



EUROPE FACES A NEW ENERGY TRAP AS GEOPOLITICS OF CLEAN POWER INTENSIFY

For Europe, the question now is how to expand grids for soaring electricity demand without sliding into a new dependence – this time on China. European clean energy companies also face a growing threat from the US under President Donald Trump. Building a clean-energy future without creating dangerous new dependencies will require a more assertive strategy.

The history of international relations is inseparable from the history of energy. Britain's empire was built on coal, its naval supremacy secured by oil, and the twentieth century defined by struggles over hydrocarbon reserves. Energy has long shaped strategy, prosperity, and conflict. Today, the race for advantage is less about barrels and pipelines than about technology and especially artificial intelligence. But even here, energy remains decisive. Nations that can deliver cheap, reliable electricity will gain an edge in AI and digital infrastructure. Those exposed to energy shocks and costly power risk falling behind.

Europe learned this lesson acutely after Russia's invasion of Ukraine. Gas prices spiked by around 180%, wholesale electricity costs surged, and prices remain well above pre-war levels. The shock dented Europe's competitiveness in heavy industry, manufacturing, and the fast-growing sector of AI data centres. The EU hosts only about 5% of global AI computing capacity, compared with 75% in the US.

Cut off from Russian pipelines, Europe turned to US and Qatari liquefied natural gas, while doubling down on renewables and nuclear. But the question now is how to expand grids for soaring electricity demand without sliding into a new dependence – this time on China.

Electricity demand from European data centres is projected to rise from 96 TWh in 2024 to 168 TWh in 2030 and 236 TWh in 2035, according to Ember. Most of this growth will be met by renewables and natural gas-fired power plants.

China's dominance

China dominates the supply chains for batteries, solar panels, wind turbines, and the minerals that underpin them. Decades of industrial policy and state-backed in-

vestment have given it near-monopolies in critical mineral processing and clean-tech manufacturing. This scale makes it extraordinarily hard for Europe to compete. Start-ups like Sweden's Northvolt are already struggling to survive.

Unless Europe can expand its grids, secure its mineral supply chains, and strengthen its industrial base, it risks trading one dependency for another - from Moscow's pipelines to Beijing's factories.

Europe relies on Chinese lithium-ion batteries for grid-scale energy storage systems, as well as Chinese solar panels. It needs Chinese rare earth permanent magnets for wind turbines. And increasingly, Chinese wind turbine producers are also eyeing the European market.

Meanwhile, clean-energy trade is also being rewired. Increasingly it flows between developing countries, often through Chinese companies, creating a new "South-South" energy diplomacy that side-lines traditional Western hubs. Chinese battery exports are surging to markets such as India and Saudi Arabia, deepening Beijing's reach.

European clean energy companies also face a growing threat from the US under President Donald Trump. He has not only turned away from clean energy, but has also threatened European companies in the clean energy sector – damaging their abilities to compete against their Chinese rivals.

The US shift under Trump

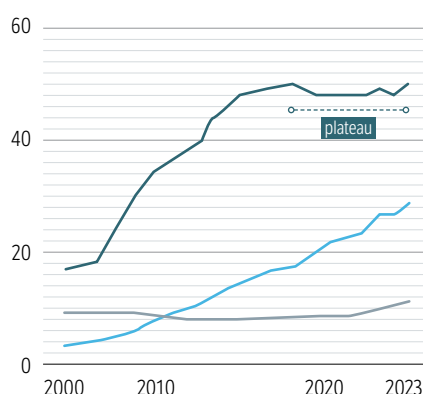
Under Trump the US has particularly targeted the wind sector – the only clean energy sector where Europe has large and competitive companies. Companies such as Vestas and Siemens Gamesa dominate wind turbine installations outside of China. Trump has sent shockwaves through the European industry. He blocked the construction of a wind farm in New England,

FIGURE 1. CHINA'S RAPID ELECTRIFICATION AND RISING SOLAR AND WIND POWER WILL SOON DRIVE DOWN ITS FOSSIL FUEL USE

Source: China Energy Transition Review 2025, EMBER, available at <https://ember-energy.org/app/uploads/2025/09/China-Energy-Transition-Review-2025.pdf>

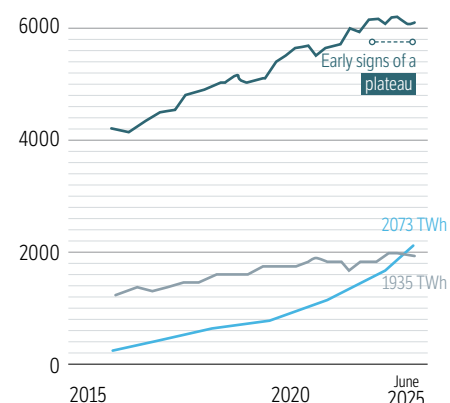
Final energy consumption (EJ)

— Fossil — Electricity — Other



Electricity generation (TWh), 12-month rolling sum

— Fossil — Wind and solar — Other clean



which was around 80% complete, sending shares of the Danish renewable energy developer Orsted plummeting. Orsted has filed a lawsuit against the Trump administration.

Elsewhere, offshore wind subsidies have been cut, loan guarantees withdrawn, and permitting for solar and wind limited. The tone from Washington now paints clean energy as expensive and unreliable. This marks a sharp turn from President Joe Biden's embrace of green subsidies. It also comes as European wind companies face increased competition from their Chinese rivals who are keen to expand into Europe.

Leading Chinese manufacturers like Goldwind, Envision, and Mingyang, are among the top global wind turbine producers and are actively expanding overseas, including Europe.

By 2024 and 2025, Chinese firms were beginning to win contracts for wind projects in EU countries such as Italy, Croatia, and Serbia, and planned factory openings in Italy and Spain indicate a growing physical presence in the region.

Chinese companies offer several competitive advantages in Europe, including turbine prices up to 50% lower than European manufacturers and generous financing terms such as deferred payments for up to three years.

Such offers have raised concerns among European industry representatives about fair competition and the impact on local manufacturers and jobs. The European Union is investigating these practices under fairness and subsidy rules.

Yet Europe has limited options.

Europe's limited options

Unlike the US climate imperatives run deeper across the continent, and a return to coal or oil dependence is politically untenable.

But building a clean-energy future without creating dangerous new dependencies will require a more assertive strategy:

- **Grids and Infrastructure:** Massive investment in transmission, storage, and cross-border connections.
- **Critical Minerals:** The EU's Critical Raw Materials Act aims for 10% of domestic mining and 40% of processing by 2030, but local resistance and slow permitting mean Europe must also deepen partnerships with allies like Canada, Australia, and Chile.

- **Nuclear Power:** France is reviving its nuclear programme, and small modular reactors (SMRs) offer potential for other countries. Nuclear provides stable, low-carbon baseload that complements renewables.
- **Friend-shoring Supply Chains:** Working with trusted partners in North America, Africa, and Asia to reduce reliance on China.
- **Innovation:** Investing in long-duration storage, and grid-scale solutions that could give Europe an edge in the next wave of energy technologies.

Conclusion

Europe escaped Russia's energy trap but risks falling into another. Clean energy is essential, yet the technologies that underpin it are dominated by China. Unless Europe can expand its grids, secure its mineral supply chains, and strengthen its industrial base, it risks trading one dependency for another – from Moscow's pipelines to Beijing's factories.

That is not just an economic concern but a geopolitical one. Energy has always shaped power; in the age of AI, clean electricity will determine not only competitiveness but sovereignty. If Europe cannot guarantee affordable and secure energy for its industries and data centres, it will fall behind in both technology and influence.

The choice ahead is stark. Europe can drift into dependency and watch its home-grown clean-tech sector hollow out, or it can take bold steps to invest, innovate, and collaborate with trusted partners to build resilient supply chains. Protecting its wind industry, scaling next-generation nuclear, and investing in storage and grids are not just climate policies — they are security strategies.

The lesson from Russia is clear: energy dependencies can be weaponised. The challenge for Europe now is to ensure its clean-energy future strengthens its independence rather than undermines it. ●