

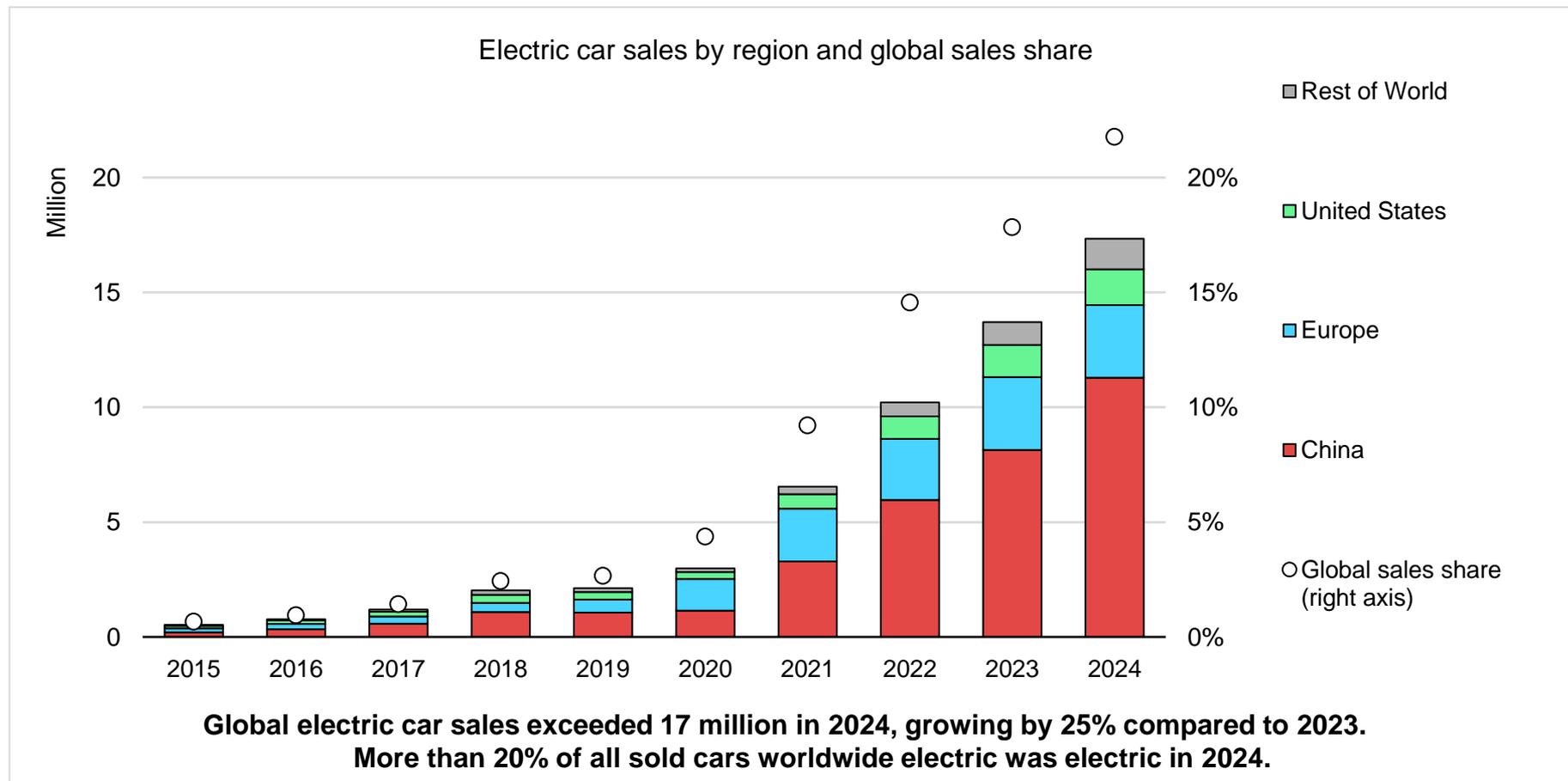


Global EV Outlook 2025

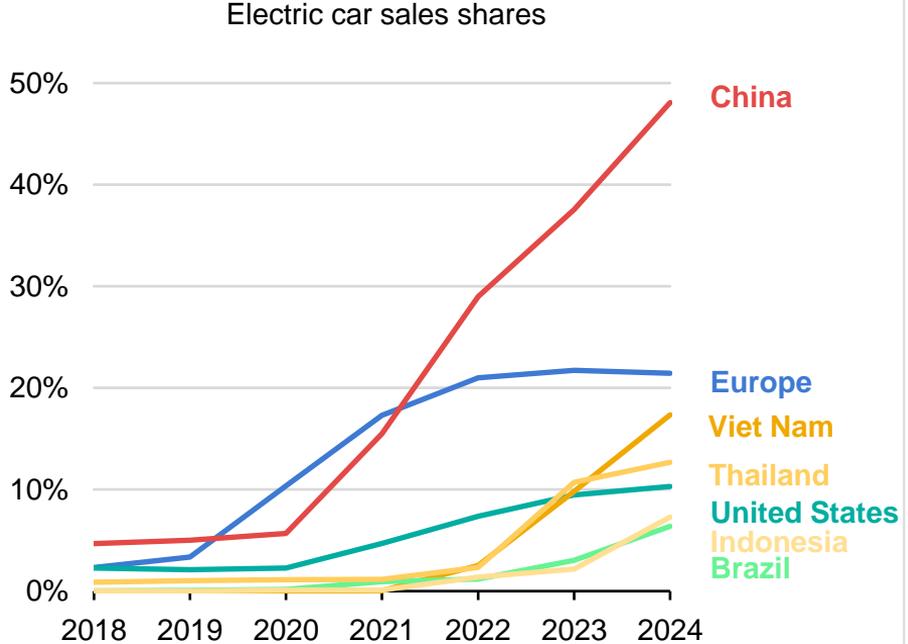
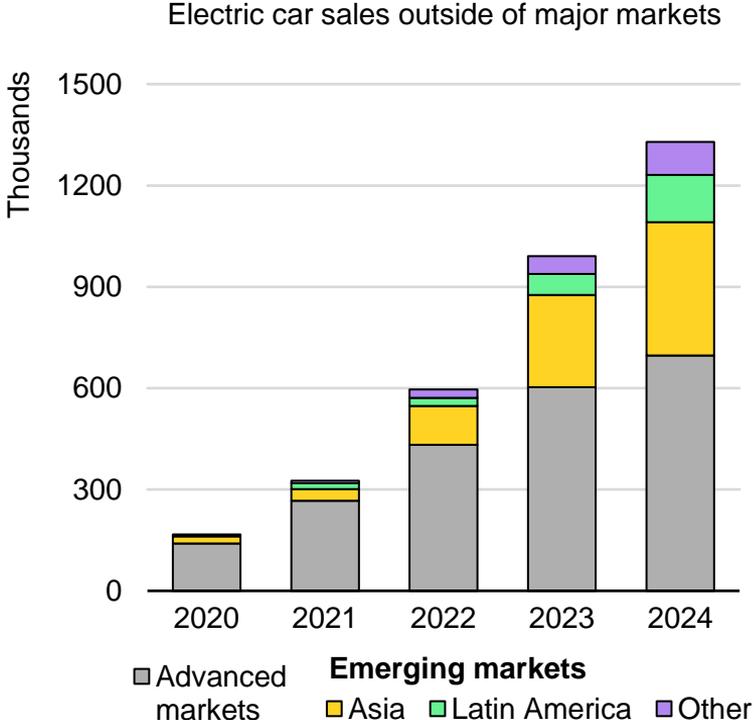
Technical webinar

15 May 2025

Global electric car sales continue to break records

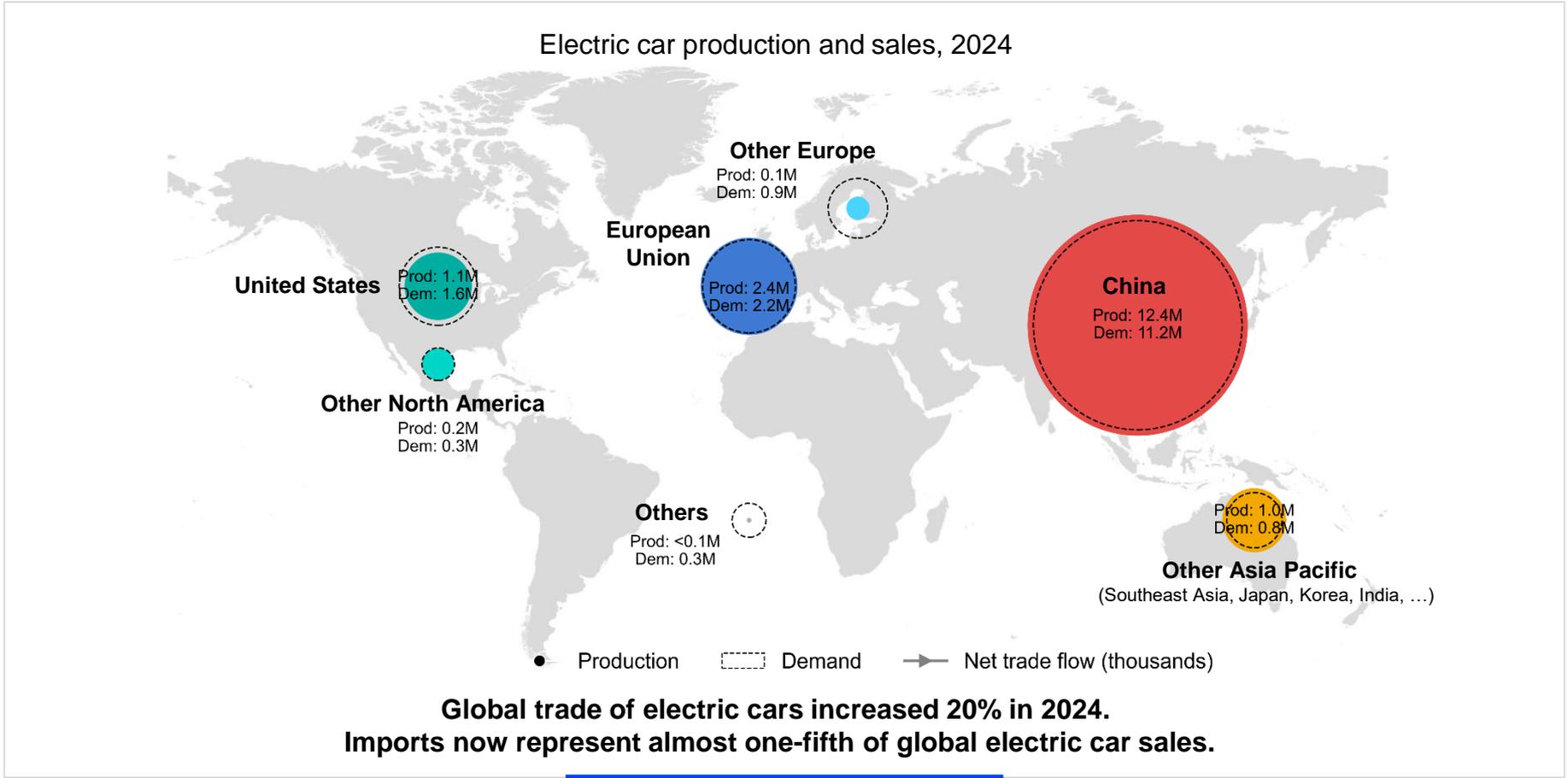


Electric cars are expanding into emerging markets



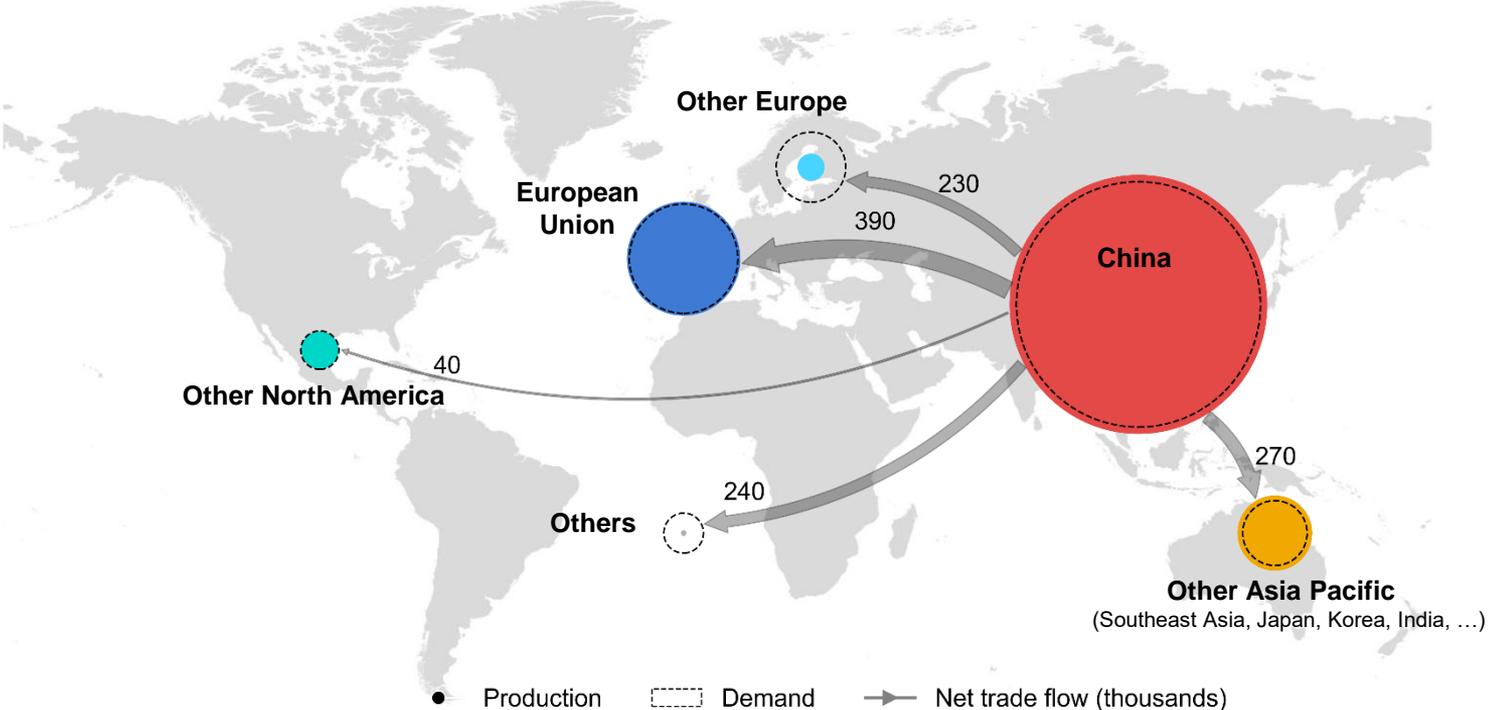
Emerging markets in Asia and Latin America are becoming new centres of growth with electric car sales jumping by over 60% in 2024 to almost 600 000.

China remains the world's largest EV manufacturing hub



... and the world's largest electric car exporter

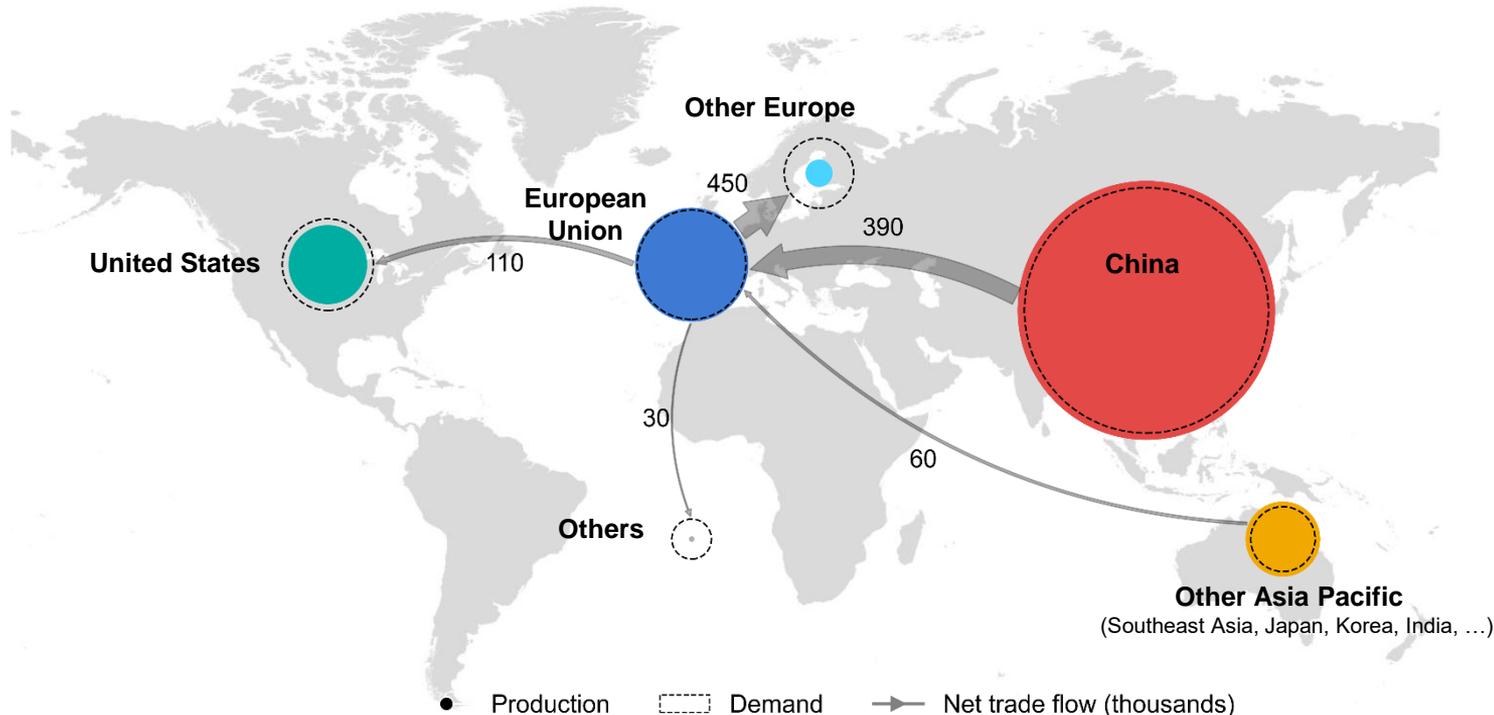
China's electric car production, sales and major trade flows, 2024



In 2024, electric cars shipped from China accounted for 40% of global EV exports. Europe, Southeast Asia and other emerging EV markets were the major destinations of these exports.

The European Union remains a net exporter of electric cars

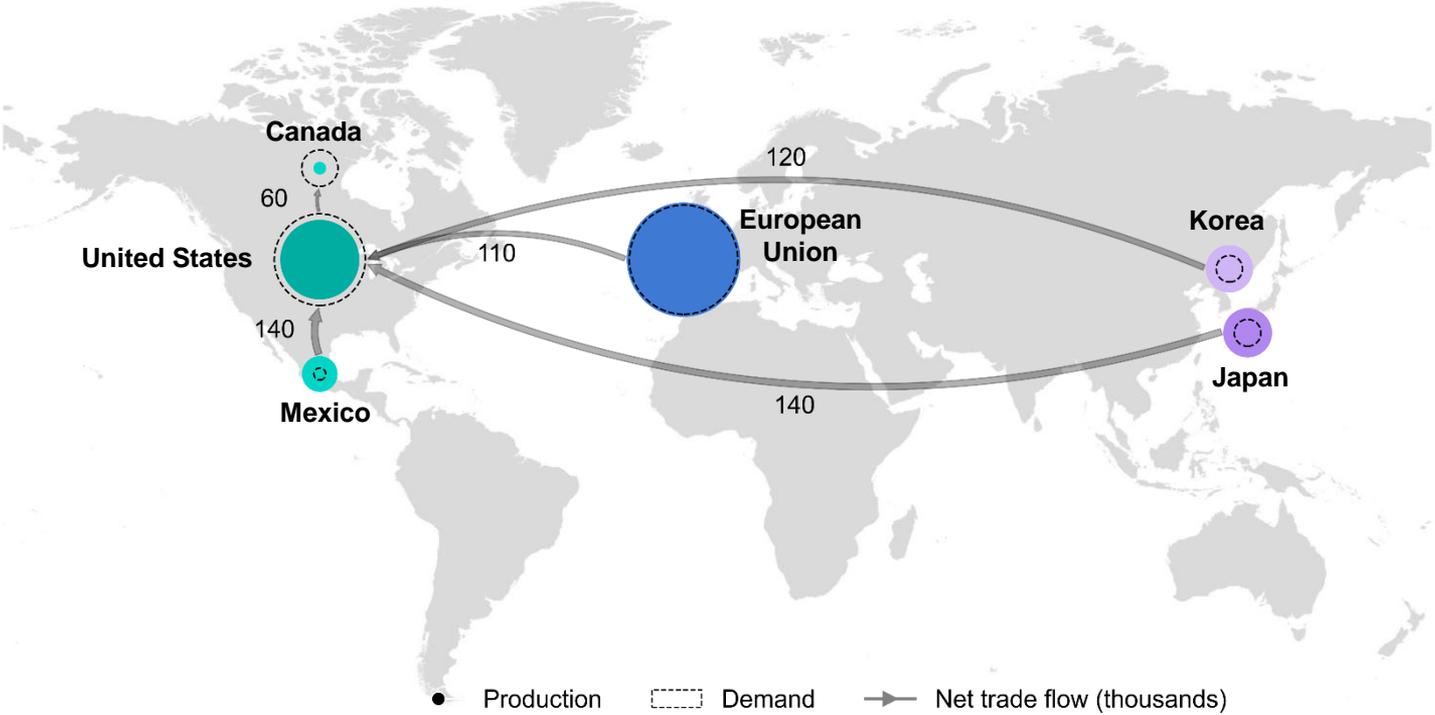
European Union's electric car production, sales and major trade flows, 2024



**Over half of EU exports were headed to other European countries.
Almost 20% of EU electric cars sales were imported from China in 2024, unchanged from 2023.**

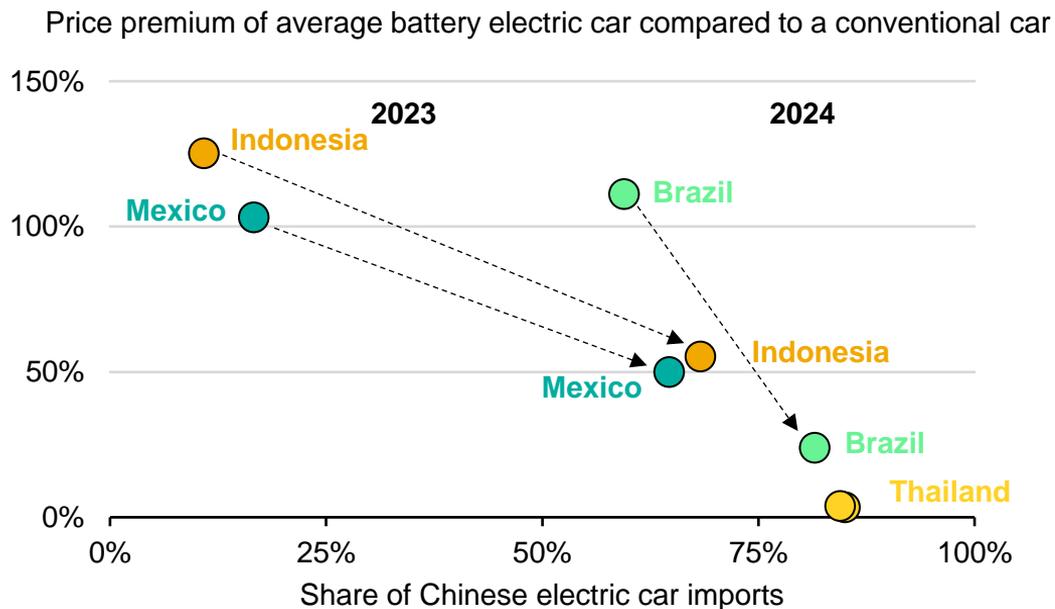
Electric car imports grew to make up 40% of US sales in 2024

United States' electric car production, sales and major trade flows, 2024



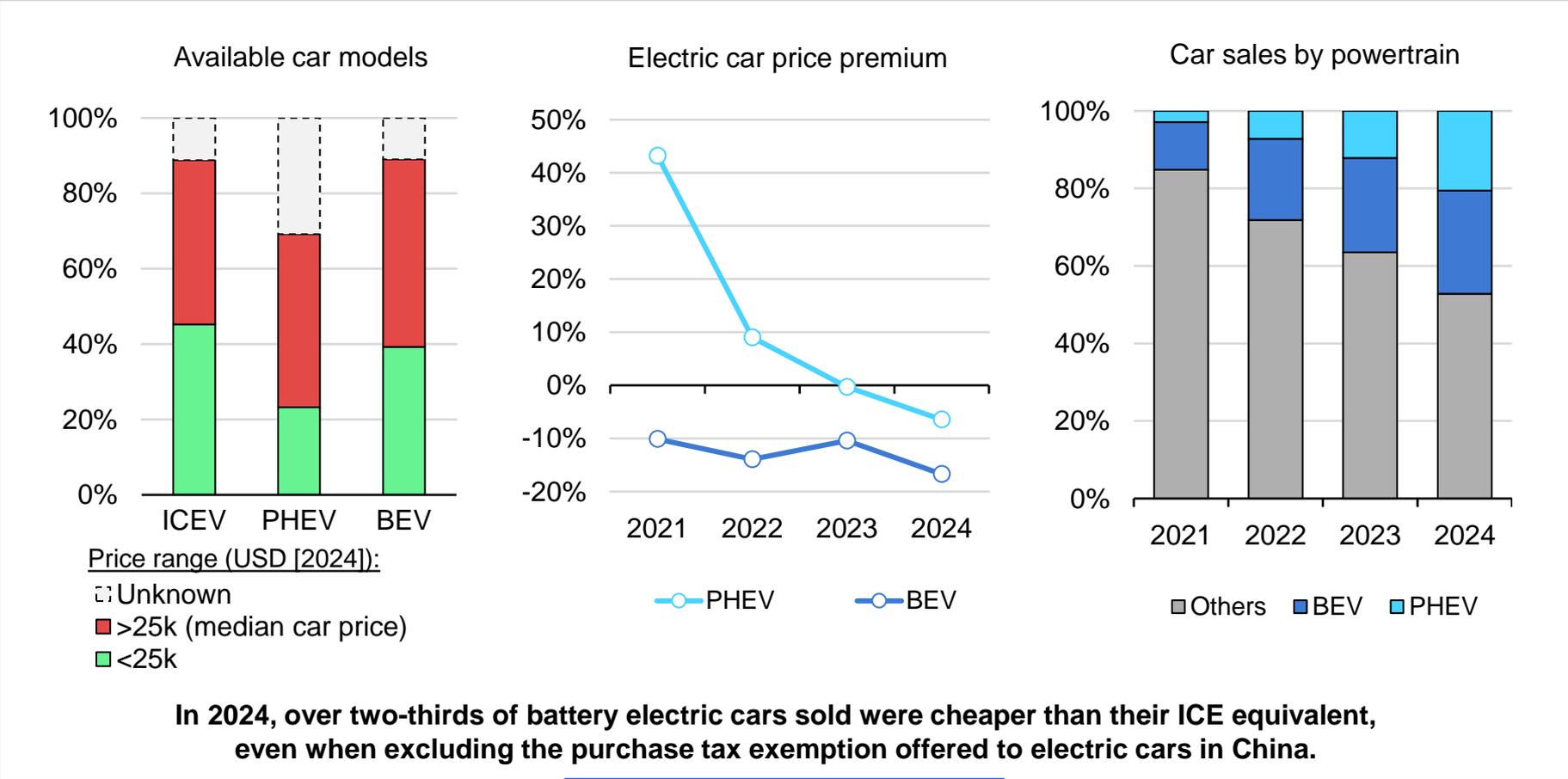
In 2024, Mexico's electric car output doubled, and it became the United States' largest importer. The European Union, Japan and Korea each accounted for around 20% of US electric car imports, in net terms.

Imports are bringing down prices in other markets

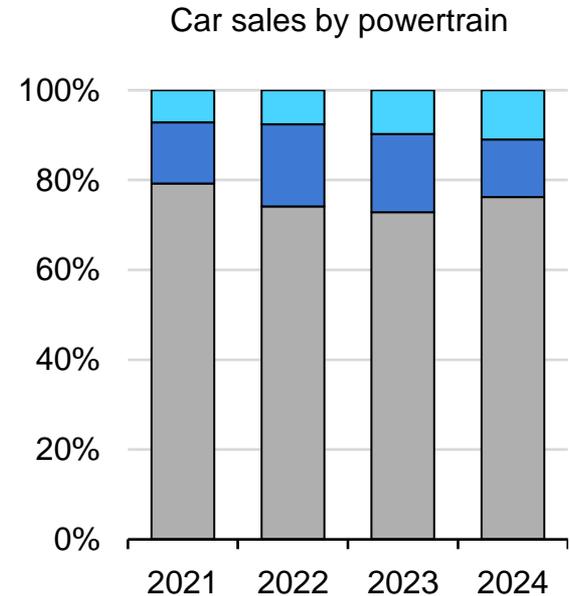
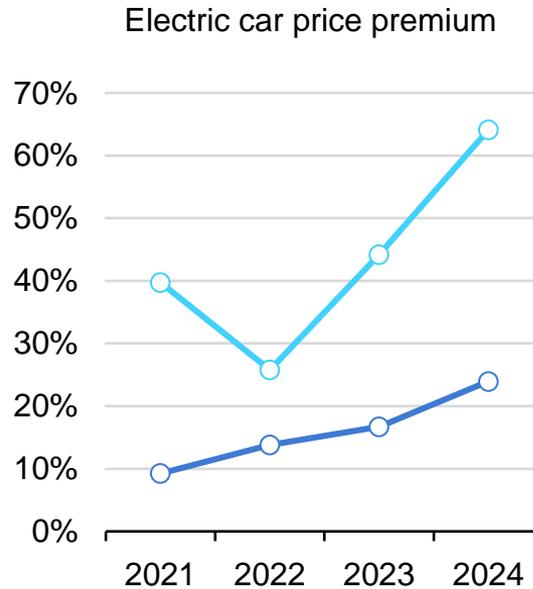
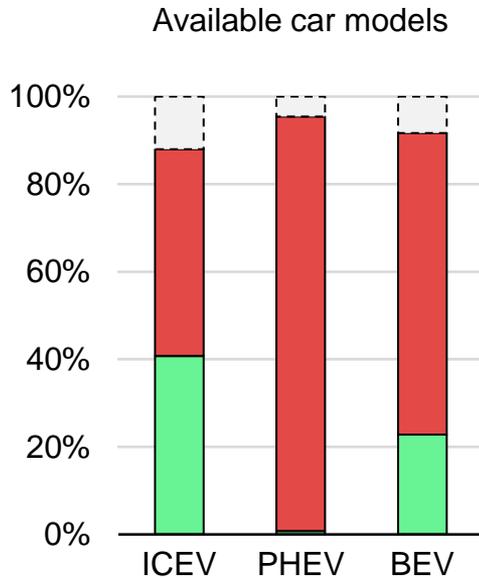


Battery electric cars have reached price parity in Thailand on the back of imports from China. The price premium has also dropped in Brazil and other emerging markets.

Price-competitiveness of electric cars in China: a key driver of growth



In Germany, fewer public incentives and costly EVs stall adoption



Price range (USD [2024]):

- Unknown
- >40k (median car price)
- <40k

PHEV BEV

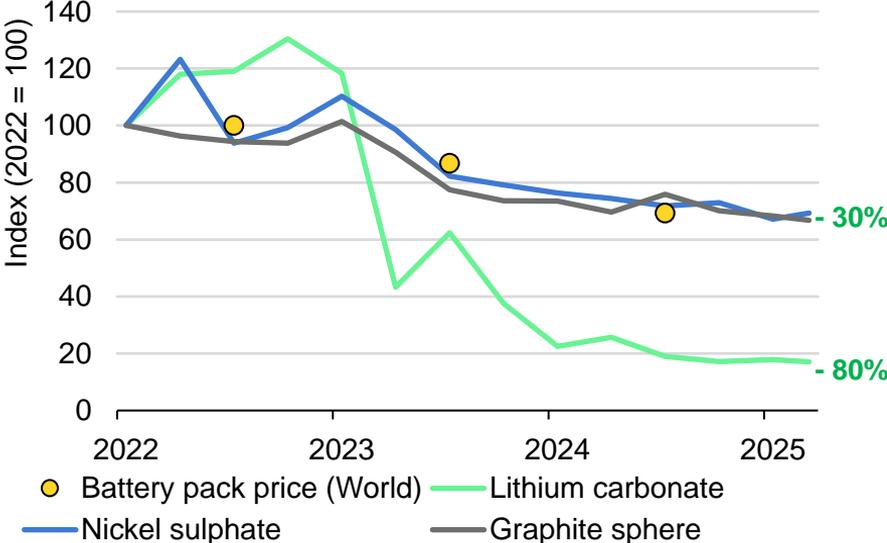
Others BEV PHEV

Too few low-price models available and waning support from government led to stagnating EV sales in Germany.

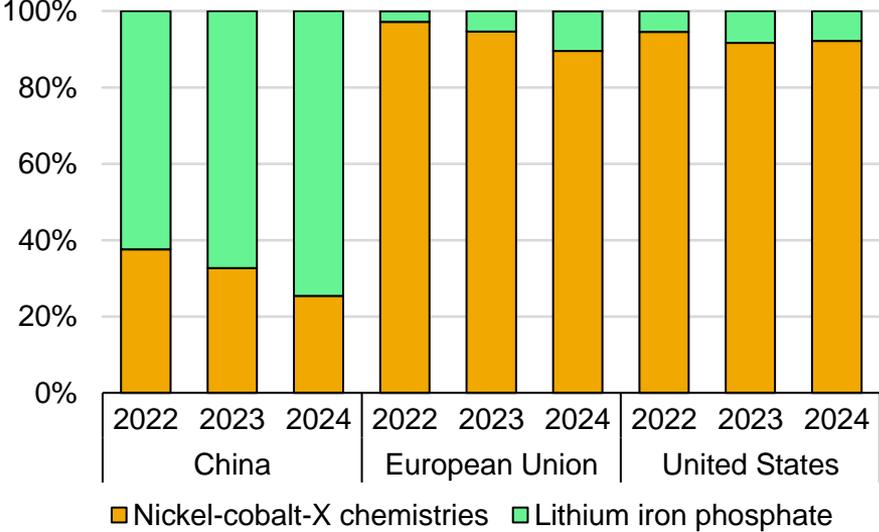
Battery price continues to fall, but China's price advantage widens



Battery and mineral price, 2022-2024



Share of electric vehicle battery sales by chemistry and region, 2022-2024

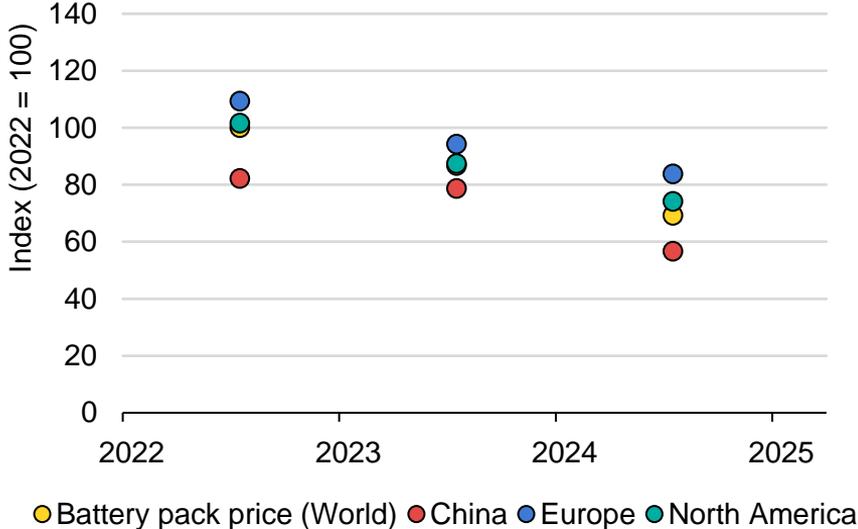


Battery prices dropped by 20% in 2024, but the drop was the fastest in China, at nearly 30%. Lower prices, supported by cheaper chemistries, is driving the adoption of Chinese batteries in all markets.

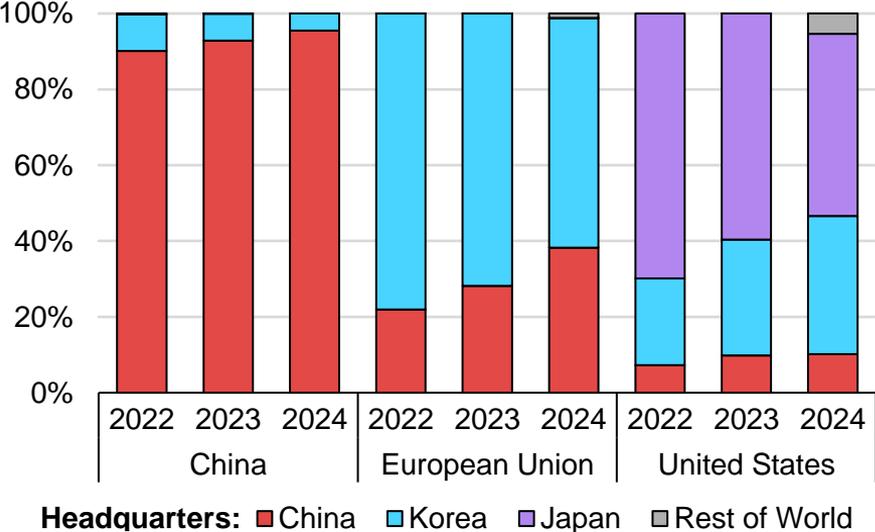
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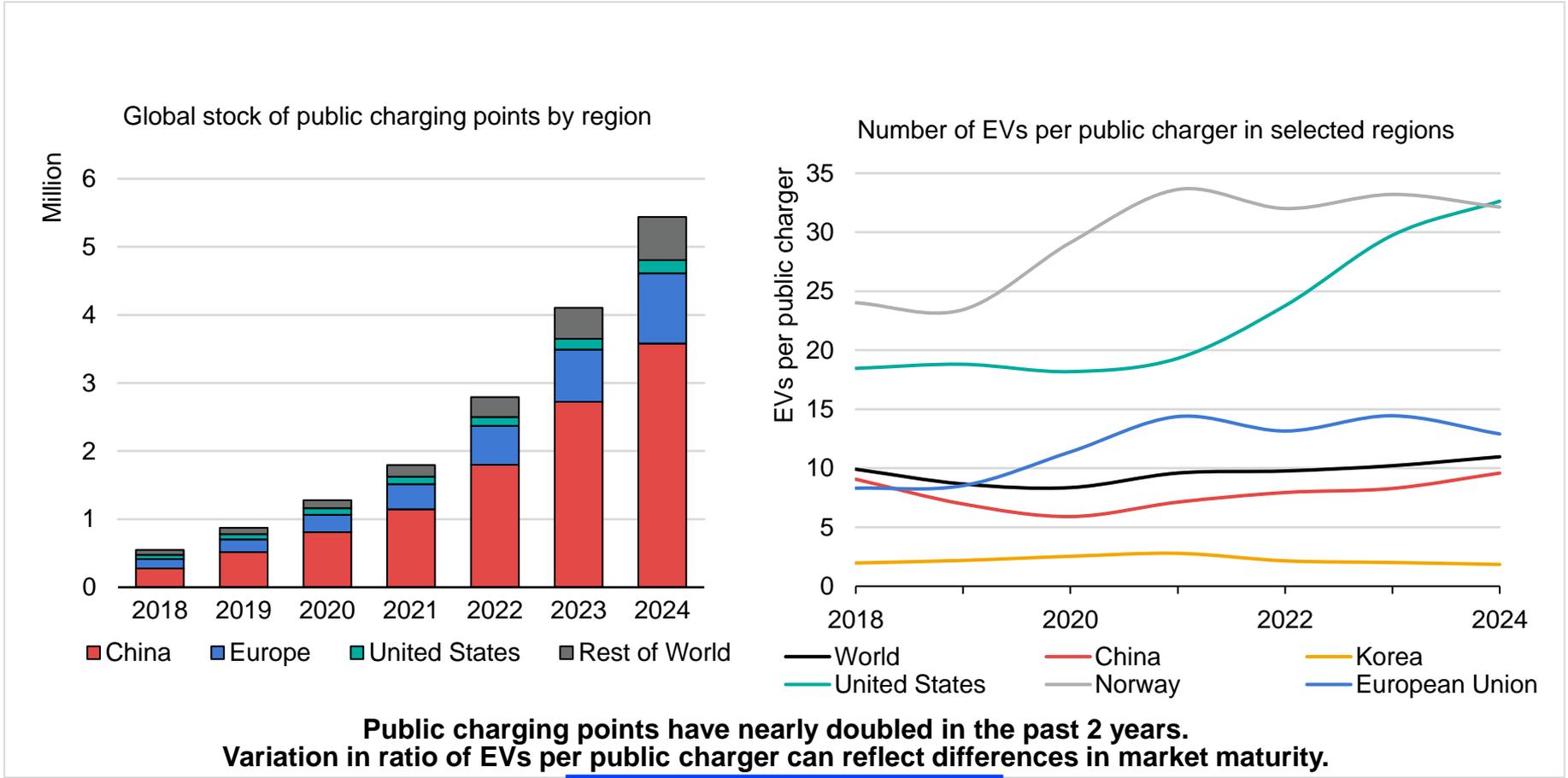


Share of electric car battery sales by battery manufacturer's headquarters, 2022-2024



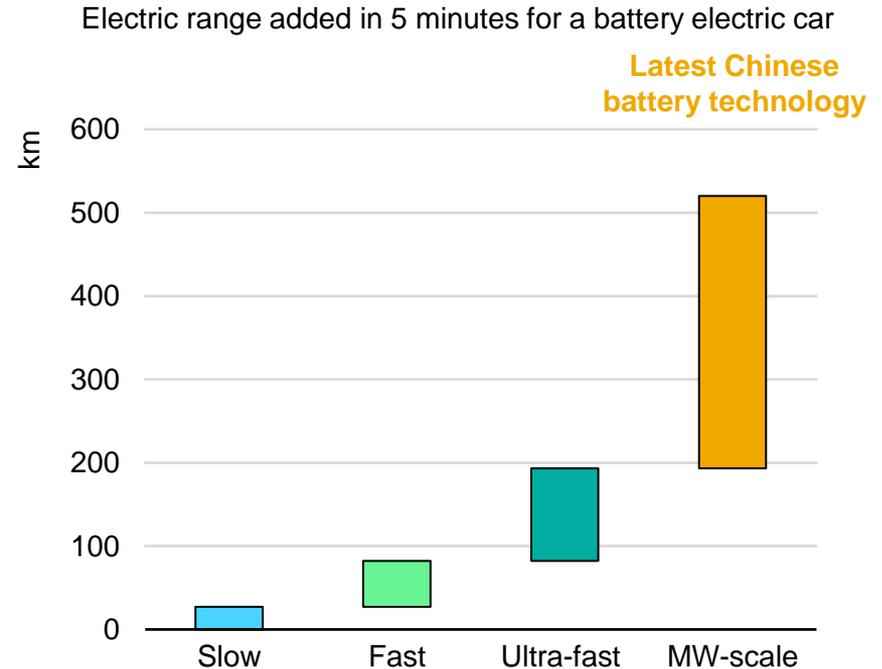
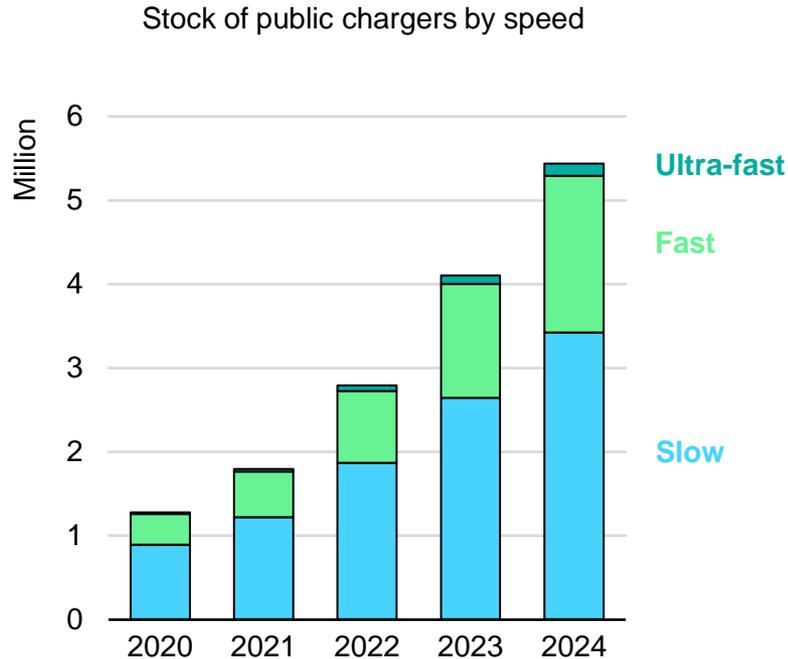
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Access to public charging points is key to supporting mass adoption



Public charging points have nearly doubled in the past 2 years.
Variation in ratio of EVs per public charger can reflect differences in market maturity.

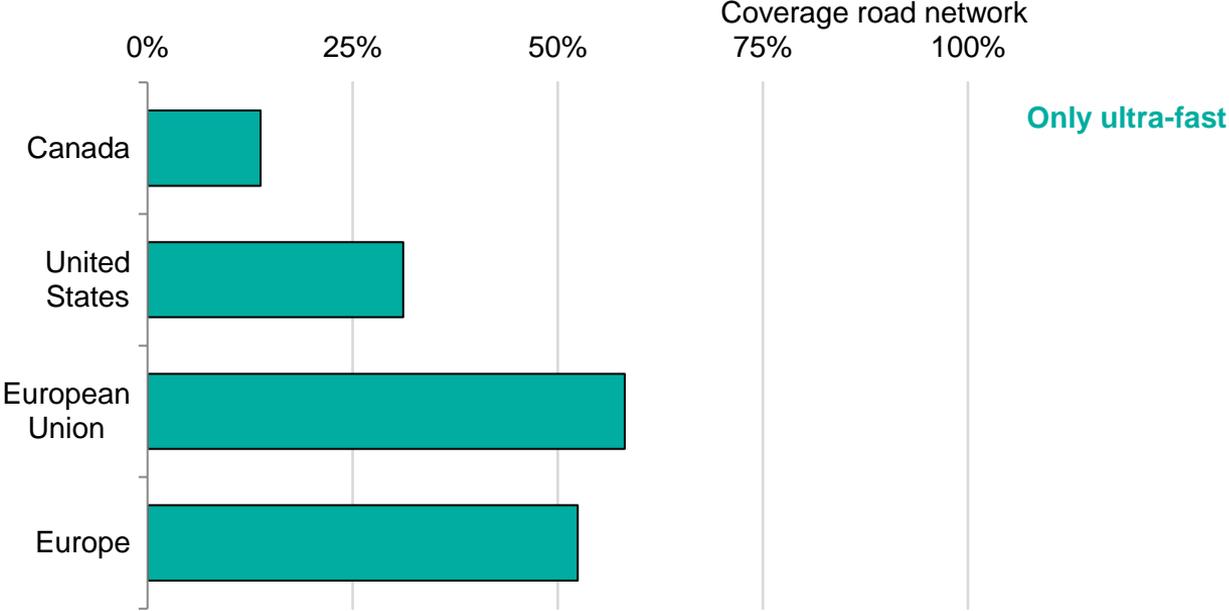
Availability of fast and ultra-fast chargers is steadily increasing



Battery technology innovations in recent years are also enabling safe high-power charging that could be as quick as refuelling a conventional car, but fully realising these advances hinges on deploying adequate infrastructure.

Fast chargers facilitate longer distance travel

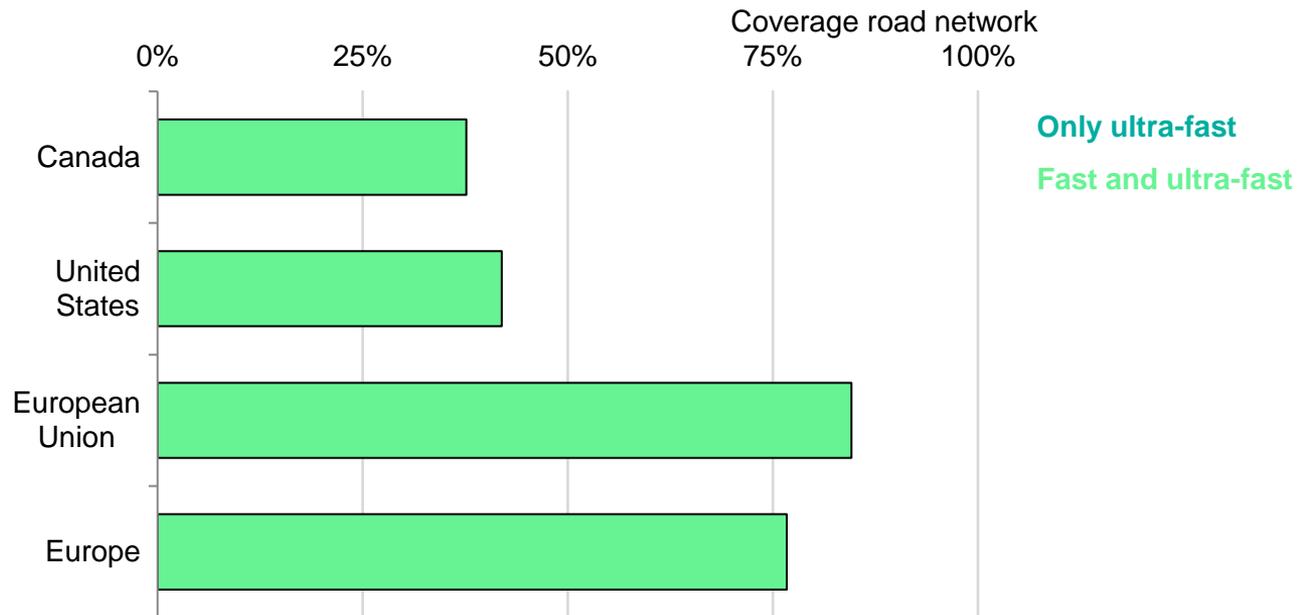
Percentage of highways that is covered by a fast or ultra-fast charger for selected markets, 2024



Over half of Europe’s highways now have ultra-fast charging stations every 50 km. Despite reasonable coverage petrol stations still outnumber charging stations.

Fast chargers facilitate longer distance travel

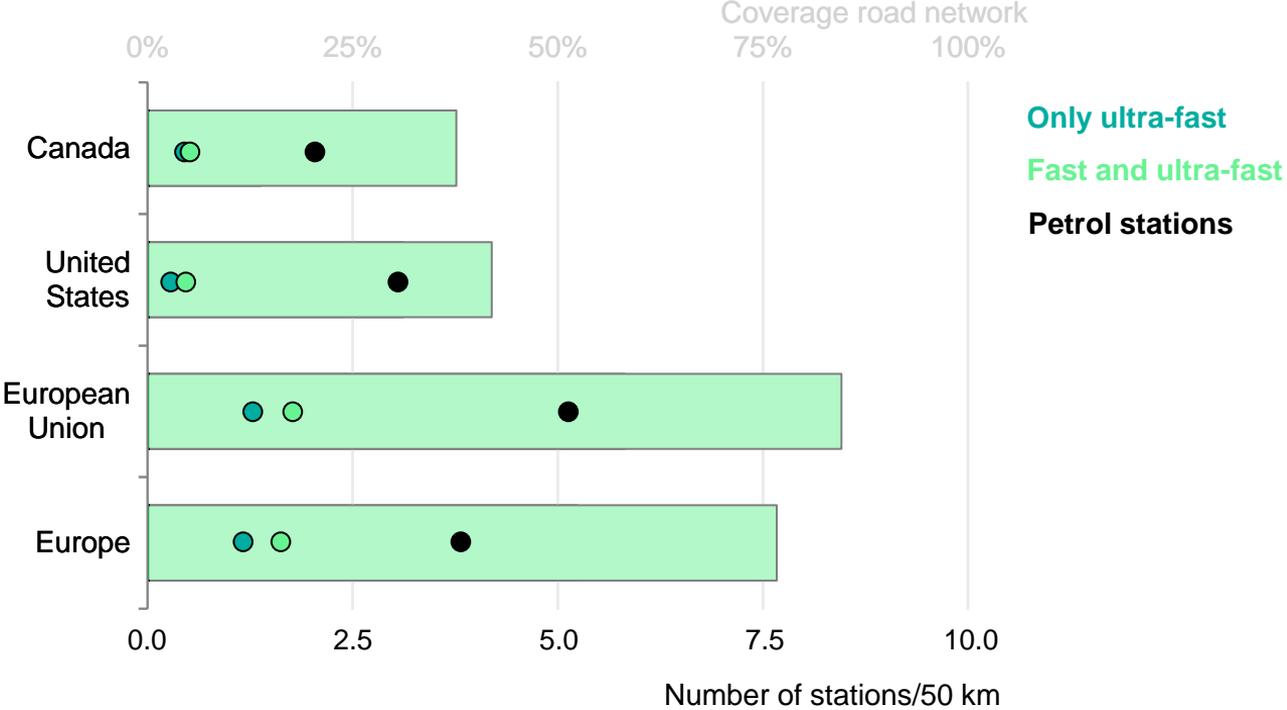
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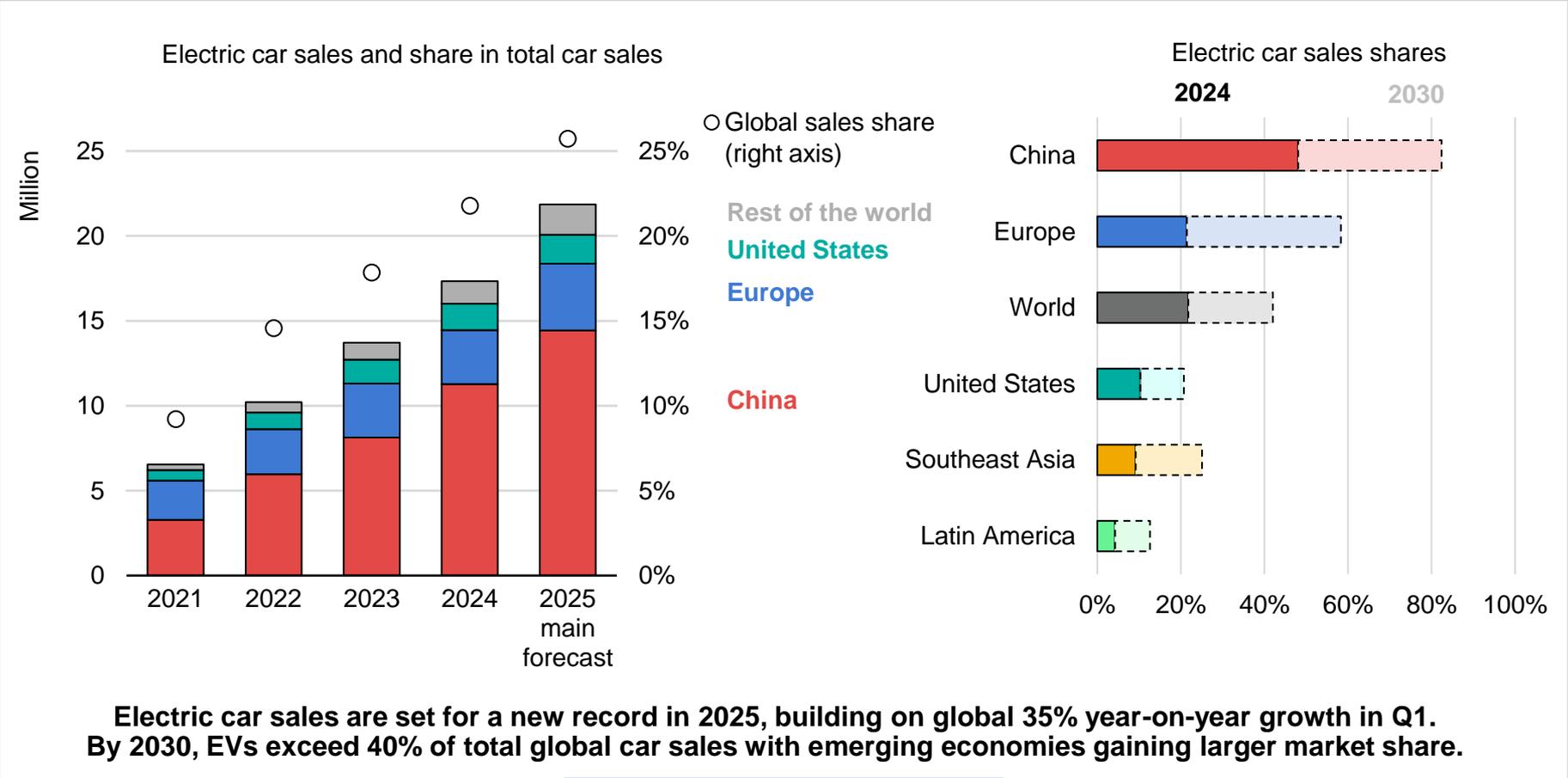
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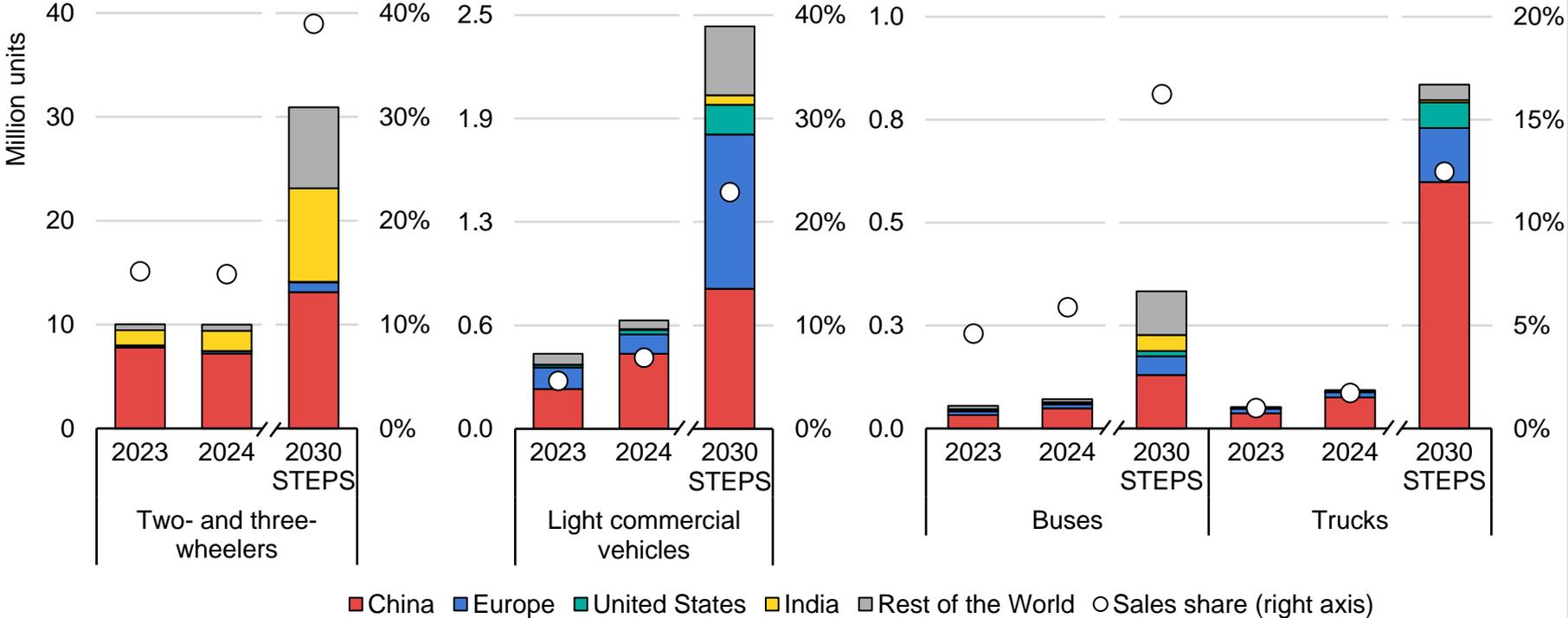
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Electric car sales break records while markets diversify



Electrification goes beyond cars

Sales and sales shares of electric vehicles across modes

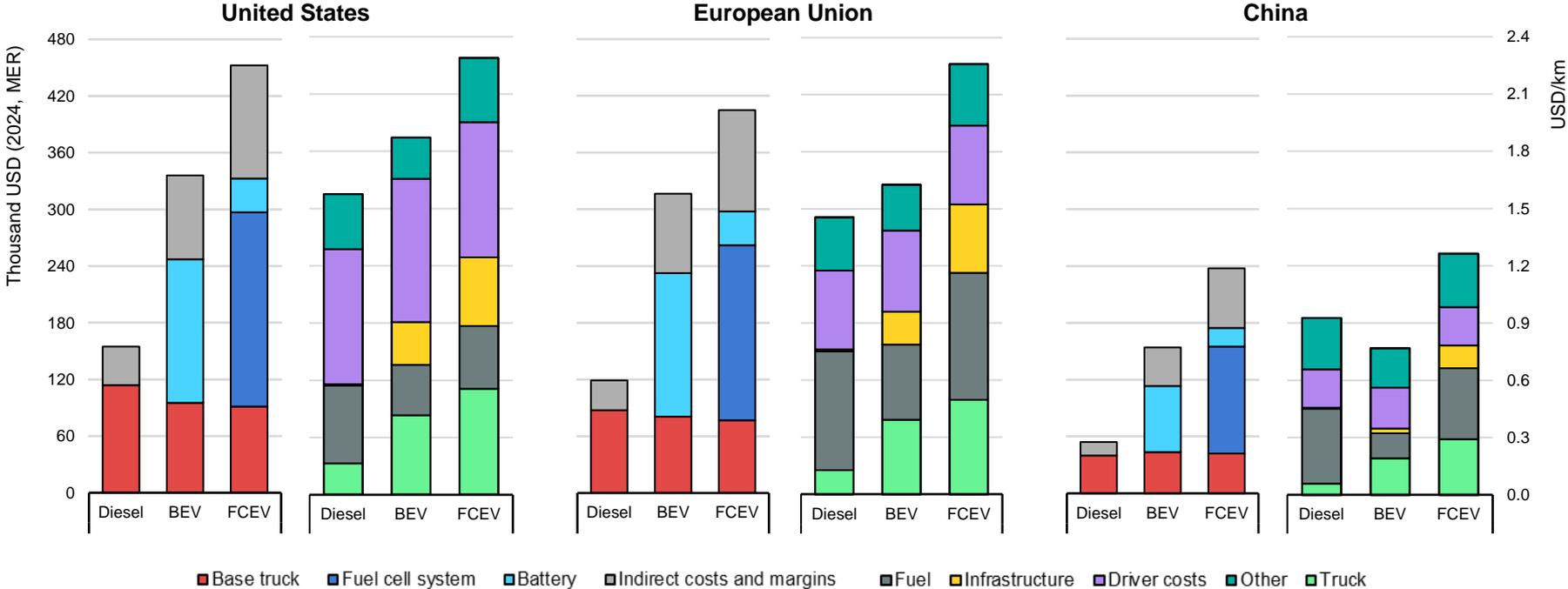


Electric trucks sales saw the highest growth of any vehicle mode in 2024, increasing nearly 80%.

Battery electric trucks are already cost-competitive in China



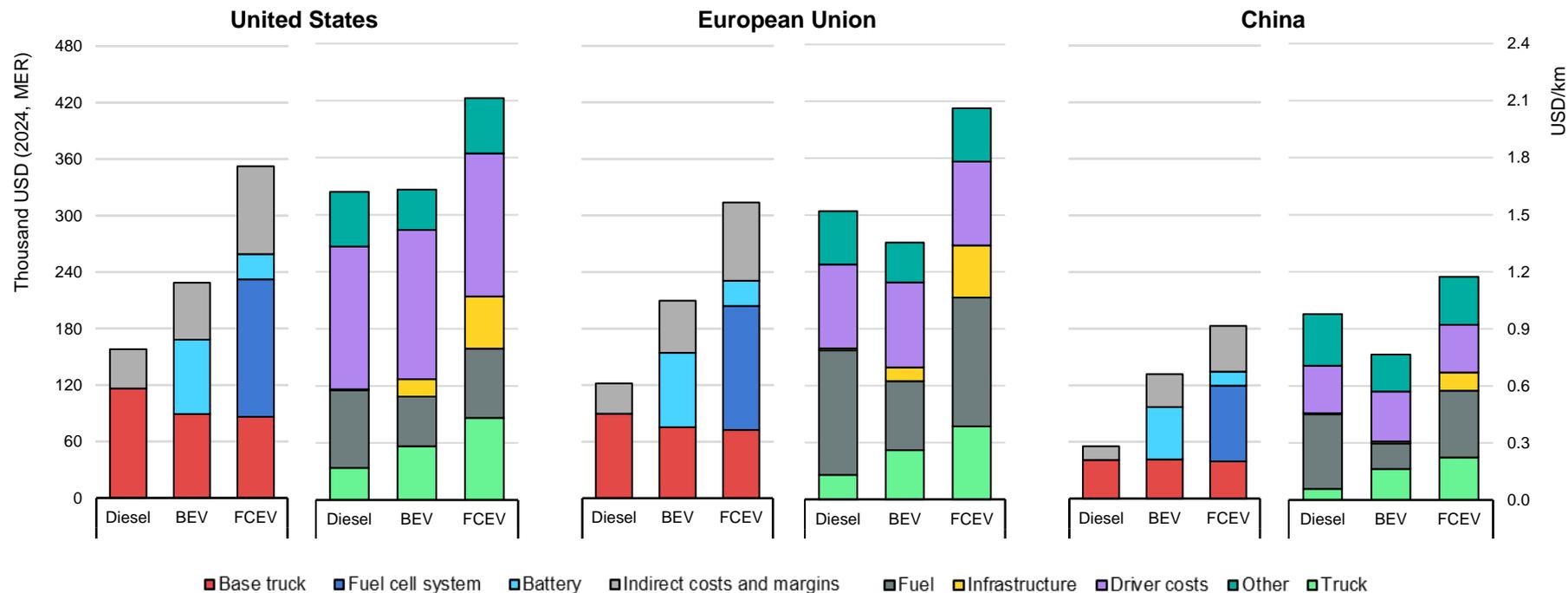
Estimated purchase price (left) and total cost of ownership (right) of heavy-duty trucks, 2024



High upfront costs can discourage investment, especially if access to affordable finance is limited, however the truck accounts for just 20-25% of the total cost of ownership.

Competitiveness achieved in the US and the EU this decade

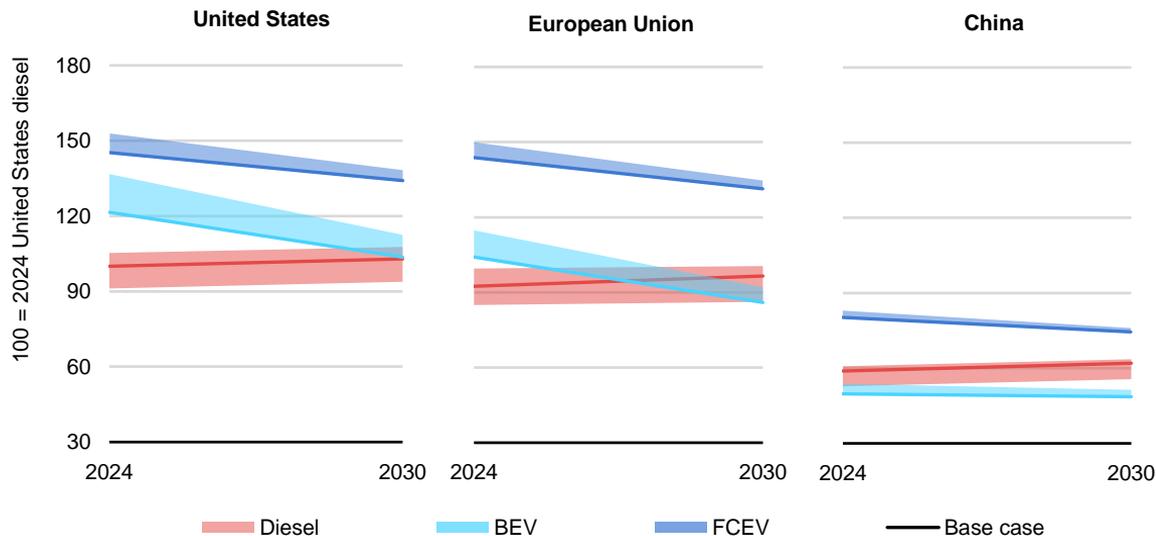
Estimated purchase price (left) and total cost of ownership (right) of heavy-duty trucks, 2030



Lower upfront costs and higher infrastructure utilisation rates lead battery electric trucks to compete with diesel trucks in the major markets by 2030.

Costs vary, but there is a strong case for battery electric trucks

Total cost of ownership for heavy-duty trucks, 2024 and 2030



Payload penalty

Reduces the amount of goods carried

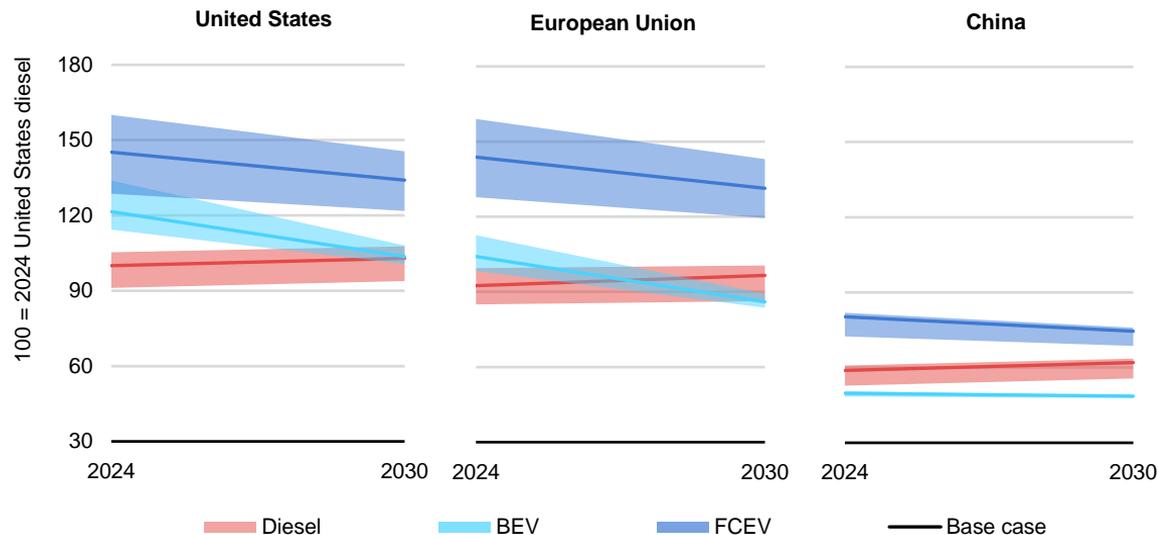
Applicable to weight constrained commodities

Diesel range is given by the highest and lowest annual average diesel prices from 2014 to 2024

Cost competitiveness can vary based on the duty cycle, the cargo moved, fuel prices and other factors, but utilisation of infrastructure plays a large role in determining overall costs.

Costs vary, but there is a strong case for battery electric trucks

Total cost of ownership for heavy-duty trucks, 2024 and 2030



Infrastructure utilisation

Trucks served per day

Battery: 1 to 6

Fuel cell: 9 to 40

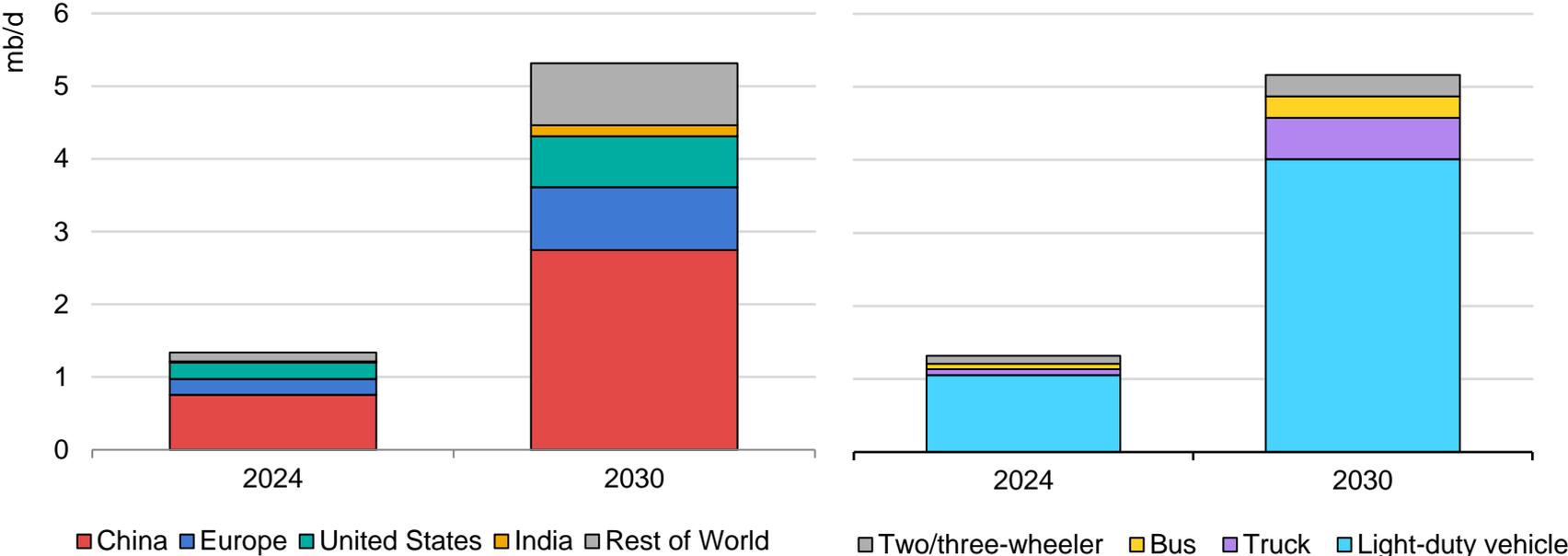
Particular issue for FCEVs where depot charging is a limited option

Diesel range is given by the highest and lowest annual average diesel prices from 2014 to 2024

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EVs to displace more than 5 mb/d by 2030

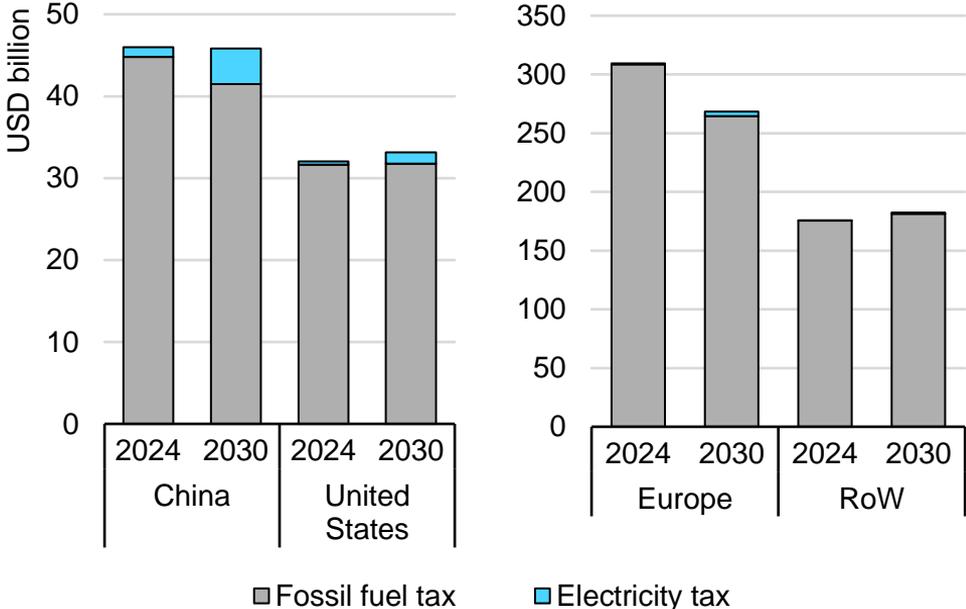
Oil displacement by region in the STEPS



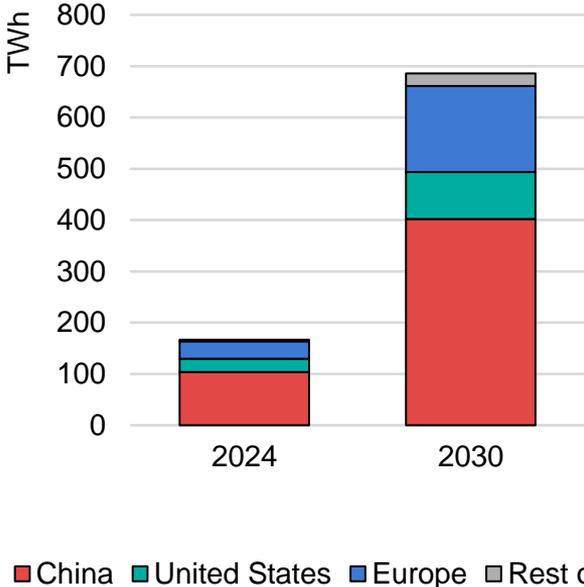
Oil displacement grew by 30% to over 1.3 mb/d in 2024 – equivalent to Japan’s entire transport oil demand.

Electrification is changing the tax landscape

Electricity, gasoline and diesel tax income by region in the STEPS



Electricity consumption in the STEPS



Without tax reform, governments could face a projected USD 65 billion shortfall in tax revenues in 2030.

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