

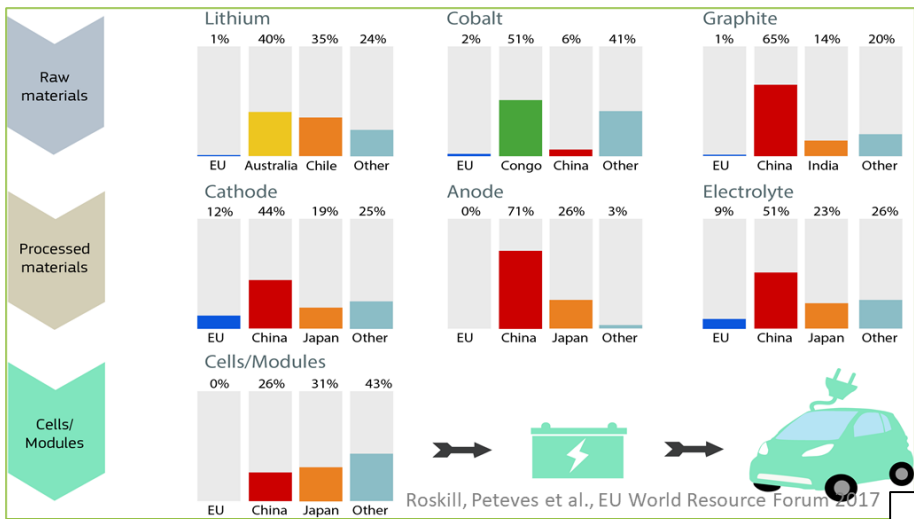
Funded by the
European Union

**EUROPEAN
BATTERY
ALLIANCE**

EBA250

Nordic Battery Thursdays – Nordic perspective from Finland

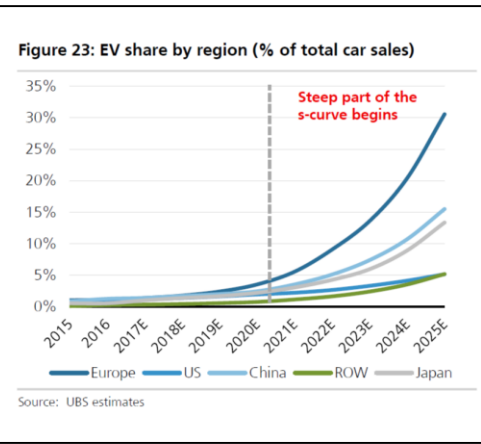
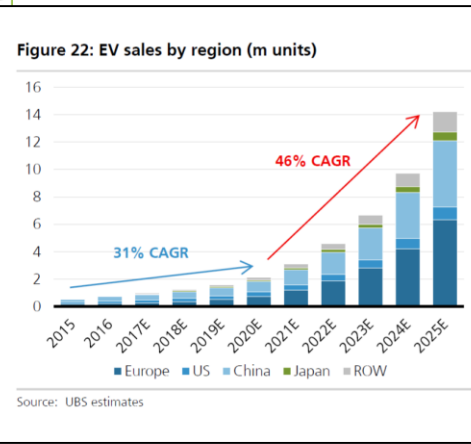
Bo Normark, EIT Innoenergy and EBA250



The “hockey stick” forecast resulted in



EBA250



Timeline European Battery Alliance



11. Oct. 2017
EU launches
European Battery Alliance

11. Oct 2017
EBA Launch

19. Dec 2017
1st High-Level Meeting

1

30. Jan 2018
2nd High-Level Meeting

2

12. Feb 2018
3rd High-Level Meeting

3

4. Sep 2018
4th High-Level Meeting

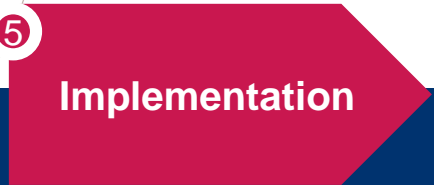
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29. Jan 2019
5th High-Level Meeting

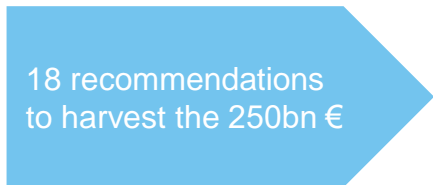
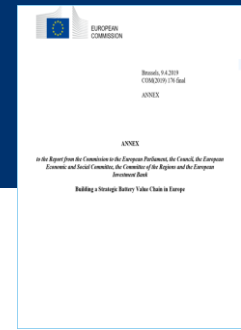
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6th High-Level Meeting
25 Sept. 2019

6



March 2018
Launch EU Battery Strategy



**EUROPEAN
BATTERY
ALLIANCE**

EBA250

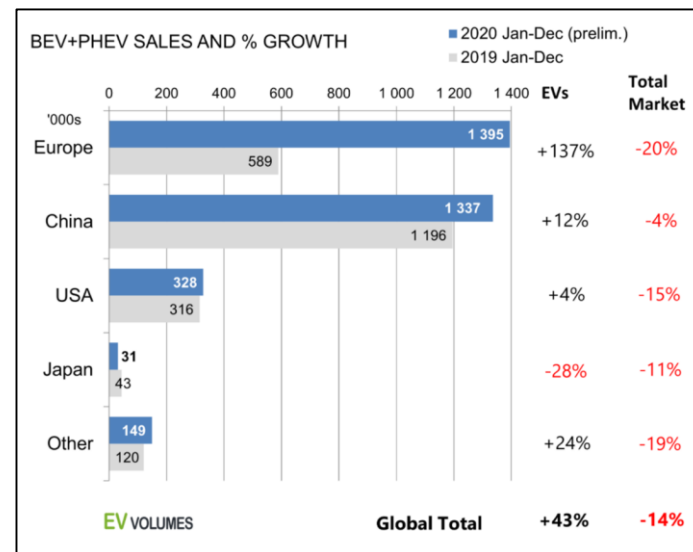
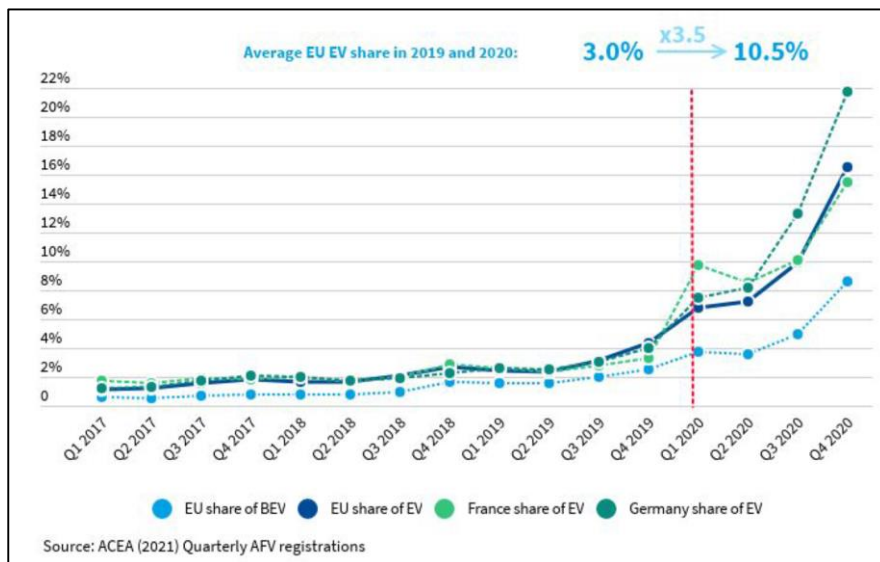
This cooperative ecosystem gathers the European Commission, interested EU countries, investment institutions and key industrial, innovation and academia stakeholders

EIT InnoEnergy has been trusted by the European Commission to drive forward and promote EBA250 activities, acting as network manager and project facilitator

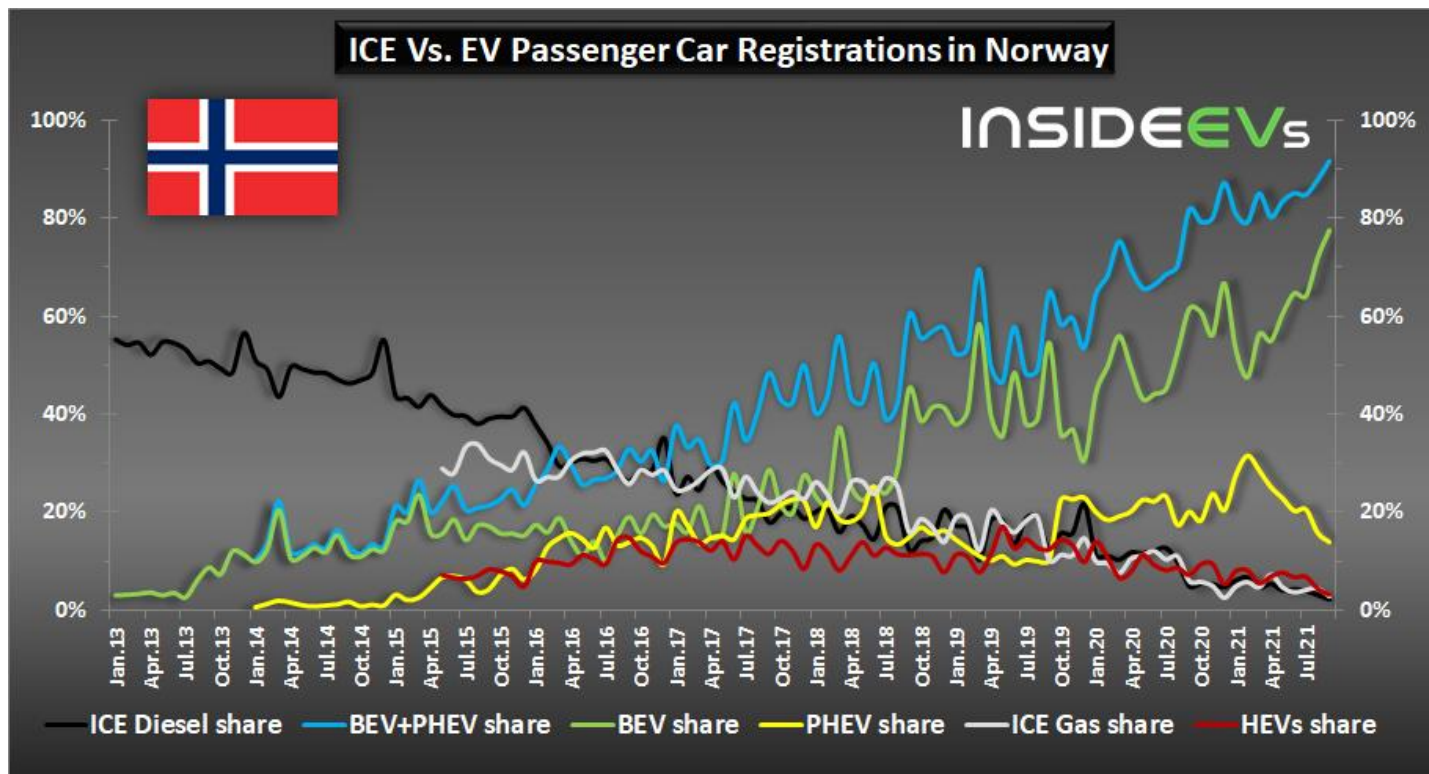
700+ members



- Actual development is ahead of the most optimistic scenarios
- Europe represent > 30% of global market vs < 20% of total market
- In 2020 Europe overtook China as the worlds largest market for electrical vehicles

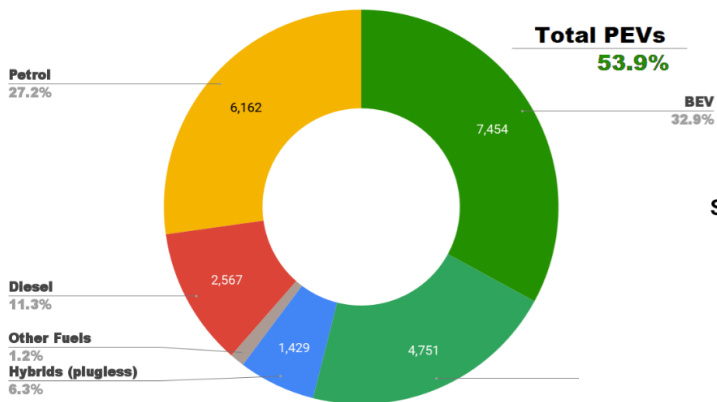


91.5 % BEV + PHEV sales in September



September 2021 Sweden Passenger Auto Registrations

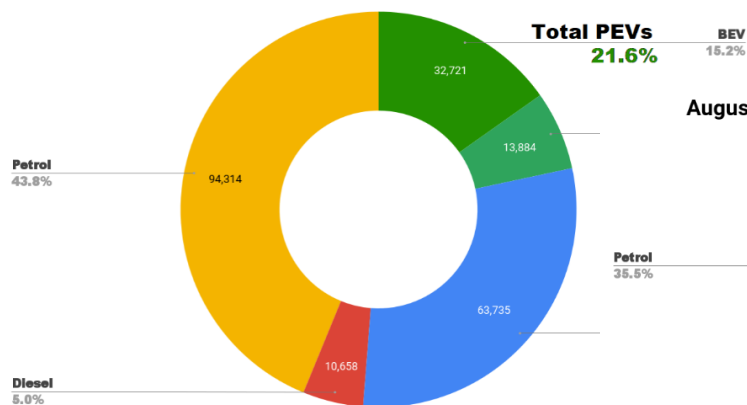
Data from BIL Sweden. % scores are rounded



© Max Holland / CleanTechnica

September 2021 UK Passenger Auto Registrations

Data from SMMT



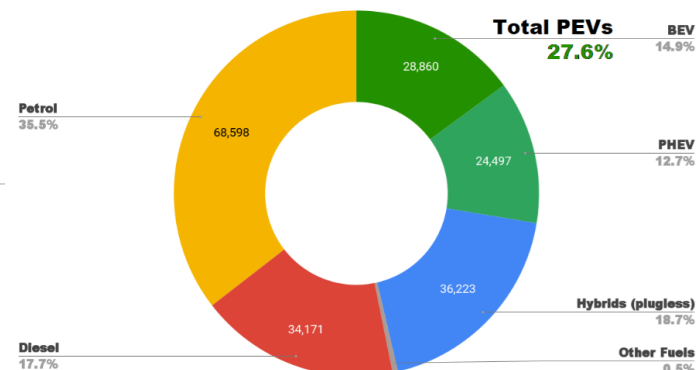
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To go from 10 – 50 % BEV

- 5 years in Norway
- 2 years in Sweden
- ? Germany

August 2021 Germany Passenger Auto Registrations

Data from KBA, accurate to 3 digits

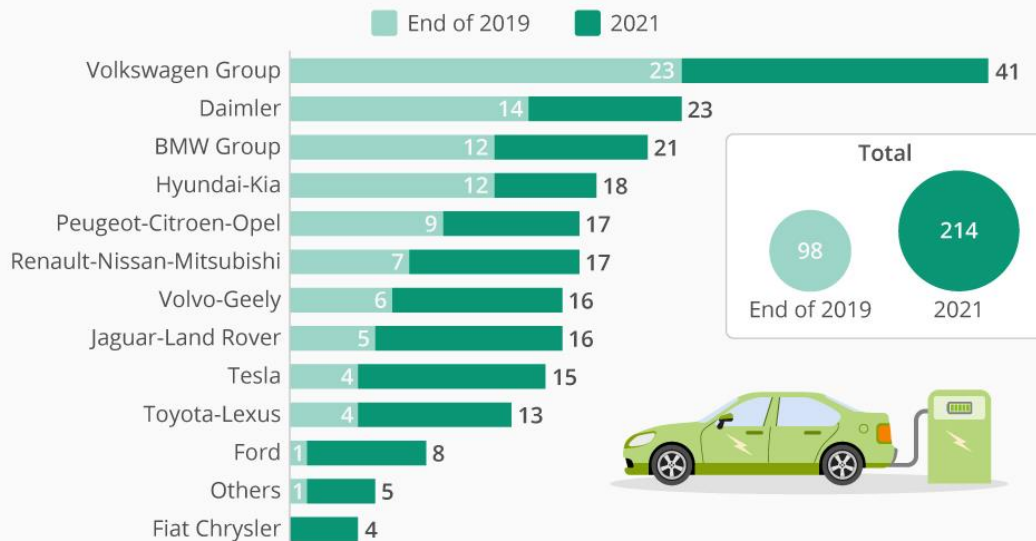


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Remove Barrier, available models by brand

Electric Car Models Set To Triple In Europe By 2021

Expected number of electric car models available in Europe in late 2019 and in 2021*



70 %
EU Brands

Most barriers have been overcome

Concern	Tipping Point	2017 >50% of market	2019 >50% of market	2020 >50% of market	2021 >50% of market
Cost/Price	TCO parity	Red	Yellow	Green	Green
Driving range	> 350 km	Red	Red	Green	Green
Charging availability	> 1 public points / 10 EV	Red	Red	Yellow	Yellow
Time to charge	200 km range in 20 min	Red	Red	Yellow	Green
Availability of models	50% of major OEM:s	Red	Red	Yellow	Green

- **EV market is now at or beyond tipping point**
- **EV represents about 90% of battery market**
- **Environmental-, COVID-19-, geopolitical issues and supportive policies all drive demand even more**

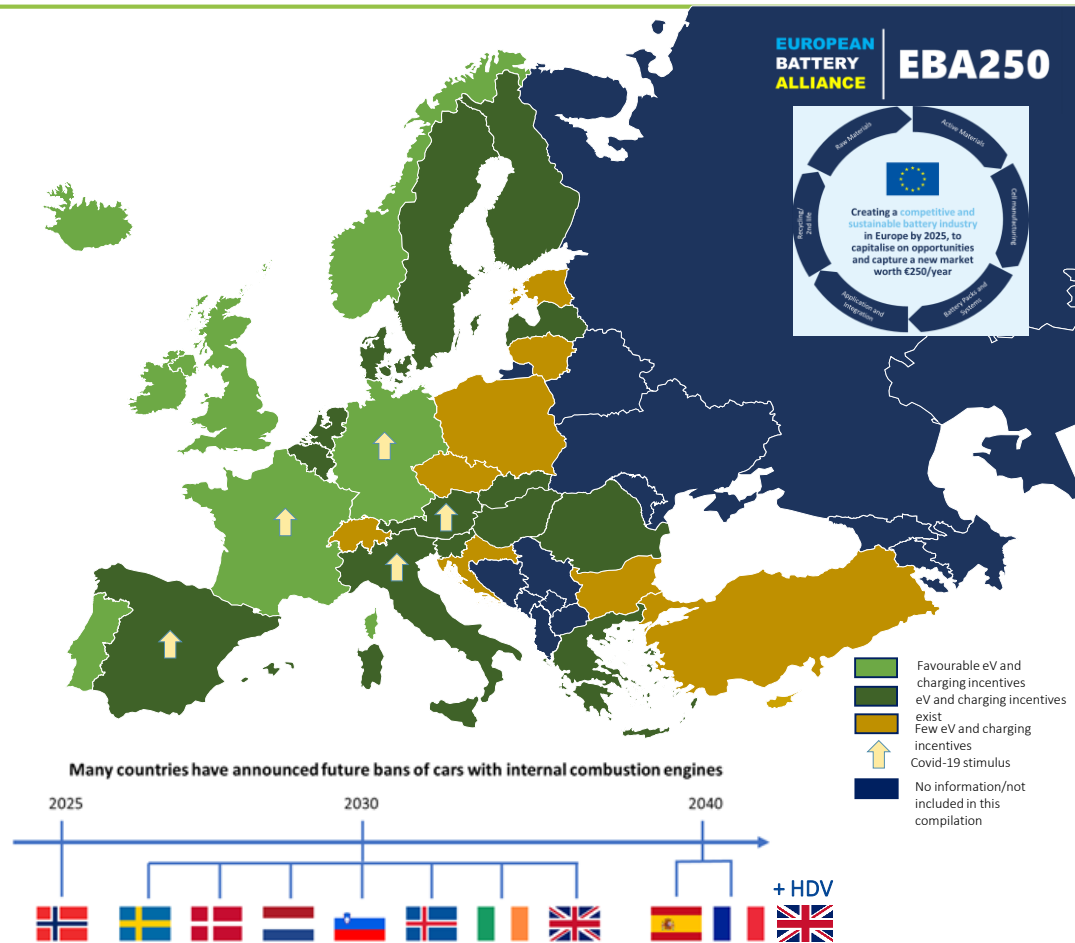
Covid-19 effects on EV sales



- Supportive regulatory framework fuelling the shift to electrification

- Incentives and taxes
- CO2 emissions thresholds
- CO2 emission targets
- Bans on sales of ICE accelerates phase-out
- European Emission Trading System (ETS), makes CO2 emissions more costly for many sectors, including fuels used for road transport (from 2026 also the maritime and aviation sector)

- Reflected in Industrial strategies



- Electricity has won the race in the transformation of the transport system, ~EV's to comprise 20% of global new car sales by 2025 and ~50 % by 2030 vs 4% today

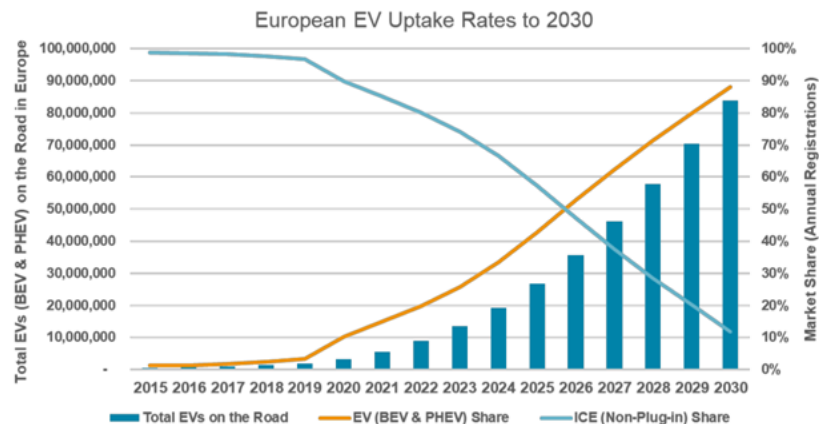


Figure 6: Global EV Sales Penetration Curve

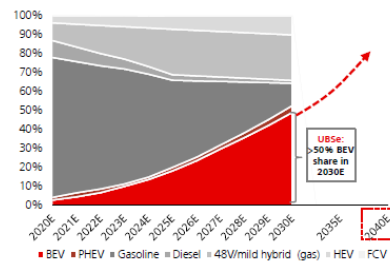
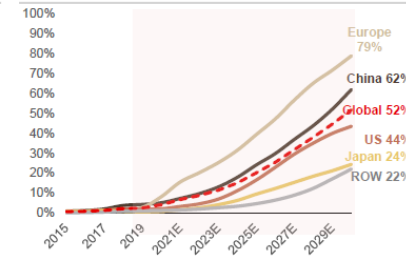


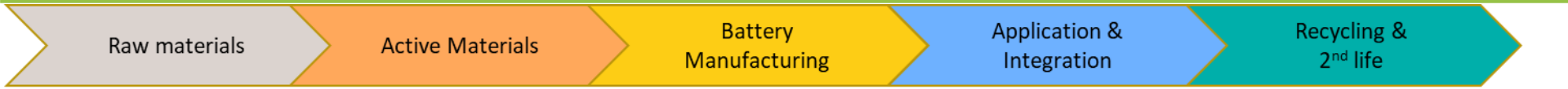
Figure 7: Penetration Rates by Major Markets



- EV's will clearly dominate European car sales in the coming decade – the ICE-age is over!
- The market share of all EV's (BEV + PHEV) will represent almost 90% of the market in Europe by 2030!
- Europe will have about 80-90 million electric vehicles on the by 2030.

Access to sustainable raw materials to fuel this market is KEY to develop the battery industry in Europe!!!

The raw material challenge

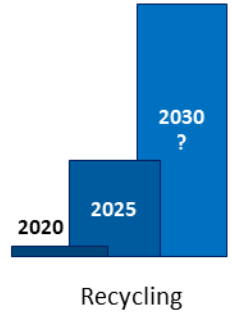
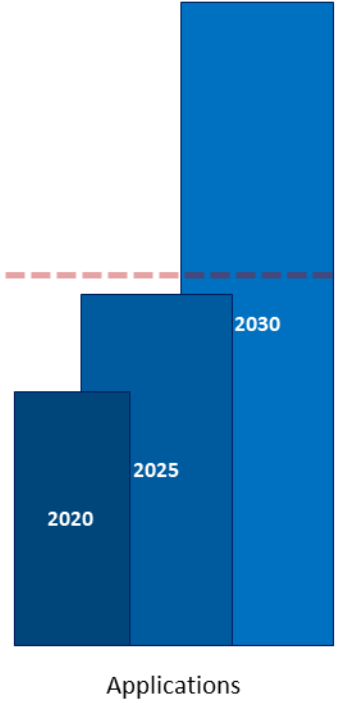
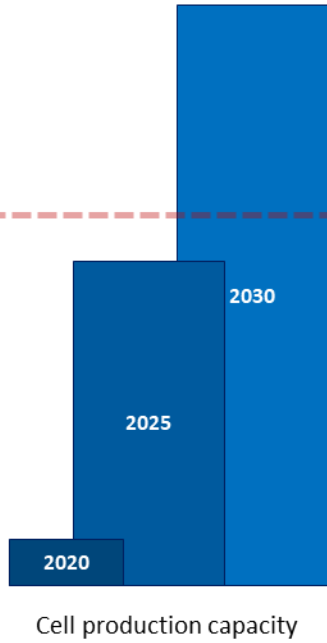
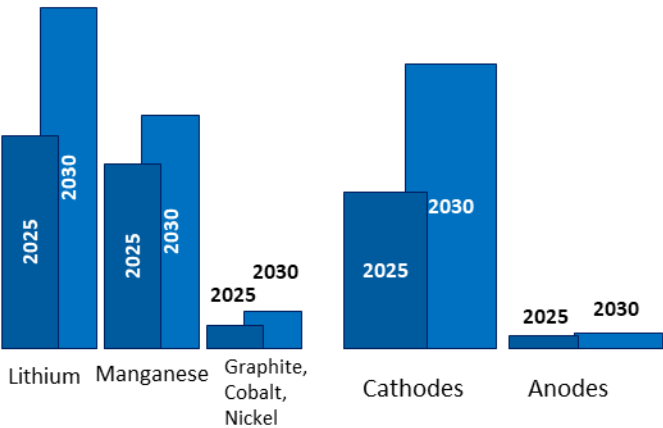


Expected EU Demand in 2030:

~~900 GWh~~
1000 GWh

Expected EU Demand in 2025:

~~400 GWh~~
550 GWh



Share of EU supply
Announced EU capacity for 2030
Announced EU capacity for 2025
Existing EU capacity

Europa has started its journey from "The Game is Lost" to "We can become Winners" and the EU Battery Alliance has become the blueprint for other industrial strategies

- **Dramatic increase of market share of advanced Li-Ion batteries – double exponentially!**
- **Transitions happen faster than anticipated, a lot is at stake but there are good opportunities for Europe**
- **Focus on value chain and cross-sectorial approach as demonstrated by the EBA has been fundamental to accelerate the industry**
- **Supportive regulatory framework and political support can further accelerate market demand**
- **Sustainable and resilient value chains**
- **Access to raw and active materials will be crucial**

EIT InnoEnergy is the innovation engine for sustainable energy across Europe supported by the European Institute of Innovation and Technology.

EIT InnoEnergy's role in the European Battery Alliance is to provide background data, collect and formulate key questions, recommendations and actions.

EIT InnoEnergy also support the establishment of a European Battery eco-system by promoting a meeting place for key players along the entire value with our EBA250 Workshops.



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