SEPTEMBER 2025

SUMMARY

EV Transition Check

Measuring progress towards zero-emission for passenger cars in the European Union

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The current carbon dioxide (CO_2) emission standards for new passenger cars and light commercial vehicles (vans) in the European Union (EU) have been in place since 2023. Key measures include a 55% fleet-wide CO_2 reduction target for new passenger cars by 2030 and a 100% reduction target by 2035. In May 2025, the standards were amended, and an averaging provision was added for the 2025–2027 period, meaning manufacturers can comply with targets by averaging their performance over the three years. The regulation is scheduled to be reviewed in 2026. In preparation, the European Commission will submit a Progress Report to the European Parliament and Council in December 2025, and every two years thereafter.

The EV Transition Check draws upon a range of data and analysis to assess topics ranging from electric vehicle (EV) uptake to battery production and related supply chains, encompassing and going beyond the elements the European Commission is required to consider in its Progress Report regarding passenger cars. Select key performance indicators shed light on five different aspects presented in the following pages. More details are provided in the full report.

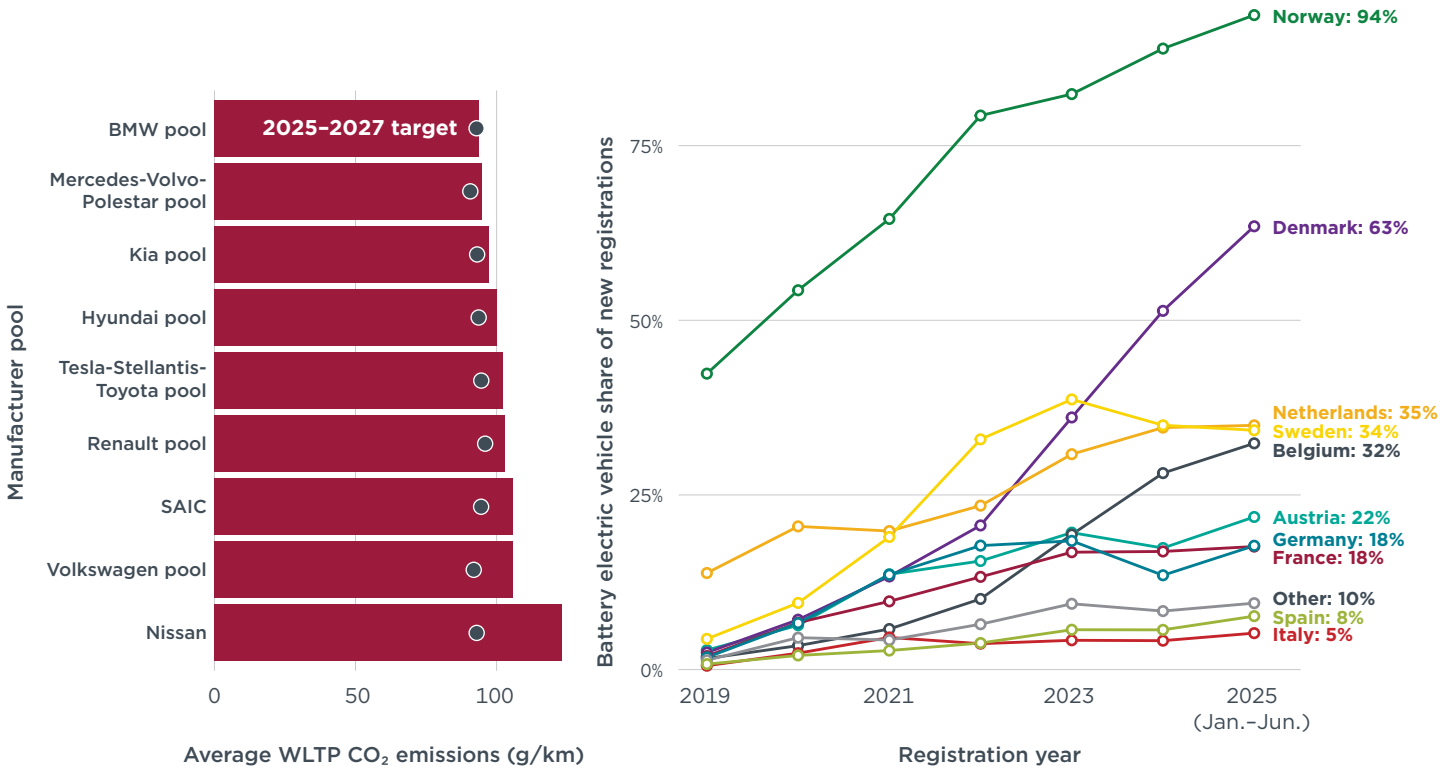
MANUFACTURER TARGETS AND ELECTRIC VEHICLE UPTAKE

ARE MANUFACTURERS ON TRACK TO MEET THE CO_2 TARGETS?

Automakers are on track to meet the EU CO_2 performance targets for new vehicles, relying mostly on electric cars as a compliance option. Among the major markets, EV uptake has been strong in Germany and France and has recently increased in Italy and Spain. Several smaller markets show particularly high EV market shares.

Figure 1

Year-to-date 2025 CO_2 performance and estimated 2025–2027 CO_2 emissions target by manufacturer pool (left) and BEV sales share by country and registration year (right)



Note: WLTP = Worldwide harmonised Light vehicles Test Procedure

Data sources: Dataforce; "Monitoring of CO_2 emissions from passenger cars Regulation (EU) 2019/631," European Environment Agency, August 13 2025, https://www.eea.europa.eu/en/datahub/datahubitem-view/fa8b1229-3db6-495d-b18e-9c9b3267c02b.

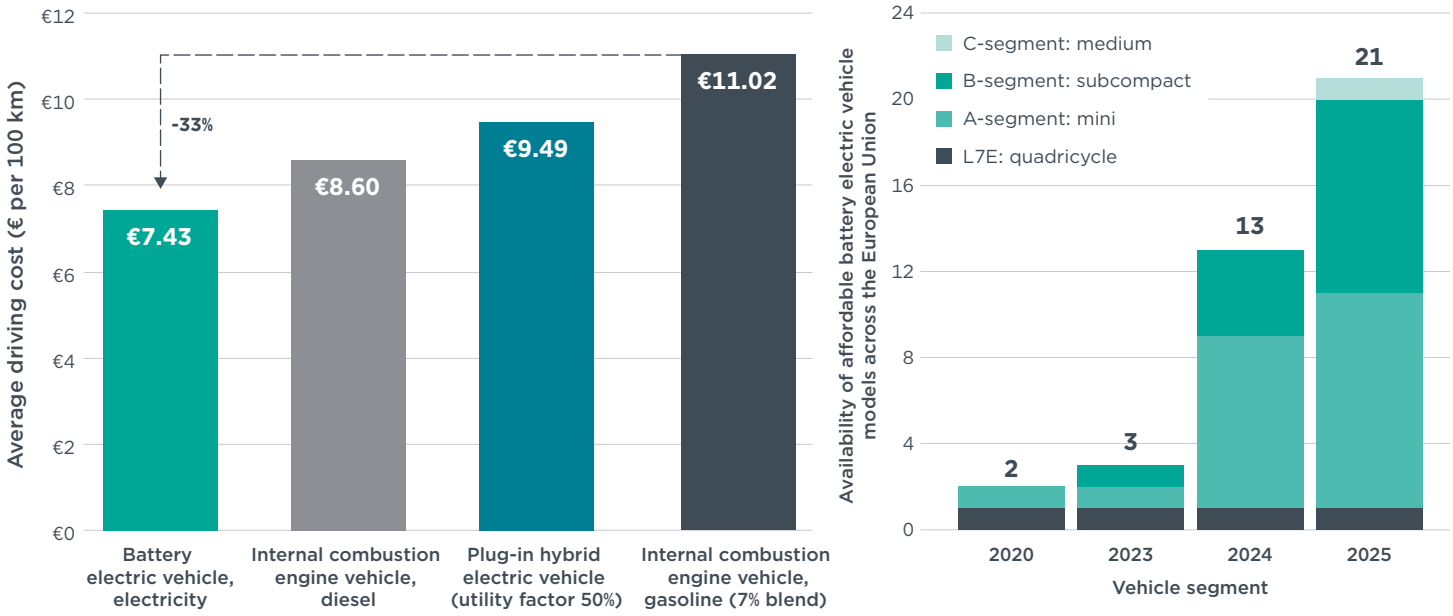
TECHNOLOGY AFFORDABILITY

WHAT ARE THE TRENDS IN VEHICLE TECHNOLOGY AFFORDABILITY?

Battery electric vehicles today have lower driving costs than other powertrains. With decreasing battery prices, the number of affordable electric cars is expected to continue to rise.

Figure 2

Comparison of refueling cost per 100 km for different fuels in the European Union for an average medium segment passenger car in 2025 (left) and evolution of BEV models priced below €30,000 available in the European Union by vehicle segment (right)



Notes: For battery electric vehicles, the proportional cost of a home charger is included.

Data sources: Eco-movement, *EV Charging Price Data, 2025,* https://www.eco-Movement.com; Eurostat Weekly Oil Bulletin, https://energy.ec.europa.eu/data-and-analysis/weekly-oil-bulletin_en; Marta Negri and Georg Bieker, *Life-Cycle Greenhouse Gas Emissions from Passenger Cars in the European Union: A 2025 Update and Key Factors to Consider* (International Council on Clean Transportation, 2025), https://theicct.org/publication/electric-cars-life-cycle-analysis-emissions-europe-jul25/; European Alternative Fuels Observatory, accessed June 2025, https://alternative-fuels-observatory.ec.europa.eu/; EV Database, accessed June 2025, https://ev-database.org/.

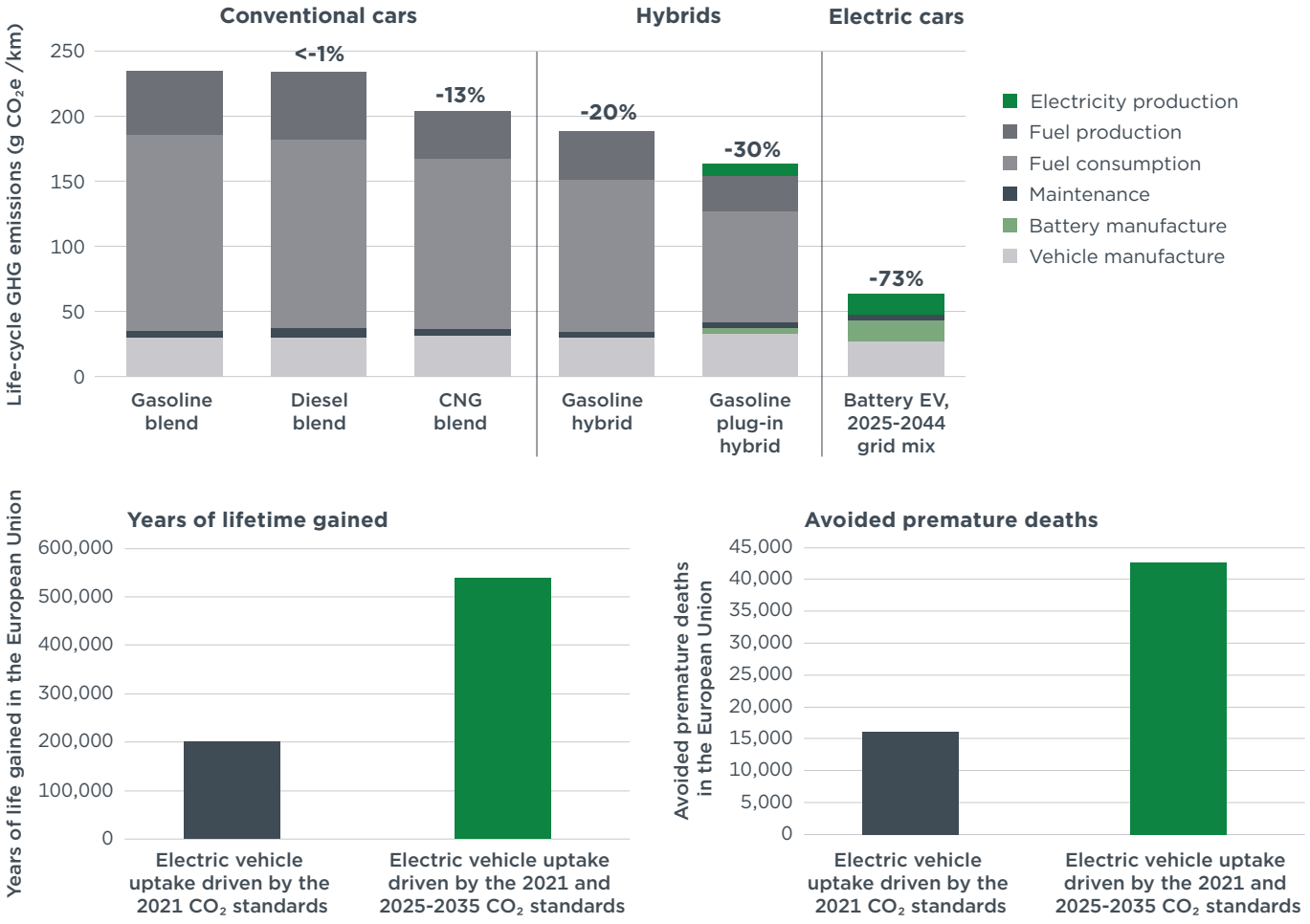
CLIMATE AND HEALTH IMPACT

WHICH VEHICLE POWERTRAIN BEST SUPPORTS CLIMATE AND HEALTH GOALS?

Battery electric vehicles offer the greatest potential to reach climate targets on time while also reducing the air quality impact of road transport.

Figure 3

Life-cycle greenhouse gas emissions of medium segment passenger cars sold in the European Union in 2025 (top) and avoided premature deaths (bottom) in the European Union between 2021 and 2050 from reduced tailpipe emissions, relative to a scenario with zero uptake of electric vehicles



Note: The average gasoline, diesel, and natural gas blends include 7vol% ethanol, 7vol% bio-based diesel, and 3% biomethane, respectively.
Data sources: Negri and Bieker, *Life-Cycle Greenhouse Gas Emissions*; International Council on Clean Transportation, FATE v2.0 Documentation (2024), *https://theicct.github.io/FATE-doc/versions/v2.0/#vsl-calculation*.

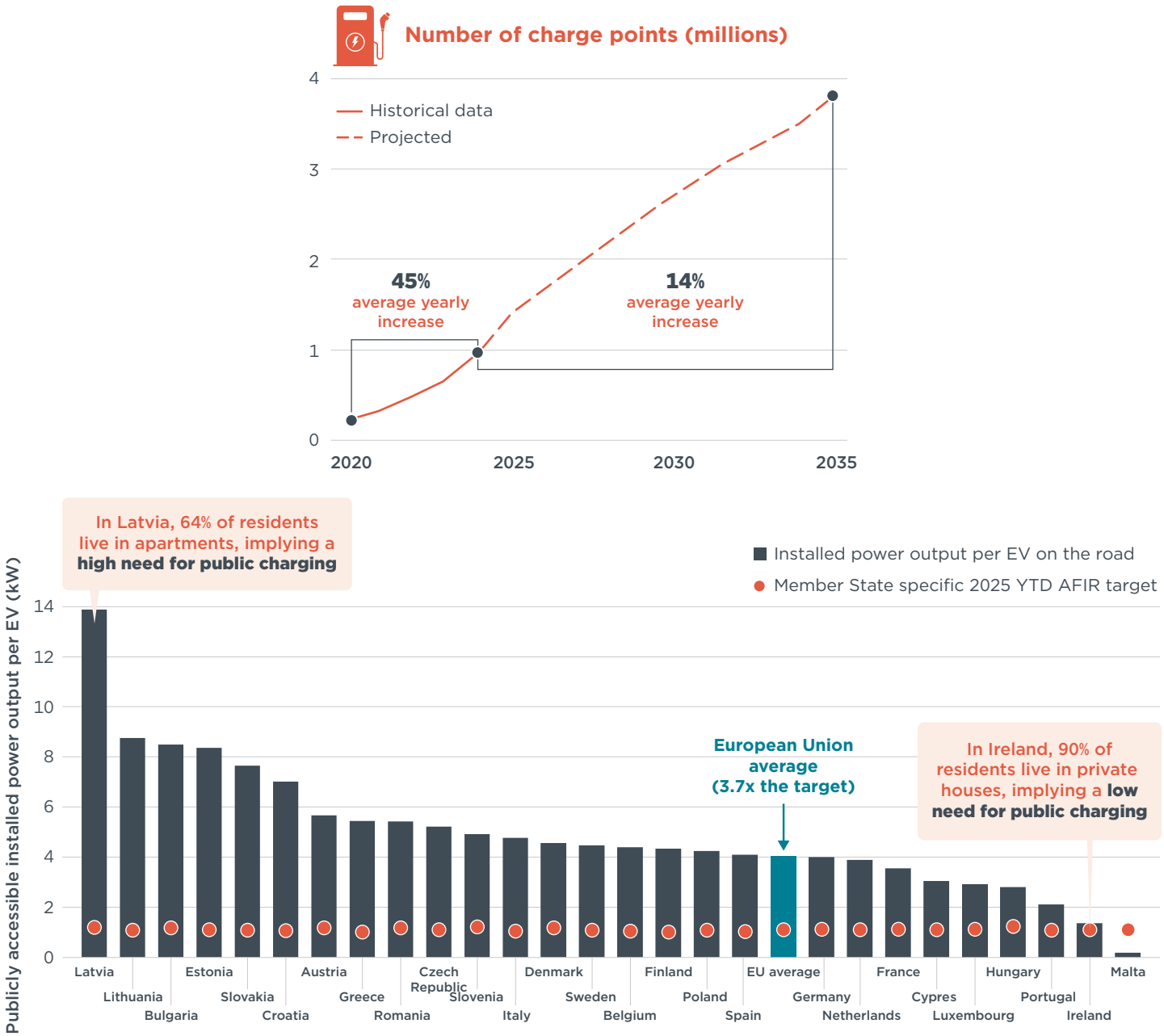
CHARGING INFRASTRUCTURE AND THE POWER GRID

ARE EUROPE'S EV CHARGING INFRASTRUCTURE AND ELECTRICAL GRID READY FOR THE TRANSITION?

With over 1 million public chargers, the European Union is equipped to support EVs currently on the road. Smart meter roll-out and time-varying tariff offers are increasing.

Figure 4

Public charging infrastructure deployment (solid line) and projected need (dashed line) in the European Union (top) and publicly accessible installed power output per electric vehicle (including battery electric and plug-in hybrid vehicles) by EU Member State compared with Alternative Fuels Infrastructure Regulation (AFIR) targets, as of July 1, 2025 (bottom)



Data sources: Charging infrastructure historical data: Eco-Movement, *Public Charging Infrastructure Data* [Dataset], accessed July 2025, https://www.eco-movement.com; projection: International Council on Clean Transportation, EV CHARGE Model Documentation, accessed January 10, 2025, *https://theicct.github.io/EVCHARGE-doc/*; EVs on the road: European Alternative Fuels Observatory, accessed July 2025.

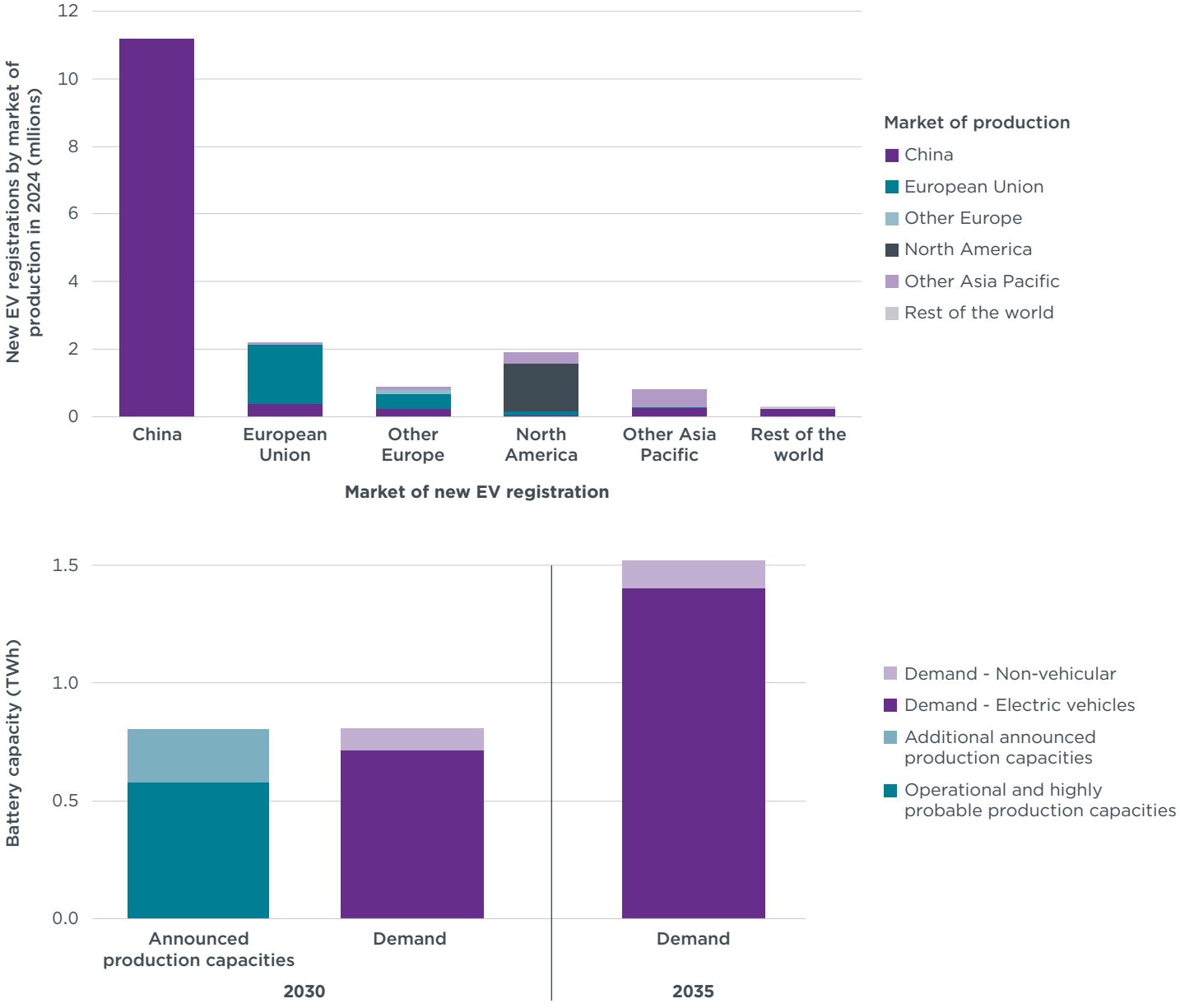
SUPPLY CHAINS AND INDUSTRIAL COMPETITIVENESS

CAN ELECTRIFYING THE AUTOMOTIVE SECTOR BOOST EUROPE'S INDUSTRIAL COMPETITIVENESS?

Building up battery production and supply chains in Europe will require concerted efforts by governments and industry as well as market confidence. Further delays in the EV transition would risk losing battery and vehicle production market shares to global competitors.

Figure 5

EV registrations worldwide in 2024 by market (left) and announced battery production capacity and projected demand in the European Union (right)



Data sources: EV Volumes, *EV Data Center* [Dataset], Retrieved March 1, 2025, from https://www. ev-volumes.com/; International Energy Agency, *Global EV Outlook 2025: Trends in Electric Car Affordability* (2025), License: [relevant CC license e.g. CC BY 4.0], and Eyal Li et al., *Electrifying Road Transport with Less Mining: A Global and Regional Battery Material Outlook* (International Council on Clean Transportation, 2024) https://theicct.org/publication/ev-battery-materials-demand-supply-dec24/.

Summary table. EV Transition Check		
Key performance indicator	**Status**	
1. Manufacturers' targets & EV uptake	Automakers are on track to meet the EU CO_2 performance targets for new vehicles, relying mostly on electric cars as a compliance option. Among the major markets, EV uptake has been strong in Germany and France and has recently increased in Italy and Spain. Several smaller markets show particularly high EV market shares.	
Manufacturer average CO_2 emission level of new vehicles	**+9 g/km** Distance to target	EU standards help reduce CO_2 and push for technology innovation.
Manufacturer-specific compliance with the CO_2 targets	**3** Manufacturer pools are within 5% compliance with the 2025–2027 targets	Vehicle manufacturers are on the path to meet their CO_2 targets.
Battery electric vehicle shares in the largest EU Member States	**18%** BEV market share in Germany and France	Electric vehicle market shares are picking up across Europe.
2. Technology affordability	Battery electric vehicles today have lower driving costs than other powertrains. With decreasing battery prices, the number of affordable electric cars is expected to continue to rise.	
Cost of BEV charging	**€7.43** Per 100 km driven **33%** cheaper than a gasoline ICE	Battery electric vehicles are cheaper to charge per 100 km due to higher energy efficiency, but public charging costs for electricity vary significantly across Europe.
Affordable BEV models (<€30,000)	**21+** Affordable BEV models	Affordable electric vehicle models remain limited but increasing across market segments, driven by falling battery prices.
Growth of the secondhand market	**40,000** Secondhand BEVs sold in France in the first trimester of 2024	The secondhand battery electric car market continues to develop but some constraints exist.
3. Climate & health	Battery electric vehicles offer the greatest potential to reach climate targets on schedule while also reducing the air quality impact of road transport.	
Life-cycle emissions of BEVs compared with ICEVs, HEVs, and PHEVs	**-73%** Life-cycle GHG emissions of BEVs compared with gasoline ICEVs	Battery electric vehicles today offer lower greenhouse gas intensity than any combustion engine or hybrid vehicle.
Premature deaths avoided within the European Union	**42,600** Avoided premature deaths	Battery electric vehicle adoption cuts air pollution and has positive health impacts.
Due diligence requirements	**Reporting and action** requirements	Due diligence provision in the Battery Regulation can help to mitigate social and environmental risks in the battery supply chain.
4. Charging infrastructure & the grid	With over 1 million public chargers, the European Union is equipped to support EVs currently on the road. Smart meter roll-out and time-varying tariff offers are increasing, and grid planning updates would help the transition.	
Public charging deployment	**1 million ~ 40 GW** public chargers	Overall deployed at a sufficient pace, but more chargers will be needed in countries with lower EV uptake
Residential private charging	**13/26** MS with programs to foster private residential charging	Targets and programs in place to encourage private charging deployment; in the future, increasing private charging deployment in residential buildings will be important.
Dynamic tariffs	**390** EV-related smart tariffs and services	Smart tariffs and smart meter deployment is increasing, but more action needed to prepare the grid.
5. Supply chain & industrial competitiveness	Building up battery production and supply chains in Europe will require concerted efforts by governments and industry as well as market confidence. Further delays in the EV transition would risk losing battery and vehicle production market shares to global competitors.	
Exports of EVs	**35%** Net export of EVs in the European Union	European automakers can capitalize on their expertise to secure a strong position in the global electric vehicle market.
Battery cell	**~ 50%** EVs produced in Europe also have a battery manufactured in Europe	Building up production capacities for batteries and raw material access within Europe requires concerted efforts as well as market certainty.
Job creation and losses	**19,000** New supplier jobs created due to electrification	The transition to electric vehicles will result in new jobs created, but will also require workforce management and re-skilling.

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Acknowledgments: This report was prepared by the ICCT, supported by a number of organizations and individuals. It has benefited from input and feedback from several stakeholders, including the think-tanks Agora Verkehrswende (Germany), Alinnea (Spain), ECCO (Italy), and Mobility in Transition (IMT-IDDRI, France), as well as the European Consumer Organisation (BEUC), Ceres, and the Fédération Internationale de l'Automobile (FIA Region I). The views expressed, potential errors, or omissions are the authors' own.