

Global EV Outlook 2023

30th IEEJ Global Energy Webinar, 30 May 2023

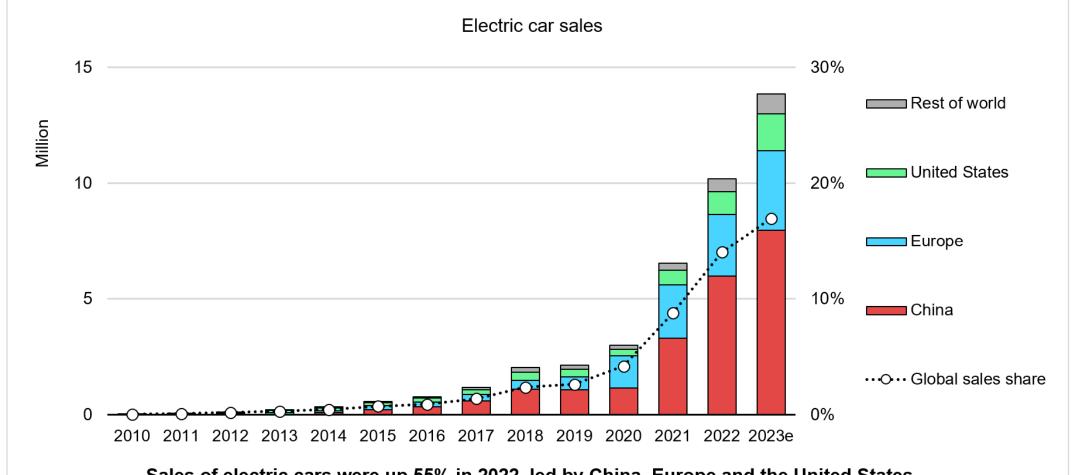
Dr. Elizabeth Connelly



Recent trends in electric cars

Electric car sales exceeded 10 million in 2022

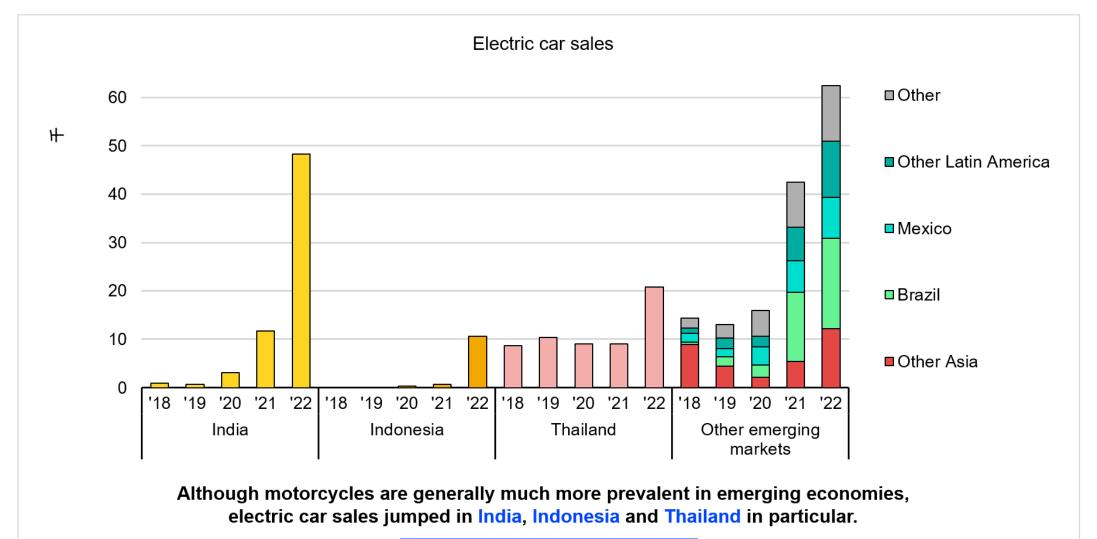




Sales of electric cars were up 55% in 2022, led by China, Europe and the United States. 2023 is set to be another record year.

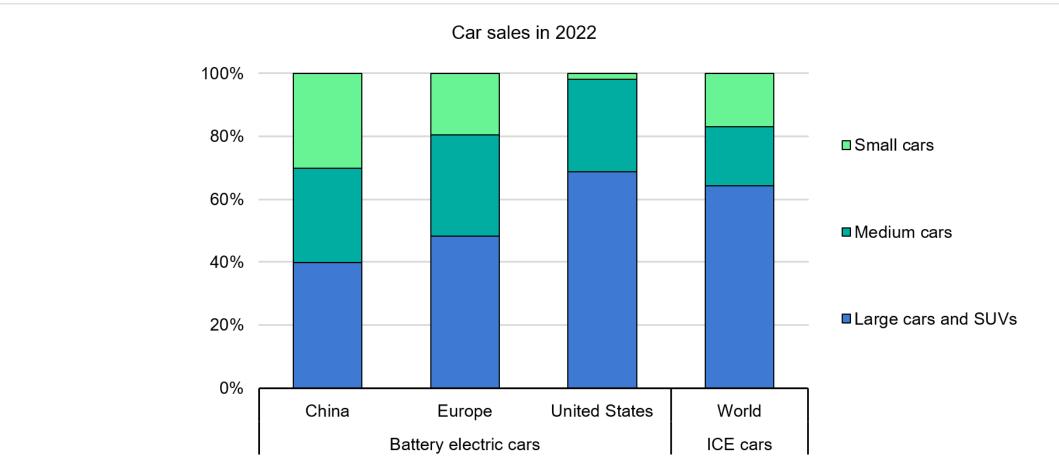
Electric cars are beginning to sell in emerging economies





Large models and SUVs dominate car sales

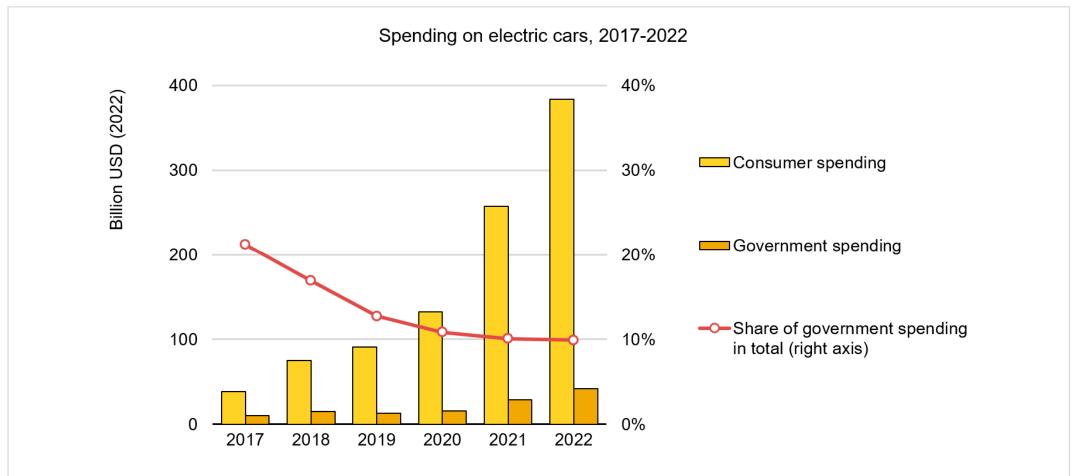




Large cars and SUVs made up over 45% of electric car sales in 2022. This has important implications for critical minerals demand.

Sustained policy support underpins EV growth





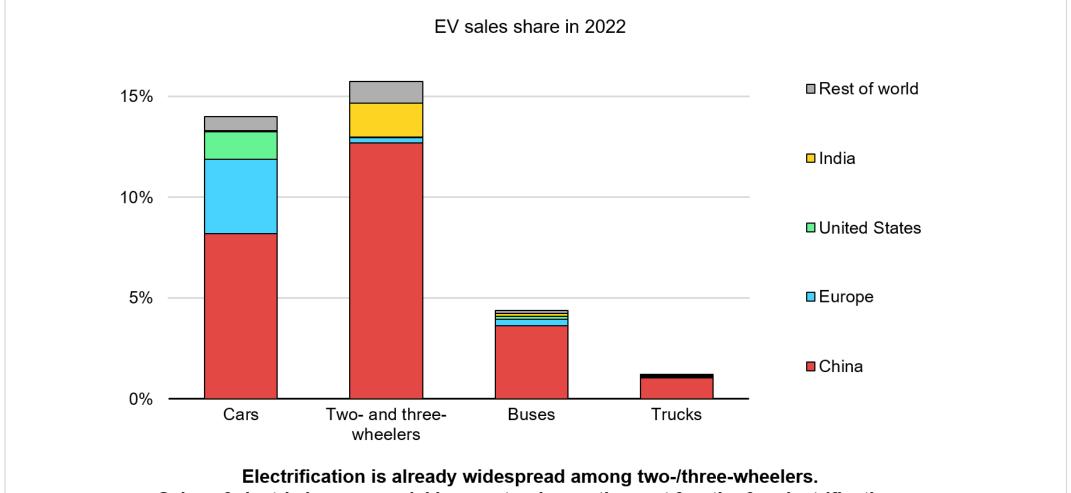
Global total spending on electric cars reached USD 425 billion in 2022, with the share of government support in total spending around 10%.



Recent trends in other vehicle segments

Transport electrification is not only about cars





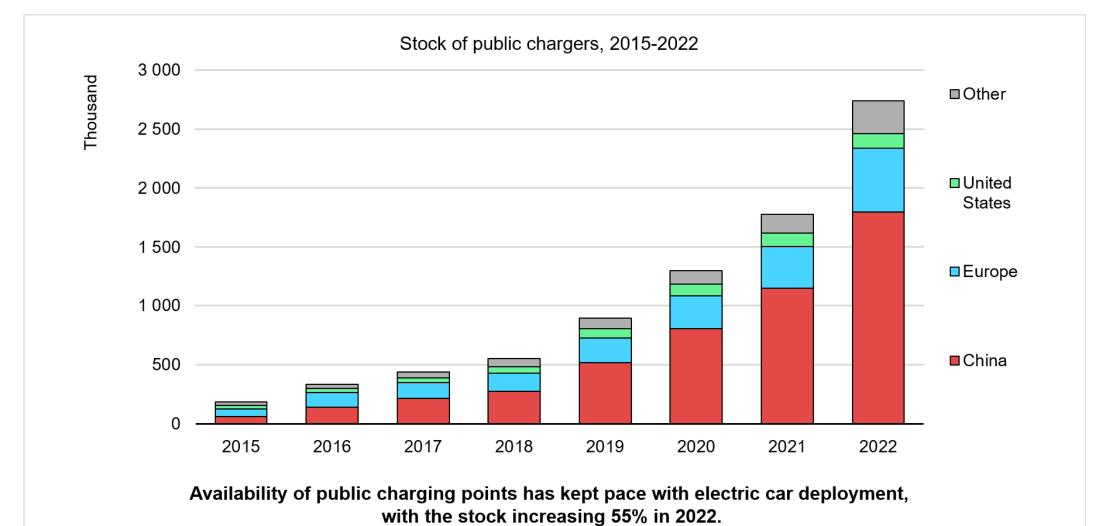
Sales of electric buses are picking up; trucks are the next frontier for electrification.



Trends in charging infrastructure

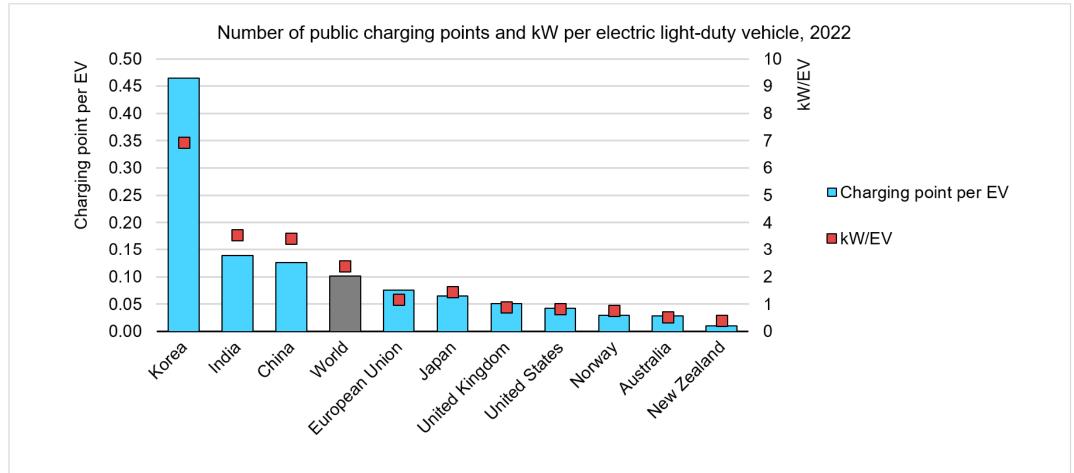
The global stock of public chargers has reached 2.7 million





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





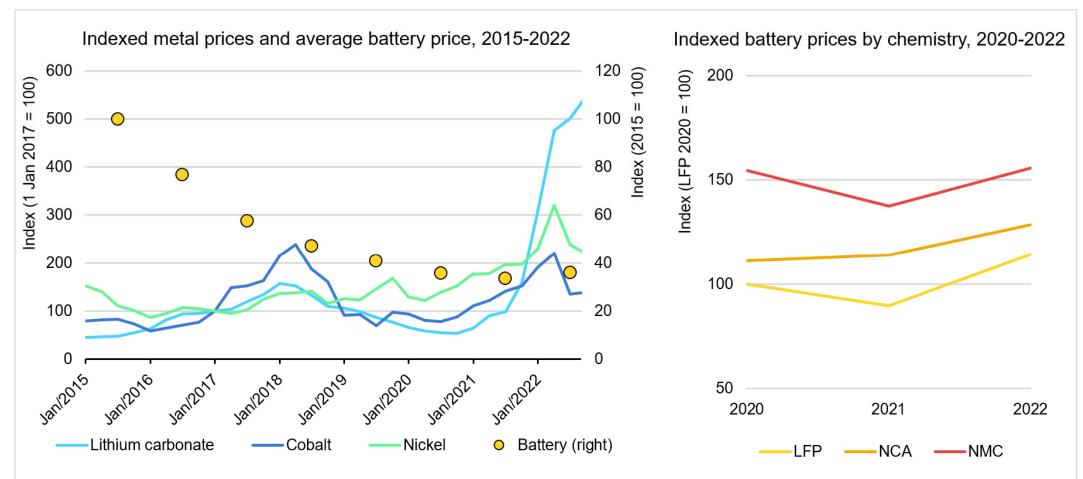
The availability of public charging points varies widely across regions. On average there is 2.4 kW of public charging capacity per EV worldwide.



Trends in EV batteries

Battery material prices increase in 2022

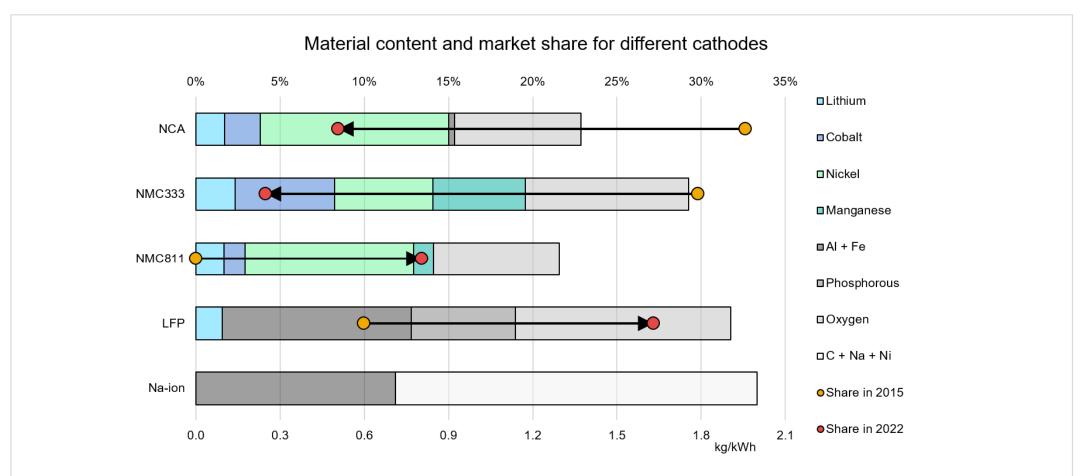




The average price of EV batteries increased for the first time in 2022, though the impact varied across different battery chemistries.

Alternative battery chemistries on the rise





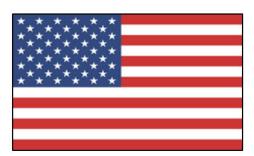
LFP batteries rely less on expensive metals like cobalt and nickel, leading to their recent increase in market share. Sodium-ion batteries which avoid lithium altogether are only now beginning to enter the market, mainly in China.



Policies to promote EV deployment

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





Production Linked Incentive



Critical Minerals Strategy



Indonesia Battery



Critical Corporation Minerals Strategy



Battery Strategy



Supply

2022



ΕV incentives



EV incentives

2023

EV Strategy

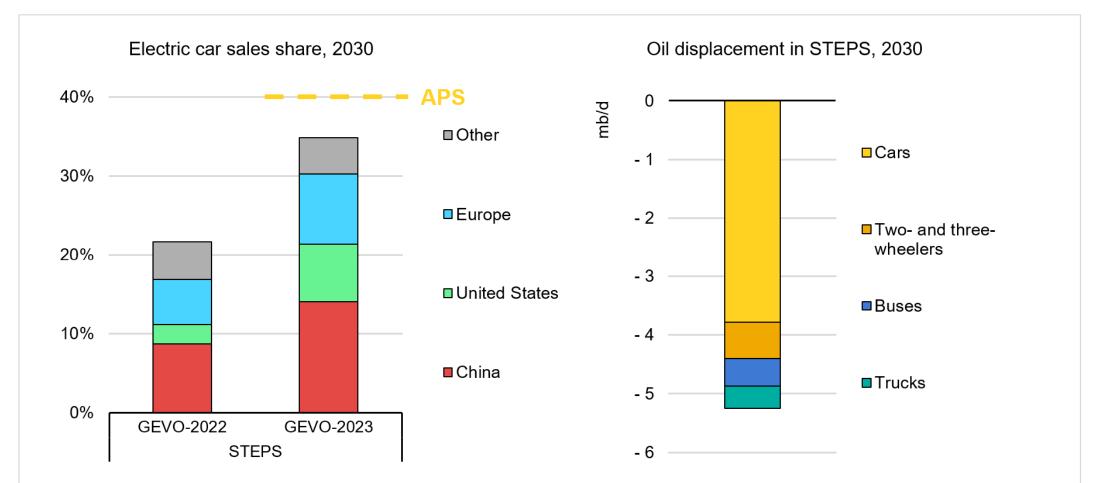
Demand



Outlook for electromobility

Policy implementation is catching up with targets

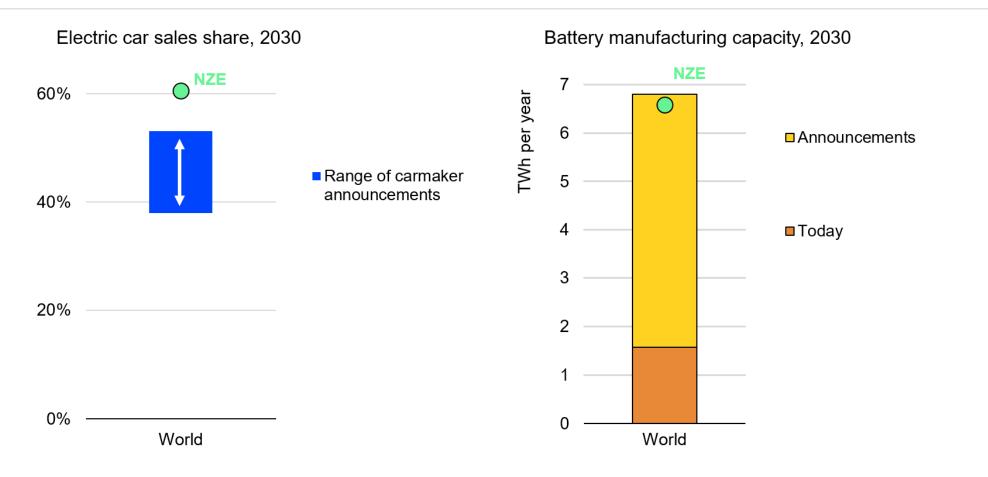




A strong growth outlook to 2030 is underpinned by governments delivering on their pledges and market dynamics. Today's policies are set to avoid over 5 mb/d of oil consumption in 2030.

Industry announcements suggest that more ambition is possible





The automotive industry and its supply chains are transforming. Policy must ensure that investment flows effectively to all steps of the supply chain.



Policy recommendations

Five recommendations to governments



