



EESC hearing on the EU 2040 climate target

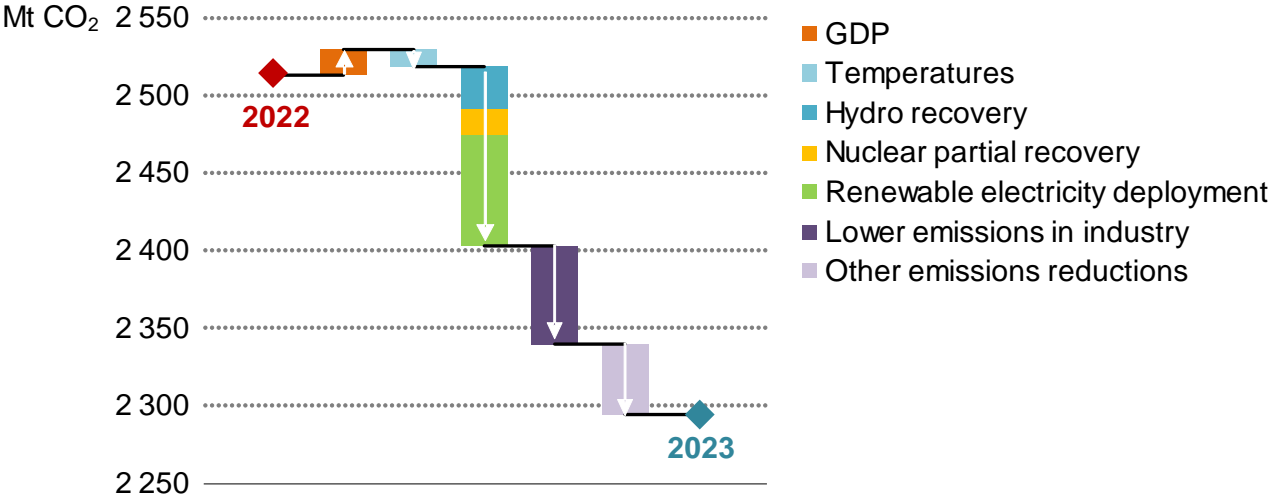
Thomas Spencer, IEA

18.03.2024

Emissions plunge in the EU thanks in particular to renewables



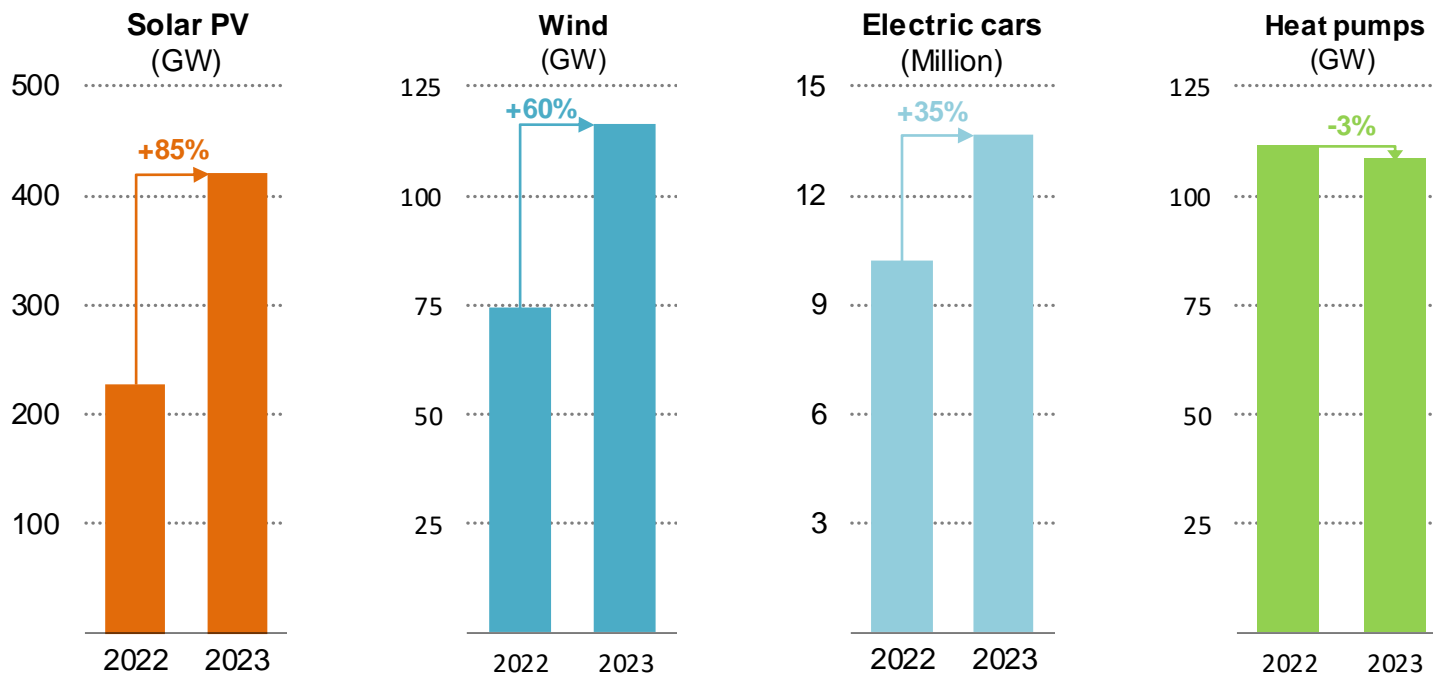
Change in emissions by driver in the EU, 2022 – 2023



Strong renewables growth and a recovery in hydro and nuclear drove down emissions in the EU in 2023; emissions in industry declined more than production indexes, suggesting efficiency and decarbonisation contributed

Clean energy deployment climbed new heights for key technologies

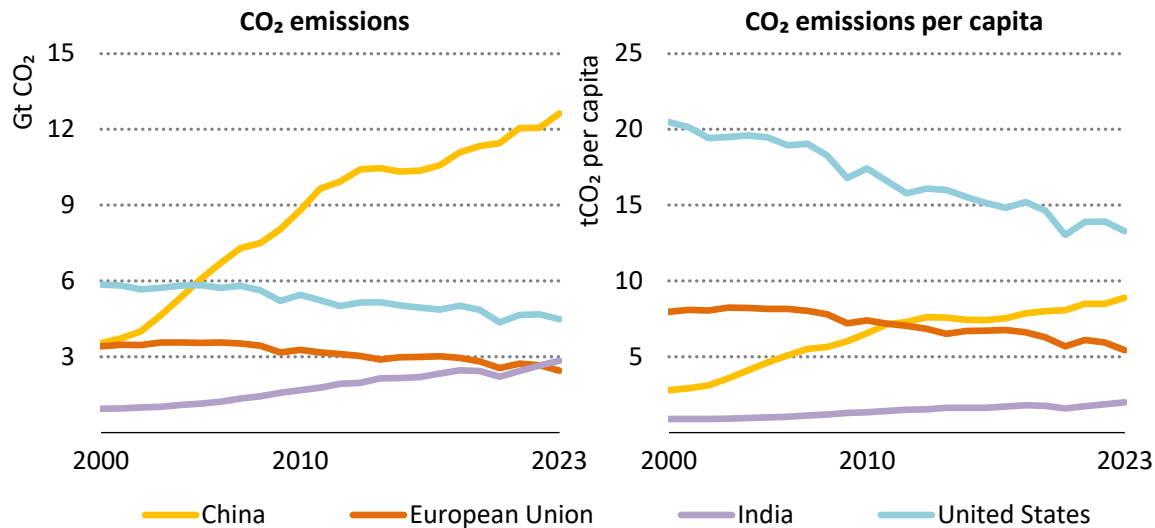
Annual global deployment of selected clean energy technologies, 2022 and 2023



Globally, additions of solar grew by 85%, wind by 60% & electric cars by 35% in 2023, but heat pumps fell, highlighting the importance of continued policy support for the transition

CO₂ emissions continued to rise in 2023, but more slowly

Total and per capita energy related CO₂ emissions, 2000 – 2023



Global CO₂ emissions rose 1.1% in 2023, driven by adverse weather conditions and continued Covid-19 reopening; the EU's per capita emissions are now closer to India's than they are to those of China

Clean energy technologies contribute to energy security today

Annual avoided fossil fuel demand versus actual increase in fossil fuel demand, 2019-23

Natural gas

Actual 2019-23 change in demand

Pre-invasion natural gas exports from Russia to the European Union



Oil

Actual 2019-23 change in demand

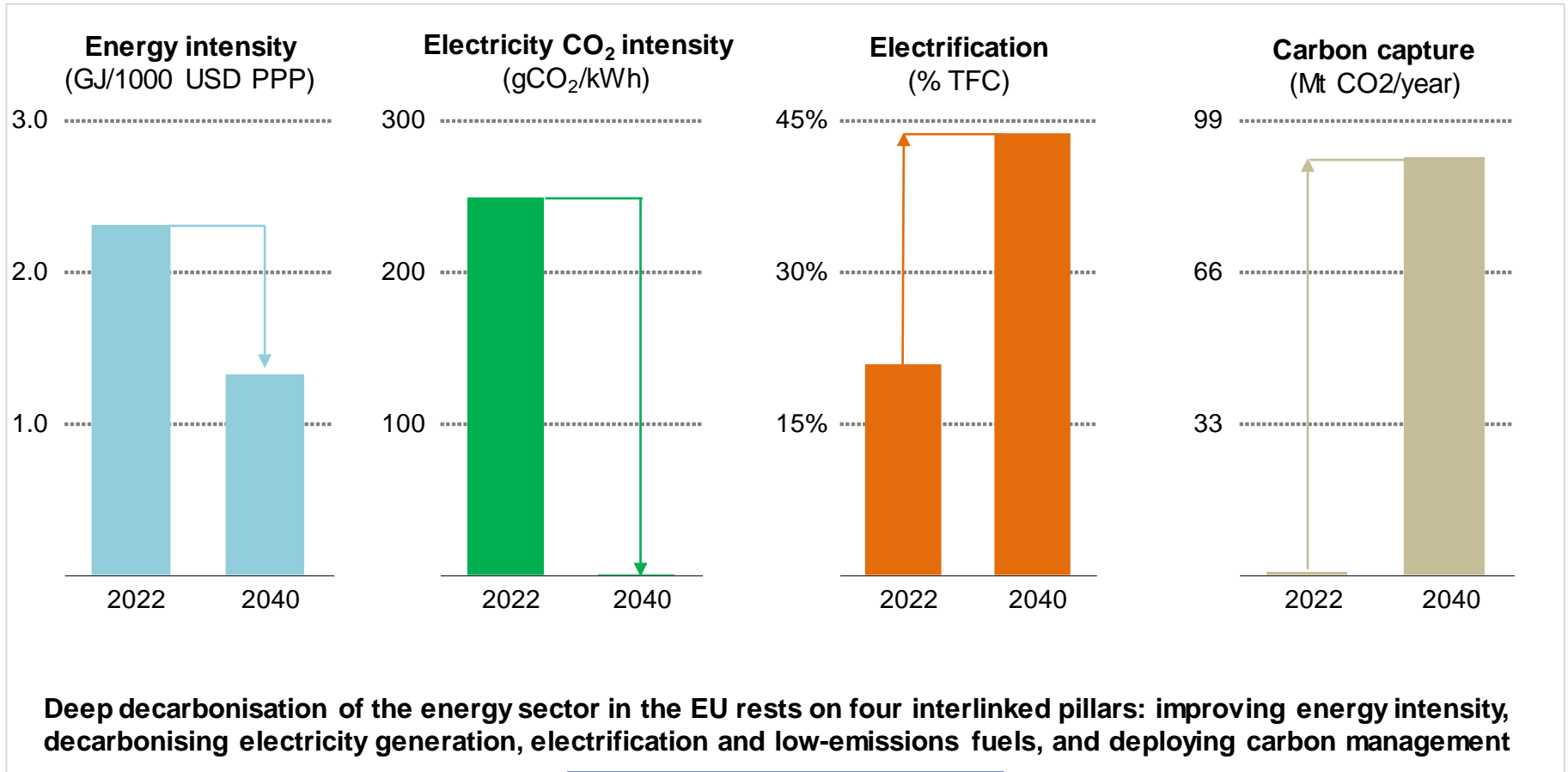
2023 United Kingdom oil demand



bcm

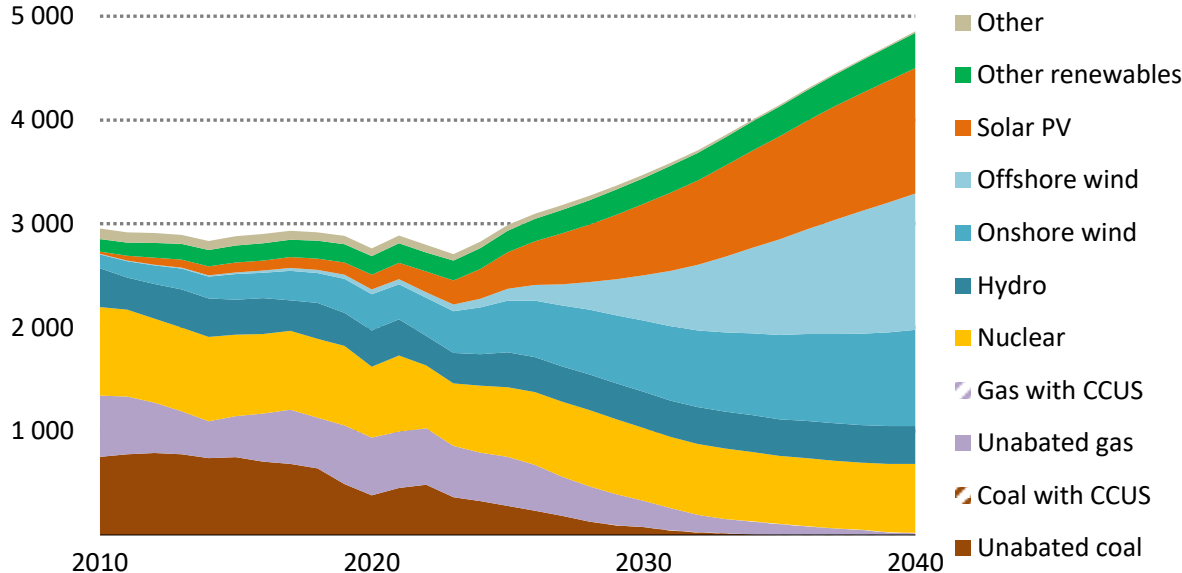
Mboe/d

Four pillars of the EU's energy transition



Electricity generation becomes dominated by renewables

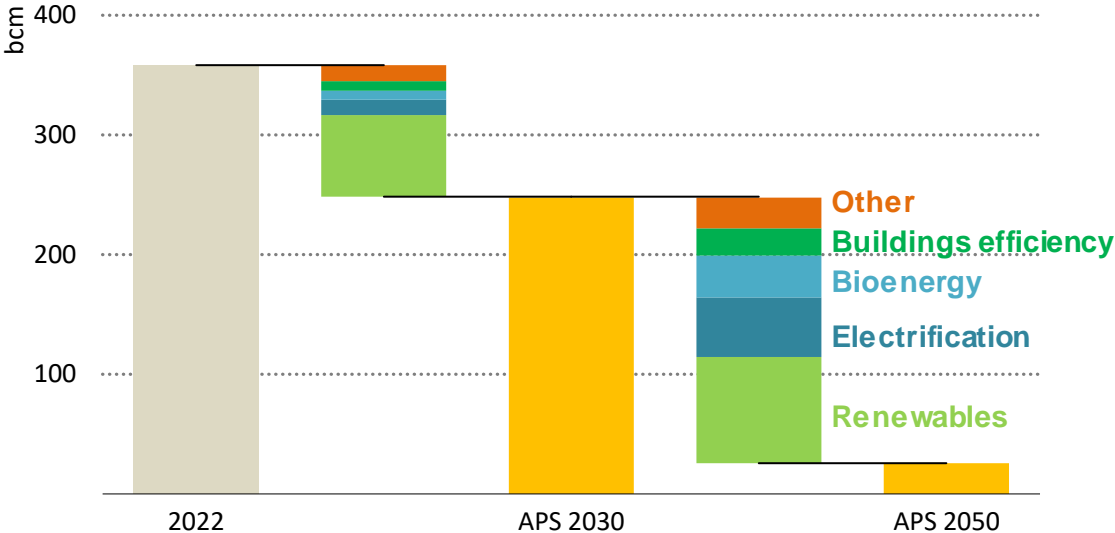
Total electricity generation in the EU, Announced Pledges Scenario, 2010-2040



After a period of stagnation, electricity demand returns to growth; variable renewables grow from around 25% of generation in 2023 to around 70% by 2040, while nuclear output is maintained through life extensions and new builds

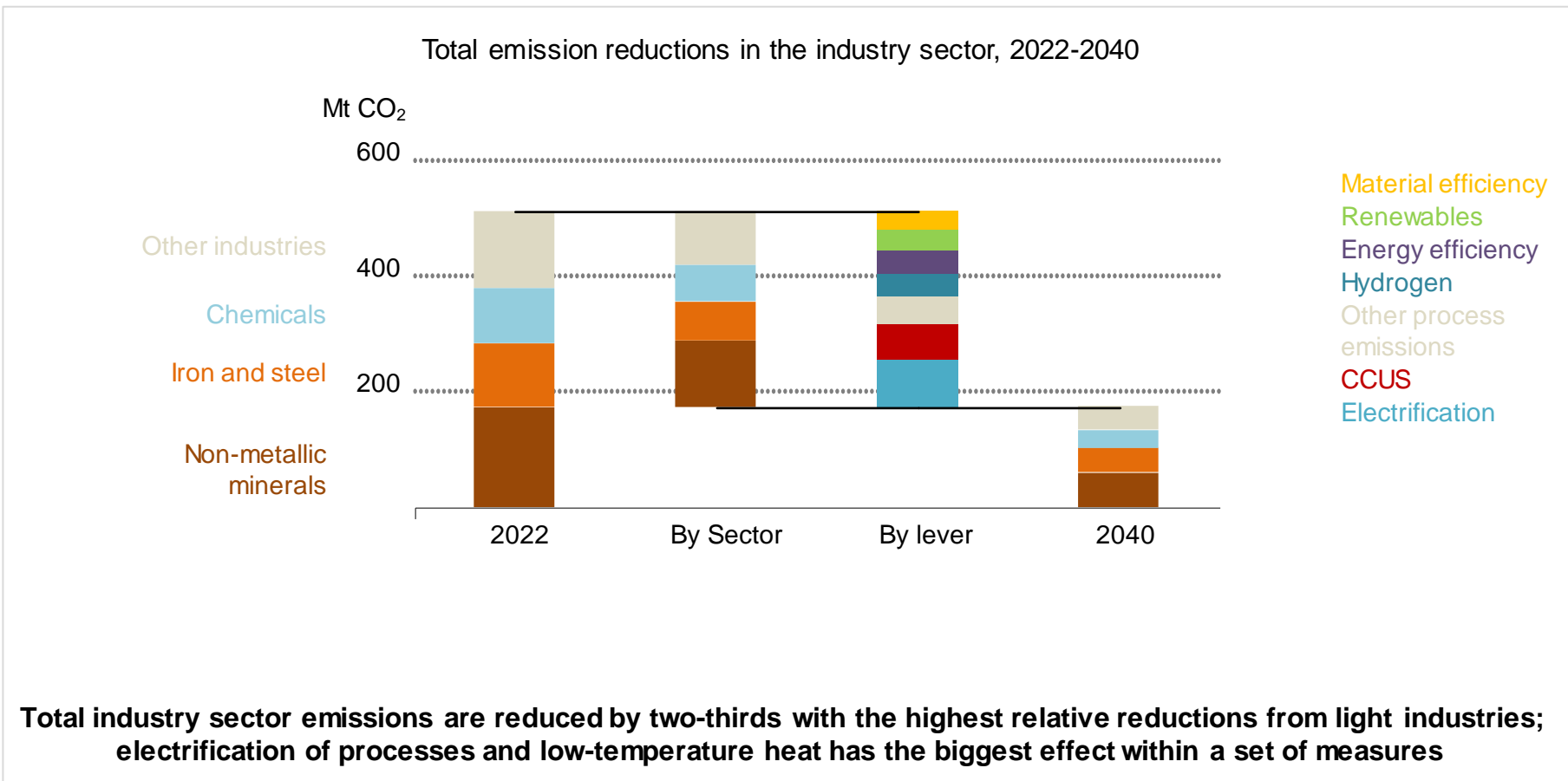
Energy transition is critical for the EU's energy security

Drivers of natural gas demand reduction, Announced Pledges Scenario, 2022 – 2050



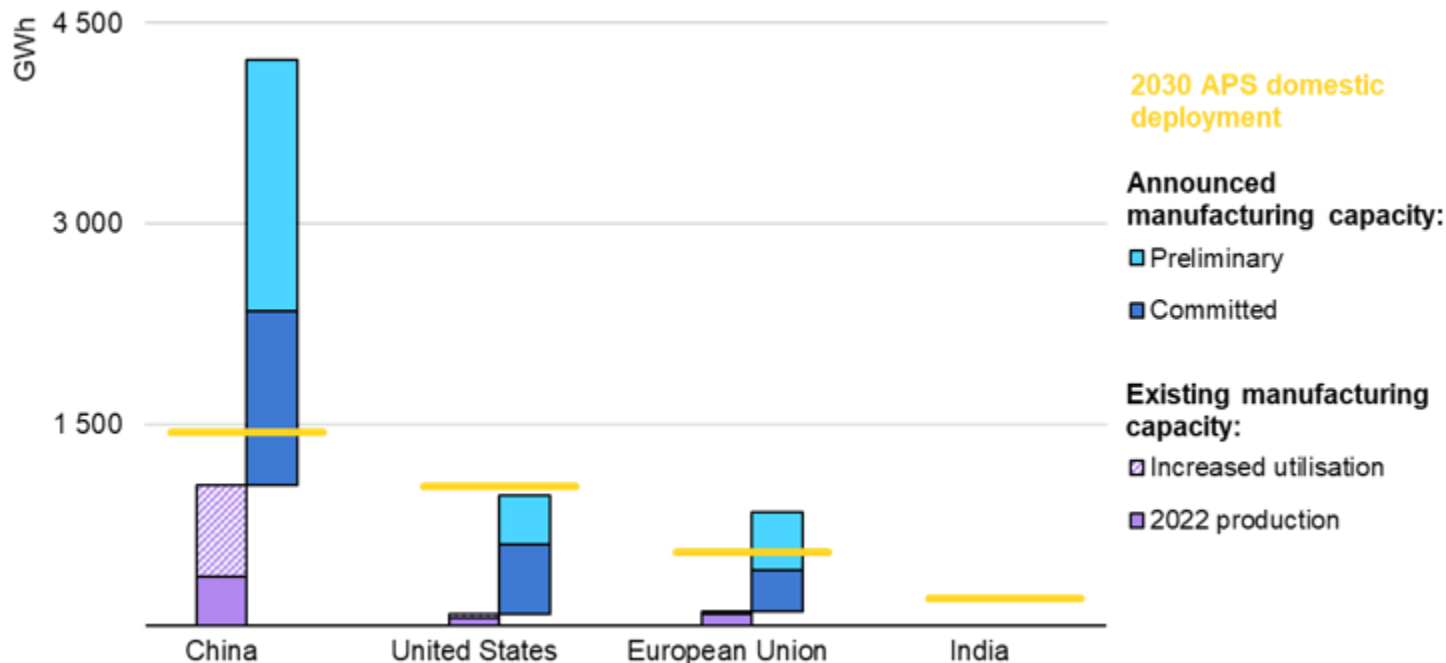
After the energy shock of 2022, the EU has unleashed a wave of support measures to accelerate the energy transition, recognising that a broad-based transition across all sectors is critical to ensuring energy security

A broad set of measures across sectors is required



The energy transition contains important industrial implications

Battery manufacturing capacity versus domestic deployment in the APS by region, 2022 and 2030



Committed battery manufacturing projects as of November 2023 would be almost sufficient for the EU to meet its domestic deployment under the Announced Pledges Scenario in 2030

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