

 Reden Solar, Europe

MACQUARIE ASSET MANAGEMENT

How power demand is reshaping long-term infrastructure opportunities

The demand for power is accelerating – and the infrastructure built to meet it is becoming one of the more compelling opportunities in private markets. Electrification and digitalisation are changing how and where power is used, while renewables are stepping in where traditional energy sources fall short. Falling costs, energy security priorities and faster build times are converging in ways that may benefit investors with exposure to the right assets.

What energy transition assets may offer a portfolio:



Cash flows supported by structurally rising electricity demand



Potentially stable income linked to essential power infrastructure, supported by regulation and power purchase agreements



Long-term growth potential driven by declining renewable energy generation costs and rapid deployment

The growing demand for power is not new, but its pace is accelerating

Widespread electrification and rapid digitalisation are driving a dramatic rise in demand for electricity. The following statistics highlight how quickly power demand is accelerating:



Electricity needs are projected to increase 75% by 2050.¹



AI power use in data centres is likely to reach 200–400 TWh in 2030 (roughly the same amount of power consumed by Spain or the UK).²



Over the next five years, electricity demand is projected to grow about 50% faster each year than it did over the past decade.³

For investors, this demand supports long-term revenue visibility and sustained growth for power-related infrastructure assets.

Why renewables are increasingly filling the gap

Power demand is clearly rising, but supply is finding it harder to keep up. We believe renewables are part of the solution as they offer three compelling benefits:

01**Cost competitiveness****02****Energy security****03****Speed to market**

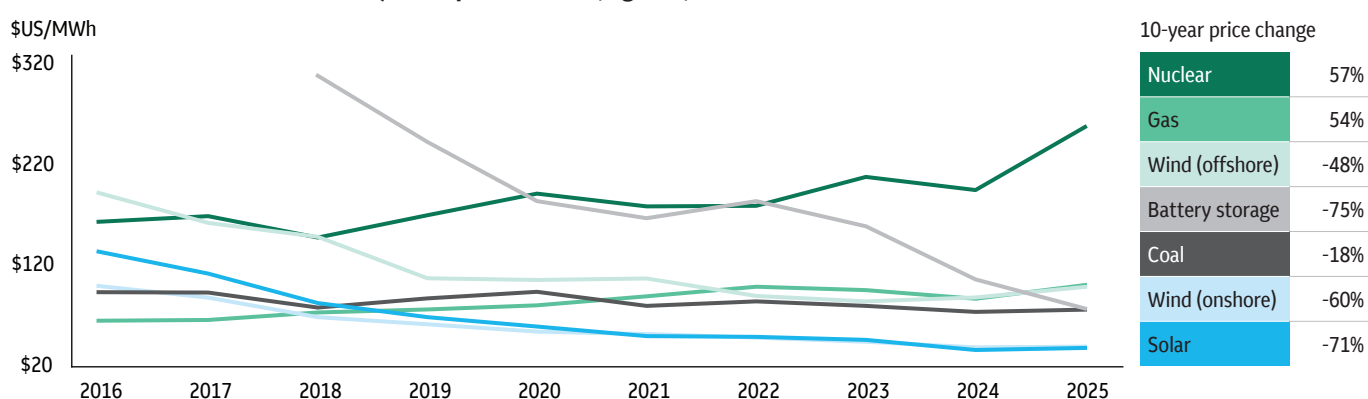
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1 Cost competitiveness

Improvements in technology and manufacturing efficiency have pushed renewable costs sharply lower.⁴ Wind and solar now represent some of the lowest cost sources of new power generation, even without subsidies (Figure 1).

Over time, per-unit costs for wind and solar are expected to continue declining (Figure 2), though there are regional variations. For example, wind and solar are already cheaper than new fossil-fuel plants across much of China, India, Europe, and Latin America.⁵ In markets with abundant low-cost fossil fuels or coal, like the U.S., renewables are increasingly filling the supply gap as traditional sources of power generation struggle to keep up with demand.⁶

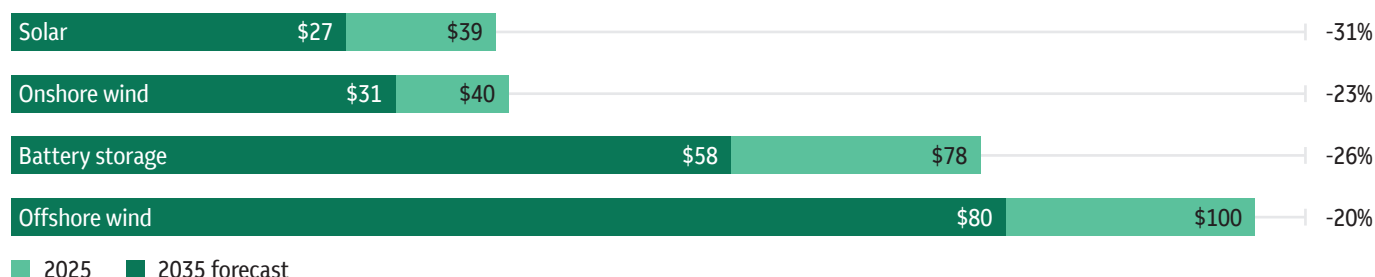
Solar and wind now cost less than any other power source (Figure 1)



Source: BloombergNEF. "Levelized Cost of Electricity Update 2026." Note: Global benchmarks are capacity-weighted averages using the latest market estimates. Offshore wind includes offshore transmission costs. Carbon pricing is included where policies are already active. Subsidies and tax credits are excluded. LCOE cost of electricity shown by financing date. CCGT is combined-cycle gas turbine, solar is fixed-axis photovoltaic solar. Nuclear data calculated as a simple average of US, China, Finland, France, UK and UAE as of 2025.

Renewables will be 20-31% cheaper by 2035 (Figure 2)

Unsubsidized LCOE (\$US/MWh)



Source: BloombergNEF. "Levelized Cost of Electricity Update 2026." Note: Global benchmarks are capacity-weighted averages using the latest market estimates. Offshore wind includes offshore transmission costs. Subsidies and tax credits are excluded. LCOE cost of electricity shown by financing date. Solar is fixed-axis photovoltaic solar.



Chart takeaway

Declining costs across wind, solar and batteries are strengthening project economics and supporting scalable deployment, reinforcing renewables as a structural growth opportunity rather than a subsidy-driven cycle.

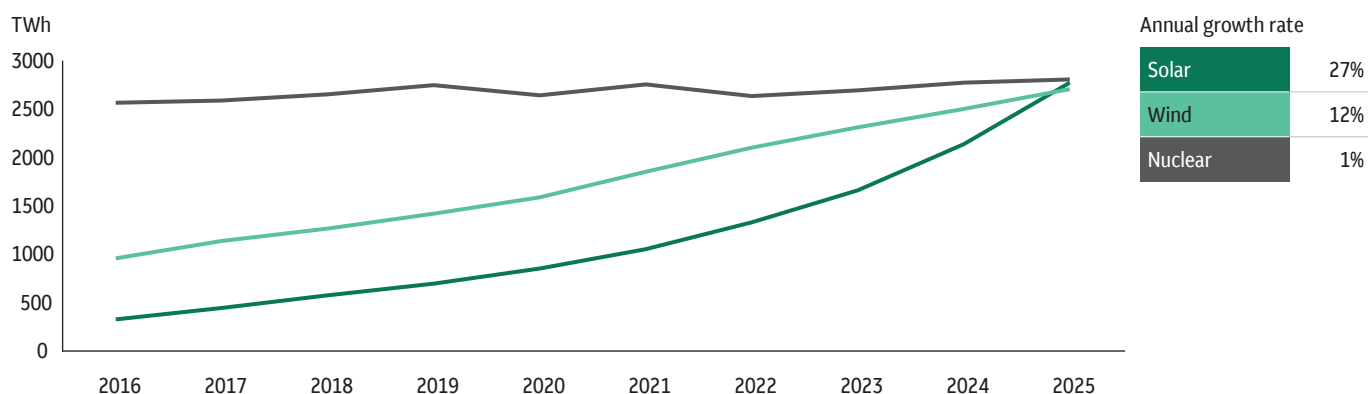
2 Energy security

Geopolitical shocks and supply disruptions may accelerate a shift toward domestic energy sources. For fossil fuel-light regions such as Europe and parts of Asia, renewables and electrification offer a path to greater energy security and reduced exposure to global oil and gas markets – potentially supporting longer-term economic and strategic priorities.

This shift is already underway. Over the last 10 years, solar and wind power have grown at a double-digit annual rate – significantly faster than the 1% growth for coal and nuclear. In 2026, wind and solar are expected to exceed nuclear power output for the first time (Figure 3),⁷ and globally wind and solar installations are expected to increase by 67% over the next five years.⁸

However, building out renewable power capacity still relies on global supply chains for imports of turbines, solar panels and critical minerals. This dependence can create challenges for energy security and may increase the costs or extend timelines, especially if countries desire local sourcing. Experienced investment teams consider these risks when evaluating opportunities, and those with analysts on the ground may be better positioned to assess how supply chain dynamics and other risks could impact a given investment.

In 2026, solar and wind will surpass nuclear output (Figure 3)



Source: Ember. Yearly electricity data from 2016-2025.



Chart takeaway

Renewables provide a more secure, domestic source of power for countries without fossil fuels, influencing how new power capacity is being built and generating durable cash flows for investors.

3 Speed to market

Traditional power sources face long development timelines, often taking years to come online. New gas turbines currently face lead times of around six years, with order books already full through 2027 – meaning projects initiated today are unlikely to come online before 2033.⁹ Nuclear facilities take even longer to develop – the last two nuclear plants in the US each took roughly a decade to complete construction, after they acquired licensing, approvals, and permits.¹⁰

In contrast, renewable capacity typically is quicker. Onshore wind and solar capacity face fewer potential bottlenecks and can be built within two years once permitting and grid connection are secured.¹¹ Faster build times allow capital to be deployed and generate cash flows sooner.

The bottom line: Renewables offer a compelling investment opportunity

As demand for power increases, renewables are set to play a central role in meeting that need. Falling costs, energy security priorities and faster build timeframes have driven significant investment in the sector, and we believe these dynamics support continued opportunity.

For investors, this represents an attractive opportunity set within infrastructure – combining long-term demand visibility with improving economics and scalable deployment. Historically, these assets have delivered stable cash flows, defensive income and capital appreciation. We see this as an opportunity to participate in the early stages of a new energy transition – this time linked to electrification and digitalisation.



Endnotes

1. BloombergNEF 2025 New Energy Outlook, April 2025.
2. IEA, "Data Centre Energy Use: Critical Review of Models and Results," p.33, March 2025.
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4. P.9, International Energy Agency, "Renewable 2023, Analysis and forecast to 2028." In 2023, an estimated 96% of newly installed, utility-scale solar PV and onshore wind capacity had lower generation costs than new coal and natural gas plants.
5. P.12, Bloomberg NEF, "Levelized Cost of Electricity Update 2026".
6. P.11, Bloomberg NEF, "Levelized Cost of Electricity Update 2026".
7. Ember, "Global Electricity Review 2026," p.16, April 21, 2026.
8. Bloomberg BNEF, "Progress Despite Fragmentation: The Energy Transition to 2030," January 6, 2026.
9. Wood Mackenzie, "Gas turbine prices soar 195% as market faces supply-demand crisis," April 1, 2026.
10. US Dept of Energy, "Potential Cost Reduction in New Nuclear Deployments Based on Recent AP1000 Experience," June 12, 2025.
11. IRENA, "24/7 Renewables: The Economics of Firm Solar and Wind," 2026.

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