and reflect the progressive uptake of EVs in corporate cars, vans, and heavy trucks. Avoided emissions are estimated by multiplying the electrified fleet stock in each year by segment-specific annual mileage and diesel fuel consumption assumptions, using a diesel emission factor of 2.70 kgCO₂/L. Results represent cumulative avoided emissions over 2026–2030.

The big three fleet opportunities

Europe’s policy framework for decarbonised transport is advancing. CO₂ emissions standards, the Clean Vehicles Directive and AFIR have already laid the foundations for fleet electrification. Now, the strongest signal comes from the proposed Regulation on Clean Corporate Vehicles.

The European Commission proposes binding targets, set by Member States to reflect their market maturity, for zero and low emission vehicle uptake by companies with more than 250 employees and a turnover greater than €50mn from 2030. It is a move designed to leverage the purchasing power of large corporates with fleets, and to accelerate electrification.

Today, 6% of corporate fleet vehicles in Europe are electric. But fleets belong to a complex and fragmented ecosystem, made up of around 65 fleet types, ranging from regular cars to 18-wheel temperature-controlled trucks. Understanding different vehicle types and usage patterns is fundamental to designing effective policy, business models and infrastructure.

EY analysis narrows the 65 fleet types into six broad archetypes: car-based fleets, LCVs, MCVs, HCVs, buses and coaches, and specialised and emergency fleet vehicles. These archetypes tend to follow typical day-to-day duty cycles in terms of distances travelled, duration of operations, stop-start patterns, load carried, and charging or refuelling needs.

This classification by archetype simplifies and supports practical implementation of the European Commission’s objective to accelerate electrification uptake, in line with the EU’s Fit for 55 and Green Deal targets.³⁰

Market participants are just as varied as the vehicles they operate. They range from large players running thousands of vehicles to very small players operating just a few. Many are SMEs, often contracted by freight forwarders for last-mile deliveries. For them, electrification presents a significant financial and operational shift. Policy certainty and incentives are critical levers for easing SMEs’ transition to electric and de-risking their investment.

Figure 7: Fleet archetypes

Car-based	Corporate/business enterprises, rental companies, taxi/ride-hailing, government bodies, healthcare providers	- Urban variable routes - Easy to electrify - Predictable use - Charging access
LCVs	Logistics and courier, retailers, fast-moving consumer goods distributors, utilities, telecoms, construction contractors, municipal services	- Urban routes for last-mile delivery - Overnight home or depot charging - Low-emission zone access - SMEs dominate ownership
MCVs	Logistics providers, retailers, fast-moving consumer goods distributors, municipal authorities, utilities, construction firms	- Urban fixed routes or regional hub to hub - Overnight depot charging
HCVs	Transport operators, retailers, construction contractors, waste management firms, tanker operators, specialised hauliers	- Long-haul or regional hub-to-hub routes for freight transport - Cross-border routes need megawatt charging and grid upgrades
Bus and coach	Public transport operators, private coach operators, school transport providers, airport authorities	- Urban fixed routes for city buses/intercity coaches - Leading segment in electrification - Supported public procurement targets under the Clean Vehicles Directive
Specialised and emergency	Emergency services (ambulance, fire, police), postal operators, utilities, airports, rail companies, security firms	Complex duty cycles and equipment push electrification to medium/long term

Source: EY analysis.

³⁰ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52025DC0096>

For the purposes of this study, taking vehicle duty cycles and electrification potential into account, we focus on the following archetypes:

- Car-based fleets
- LCVs
- MCVs and HCVs

These are the largest archetypes by fleet size and CO₂ contributions and are at different levels of readiness for electrification. They highlight how targeted smart measures, tailor-made for different vehicle types, are critical to boosting uptake.



Car-based fleets

Comprising company cars, pool vehicles, rental cars and ride-hailing vehicles, around 8% of today’s car-based corporate fleet stock is electric.

This already-maturing archetype leads the shift to electrification. Typical daily mileage for corporate cars in Europe is generally below 100 kilometres, based on travel survey and fleet usage data. Drivers are increasingly confident that vehicle ranges up to 500 kilometres are more than sufficient for most duty cycles.

Smart charging is an already-maturing solution with scalability potential; V2G is at an earlier stage of development but demonstrating viability. For users, these technologies offer scope to lower charging costs and generate additional income, which will contribute to a strengthening EV vs. ICE opex proposition.

However, the pace of car-based fleet electrification in Europe is uneven, largely due to a patchwork of different national policies and inconsistent implementation. Belgium, for instance, with its supportive company car policy, leads with high EV penetration in company fleets. Conversely, Poland shows moderate uptake, due to limited tax breaks, fragmented programmes and lack of leasing packages tailored to EVs.

Figure 8: Key differences in fleet electrification and company car policy

Aspect	Belgium	France	Germany	Netherlands	Poland	Sweden	UK
BEV corporate fleet share	~87% BEV registrations	~60% BEV registrations	>70% BEV registrations	~56% BEV registrations	~12% BEV registrations	>70% BEV registrations	>75% BEV registrations
Tax deductibility	100% until 2026, phased down to 67.5% by 2031	No deductibility; based on quotas and subsidies	Accelerated depreciation and tax-free for BEVs until 2030	No deductibility; incentives via <i>bijtelling</i>	Higher depreciation limits; excise exemption	No deductibility; taxable value reductions	No deductibility; incentives via <i>BiK</i>
Employee tax benefit	Minimal <i>BiK</i> for EVs	Reduced <i>BiK</i> for EVs	Reduced <i>BiK</i> for EVs	<i>Bijtelling</i> : 17% (EV) vs. 22% (ICE) in 2025	Limited; focus on grants rather than employee taxation	Taxable benefit (SEK 350k); tax-free workplace charging until Jun 2026	EV <i>BiK</i> : 3% (2025/26), 4% (2026/27), 5% (2027/28); vs. ICE 25%–35%
Future policy	EU Regulation on Clean Corporate Vehicles binding ZEV shares for new corporate cars and vans from 2030	Same EU proposal; national LOM quota ramp-up to 40% (2027) and 70% (2030)	Same EU proposal; adds demand-side pull alongside fiscal levers	Same EU proposal; becomes more important as national EV tax advantage weakens	Same EU proposal (lower targets reflecting GDP and market maturity)	Same EU proposal	2030: ban on new ICE vehicle sales; 2035: all new vehicles must be fully zero emission
Road tax	EV-friendly VAT and exemptions	EVs exempt until 2030	EVs exempt until 2030	<i>Motorrijtuig-belasting</i> (MRB) discount until 2030	EVs exempt until 2030	EVs exempt until 2030	EVs exempt from Vehicle Excise Duty (VED) until 2025
Subsidies	Focus on tax deductibility	Environmental bonus and CEE scheme	Purchase grants phased out; infrastructure support	Consumer subsidies ended; corporate phase-out	Grants up to PLN40k per EV; infrastructure funding	Tax-free charging and depreciation benefits	No direct purchase subsidies; salary sacrifice popular

Source: EY analysis.

Residual value concerns persist, despite studies showing high EV battery longevity

Across markets, corporates typically decommission vehicles after three to five years, creating a steady pipeline of used cars. This makes fleet vehicles the single most important source of second-hand EVs.

However, residual value risk is now a major financial concern for OEMs, leasing firms and fleets. It is impacting TCO and slowing electrification uptake. The downturn is driven by battery health concerns, technology obsolescence, reductions in new EV car prices and an insufficiently liquid market. In Germany, for instance, BEVs retain only around 38% of their original value after three years, compared with more than 50% for petrol or diesel equivalents.³¹

More could be done by carmakers and stakeholders to educate consumers about the performance potential of EV batteries and grow their confidence in second-hand markets. In fact, recent studies confirm that EV batteries degrade far more slowly than early fears suggested. Geotab's analysis of more than 10,000 EVs found an average annual capacity loss of just 1.8%,³² meaning most batteries will last 15 to 20 years under normal

conditions. Similarly, DEKRA's fleet data shows 90%+ SoH even after 120,000 kilometres,³³ while Kvdbil's study of 1,300 used EVs in Sweden reports that eight out of 10 vehicles retained at least 90% of their original capacity.³⁴ Even so, confidence in BEV residual values is still fragile, which is slowing uptake in some markets.

EY analysis across different markets identifies a clear business case for EV adoption by car-based fleets:

- TCO for EVs varies significantly across countries, due to diverse tax policies, employee benefits and purchase price incentives.
- Access to tax breaks, grants and innovative leasing or Finance-as-a-Service options can reduce upfront costs.
- EVs can cost 20% to 40% less to maintain than ICE equivalents over a five-year period, due to fewer moving parts, no engine fluids and regenerative braking. It means significantly reduced wear and tear, and simpler and cheaper servicing. However, unscheduled or accident repair can be more expensive, and tyres may need to be replaced more frequently.

- The price of electricity is low relative to fuel. There is the potential for 30% to 70% savings, dependent on the price of electricity.
- Smart charging can automatically shift and stagger workplace/home charging into the lowest-cost off-peak windows while guaranteeing departure readiness, reducing electricity and demand-charge exposure.

- EV adoption strengthens sustainability credentials, improves ESG framework scores, and enhances brand and corporate reputation.
- There is a growing choice of affordable vehicle models.
- There is an increasing availability of home, workplace and public charging infrastructure.



³¹ <https://www.fleeteurope.com/en/remarketing/europe/features/residual-values-downward-trend-far-over-2025?a=FJA05&t%5B0%5D=Remarketing&t%5B1%5D=Autovista&t%5B2%5D=Residual%20value&curl=1>

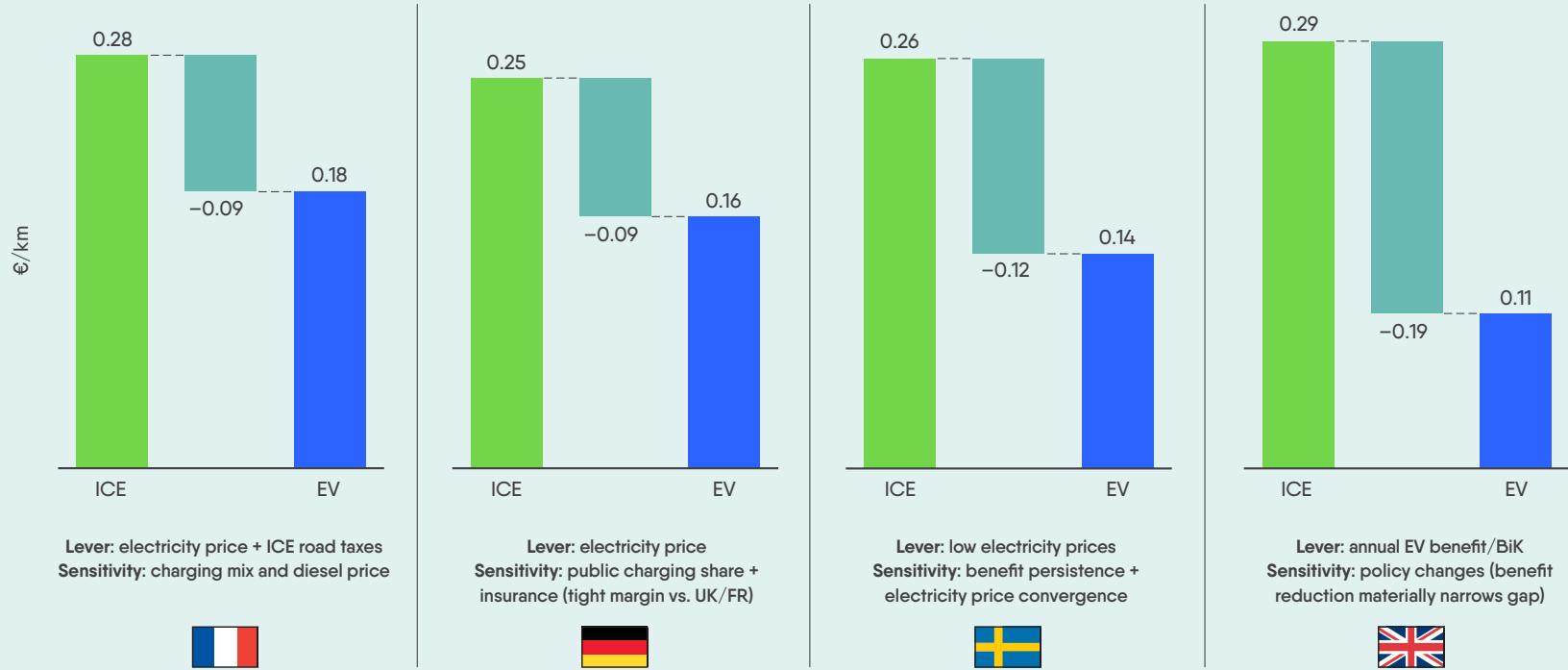
³² <https://www.geotab.com/blog/ev-battery-health/>

³³ https://www.dekra.com/en/batteries-of-electric-cars-are-more-durable-than-consumers-sometimes-fear/?utm_source=web&utm_medium=article&utm_campaign=did_you_know

³⁴ <https://www.mynewsdesk.com/se/kvdbil/pressreleases/stort-elbilsbatteritest-volvo-och-tesla-med-i-toppen-3411234>

Corporate car opex comparison

Figure 9: Opex for diesel vs. electric corporate cars purchased in 2025, in France, Germany, Sweden, and the UK, current policies, €/km



Source: EY analysis.

- Opex is lower for EVs than for ICE corporate cars across all four countries. The extent of reduction differs by market.
- EV opex savings range from ~€0.09 to ~0.15/km (~10% to 30%), reflecting different electricity prices, road charges or tolls, and national tax treatment.
- The UK has the largest EV operating cost advantage, due to policy and road charges, rather than energy costs alone.
- Strong EV BiK treatment, combined with higher ICE exposure to tolls, congestion and clean-air charges, results in the widest EV-ICE gap.
- In France and Sweden, lower electricity prices and road charges, and lower maintenance costs, underpin stable EV savings that are less sensitive to short-term policy changes.
- Germany shows one of the narrowest EV operating cost advantages. Higher electricity and insurance costs, combined with limited toll reductions for EVs, compress the EV-ICE gap and increase sensitivity to power price volatility.

Note: Operating costs reflect per-km variable opex only (energy, maintenance (including tyres), insurance, road charges and tolls and recurring EV tax or BiK benefits) and exclude vehicle purchase price, financing, residual value, charging infrastructure capex and upfront purchase grants. Analysis is based on standardised C-segment corporate car benchmarks (Volkswagen ID.3 vs. Volkswagen Golf 2.0 TDI) operated at 25,000 km/year. Electricity costs reflect a weighted charging mix with country-specific prices; diesel costs reflect prevailing pump prices. Road charges and tolls are country- and vehicle-class-specific, including CO₂-linked vehicle taxes and urban access charges where applicable; no EV-specific motorway toll discounts are assumed unless explicitly stated. Results are shown in €/km, 2025 real terms.

Light commercial vehicle fleets

LCV fleets comprise small electric vans, up to 3.5 tonnes, which are used by last-mile delivery companies and couriers, as well as tradespeople and utility services. Vehicles typically have a daily range up to 250 kilometres, making eLCVs a good choice for users who mostly travel well under 150 kilometres per day.

Their predictability supports chargeability, as well as flexibility services. As LCVs tend to stick to fixed routes or consistent delivery zones, and mostly return to base at night, they present significant electrification potential.

Europe’s van-based last-mile delivery market is fragmented. SMEs operate around 60% to 70% of van fleets, mainly via local and subcontracted providers. They mostly service rural areas and provide fast-turnaround deliveries. Large operators account for roughly 30% to 40% of van fleets, and typically focus on central, high-volume and urban routes.

For SMEs, going electric can present an even bigger financial consideration than for their larger peers. Their business case is sensitive to capital costs, shorter economic lifecycles, asset values and access to charging. However, opex advantages are already available for electric vans, due to their lower energy and maintenance costs. The availability of targeted solutions, such as financial guarantees, flexible leasing structures and simplified TCO tools, could help to make EV adoption more accessible and commercially attractive to SMEs.

Tax incentives can bridge part of this gap. Across Europe, eLCVs enjoy strong advantages, such as 100% deductibility in Belgium, accelerated depreciation in Germany and reduced taxable value in Sweden. Road tax exemptions, or discounts such as Motorrijtuigenbelasting (MRB) in the Netherlands and Vehicle Excise Duty (VED) relief in the UK, also apply.

Figure 10: Key differences in fleet electrification and LCV policy

Aspect	Belgium	France	Germany	Netherlands	Poland	Sweden	UK
Main driver	Fiscal incentives and urban access rules	LOM law mandates EV share; Article 28 (Loi de finances 2025) incentive tax for large fleets >100 vehicles	Tax incentives and urban restrictions	Urban ZEZs push EV uptake	Purchase grants; R&D funding	Tax incentives and green zones	ZEV mandate for vans from 2025
Purchase incentives	Brussels: up to €16,000 per van; Flanders: 35% investment deduction for commercial vehicles and charging	Bonus écologique up to €4,000; regional grants up to €9,000	New incentives return in 2026 (up to €4,000)	eLCVs eligible for MIA/Vamil	NaszEauto: up to PLN70,000 for electric N1* delivery vans	Climate Premium up to SEK50,000 (~€4,400)	Plug-in van grant: £2,500–£5,000
Tax benefits	100% deductibility until 2026, phased down to 67.5% by 2031; reduced VAT	CO ₂ tax exemption; 50% BiK reduction; VAT deductible; penalties rise to €5,000 per missing vehicle from 2027	Accelerated depreciation; reduced BiK	MRB discount (phased); VAT deductible	Higher depreciation limits; VAT reclaim	Reduced taxable value; workplace charging tax-free	100% first-year allowance; low BiK
Road tax	BEVs exempt from annual circulation tax (Flanders); minimal in Brussels/Wallonia	BEVs exempt from annual ownership tax	EVs exempt from motor vehicle tax until 2030	eLCVs exempt from BPM; MRB discount ends after 2025	EVs exempt from excise duty; standard road tax applies	EVs exempt from annual road tax	eLCVs pay £10 first-year VED from April 2025; £195 thereafter
Infrastructure support	Public charging and depot grants	Regional charging subsidies via CEE	Megawatt charging pilots for logistics	Urban hubs and fast-charging corridors	High-powered charging hubs funded (up to PLN6bn/€1.4bn) by government	Workplace charging tax-free until 2026	Rapid charging grants for depots
Policy targets	From 2030, minimum share of ZEVs as corporate vans as per the European Commission's corporate vehicle mandatory target proposal	LOM fleet renewal quotas for light vehicles plus Article 28 targets; from 2030, minimum share of ZEVs as corporate vans	From 2030, minimum share of ZEVs as corporate vans as per the European Commission's corporate vehicle mandatory target proposal	ZEZs mandatory from 2025; from 2030, minimum share of ZEVs as corporate vans	From 2030, minimum share of ZEVs as corporate vans as per the European Commission's corporate vehicle mandatory target proposal	From 2030, minimum share of ZEVs as corporate vans as per the European Commission's corporate vehicle mandatory target proposal	ZEV mandate for vans: rising shares through 2030, 100% ZEV by 2035

*N1 = Light commercial vehicles with a maximum mass not exceeding 3.5 tonnes (3,500 kg).
Source: EY analysis.

Beyond fiscal levers, operational innovation matters. Depot-based smart charging, using time-of-use tariffs, EMS and battery storage, presents opportunities to lower energy bills. V2G, though a nascent technology, promises low-cost charging and new revenue streams. By monetising flexibility and reducing energy costs, these solutions could materially improve EV TCO, helping SMEs overcome financial barriers and future-proof their fleets.

Today, just over 2.5% of LCVs in Europe are electric, but the trend is positive. In 2025, eLCV sales reached 12% market share across Europe, up from 6.5% in 2024, with sales doubling in Germany (11.4%) and the UK (12.1%), and increasing to 10.5% in France.³⁵

EY analysis identifies a clear business case for eLCV adoption:

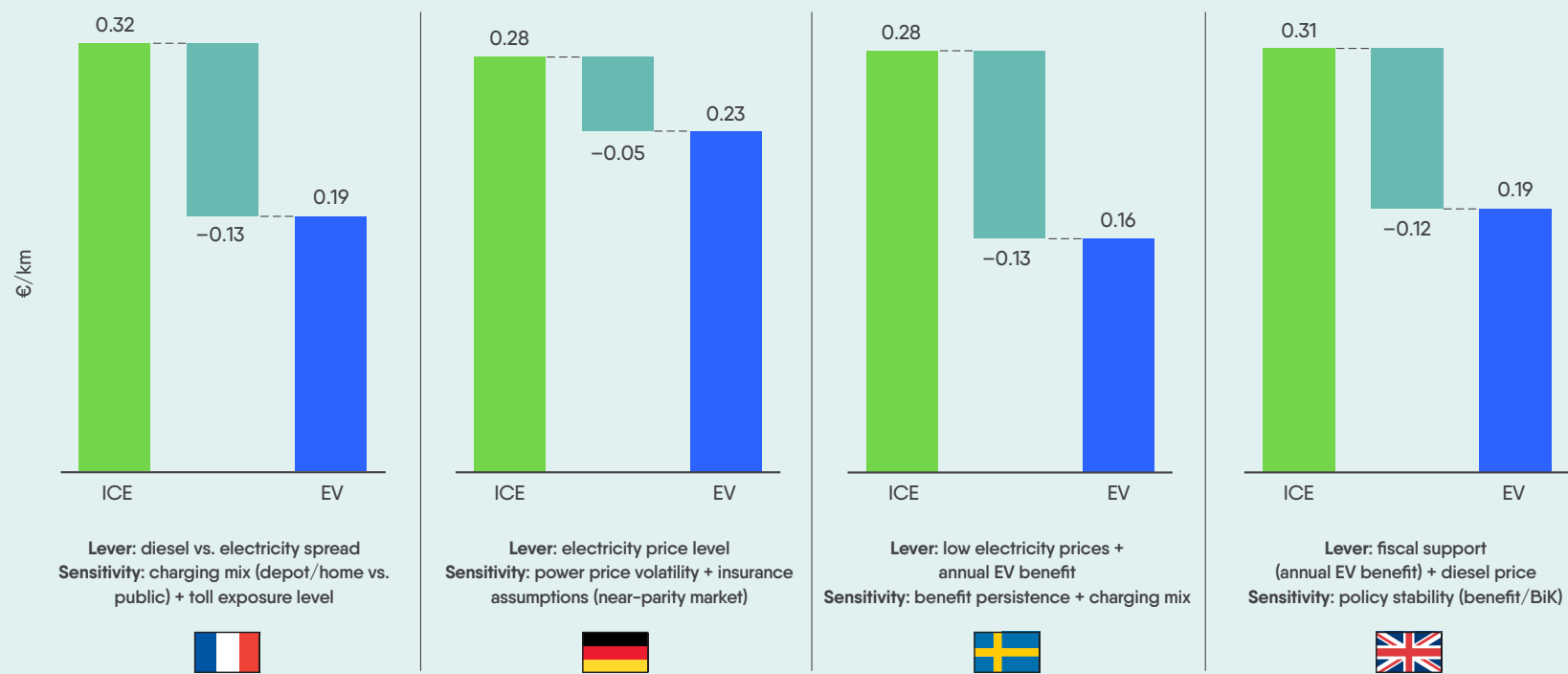
- Reduction of fuel expenses by up to 70% depending on market
- Unrestricted access to city centres; no tolls or route deviations
- Supporting corporate sustainability goals, enhancing ESG ratings, and strengthening reputation with customers and stakeholders
- Grants, rebates and favourable leasing models available to reduce upfront cost barriers and accelerate ROI
- Last-mile optimisation and smart charging flexibility potential, as most vans return to depots at night for charging
- Positioning fleets for long-term competitiveness as zero-emissions regulations tighten and customers demand cleaner logistics
- Greater choice of depot and charging services, such as Fleet-as-a-Service (FaaS) offerings



³⁵ https://www.acea.auto/files/Press_release_commercial_vehicle_registrations_full_year_2025.pdf

LCV opex comparison

Figure 11: Opex for diesel vs. eLCVs purchased in 2025, France, Germany, Sweden, and the UK, current policies, €/km



Source: EY analysis.

- EV vans are cheaper to operate than diesel across all four countries, with operating cost savings ranging from ~15% (Germany) to ~40% (France). It confirms EV competitiveness without over-reliance on incentives.
- France has the strongest EV operating cost advantage (~40%), driven by energy cost savings and materially lower road charges and tolls. Maintenance savings provide a small additional uplift.
- The UK demonstrates a clear EV advantage (~35% to 40%), due to high diesel prices, lower EV exposure to road charges and recurring fiscal benefits. Though largely policy-driven, the UK's results are structurally favourable to EVs. Incentives (ultra-low emission zones, congestion charges, BiK tax) play a critical role.
- Germany's EV van advantage is the narrowest, as higher electricity prices and insurance costs offset lower EV energy and maintenance benefits. Upfront premiums keep ICE prices cheaper.
- Sweden's low electricity prices, and congestion and CO₂ tax structures, support eLCV economics. Savings depend on high depot and home charging vs. public charging.

Note: Operating costs are shown in €/km and include recurring in-use costs only: energy, maintenance (including tyres), insurance, road charges and tolls, and recurring EV operating incentives. The analysis excludes vehicle purchase price, financing, residual value, charging infrastructure capex and upfront grants. Results are based on mid-sized vans operated at ~40,000 km/year, using country-specific energy prices and road-charge regimes, with a depot and home-heavy charging mix. Values shown in 2025 real terms.

Medium and heavy commercial vehicle fleets

MCVs range from 3.6 to 12 tonnes. They typically handle regional distribution and deliveries, and small-scale refuse collections. The current electric MCV (eMCV) market comprises around 10 series-produced models. Automakers have prioritised controlled scaling over expanding their full portfolios. As a result, upfront vehicle costs are higher – around €150,000 to £250,000 for an eMCV vs. €80,000 to £120,000 for diesel. Today, eMCVs are at an early-deployment stage, making up around 1.5% of all MCVs registered, but reached a 15.4% market share in 2025. Technology readiness, economics and infrastructure must align to accelerate take-up.

HCVs include long-haul trucks, articulated lorries and large construction vehicles. Today, most electric HCVs (eHCVs) are already capable of between 250 and 500 kilometres on a single charge. This is increasingly relevant, given that around 45% of all goods transported by road in Europe travel less than 350 kilometres each day.³⁶

It means that a significant share of fleet operations could be electrified without the need to rely routinely on public charging.

At present, eHCVs account for just 0.3% of the HCV fleet, which illustrates that widespread adoption does not hinge on vehicle capability alone, but on the alignment of other enabling conditions. Though a nascent segment, truck electrification is led by the Netherlands, Germany and France, which account for two-thirds of sales. eHCV sales across Europe reached 2.1% market share in 2025, up from 1.3% in 2024.³⁷

eHCVs benefit from lower scheduled maintenance costs compared with diesel, although tyre replacement costs can be higher. Overall operating economics are shaped, increasingly, by when and where vehicles charge. Continued advances in battery technologies and charging strategies are key to improving performance across weight, range and payload-intensive applications. Charging times must also be better aligned with fleet operators' demanding logistics schedules.

The case for electric trucks

Research by Volvo Trucks reveals that 45% of trucks in Europe travel fewer than 350 kilometres per day. Internationally, 33% of trucks cover daily distances of 500 kilometres or less.

It defuses arguments that electric trucks must match up to diesel-powered HCVs that can travel up to 600 kilometres on one tank. And it means a significant proportion of medium-range transport could be carried out by electric trucks today.

Using smart-route planning and scheduling, trucks make ideal candidates for electrification and will see a reduction in diesel costs.



Source: <https://www.volvonautomoussolutions.com/en-en/news-and-insights/insights/articles/nov/long-range-electric-trucks-ready-today.html>.

³⁶ [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Road_freight_transport_by_distance_class,_2018-2020_\(million_tkm\).png&olidid=546477](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Road_freight_transport_by_distance_class,_2018-2020_(million_tkm).png&olidid=546477)

³⁷ https://www.acea.auto/files/Press_release_commercial_vehicle_registrations_full_year_2025.pdf

Availability is everything in the trucking industry; downtime costs money. Dependable en-route and destination charging is an imperative for electric trucks. It unlocks a strong economic case for electrification and creates a clear opportunity for investment in dedicated hubs with ultra-fast megawatt charging along major corridors. Given the significant future power demand from charging, anticipatory grid investments are critical to the timely deployment and operation of these charging hubs.

Depot charging remains the primary eHCV solution today. While space and layout considerations influence how high-power charging infrastructure is deployed, innovative depot design and shared-use models create opportunities to monetise charger downtime. When allowing other users to charge while fleet vehicles are on the road, operators must be mindful of insurance restrictions and liabilities.

Significant progress is being made on Megawatt Charging Systems (MCS) for large battery vehicles. Commercialisation is expected in 2026, according to Milence, which is building and operating high-performance charging networks for eHCVs across Europe. It is expected that MCS will be adopted into AFIR and other European laws. The goal is to enable 700- to 800-kilowatt-hour (kWh) charging within 30 to 40 minutes, which will coincide with drivers' mandatory 45-minute breaks.

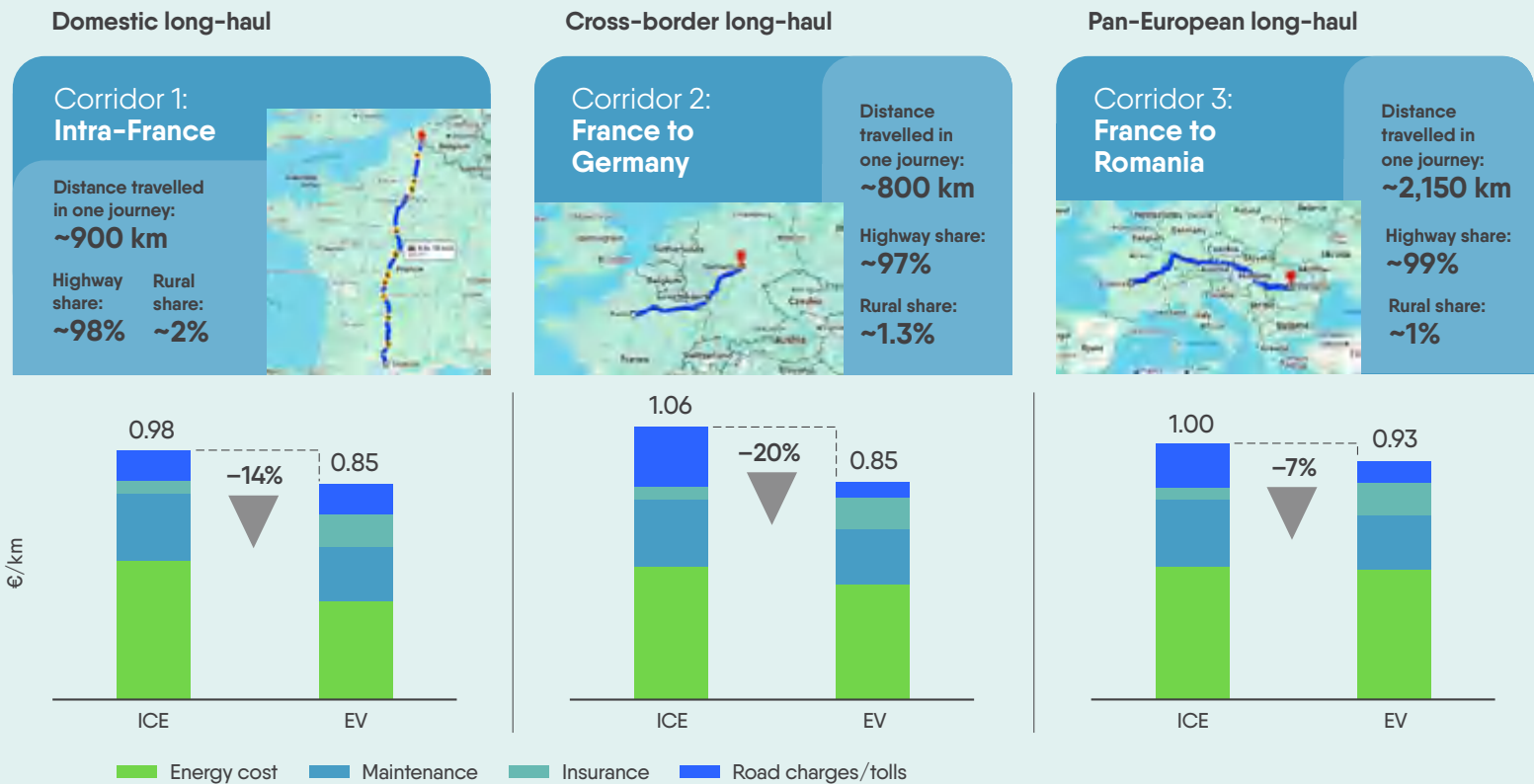
EY analysis identifies a business case for eMCV and eHCV adoption:

- Opex for electric trucks can be lower than for diesel, based on savings from lower energy and maintenance costs. Only unscheduled repairs and tyre wear present potential cost anomalies – particularly for early diesel-to-electric conversions or in applications with demanding duty cycles.
- Grants, tax breaks and innovative leasing models are available to reduce initial cost barriers and improve ROI timelines.
- Ensures compliance with low emission zones and future restrictions, avoiding costly route limitations and charges.
- Meets EU and UK CO₂ reduction targets (–45% by 2030, –90% by 2040) and avoids penalties as zero-emission mandates tighten.
- Strengthens sustainability credentials, supports corporate climate goals and enhances brand reputation in business-to-business contracts.
- Ensures fleet readiness for future regulatory and electrification mandates.
- Supports participation in current and emerging energy services, including smart charging and, potentially, V2G.



HCV opex comparison

Figure 12: Opex for diesel vs. eHCVs purchased in 2025 by different routes, current policies, €/km



Source: EY analysis.

- Electric trucks are cheaper to operate across all three routes. Opex advantages range from ~7% (France to Romania) to ~20% (France to Germany) vs. diesel, and ~14% on intra-France routes.
- Savings depend on charging mix: Higher en-route charging on long-haul routes (France to Romania) reduces the cost savings compared with depot-based charging.
- Maintenance savings are structural and consistent, with EV maintenance around €0.05/km lower than for ICE vehicles across all routes. It reflects fewer moving parts and lower drivetrain wear for electric trucks.
- Road charges and tolls materially shape route outcomes. Cross-border corridors (France to Germany) amplify the EV advantage, as diesel trucks are more exposed to tolls. Intra-France tolls remain largely powertrain-neutral.
- Insurance costs partially offset EV savings on all routes, due to higher insured asset values. They do not outweigh energy and maintenance benefits under current assumptions.
- Operating-cost leadership does not imply full TCO parity. Higher upfront capex and residual value uncertainty remain significant factors for total cost outcomes, especially on long-haul routes.

Note: Operating costs are calculated on a €/km basis using recurring in-use costs over a five-year ownership period and include energy (electricity, diesel), maintenance (including tyres), insurance, and road charges and tolls. Infrastructure capex and vehicle purchase costs are excluded from operating costs and assessed separately in TCO. Assumptions reflect standardised 40-tonne tractor benchmarks, route-specific mileage, weighted depot vs. en-route charging prices and current national toll regimes. Results are sensitive to electricity prices, diesel prices, charging mix, toll structures and annual utilisation.

A blue semi-truck with a crane on its back, driving on a bridge over water. The truck is moving towards the right. The background shows a clear blue sky and distant mountains.

2

Insights from industry: obstacles and complexity

- **Fragmented and inconsistently applied EU policy frustrates planning for electrification.**
- **The rollout of charging infrastructure is only possible if Europe invests in a robust electricity grid infrastructure.**
- **Fleet operators need to switch from a “fill up” mindset to scheduled and optimised charging.**

Four main obstacles stand in the way of fleet electrification, say industry leaders

Despite strong policy momentum, there are practical and structural challenges still slowing the transition to zero-emission fleets. In conversation with industry, four key problem areas emerge repeatedly, which impact each vehicle archetype in unique ways.

These barriers span regulatory, economic, technical and operational dimensions. Importantly, they also vary by geography, due to differences in infrastructure maturity, policy support, market readiness and economic conditions. What works for one vehicle archetype in one Member State cannot be considered true for another.

Equally, it should be noted that the maturity of the car-based fleet segment leaves it least exposed to barriers to electrification. Conversely, the more nascent eMCV and eHCV segments are disproportionately impacted.

Progress in dismantling these four obstacles will be critical to making fleet electrification mainstream and capitalising on opportunities for monetisation.

Obstacle 1

Policy fragmentation undermines fleet TCO certainty

Opex advantage for BEVs is clear for all segments. However, the overall TCO benefit depends on the use case, because it is still influenced by upfront vehicle acquisition costs and residual value uncertainty. These pressures are magnified by fragmented and short-lived policy support across Member States.

The fact is that EVs still carry a price premium. Although premiums are reducing, without predictable incentives under a clear policy trajectory towards electrification, the TCO balance can swing sharply. For company car fleets, we see how stable BiK treatment in Belgium and the UK can help absorb this price premium. Meanwhile, in markets such as Poland, with fewer supportive tax levers, it becomes more difficult to close the gap.

The effect is more pronounced for eLCVs, where purchase prices at €5,000 to €12,000 higher can deter SMEs, which account for most operators. And it is even more acute for electric trucks, which can cost two to three times more than their diesel equivalents.

This uneven incentive landscape directly shapes running costs too. Regulatory levers that influence opex, such as toll exemptions and clean-air access rules, can materially improve EV economics where they are consistently applied. For instance, Germany's CO₂-based truck tolling improves the economics of long-haul eHCV routes.

Yet many Member States are still to implement Eurovignette ZEV exemptions – or they offer only partial relief. As a result, two identical cross-border routes can generate very different operating cost outcomes, making opex forecasting unpredictable for pan-European fleets.

The Eurovignette

The Eurovignette system is an EU-wide framework of tolls or road charges on HCVs, based on distance, time or vehicle emissions. To encourage the shift to zero-emission logistics, it allows Member States to grant road toll exemptions to battery electric and fuel cell trucks and buses. The European Commission recently extended this exemption to 30 June 2031, allowing full

toll relief for zero-emission HDVs if national governments choose.

Only a few countries, such as Germany and Austria, currently apply full exemptions. Ten Member States apply reduced rates (up to 75%), while others have yet to introduce any form of zero-emission toll relief.³⁸

Short-lived purchase incentives compound this volatility. When grant schemes close early, or eligibility rules change, as seen in several national truck subsidy programmes, fleets face sudden shifts in expected cost recovery. This raises lease rates and increases depreciation risk, particularly for vans and early-stage electric trucks, where residual values are already fragile. The inability to plan procurement cycles around stable incentive programmes can erode the underlying opex advantage that EVs already deliver.

These combined factors – higher upfront costs, uncertain residual values, inconsistent tolling benefits and volatile incentive schemes – create a moving TCO target. Even where the intrinsic economics are strong, for operators that replace their vehicle assets every three to five years, this uncertainty directly influences when and whether to electrify.

³⁸ https://www.transportenvironment.org/uploads/files/202403_TE_Eurovignette_briefing_update.pdf

³⁹ <https://alternative-fuels-observatory.ec.europa.eu/reports/statistics>

⁴⁰ https://energy.ec.europa.eu/publications/guidance-efficient-grid-connections-c2025-8473-final_en

Obstacle 2

Infrastructure and grid connections

Progress is being made on the rollout of charging infrastructure, both for public use and at private depots that support car- and LCV-based fleets. By the end of 2025, there were more than one million publicly accessible charging points, up 17% on 2024, with DC fast chargers increasing 31%.³⁹ But parallel expansion of truck-charging infrastructure is needed to support real uptake in long-haul EVs.

In some countries, restricted access to grid capacity has prevented the rapid expansion of charging infrastructure. The European Commission stated that at least 16 Member States faced grid connection queues in mid-2025.⁴⁰ This is attributed to the restrictive and cost-savings-focused regulatory framework for European distribution system operators (DSOs). And it coincides with the increasing electrification objectives of multiple end users across sectors.

Customers seeking a grid connection highlight a lack of visibility over available grid capacity. It reflects the obligation on regulated network operators to treat all connection requests equally, typically on a first-come, first-served basis. While this approach ensures non-discriminatory access, it can prove less efficient in practice. Many Member States cite speculative or inactive applications, which reserve capacity for extended periods, just because they are first in the queue. As a result, connection lead times of 18 to 36 months are not uncommon, with knock-on delays for HCV depot electrification and fleet deployment.

DSOs, meanwhile, are acting although they are at different stages of deploying improved queue management systems. The greater the number of vehicles that need to charge in one place, such as at the fleet operator's depot, the more important it becomes to prepare the grids for additional load with anticipatory investments and accelerated permitting.

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The problem is that we must take everything in the connection queue at face value. The Connections Reform is trying to separate what is speculation from what is ‘shovel ready’ and will be delivered.

Abbie Badcock-Broe

Head of Corporate, UK & Decarbonisation Strategy, National Grid Group

Increasingly, fleet operators manage grid connection limitations by deploying interim solutions, such as behind-the-meter storage and EMS. Though these measures can add to system

complexity and capital investment, they provide practical means to accommodate near-term electrification needs with flexibility.

Obstacle 3

Education, information and operations

Limited industry and government guidance, resources and expertise on moving fleets from ICE to electric create additional barriers to adoption.

Electrification requires a fundamental shift from a “fill up” mindset to scheduled charging. It takes cultural change, supported by robust planning tools.

It also involves changes to fleet operating practices. Aligned duty cycles, charging targets and depot grid capacity limits are needed to optimise fleet performance. Integrated data platforms and intelligent scheduling solutions are vital for streamlining operations, enhancing transparency and maximising fleet uptime.

Fragmented billing and transaction data across home, depot and public charging networks add complexity, which can inflate costs and reduce utilisation. Users want more straightforward

processes and training on how to get the most out of their charging and payment apps.

Fleet operators also need clear information about the incentives available to them, which could ease the costs of electrification. They want guidance on how to get started so they can see beyond the headline costs of a new vehicle plus charger. They need to understand how electrification can work for them, and the e-mobility solutions that are right for their industry segment. And they want updates on improvements in battery performance and the certainty it will bring to residual values, especially for car-based fleets.

Obstacle 4

Standards and data interoperability

Technical standards remain a critical dependency for scaling fleet electrification.

Finalising the MCS standard and aligning it with AFIR requirements are near-term priorities. Delays in adoption could slow the rollout of long-haul electric trucks beyond 2028, while interoperability gaps across borders hinder seamless charging experiences for operators.

Standardisation and interoperability are essential to future-proof EV infrastructure, yet adoption can be slow. For instance, ISO 15118-20 – enabling Plug & Charge and bidirectional charging – is becoming

mandatory under EU rules by 2027 for new public and private chargers, but implementation remains uneven today. For fleet operators, these standards will eventually unlock coordinated multi-vehicle charging at depots and create monetisation opportunities through V2G services, turning parked vehicles into grid assets.

Yet some Member States are further behind the curve. For example, Germany is making slow progress on the rollout of smart meters, which are critical for scaling up EV adoption and turning EVs into grid assets.

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We urgently need regulation that brings manufacturers onto the same page for battery data and smart charging. Fragmented standards aren't just a headache, they're slowing everything down. They block innovation, make systems harder to connect, and stop fleets and finance providers from getting the full value out of their vehicles.

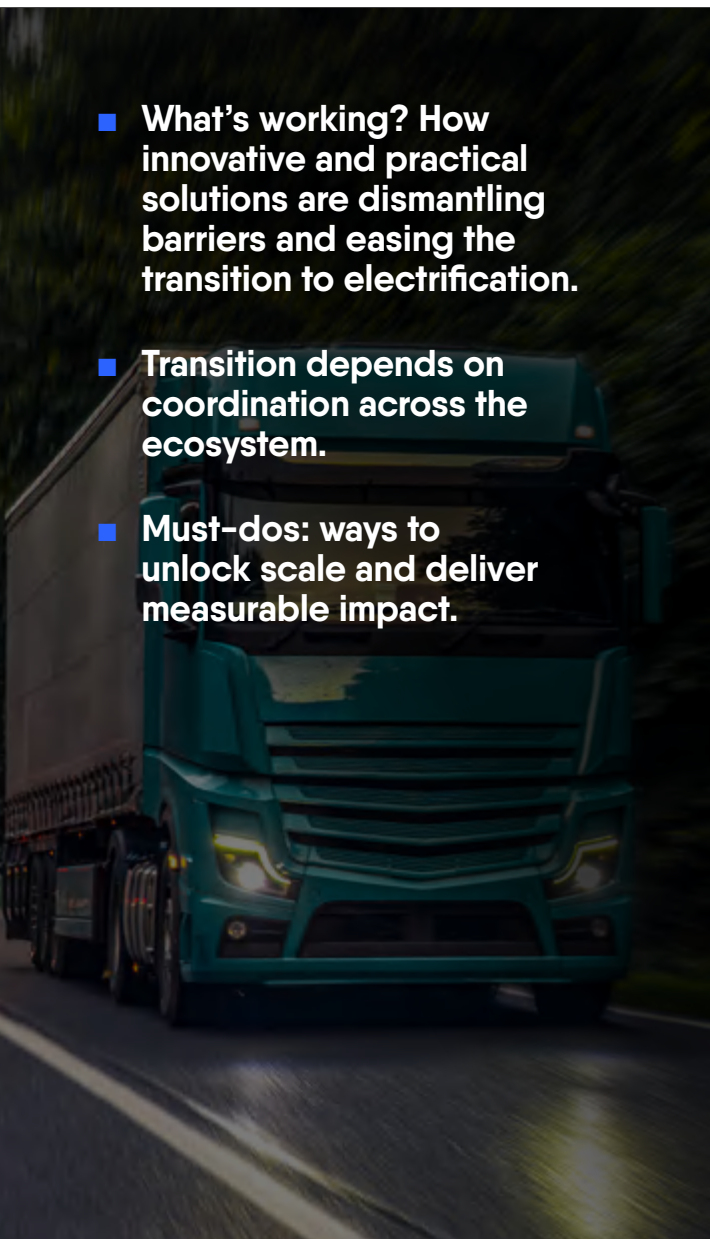
Natalia Silverstone

Head of proposition, Octopus EV

3

Solutions and operating models that scale





- **What's working? How innovative and practical solutions are dismantling barriers and easing the transition to electrification.**
- **Transition depends on coordination across the ecosystem.**
- **Must-dos: ways to unlock scale and deliver measurable impact.**

Where electrification policy is working

Fleet electrification moves fastest when we remove the biggest sources of uncertainty: costs, compliance risk, urban access and infrastructure availability. Some countries are getting this right.

Predictable company car taxes in Belgium and the UK provide certainty, decisively steering both fleet procurement and drivers towards EVs instead of ICE vehicles. Austria and Finland take a similar approach. By keeping company car and workplace charging taxes simple and stable, they reduce hassle for drivers and make EVs the easy choice.

France demonstrates how binding quotas on low-emission fleets, with €4,000 penalties per non-compliant vehicle, increase the economic advantage of EVs for fleets. The Netherlands, meanwhile, proves how access rules in urban ZEZs turn EVs into a licence to operate. For last-mile logistics providers, it is hastening the switch from ICE to electric.

Where capex is the blocker to electrification, government policy can unlock access. Spain and Germany show that EV purchase or charging grants, and accelerated depreciation, can improve cashflow and reduce investment risk. This helps companies to scale EV fleets beyond pilots.

Industry innovates: from small scale to real-world implementation

Direct engagement with industry reveals that fleet electrification is not just theoretical — it is happening today. Real-world deployments provide insights beyond what data alone can offer. They expose practical challenges and showcase creative solutions that address the barriers to scale.

Policy levers

Policy is the cornerstone that underpins every business case. Industry commentators tell us that scaling fleet electrification depends on harmonised and consistent deployment of rules and regulations across EU borders. Clear and defined standards and targets help to strengthen investor confidence in fleet electrification.

Emerging proposals include AFIR-compliant access and payment systems, HCV road toll exemptions, queue reforms (“first ready, first connected”) and transparent capacity maps.

Battery passports and SoH standards will support the residual values of EVs, while the introduction of corporate-fleet reporting targets will accelerate adoption. CO₂-based tolling and ZEZs, already in place in Germany and the Netherlands, are proven to materially improve TCO when paired with targeted grants and green finance tools for SMEs.

At Plug, an online marketplace for used EVs, founder Jimmy Douglas says:

“There is massive opportunity in second-life EV leasing. Most people underestimate EV battery resilience. Battery data shows vehicles retain 85%-88% capacity at 200,000 miles, which suggests a 400,000 to 500,000 mile useful life is possible.”

Fiscal incentives currently remain the most effective way to close the TCO gap, especially where EVs carry higher upfront costs and weaker residual values. Stable, multi-year schemes, such as Belgium’s company car deductibility or France’s Bonus Écologique, help fleets to manage EV price premiums. Truck subsidies, ranging from €53,000 in France to €135,000 in the UK, can determine whether eHCVs reach TCO viability at all. A more harmonised and predictable fiscal framework would give operators the cost certainty needed to electrify at scale.

Residual value management: standards, guarantees, buybacks

Residual value management is becoming a key enabler of fleet electrification by reducing uncertainty around long-term asset value and improving TCO.

Insurance-backed residual value guarantees shift depreciation risk away from operators by underwriting future battery performance and resale value. They give fleet operators greater confidence to electrify. Independent SoH certification from TÜV and DEKRA, together with emerging battery-passport standards, provides trusted

data on battery condition and supports more accurate second-hand pricing.

OEM buyback programmes further strengthen predictability by offering guaranteed exit options. Meanwhile, as second-life markets mature, batteries are increasingly recognised as valuable multi-use assets rather than end-of-life liabilities. Similarly, stationary storage applications already demonstrate durable residual value, reinforcing confidence in long-term EV economics.

Integrated platforms from providers such as Ayvens and Arval, which bundle insurance, SoH certification, buyback and battery-analytics services, offer practical and scalable residual value solutions – helping fleets, financiers and policymakers unlock investment and accelerate the shift from pilots to mass electrification.



New models fill the financing gap

To tackle economic and TCO barriers, new financing and service models are emerging:

- Leasing 2.0 is tech-enabled and more flexible than traditional asset leasing. It incorporates the EV, charger installation and electricity use in a monthly flat fee.
- Charging-as-a-Service (CaaS) is a turnkey solution that provides, installs, operates and maintains EV charging infrastructure. With no upfront capital cost for chargers, it works on a usage or subscription basis to simplify a fleet's transition to electric. CaaS also supports energy management and flexibility services through load balancing and renewable energy integration.

Finnish CaaS provider Virta works with DSOs to secure long-term contracts for urban and regional fleet. It aims for 75% charging at depot.

“Fleet charging will be predictable and profitable – public charging can’t match that on the same terms, as utilisation is the name of the game,” says Christian Girardeau, CSO, Virta.

- Fleet-as-a-Service (FaaS) is a subscription-based, fully managed fleet solution. It allows companies to outsource management of their fleets to a third-party provider, removing the need to own assets outright. Highly scalable, the FaaS package bundles EVs, charging infrastructure, fleet management software and operational support at a per-kilometre or per-kilowatt-hour rate. Digital platforms integrate telematics and data analytics, including route optimisation, while real-time asset monitoring and predictive maintenance optimise vehicles' residual values for lease providers.

Novuna, a UK-based financing services and vehicle leasing company, recognises that capex is one of the biggest barriers to fleet electrification. Novuna's packaged solution includes supply and management of vehicles; installation of home, depot and public charging infrastructure; and online tools to support EV drivers, and manage energy costs. Its aim is to make EV leasing equitable and to support scaling as fleet electrification needs evolve.

Together, Leasing 2.0, CaaS and FaaS shift capex off operators' balance sheets. They de-risk investments and bundle uptime with energy guarantees. These models also create structured pathways for certified-used assets, improving the residual values of EVs and boosting market confidence.

HCV charging on major road networks

Corridor-based charging hubs for HCVs are helping to address grid and site constraints. These hubs integrate reservation systems that lock in utilisation. They co-locate storage and renewable energy and are preparing for MCS technology. A 700 to 800 kWh charge, in just 30 to 40 minutes, aligns with driver's mandatory rest breaks, reducing range anxiety and optimising infrastructure usage.

Milence is deploying a €111.5 million EU grant to build a pan-European truck-charging network ahead of rising HCV demand. Across 71 sites in 10 Member States, it is installing high-power chargers with co-located storage and renewables to guarantee uninterrupted supply. A reservation-based system secures utilisation and gives hauliers confidence in charging availability. Milence is also rolling out 25 MCS, enabling 700 kWh to 800 kWh top-ups during drivers' 45-minute breaks, cutting downtime, improving TCO parity and accelerating CO₂ reductions in freight transport.

Source: <https://milence.com/app/uploads/2025/07/Factsheet-Milence-2025-July-ENGLISH.pdf>

FaaS for infrastructure

To overcome high upfront costs and grid delays, fleet operators are leasing DC chargers. They are also turning to bundled solutions, which include vehicles, depot and home charging, and access to public charging infrastructure, all underpinned by uptime service level agreements (SLAs). Battery-integrated chargers, deployed at energy-constrained sites, reduce dependency on immediate grid upgrades and accelerate time to market.

Among the pioneers is Swedish technology company Einride. It develops freight mobility solutions for electric and autonomous vehicles, with tailored depots, power reservation and battery energy storage system integration to control energy costs and availability.

Integrated transactions and reimbursements

Platforms that can provide a single view of charging events across home, depot and public networks are resolving operational complexity and fragmented data. They pave the way to fleet-wide optimised energy procurement.

Automated systems simplify reimbursements. As data scales, dynamic price signals will direct employees to charge when energy costs are low, reducing the fleet operator's overall bill.

In time, operators will optimise around real-time grid prices and availability of renewables. And, by aggregating home, depot and public charging data, and perhaps even bulk buying energy with power purchase agreements (PPAs), EVs can become a strategic part of fleet-wide energy procurement.

Octopus Energy's Electroverse card gives employees access to 80% of the UK's public charge points. It makes on-the-go charging simple, with data centralised and billed back to the fleet operator.



For its corporate clients, Portuguese mobility company Ayvens offers an integrated leasing contract, which includes vehicles, charge points and installation. Employees, using the same card to charge on both the public network and at home, are reimbursed immediately.

Flexibility and energy integration

By transforming depots, airports and car parks into energy centres, grid constraints can be mitigated. Smart charging and unidirectional managed charging (V1G) are the priority technologies today, and continue to scale, though selective V2G is emerging where fleet duty cycles allow.

Behind-the-meter energy hubs, combining battery storage and solar photovoltaics with an EMS, can help operators to avoid peak-power fees and de-risk connection delays. Subject to DSO consent and security of supply, energy hubs can create more investable and schedulable assets at logistics sites.

Co-locating storage and onsite renewables, standardising participation in flexibility markets and publishing an energy procurement playbook – from fixed blocks to corporate PPAs – are critical steps to support energy integration.

At Welch Group, 5% of the fleet is already electric, and expected to rise to 10% by September 2026. It is experimenting with bidirectional charging by repowering a diesel truck with an electric powertrain. Plugged in at the depot, it will turn the battery into an energy asset.

In Ireland, energy company ESB recognises the significant opportunity to transform existing car parks into multi-purpose energy hubs. By deploying solar carports, these sites can generate clean electricity, support EV charging, and offset energy use in adjacent retail and commercial units—maximising the value of under-utilised space while accelerating the energy transition.

Looking ahead, Paul Fitzpatrick, Head of Customer Solutions for EV-Mobility, sees even greater potential through V2G technology. At locations such as airports where thousands of EVs remain parked for extended periods V2G could create a large, flexible energy resource. In exchange for reduced parking fees, customers could opt to make their vehicles available to support the grid. With many cars stationary for up to two weeks, this aggregated capacity could help airports operate with a high degree of energy independence, enhance grid stability, and contribute to Ireland's broader decarbonisation goals.

Ways to optimise charging infrastructure

The predictability of routes means that fleets typically charge at depots between 6:00 p.m. and 6:00 a.m. Opening depots, where permitted, for public charging during the daytime, when chargers are not typically in use, or converting airport car parks into energy centres are among the ways to optimise charging infrastructure. They raise charger utilisation and revenues while supporting broader network resilience.

The Regulatory Assistance Project modelled optimised smart-charging patterns for all EVs at depots and on highways in Paris in 2040. It identified potential savings of 25% on annual grid investment costs, as well as reduced peak in the daily load curve.



ESB sees potential in putting charging infrastructure to use 24/7, subject to relevant insurances. Opening the depot to the public, or other corporate users, will generate revenues for the depot owner, minimise the need for grid reinforcements and reduce local authority investment in public charging infrastructure.

Figure 13: Barrier resolutions

Solution/model	Barriers resolved	Which stakeholders benefit	Why it matters
Policy levers	Regulatory fragmentation, residual value risk, grid access delays	Governments, OEMs, fleet operators	Harmonises standards, enables battery passports and supports used EV markets
Residual value management	Residual value risk	Car-based and LCV fleet operators, leasing companies, OEMs	Stabilising residual values can improve TCOs and boost confidence in used EVs
Leasing 2.0	High upfront costs, residual value risk, infrastructure capex	Car-based and LCV fleet operators, leasing companies OEMs	Bundles EV, charger and energy into predictable monthly cost; de-risks investment and simplifies adoption
CaaS	Depot charging capex, grid delays, maintenance complexity	Fleet operators, CPOs	Removes upfront cost, enables scalable infrastructure and supports uptime guarantees
FaaS	Operational complexity, TCO uncertainty, downtime risk	Fleet operators, leasing companies, technology providers	Fully managed fleet solution with per-kilometre pricing, predictive maintenance and route optimisation
HCV charging on major road networks	Corridor infrastructure gaps, range anxiety, grid bottlenecks	HCV operators, CPOs, governments	Enables long-haul and regional trunk electrification with MCS-ready hubs and reservation systems
Finance as-a-Service for infrastructure	Grid delays, capex barriers, slow deployment	Fleet operators, energy companies, leasing companies	Accelerates time to market by leasing DC chargers and bundling uptime SLAs
Integrated transactions and reimbursements	Charging data fragmentation, cost recovery issues	Fleet operators, technology providers, energy companies	Enables fleet-wide energy optimisation, dynamic pricing and automated driver reimbursements
Flexibility and energy integration	Grid capacity constraints, peak demand charges	Energy companies, DSOs, fleet operators	Turns depots into energy hubs with V2G, solar and storage; supports grid services
Ways to optimise charging infrastructure	Low charger utilisation, infrastructure ROI risk	CPOs, municipalities, fleet operators	Opens depots for public charging during off-peak hours and boosts asset utilisation

Source: EY analysis.

The shift to fleet electrification stands to unlock environmental and economic value, substantial reductions in CO₂ emissions, meaningful flexibility for the grid, and significant TCO savings for high-mileage vans and freight operators.

But while the transition to zero-emission fleets is accelerating, progress depends on coordinated action across the ecosystem.

Obstacles, which range from policy fragmentation and grid constraints to economic risk and operational complexity, require targeted interventions. By leveraging emerging solutions that are already proving effective in real-world deployments, stakeholders can unlock scale and deliver measurable impact within the next two years.

From challenge to implementation: What next?

Our in-depth conversations with industry stakeholders reveal what needs to change, the opportunities available and the immediate steps for each stakeholder group.

Fleet operators and logistics

Fleet operators must treat energy as a schedulable input, linking routing and charging to optimise costs and uptime. Opening depots to the public during the day can raise utilisation and revenues, while adopting an EMS with reimbursement and flexibility modules allows participation in the emerging energy markets.

Next steps:

- Identify the business case for fleet electrification.
- Car-based fleets: Adopt FaaS and CaaS leasing solutions to remove capex from balance sheets and to benefit from predictable opex costs.

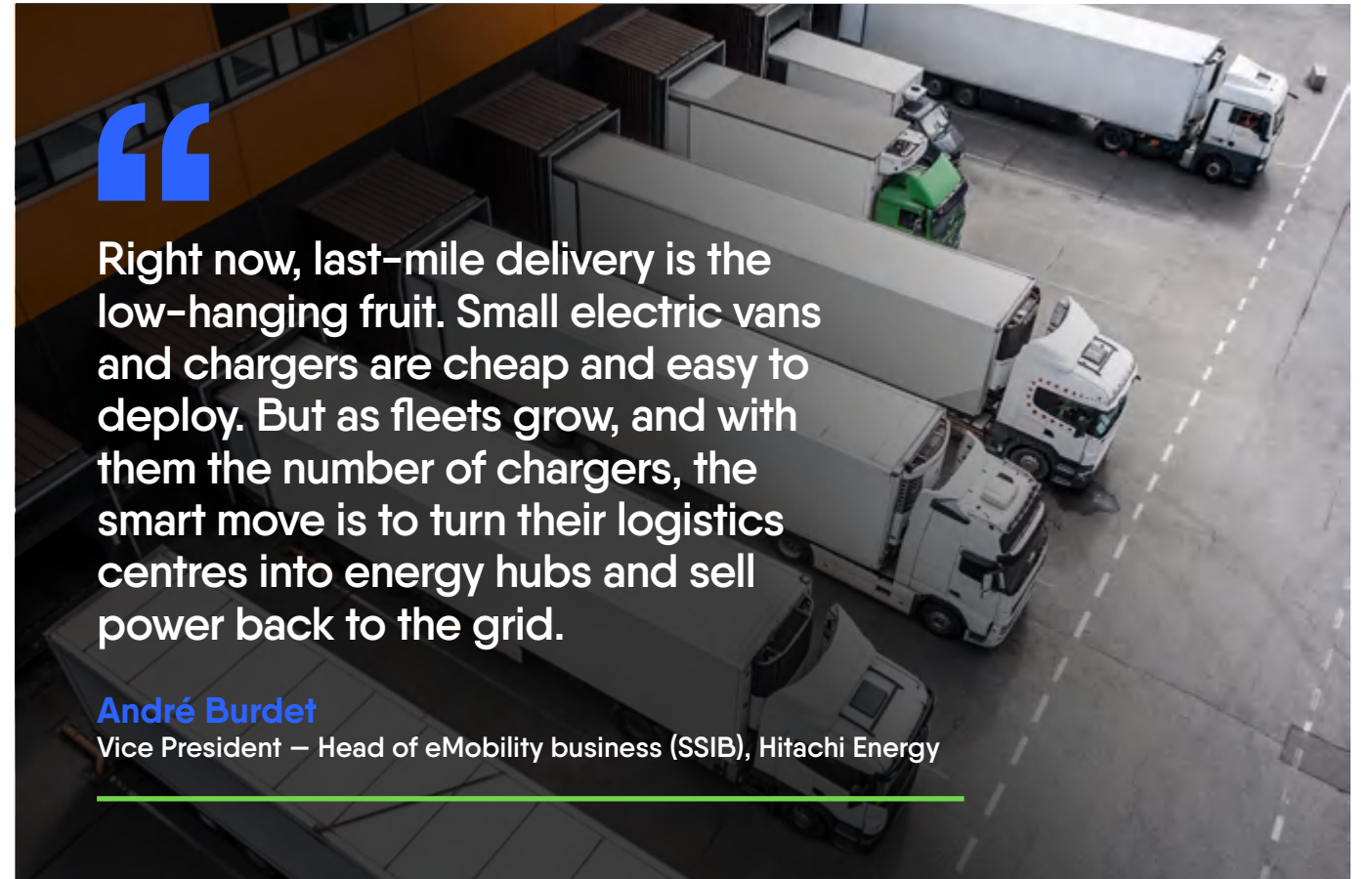
- LCVs: Adopt schedule-aware charging and open depots for public use, where permitted, to lower opex and unlock new revenue streams.
- MCVs and HCVs: Expedite installation of DC fast chargers at depots and integrate behind-the-meter solar and storage for cost optimisation. Invest in driver training and digital route optimisation tools to maximise EV efficiency across all archetypes.
- Evaluate and adopt the right residual value management options, whether insurance, SoH certification or OEM buyback guarantees.
- Develop hands-on training modules for depot managers and fleet planners, and provide digital guides and e-learning platforms for ongoing education.



Right now, last-mile delivery is the low-hanging fruit. Small electric vans and chargers are cheap and easy to deploy. But as fleets grow, and with them the number of chargers, the smart move is to turn their logistics centres into energy hubs and sell power back to the grid.

André Burdet

Vice President — Head of eMobility business (SSIB), Hitachi Energy



Energy companies: utilities, transmission system operators (TSOs) and DSOs

Energy companies are becoming active partners in electrification.

Regional energy system plans can provide a spatial view of how energy demand and supply align with network capacity. They help network planners to decide where to expand or upgrade infrastructure. Transparent capacity maps, and pragmatic queue reforms, will reduce delays and optimise grid utilisation.

And rather than locking depots into rigid grid allocations, “flex by design” will allow infrastructure and energy systems to adapt with evolving needs. The opportunity lies in creating new flexibility markets, aggregating depots for demand-side participation and enabling corridor-charging programmes.

Next steps:

- If technically available, and when it is cost-efficient, provide transparent information on renewable electricity share and emissions content, as mentioned in Article 20a of the revised Renewable Energy Directive (RED III). Enable smart and bidirectional EV charging with the deployment of smart meters.
- Enable consumers to assess their connection capacity down to low voltage, including planned and reserved capacity.
- Offer fully digital connection procedures and integrate them with internal grid data systems for faster processing.
- Scale flexible connection agreements (e.g., non-firm access) with incentives, using complementary load profiles.
- Develop time-of-use tariffs and flexibility programmes to incentivise off-peak charging for LCV and MCV depot fleets.



Smart charging has shifted from a niche subject to a central policy tool. It is now recognised as essential for addressing grid integration challenges as electrification accelerates across Europe. All electrification policies in Europe related to transport will need to prioritise smart charging as the default solution.

Julia Hildermeier

Global Lead Flexible Demand, Regulatory Assistance Project



OEMs

OEMs play a pivotal role in reducing uncertainty around technology and economics. Anchoring MCS readiness and publishing duty-cycle energy curves will help fleets to plan infrastructure and optimise operations.

EV batteries are proving durable, with predictable degradation patterns. Initiatives such as battery health certificates and predictive analytics are emerging to further boost consumer confidence in the second-hand EV market.

Battery SoH transparency is critical to stabilise residual values and unlock financing models. Manufacturers can embed on-board SoH monitoring in battery management systems and make data accessible via application programming interfaces (APIs) or digital passports. From 2027, EU law mandates a battery passport for every EV battery, including SoH data, lifecycle history and sustainability metrics.

Next steps:

- Accelerate megawatt charging corridors and explore battery-swapping pilots for HCVs to progress long-haul electrification.
- Advance interoperability standards for cross-border, heavy-duty operations and predictive maintenance via telematics.
- Support EU battery passport compliance and prepare systems to share SoH securely across stakeholders (dealers, recyclers, insurers).
- Integrate SoH reporting into connected vehicle platforms for real-time health checks.
- Partner with certified testing providers to offer official SoH certificates at resale.
- Introduce specific warranty clauses for bidirectional charging.
- Educate consumers and fleets on battery health transparency to boost trust in used EVs.



Despite European data showing that most batteries retain 90% capacity after three to four years, confidence remains low. At Ayvens, we have introduced independent state-of-health certification for batteries on second-hand EVs to provide confidence to the market.

Pedro Luz

Head of Consulting and EV, Ayvens Portugal



CPOs and hub developers

A Regulation on Clean Corporate Vehicles with strong ZEZ targets stands to increase EV volumes significantly, in turn improving charge point utilisation and profitability for CPOs.

Infrastructure providers must prioritise utilisation and resilience. Building hubs where demand is contractable – through reservations and shipper commitments – will help to de-risk investment. Co-locating battery storage and renewables enhances grid flexibility and reduces peak charges, while standardising driver amenities and cargo security improves the user experience.

Next steps:

- Build reservation-based truck hubs near logistics clusters for MCVs and HCVs.
- Co-locate storage and renewables to reduce grid dependency and improve sustainability credentials.
- Prepare for MCS technology along major corridors to support heavy-duty fleets.
- Educate fleet operators on EV technology, charging infrastructure and operational benefits.

Financing and leasing companies

Financial players must move beyond asset financing to integrated service models. Bundling vehicles, charging infrastructure and uptime guarantees into FaaS reduces risk and accelerates adoption. Leasing chargers and deploying battery-integrated solutions at energy-constrained sites will help to tackle grid delays.

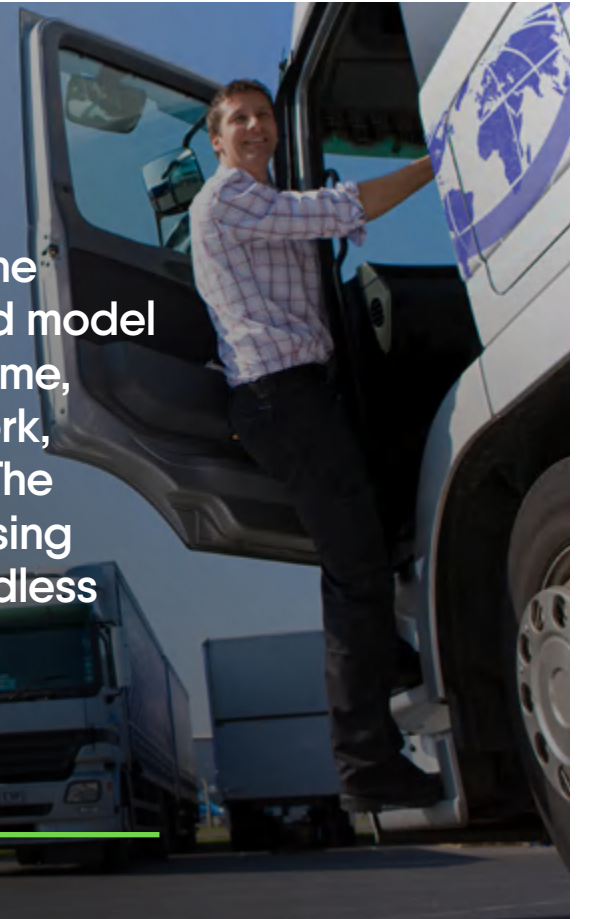
Next steps:

- Scale CaaS and FaaS models to reduce capex barriers and accelerate adoption by SMEs.
- Develop bundled solutions, combining vehicles, depot chargers and energy services for LCV and MCV fleets.
- Introduce battery lifecycle financing and second-life programmes for HCVs.



EV leasing is no longer just about the vehicle. It's becoming an integrated model that brings together charging at home, at depots, and on the public network, alongside energy considerations. The objective is simple: to make EV leasing fair and equitable for drivers, regardless of how or where they charge.

Jonny Berry
Head of Net Zero Transition, Novuna



Polymakers and regulators

Regulatory clarity, a predictable and stable revenue framework with an adequate rate of return, and harmonisation are essential to unlock investment in the network.

Europe needs integrated planning across transport, energy, and digital systems. By publishing a near-term truck strategy, reforming network charges and accelerating grid connections, structural bottlenecks can be eliminated. By opening flexibility markets to fleets and codifying V2G standards, new revenue streams can eventually be unlocked.

Next steps:

- Enforce binding ZEV purchase targets for fleet operators.
- Favour the switch to EVs with both purchase incentives and the removal of unnecessary taxes from electricity bills.
- Fast-track permitting, accelerate grid-connection and grid-capacity upgrades, harmonise cross-border rules and technical standards, and coordinate funding to enable rapid deployment of high-power, zero-emission truck charging along the TEN-T corridors.
- Provide information and education services to fleet operators to support their transition to electric.
- Deliver a near-term truck strategy and harmonise cross-border charging standards for HCVs.
- Enforce Eurovignette exemptions on road tolls across Member States to improve opex for zero-emission fleets.
- Codify V2G standards and battery recycling mandates to future-proof investments and meet ESG requirements.

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CO₂-based road tolls and smart transport policy measures, such as zero-emission freight zones, are critical levers to encourage electrification in the road transport sector and improve TCO.

Thomas Fabian
Chief Commercial Vehicles Officer, ACEA

Figure 14: Action plans for fleet electrification

Stakeholder	Next-step actions	Expected impact	Why it matters for fleets
Fleet operators and logistics	Identify business case for electrification; adopt schedule-aware charging; open depots for public use, where permitted; integrate EMS with reimbursement and flexibility modules	Lower opex (10%–15% savings); new revenue streams from V2G and vehicle to load; improved asset utilisation	■ Car-based fleets: simplifies home/depot charging ■ LCV and HCV fleets: optimises duty cycles and MIC
Energy companies: utilities, TSOs and DSOs	If technically possible, provide renewable electricity, emissions and flexibility data to enable smart/V2G charging; enable consumers to assess connection capacity down to low voltage level, including planned and reserved capacity; digitalise and integrate grid connection processes for faster approvals; develop time-of-use tariffs	Faster grid connections cut delays by 12–18 months; improved transparency to enable smart and bidirectional EV charging; flexibility revenues unlocked	■ Car-based and LCV fleets: supports scaling up depot charging ■ HCV fleets: critical for corridor hubs and megawatt charging
OEMs	Lock in MCS timelines; publish duty-cycle energy curves, enable battery SoH transparency; co-develop smart-charging APIs; educate fleets on SoH and EVs	Greater fleet confidence; accelerated long-haul EV adoption; stabilised residual values	■ Car-based fleets: improves TCO predictability ■ HCV fleets: essential for route planning and uptime
CPOs and hub developers	Build reservation-based truck hubs near logistics clusters; co-locate storage/renewables, standardise amenities; provide education on EV technology, charging infrastructure and operational benefits	Higher utilisation (up to 80%); reduced peak charges; improved driver experience.	■ LCV fleets: supports urban delivery reliability ■ HCV fleets: enables long-haul charging during mandated breaks
Financing and leasing companies	Scale charger leasing and FaaS models; bundle uptime guarantees; support SME depots with grant-backed kits	Reduced capex barriers; accelerated SME adoption; improved financing confidence	■ All fleets: removes upfront cost barriers, accelerates adoption for SMEs and high-mileage operators
Policy makers and regulators	Mandate ZEV fleet targets; incentivise EVs and cut electricity surcharges; fast track permits and grid upgrades for TEN T truck charging; harmonise HCV charging standards and deliver a truck strategy; apply Eurovignette toll exemptions for ZEVs; set V2G and battery recycling rules	Harmonised rules improve TCO; faster infrastructure rollout; new market participation for fleets	■ Car-based fleets: maintains tax incentives ■ LCV and HCV fleets: unlocks corridor charging and flexibility revenues



Source: EY analysis.



OUTLOOK

Fleet electrification:
the catalyst for
Europe's net-zero future

Europe stands at a defining moment in its transport and energy transition. The electrification of fleets is no longer a distant ambition; it can become a powerful lever to accelerate decarbonisation, strengthen industrial competitiveness and unlock new energy system flexibility.

The environmental case is undeniable: Fleets represent just over one-quarter of vehicles but account for more than half of new sales and most road transport emissions. Fleet electrification could cut more than one billion tonnes of CO₂, delivering a critical contribution to EU climate targets and improving air quality in cities across the continent.

The economic case for fleet electrification is equally compelling:

- For operators, electrification promises significant TCO savings and is key to staying competitive.
- For infrastructure providers and financiers, it offers predictable, high-volume demand and long-term revenue streams.
- For automakers, it is this battleground that will determine leadership in the next era of mobility.
- For Europe's energy system, fleets provide a flexible load that can absorb renewable generation and stabilise grids, turning challenge into opportunity.

But challenges persist: uncertain and fragmented policy, upfront costs, residual value concerns, fleet operational complexity and lack of information. Some solutions already exist; others are emerging rapidly. Incentive schemes and favourable taxation, innovative financing models, corridor-based charging hubs, integrated data platforms and flexibility services are already proving their worth by supporting electrification across different fleet types.

With an EU proposal for mandatory fleet electrification, momentum is building, and stakeholders must act decisively to harness the benefits:

- Utilities must use “first-ready, first-served” grid connection principles where deemed most appropriate and maximise the use of flexible connection agreements.
- OEMs must scale production and offer more affordable models, lock in megawatt charging timelines and standardise battery SoH reporting, providing more transparency for customers.
- CPOs must build reservation-based hubs near logistics clusters.
- Fleets must adopt smart-charging and open depots where possible.
- Financiers must scale FaaS.
- Policymakers should mandate ZEV fleet targets, maintain policy certainty on transport electrification, utilise fiscal incentives, fast-track permits and grid upgrades, and enforce Eurovignette toll exemptions for zero-emission fleets.

The choice is clear. Europe can seize this moment to lead the global transition, creating cleaner cities, competitive industries and resilient energy systems. Or it can risk falling behind. Fleet electrification is not just a transport strategy; it is a cornerstone of Europe's net-zero future. The time to act is now.



Appendix

Key assumptions

Assumptions	Unit	Car-based fleet	LCVs	HCVs
Base price – BEV	€	Volkswagen ID.3 €38,000	Ford E-Transit Custom €47,000	Mercedes-Benz eActros 600 €280,000
Base price – diesel	€	Volkswagen Golf 2.0 TDI €35,000	Ford Transit Custom 2.0 EcoBlue €38,000	Mercedes-Benz Actros 1845 €120,000
Annual distance travelled	km/year	25,000	40,000	90,000
EV consumption	kWh/100 km	16.5	22	120
ICE consumption	litre/100 km	5.4	7.8	32
Charging locations	€	Home 80% Workplace 15% Public 5%	Depot 85% Workplace 10% Public 5%	FR: depot 40% / public 60% FR-DE: depot 30% / public 70% FR-RO: depot 10% / public 90%
Home charging cost	€/kWh	0.14–0.40	–	–
Depot charging cost	€/kWh	–	0.14–0.40	0.18–0.22
Workplace	€/kWh	0.16–0.36	0.16–0.36	0.30–0.60
Public charging cost	€/kWh	0.45–0.75	0.45–0.75	1.52–1.70
Diesel cost	€/litre	1.80–1.95	1.80–1.95	32
Maintenance	€/year	BEV €630 Diesel €900	BEV €825 Diesel €1,100	BEV €10,500 Diesel €15,000
Toll	€/km	0.03–0.06	0.01–0.09	0.1–0.35
Residual value – BEV	% of base price	38%	35%	33%
Residual value – diesel	% of base price	42%	40%	50%