



Global EV Outlook 2023

27 April 2023

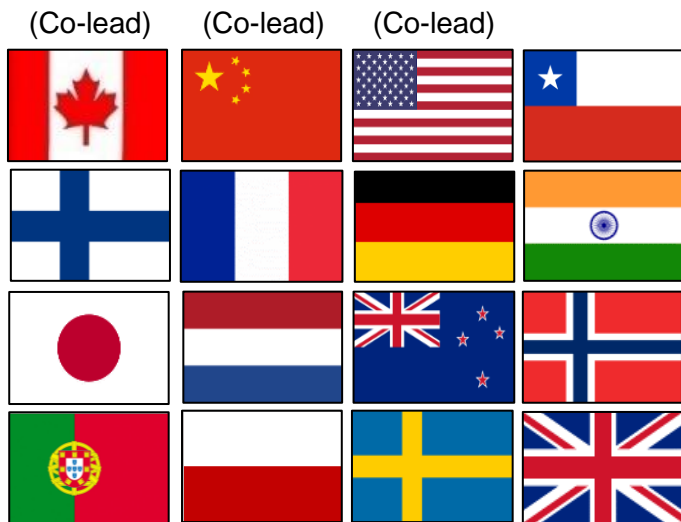
International
Energy Agency



Global EV Outlook 2023

Launch Webinar, 27th April 2023

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Shane McDonagh, Araceli Fernandez Pales, Apostolos Petropoulos, Jacob Teter



Global EV Outlook 2023

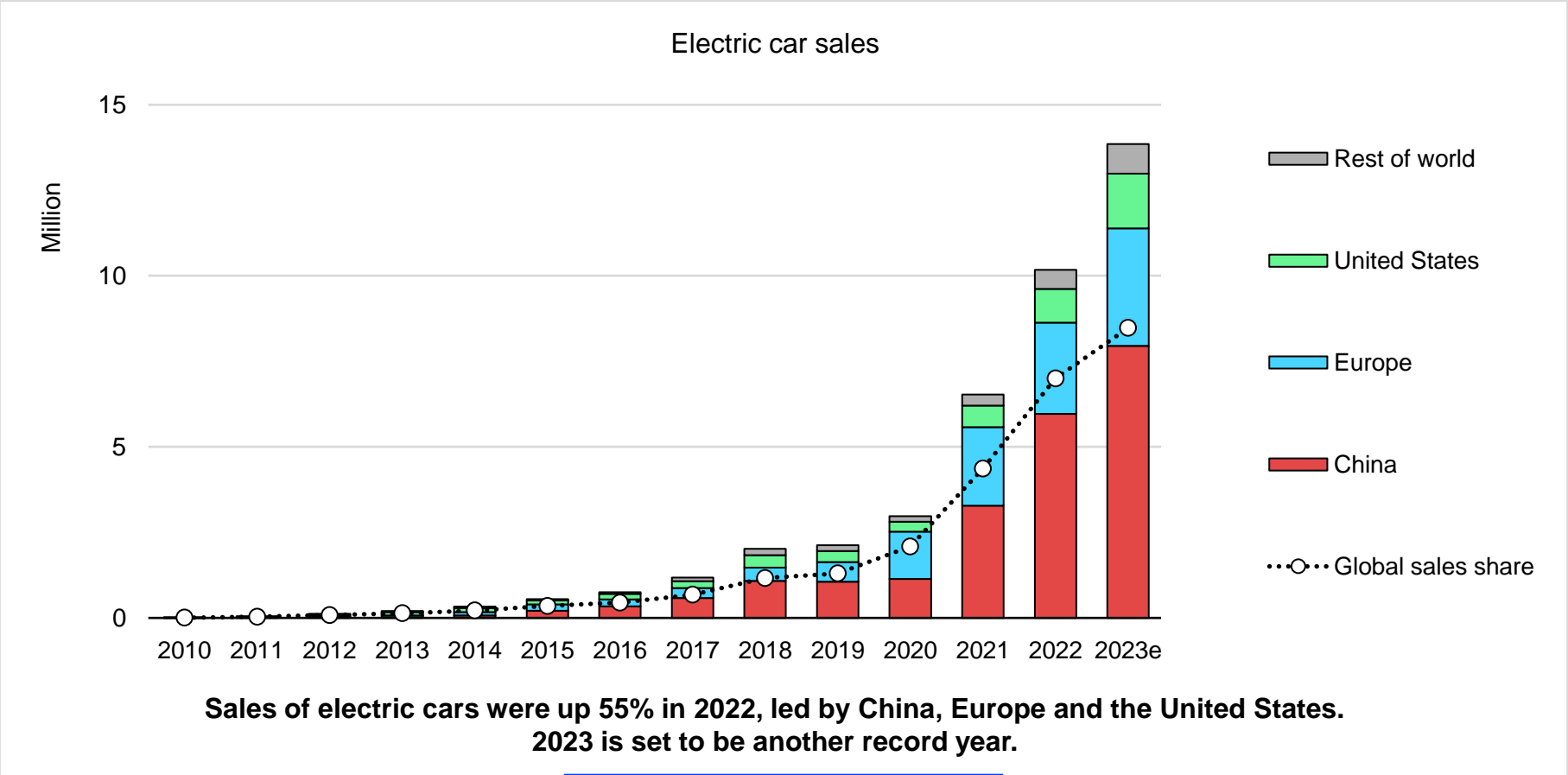
Catching up with climate ambitions



International
Energy Agency

Recent trends in electric cars

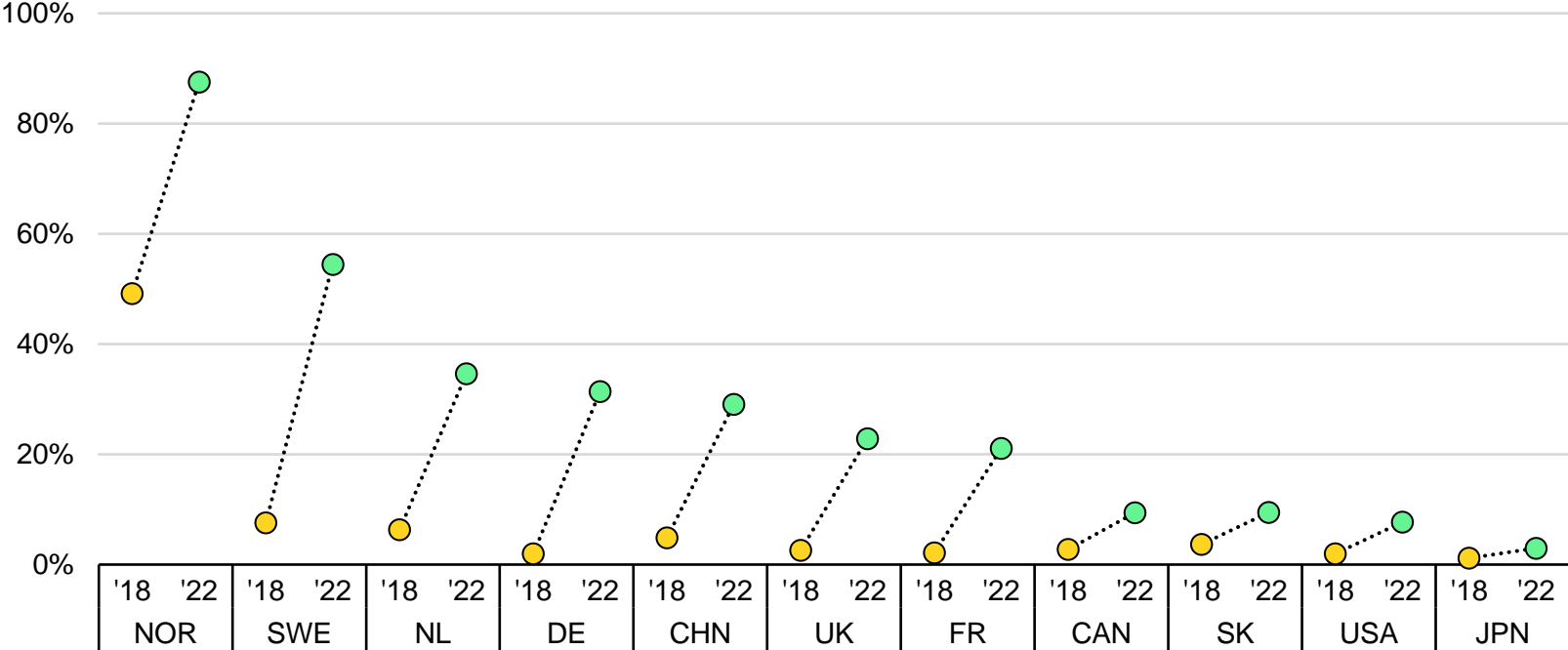
Electric car sales exceeded 10 million in 2022



Electric cars are reaching mass-market adoption in many cases

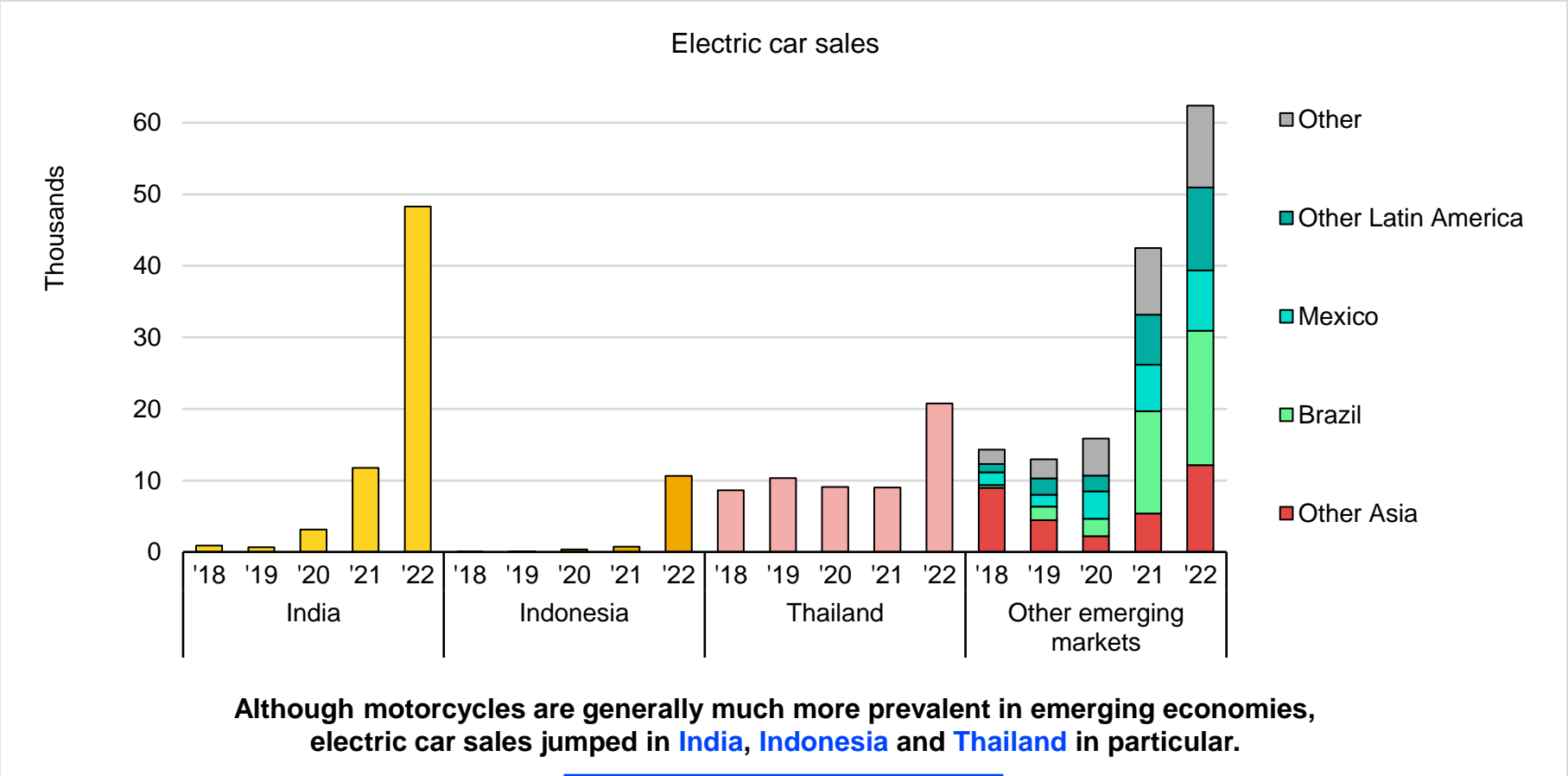


Electric car sales share in selected countries, 2018-2022

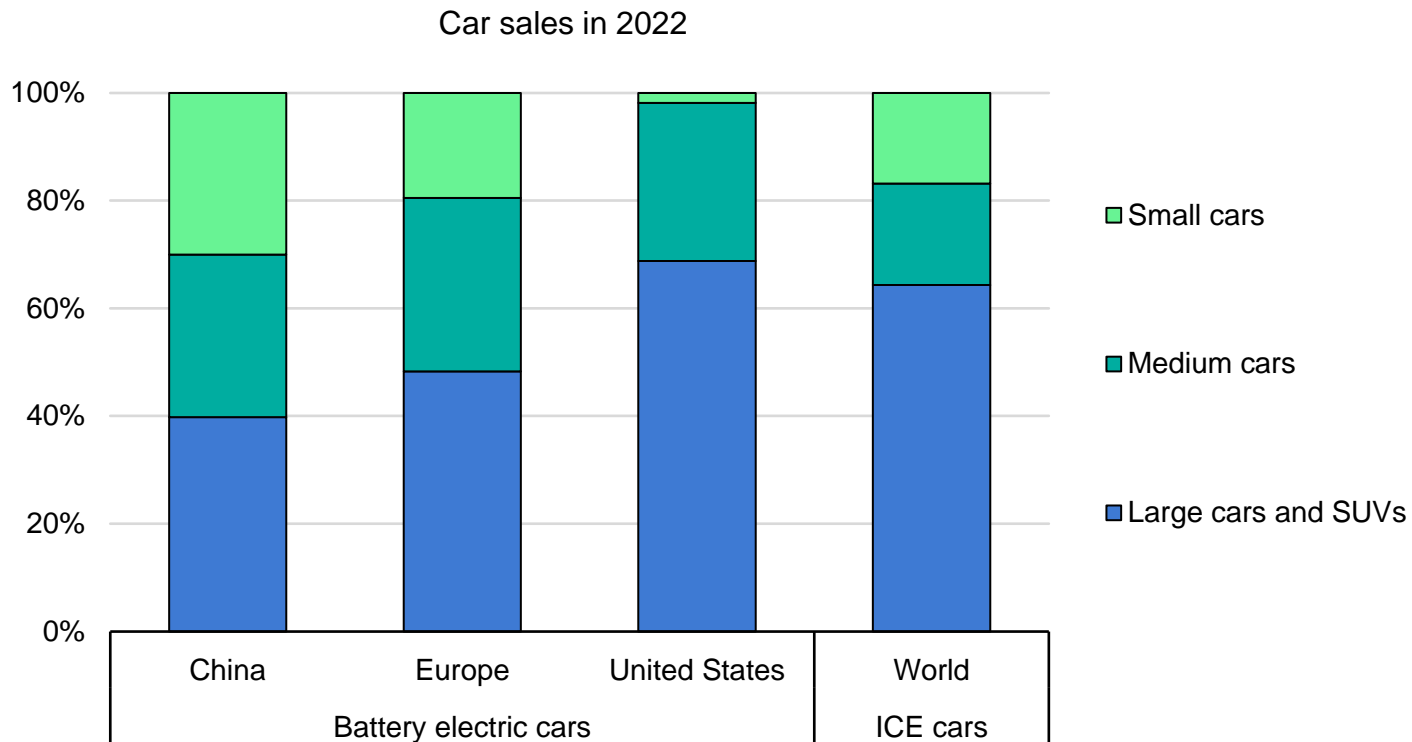


Electric cars account for **more than 20%** of total sales in China and more than 10 European countries. This share is expected to climb much higher by 2030 with current policies.

Electric cars are beginning to sell in emerging economies

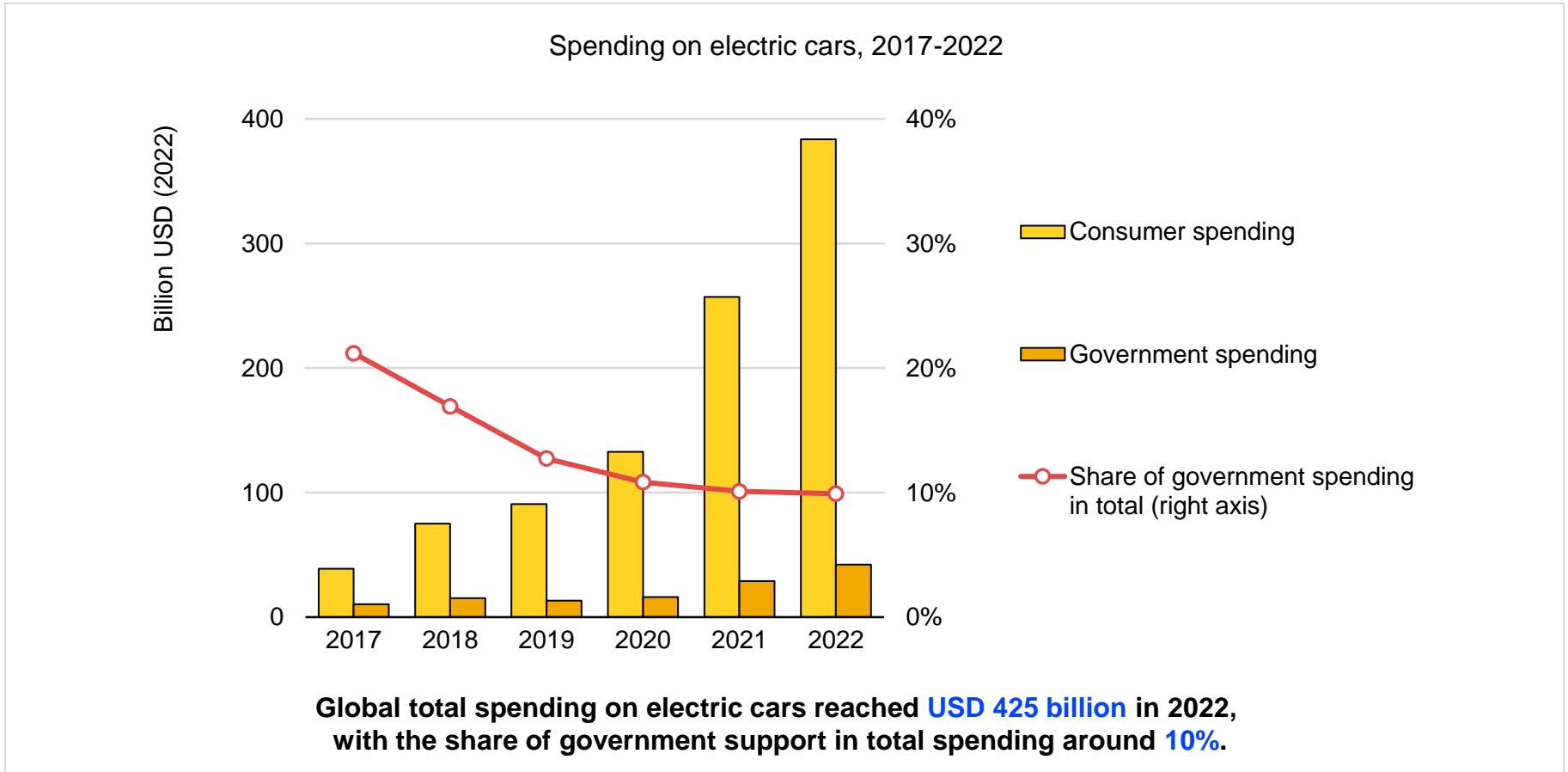


Large models and SUVs dominate car sales



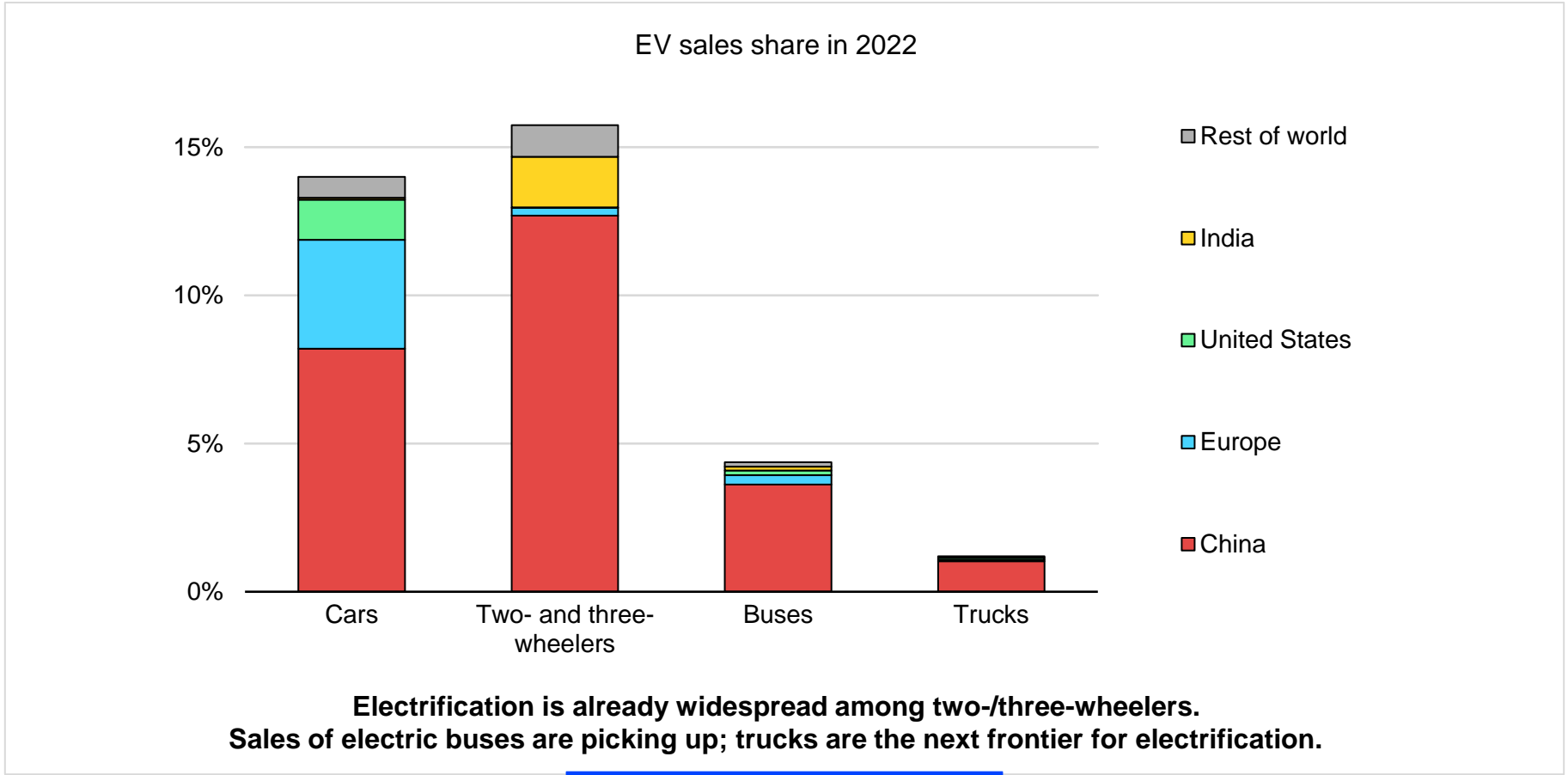
Large cars and SUVs made up over **45%** of electric car sales in 2022. This has important implications for **critical minerals** demand.

Sustained policy support underpins EV growth



Recent trends in other vehicle segments

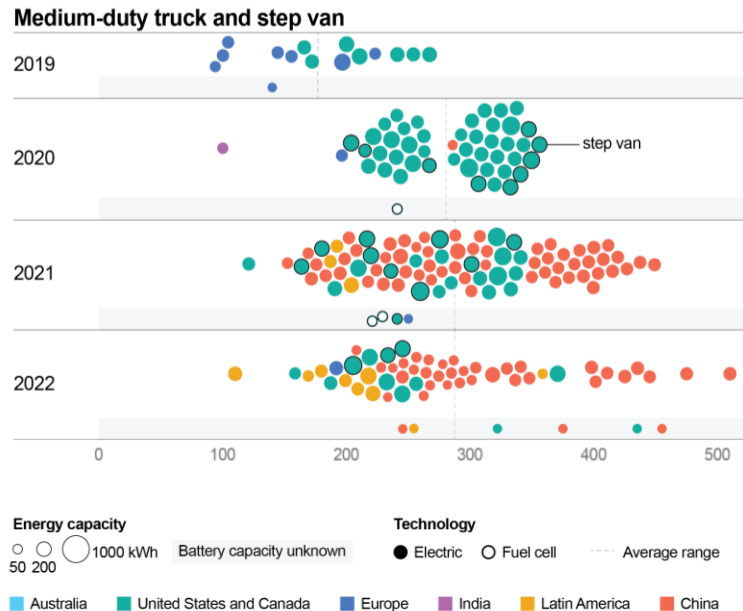
Transport electrification is not only about cars



**Electrification is already widespread among two-/three-wheelers.
Sales of electric buses are picking up; trucks are the next frontier for electrification.**

Model availability widens for electric medium and heavy-duty trucks

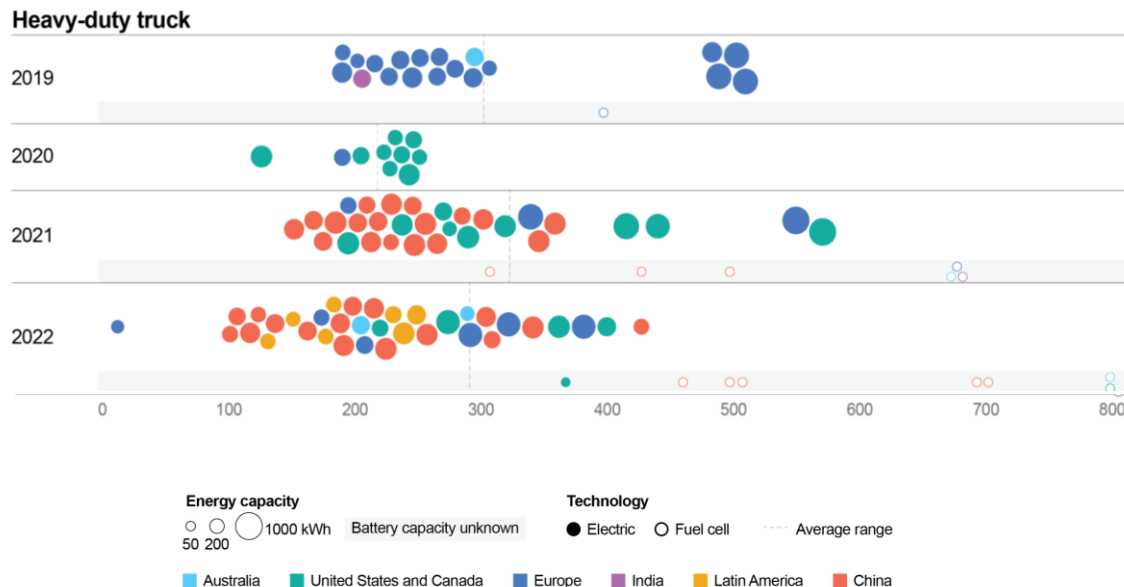
Current and announced zero emissions commercial vehicle models by type, release date and range, 2019-2024



China accounts for the vast majority (with 54 000 bus sales and 52 000 medium- and heavy-duty truck sales), but sales in the United States and Europe are rising, with more available models and more viable use cases.

Model availability widens for electric medium and heavy-duty trucks

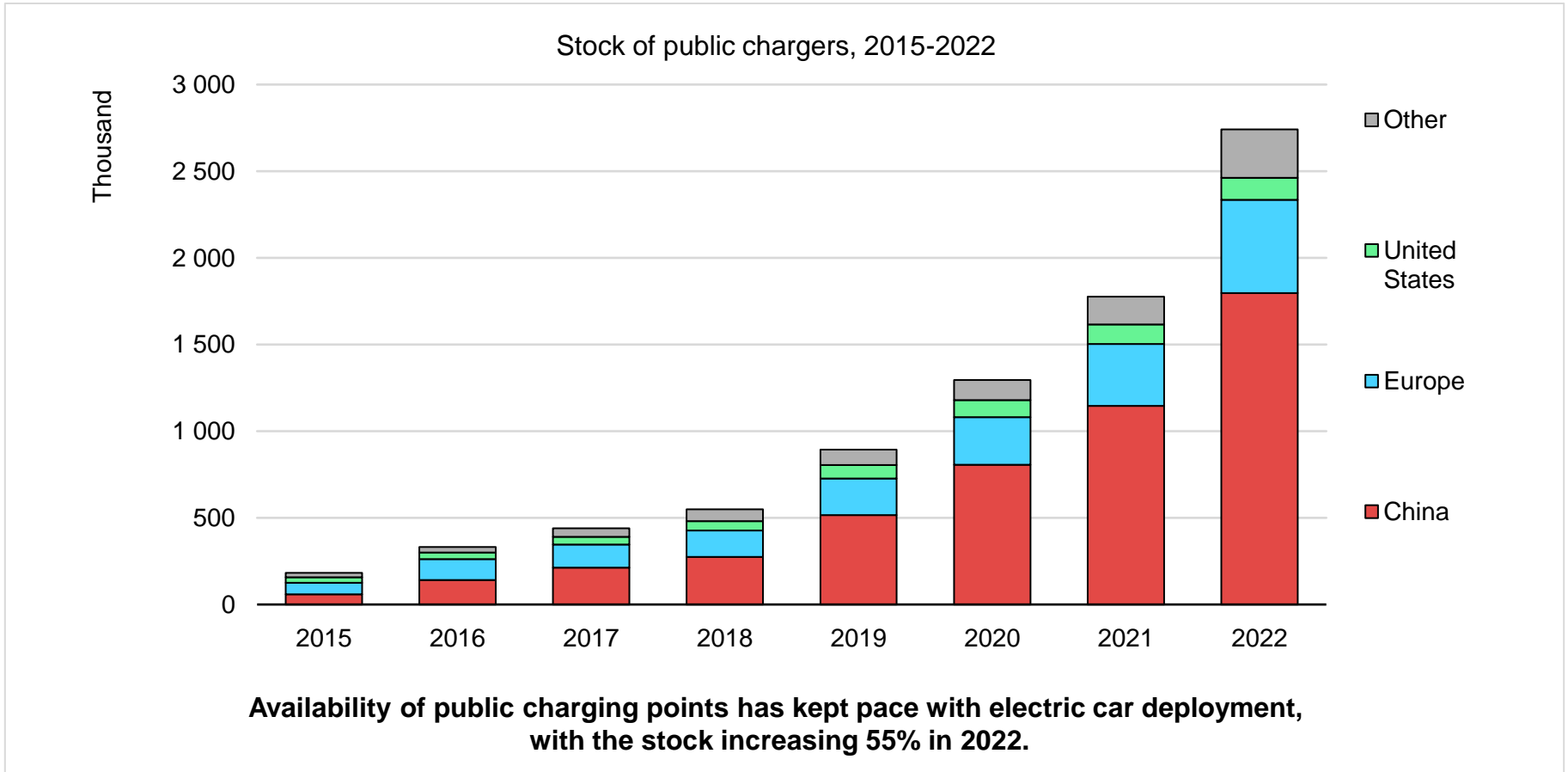
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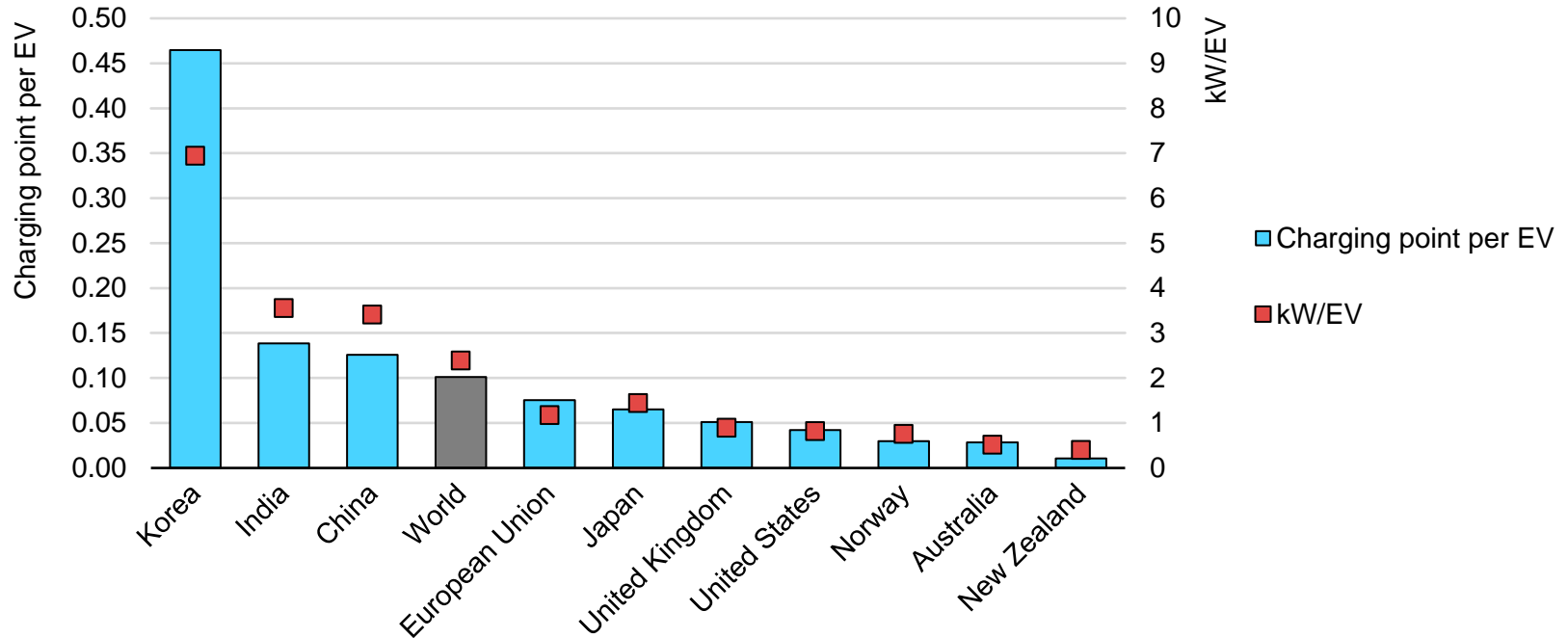
Trends in charging infrastructure

The global stock of public chargers has reached 2.7 million



Globally, there is a ratio of 10 EVs per public charging point

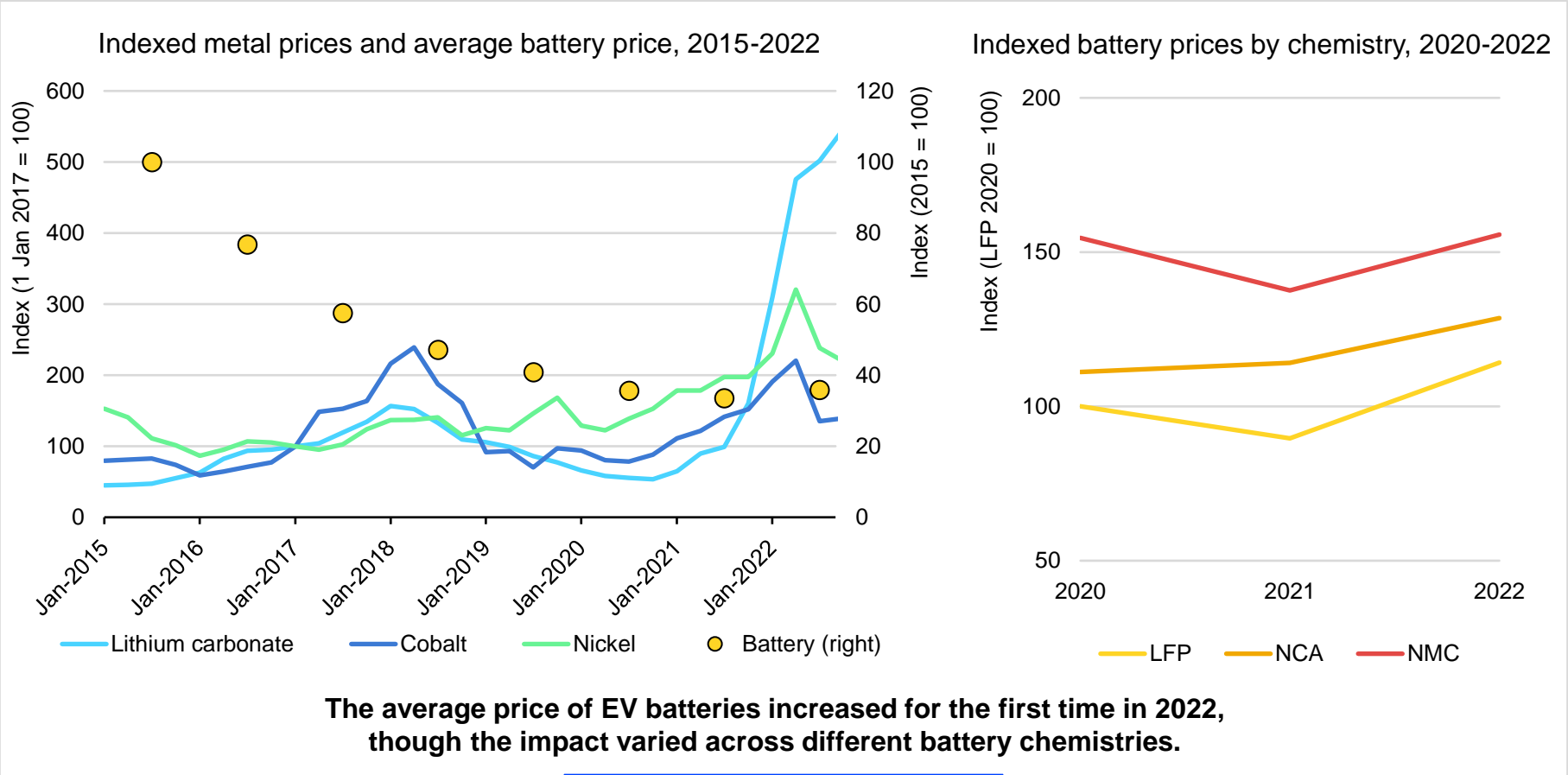
Number of public charging points and kW per electric light-duty vehicle, 2022



The availability of public charging points varies widely across regions. On average there is 2.4 kW of public charging capacity per EV worldwide.

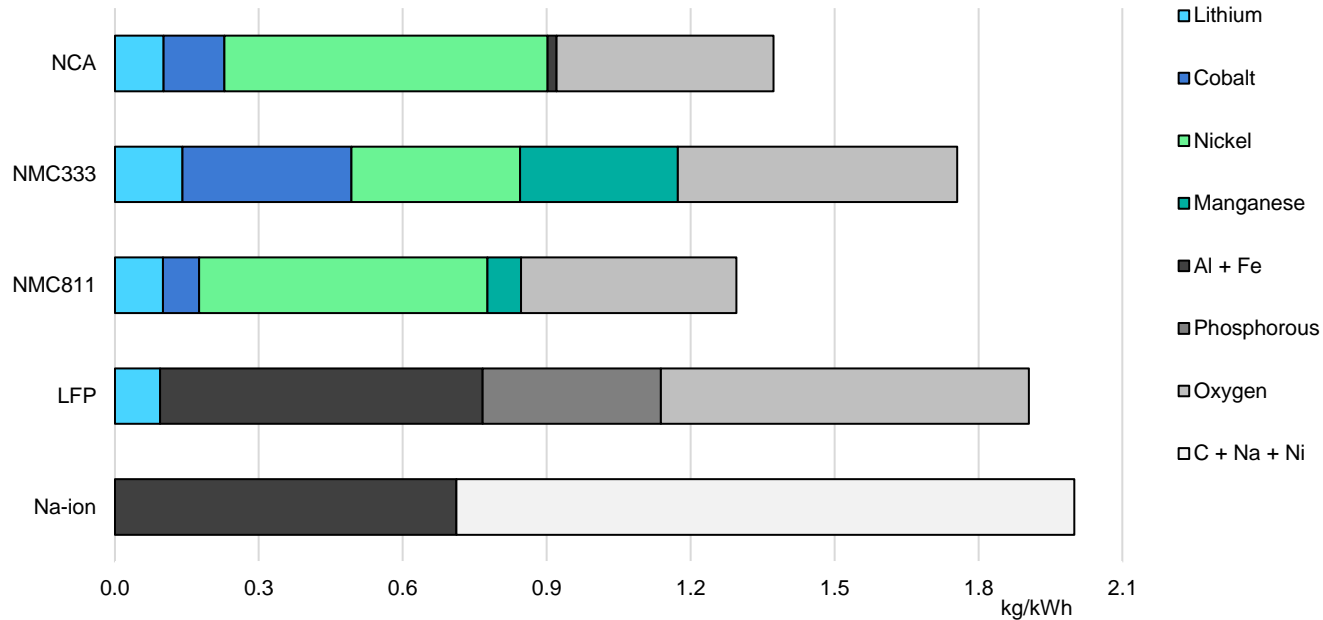
Trends in EV batteries

Battery material prices increase in 2022



Alternative battery chemistries on the rise

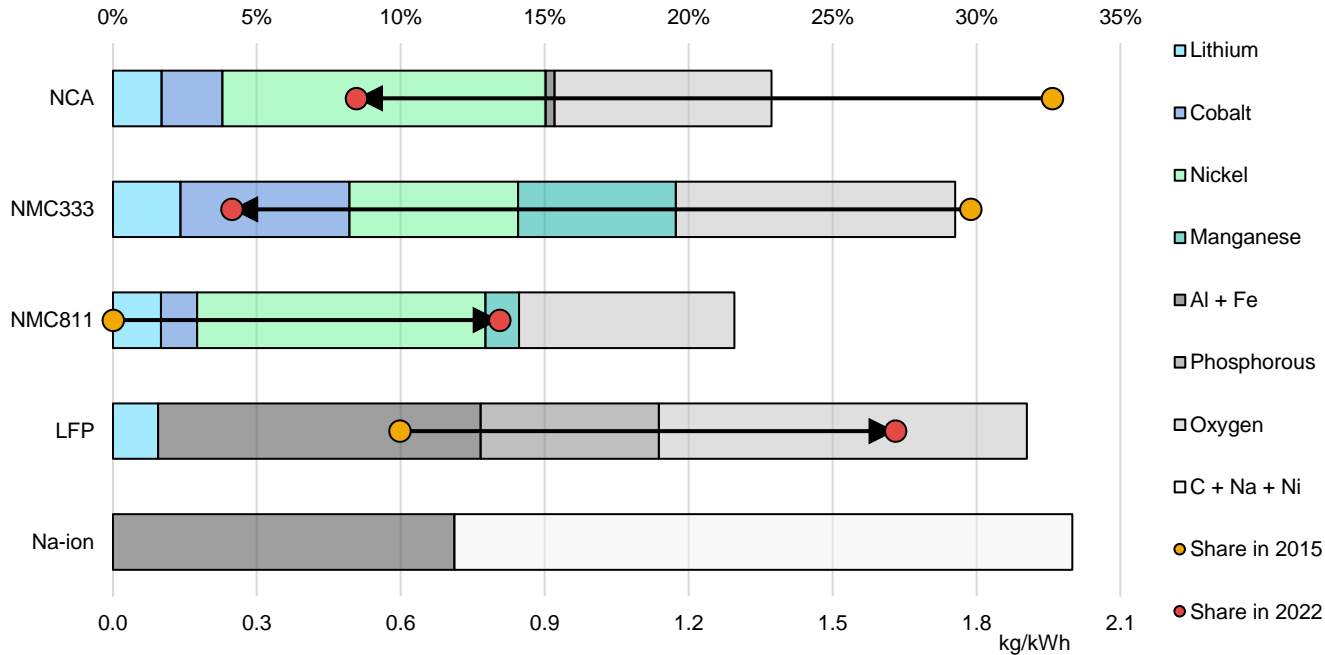
Material content and market share for different cathodes



LFP batteries rely less on expensive metals like cobalt and nickel, leading to their recent increase in market share. Sodium-ion batteries which avoid lithium altogether are only now beginning to enter the market, mainly in China.

Alternative battery chemistries on the rise

Material content and market share for different cathodes

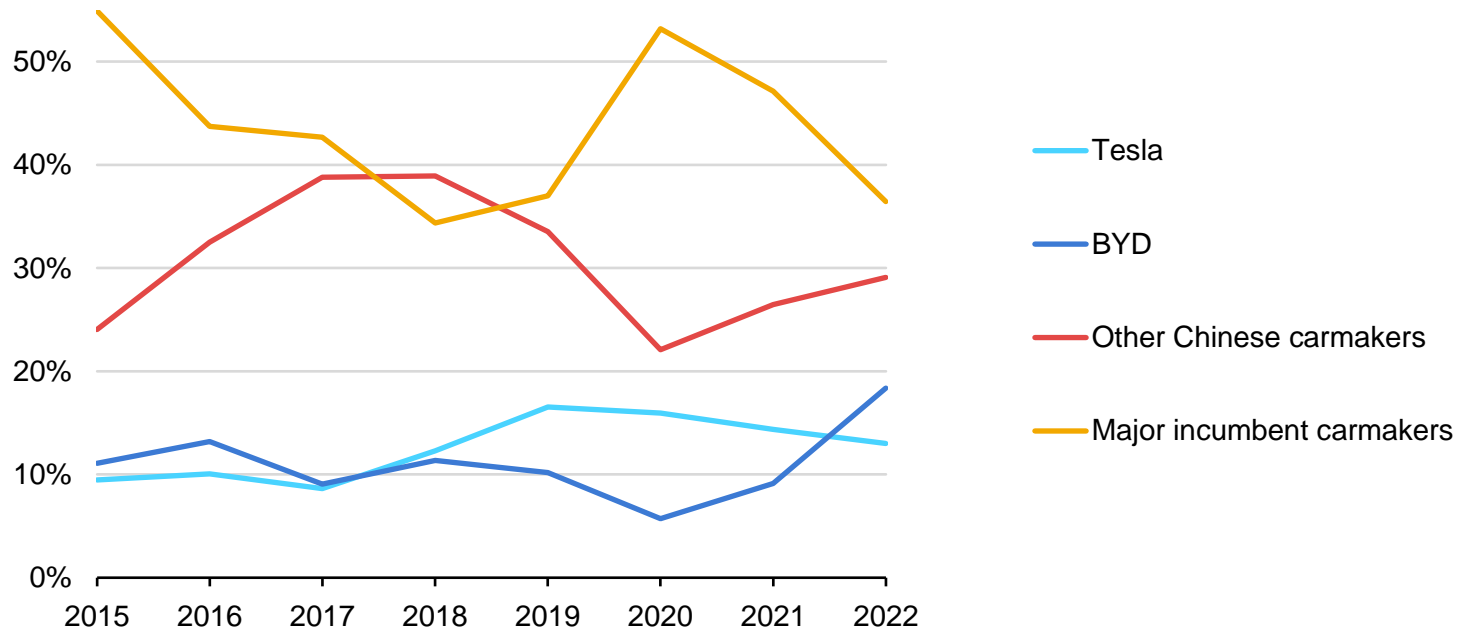


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Finance and trade

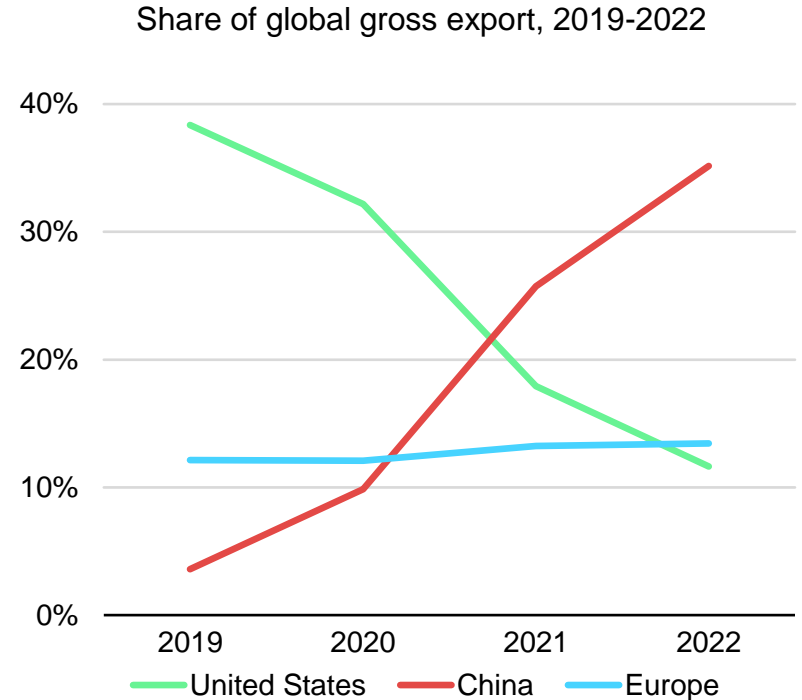
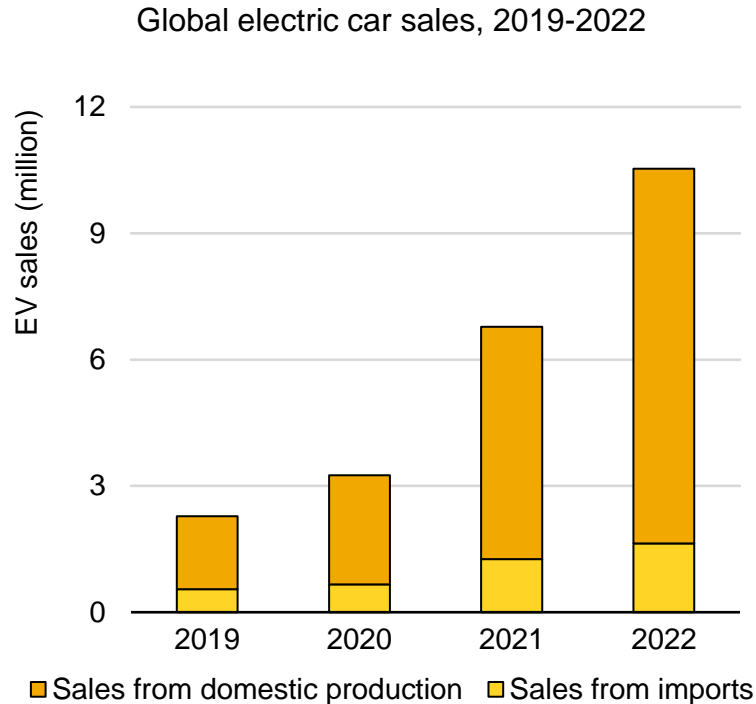
Carmakers are facing tough competition, especially from China

Share of global electric car markets, 2015-2022



Tesla and BYD dominate global electric car markets, together accounting for over 30% of sales. Major incumbents and Chinese carmakers are racing to capture global market share.

International trade of electric vehicles is increasing



Between 2019 and 2022, the share of traded EV went from quarter to just a sixth of global sales. Since 2021, China has become the largest exporter of electric vehicles, overtaking the US.

Policies to promote EV deployment

Global EV Policy Explorer

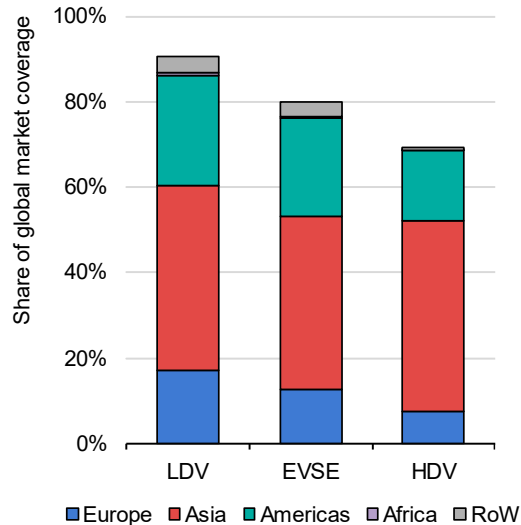
Key policies and measures that support the deployment of electric and zero-emission vehicles

Region Any ▼	Country/Economy Any ▼	Level All ▼	Policy type All ▼	Category All ▼
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Easily search of filter by region, category, and others

Global EV Policy Explorer

Key policies and measures that support the deployment of electric and zero-emission vehicles



LDVs remain the primary focus with over 90% of global sales covered...

A key barrier for many, EVSE policy coverage continues to increase...

Adoption of bus targets in particular sees coverage of HDVs rise...

Suites of policies were released in major markets



Inflation Reduction Act

- Clean Vehicle Tax Credit
- Clean Heavy-Duty Vehicle Program
- Commercial Clean Vehicle Credit
- And others..



Green Deal Industrial Plan

- Net Zero Industry Act
- Critical Mineral Act
- EU Battery Directive
- Plus revised CO₂ standards, Euro 7 regulations, and the Alternative Fuel Infrastructure Directive

Examples of key EV related policies

OEM sales mandate



Production Linked Incentive



2022

Critical Minerals Strategy



Indonesia Battery Corporation



Critical Minerals Strategy



2023

Battery Strategy



Supply

Demand

Multiple state level EV policies



EV incentives



EV incentives



EV incentives

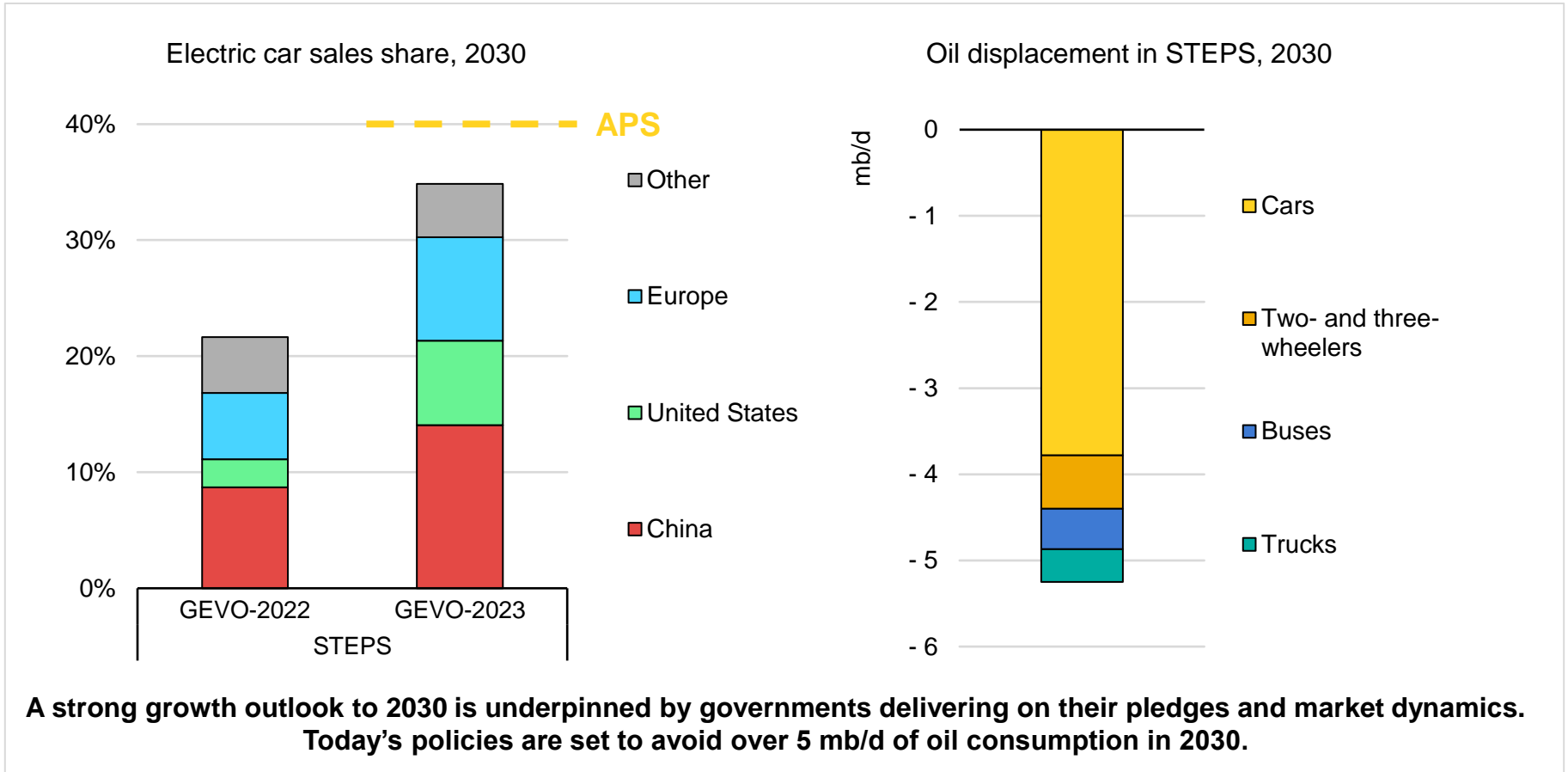


EV Strategy

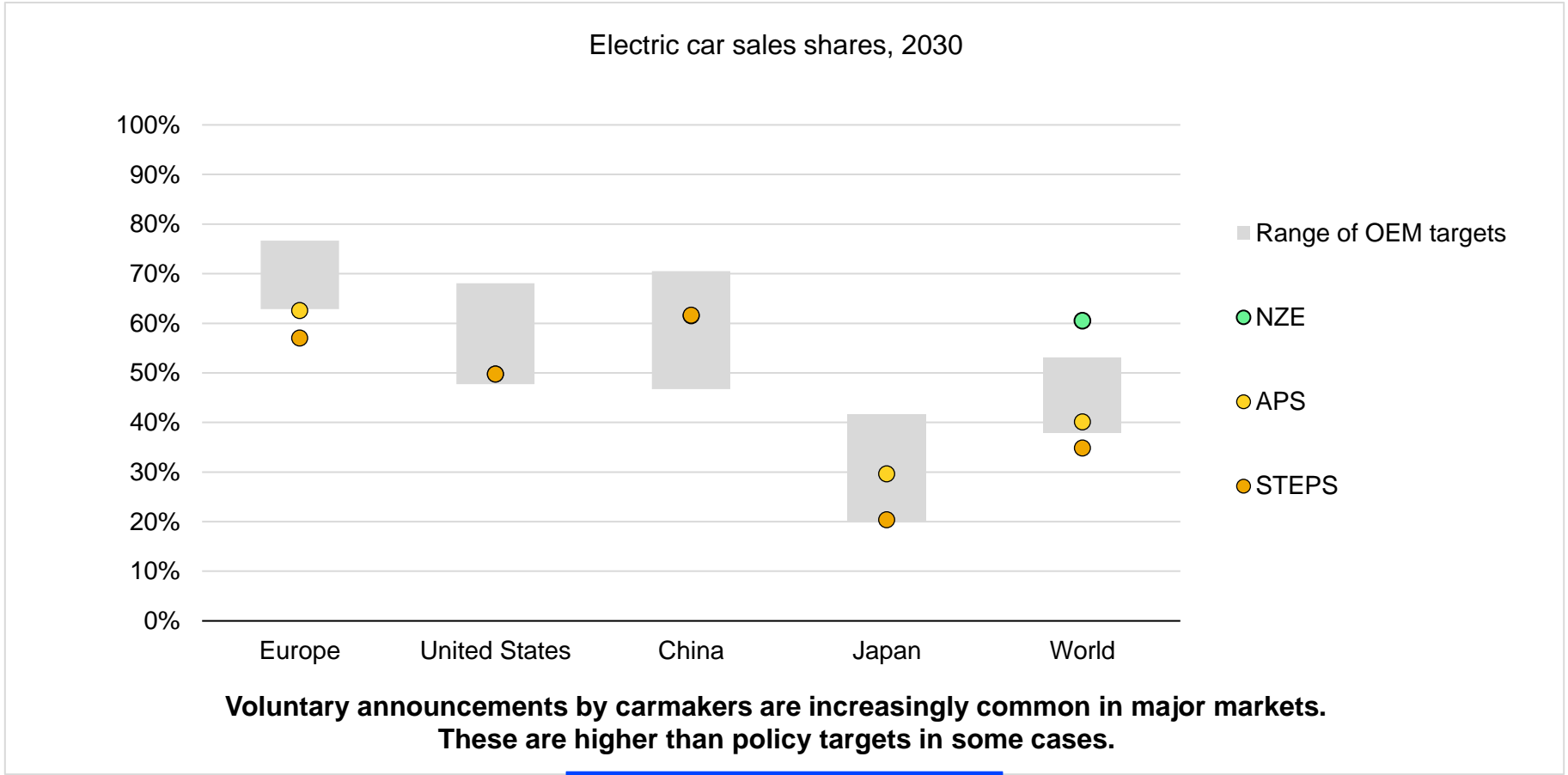


Outlook for electromobility

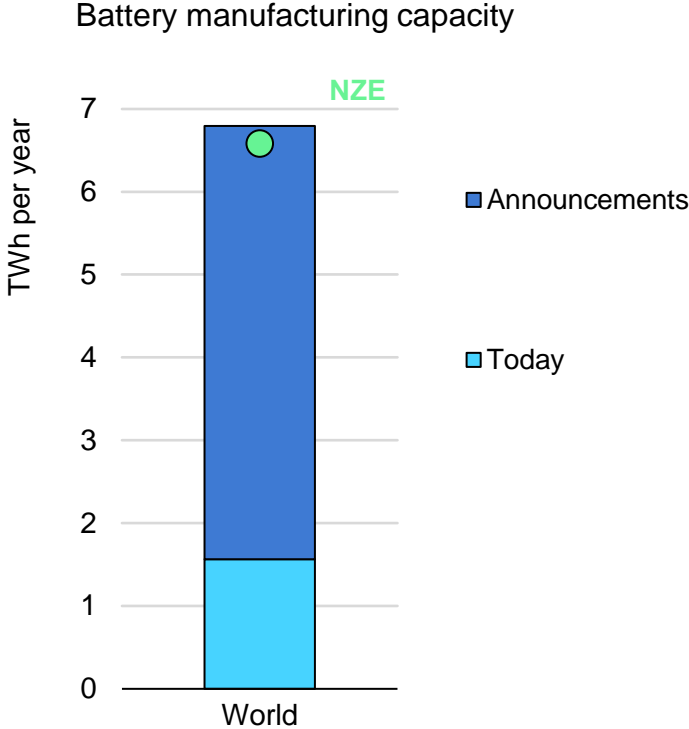
Policy implementation is catching up with targets



Major carmakers anticipate higher policy ambitions



Battery supply chains are essential to the transition



Battery manufacturing capacity needs to grow two- to fourfold by 2030. Policy must ensure that investment flows effectively to all steps of the supply chain.

Policy recommendations

Five recommendations to governments

1

Adapt support for electric cars

2

Expand EV infrastructure

3

Kickstart the heavy-duty market

4

Promote adoption in emerging and developing economies

5

Ensure secure, resilient and sustainable EV supply chains

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