# THE ENERGY INDUSTRY TIMES

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# EU 2040 climate ambition needs clear renewable build-out targets

The European Commission's proposal for 2040 climate targets has prompted a call for clear wind power build-out targets, while fuelling concerns of watering down ambition. **Junior Isles**

The European Commission has presented its 2040 climate target, reaffirming its determination to reach climate neutrality by 2050. But targets alone will not deliver climate action, energy security and competitiveness, according to WindEurope.

The proposal tabled on July 2 is for a net emissions reduction of 90 per cent by 2040, based on 1990 levels. This follows a recommendation from the EU's independent scientific advisory board to have a target of 90-95 per cent. However, WindEurope, the association representing Europe's wind power sector, says EU Member States must translate this climate target into clear annual targets for the deployment of wind and other renewables for the period 2031-40.

"It's that level of visibility that will drive the investments that will deliver the 2040 target. Otherwise, the 2040 target will remain academic," it said.

The Commission's recent proposal offers a credible trajectory from the existing 2030 climate target – which requires the EU to reduce greenhouse gas emissions by at least 55 per cent relative to 1990 – towards the 2050 vision of a climate neutral EU. The new 2040 target provides investment visibility on the way to climate neutrality and would help avoid stranded investments in the fossil fuel economy. Once agreed, it would become a legally binding objective set out in the European Climate Law.

Commenting on what needs to happen now, WindEurope said: "Deploying renewables at scale is now a matter of energy security and industrial competitiveness. In line with the Clean Industrial Deal, the proposed 2040 target sends a clear investment signal: Europe is going renewable. Europe is electrifying."

It stressed, however, that this means the EU will have to keep ramping up the deployment of competitive and home-grown wind energy. But last year the EU only built 13 GW of new wind; when it would need to build more than 30 GW annually to reach the 2030 target.

"The EU needs to focus on closing this gap. Otherwise, the proposed 2040 target will quickly become unattainable," said WindEurope.

The organisation said four things need to happen as a matter of priority:

- *Permitting:* National governments

*Continued on Page 2*

# Global energy investment set to rise to $3.3 trillion, says IEA

Global energy investment is set to increase in 2025 to a record $3.3 trillion despite headwinds from elevated geopolitical tensions and economic uncertainty, says a new International Energy Agency (IEA) report, with clean energy technologies attracting twice as much capital as fossil fuels.

According to the 2025 edition of the IEA's annual 'World Energy Investment report', investment in clean technologies – renewables, nuclear, grids, storage, low-emissions fuels, efficiency and electrification – is on course to hit a record $2.2 trillion this year. This, it says, reflects not only efforts to reduce emissions but also the growing influence of industrial policy, energy security concerns and the cost competitiveness of electricity-based solutions. Investment in oil, natural gas and coal is set to reach $1.1 trillion.

"Amid the geopolitical and economic uncertainties that are clouding the outlook for the energy world, we see energy security coming through as a key driver of the growth in global investment this year to a record $3.3 trillion as countries and companies seek to insulate themselves from a wide range of risks," said IEA Executive Director Fatih Birol. "The fast-evolving economic and trade picture means that some investors are adopting a wait-and-see approach to new energy project approvals, but in most areas we have yet to see significant implications for existing projects."

Commenting on the major changes over the past decade, Birol said: "When the IEA published the first ever edition of its World Energy Investment report nearly ten years ago, it showed energy investment in China in 2015 just edging ahead of that of the US. Today, China is by far the largest energy investor globally, spending twice as much on energy as the European Union – and almost as much as the EU and US combined."

Today's investment trends clearly show a new 'Age of Electricity' is drawing nearer. A decade ago, investments in fossil fuels were 30 per cent higher than those in electricity generation, grids and storage. This year, electricity investments are set to be some 50 per cent higher than the total amount being spent bringing oil, natural gas and coal to market.

Globally, spending on low-emissions power generation has almost doubled over the past five years, led by solar PV. Investment in solar, both utility-scale and rooftop, is expected to reach $450 billion in 2025, making it the single largest item in the global energy investment inventory. Battery storage investments are also climbing rapidly, surging above $65 billion this year.

Capital flows to nuclear power have grown by 50 per cent over the past five years and are on course to reach around $75 billion in 2025. Rapid growth in electricity demand also underpins continued investment in coal supply, mainly in China and India. In 2024, China started construction on nearly 100 GW of new coal fired power plants, pushing global approvals of coal fired plants to their highest level since 2015.

In a worrying sign for electricity security, investment in grids, now at $400 billion per year, is failing to keep pace with spending on generation and electrification. Maintaining electricity security would require investment in grids to rise towards parity with generation spending by the early 2030s.


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must "ruthlessly" implement the excellent Renewable Energy Directive (REDIII), including the measures on overriding public interest and shortened permitting timelines.

■ *Grids:* Optimising and expanding Europe's electricity grid is a "no-brainer". Not only do more interconnectors help with supply security, grid investments also reduce curtailment and lower electricity costs in the long run. Grid infrastructure is the number one enabler to reach the new 2040 target.

■ *Electrification:* National governments must remove all barriers to electrification. Governments must act – by producing more decarbonised electricity and incentivising electricity demand through smart taxation and targeted state aid.

■ *Auction design:* Governments should de-risk wind energy investments with a stable pipeline of two-sided Contract for Difference (CfD) auctions.

There has also been concern that the European Commission has bowed to political pressure and watered down the target by including flexibilities, like international carbon credits. This is a first for EU climate targets, as both the 2030 and 2050 targets have to be met with only domestic action. Another flexibility is a commitment to integrate domestic permanent carbon removals into the emissions trading system and provide more leeway between sectors after 2030 to allow for falling short in some sectors and compensating in others.

Although the scientific advisory board has flagged its concerns, EU climate chief Wopke Hoekstra defended the decision. According to the European Commission's impact assessment for the target, the EU will achieve a gross emissions reduction of 75-85 per cent by 2040, showing that removals are needed alongside emissions cuts.

The European Geothermal Energy Council (EGEC) also voiced concern over the proposal, arguing that introducing international and domestic offsets will divert urgently needed investment in the EU's energy, transport, building and agriculture sectors.

"The climate target alone does not drive investments in Europe. The Renewable Energy and Energy Efficiency Directives do. The 2040 energy framework, and the European Geothermal Action Plan, which is to be launched in Q1 2026, are essential for building energy security and providing affordable energy for all," it stated in a press release.

Sanjeev Kumar, EGEC's Policy Director, added: "With the inclusion of international and internal offsets, the 2040 energy and geothermal frameworks become even more important as they are the only measure to attract inward investment in local energy resources, jobs and competitiveness as well as shielding Europe from high and volatile energy prices."

**Kumar says with the offsets, geothermal frameworks are now even more important**

# Austria calls on EU to consider resuming Russian gas imports if Ukraine peace deal reached

Austria has said the EU must be open to resuming importing Russian gas if there is a peace deal ending the war, but the EU's Energy Commissioner says "that would be a mistake".

The EU must be open to resuming Russian gas imports in the event of a peace deal being agreed to end the war in Ukraine, the Austrian government has said. In June, Austria's energy ministry told the *Financial Times* that Brussels "must maintain the option to reassess the situation once the war has ended".

Last month US President Donald Trump was confident he could broker a peace deal but since then those chances look increasingly remote, with the US recently agreeing to equip Ukraine with weapons to shore-up its waning defences.

Vienna's stance marks the first time since Russia's full-scale invasion of Ukraine in 2022 that an EU member state other than Hungary or Slovakia has openly floated the resumption of Russian gas imports once the war is over.

Austria's call came as the European Commission proposed to gradually ban Russian gas imports from January 1, culminating with a full ban on Russian gas imports by the end of 2027 – regardless of the outcome of peace talks. Landlocked countries such as Austria, Hungary and Slovakia would be granted longer periods to phase out short-term contracts for Russian gas, while the rest of the bloc would have to put an end to those by June 17, 2026. Supplies linked to long-term contracts would come to an end on January 1, 2028.

Commenting on Austria's position, Dan Jørgensen, the EU's Energy Commissioner, said a potential peace deal should "not lead to us starting to import Russian gas again".

"That would be a very unwise decision because that would just be refilling [Russian President Vladimir] Putin's war chest with money. I think that would be to repeat the mistakes that we have done in the past," he added.

Hungarian foreign minister Péter Szijjártó threatened to cut electricity exports to Ukraine if Brussels went ahead with plans to completely phase out Russian fossil fuels. Almost 40 per cent of Ukraine's power imports from the EU come via Hungary.

The EU plan "completely violates member states' sovereignty in setting their own energy policies", said Szijjártó, adding that "Russian shipments have always reached Hungary on time, at the agreed price, always reliably".

Slovakia's Deputy Economy Minister Vladimír Šimoňák said his government was "not really happy" with the EU plan, including the concession for his country to phase out contracts by 2027.

Under separate EU proposals, member states would also have to present plans showing how they would diversify their gas supplies if they were still receiving Russian gas. The biggest importer of Russian gas in 2024 was Italy, according to the think-tank Ember, followed by Hungary, France and Spain.

Like its EU counterparts, the UK has recognised that continued reliance on gas in general is a huge strategic weakness – undermining its industrial and economic competitiveness and leaving consumers and businesses badly exposed to price spikes in global gas markets driven by geopolitical uncertainty, including the current crisis in the Middle East.

New analysis of government data by the Energy and Climate Intelligence Unit (ECIU) has found that over the four years since gas prices started to spike, British industry has had to pay an additional £29 billion ($39 billlion) for its gas and electricity compared to the four years before the pandemic.

# Industry decarbonisation gets a boost with new State Aid rules

EU member states will now be able to channel money into strategic electrification, decarbonisation and clean tech manufacturing projects following publication of a new framework for State Aid measures to support the Clean Industrial Deal (CISAF).

In February European Commission President Ursula von der Leyen presented the Clean Industrial Deal, the EU's strategy to make its economy more resilient and competitive. At its core, is the accelerated build-out of domestic decarbonised energy, the ramp-up of direct electrification to decarbonise Europe's industry and the scale-up of clean-tech manufacturing.

The new framework, published on June 25, builds on the Temporary Crisis and Transition Framework of 2023 and will be a key enabler of the Clean Industrial Deal. It will be in place until the end of the decade, providing long-term investment visibility.

"It's good that the EU's new state aid rules help heavy industry invest in the electrification of their factories. To get industry running on electricity rather than fossil fuels will boost Europe's competitiveness and energy security.

"It's great that so much of industry wants to electrify with renewables. And PPAs are an excellent way of making this happen. They guarantee the electricity is renewable. And they deliver new and efficient renewables, which is what Europe's industry wants", said Giles Dickson, who recently stepped down from his position as WindEurope's CEO.

High electricity prices are a challenge to Europe's international competitiveness. The new CISAF allows national governments to offer temporary relief on electricity prices for electro-intensive industries.

"Getting this relief comes with conditions, including the development of renewables, storage, demand-side flexibility or investments in electrification. Good," said Dickson.

WindEurope sees direct electrification as the fastest and most efficient way to decarbonise Europe, noting that this is especially true for industrial heat processes up to 500°C. These processes can run on proven technologies like electric boilers and thermal energy storage. The CISAF recognises this and prioritises the use of direct electrification to decarbonise these processes.

The new CISAF enables governments to fund clean tech manufacturing projects. CAPEX support for manufacturing can play a critical role in supporting the expansion of the European wind supply chain. This is consistent with the EU Net-Zero Industry Act target of reaching at least 36 GW wind energy manufacturing capacity in the EU by 2030.

Dickson also said it is "also very good news" that investments in Europe's grid equipment supply chain will benefit from the CISAF fast-track approval procedures. The expansion of renewables hinges on accelerated grid build-out.

CISAF also foresees support for repowering projects. "Repowering is a no-brainer", said Dickson. "On average it reduces the number of turbines by 25 per cent, while more than tripling the output of the wind farm and quadrupling the output per wind turbine. Repowering will be essential to meet our 2030 renewable targets. CISAF allows governments to support costs linked to repowering projects, including dismantling costs."

# Solar not to blame for Iberian blackout, says Spanish government

Further to the Spanish government report on the causes of the Iberian Blackout in April 2025, several industry associations, including SolarPower Europe and the Global Renewables Alliance, have issued a joint statement stressing that solar PV was not the cause of the blackout.

The joint statement noted: "The investigation confirms that managing an electricity system is a complex and multi-faceted undertaking and is of great societal importance. Going forward, the Iberian blackout must be a moment of learning. Solar PV already has the capacity to control voltage, but regulations did not allow its application.

"This is a call for accelerated investment in grid resilience and system flexibility – especially through grid-forming inverters and battery storage. These technologies are already available and are key to supporting stable voltage levels, managing variability, and delivering renewable-powered energy security."

The statement followed the Spanish government's findings that the blackout was due to "poor planning" by grid operator Red Eléctrica and power plants disconnecting improperly.

Announcing the findings of a 49-day probe into the outage, Sara Aagesen, Spain's Energy and Environment Minister, said several factors combined to leave the country unable to control a surge in voltage that should have been manageable.

Aagesen confirmed the outage's immediate cause was a surge in voltage on the grid, which triggered the disconnection of multiple generation plants in a cascade that brought down the system in Spain and Portugal.

Pointing a finger at Red Eléctrica, she described as "bad planning" its decision the day before the blackout to not replace a conventional power plant – either gas or nuclear – that had been scheduled for operation on the day of the outage but at the last minute became unavailable.

Aagesen also blamed the electricity companies. Many power plants disconnected automatically from the grid to protect equipment from the voltage surge, but she said: "With the available information, we can also state that some of these disconnections occurred improperly."

"The next phase will be the administrative and judicial proceedings that determine how this whole process ends," Aagesen told the *Financial Times*. The outage on April 28 left 60 million people across Spain and Portugal without power.

# Trump measures hit utility-scale renewables

■ Large solar and wind plans less economic ■ Debate over stability and cost of fossil vs green

Janet Wood

Renewable power companies face uncertainty in the USA as President Trump's tax bill hit clean energy producers and tariff plans threaten to raise prices for imports needed for the industry.

Measures would raise costs for wind and solar developers that source parts from China but would exempt some American manufacturers. The effect is that companies that build industrial-scale wind and solar will be hit hardest, while those that lease out solar systems to homeowners would have their access to tax credits extended.

After the bill passed the Senate, shares in Vestas Wind Systems surged almost 10 per cent as analysts anticipated that it was likely to drive a surge of orders before renewable energy tax credits are phased out.

Clean energy companies had been taken by surprise by the amendments, which included a new tax on solar and wind projects if they were to use too high a proportion of Chinese components and a requirement for solar and wind projects to be operational by the end of 2027 to qualify for tax credits. "This is a full-on legislative assault on wind and solar," said John Miller, an energy transition analyst at TD Securities.

"The clean energy investor community is extremely concerned about what Congress is doing," said Frank Macchiarola, Chief Advocacy Officer of the American Clean Power Association.

President Donald Trump claimed that solar and wind power has made US electricity unstable and expensive, but campaigners note that reliability has improved dramatically in Texas, the state that has the most renewable energy, and electricity prices there are below the national averages. The Electric Reliability Council of Texas (ERCOT), the state's main grid operator, forecasts only a 0.3 per cent chance of rolling blackouts during peak energy demand in August, according to a recent reliability assessment, compared with 12 per cent in August 2024.

"ERCOT has done a good job of defining the products needed for energy and reliability," said Joshua Rhodes, a research scientist at the University of Texas in Austin. "It could be an example for other grids in how to create reliability at a low cost."

Campaigners contrast Texas with PJM Interconnection, the largest US regional grid, where natural gas and coal plants accounted for nearly 60 per cent of electricity generation, with wind and solar at about 6 per cent. They say its electricity prices are increasing while reliability is falling.

"The grid is a rusted old pickup truck and we're adding multiple pressures onto it," said Tom Bullock, Executive Director of The Citizens Utility Board of Ohio, a consumer watchdog group.

US Energy Secretary Chris said the bill "will help end wasteful subsidies and deliver more reliable energy for the American people".

# Batteries boom in US

The New Jersey Board of Public Utilities (NJBPU) has approved phase 1 of the Garden State Energy Storage Program, which will deploy gigawatts of energy storage by 2030.

Phase 1 of the programme will procure at least 1 GW of larger projects directly connected to the main power grid through competitive bidding.

A second phase, expected to be launched in 2026, will focus on incentives for smaller energy storage systems connected to local distribution grids. A third phase is currently being evaluated.

The programme is in accord with trends identified by the US DOE's Energy Information Administration (EIA), which expects 18.2 GW of utility-scale battery storage to be added to the grid in 2025, according to its 'Preliminary Monthly Electric Generator Inventory' report.

Texas has already invested in large-scale battery storage and they have helped to reduce the chances of blackouts this year, according to *Reuters*.

Since summer 2024, ERCOT said it has added nearly 5 GW of new battery storage, lifting total capacity above 8 GW, and another 174 GW of storage awaits connection over the next five years.

"Increasing capacity from solar and battery storage have been a winning combo for the Texas grid over the past two years," said Garrett Golding, an Assistant Vice President of Energy Programmes at the Federal Reserve Bank of Dallas.

# Caribbean countries pursue diesel alternatives

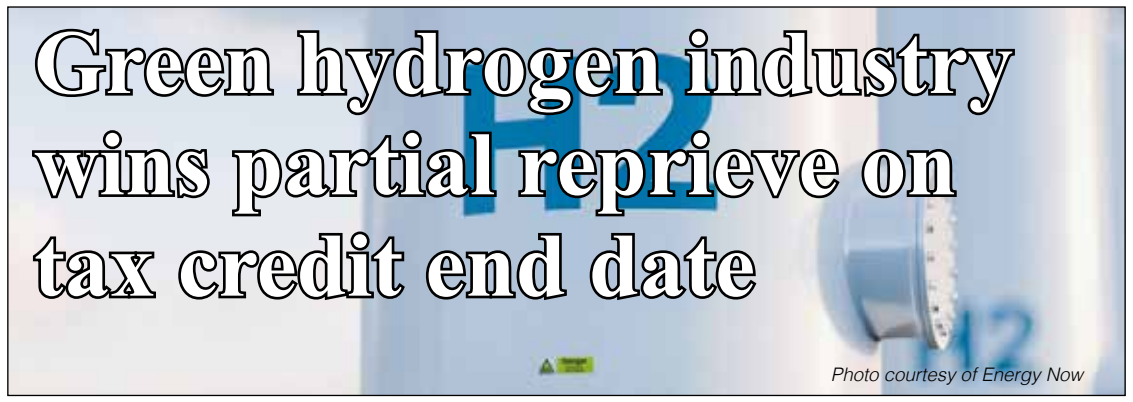
The Barbados Investment & Development Corporation (BIDC) has signed a Memorandum of Understanding (MoU) with Global OTEC, a climate technology company specialised in Ocean Thermal Energy Conversion (OTEC). Barbados has set ambitious goals to become a carbon neutral state by 2030 with a diverse energy mix, in contrast to its current reliance on diesel fuel imports.

OTEC's technology uses the temperature difference between warm surface water and cold deep water to provide continuous electricity, and it hopes the agreement will be a springboard for work in neighbouring Caribbean territories.

The Caribbean needs renewable energy technologies that take into account its unique characteristics, such as limited land space and vulnerability to tropical storms and it urgently needs to reduce electricity prices.

Meanwhile, TotalEnergies has purchased a 50 per cent stake in AES' renewable energy portfolio in the Dominican Republic, following an acquisition of 30 per cent in AES' Puerto Rican assets and giving it a 1.5 GW portfolio across the Caribbean.

These transactions advance TotalEnergies' multi-energy strategy in a region where it is a key player in the liquefied natural gas (LNG) value chain. Stéphane Michel, President of Gas, Renewables & Power at TotalEnergies, said: "These new transactions will contribute to our targets of 35 GW of gross renewable capacity by 2025 and over 100 TWh of electricity production by 2030."



# Green hydrogen industry wins partial reprieve on tax credit end date

Photo courtesy of Energy Now

■ Renewables and oil industry combine to lobby
■ Extra time may not be enough to drive down costs

Janet Wood

The US green hydrogen industry has won a reprieve before a crucial tax credit is terminated.

The so-called 'Section 45V' measure provides a tax credit of $3/kg for clean hydrogen for a 10-year period.

President Donald Trump signed a tax bill into law on July 4 that would have terminated the uplift, if a version of the bill agreed by the House of Representatives was accepted.

Approximately three quarters of the US green hydrogen pipeline was said to be unlikely to qualify for tax credits because of an accelerated 2027 expiration deadline. But the green energy lobby and the American oil industry successfully pushed the deadline to January 1, 2028 in the version of the bill signed into law.

"I'm thrilled that we've been given until the end of 2027 to begin construction," said Andy Marsh, Chief Executive of Plug Power, one of the largest US hydrogen fuel and equipment manufacturers. "There was a lot of uncertainty at the beginning of 2025. Now I know the rules of the game."

Marsh said Plug Power's plan to start construction on three new green hydrogen projects by the end of 2027 would not have been possible if the tax credits expired at the end of the year. The company aims to increase its production from 40 tonnes of hydrogen a day, to produce 100 to 120 tonnes of the fuel a day by the end of the decade.

However, Wood Mackenzie estimated that 75 per cent of announced green hydrogen projects would be unlikely to qualify for the 45V tax credit and meet the deadline.

Hector Arreola, principal analyst for hydrogen and emerging technologies at Wood Mackenzie, said: "Hydrogen is still very, very new so giving subsidies for just two years is just not enough to bring costs down to where it needs to be competitive."

The industry fears a slowdown that will mean the industry does not reach the necessary scale to reduce costs. Aaron Bergman, a fellow at Resources for the Future, agreed. "If you look at the wind and solar industry it took decades for the cost to come down. The hydrogen industry has not had that time," he said.

Arreola warned the US has struggled with weak demand and may fail to catch up with China's green hydrogen industry.

Frank Wolak, President and Chief Executive of Fuel Cell and Hydrogen Energy Association, said: "Time is of the essence," adding, "The industry has two years of timeframe to get moving and show it can achieve progress and make the investments."

# Google signs PPA with fusion developer for 2030s

Google has signed a power purchase agreement (PPA) with Commonwealth Fusion Systems to buy power from a fusion power plant planned to go into operation in the 2030s.

The PPA is the second to be signed in the fusion energy sector. In 2023 Microsoft signed a power purchase agreement with Helion to take electricity from a proposed 50 MW facility that was planned to be online by 2028.

Under the new agreement Google has committed to buying 200 MW, half the output from the planned power station in Virginia.

US-headquartered CFS is arguably the most advanced of a few dozen privately held fusion companies working to perfect fusion technology and develop a commercially viable machine.

CFS raised $1.8 billion from investors in 2021, including Google, and it hopes the proposed 400 MW facility will be the first fusion power station to be connected to the grid. It is currently building a demonstration plant in Massachusetts which it aims to start up in 2027.

"This is not just a plant with some date made up or some thin document," CFS Chief Executive and co-founder Bob Mumgaard told the *Financial Times*, referring to the power purchase agreement. "This is a full PPA," he said, adding: "We make power, and they're obligated to buy it."

Technology companies are competing to lock in access to electricity to supply the data centres required to power AI systems.

# New and renewable energy to drive Indonesian energy transformation

- NRE to represent three quarters of new capacity
- Regulation being prepared to support uranium purification and processing

Photo by Tom Fisk

Syed Ali

Indonesia has set a target to add 69.5 GW of additional capacity by 2034, with just over three quarters to come from new and renewable energy (NRE) including storage.

Under its Electricity Supply Business Plan (RUPTL) for 2025-2034, Indonesia's Energy and Mineral Resources Minister Bahlil Lahadalia said 76 per cent of the total power plant capacity would come from NRE.

"Around 42.6 GW comes from new and renewable energy; meanwhile, around 10.3 GW is storage," Lahadalia said.

The ministry said this means 61 per cent of the additional power plants will be based on NRE; 15 per cent will focus on energy storage; and 24 per cent of the additional power plants, which will have a capacity of 16.6 GW, will derive power from fossil fuels, such as gas and coal.

According to Lahadalia, the plan to add power plants will later be divided into two stages of five years each. "The first five years total 27.9 GW (of capacity will be added), and the second five years 41.6 GW," he said.

The planned addition of power plants stipulated in the RUPTL plan is based on the economic growth target of 8 per cent, he added.

Earlier, Lahadalia said that the government is trying to find a middle ground between reducing carbon emissions and tapping Indonesia's energy potential.

Following the issue of the plan, state-owned utility company PLN has set its sights on renewable energy contributing 34.3 per cent of the national energy mix by the end of 2034.

This would outpace a similar target outlined by the National Electricity General Plan (RUKN) for 2025–2060, which aims for 29.4 per cent in the same year, the company said.

"The renewable energy mix in 2034 will increase to 34.3 per cent, exceeding expectations set in the RUKN," PLN chief Darmawan Prasodjo told a press conference on the updated RUKN and RUPTL.

Indonesia's renewable energy mix stood at 14.1 per cent in early 2025, significantly below the 23 per cent target for this year outlined in the previous long-term planning. This lagging progress prompted the government to slash its target on renewable energy contributions to the national energy mix from the 23 per cent by the end of 2025 to between 17 and 19 per cent during the same period.

In late June the Industry Ministry (Kemenperin) urged domestic industries to increase their participation in developing power generation facilities using NRE sources, supporting the national roadmap to achieve net zero by 2060.

"We are encouraging the growth of supporting industries for new and renewable energy, such as solar cells, batteries, control panels, generators, hydro turbines, and wind turbines," explained Setia Diarta, Director General of Metal, Machinery, Transportation Equipment, and Electronics.

Renewable capacity coming on to the grid received a boost in late June when President Prabowo Subianto inaugurated 50 renewable power plants and broke ground on five more across 15 provinces, backed by a total investment of around Rp 25 trillion ($1.5 billion). Together, the new projects are set to deliver 379.7 MW of electricity.

In another development, Indonesia's sovereign wealth fund (SWF), Danantara, recently signed a memorandum of understanding (MoU) with ACWA Power, a Saudi Arabian company specialising in desalination and green hydrogen technology, to explore investments in renewable energy projects.

Meanwhile Indonesia continues to investigate nuclear. The country is moving ahead with plans to harness nuclear energy by drafting regulations to manage radioactive materials, including uranium deposits discovered in Kalimantan.

Deputy Energy Minister Yuliot Tanjung said on June 23, that a draft government regulation is currently being prepared to support uranium purification and processing for future power generation.

According to the ministry, Canada and Russia are interested in developing nuclear power plants and have both submitted official proposals as part of the national nuclear energy development cooperation.

# Coal phase-out at Taichung could "cripple" Taiwan power supply

Taiwan's power supply could collapse if authorities phase out coal use at the Taichung power plant by 2028, according to Taiwan Power Co (Taipower) Chairman Tseng Wen-sheng.

The comment came after lawmakers approved a motion proposed by opposition lawmakers to phase out coal use at the plant, which accounts for around 15 per cent of the nation's power supply.

The plant's capacity is 5.5 GW. Taipower has committed to operating only nine of the plant's 10 units, still generating up to 5 GW and accounting for 14 per cent of the nation's power supply, he said.

If this power supply is to be eliminated by 2028, the opposition parties need to consider suitable and stable alternative sources of energy and propose possibilities for discussion, Tseng said. Giving an example, he said: "If comprehensive tax cuts were proposed, I believe all of Taiwan would support it, but where would funding come from?" Taiwan's current power system might collapse if it goes coal-free by 2028, he said.

Opposition parties have also proposed a referendum advocating to extend the life of nuclear power plants. This came after the Maanshan Nuclear Power Plant's No. 2 reactor was decommissioned on 17 May, officially making Taiwan nuclear free. Five public forums will be held starting August 7 to discuss a proposal to restart the Maanshan Nuclear Power Plant, ahead of a public referendum on the issue.

If nuclear power was to make up for the power generated by the Taichung Power Plant, it would require all three of Taiwan's nuclear power plants to resume their operations, not only Maanshan, Tseng said.

Regarding future plans for Taichung power plant, as natural gas units begin operating two coal fired units would be dismantled next year and another two in 2031. The remaining six units would be converted into emergency backup power facilities, Tseng said.

In July GE Vernova Inc. announced that the first of three blocks of Taiwan Power Company Nan Bu Construction Organization (TPC NPCO)'s Hsinta gas fired combined cycle power plant, started to operate and officially dispatch up to 1.3 GW of electricity to Taiwan's energy grid. The new generating unit paves the way to a gradual replacement of the coal fired units present at Hsinta site.

# China leads global renewable energy build-out

Photo by wolfram-k

China is dominating construction of renewable energy sources, according to a recent Global Energy Monitor (GEM) report. Nearly three-quarters of all solar and wind power projects being built globally are in China, said the report, highlighting the country's rapid expansion of renewable energy sources.

According to GEM, China is building 510 GW of utility-scale solar and wind projects out of about 689 GW under construction globally.

"China is leading the world in global renewable energy build-out," the report said. "It continues to add solar and wind power at a record pace."

China is responsible for about one-third of global greenhouse gas emissions, so expansion of its clean energy sources is therefore crucial for efforts to fight global climate change. Although the country is continuing to develop new coal fired power plants, it is finalising details of new climate change targets which it says it will announce before this year's UN Climate Change Conference in Belém, Brazil.

China is expected to add at least 246.5 GW of solar and 97.7 GW of wind this year, according to figures from the GEM report. The country had 1.5 TW of solar and wind power capacity up and running as of the end of March.

Solar and wind accounted for 22.5 per cent of China's total electricity consumption in the first quarter of 2025, according to the government's National Energy Administration.

The growth of electric cars and trains in China also means that a growing share of its energy is provided through electricity.

In June, Tesla announced that it signed an agreement to build its first grid-scale energy storage power station project in mainland China.

The project will help with the flexible adjustment of grid resources, and "effectively solve pressures relating to urban power supply," Tesla said in a post to the Chinese social media platform *Weibo*.

"After completion, this project is expected to become the largest grid-side energy storage project in China," Tesla added.

Such energy storage systems help to enhance stability in the electricity grid at a time when there are greater supplies of solar and wind power.

# Bangladesh unveils new renewable energy policy

Bangladesh's government has updated the Renewable Energy Policy after 17 years, aiming to produce at least 20 per cent of the national power demand from green sources by 2030.

The new policy offers a 10-year corporate tax exemption for all government and private renewable energy producers, followed by another five years of partial tax exemption.

The Renewable Energy Policy 2025 allows all types of customers – residential, industrial, and commercial – to set up renewable energy systems on rooftops, in yards or premises.

The power produced can be sold to government agencies or private entities, following the Net Metering Guidelines 2018, it said.

Currently, Bangladesh has a capacity of around 1563 MW of grid and non-grid power from renewable energy, which is about 8 per cent of the current demand and 5.6 per cent of the country's total capacity of 27 426 MW.

The government will encourage peer-to-peer trade in renewable energy – a decentralised system that enables electricity consumers with solar panels or renewable systems to directly trade the excess electricity they generate with other consumers using distribution and transmission networks.

# UK sets course for energy transmission reforms

- Zonal pricing proposal rejected
- Window opens in reformed connections process

Janet Wood

The UK government has decided against introducing a handful of price zones in Great Britain that would have seen electricity prices diverge across the country. The proposal had been fiercely debated within the energy industry and customer groups.

Instead, in a statement, the government said retaining a single national wholesale price was the "right way to deliver a fair, affordable, secure, and efficient electricity system".

The government said it would instead look at other reforms, such as a review of the charges generators pay to access the transmission network and developing more battery storage sites. It is also taking more control over where different types of generation can be located.

Martin Pibworth, Chief Executive designate of FTSE 100 energy company SSE, said the decision brought "welcome clarity".

He said: "Zonal pricing would have added risk at a time when the UK needed to accelerate its clean power transition, making energy bills more expensive."

The proposals were part of a package of potential reforms to the electricity market that has been considered in government for several years to try to make it more efficient and make better use of new wind and solar power generation.

Both sides of the debate had sought early clarity from the government on whether it would go ahead with reform, at a time when energy system governance is undergoing rapid and wholesale change to accommodate the shift to clean power.

July saw the National Energy System Operator (NESO) open a 'window' for projects that want to connect to the grid to prove they are ready to build. That new designation replaces a 'first come first served' approach in which so-called 'zombie' projects had stalled progress. It is one of a series of reforms to the so-called 'connections queue'. For example, NESO has sped up the connection of projects under 5 MW, by deleting a requirement for their impact on the transmission system to be evaluated.

Anthony Maguire, Managing Director at Longevity Power, said: "Smaller developments are ideal for unused land like brownfield sites or redundant farmland because they can be deployed more quickly and with fewer planning hurdles than larger projects. Ofgem's decision to remove the TIA requirement means these schemes can roll out faster and begin generating clean energy."

# EIB funds new undersea link between Spain and France

The European Investment Bank has provided €1.6 billion of funding for a subsea link across the Bay of Biscay that will boost the interconnection capacity between the Iberian Peninsula and the rest of Europe. It will raise the total capacity of links between the areas from 2800 MW to 5000 MW.

The 400 km link, of which 300 km will be underwater, will be the first subsea interconnector between Spain and France.

It is a Project of Common Interest for the EU. The EIB financing takes the form of loans to Spanish and French transmission system operators (TSOs) Red Eléctrica and RTE Réseau de transport d'électricité.

"EIB support for the France-Spain electricity interconnection will be key to ensuring that the Iberian Peninsula is no longer an energy island. This agreement will lead to a major shift in energy integration, an important area for EU competitiveness and strategic autonomy," said Nadia Calviño, president of the EIB Group.

Meanwhile, eight European TSOs have formed an Innovation Alliance to accelerate innovation that improves the resilience and efficiency of the European electricity grid. Its first area of work will be 'Weather and Grid Resilience'.

# UK nuclear sites secure funding

The UK government has announced it will take a 47.5 per cent stake in a new nuclear power plant at Sizewell C. The government has already committed funding of £14.2 billion.

The other investors are expected to be Canada's Brookfield Asset Management, which is expected to take a 25 per cent stake, British energy supplier Centrica taking 15 per cent and French energy group EDF, which is leading development of the site, with 12.5 per cent. Centrica already holds a 20 per cent stake in the parent company of the entity that operates EDF's existing nuclear assets in the UK.

Sue Ferns, Senior Deputy General Secretary of Prospect union, said: "Sizewell C is critical to securing the future of the nuclear industry in the UK, so this confirmation of EDF's stake in the project is welcome. Taken together with the investment the government has recently put forward, a Final Investment Decision (FID) for the project is now within touching distance. The parties involved should confirm the FID as soon as possible so work can get going in earnest."

Meanwhile, US private capital group Apollo will provide £4.5 billion in debt financing for the delayed and over-budget Hinkley Point C project. The investment-grade package will be provided as unsecured debt at an interest rate just below 7 per cent.

# Poland makes a turn towards green power

Photo by Karolina Grabowska

- Renewable generation beats coal for the first time
- Grid expansion will reduce coal reliance

Janet Wood

Poland's coal generation fell behind renewables for the first time in June, a key moment in the country's efforts to cut its reliance on fossil fuel.

Renewable energy sources accounted for 44.1 per cent of Poland's electricity mix, while coal fell to 43.7 per cent, according to Warsaw-based Forum Energii. Natural gas made up the remainder. It was also the first time that coal contributed less than half of total electricity output over a full quarter, dropping to 46.2 per cent in the second quarter from 56.4 per cent in the same period a year earlier.

The data represents "a big change for Poland", said Tobiasz Adamczewski, Vice-President of Forum Energii, and could trigger "a real snowball effect" if renewables continue to surpass production of coal fired power plants. He said many coal plants rely heavily on government subsidies.

About 60 per cent of Poland's electricity came from coal in 2024, making it the most coal-dependent country in the EU, and it also remains a major producer of coal. Prime Minister Donald Tusk's government, which took power in 2023, has been accelerating efforts to diversify energy production in the country. It is backing offshore wind farms and a nuclear power plant, which will be built by US groups Westinghouse and Bechtel and is scheduled to begin operations in 2036.

Tusk recently also approved a $3 billion investment in new transmission lines that will see the high-voltage network expanded by 5000 km in the next decade. The funding will be drawn from EU pandemic recovery funds. Bottlenecks in the grid and a lack of energy storage have benefitted coal plants, according to environmental campaigners.

Marek Józefiak from Greenpeace Poland said: "We're finally on the right path, but progress could have been faster if our politicians had planned things better and ended policies designed mostly to appease our coal trade unions."

Poland now has 23 GW of solar capacity – more than three times the 2030 target set in 2021 – in response to support from the former Law and Justice (PiS) government. This included expanding a subsidy programme for households to install rooftop panels in response to the energy crisis following Russia's invasion of Ukraine.

Several offshore wind farms are scheduled to be constructed along Poland's Baltic coast, while onshore wind continues to face political resistance and regulatory uncertainty.

Duda's successor Karol Nawrocki, who backed opponents of onshore wind developments during his election campaign, is expected to maintain a sceptical stance on wind farms when he takes office.

# Storage aims for higher power, longer duration

Augwind Energy has announced it intends to build its first commercial-scale AirBattery project in Germany. This is the first industrial-scale installation of Augwind's AirBattery hydraulic compressed air energy storage technology designed for seasonal grid-scale storage. It merges pumped hydroelectric principles with compressed air storage and the German project will make use of a mined salt cavern.

Or Yogev, Founder and CEO of Augwind, said: "With the AirBattery, we're introducing a storage solution that finally matches the scale and rhythm of renewable energy".

The company already claims a 47 per cent AC-to-AC round-trip efficiency at its AirBattery demonstration facility in Israel, and says commercial installations will exceed 60 per cent.

The energy industry has been working on solutions for large, long-duration storage to bridge long periods of low wind. Meanwhile, developers have been rapidly installing battery systems to cover shorter-term fluctuations in supply.

For example, battery operator BW ESS and Ibersun recently signed a joint venture to develop 2.2 GW of utility-scale battery projects across Spain, in what they say is the first phase of a larger investment. In the UK, Balance Power recently won planning approval for a 30 MW battery in Rochdale, Greater Manchester, while NatPower UK says it has a national pipeline of over 100 GWh of large batteries that will discharge for up to eight hours.

# Power markets transformation leaves most countries behind

Photo by Pramod Kee Mee

- Renewable energy boom 'not benefitting everyone'
- Deeper transition could generate economic growth

Nadia Weekes

Global power markets are entering a period of unprecedented transformation as Asia Pacific embraces the energy storage revolution, the US faces rising policy uncertainty and Europe grapples with implementation challenges, according to Wood Mackenzie's latest outlook. But the rest of the world is lagging behind.

Investments in Asia Pacific's power generation are projected to reach $3.9 trillion over the next decade – 44 per cent higher than the previous ten years. Energy storage has emerged as a mainstream technology, accounting for 14 per cent of investments through 2034 and surpassing both coal and gas power.

"Power sector carbon emissions have likely peaked in 2024 as renewables rapidly displace coal generation," said Alex Whitworth, Head of Asia Pacific Power and Renewables Research at Wood Mackenzie. The combined share of hydro, solar and wind generation is set to climb from 27 per cent in 2024 to 40 per cent by 2030, he added.

Despite robust demand growth, American and Canadian power markets are experiencing new costs and development risks deriving from policy uncertainty from potential trade actions and regulatory changes. Power prices are expected to rise 10-50 per cent above previous forecasts.

In Europe, global trade tensions dampen economic growth and investor confidence, with policymakers confronting complexities, including permitting and grid connection hurdles, in delivering the energy transition. The fundamental trajectory toward decarbonisation persists, but the pace may be slower than initially anticipated.

REN21's recently published report, the 'Renewables 2025 Global Status Report: Global Overview', reveals a troubling picture of surging renewable deployment but stalling systemic transformation.

Despite the ambition to triple capacity by 2030, current trajectories suggest a shortfall of 6.2 TW – more than all renewables deployed to date.

Beyond the power system, heat and fuels still account for more than three-quarters of total final energy consumption, with renewables only meeting 5.7 per cent of this demand. The report also finds that the electrification of end use is slow and uneven across sectors.

Another troubling statistic reveals that the gap between global regions continues to widen. According to new data by the International Renewable Energy Agency (IRENA), more than 90 per cent of new renewable energy capacity was added in Asia, Europe and North America, while Africa, Eurasia, Central America and the Caribbean combined represented only 2.8 per cent of global additions.

Commenting on the data, IRENA Director-General Francesco La Camera said: "The renewable energy boom is transforming global energy markets, driving economies and creating vast investment opportunities. However,… not everyone is benefitting equally from this transition." La Camera called for targeted policies, international financing, and partnerships that unlock capital and technology where they are needed most.

A study published in early July by the United Nations Development Programme (UNDP) shows that coupling renewable energy targets with supportive development policies and investments could unlock $20 trillion in cumulative savings in the energy sector, increase GDP by 21 per cent, and increase average per capita GDP by $6000 by 2060, compared with a business-as-usual scenario.

An ambitious scenario that builds on the renewable energy transition with system-wide investments and policies aligned with the Sustainable Development Goals is projected to achieve universal access to electricity and clean cooking, lift 193 million people out of extreme poverty and give 550 million more people access to clean water and sanitation.

A report by the Mission Possible Partnership (MPP) highlights growing momentum for an "industrial sunbelt" of countries such as Indonesia and Morocco, potentially attracting new industrial plants that can leverage abundant local sources of renewable energy.

The MPP reveals a global $1.6 trillion pipeline of projects spanning key sectors such as aluminium, chemicals, cement, aviation and steel – predominantly located in the industrial sunbelt countries – that have been announced but are not yet financed.

Financing of around $250 billion has already been committed to producing materials, chemicals and fuels through clean energy, but a much larger investment opportunity exists to unlock almost 700 announced projects across the world.

## Funding reprieve breathes new life into nuclear industry

The World Bank has said it will lift its decades-long ban on financing nuclear energy in a shift that aligns with the political mood in the US and Germany and aims to tackle an expected doubling of electricity demand in the developing world by 2035.

The bank said private sector investment should drive capacity growth but businesses would need support from the bank, including tools like guarantees and equity.

The decision by the multilateral lender to consider financing nuclear projects is a significant boost for the industry, which experienced a sharp contraction following the Fukushima nuclear accident in 2011.

The climate crisis and surging power demand due to the rollout of power-hungry artificial intelligence (AI) technologies, have prompted many governments to reconsider nuclear energy. More than 30 countries committed at the COP28 climate summit in Dubai in 2023 to triple global nuclear capacity by 2050.

Pro-nuclear countries believe that support from the World Bank will help western companies compete with state-owned nuclear giants in Russia and China that have begun building plants in developing countries.

Last year the European Investment Bank opened the door to funding nuclear energy projects.

## Egypt to welcome its first utility-scale BESS project

AMEA Power is about to commission Egypt's first utility-scale battery energy storage system (BESS) project, a 300 MWh addition to the utility's 500 MW solar PV plant in Aswan Governorate commissioned in December 2024.

The 300 MWh BESS project, which has been constructed in a record six months, will receive a $72 million debt package from the International Finance Corporation (IFC) to finance its integration into the operational solar plant. The financing documents were signed in June by top officials from AMEA Power Egypt and IFC North Africa in the presence of H.E. Mostafa Madbouly, Prime Minister of Egypt, and other dignitaries.

This BESS integration is part of Egypt's accelerated 4 GW Emergency Renewable Energy Program – a government-led effort to address rising electricity demand through clean energy solutions that also help decrease dependence on imported natural gas.

## Saudi Arabia to invest in 15 GW of renewable energy

An ACWA Power-led consortium is to invest $8.3 billion to build five solar and two wind projects in four regions across the kingdom.

Saudi Arabia aims to generate half of its electricity from renewable sources by 2030 under plans to reduce the economy's dependence on oil revenues. Targets see 130 GW of solar and wind capacity installed by 2030, up from 4.3 GW of solar at the end of 2024. Almost all of the Saudi Arabia's electricity is currenty supplied by oil and gas fired power plants.

In a statement, the Saudi government said the agreements were "among the world's largest" at prices that are "the lowest globally".

Aided by abundant solar irradiation and the falling cost of solar panels, the Middle East is adding renewable electricity capacity faster than any other region outside of China.

The two wind projects and two of the solar projects will be located in the central Riyadh region, while the remaining solar projects will be in Mecca, Medina and Aseer. The projects are expected to be up and running by 2028.

# Syria signs $7 billion power deal with foreign investors

- Multinational consortium to invest $7 billion in 5 GW of capacity
- New projects will satisfy more than half of electricity demand

Nadia Weekes

A consortium of Qatari, Turkish and US companies has committed to investing about $7 billion to develop major power generation projects in Syria, including four combined cycle gas turbine power plants with a total capacity of 4 GW and a 1 GW solar power plant.

The consortium, led by Qatar's UCC Holding, includes Kalyon GES Enerji Yatırımları and Cengiz Enerji from Türkiye, as well as Power International USA.

"This agreement marks a crucial step in Syria's infrastructure recovery plan," said Syrian Energy Minister Mohammad al-Bashir.

Construction is expected to begin after final agreements and financial close, and is targeted to finish within three years for the gas turbine plants, and less than two years for the solar plant. Once completed, the projects are expected to provide over 50 per cent of Syria's electricity needs.

After 14 years of war, Syria's electricity sector has suffered severe damage to its grid and power stations, and faces an aging infrastructure while experiencing persistent fuel shortages. Current power generation capacity is around 1.6 GW, down from 9.5 GW before 2011.

In a separate development, the World Bank has approved $146 million for the Syria Electricity Emergency Project (SEEP) to rehabilitate damaged transmission lines and transformer substations, as well as support the development of the electricity sector.

Jean-Christophe Carret, World Bank Middle East Division Director, said: "Among Syria's urgent reconstruction needs, rehabilitating the electricity sector has emerged as a critical, no-regret investment that can improve the living conditions of the Syrian people, support the return of refugees and the internally displaced, enable resumption of other services such as water services and healthcare for the population and help kickstart economic recovery."

# Governments should buy stakes in companies instead of offering subsidies

EU competition commissioner Teresa Ribera has said governments should buy stakes in companies instead of providing direct subsidies as a way of making them more competitive.

Ribera told the *Financial Times* that although EU state aid rules restricted public subsidies to companies, there were still other ways to help Europe's emerging green technology companies compete with their China and US counterparts.

The suggestion came as Ribera's competition directorate attempted to push back against an effort led by Stéphane Séjourné, the French commissioner for industry, to allow governments to "Buy European" and to grant exemptions from EU state aid rules to solar panel, wind turbine and battery producers.

Ribera said such subsidies would have been illegal and would also be distortive. Instead, she encouraged governments to consider taking equity stakes in companies. "If it succeeds, this public money could be paid back in terms of profits being returned to the public benefit," she told the *FT*.

The European Commission recently adopted new guidance for state aid as part of industrial policy that aims to align Europe's climate ambitions with its push to revive the bloc's diminishing competitiveness.

The framework extends the EU's soft approach to encourage the green transition while seeking to maintain a level playing field between member states with differing economic power.

The EU is ready to compete in the global race, Ribera told the *FT*. "We are providing stability, predictability and reliability. We are ready to blend public and private [investment]. These are our big bets: energy, decarbonisation, clean manufacturing. Europe has a great opportunity to be an attractive destination for private investors."

Ribera cited the uncertainty surrounding US tax breaks and subsidies for green technologies adopted under the Biden administration amid reports that companies are cancelling investments in planned American battery factories.

"Do you want to invest in batteries? We welcome you. We have lots of strengths as an open, modern economy," she said.

# Wood Thilsted and PEAK Wind accelerate power-to-x

PEAK Wind, a renewable energy advisor with power-to-X process engineering expertise, and offshore wind engineering consultancy Wood Thilsted have signed a Memorandum of Understanding (MoU) to combine their expertise to accelerate power-to-x engineering delivery.

The collaboration aims to disrupt the current approach to process plant engineering design by combining PEAK Wind's process engineering capabilities through their power-to-X advisory business PEAX Energy with Wood Thilsted's design approach and software developed through the last decades of a fast-moving, highly competitive renewable energy sector.

"The nascent power-to-x industry differs significantly from the established chemical and fossil fuel sectors," said PEAK Wind's Leif Winther. "Project developers need to assess new technologies and suppliers simultaneously with finding commercially attractive solutions, upstream green power producers and downstream green fuel off-takers."

He added: "This complexity requires rapid evaluation of various technologies, sizing envelopes and commercial models that existing design approaches do not meet – they are simply too slow and rigid compared to what is required."

Utilising PEAK Wind and Wood Thilsted's combined capabilities, the collaboration provides a solution to evaluate technologies, process flows and scenarios with a short turnaround time – without compromising on the proven and process plant engineering disciplines.

This will enable project developers to evaluate multiple design configurations and scenarios within days as opposed to months – while receiving detailed inputs to valuation models and permit envelope together with full standard Design Basis/pre-FEED packages (including e.g. process design basis, flow diagrams, heat and material balances, etc.).

"The ability to comprehensively explore a broad range of design parameters has been instrumental in enhancing the speed and efficiency of offshore wind foundation design over the past decade," said Alastair Muir Wood, CEO and Co-Founder at Wood Thilsted. "Applying this approach to power-to-x enables agile analysis of multiple technology and process plant configuration scenarios, accelerating early-stage power-to-x engineering delivery and supporting the identification and calibration of the optimal design strategy for each project."

# Siemens Energy replaces federal guarantee with a new bank facility

Siemens Energy has completed the planned replacement of the €11 billion facility backed by the German federal government. A new €9 billion facility, together with existing guarantee lines, will continue to support and underpin the company's large-scale project business. The €1 billion facility previously backed by Siemens AG has also been replaced under the new agreement.

Maria Ferraro, CFO of Siemens Energy, said: "The federal government's counter-guarantee was instrumental in 2023 during a challenging phase to secure our strong anticipated growth. Due to our performance in the past two years and the positive market environment we were able to improve margins, cash flow and strengthen our balance sheet. This enabled us to replace the facility before the end of our fiscal year and deliver on our commitment as promised."

The new facility, with a term of five years, is provided by an expanded consortium of 23 international banks.

In 2023, Siemens Energy had an order backlog of over €100 billion for the first time, which required correspondingly high guarantee commitments. Due to Siemens Energy's risk profile which at the time was affected by the announcement of provisions at the wind business, banks were reluctant to provide unsecured guarantees.

As a result, the German government provided a counter-guarantee in the amount of €7.5 billion. In return, the federal government received an annual fee without having to make any payments to Siemens Energy.

Guarantees are a standard industry instrument to secure advance payments, performance, or warranty guarantees over the entire duration of projects. These guarantees are issued by banks for a fee. In practice, guarantees are rarely called upon, with a default rate of less than 0.5 per cent.

# MAN Energy Solutions becomes Everllence

The former MAN Energy Solutions is now operating under a new name and has become 'Everllence'.

The new brand identity applies worldwide and marks a significant milestone in the company's strategic development.

Everllence – a combination that merges the two English-language terms 'ever' and 'excellence' – remains part of the Volkswagen Group, and the company's product and service portfolio also remains unchanged.

"Our name change is the logical next-step in the execution of our 'Moving big things to zero' strategy, which focuses on decarbonisation and efficiency solutions, especially for those sectors of the global economy that have to deal with 'hard-to-abate', climate-damaging emissions," said CEO Uwe Lauber.

Today, we are no longer known in the market for just engines and turbomachinery, but also as a supplier of large heat pumps, carbon capture and storage, as a driver of climate-neutral shipping, and as part of the hydrogen ramp-up. This is what we want to express with our new name, Everllence."

Gunnar Kilian, Chairman of the Supervisory Board of Everllence and Member of the Board of Volkswagen Group, added: "The name Everllence underlines the company's current development into one of the world's leading providers of sustainable decarbonisation solutions... With a clear focus on climate protection and as a driver of industrial value-creation, Everllence will continue to drive forward sustainability and the future viability of mechanical engineering in Germany, as well as the global energy transition."

■ The Supervisory Board of Everllence has appointed Rainer Seidl to the company's Executive Board, effective September 1, 2025. Seidl will take over the "Finance" division, succeeding Jürgen Klöpffer, who is leaving the company as part of a retirement arrangement.

# Innio and Gföllner launch US JV to meet decentralised energy demand

Innio Group and Gföllner Group have established IGPS (Innio Gfoellner Power Systems LLC), a joint venture (JV) in the US formed to meet the rapidly rising demand for decentralised, flexible, and quickly deployable energy solutions.

Innio will hold a majority stake in the new company and will provide its Jenbacher gas engines, which will be containerised on site to create modular energy solutions.

"This joint venture is another important step forward on our growth path. With decentralised plug-and-play energy solutions, we are the ideal partner to help meet the rapidly growing energy demands of the US," said Dr. Olaf Berlien, President and CEO of Innio Group.

The production of the containerised modules, which will house Jenbacher engines, is scheduled to begin by the end of 2025. By 2028, the capacity of the containers produced will be capable of delivering well over 1 GW of output annually. The container modules will be manufactured in Trenton, New Jersey.

"This joint venture supports the expansion of North America's energy infrastructure through decentralised container systems. Gföllner is committed to enabling a secure and sustainable energy supply worldwide," said Dipl.-Ing. (FH) Karl Pühretmair, owner and CEO at Gföllner Group.

Innio intends to expand its US workforce by around 50 per cent in the coming years. In Trenton alone, more than 200 new jobs – primarily in production – are planned.

## Americas

### LM2500s to shore-up Puerto Rico power system

The Puerto Rican Equipment Procurement and Construction company RG Engineering (RGE) has ordered six LM2500XPRESS gas turbine packages from GE Vernova to improve power reliability in Puerto Rico.

The units will be used to modernise the Puerto Rico Electric Power Authority (PREPA) power plants at Daguao, Jobos, and Yabucoa managed by the private operator Genera PR (Genera). The six units will supply around 244 MW to ensure a more robust energy system for the island, support possible peak summer demand and provide emergency power.

The LM2500XPRESS units for this project will be assembled at GE Vernova Gas Power's Manufacturing Excellence Centre in Verésegyhaz, Hungary.

### First major solar power plant in Belize

Belize Electricity Limited (BEL) has signed an agreement with Blair Athol Power Company Limited (BAPCL) for the construction of a 15 MW solar power plant in Buena Vista, Corozal District, Belize.

Official groundbreaking is expected by December, and construction is due to be completed by the end of 2026. The PPA is for 15 years.

Prime Minister John Briceño said: "Energy security is akin to national security, and therefore a priority for the government."

### AtkinsRéalis signs Darlington SMR contract

Candu Energy, a subsidiary of AtkinsRéalis, has won a C$450 million ($328 million) contract from Ontario Power Generation (OPG) for the first of four planned SMR units at the Darlington New Nuclear Project, a 300 MW BWRX-300 unit. AtkinsRéalis will provide project management, licensing, engineering, design, procurement, construction support and commissioning, as well as digital delivery capabilities in both the nuclear island and balance of plant scopes for the project.

The site preparation work undertaken under an earlier validation phase contract has been completed on time and on budget. The Canadian Nuclear Safety Commission has issued a license to construct the SMR, and the Ontario government has also given its final approval for construction of the first of four planned units at the site.

### Aruba to get Wärtsilä engines

Wärtsilä has won an engineering, procurement and construction (EPC) extension contract from WEB Aruba to supply an additional 36 MW of generating capacity to the Caribbean island of Aruba. The scope of the contract includes installation of two Wärtsilä 50DF dual-fuel engines and auxiliaries.

The engines are scheduled for delivery in Q3 2025, and the project is due to be commissioned and fully operational by mid-2026. In carrying out the expansion of the existing plant, existing radiator fields and auxiliaries will need to be relocated as there is limited space in which to install the two additional engines.

Alfredo A. Koolman, CEO at WEB Aruba, said: "This is an important and challenging project that is urgently needed to meet the increasing demand for electricity due to the considerable increase of temperature, growth in tourism, resort construction, and residential housing."

## Asia-Pacific

### Offshore wind cables for Haesong

Copenhagen Offshore Partners (COP) has named LS Cable & System as the preferred supplier of subsea cables for the 1 GW Haesong offshore wind farm in South Korea. LS Marine Solution, a subsidiary of LS Cable & System, was also selected as the preferred bidder for installation works.

Together, the two companies will deliver a fully integrated solution, from design and manufacturing to installation for the offshore wind farm.

The Haesong project is planned to be built off the west coast of Shinan, Jeonnam, and consists of two 504 MW phases, Haesong 1 and Haesong 3.

### MHI to design Hokkaido $CO_2$ capture plant

Mitsubishi Heavy Industries (MHI) has won an order from Hokkaido Electric Power Co (HEPCO) for the basic design of a $CO_2$ capture plant for the company's Tomato-Atsuma Power Station.

The plant will have the capacity to capture 5200 tons of $CO_2$ per day from the flue gases emitted during combustion of the boilers in the power station. When completed, the facility is expected to be the largest $CO_2$ capture plant in Japan.

MHI will investigate the main equipment and specifications through its proprietary $CO_2$ capture technology, in preparation for the introduction of equipment in the future.

### Fuji to supply Indonesia geothermal plant

Fuji Electric will provide the power generation equipment for a $500 million geothermal power project in West Sumatra, Indonesia.

Supreme Energy Muara Laboh (SEML) is expanding the Muara Laboh geothermal plant, doubling its output from 85 MW to 170 MW. Construction is underway, with an expected completion date of 2027. Electricity generated will then be sold to PT PLN until 2052.

### Doosan wins Vietnam CCGT contract

Doosan Enerbility has won a €560 million contract to build the O Mon 4 combined cycle gas turbine (CCGT) power plant in Vietnam by 2028.

Doosan Enerbility has formed a consortium with local plant engineering firm PECC2 to construct the 1155 MW gas fired power plant for Vietnam's state-run PetroVietnam (PVN) in Can Tho, 180 km southwest of Ho Chi Minh City.

### Wärtsilä units to power Pakistan mine

Wärtsilä will supply a 204 MW power plant for the Reko Diq copper-gold mining project in Pakistan. The power plant, which will operate with 12 Wärtsilä 50 engines and auxiliaries, is located in a remote region of Balochistan, Pakistan.

The project will be delivered under an EPC contract and will include technical provisions to enable the engines to be converted to operate with alternative fuels in the future.

The scope of the contract includes full heat recovery boilers to support steam turbines. The power plant is designed to integrate renewable energy sources and includes provisions for a future grid connection. Equipment delivery is scheduled to commence in late 2026.

## Europe

### European wind turbine orders for Nordex

Nordex has won wind turbine orders across Europe, including Germany, UK, Belgium and France.

SAB WindTeam ordered 13 N163/6.X turbines with a total capacity of 91 MW, with a 20-year service contract for the Fretzdorf site in Brandenburg, Germany, near Wittstock/Dosse. Installation is scheduled to start in Q3 2026, and full commissioning of all turbines is planned for Q2 2027.

Nordex is also supplying and installing six N133/4800 machines and seven N163/6.X turbines for two wind farms in Scotland totalling 75.7 MW. It will also deliver two N163/5.X turbines to a 11.8 MW wind farm in Belgium and seven N149/5.X turbines totalling 39.9 MW as well as two N117/3600 (7.2 MW) turbines for two wind sites in France. All contracts include service and maintenance contracts for the turbines for different periods. Deliveries and installations are scheduled to begin in mid-2026.

### Valmet wins Swedish BFB boiler order

Kraftringen Energi has placed an order with Valmet for a bubbling fluidised bed (BFB) boiler and flue gas handling equipment for its new CHP plant to be built in Örtofta, Eslöv municipality in Skåne, Sweden.

The new CHP (combined heat and power) plant will replace aging production units and ensure a reliable supply of district heating, securing heat and hot water for large parts of central and western Skåne. The new plant will double the production capacity at the site, enabling it to deliver 25 MW of electricity.

The combined heat and power plant will feature Valmet's flue gas treatment system with integrated heat recovery, which will feed additional energy into the district heating network, enhancing both efficiency and sustainability.

Installation will start in June 2026, and the plant is scheduled to be operational in 2028.

### Norway orders Hitachi Energy $SF_6$-free GIS

Hitachi Energy has signed contracts with Stetnett of Norway to deliver eco-efficient grid connection solutions in the greater Oslo area.

Statnett's grid expansion and modernisation project will help transport 60 per cent more electricity to meet growing demand and ensure the grid has a sustained, secure supply when the consumption is at its peak. Hitachi Energy will install two 420 kV grid connection solutions with a compact footprint based on $SF_6$-free gas-insulated switchgear (GIS).

These solutions will enhance the reliability and availability of electricity supply in and around the capital, while advancing Norway's net zero goals.

### Worley Rosenberg wins Sørlige Nordsjø II contract

Ventyr, a consortium consisting of Parkwind and Ingka Investments, has awarded Worley Rosenberg a preferred contractor agreement for the development of the offshore substation of the Sørlige Nordsjø II offshore wind farm in Norway. Worley Rosenberg also signed an early works agreement for design engineering.

The design and engineering work has begun and will continue with an expected continuous rollover to the engineering, procurement, construction and installation (EPCI) phase in December 2025.

### Turbine upgrade at Grain power station

GE Vernova has signed a contract to upgrade three GT26 gas turbine units powering Uniper's Grain power station in Kent, UK. The upgrade will increase efficiency and power output, while supporting the decarbonisation of Uniper's fleet by reducing carbon intensity. In addition, the upgrade will also extend maintenance intervals to 32 000 hours.

At a previous upgrade at Uniper's Enfield plant, the upgrade increased plant output by 25 MW per unit, a 1 per cent increased efficiency in part load and a 1.8 per cent increase in baseload efficiency, with maintenance intervals extended to 32 000 hours.

## International

### DNV selected for 1 GW solar-BESS project

DNV has been selected as Owner's Engineer for the 1 GW Abydos solar power project and its integrated 600 MWh battery energy storage system (BESS). The project is located in Benban, Egypt. The project is being developed by AMEA Power.

DNV will support the Abydos 2 project – from feasibility and design review, to construction supervision and commissioning oversight.

### Doosan wins €210 million Saudi projects

Doosan Enerbility has won the supplier contracts for the main components of two combined cycle gas turbine (CCGT) power projects in Saudi Arabia. The two projects have a combined value of €210 million.

Doosan has signed a supplier agreement with the joint venture EPC contractor to supply a steam turbine and generator package for the Ghazlan 2 Expansion project, and a supplier agreement to deliver the same equipment for the Hajar Power Plant Expansion project.

Ghazlan 2 and Hajar power plants each have a planned capacity of 2900 MW and are scheduled to be built in phases by 2028. Doosan will supply each plant with a 650 MW steam turbine and generator, and a 540 MW steam turbine and generator.

### AtkinsRéalis and EDF sign nuclear agreement

AtkinsRéalis and EDF have concluded a collaboration agreement to expand the strategic partnership between Canada and France, enabling better integration of their nuclear industries while preserving each country's sovereignty over their respective proprietary CANDU and EPR technologies.

The agreement will cover pre-technology and post-technology vendor selection processes and will include engineering support, the provision of non-reactor equipment, sharing of best practices, installation and commissioning services, as well as engagement between the centres of excellence of each organisation. Both companies will continue to compete on reactor technology vendor selection processes where appropriate or when asked by governments and developers.

Hydrogen

# European Commission hydrogen policy – not quite but almost there

The European Commission took a couple big steps in July towards advancing organisation-wide policies designed to encourage businesses throughout Europe to pursue the greater use of hydrogen as a fuel and thus reduce fossil fuel emissions. While Commission officials frequently comment on the need to cut greenhouse gases and the progress the Commission is making towards net zero, the body clearly needs to move faster as another blistering summer brought about by climate change makes its way through the continent.

Gary Lakes

The European Commission (EC) on July 8 launched its Hydrogen Mechanism under the EU Energy and Raw Materials Platform which is meant to enhance the competitiveness of Europe's hydrogen industry and to adhere to the group's broader strategy of ensuring secure energy supply, diversification, and decarbonisation. The new mechanism is designed to encourage market development of renewable and low-carbon hydrogen as well as its derivatives, such as ammonia, methanol, and electro-sustainable aviation fuel (eSAF). It also aims to empower market participants by matching and aggregating supply and demand.

The Hydrogen Mechanism serves as the EC's official rules for defining low-carbon hydrogen, which it considers fuel that will produce at least 70 per cent fewer emissions than fossil fuels.

The publication of the Low Carbon Hydrogen Delegated Act "will provide legal certainty to hydrogen project developers and its finalisation before its expected legal deadline of August 5 is most welcome," the pro-hydrogen group, Hydrogen Europe (HE), said in statement released in Brussels on July 9. "The mechanism joins the REDIII Delegated Act on Renewable Fuels of non-Biological Origin (RFNBO) to set the framework for hydrogen producers in Europe," the statement said.

Yet, Hydrogen Europe pointed out there is still some ground to cover before hydrogen takes genuine hold in European markets. "While the text falls well short of what is needed for a thriving low-carbon hydrogen market, this final version introduces several improvements, and we welcome the efforts made by the European Commission to take into account the results of the consultation."

Hydrogen Europe is a group of internationally active European companies with the stated goal of propelling global carbon neutrality by accelerating the European hydrogen industry. Its mission is to enable the adoption of clean hydrogen as an abundant and affordable energy carrier and feedstock which efficiently fuels Europe's net zero economy, among other things.

But it points out that despite the positive steps taken by the Commission, the mechanism "has not allowed for the sourcing of low-carbon electricity through a power purchase agreement (PPA) and the treatment of hydrogen from nuclear sources remains unchanged – a specific methodology will be put out for consultation in 2026, with July 2028 still being the official deadline for a revision of the law".

"This will negatively impact a significant number of projects that will have to report the greenhouse gas emissions intensity of their national electricity grid, even if they are sourcing their electricity from low-carbon sources," the HE statement said.

Hydrogen Europe's CEO Jorgo Chatzimarkakis, called for more and quicker action from the Commission.

"We are glad to see that the rules are finally adopted, and we acknowledge improvements from previous versions in reaction to strong pressure from industry, the European Parliament and capitals," Chatzimarkakis said in the HE statement. "However, the low speed of preparation and adoption of this – still very stringent act – are contrary to what Europe needs today in a complex geopolitical landscape. Our common objective of decarbonisation requires clarity and agility, not additional complexity and rigidity. The hydrogen sector deserves more than recognition in speeches; it needs a regulatory environment that supports innovation, scale-up, and practical deployment."

A week earlier, the EC proposed an amendment to the EU Climate Law, putting a 2040 EU climate target of 90 per cent reduction in overall greenhouse gas (GHG) emissions, compared to 1990 levels. The proposal was made in accordance with a request made in the Commission Political Guidelines for 2024-2029.

The proposal builds on the EU's existing legally binding goal of reducing net GHG emissions by at least 55 per cent by 2030, and sets out a more pragmatic and flexible way to reach the target, with a view towards a decarbonised European economy by 2050, the statement said. The amendment is aligned with the EU Competitiveness Compass and Clean Industrial Deal and Affordable Energy Action Plan.

"The proposed 2040 climate target takes fully into account the current economic, security and geopolitical landscape and gives investors and businesses the predictability and stability they need in the EU's clean energy transition," the statement said. "By staying the course on decarbonisation, the EU will drive investment in innovation, create more jobs, growth, increase our resilience to impacts of climate change and become more energy independent."

Commission President, Ursula von der Leyen, said: "As European citizens increasingly feel the impact of climate change, they expect Europe to act. Industry and investors look to us to set a predictable direction of travel. [With this amendment] we show that we stand firmly by our commitment to decarbonise the European economy by 2050. The goal is clear, the journey is pragmatic and realistic."

Gas

# Gas discovery at Pegasus well prompts only 'pending' further assessment

There have been a number of gas discoveries in the Cyprus exclusive economic zone (EEZ) over the last decade, but none of them have elicited the excitement that existed on the island in the early 2010s after that first discovery of the Aphrodite field when Cyprus expected a looming gas bonanza. After years of hoping the next well will be 'the big one', Cyprus remains disappointed with gas reserves too small to mount the kind of project that would make it a major supplier to the European Union.

Gary Lakes

A drilling group comprised of US giant ExxonMobil and QatarEnergy announced the discovery of a natural gas column at the Pegasus well in Block 10 in early July. The block is located southwest of the island. A spokesman for the Cypriot government said preliminary indications suggest the gas bearing reservoir had a depth of 350 m in 1.9 km of water. The well is to undergo "further assessment" in the coming months, the spokesman said in a statement issued following a video briefing on the well's findings between Cypriot President Nicos Christodoulides and the Vice President of ExxonMobil, John Ardill.

The Pegasus well follows ExxonMobil's disappointing Electra well in Block 5, which was concluded in May. Elektra was expected to hit a significant gas resource, considering the information that was indicated by seismic data. But while the well did discover a gas column, it was not as deep at that at Pegasus.

ExxonMobil and a number of other big energy companies, namely France's TotalEnergies and Italy's Eni, have been active in the Cyprus offshore for many years. Meanwhile, Chevron Corporation is reported to be actively planning the development of the Aphrodite field, which lies along the maritime border with Israel.

For its part, ExxonMobil made an earlier gas discovery in Block 10, the Glaucos-1 well, in February 2019, which was backed up with appraisal drilling at the Glaucos-2 well that confirmed in March 2022 a high-quality gas-bearing reservoir.

Yet despite the island's own need for natural gas as a fuel for power generation – Cyprus continues to burn heavy fuel oil for electricity – and its desire to get on the LNG map and export gas to its fellow European Union partners, the possibility of Cypriot gas making its way to a foreign market seems some years away. Furthermore, there is no plan to bring some gas to Cyprus itself, the reason being the prohibitive price of constructing a pipeline from a well to the shore. The Cypriot gas market is too small to warrant such an undertaking.

Cyprus will just have to wait. Speaking in mid-July to a gathering of technical staff at the Electricity Authority of Cyprus (AEK), the Minister of Energy, George Papanastasiou said there is no immediate plan to exploit the Pegasus gas field. The minister said there are "several stages of technical and commercial evaluation" that must be rendered at Pegasus before gas reaches the market, according to a report in the *Cyprus Mail*.

Papanastasiou said the 350 m gas column "gives us optimism that this is something which is within the scope of a small to medium deposit". Evaluations to be carried out by ExxonMobil will make that determination, he said, adding that further drilling at the site is pending and that no timetable for further offshore work has been set. The minister added that Pegasus does not appear to be an extension of the Glaucos field, which is located some distance away. Glaucos is a column of gas estimated at 133 m, not quite as deep at Pegasus.

Even with a significant discovery at Pegasus, the minister said, the discovery would take a number of years to be developed and exploited.

"Let's not assume that a deposit which was found the day before yesterday will be able to be on the market within a year or two. Processing is needed, infrastructure is needed, agreements are needed," Papanastiou said, adding that "difficulties" arise when "collaborations with other countries are required."

Cyprus, along with the TotalEnergies/Eni partnership that operates in Cyprus, signed last February a Host Government agreement with Egypt pertaining to the export of Cyprus gas in blocks operated by the partners to Egypt for liquefaction at the Eni-operated SEGAS LNG facility at Damietta. From there, the Cypriot gas would be exported in the form of LNG.

The agreement has Egypt serving as host government for Block 6 and the Kronos, Zeus and Kalypso gas fields that have been discovered there by TotalEnergies and Eni. Block 6 is north and adjacent to Block 10, making it possible to connect the ExxonMobil discoveries for export if they are viable.

The plan being considered by TotalEnergies and Eni, calls for gas in Block 6 to be transported by underwater pipeline to Eni's gas processing infrastructure at the Zohr field, which lies on the Cyprus-Egypt maritime border, and be transported to Egypt via that existing route.

# Unlocking China's green potential: policies, progress, and investment insights

China is transforming its energy landscape, with clean energy capacity expanding at an unprecedented pace. This is the latest in a series of country analyses, where ***TEI Times*** examines China's generation and consumption profiles, policy, emissions targets and potential for a future increase in foreign participation in domestic decarbonisation projects.

China is making significant strides in its climate action, with ambitious goals to peak $CO_2$ emissions before 2030 and achieve carbon neutrality by 2060. The nation is rapidly transforming its energy landscape, with clean energy capacity expanding at an unprecedented pace.

Despite challenges such as regulatory complexities and geopolitical hurdles, China offers a compelling investment environment bolstered by political stability, a vast market, and robust supply chains.

So how are China's decarbonisation commitments shaping its approach to a greener future? What transformations are occurring in the energy mix, and how do they reflect the country's commitment to sustainability? Could the policies and incentives in place truly attract foreign investment into China's green transition?

### Decarbonisation commitments

China's climate action has progressively intensified in recent years. At a high level, the objective is for $CO_2$ emissions to peak before 2030 and to reach carbon neutrality by 2060. The short-term objectives include non-fossil fuel sources accounting for about 25 per cent of primary energy consumption, cutting energy consumption per unit of GDP by about 13.5 per cent, and installing about 1200 GW of solar and wind generation capacity by 2025. In the near term, climate action will certainly accelerate further.

For example, the 'Action Plan for Energy Conservation and Carbon Reduction (2024-2025)', Document [2024] No. 12, released by the State Council in May 2024, mandated all provinces to prepare and publish their respective carbon peaking roadmaps by the end of 2025.

Two other government bodies announced a 2025-2027 low-carbon retrofit programme in July 2024. This initiative mandates a $CO_2$ emissions reduction of 20 per cent by 2025 and 50 per cent by 2027, against a 2023 baseline. It launched low-carbon upgrade pilot projects at selected coal plants and lays the groundwork for these plants to add carbon capture, utilisation, and storage (CCUS) after 2027.

Specifically, these plants will have to match the emissions of a gas fired power plant (420 grams $CO_2$/kWh) if they wish to remain in operation, effectively mandating CCUS retrofits.

### Energy mix

In 2024, China reported GDP growth of 5 per cent, compared to a growth in electric power output of 6.7 per cent to 10 087 TWh. Output from fossil fuel sources rose by less than 2 per cent, a rate below that of any other energy source. Hydropower had a share of 14 per cent, and its output rose by almost 11 per cent during the year. Wind generation accounted for nearly 10 per cent of output, rising by 13 per cent year-over-year. Solar PV, with a share of 8.3 per cent of output, saw a huge surge in generation of almost 44 per cent in 2024. The capacity of wind and solar PV rose at remarkable rates, 18 per cent and 45 per cent, respectively.

Over the next few years, the generation mix will continue to shift considerably away from coal fired generation. Solar and wind capacity will continue to grow at a staggering pace. The steady decline of the share of output from coal plants will not stop. Gas fired power plants will be added, but only moderately, as they will be principally used as a bridging fuel. Nuclear capacity will also increase as the number of large-scale plants grows, and there could also be some additions from small modular reactors (SMRs) if the various pilot projects are successful. The country is also rapidly expanding and modernising its grid network, including huge investments in ultra-high-voltage transmission, along with smart grid and energy storage solutions.

Investment environment

China is not a straightforward destination for overseas investors seeking energy transition-related projects and solutions. Some of the challenges include formidable domestic players, evolving regulations (typically consistent but not always transparent), capital controls, and highly dynamic geopolitical hurdles. Despite these challenges, China can be an attractive investment target. Factors that somewhat de-risk the investment include political stability, a huge and rapidly growing market, local partnership (even majority owned joint ventures) and supply chains that are unmatched in size and sophistication. Additionally, the permitting process is generally fast-paced, such as for utility-scale solar PV projects.

In terms of financing, green loans can be secured at 25 to 50 basis points below the loan prime rate (currently 3.35 per cent, for example). Although foreign-invested enterprises admittedly face more hurdles than domestic ones in securing bank loans, in the first half of 2025 they were able to have an 11 per cent share of loans for low-carbon projects from China's six policy banks, according to one domestic media source.

Jacobelli says it is realistic to be bullish about foreign participation

Another financing option is the rapidly growing domestic green finance ecosystem. For example, one could attempt to issue onshore green bonds, despite the highly stringent approval process. One can also use a blend of domestic and offshore finance, such as issuing green bonds in Hong Kong.

### Policies and incentives

The Chinese government deploys a robust collection of policies and incentives to encourage investments related to the energy transition. Climate action is a national strategic priority for the central government, providing ministries and local governments alike with a high level of motivation.

The existing Renewable Portfolio Standards push industries to switch to clean energy consumption. There are a variety of tax incentives, such as value-added tax rebates, corporate tax reductions, exemptions on some import duties for certain equipment, and accelerated depreciation for specific sub-industries.

China has published a Catalogue of Encouraged Industries for Foreign Investments to promote overseas investors' involvement in areas such as electrolysers above 5 MW, CCUS equipment, SMRs, and grid-scale batteries. At the local government level, foreign-invested enterprises can participate in obtaining grants for project development, R&D centres, and the like, as well as potentially obtaining preferential land use treatment and infrastructure support.

### Investors backdrop

While foreign direct investment in China's energy transition is not booming, there is interest on the part of foreign investors, as shown by several examples over the past five years. Saudi Arabia's ACWA Power invested $312 million to develop a 132 MW solar PV and 200 MW wind power portfolio in Guangdong and also committed to developing over 1 GW of similar projects across China (2024). France's Air Liquide constructed two blue hydrogen facilities in Shanghai (2023). Shell previously announced a plan to invest in a green hydrogen production project with a capacity of 20 MW in Hebei Province (2020). Germany's Siemens partnered with the Chinese firm Guofo Hydrogen for the production of electrolysers and green hydrogen (2025). France's TotalEnergies is collaborating with Chinese partners on the development of clean energy products such as sustainable aviation fuel, green power, hydrogen, and carbon capture (2025). Germany's ZF Friedrichshafen AG launched a project in Shenyang, Liaoning Province, which will manufacture products such as new powertrains for electric vehicles (2021).

It is realistic to be bullish about a future increase in foreign participation in domestic decarbonisation projects in China, based on three likely future trends.

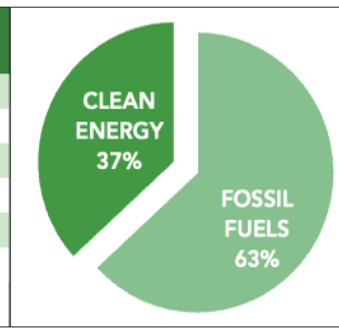
First, there could be a revival or re-acceleration of the Chinese economy, which has been in the doldrums at least since the beginning of the COVID pandemic. Second, the 'geopolitical hurdles' will likely become less demanding as the pendulum swings towards a more cooperative and collaborative relationship with China. Third, China will continue to open its doors to foreign investors, such as by expanding the scope of the Catalogue of Encouraged Industries for Foreign Investments. However, the country will also have to work hard on changing perceptions regarding access to its markets.

*Prepared for The Energy Industry Times by Joseph Jacobelli, Managing Partner, Asia Clean Tech Energy Investments Ltd.*

**Electricity generation reached over 10 000 TWh in 2024, with non-fossil fuel generation accounting for almost 40 per cent of total output**

| Source of Output | Share of Total Output (%) | Total Output (TWh) |
|---|---|---|
| Coal | 58.0 | 5,850 |
| Natural gas | 5.2 | 524 |
| Hydropower | 14.1 | 1,426 |
| Nuclear | 4.5 | 451 |
| Wind | 9.9 | 997 |
| Solar PV | 8.3 | 839 |

*Source: Statistical Communiqué of the People's Republic of China on the 2024 National Economic and Social Development, February 28, 2025, National Bureau of Statistics of China (NBS)*



# Independent network companies are key to strategic grid development

Photo by Brett Sayles

There is a need for further competition in the UK transmission network. Successfully innovating the grid depends on recognising the problem-solving role of independent network innovators, says Eclipse Power's **Spencer Thompson**.

The UK's electricity transmission network has a problem. Built in the 1920s, expanded in the '50s, and designed for an era of coal fired power, today's grid is attempting to serve the electricity demands of the 21st century with fundamentals that date back to the coal age. But coal power has gone, renewables are thriving, and the electrification of heat and transport continues apace.

The nation is by no means alone in facing this challenge, of course, but the UK provides a strong example of the pressures transmission grids face today. The government has committed to almost fully renewable power by 2030. At the same time, it's seeking to consolidate its position as a leader for AI expertise and data centres. As the nation strives to meet its net zero obligations, the transmission network is fast having to adapt to the variability of wind and solar, large demand customers, new centres of power generation, and new consumer needs.

Is it any wonder cracks are beginning to show? The UK transmission system needs modernising and rethinking to be fit for purpose now, let alone in a near-future where its power is renewable, and heat and transport needs are met chiefly by electricity. Yet the transmission network in Great Britain is almost entirely owned by three companies, each a natural monopoly.

### A grid history

It pays to understand a little of the history of power transmission in Britain. In its infancy, mains electricity was generated relatively locally and distributed only to nearby users – often municipal streetlights. As generation and use became more distributed, localised grids arose, yet there was no coordinated national system. This changed with the 1926 Electricity (Supply) Act, and in 1938 the first nationwide grid.

The fledgling grid ran at 132 kV, but in 1950 it was upgraded with 275 kV interconnectors, offering lower losses and allowing for thinner cables for a given amount of power. By 1965, the need to transmit more electricity over longer distances was addressed with new 400 kV links.

This very much became the model for British power transmission through the seventies and beyond, as major coal, gas and nuclear plants provided almost all of the nation's electricity demands. However, the expansion of renewable energy presents two major challenges.

First, major wind and solar projects aren't bound by the same fuel needs as coal or gas fired stations, so big projects, requiring big connections, may be situated far from existing grid infrastructure – and major power users. Second, the output from wind and solar is inherently variable, meaning the power transmission system needs flexibility to ensure balance, consistency, and reliable operation.

**Thompson: New independent transmission owner-operators should be created and allowed to build the grid supply points that major power customers demand, delivering projects in 2-3 years**

### New demands, new power

All of this is without reckoning on the additional challenge of changing use and growing demand. The government has set an ambitious target for almost wholly renewable power under the Clean Power 2030 Action Plan, describing this as 'key to a growing economy, our national security, and improving our standards of living'. Achieving it is vital if renewable electricity is to displace fossil fuels for transport, and for water, space and industrial process heating – all necessary for the UK to meet its net zero commitments.

At the same time, the UK is a front-runner in data centres. It is the world's third-largest market for AI (after the US and China), and the leader in Europe. The country has the potential to consolidate its position and benefit from billions of pounds of investment in new data centres, unlocked by the AI Growth Zones envisaged by the government. Yet AI is famously energy-hungry, and delays in connecting new projects could threaten this highly valuable sector.

As the UK leans on clean electricity to decarbonise transport and heat, its commercial and domestic users will need more power, sometimes distributed to new places – such as large-scale EV charging points on the motorway network. These new demands are a far cry from those the grid was built to serve, and it needs rapid change to meet them.

### Regulation and oversight

And yet, when did large-scale national infrastructure ever move quickly? The British power transmission grid is owned today by three companies: National Grid Electricity Transmission, ScottishPower Transmission, and Scottish Hydro Electric Transmission Limited (SHETL). National Energy System Operator (NESO), the grid operator for the whole of Britain, manages the electricity market – to it falls the challenge of balancing changing supply and demand.

The transmission system is effectively a monopoly, run to strict rules and heavily regulated by Ofgem. The industry is slow-moving and risk-averse – it has undergone relatively modest infrastructure development since the majority of transmission assets were installed 45-60 years ago.

Despite the urgent need for multiple major upgrades, under the current system transmission projects have limited appeal to investors. They move slowly, face bureaucratic hurdles, and carry the risk of regulatory penalties that can take a huge bite out of the returns.

In this environment, it is difficult to innovate, and challenging to deliver new capabilities to the grid. Currently it is virtually impossible to build out transmission assets for large single-use customers without a significant change in regulation. We urgently need an updated Electricity Act, and a coordinated approach from industry bodies.

The present setup is not what is needed to decarbonise the power grid, or to capitalise on investment opportunities in the AI sector and elsewhere.

With a lack of flexibility, and a limited track record in delivering major infrastructure upgrades, the incumbents of the transmission industry risk becoming the bottleneck in the UK's plans. They need support and different non-monopoly solutions to deliver these huge infrastructure upgrades.

### Adapt and innovate

If the UK's power transmission network is to complete its renewables switch, while adapting to fast-changing use patterns, it needs a huge shake up. New grid capacity needs to come online in a matter of years, not decades. Investors in major power-using or generating projects need the reassurance they'll get connections within a viable timeframe – or they'll put their money in other countries where they can.

For some years Ofgem has been examining the potential of competition to drive the necessary changes. Indeed, NESO is now pushing ahead with the implementation of competition for selected projects that are:

- Clearly defined (their design and construction can be separated from the system)
- Large, and high-value
- Not integrated with the rest of the grid in a way that means only existing incumbents can deliver them.

Key to this is the concept of 'early competition', which it is hoped will drive innovation, and result in fresh ideas and improved technologies. The other objectives for competition include lower costs for consumers, and projects that are more attractive to investors, helping speed up their funding and delivery. It is certainly progress, but as the first project is tentatively put out to tender, it's slow going.

### Competition time

Yet our experience in the connections space – the so-called 'last mile' distribution between the transmission grid and its consumers and suppliers – shows us that competition is exactly what is needed.

In 2000, competition in distribution was opened up so that the established distribution network operators (DNOs) now faced competition from independent distribution network operators (IDNOs) like Eclipse, and independent connection providers (ICPs).

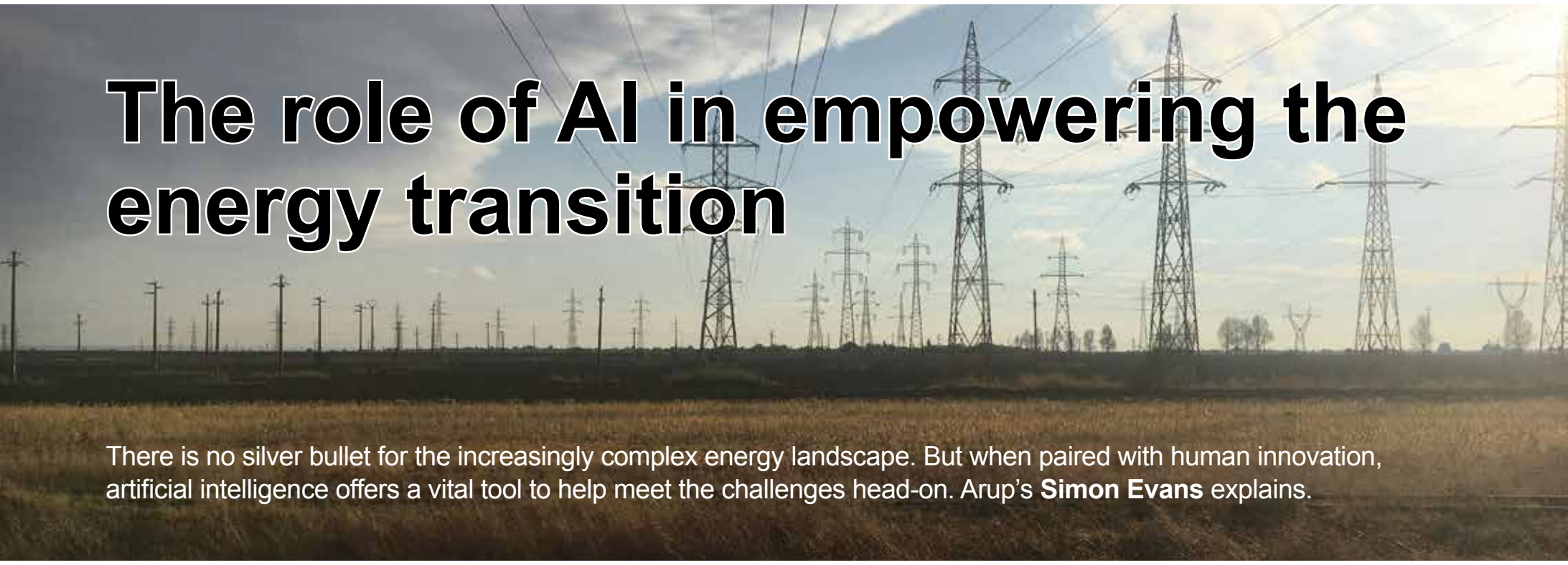
This competition has allowed dynamic market entrants who aren't bound by geography in the same way as DNOs. Independents can plan, provide and adopt new connections to the grid across the British power network. And while still regulated by Ofgem, we enjoy greater flexibility to design innovative solutions that can reduce cost or delays or even contribute to the overall viability of new projects.

This has had a measurable benefit for businesses and investors seeking to connect critical infrastructure such as EV charging points, battery electric storage systems, housing and commercial developments and data centres. It has also positively impacted the service levels of monopoly DNOs, as well as improving cost-effectiveness and service levels for customers.

We now need an equivalent change in the transmission network. While steps towards early competition are welcome, they are too little, too slow, to deliver the changes we need in the time we have. New independent transmission owner-operators should be created and allowed to build the grid supply points that major power customers demand, delivering projects in two to three years – not the 10-15 they might otherwise take.

By leveraging the same innovation and flexibility that independent operators have brought to the distribution market, the UK can get its transmission infrastructure on track. But the *status quo* does not encourage the incumbent grid operators to drive change, and the regulator is under-resourced and lacks the capacity or remit to do so. Without change, the sector cannot deliver the progress needed, the government's commitments will not be met, and the UK will miss out on massive wealth-creation opportunities.

*Spencer Thompson is Chief Executive Officer at Eclipse Power.*



# The role of AI in empowering the energy transition

There is no silver bullet for the increasingly complex energy landscape. But when paired with human innovation, artificial intelligence offers a vital tool to help meet the challenges head-on. Arup's **Simon Evans** explains.

The energy industry is at an unprecedented turning point: climate change, population fluctuations, and economic and lifestyle shifts present challenges that traditional energy planning models were not designed to address.

On the one hand, we're racing against the clock to achieve net zero by decarbonising as quickly as possible. On the other, the energy demands of data centres are booming and we need to build resilience into our energy supply. There is no silver bullet for this increasingly complex situation; however, when paired with human innovation, artificial intelligence (AI) presents a vital tool to help meet these challenges head-on.

We know from Arup's recent survey – 'Embracing AI: Reshaping Today's Cities and Built Environment' – AI is already being widely used by engineers, city planners, and digital officers across the globe.

We have seen very high take-up of the technology and overwhelmingly positive attitudes. Many respondents are already using it to enhance energy efficiency and believe it can help renewable energy optimisation and decarbonisation.

With its right-time data analysis and predictive capabilities, AI can support in maintaining grid stability and resilience amid rising demands and increasing risks. In addition, it can help to optimise costs and ultimately, drive systemic transformation across the sector.

### Cities as energy actors

For more than a century, the role of cities in the energy system has remained largely unchanged. Electricity is generated at thermal power stations and then consumed by urban centres. In fact, cities consume three-quarters of global primary energy supplies. However, in the face of increasingly scarce resources, AI is being used to rethink this model.

But now we see AI and digital solutions helping to turn cities and their residents into active nodes in the electricity grid rather than endpoints. For example, it is enabling local energy systems to anticipate demand by integrating buildings' battery energy storage systems (BESS) and electrical vehicle (EV) batteries into the grid, controlling rooftop solar panels and optimising heating and cooling networks.

In this model, where cities and their residents are active participants, grid operators have complete transparency over energy supply and demand to anticipate future needs. What's more, surplus revenue from energy can subsidise poorer residents or be invested in community initiatives, reducing wastage.

### Interoperability is key

Embedding AI into our energy systems and realising the benefits of this relies on interoperability. This means that data can be shared across platforms, projects and sectors so that all the different components of the energy system, from solar panels to electric vehicles and grid operators, can communicate with one another. By contrast, when AI systems operate in isolation, and are confined to specific projects, they create and operate in silos of data. This hinders comprehensive planning.

Interoperability is, therefore, at the heart of an intelligent energy system. It facilitates optimal resource allocation and adaptive infrastructure development, by revealing where and when resources are being used in real-time. This can help to forecast demand, optimise energy distribution and efficiently integrate renewable sources.

Interoperability is not merely aspirational; it is a current technical and social necessity. Achieving it relies on standardised data models and frameworks, which protocols and government policy must evolve to support. This is not only to achieve adequate data sharing, but also to manage cyber security risks and establish trust among market actors. Indeed, like any technology, incorporating AI into the operation of critical infrastructure might introduce new cyber security vulnerabilities. Robust measures to protect against this are crucial.

### A digital spine

Alongside interoperability of data, AI model compatibility is essential, and we are at the centre of developing this new digital energy system architecture. With Britain's National Energy System Operator (NESO), we are building the Virtual Energy System Programme, which is the world's first ecosystem of connected "digital twins" for a national energy system – enabled by a common data sharing infrastructure – a digital spine.

These digital twins, digital replicas of the grid, are designed to improve operational oversight, scenario planning and system optimisation. They enable more accurate forecasting of renewable input, better balancing of local and national supply and efficient integration of new technologies like heat pumps and EVs.

This work is underpinned by the 'Digital Spine Feasibility Study'. It entailed a 6-month feasibility study, conducted by Arup, in partnership with Energy Systems Catapult and the University of Bath, to explore the concept of a 'digital spine' identifying the needs case and challenges for the energy sector to facilitate data sharing through a digital infrastructure.

Through a combination of stakeholder engagement, market research, and the consortium's internal expertise, the concept was explored through the lens of priority energy sector use cases, such as flexibility and vulnerable customers, to understand the technical and non-technical requirements of a data sharing infrastructure. It defined the technical architecture, security considerations, governance models, and the pathways and delivery routes necessary to enable a data sharing infrastructure within the energy sector. By doing so, it highlighted the challenges for the energy sector to facilitate data sharing and how these challenges could be overcome through an enabling infrastructure.

The completed study presents the cumulative thinking of the consortium, along with the 100+ individuals and cross-sector organisations that were consulted in the co-creation of what has now become the concept of a data sharing infrastructure. Indeed, the consortium developed a conceptual technical architecture which brought the study to life by illustrating the user journey, key components, their interactions, and how they would support identified use cases.

### Real-world impact

While AI is often spoken of in abstract terms, its most valuable contributions are practical. It does, and should, improve project outcomes, keep timelines and budgets under control and enhance the performance of built infrastructure.

For example, in the United States, our team has developed machine learning models with Whole Foods and the National Resources Defence Council (NRDC). To do so, we used machine learning to train models to search for novel combinations of energy conservation strategies to achieve deep reductions in building energy consumption within cost and deployment constraints.

The work showed that machine intelligence coupled with human review and guidance could lead to up to 10 per cent greater savings per building within the same budget. While this may sound small, an additional 10 per cent savings per building means far less new generation required on the grid to meet surging electricity demands.

Similarly, in the UK, we have developed a data model for energy flexibility markets that makes information clearer and easier to share, helping systems work together and support the use of AI at scale.

AI is also already improving grid safety and resilience. Computer vision is now being used to predict the risk of extreme events, such as wildfires, that might damage grid infrastructure, helping prevent tragedies like the Camp Fire in California in 2018.

### Concept to capability

Undoubtedly, AI has the potential to rapidly elevate how we model and optimise grid systems; however, this is only if it is deployed in a way that supports human decision-making and addresses its risks. While data centres powering AI are consuming large amounts of energy, the technologies that increase the need for these data centres are in themselves essential for helping us address challenges like grid decarbonisation.

From predictive maintenance and digital twins to AI-assisted building management and wildfire detection, AI is already reshaping how we think about energy. However, if we want it to power the next phase of the energy transition, we must embed it into the very structure of our systems, not just as a bolt-on, but as a backbone. With the right infrastructure, standards and cross-sector collaboration, we can unlock AI's potential not just to decarbonise, but to decentralise and futureproof the energy grid. This will create a smarter, more inclusive and responsive system that benefits people, planet and economy alike and it's a challenge we must rise to, collectively.

*Simon Evans is Global Digital Energy Leader, Arup.*

# The cyber security burden of nuclear decommissioning

Once nuclear facilities no longer generate power, they often lose some focus as a potential risk. However, their cyber security risk profile remains high. OPSWAT's **James Neilson** explains why.

The role of nuclear power on the global stage is set to grow. The number of new plants is expected to rise as nations seek to get ahead of growing energy demands.

Behind these trends is a background hum of concern of cyber threats. The WEF recently warned of the need for greater resilience, and energy leaders have repeatedly spoken out against the rising threat.

But while the focus is typically on current infrastructure and the commissioning of next-generation reactors, another frequently overlooked challenge is playing out: the safe decommissioning of ageing existing nuclear facilities.

In the UK alone, most of the current nuclear generation capacity is set to be retired by the end of this decade. Once these facilities no longer generate power, they often lose some focus as a potential risk.

However, their cybersecurity risk profile remains high. Active systems and archives of sensitive operational data persist long after operational shutdown, and with fewer personnel on site and reduced budgets, these sites can become soft targets for cyber criminals and nation-state actors while still having to maintain safety and compliance.

These sites often remain in a transitional state for decades, with full dismantlement, decontamination, and restoration stretching across 15 to 30 years. During much of that time, they retain many characteristics of active critical infrastructure, from networked control systems to highly sensitive data stores.

As such, these facilities represent a unique opportunity for threat actors targeting the sector, particularly state-backed groups. The UK's National Cyber Security Centre (NCSC) has previously flagged interest in nuclear sector intelligence by hostile states, including attempts to access classified information.

Access to historical operational data, transport plans for nuclear waste, archived schematics, and personnel records offers potential routes for sabotage, surveillance, or geopolitical leverage. Even partially decommissioned physical assets may still hold radiological materials that malicious actors could exploit.

**Neilson: Decommissioned sites must therefore be treated not as legacy infrastructure, but as live targets**

### The state of play

The security risk of decommissioning is growing more significant as the number of sites increases. While different regions have their own nuclear growth trajectories, most areas are set to see more sites closing down.

The UK, for example, has new projects underway, such as Sizewell C and Hinkley Point C, but is still currently on track to retire almost half of its existing capacity by the end of this year.

Likewise, 19 commercial reactors are in various stages of decommissioning in the United States. More are expected to join the list, although some sites are instead receiving life extensions. In Europe, 37 reactors have been permanently shut down since 2011, with more closures expected.

Asia presents a more expansionist picture. China and India are scaling up their nuclear capacity, while Japan is restarting and decommissioning reactors simultaneously.

This evolving global mix underscores a pressing challenge: the cyber security burden of decommissioned sites is set to grow everywhere, regardless of whether a country is scaling up its nuclear power capacity or winding it down.

### Unique cyber security challenges

The cybersecurity challenges facing decommissioned nuclear sites are not simply a scaled-down version of those at operational facilities. There are a number of factors that add new issues or change the nature of existing tasks.

Legacy operational technology (OT) systems such as programmable logic controllers (PLCs) and supervisory control and data acquisition (SCADA) networks are a particular issue. These systems were typically not designed with digital connectivity in mind and lack native cyber security capabilities. As layers of smart monitoring are added, the data pathways and the data itself require protection and control.

OT infrastructure historically relied on air-gapped architecture, but maintenance, reporting, and data extraction tasks often necessitate bridging these gaps using one-way communications via data diodes, or by using portable media or temporary connections. This can open up critical pathways for malware if not properly managed.

In active plants, these weaknesses are shielded by layered defences and 24/7 monitoring. In decommissioning environments, however, scaled-back operations mean that they may remain connected and accessible but lack the same level of protection.

Decommissioning is an expensive process, with EDF, for example, estimating costs of around £27 billion for the fleet of seven AGR plants slated for closure. To minimise costs, as production winds down, so too does budget, staffing and, in some cases, security vigilance.

This can create an environment where vulnerabilities multiply unnoticed, especially as ageing infrastructure is exposed to new modes of access and external involvement.

Research from the SANS Institute and OPSWAT recently found, protecting critical infrastructure such as industrial control systems (ICS) and OT is typically underfunded even in active sites.

Less than half of organisations were found to allocate just 25 per cent of their cyber security budgets on these systems.

Compounding the risk is the increased presence of third-party contractors. Decommissioning is a resource-intensive process that relies on a rotating cast of specialist firms. Large numbers of workers coming and going, equipped with their own tools and devices, increase the attack surface through supply chain exposure.

Without rigorous controls, credentials, or secure onboarding protocols, these partners or contractors can inadvertently become entry points for cyber threats.

### Managing removable media risks

In cases of air-gapped, or where network connectivity deliberately is restricted, portable storage devices like USB drives, DVDs, and external hard disks are tools used extensively in active and decommissioned sites, to transfer data, apply software updates, or share documentation between isolated systems.

Although this approach is essential for maintaining air-gap protections, it also introduces more cyber risk.

Each device brought on-site represents a potential vector for malware, either through inadvertent malware infection or deliberate tampering. The impact could be severe, from the theft of classified data to the disruption of critical systems.

This is no theoretical threat – some of the most high-profile cyber attacks against critical infrastructure originated via infected removable media, including the notorious Stuxnet worm that rampaged through Iran's nuclear programme.

Nuclear sites are not blind to this risk, and there are standard controls in place to manage device security. However, standard anti-virus scans can be unreliable, with AV engines missing new and more subtle viruses.

Without the right tools, the 'sheep dip' process of checking each incoming device can also be slow and cumbersome at scale. Adhering to strict scanning processes with these systems can result in bottlenecks that delay critical processes – a daunting prospect in a multi-year, multi-billion project.

### A model for legacy infrastructure

Securing decommissioned nuclear sites requires more than preserving old safeguards. A proactive, layered model is required, recognising the unique operational demands of legacy infrastructure and the evolving tactics of cyber adversaries.

As removable media is critical to the shutdown process and one of the more prominent cyber risks, it should be a focal point of new controls. Facilities must move beyond outdated antivirus scanning and adopt tools purpose-built for high-security, air-gapped environments.

Multi-scanning kiosks are one of the most effective approaches here, enabling comprehensive screening of portable media using multiple antivirus engines, heuristic analysis, and deep file inspection. Using multiple AV engines increases the chances of detecting more advanced and well-hidden threats, while specialist kiosks can deliver security without slowing operations down.

It is also important to apply content disarm and reconstruction (CDR) techniques rather than simply scanning for potential risks. This neutralises embedded threats by sanitising files without disrupting their usability.

Secure workflows should govern all data movement, from removable media to email. Managed file transfer (MFT) systems with centralised logging provide oversight, ensuring accountability, auditability, and compliance with regulations from bodies like the NCSC and NDA.

Data diodes in OT telemetry systems enforce one-way data flow from operational networks to monitoring systems, blocking any return path for malicious commands. This physical separation protects critical infrastructure and ensures the integrity of industrial control systems in high-security environments.

Where third-party contractors are involved, strict onboarding, device vetting, and enforcement of least-privilege access should be standard to ensure visitors aren't delivering unnecessary risk exposure.

Finally, visibility into OT assets is also essential. While many legacy systems cannot support modern endpoint protection, specialist tools are designed to be compatible with the various different architectures to identify anomalies and unauthorised activity.

### Decommissioned, not defenceless

Decommissioned sites must therefore be treated not as legacy infrastructure, but as live targets requiring the same cybersecurity vigilance as operational plants.

Cybersecurity must be embedded into every phase of a nuclear asset's lifecycle – from commissioning to shutdown and through the long tail of decommissioning.

Security need not be a bottleneck. With the right tools and policies, it can become an enabler – allowing work to proceed safely, efficiently, and in full compliance of regulations. In the long arc of decommissioning, a modern cyber security model provides the stability and trust needed to see complex, multi-decade projects through to completion.

*James Neilson is SVP International at OPSWAT.*

Junior Isles

# Keep your eyes on the prize and your back to the wind

It appears to be increasingly challenging for governments to stay focused on climate change as geopolitical tensions escalate around the world. It is therefore comforting to see that Europe's electricity sector is keeping the climate and clean energy front and centre of its thinking.

During the annual Eurelectric Power Summit, held in early June with the theme 'Power Play', Dan Jørgensen, EU Commissioner for Energy & Housing, opened by pointing to Russia's ongoing war against Ukraine, saying: "Europe needs to show the power to play and the will to win… we will stop the import of energy from Russia. We have already gone a long way since February three years ago."

Since the start of the invasion, the EU has significantly reduced fossil fuel imports from Russia. In 2022 the bloc imported 51 per cent of its total consumption from Russia. That figure now stands at zero. Three years ago the EU received 27 per cent of its oil from Russia, now it gets 3 per cent. Meanwhile gas imports have fallen from 45 per cent to 13 per cent. And the bloc still seeks to do more. The plan is to ban all imports of Russian gas by the end of 2027.

But it's not just about severing dependence on Russia. While energy security and independence prompted this action, the EU remains more than mindful of its climate commitments.

Jørgensen told delegates: "We also face other huge challenges. Energy is at the core of our competitiveness. And right now, it's challenged; we pay 2-3 times more for our energy than our competitors in the US and China." He added: "We are also still, and unfortunately increasingly so, in a climate crisis. The fact that other countries are stepping back in the fight against climate change, means that we have to step forward.

"There will be no back-tracking; there can only be fast-tracking because, as opposed to the other crises that we are in the middle of, this will not disappear. Hopefully in 10 years we will have peace in Ukraine and we can contain the threat from Russia. Hopefully we will have normalised trading relationships across the Atlantic. Hopefully we will have brought down the price of energy and increased our competitiveness. But I hate to say it, climate change will not only still be here, it'll be worse. Much worse."

The latest report from the World Meteorological Organization certainly bears this out. According to the organisation, the global average temperature could rise to almost 2°C above pre-industrial levels in the next five years for the first time.

Adam Scaife of the UK Met Office Hadley Centre said the predictions by the UN agency, which gathers global, regional and national data sets, were "shocking" because they showed that years in which the temperature rise exceeded 1.5°C – which happened for the first time in 2024 – would now be close to "commonplace".

Unfortunately, like other warnings on climate change, it will fall on deaf ears in the current US government – one of the world's biggest polluters and whose energy and economic policies are having an impact that extends far beyond its domestic borders.

For example, the trade war initiated by US President Donald Trump is weighing on the energy strategy of Canada. In June, Prime Minister Mark Carney, a long-time climate finance advocate, moved to restore relations with the oil industry. Carney promised to work with Canada's oil industry to boost production and reduce emissions, as part of an economic agenda to stand up to Trump's tariff threats.

In what is no doubt an attempt to undermine any pro-renewable voices that could be seen as influential, the US recently threatened to withdraw from the International Energy Agency (IEA) unless it reins in its "unrealistically green" forecasts. The Trump administration argued that the Paris-based agency was now acting more like an energy transition lobby than a neutral forecaster and called for a complete overhaul of the IEA's assumptions.

But as the US seeks to stem the green tide, Jørgensen in true Viking fashion is determined that the EU will ride the renewables wave. The Danish politician therefore called for an acceleration in electricity produced from green energy sources as well as improvement in energy efficiency. He also noted that if the US is turning away from what is "the cheapest way" of producing electricity, that is an opportunity for Europe.

It is certainly an opportunity for the EU to take leadership in the global climate effort. "The good news is that many of the solutions that we need [for energy security and combatting climate change] are interlinked and we know what we need to do. We need to deploy more renewables fast; we need to become more energy efficient fast," said Jørgensen.

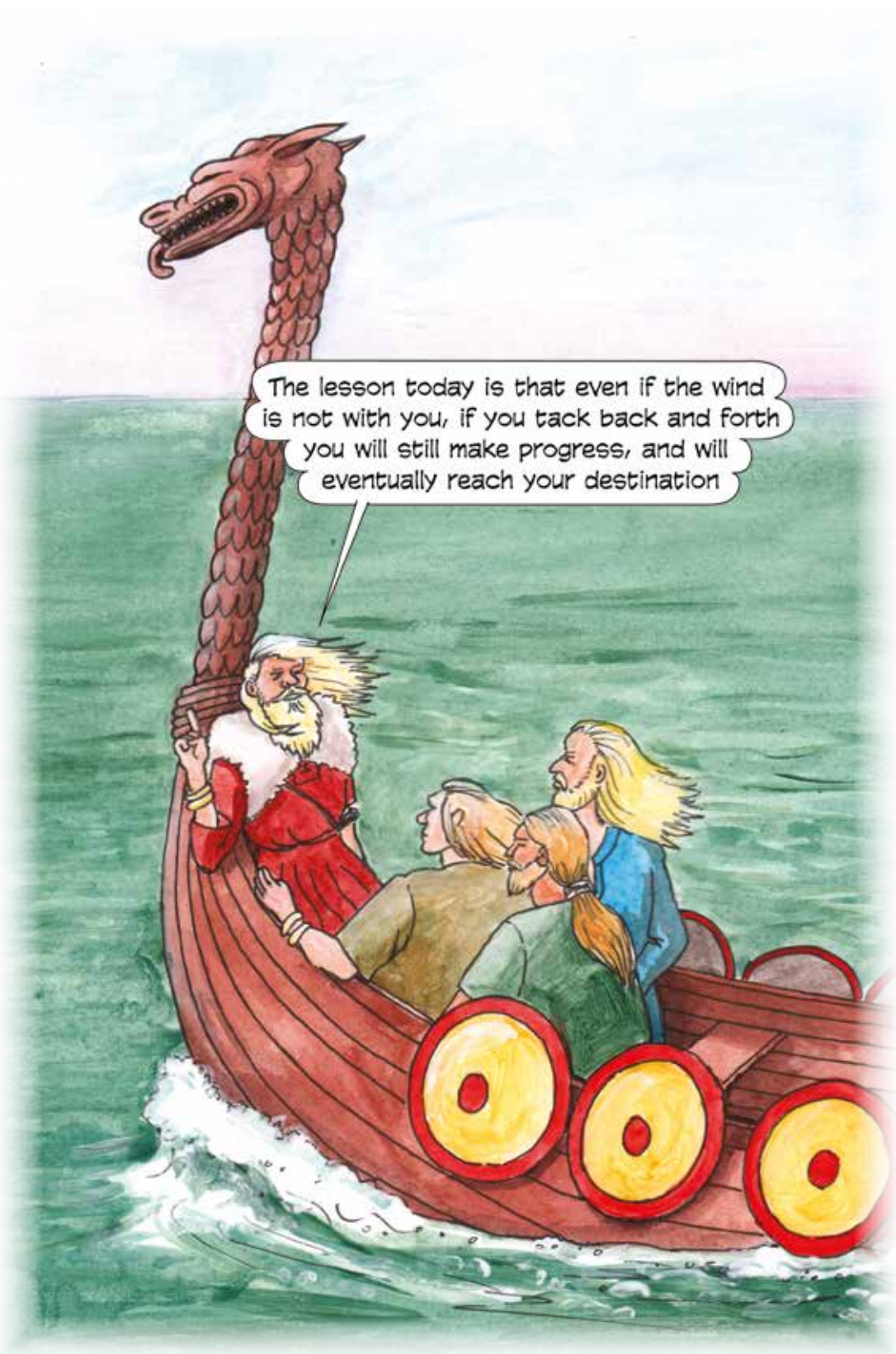
Electrification is seen by many as being at the core of the energy transformation. Although energy has become a real political football, it is fairly safe to say that the transformation, at least in the power sector, is common sense. The best way to bring down electricity prices – while improving energy security and addressing climate change – is to deploy more renewables.

"The IEA has estimated that from 2021-23, the EU saved €100 billion – more than €33 billion per year by deploying renewables," said Jørgensen. "And since then, we have managed to increase how much renewables we bring online every year. Last year we did 78 GW, this year it will probably be 89 GW. So, it is going in the right direction, but we need to do it faster."

A recent report by REN21 highlighted that last year, global renewable power capacity increased 18 per cent, adding a record-breaking 741 GW. But even at the record growth levels of 2024, projections indicate that the world will fall 800 GW short of the internationally agreed target calling for a tripling of renewable power by 2030. Worryingly, the report pointed to a slowdown in solar additions and only a marginal increase in new wind capacity.

Jørgensen had opened his address, saying: "We have a lot to learn from the Vikings right now." He closed story with another nod to his ancestors. "Do you know how they managed to reach America before Columbus? It was not because of the big muscles, or even because of the ships. It was because of the sails. They were very difficult to make – the sails took just as long to build as a boat and were just as expensive. But it was the sails that took them over those long distances because they exploited the wind. We need to exploit the wind, and solar – the forces of nature – turn them into electrons and use it to power our societies."

In these difficult times, the EU would be well advised to keep its eyes on the prize and its back to the wind.




*Cartoon by Jem Soar*