

The State of Energy Transition

REvision2026

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BloombergNEF

BNEF coverage

Commodities



Gas & LNG



Power



Oil



Carbon & offsets



Coal



Metals



Chemicals



Bioenergy feedstocks



Weather

Sector transitions

Clean power



Solar



Wind



Storage



Advanced nuclear



Power systems & networks

Clean transport



Electric vehicles



New mobility services & tech



Commercial transport



Aviation & shipping



Renewable fuels

Buildings & industry



Low-carbon heating & cooling



Circular economy



Green steel & aluminum



Sustainable plastics & chemicals



Low-carbon cement

Food & agriculture



Sustainable proteins



Green agrochemicals



Crop science



Regenerative practices



Advanced machinery & agtech

Cross-cutting technologies



Digital & AI



Hydrogen



Bioenergy



Carbon capture, utilization, storage & removal (CCUSR)



Energy efficiency

Climate & nature



Risk & resilience



Regulation



Finance & investment



Financials transition



Corporate transition

Technology

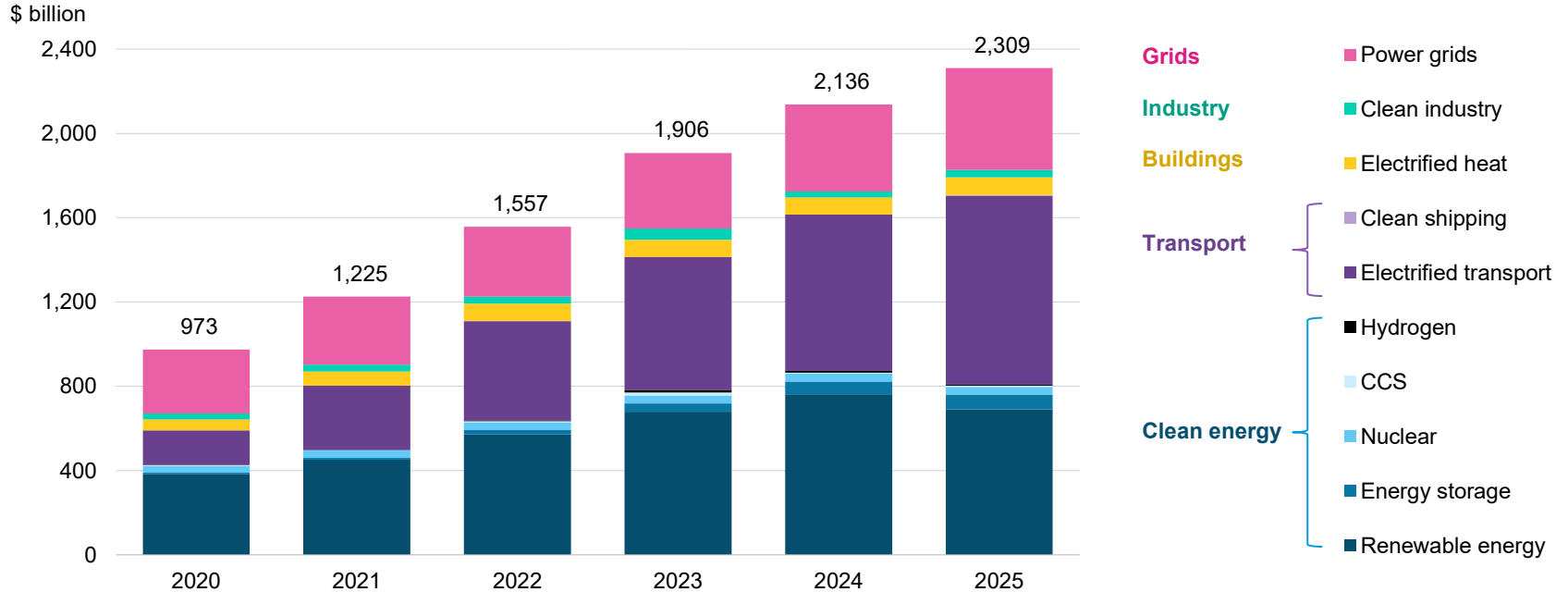
Policy

Economics

Markets

Global energy transition investment hit \$2.3 trillion in 2025, a new record

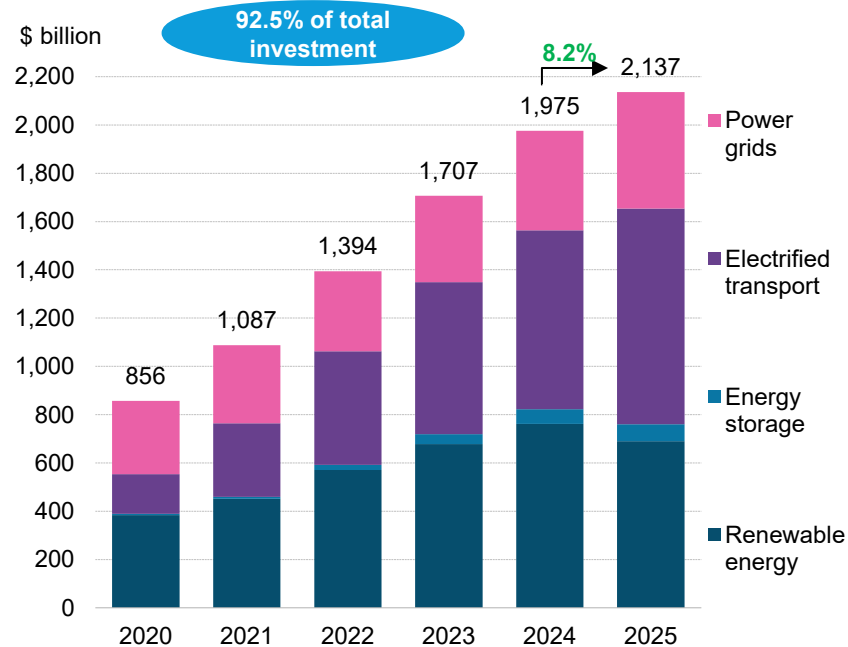
Global energy transition investment, by sector



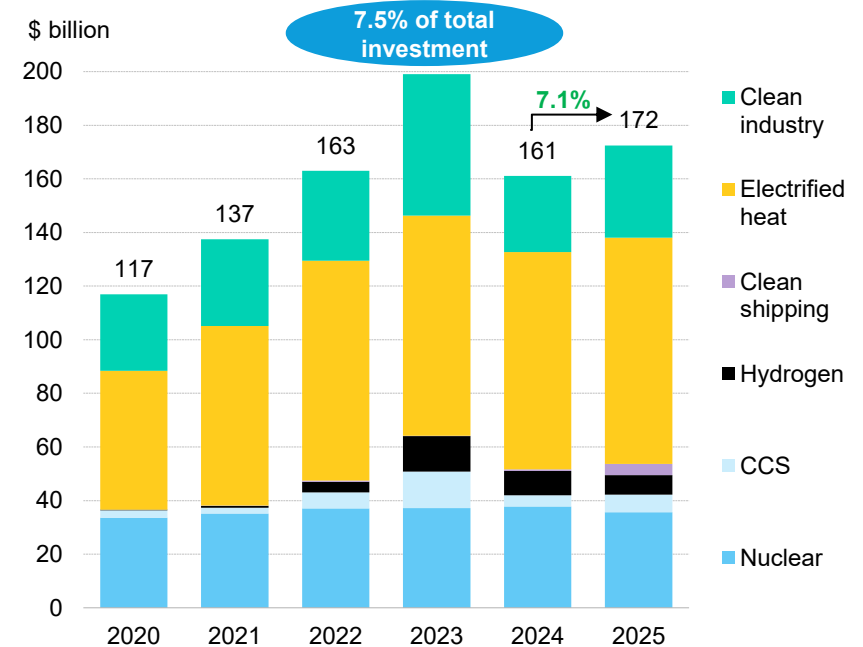
Source: BloombergNEF. Note: CCS refers to carbon capture and storage.

Mature technologies dominate, but emerging areas ticked up in 2025

Energy transition investment trends: mature sectors



Energy transition investment trends: emerging sectors

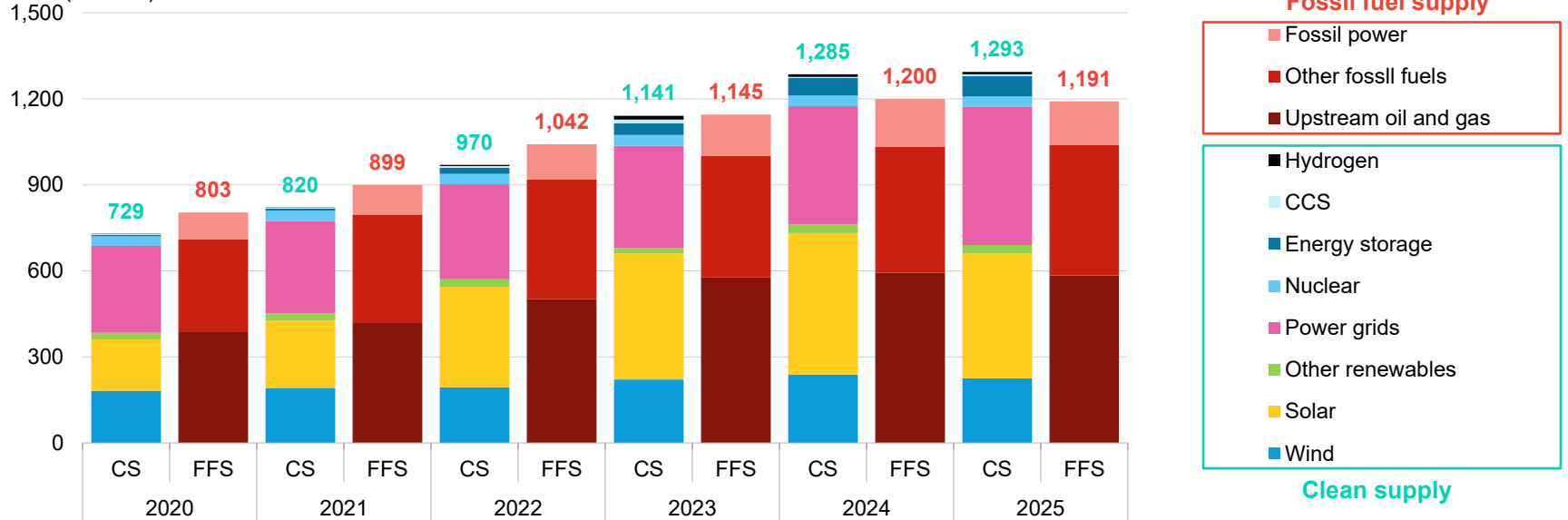


Source: BloombergNEF. Note: CCS refers to carbon capture and storage.

Clean energy supply investment outpaced fossil fuels again

Investment comparison: Clean energy supply versus fossil fuel supply

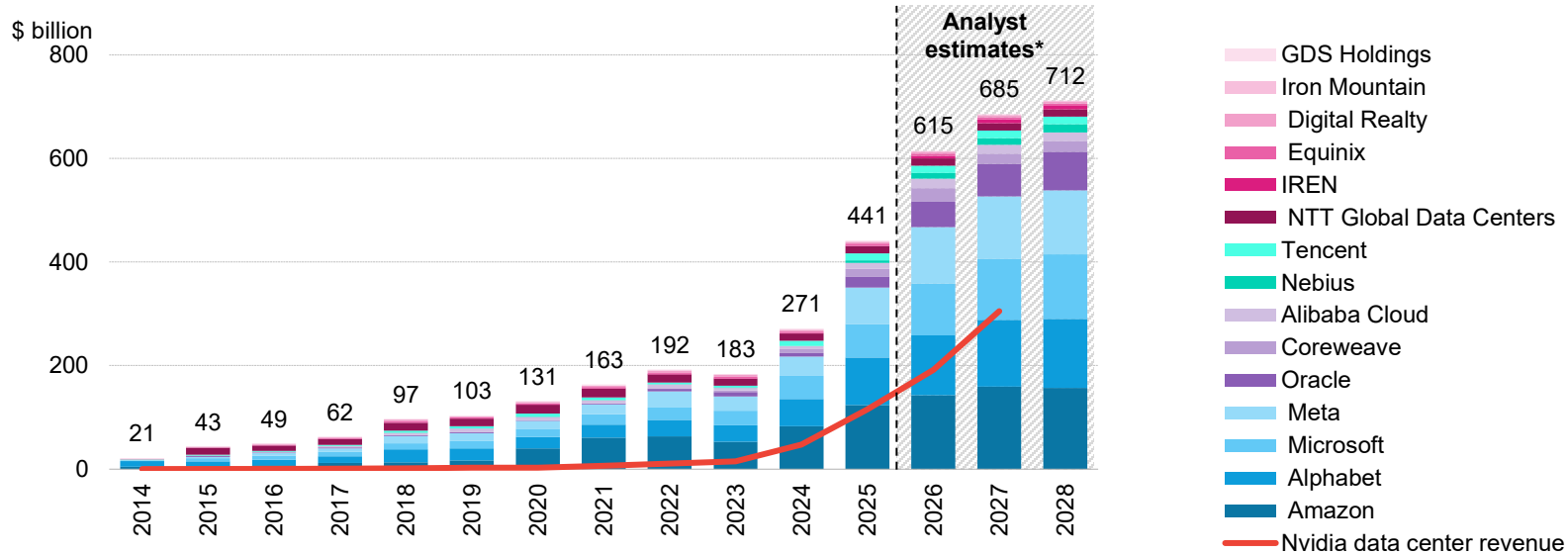
\$ billion (nominal)



Source: BloombergNEF, International Energy Agency (IEA). Note: CS stands for clean supply. FFS stands for fossil fuel supply. CCS stands for carbon capture and storage. Historical volumes for FFS investment were aggregated from IEA World Energy Investment 2025 ([web](#)). Investment includes upstream, midstream, downstream sectors and unabated fossil power generation. Dollar values have been adjusted to nominal terms. Investment in demand for fossil fuels - like gas boilers - is not included.

Data center capex likely already exceeds half a trillion dollars annually

Capital expenditure of largest publicly owned data center operators

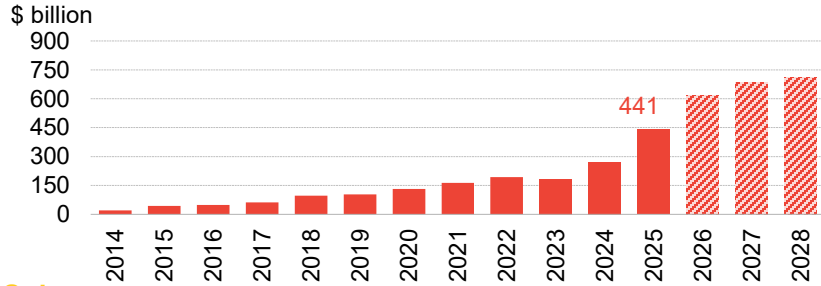


Source: BloombergNEF. Note: Uses headline capex from FA<GO>. Companies do have other capex activities, most notably Amazon. Only includes public companies that are in the top 20 owners of live IT capacity and have 200 megawatts or more of IT capacity under construction, according to BNEF's [Global Data Center Live IT Capacity Database \(1.2.0\)](#). *2026-2028 figures are third-party analyst estimates collated by Bloomberg and available from FA<GO>.

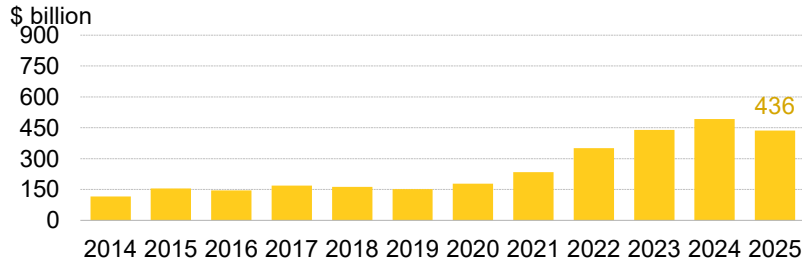
Data center boom overtakes solar, but lags electric vehicles

Capital expenditure of largest publicly owned data center operators versus energy transition spending

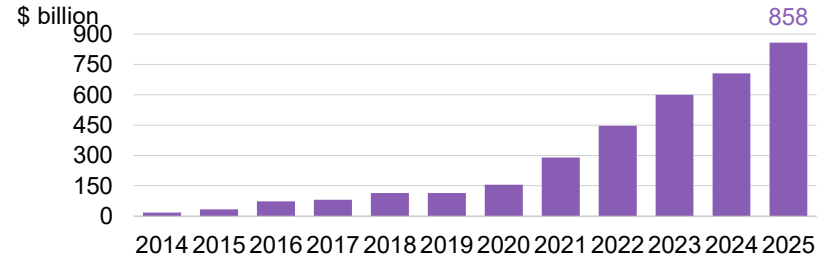
Data centers



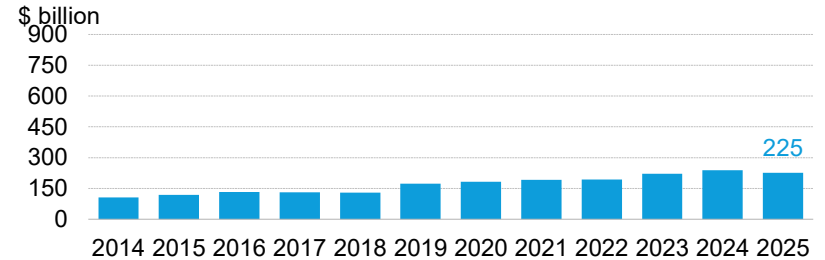
Solar



Electric vehicles



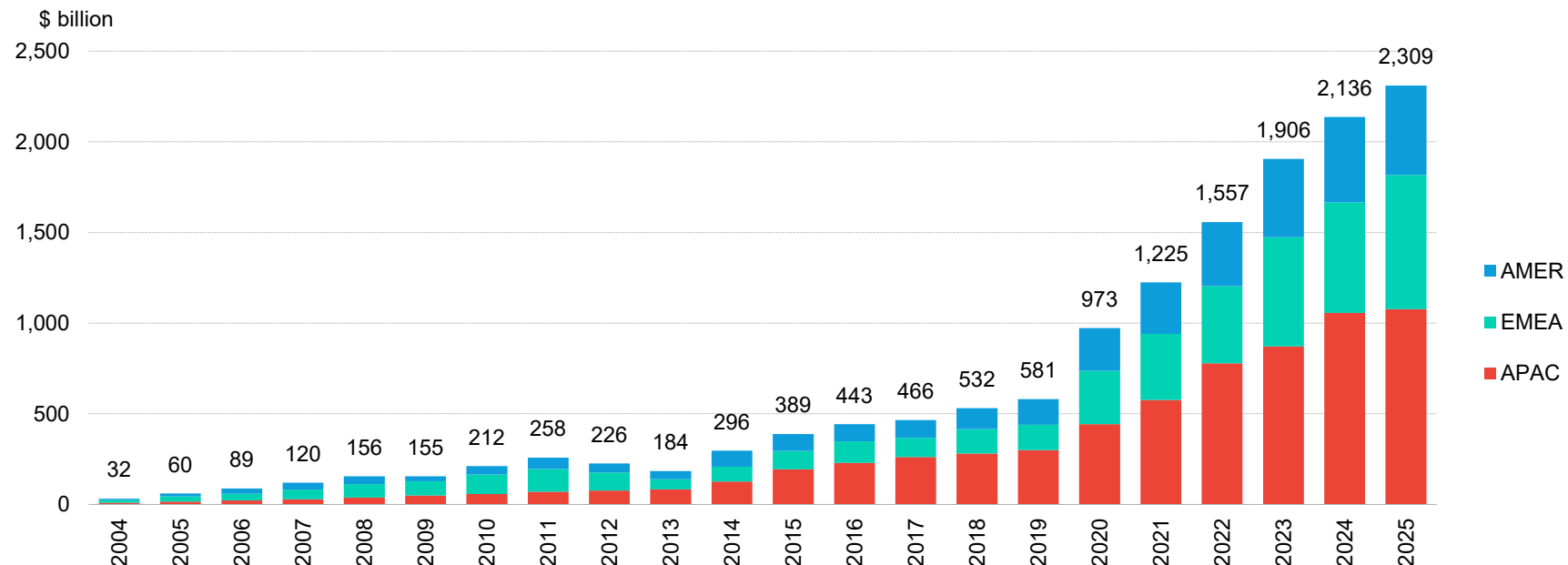
Wind



Source: BloombergNEF. Note: Data center capex accounts for capex incurred on cashflow statements in that year. Forward looking figures are estimates taken from FA<GO>. Solar and wind investment tracks expenditure by year of final investment decision.

Since 2013, Asia Pacific has led energy transition investment

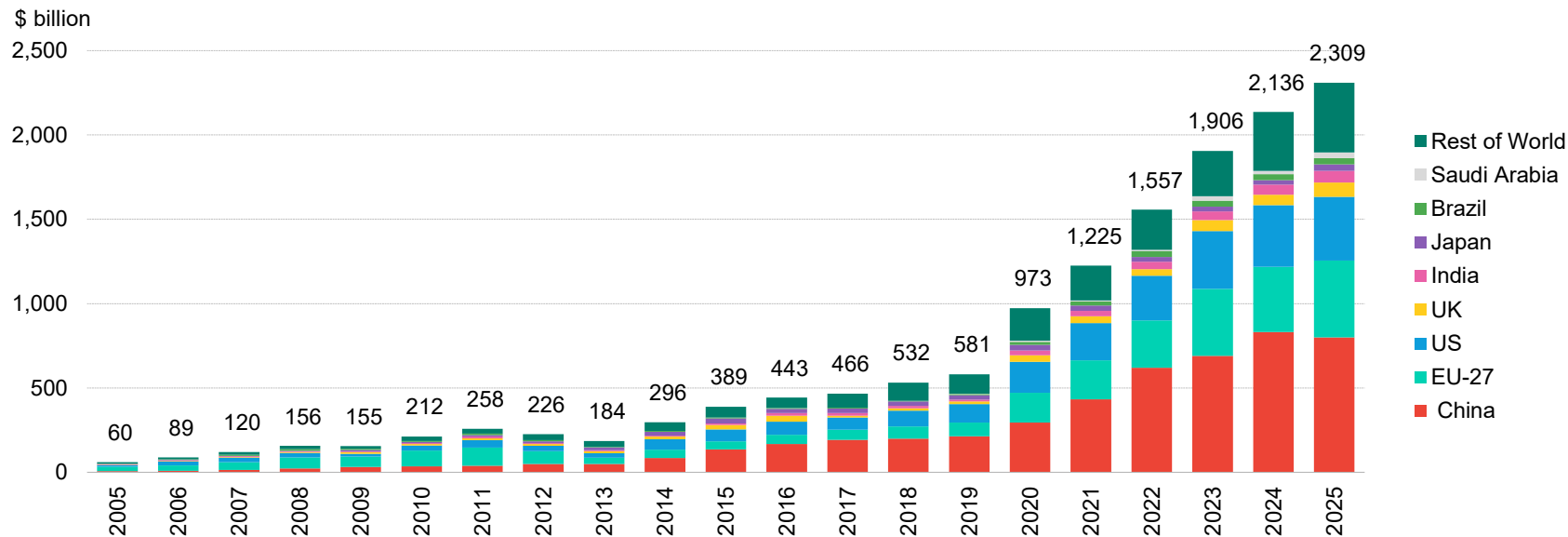
Global energy transition investment, by region



Source: BloombergNEF. Note: Start years differ by sector, but all sectors are present by 2020. The step change in 2020 is caused in part by the addition of power grids into the scope from that year onward. EMEA refers to Europe, the Middle East and Africa; APAC is Asia Pacific; AMER is the Americas.

APAC's dominance has historically been due to China

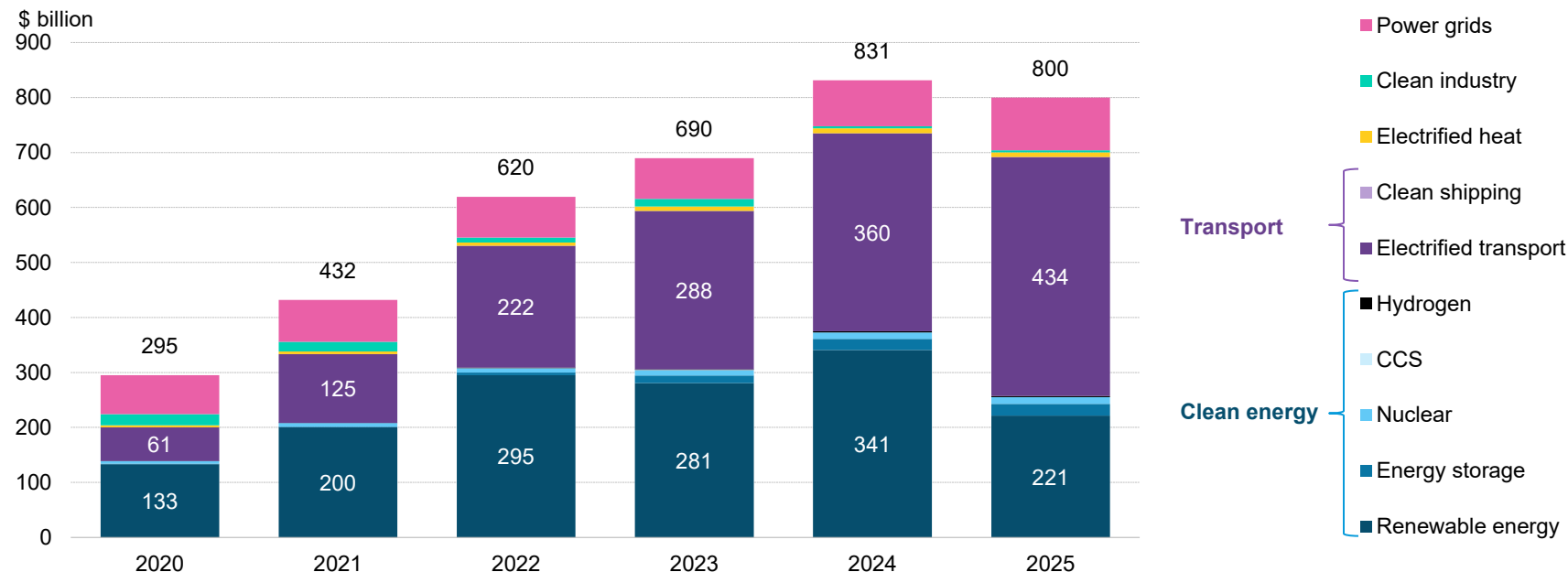
Global energy transition investment, by economy/bloc



Source: BloombergNEF. Note: Start years differ by sector, but all sectors are present by 2020. The step change in 2020 is caused in part by the addition of power grids into the scope from that year onward.

China renewable energy investment declined in 2025

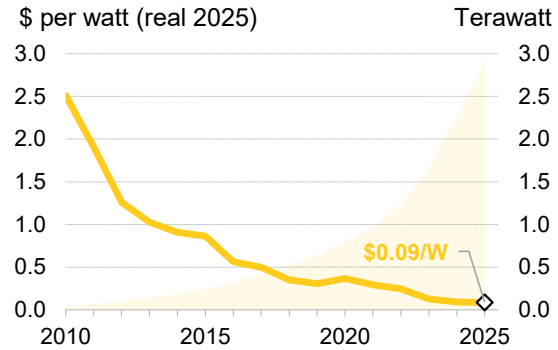
China energy transition investment, by sector



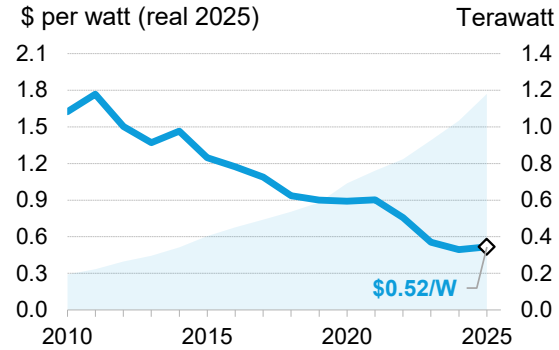
Source: BloombergNEF. Note: Start years differ by sector, but all sectors are present from 2020 onwards. Most notably, power grids start in 2020. CCS refers to carbon capture and storage.

The decline in China renewable energy investment is due to cheaper equipment and ...

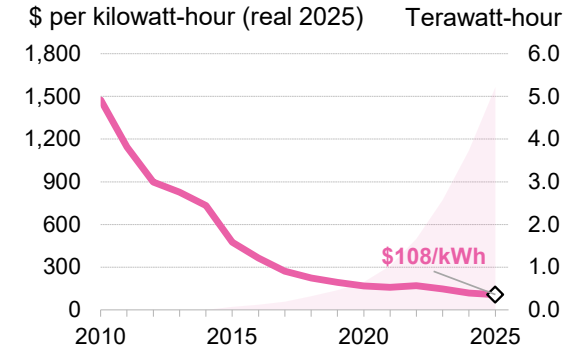
PV module price and installed capacity



Onshore wind turbine price and installed capacity



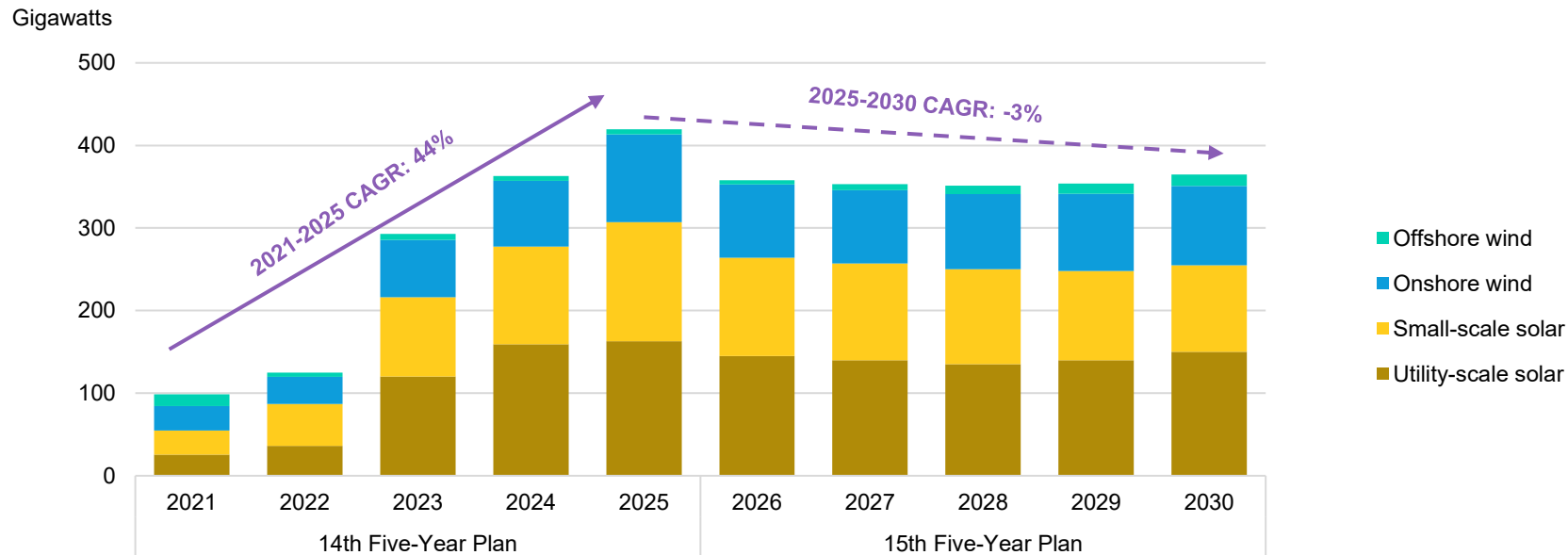
Lithium-ion battery pack price and demand



Source: BloombergNEF. Note: Prices are from 4Q 2025 Global PV Market Outlook, Wind Turbine Price Index 2H 2025 and 2025 Lithium-Ion Battery Price Survey.

The decline in China renewable energy investment is due to cheaper equipment and power market reforms

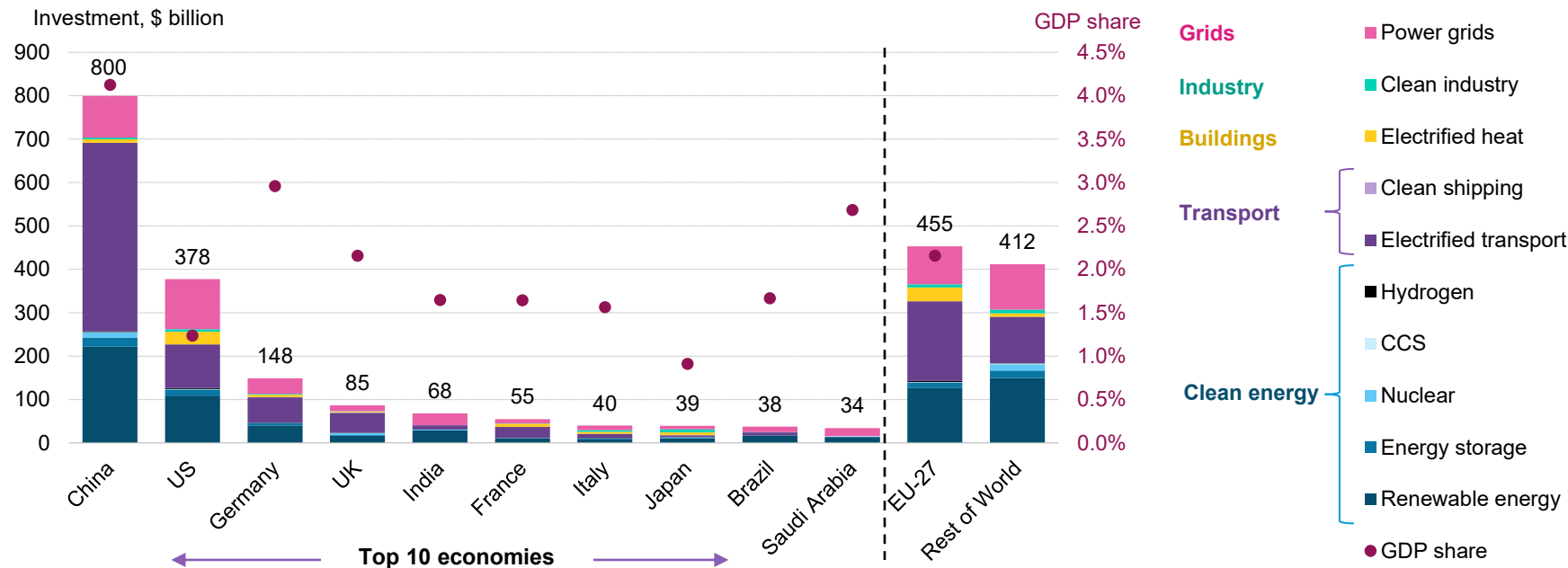
China's historical and forecast solar and wind installations



Source: BloombergNEF, National Energy Administration. Note: Figures from 2025 to 2030 are BNEF estimates as of December 2025. Values are shown in alternating current, which refers to the capacity of the inverter and grid connection. CAGR refers to compound annual growth rate.

2025 top 10 markets: China still in the lead; India climbs a place; Saudi Arabia enters the fray

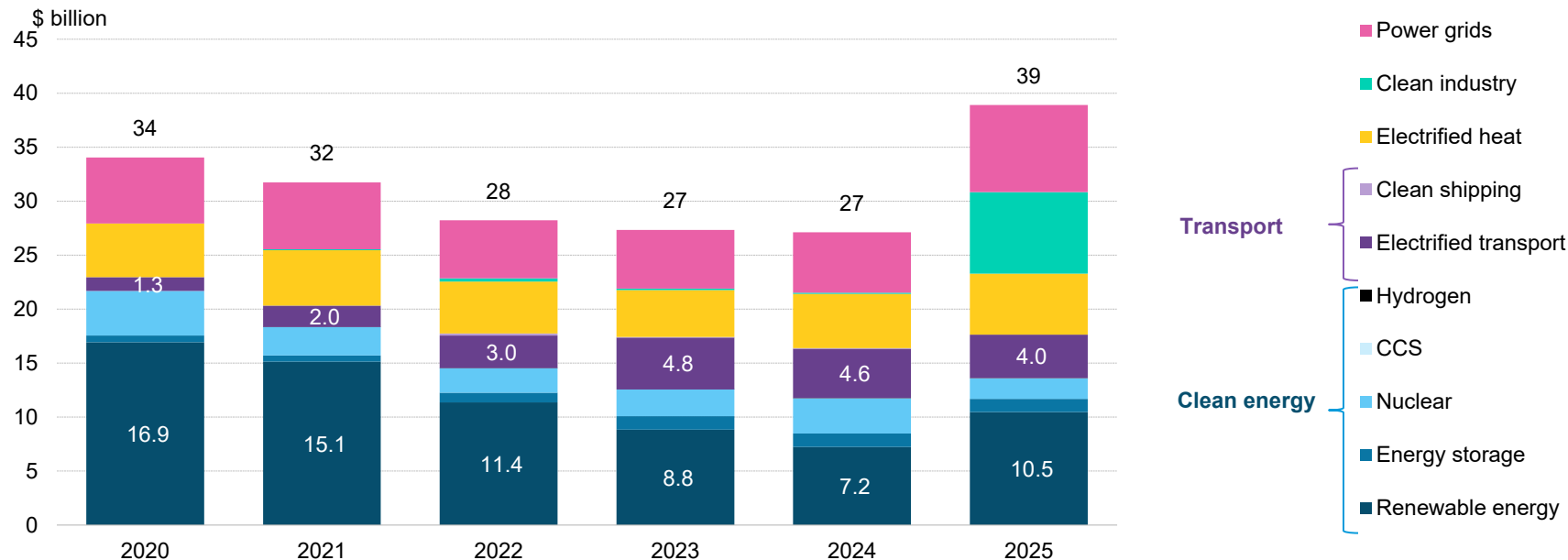
Energy transition investment and GDP share in 2025, top 10 economies plus the EU-27 and Rest of the World



Source: BloombergNEF. Note: EU-27 bar also includes the EU member states shown. "Rest of World" is global investment excluding the EU and individual economies in the chart. CCS refers to carbon capture and storage.

Japan 2025 energy transition investment reached a record high for this decade

Japan energy transition investment, by sector

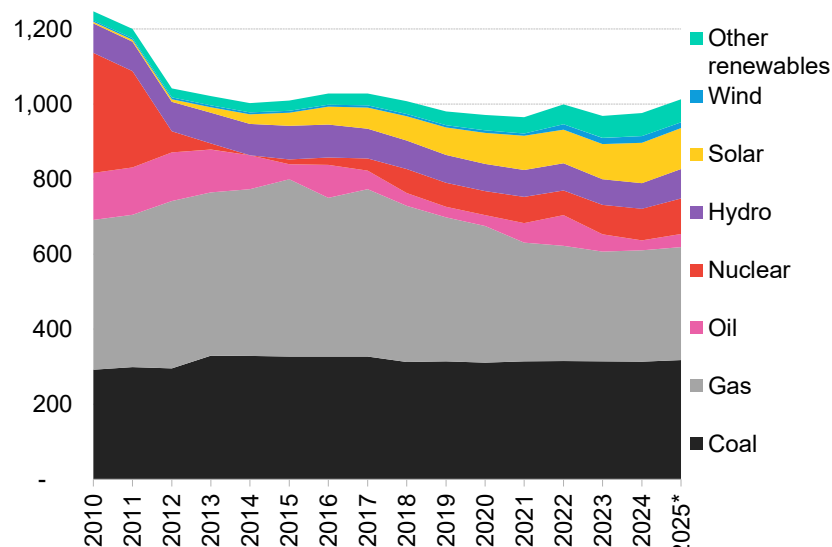


Source: BloombergNEF. Note: Start years differ by sector, but all sectors are present from 2020 onwards. Most notably, power grids start in 2020. CCS refers to carbon capture and storage.

Japan's economy remains highly vulnerable to fossil fuel supply and price shocks

Fossil fueled thermal generators still dominate Japan's electricity supply

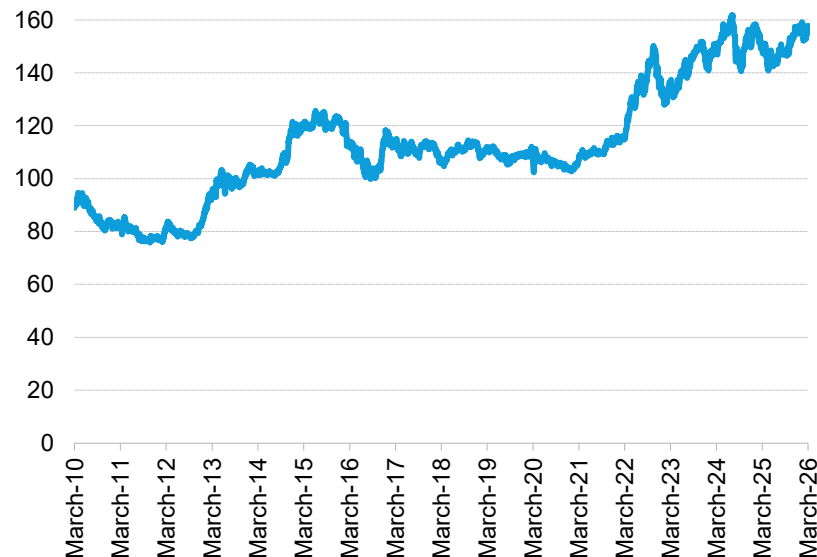
Annual electricity generation (TWh)



Source: BloombergNEF based on public sources. Note: 2025 values are BNEF estimates

Fossil fuels have a direct impact on Japanese yen exchange rates

JPY/USD spot exchange rate



Source: Bloomberg

Most Asian economies are highly exposed to fossil fuel disruptions

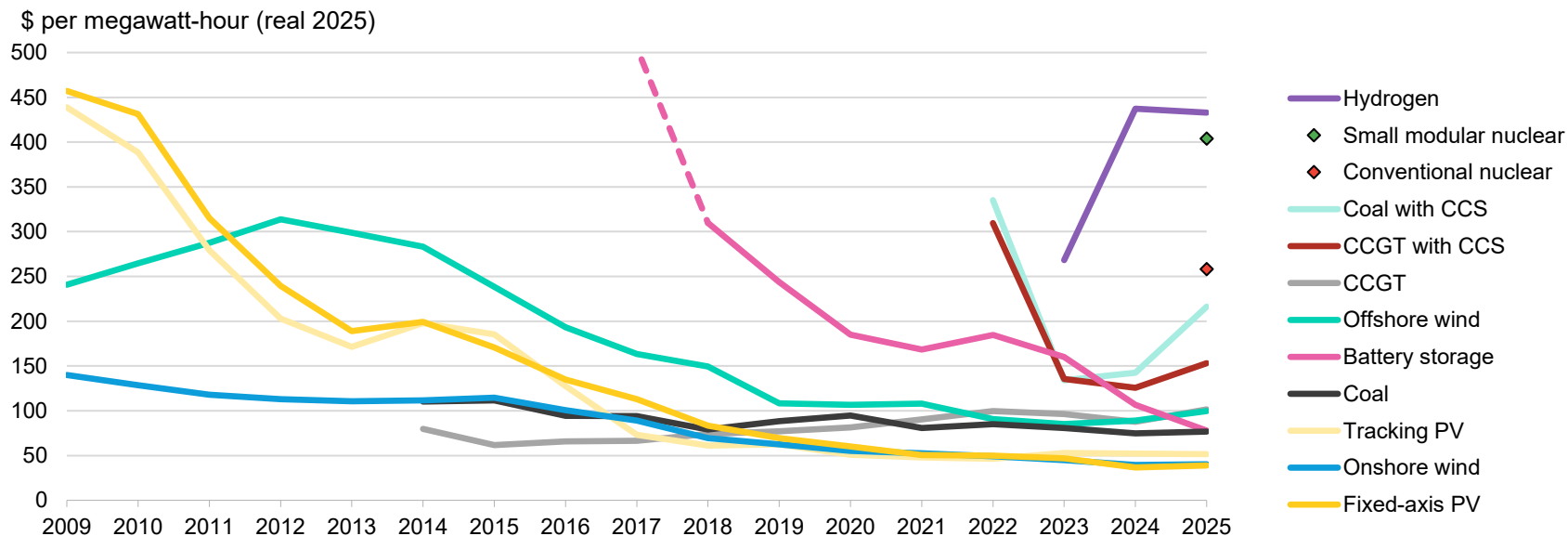
BNEF assessment of the Middle East conflict's impact on energy costs by market and sector, as of March 4, 2026

Region	Market	Power	Industry	Transport
North Asia	Australia	Green	Yellow	Red
	Japan	Yellow	Yellow	Red
	South Korea	Yellow	Yellow	Red
	Mainland China	Green	Green	Yellow
	Taiwan	Red	Yellow	Red
Southeast Asia	Indonesia	Green	Yellow	Red
	Malaysia	Yellow	Yellow	Red
	Philippines	Yellow	Yellow	Red
	Singapore	Red	Yellow	Red
	Thailand	Yellow	Yellow	Red
	Vietnam	Yellow	Yellow	Red
	South Asia	Bangladesh	Red	Yellow
India	Green	Yellow	Red	
	Pakistan	Red	Yellow	Red

Source: BloombergNEF. Note: Power refers to average electricity generation cost. Industry refers to average energy input costs for industry. Transport refers to the average energy input costs for transportation. Green means least exposure to increased energy costs. Yellow means higher costs likely. Red means higher costs are certain.

Since 2017, levelized cost of electricity global benchmarks for new power plants have favored solar and wind

Global benchmarks for the levelized cost of electricity, 2009-2025

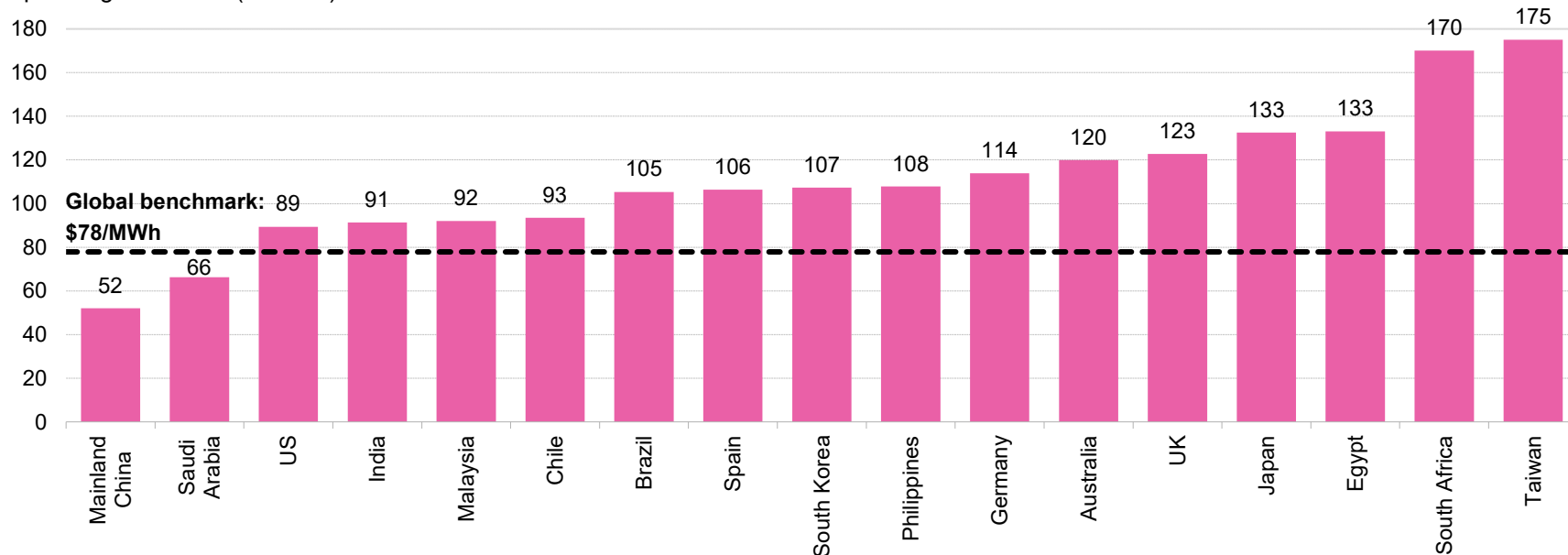


Source: BloombergNEF. Note: Global benchmarks are capacity-weighted averages using the latest market estimates – apart from nuclear, hydrogen and CCS, which are simple averages. Offshore wind includes offshore transmission costs. Carbon pricing is included where policies are already active. Subsidies and tax credits are excluded. CCGT is combined-cycle gas turbine, CCS is carbon capture and storage, PV is photovoltaic solar.

Battery energy storage system costs in many markets have already fallen below \$100 per megawatt-hour

Levelized cost of electricity, 4-hour duration battery energy storage system

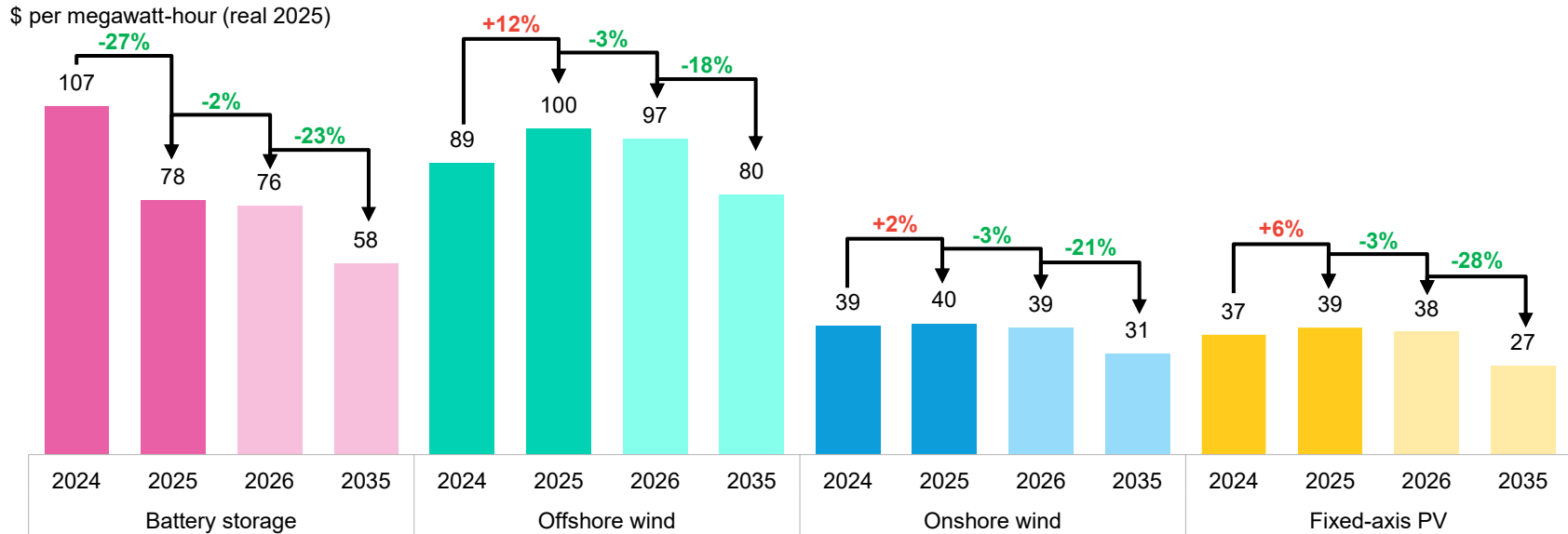
\$ per megawatt-hour (nominal)



Source: BloombergNEF. Note: Global benchmark is capacity-weighted average using the latest market estimates. Subsidies and tax credits are excluded. (Malaysia figure corrected on February 20, 2026.)

Solar, wind and energy storage are set to become even more economically competitive

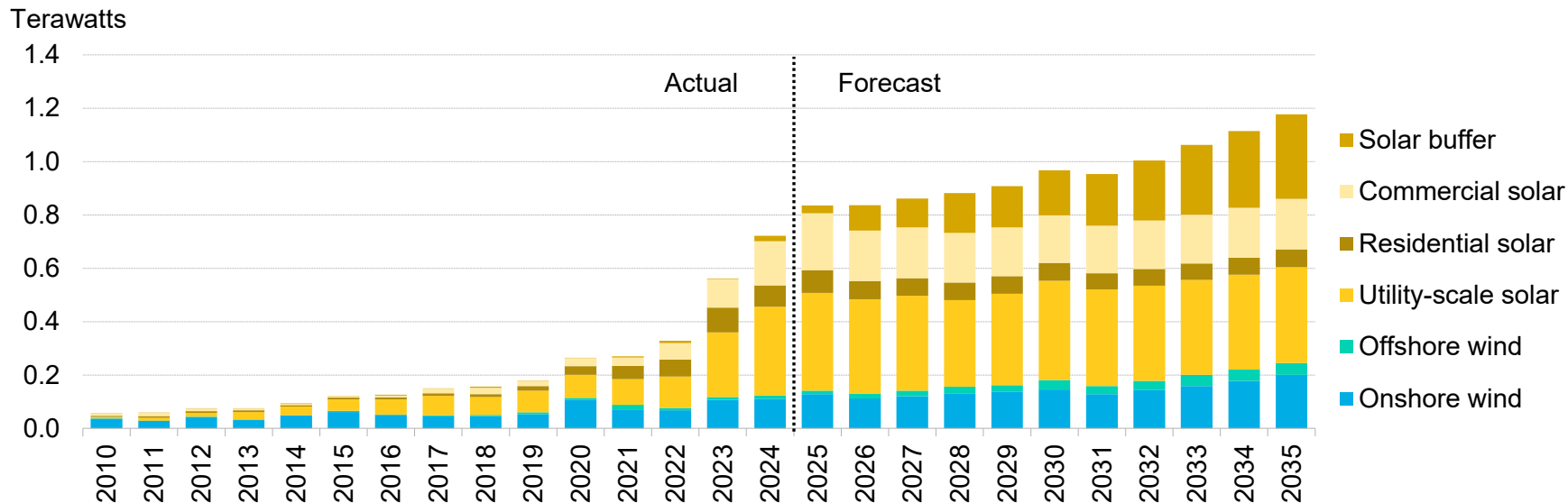
Global benchmark levelized cost of electricity by financing date



Source: BloombergNEF. Note: Global benchmarks are capacity-weighted averages using the latest market capacity estimates for 2024, and capacity forecasts from sector teams' Market Outlooks for 2025 and 2035. LCOEs do not include subsidies or tax credits. Offshore wind includes transmission costs. Battery storage reflects 4-hour systems. PV refers to photovoltaic solar.

Since 2017, levelized cost of electricity global benchmarks for new power plants have favored solar and wind

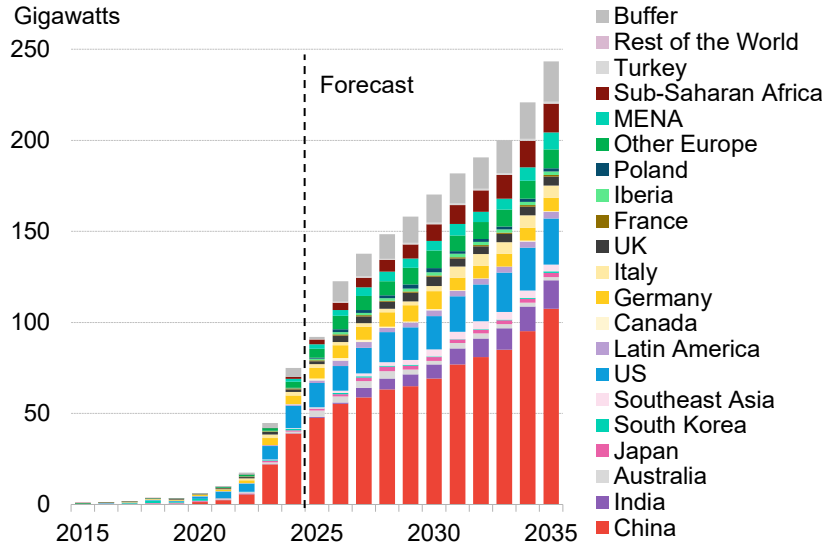
Global annual wind and solar installations



Source: BloombergNEF. Note: Solar capacity in direct current (DC) terms, all others in alternating current (AC). Excludes solar thermal.

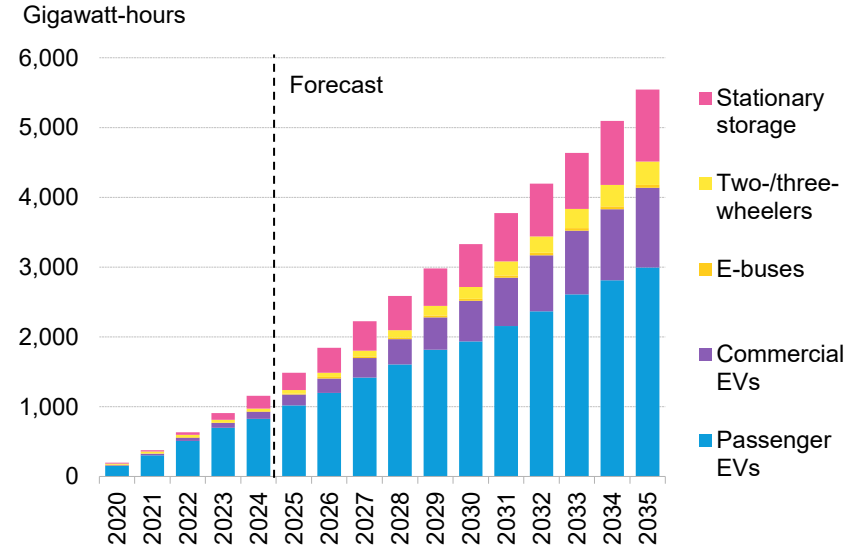
Energy storage is at an inflection point, battery demand nearly triples by 2030

Global gross energy storage capacity additions



Source: BloombergNEF. Note: Excludes pumped hydro plants. Buffer is estimated capacity not explicitly allocated to any specific region or application. MENA is the Middle East and North Africa.

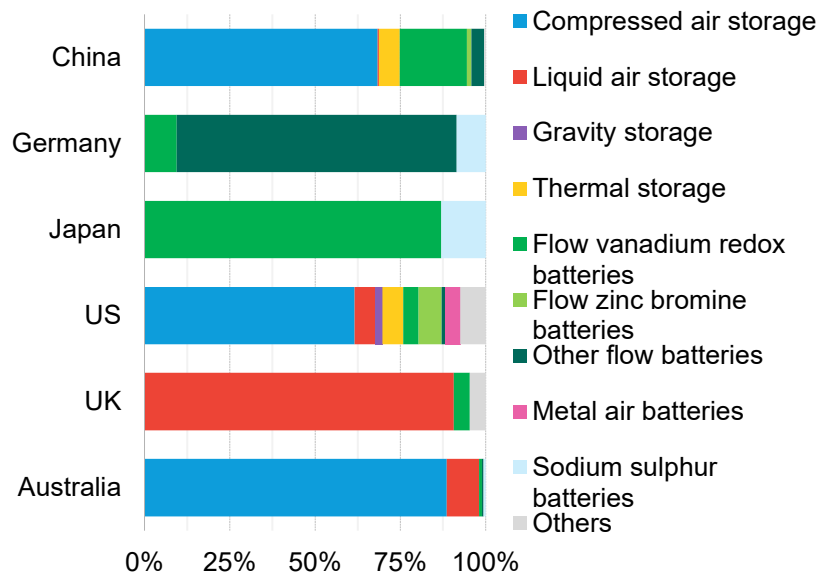
Global battery demand



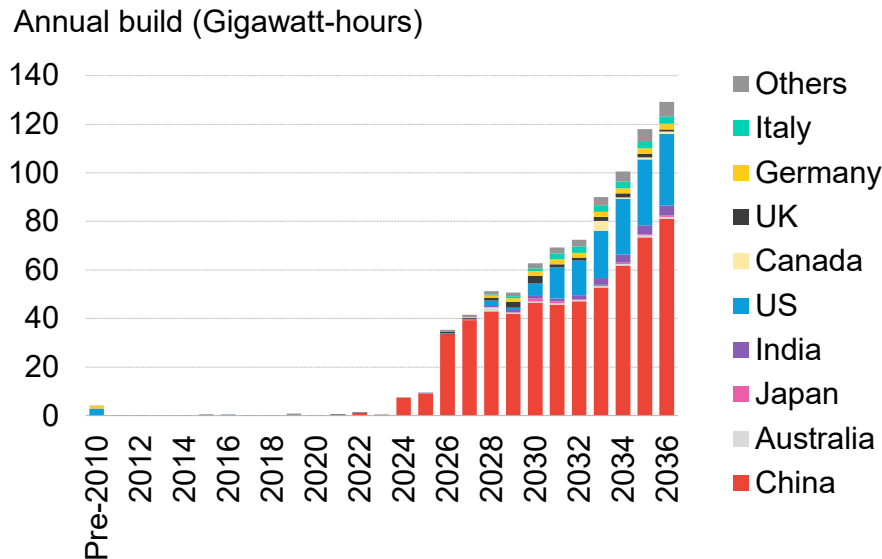
Source: BloombergNEF. Note: HEV is hybrid electric vehicle; PHEV is plug-in hybrid electric vehicle; BEV is battery-electric vehicle.

Long-duration energy storage deployment is set to accelerate globally led by China

Pipeline of long-duration energy storage, in power capacity terms, by technology



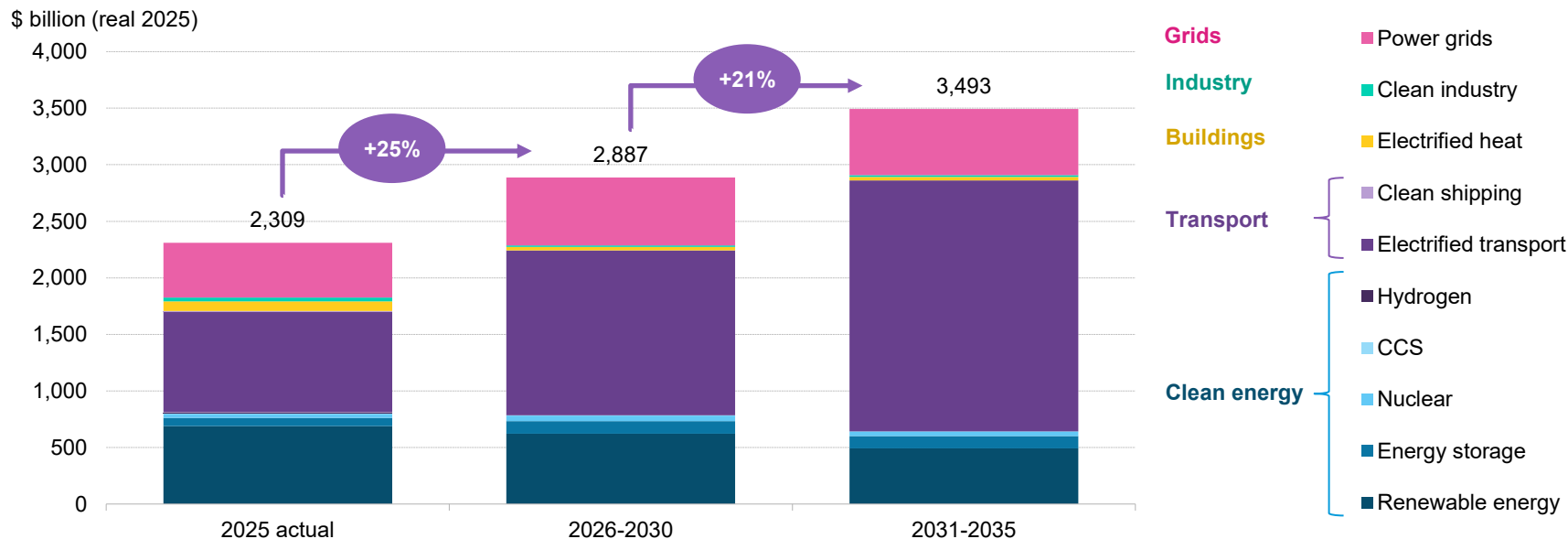
Global annual long-duration energy storage additions, by energy capacity



Source: BloombergNEF. Note: Data as of February 2026. Metal-air batteries include technologies such as iron-air and zinc-air batteries. Lithium-ion batteries and pumped hydro are excluded here. The forecast focuses on power-to-power thermal storage applications.

The Economic Transition Scenario is tangibly within reach...

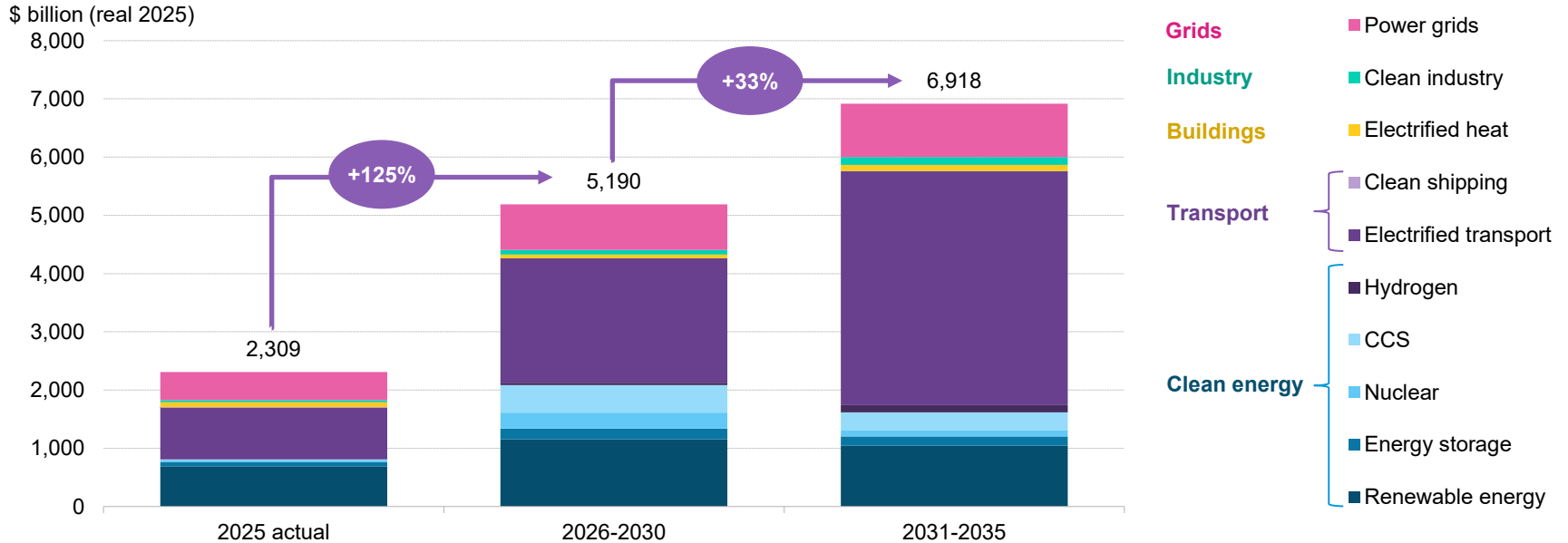
Comparison of 2025 energy transition investment versus annualized levels in Economic Transition Scenario



Source: BloombergNEF. Note: Future values are from BNEF's New Energy Outlook (NEO) 2025 ([web](#) | [terminal](#)), New Energy Outlook 2025: Grids ([web](#) | [terminal](#)), and Long-Term Electric Vehicle Outlook 2025 ([web](#) | [terminal](#)). CCS stands for carbon capture and storage.

...but investment is far off track for BNEF's Net Zero Scenario

Comparison of 2025 energy transition investment versus annualized levels in Net Zero Scenario



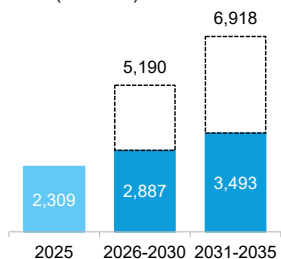
Source: BloombergNEF. Note: Future values are from BNEF's New Energy Outlook (NEO) 2025 ([web](#) | [terminal](#)), New Energy Outlook 2025: Grids ([web](#) | [terminal](#)), and Long-Term Electric Vehicle Outlook 2025 ([web](#) | [terminal](#)). CCS stands for carbon capture and storage.

US, India and Europe are nearly on track for the ETS; Japan needs more growth

Comparison of 2025 energy transition investment vs. required annualized levels in BNEF scenarios

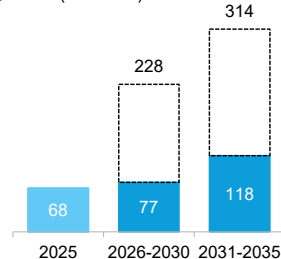
Global

\$ billion (real 2025)



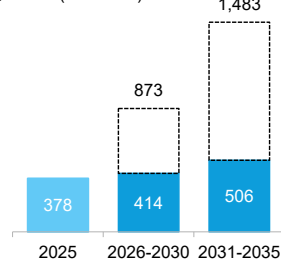
India

\$ billion (real 2025)



US

\$ billion (real 2025)



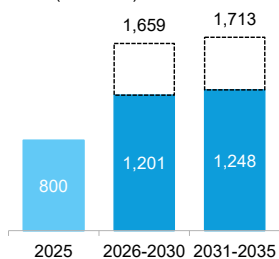
□ Gap to Net Zero Scenario

■ Economic Transition Scenario

■ Actual

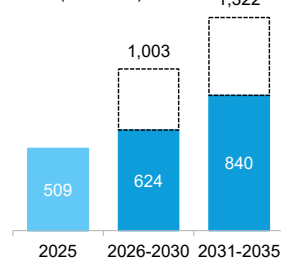
China

\$ billion (real 2025)



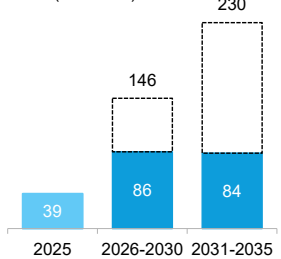
Europe

\$ billion (real 2025)



Japan

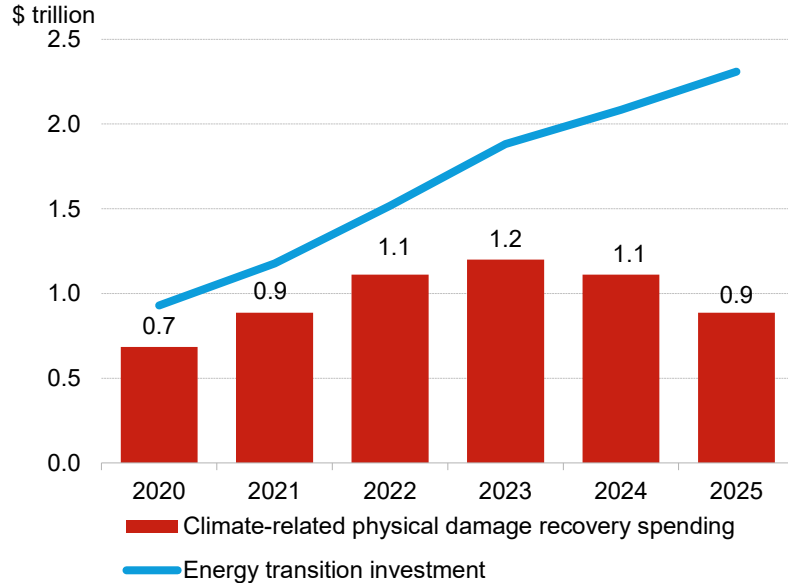
\$ billion (real 2025)



Source: BloombergNEF. Note: Future values are from the New Energy Outlook (NEO) 2025 ([web](#) | [terminal](#)), New Energy Outlook 2025: Grids ([web](#) | [terminal](#)), and Long-Term Electric Vehicle Outlook 2025 ([web](#) | [terminal](#)).

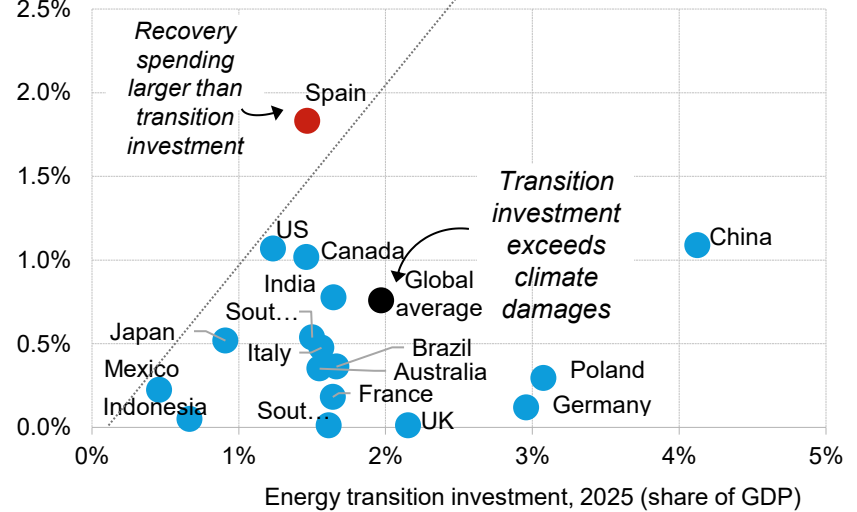
Transition investment has outpaced climate recovery costs, but adaptation gap is widening

Global climate damage recovery spending versus energy transition investment



Climate recovery spending versus energy transition investment, relative to GDP

Climate-related damage recovery spending, 2025 (share of GDP)



Source: BloombergNEF, Bloomberg Intelligence. Note: "Climate-related damage recovery spending" includes government recovery budgets, and climate-related insured and uninsured losses disclosed by insurers.

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Our expert coverage assesses pathways for the power, transport, industry, buildings and agriculture sectors to adapt to the energy transition.

We help commodity trading, corporate strategy, finance and policy professionals navigate change and generate opportunities.

The logo for BloombergNEF, featuring the word "Bloomberg" in a bold, sans-serif font, followed by "NEF" in a larger, bold, sans-serif font. The background of the slide is a light gray grid of small dots.

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