



# Energy Transition Macro Outlook: Technology Drives Acceleration

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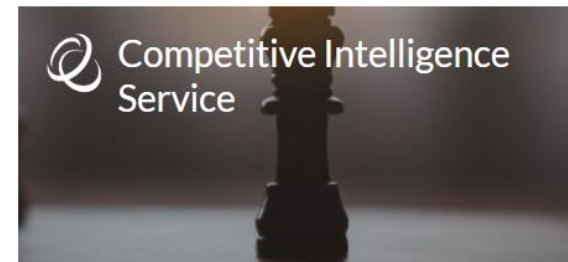
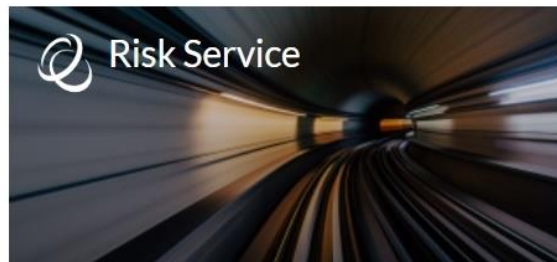
## Energy Intelligence

Engaging insights | Leading decisions

- **Energy Intelligence provides news, analysis, data and research on the energy sector.**
- Our clients are corporates, investors, other financial services firms, law firms, governments, NGOs and international institutions.
- We specialize in the intersection of geopolitics and energy.
- We host the Energy Intelligence Forum in London each year.



Energy Intelligence insights extend across **five core areas**, each providing an integrated offering of news, analysis, research and data.





London, November 25th – 27th

- Theme was *Geopolitics and Transition*.
- Key transition-related takeaways:
  - Uncertainty
  - Trump
  - Technology
  - China
  - Geopolitics
  - COP29

## Energy Transition

Technology drives transition acceleration, but US policy and climate diplomacy add to uncertain outlook

- **Energy Intelligence's analysis of the underlying drivers of the energy transition suggest that it continues to accelerate despite political, geopolitical and economic headwinds.**
- **This acceleration is being driven by technology**, which will be the most important factor in setting the pace of the transition in 2025 and beyond, taking up more momentum from policy.
- **Aggregated global figures mask significant regional variation in the pace of the transition.** China is projected to manufacture and deploy more low-carbon technology in 2025-2030 than the rest of the world combined, according to the IEA. The EU remains ambitious at an institutional level. This is in stark contrast to the US, where Trump's return casts a shadow over the transition.

### What we're watching in 2025



#### US Policy

*President Trump's energy policy and how it affects the pace of the transition in the US and globally.*



#### Chinese Exports

*Penetration of Chinese low-carbon technology into other markets given tightening trade barriers but increased localized manufacturing.*



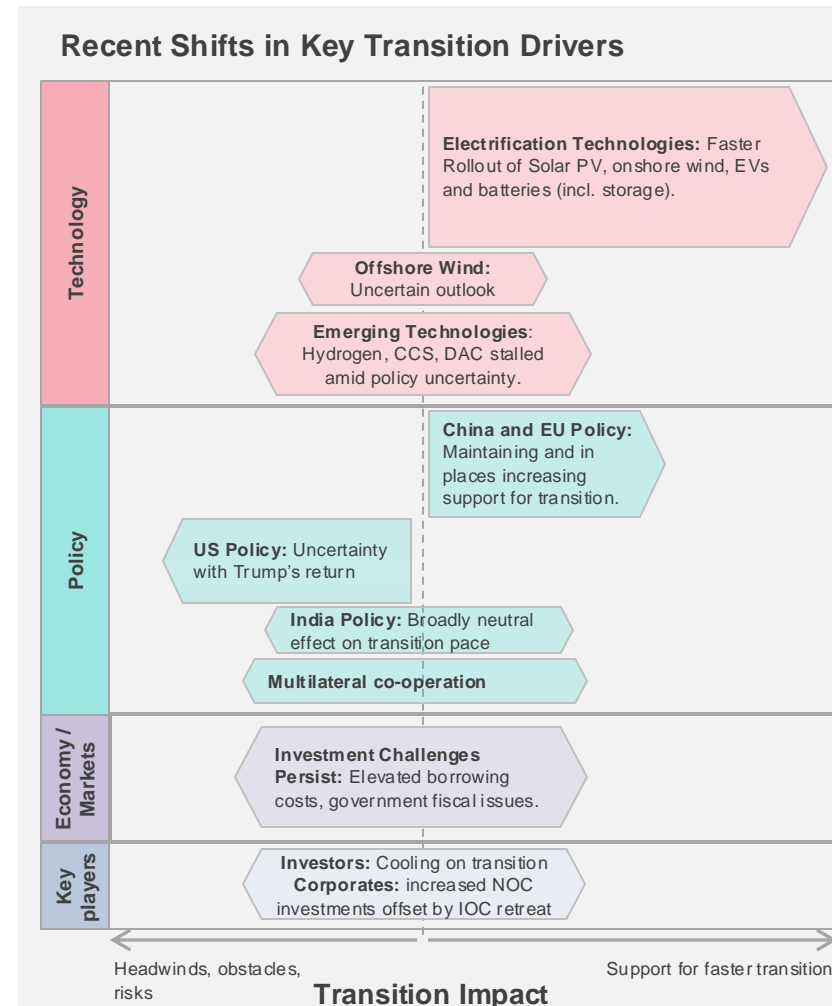
#### International climate action

*The level of ambition shown in nationally determined contributions (NDCs), and how bitter geopolitics will play out at COP30.*

## Energy Transition: Recent Trends

Slightly firmer momentum behind energy transition, but US policy poses uncertainty

- Our analysis indicates a slight increase in momentum since our previous outlook in March 2024. However, risks remain.
- Growing transition momentum is evident by the increasing rollout of low-carbon **technology**, especially in China.
- **Policy** presents a more mixed picture, with contrasting prognoses in the EU and China versus the US. The future of climate diplomacy is precarious.
- Multiple **macroeconomic/market** challenges and waning **investor and corporate** enthusiasm for the transition continue to keep a check on faster momentum.

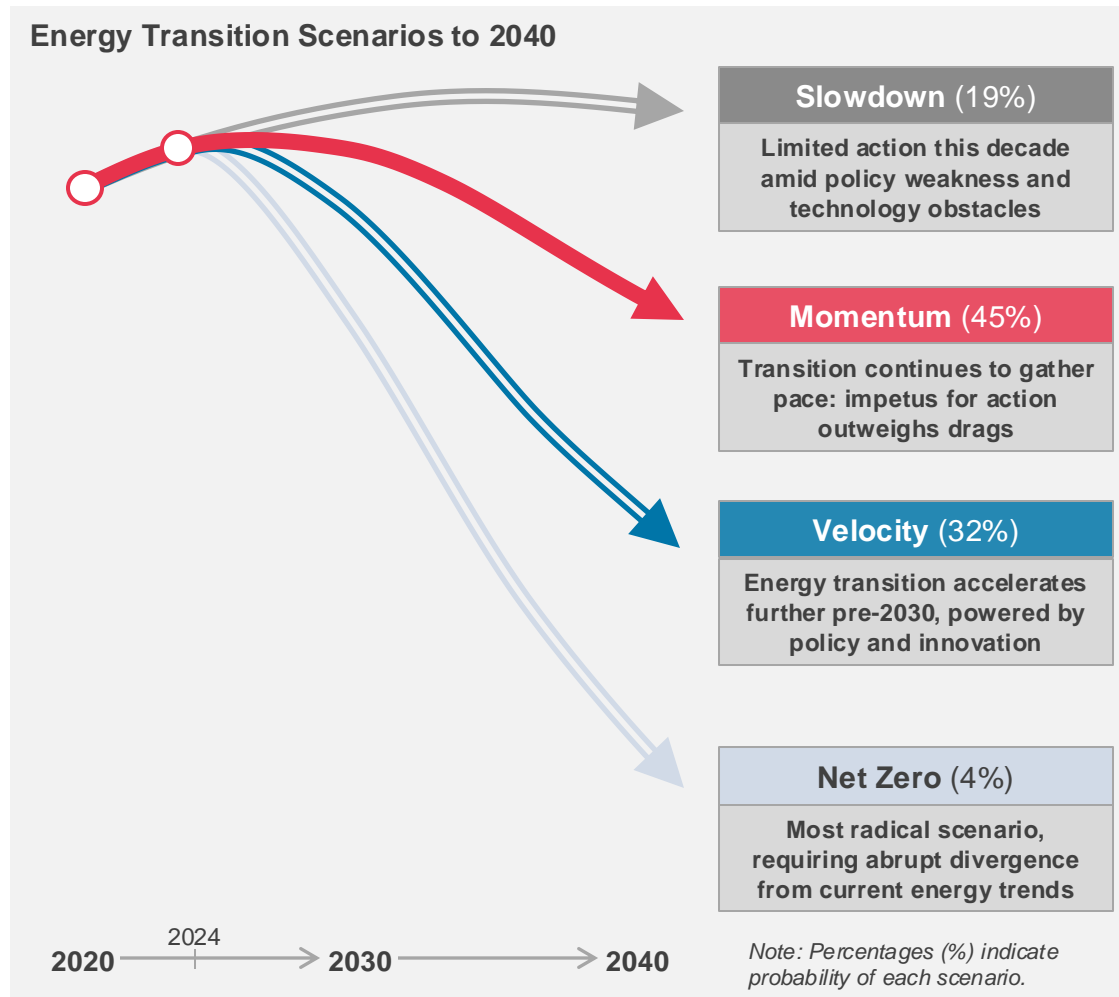


Source: Energy Intelligence

## Energy Transition Scenarios

Updated scenario analysis highlights ongoing momentum and possibility of faster transition

- Our core **Momentum** scenario reflects the overall pace of the transition continuing to grow, led by faster technology deployment and ongoing policy support.
- Our **Velocity** case assumes persistent policy ambition, technology innovation and rapid adoption.
- The chance of **Net Zero** has nudged up, but remains low.
- Our **Slowdown** scenario is the possibility of a slower transition if policy support fragments and technology rollout hits obstacles.

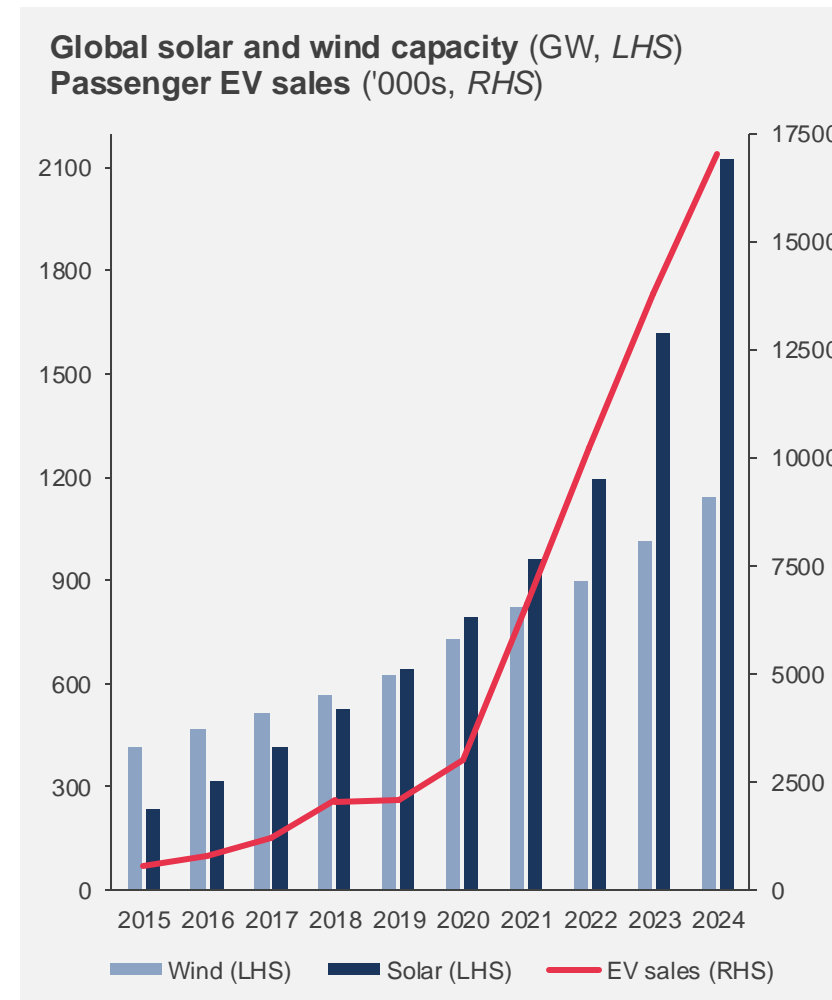


Source: Energy Intelligence. Note: Simplified schematic diagram only: arrows represent approximate global emissions pathways. Previous report (March 2024) probabilities: Slowdown/Downshift (19%), Momentum (47%), Velocity (31%), Net Zero (3%).

## Energy Transition Drivers: Technology

Low-carbon technology rollout accelerates, but regional variations are becoming more pronounced

- 2024 was another record-breaking year for **renewables, batteries** and **EVs**.
- **Less mature, non-electrification technologies** – carbon capture, hydrogen/ammonia, synthetic fuels – still require major policy backing and technology advances.
- We expect renewed interest in **nuclear** to continue into 2025, driven by energy-hungry tech companies.
- Key to watch are:
  - **Chinese exports**
  - **FIDs**
  - **Investment**
  - **Grids**

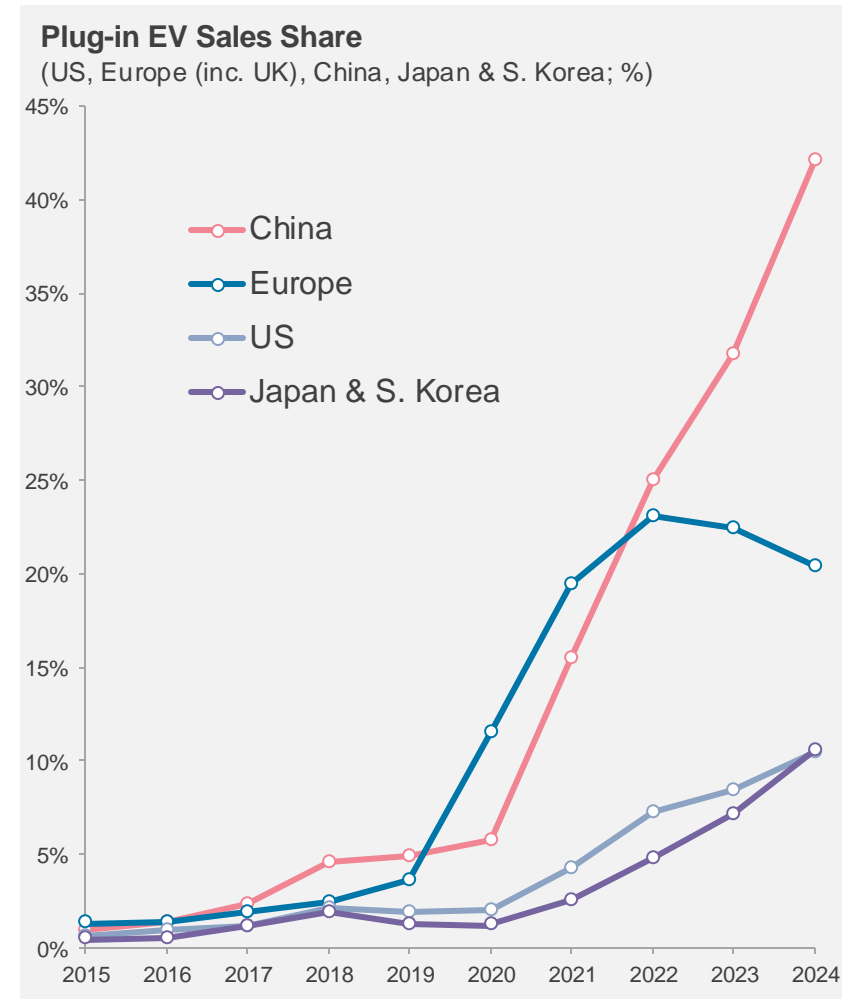


Source: IEA. Figures for 2024 are estimates.

## Energy Transition Drivers: Technology – Electric Vehicles

Sales in China accelerate rapidly, but adoption sluggish in Europe and the US

- **Globally**, EVs accounted for 19.2% of all passenger vehicle sales last year, according to IEA estimates, up from 18% in 2023.
- In **China**, EVs soared past the 50% share of passenger vehicle sales mark in the second half of 2024, and look set to breach 60% in 2025.
- The **UK, Brazil** and other parts of **Asia** and **Latin America** also set records in 2024.
- But sales in the **US** and **EU** have stalled around the 10% and 20-25% mark respectively.
- We expect EV uptake to remain bumpy in the US but to pick up again in Europe once new mandates take effect from 2025, and to continue to accelerate in China.

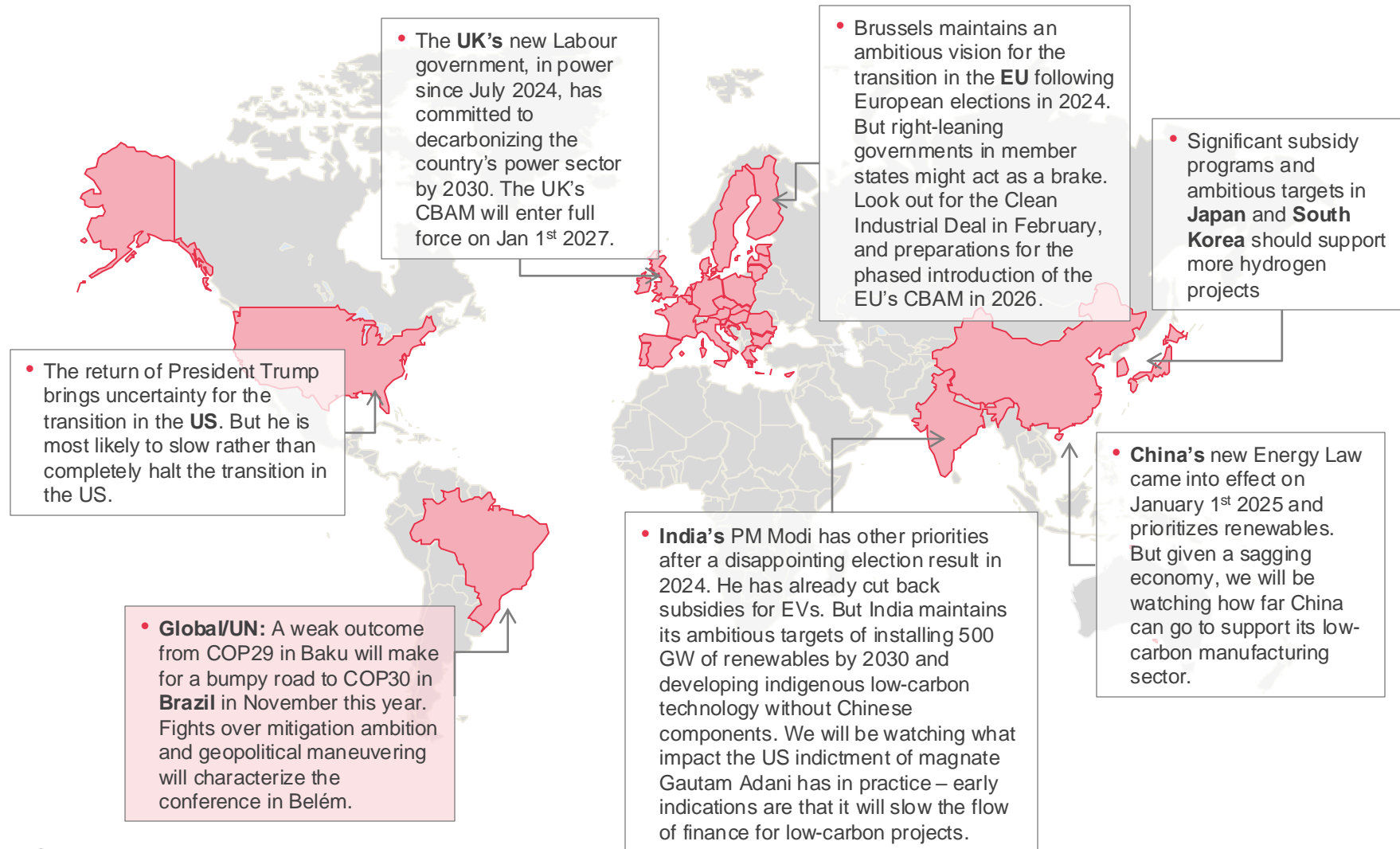


Source: Energy Intelligence. Note: 2024 data is estimated.



# Energy Transition Drivers: Global Policy Developments

Further policy expansion in key economies – but US and EU elections highlight political risks

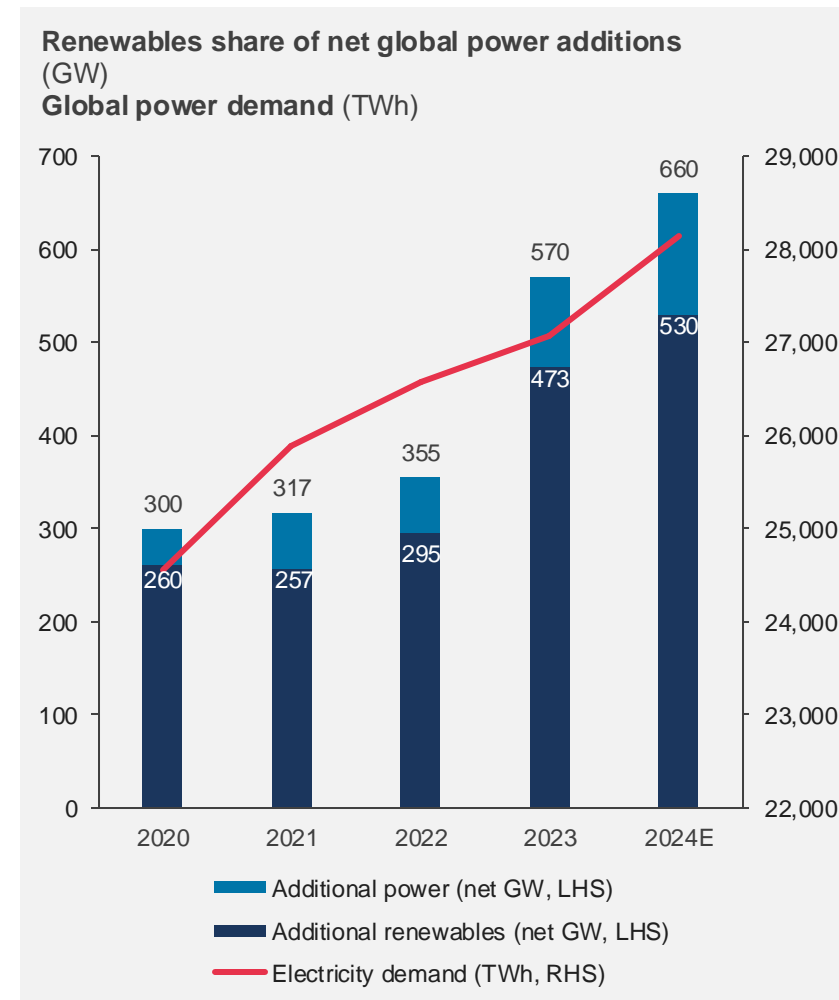


Source: Energy Intelligence.

## Global Power Demand: Rising Faster than Expected

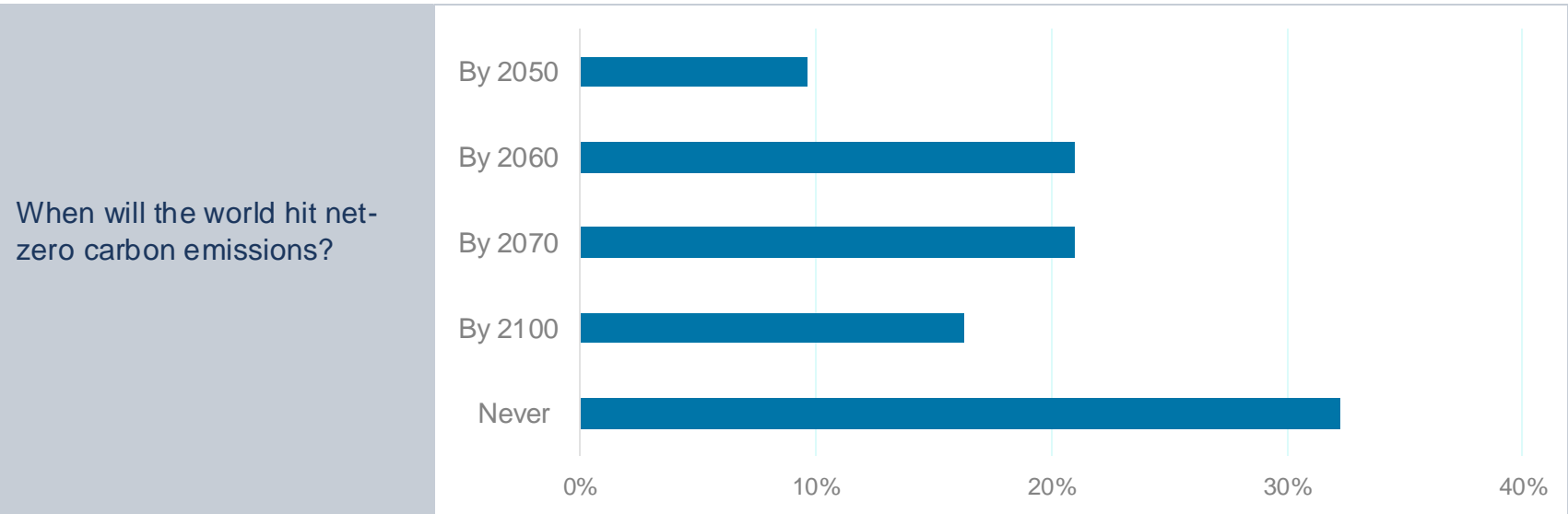
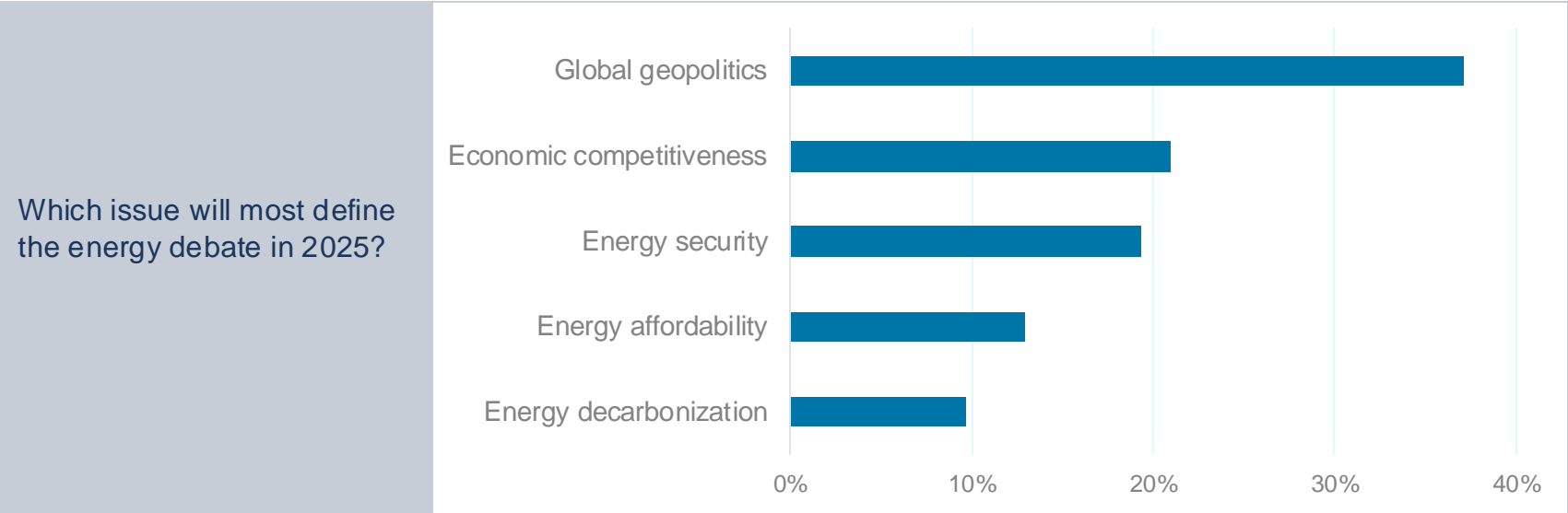
Demand for more power continues to outstrip low-carbon additions – future pattern is uncertain

- Global power demand has continued to increase.
- This is making it harder for renewables to displace fossil fuels, which are enjoying extended use.
- New renewables capacity does not yet meet the entirety of net power additions globally. We expect this to again be the case in 2025.
- The long-term impact of AI on power demand remains unclear, as it should also result in major energy efficiencies.
- We expect that renewables will ultimately close the gap.



Source: IRENA, IEA, Statista

# Energy Intelligence 2025 Outlook Survey



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