

US Six predictions for the energy transition in 2025



Guest comment by **Izzet Bensusan**

The global energy transition is accelerating at an unprecedented pace, driven by factors ranging from government policies to reduce emissions and promote sustainable development to growing innovation and private-sector commitments to decarbonisation. The Inflation Reduction Act has been a cornerstone of US climate policy, unlocking billions of dollars for renewable energy projects and creating fertile ground for technology advancement.

As we step into 2025, the landscape is poised for a period of significant change. Investors, developers and policymakers are grappling with the uncertainties posed by the potential expiration of the Trump-era tax cuts at the end of 2025 and its implications for the IRA, fuelling a rush to capitalise on existing incentives and deploy next-generation solutions.

The energy sector is undergoing seismic shifts. From a surge in construction and bulk procurement of key components to the rise of hybrid power generation solutions and state-level compensatory actions, the energy transition is a nuanced interplay of market forces and a surge of new investors, regulatory frameworks, political landscape and technological breakthroughs. The Magic 8 Ball for the energy transition over

the next two years, grounded in historical trends, emerging market data, global macro and political environment, and the strategic priorities of key stakeholders, signals the following six opportunities and challenges that lie ahead.

1 Surge in construction and new starts

In the first half of 2024 alone, renewable energy projects attracted \$313 billion in new investments. The US Energy Information Administration projects solar capacity to grow by 75 percent and wind capacity by 11 percent between 2023 and 2025.

As possible changes to IRA benefits loom, developers are

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scrambling to secure safe harbour provisions for their renewable energy projects. This dynamic is driving a surge in construction starts for solar, wind and battery storage projects, mirroring the behaviour observed during past phase-outs of cash grants and Investment Tax Credit incentives. Historically, the renewable energy industry has responded to policy deadlines with a rush to lock in favourable terms. For example, during the final years of the Production Tax Credit, wind installations surged in 2020. With similar urgency, the US solar industry is expected to install more than 30GW of new capacity annually through 2025 to ensure eligibility for maximum IRA benefits.

2 Bulk purchases of key components

Anticipating potential tariffs and supply chain bottlenecks with the Trump administration in office, developers and EPCs are accelerating the procurement of solar panels, inverters and batteries. The US utility-scale solar costs could rise by up to 30 percent due to proposed tariffs on Chinese imports.

With China keeping its throne as the dominant global supplier of key solar and battery technologies and equipment, the potential impact of tariffs or trade restrictions stands out as a critical consideration. The strategy to hedge against rising costs and ensure timely project completion echoes the “gold panel” rush during prior subsidy phase-outs, where developers bulk-purchased components to mitigate financial risks.

3 Hybrid power generation solutions

The rising demand for electricity, particularly from energy-intensive sectors such as data centres with the AI boom and manufacturing, as



well as electrification of everything, is driving the adoption of hybrid power generation solutions.

Pairing gas-fired plants with renewable sources like solar or wind allows for both reliability and compliance with corporate sustainability targets. In 2023, 80 new hybrid plants began operating across the US, with Texas, California and Florida leading the wave.

These hybrid systems can also reduce wholesale market costs by increasing the competition among suppliers, since they combine highly cost-effective sources of generation with storage. They offer a practical pathway to meet the growing demand for green energy while ensuring grid stability. Hybrid plants in Texas are combining natural gas and solar power, and they are creating a model for scalable and sustainable energy production.

4 Developer premium on assets

The lack of certainty surrounding the post-2025 regulatory environment is driving up the demand for energy transition assets. Developers and investors are capitalising on this, and it leads to premium pricing for solar, wind and battery projects. Whereas

this dynamic creates short-term windfalls for asset holders while increasing competition among buyers, it also underscores the importance of regulatory clarity in sustaining investment momentum.

5 State-level regulatory actions

As federal incentives face potential reductions, states are stepping in to sustain investment momentum. Compensatory programmes, such as state-level ITC extensions and renewable portfolio standards, as well as other investment enticements such as low taxes and fast permitting times are becoming critical tools for driving local renewable energy development.

Texas is the prime example. The Lone Star State has emerged as a leader in renewable energy capacity, installing nearly 80 percent more solar, wind and battery capacity than the next largest state thanks to the permissive regulatory environment. In 2024, wind and solar farms generated around 30 percent of Texas's electricity. California, New York and Illinois are on track to follow in these footsteps and are also introducing innovative programmes to attract private investment.

6 Technology shifts: CCS, SMRs and beyond

The energy transition is not limited to traditional renewables. Emerging technologies are playing an increasingly significant role. Carbon capture and storage, small modular reactors and advanced battery systems are gaining traction as viable solutions to decarbonise hard-to-abate sectors.

The US is the global leader in CCS, and its capacity is expected to increase sevenfold in the next 10 years. The US government is also pushing for innovation in nuclear, as the Department of Energy announced \$900 million in funding to support the deployment of next-generation SMRs.

While wind and solar remain the backbone of the energy transition and a sustainable future, nuclear and CCS are addressing critical gaps in baseload power and industrial emissions. Simultaneously, innovations in fusion technology and grid-scale batteries are creating new frontiers for clean energy. ■

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