WORLD POWER SYSTEMS REVIEW

15 July 2025

1 July 2025

Final report from the review into the North Hyde Substation outage

We've published our final report from the review into the North Hyde Substation outage which took place late on 20 March. The consequence was the loss of all supplies from North Hyde 275kV substation, impacting thousands of customers, including Heathrow Airport.

The impacts beyond Heathrow were significant, affecting essential services including road, rail and Hillingdon Hospital, as well as thousands of homes and businesses. Residents living near the substation had to be evacuated with some needing alternative accommodation. Three data centres lost power but were able to continue operations through the use of backup generators. Customer restoration occurred within expected timeframes: by 12:24 all except two of the 66,919 domestic and commercial customers directly supplied by SSEN Distribution had power restored following the re-energisation of North Hyde 66KV. Information seen by this review suggests communication between SSEN Distribution and its domestic customers was effective and timely.

Using forensic analysis from both National Grid Electricity Transmission and London Fire Brigade, this review has seen evidence that a catastrophic failure on one of the transformer's high voltage bushings at National Grid Electricity Transmission's 275kV substation caused the transformer to catch fire.

This was most likely caused by moisture entering the bushing, causing an electrical fault. An elevated moisture reading in the bushing had been detected in oil samples taken in July 2018 but mitigating actions appropriate to its severity were not implemented. National Grid Electricity Transmission has since initiated an end-to-end review of its oil sampling process, with a view to ensuring that it is robust. In addition, they are undertaking a review and assurance exercise of all recorded oil samples to ensure all appropriate actions have been taken where required.

This review found that the design and configuration of Heathrow Airport's private internal electrical distribution network meant that the loss of one of its three independent supply points would result in the loss of power to some of the airport's operationally critical systems. Heathrow Airport Limited have a plan to deal with this which includes reconfiguring their internal electrical distribution network to take power from the other two supply points. The process to enact this is estimated to take 10-12 hours, according to Heathrow Airport Limited's plans. This was less well-known by those outside the technical team within Heathrow Airport Limited, and it was not known to the energy companies.

The incident at North Hyde on 20 March caused a loss of supply to one of Heathrow Airport's supply points. This resulted in the airport closing for most of 21 March so that its internal network could be reconfigured to take power from the two other operational supply points and to perform safety checks before reopening for some repositioning and repatriation flights. Heathrow reopened for some flights late on 21 March and was fully operational from 22 March.

The review also found that energy network operators are not generally aware whether customers connected to their networks are Critical National Infrastructure (CNI), and there is currently no explicit cross-sector requirement on CNI operators to ensure appropriate continuity of operations in response to power disruption. CNI facilities also have no priority within the electricity legal or regulatory framework. Work is underway, led by government, to identify and analyse cross-sector CNI interdependencies.

This review makes a number of recommendations to reduce the likelihood and impact of a similar event in the future and serves as a starting point for an opportunity to make cross

sector improvements for the benefit of Great Britain and its energy resilience. The 12 recommendations set out in the report correspond to the following key themes:

- Asset management systems
- Maintenance actions
- Fire and asset risk assessments
- Site accessibility for emergency services
- Visibility of total site risk
- Electricity Safety, Quality and Continuity Regulations (ESQCR)
- Incident management protocols
- Resilience of infrastructure with multiple supply points
- Energy resilience of CNI

Fintan Slye, Chief Executive Officer, NESO said:

"NESO's final report into the North Hyde Substation outage sets out the root cause and a clear set of recommendations to further improve the resilience of Great Britain's energy system, and the resilience of its critical national infrastructure.

"The power outage and closure of Heathrow airport were hugely disruptive and our report seeks to improve the way parties plan for and respond to these incidents, building on the underlying resilience of our energy system.

"All parties involved are focussed on working together to deliver these important recommendations and much of this work is already underway with NESO's full support.

"I would like to thank all the organisations who have provided evidence to the review for their cooperation."

NESO
http://www.neso.energy/

1 July 2025

Ofgem approves initial £24 billion to operate and maintain critical gas networks and upgrade Britain's electricity supergrid

Ofgem has today (1 July) given the provisional green light to an initial £24bn investment programme to enhance energy security while enabling the transmission of more clean energy from renewable sources. Over £15bn will ensure the continued safe operation of Great Britain's gas transmission and distribution networks, making sure they deliver safe and secure supplies of gas to households and businesses across the UK.

An initial £8.9bn investment is being committed to Britain's high-voltage electricity network, with a further £1.3bn ready to go – to power the biggest expansion of the electricity grid since the 1960s. The draft settlement is the first step in an estimated £80bn investment programme boosting electricity network capacity, protecting UK households from the volatile international gas markets that caused the massive fluctuations in energy bills in recent years. The investment in our grid, which will rise to around four times the current spending levels, will allow for 80 transmission projects and all associated works right across the country to be completed within five years. This will significantly increase the grid's capacity, through new power lines, substations and other technologies, to handle the flow of electricity from new renewable sources.

These projects, which are also vital for driving growth, will upgrade over 4400km of overhead lines and deliver 3500km of new circuits, including investments offshore, doubling the total build in the last 10 years. It means up to 126 GW of clean power generation will be connected to the grid by 2030 alongside additional flexible storage and technologies, enough to power millions of households with clean, stable and secure energy. Over the last six months, the energy regulator has scrutinised spending proposals from the electricity transmission owners, National Gas, and the gas distribution companies, to ensure they

represent the best value for billpayers. Strict emphasis has been put on delivery targets while pushing companies to be as efficient as possible, and where necessary, bids that we do not think are in the best interests of consumers have been turned down. This scrutiny has resulted in potential reductions of more than £8bn, equivalent to around 26% of the initial proposals put forward.

Ofgem CEO Jonathan Brearley said: "Britain's reliance on imported gas has left us at the mercy of volatile international gas prices which during the energy crisis would have caused bills to rise as high as £4000 for an average household without government support. Even today the price cap can move up or down by hundreds of pounds with little we can do about it. This record investment will deliver a homegrown energy system that is better for Britain and better for customers. It will ensure the system has greater resilience against shocks from volatile gas prices we don't control. These 80 projects are a long-term insurance policy against threats to Britain's energy security and the instability of prices. By bringing online dozens of homegrown, renewable generation sites and modernising our energy system to the one we will need in the future we can boost growth and give ourselves more control over prices too. Doing nothing is not an option and will cost consumers more – this is critical national infrastructure. The sooner we build the network we need, and invest to strengthen our resilience, the lower the cost for bill payers will be in the future. However, this can't be done at any price, which is why we have built in cost controls and negotiated a fair deal for both investors and consumers. And we won't hesitate to intervene if network companies don't deliver on time and on budget."

This critical investment covering upgrade and expansion of the electricity grid, maintenance and also gas depreciation in its entirety is estimated to increase network charges on bills by £104 by 2031. This includes £30 for the gas networks and £74 for the electricity grid. Around half of this investment, including £30 on gas networks, is needed for the gas and electricity grids to maintain safety, resilience, and reliability. The remainder, around £52, will be used to expand the capacity of the electricity grid to deal with the rising demands of a more electrified energy system, as we move away from gas. This investment (£52) alone is expected to lead to around £80 of savings for consumers by 2031 compared to not investing by reducing constraint costs (money paid to wind farms to switch off because the grid is unable to transmit their power output) and making better use of our clean renewable energy so we are not having to pay for expensive gas plants to serve demand. So bills are expected to be around £30 lower than they would have been had this investment in upgrading and expanding the electricity network not been made.

Taken all together the net cost of these investments on bills amounts to around £24 a year, or less than 40p per week, by March 2031, although this does not take into account the overall benefits of reaching clean power that can reduce bills. The £30 increase in gas network charges on bills by 2031 would be necessary in all scenarios in order to maintain safety, resilience, and reliability in our gas networks. These costs should also reduce even further as the benefits from the investment fully materialize through the 2030s. The draft determinations are now published for consultation with final decisions made by the end of 2025.

Ofgem
http://www.ofgem.gov.uk/

3 July 2025

Largest UK solar plant goes online

The largest UK solar plant to date is up and running. Construction is complete at the 373 MW Cleve Hill Solar Park and commercial operations have begun. The project is now able to export 100% of its capacity to the grid, more than four times the electricity exported

by the next largest operational UK project, according to project developer Quinbrook. Cleve Hill was the first solar and battery energy storage system (BESS) project to be granted consent through the UK government's Nationally Significant Infrastructure Project process in 2020 – its 150 MW/300 MWh co-located BESS remains under construction.

The project has made headlines throughout its development. In 2022, Cleve Hill secured the largest award for a solar project in the fourth allocation round of the UK government's Contracts for Difference (CfD) scheme. The project also broke records in fall 2024 when Quinbrook signed the largest UK PPA to date with supermarket retailer Tesco for 65% of the site's capacity, as well as a 10-year route-to-market agreement with Shell Energy Europe Limited, which will see the energy giant trade the remaining 35% capacity contracted through Cleve Hill's CfD. Financial backing for the project includes a GBP 218.5 million ($299.8 million) term loan and a GBP 20 million VAT facility with Lloyds and NatWest, which Quinbrook said makes it the largest solar and storage project financing undertaken in the United Kingdom to date.

Cleve Hill was initially developed as a joint enterprise between Wirsol and Hive Energy, before Quinbrook acquired the project in 2021. Construction started at the site in early 2023. In a press release, Keith Gains, managing director and UK regional leader for Quinbrook, described Cleve Hill reaching commercial operations as a "major technical, construction and financial achievement four our teams, our partners and investors."

Pv-magazine
http://www.pv-magazine.com/

3 July 2025

Ethiopia's PM Abiy Ahmed says mega dam GERD on the Nile 'now complete'

Ethiopia's Prime Minister Abiy Ahmed has said a multibillion-dollar mega dam on the Blue Nile, which has caused deep consternation to downstream neighbours Egypt and Sudan over its effect on their water supply, is complete and will be officially inaugurated in September.

Of that regional concern over the Grand Ethiopian Renaissance Dam (GERD), Abiy said on Thursday in an address to parliament: "To our neighbours downstream – Egypt and Sudan – our message is clear: the Renaissance Dam is not a threat, but a shared opportunity. The energy and development it will generate stand to uplift not just Ethiopia."

Egypt and Sudan have expressed concerns about GERD's operation, fearing it could threaten their access to vital Nile waters. Negotiations to reach a three-way agreement with Ethiopia have failed to make a breakthrough.

Egypt, which is already suffering from severe water scarcity, sees the dam as an existential threat, as the country relies on the Nile for 97 percent of its water needs. The GERD, launched in 2011 with a $4bn budget, is considered Africa's largest hydroelectric project, stretching 1.8km (about one mile) wide and 145 metres (475ft) high. Ethiopia says the dam, located on the Blue Nile, a major tributary of the Nile River, is vital for its electrification programme. Ethiopia first began generating electricity at the project, located in the northwest of the country, about 30km (20 miles) from the border with Sudan, in February 2022.

At full capacity, the huge dam can hold as much as 74 billion cubic metres (2,590 cubic feet) of water and could generate more than 5,000 megawatts of power – more than double Ethiopia's current output. The east African nation is the second most populous on the continent, with a rapidly growing population estimated at 130 million, and has growing electricity needs.

About half of its people live without electricity, according to estimates released this year by the World Bank. Earlier this week, Egyptian President Abdel Fattah el-Sisi and

Sudan's leader Abdel Fattah al-Burhan met and "stressed their rejection of any unilateral measures in the Blue Nile Basin". According to a statement by Sisi's spokesman, the two are committed to "safeguard water security" in the region.

But Abiy said Ethiopia is "willing to engage constructively", adding that the project will "not come at the expense" of either Egypt or Sudan. "We believe in shared progress, shared energy, and shared water," he said. "Prosperity for one should mean prosperity for all."

Aljazeera
http://www.aljazeera.com/

3 July 2025

Trump signs budget bill slashing clean energy tax credits

President Donald Trump signed the Republican tax and policy bill into law in a July 4 ceremony, making significant cuts to the Inflation Reduction Act that are expected to have negative impacts for the wind and solar industries in particular.

Trump commented during the signing ceremony that "coal is back."

"China is right now building 68 coal-generating plants, and we're putting up wind," Trump said. "Wind – it doesn't work, I'll tell you."

While China is the world's largest producer and consumer of coal, the country also dominates the U.S. in wind turbine capacity and plans to deploy around 140 GW of wind capacity this year alone. The Energy Information Administration projects the U.S. will add 7.7 GW in the same timeframe.

The Republican budget megabill, which makes steep cuts to the Inflation Reduction Act's clean energy tax credits, now heads to President Donald Trump's desk after passing both houses of Congress. The House passed the Senate's version of the bill 218-214 on Thursday, after Republicans debated through the night and House Minority Leader Hakeem Jeffries, D-N.Y., used the leadership prerogative of a "magic minute" to speak in opposition to the bill for a record-breaking 8 hours and 44 minutes.

Jeffries at one point referenced a June letter 13 House Republicans sent to the Senate, in which the Republicans stated they were "proud to have worked to ensure that the bill did not include a full repeal of the clean energy tax credits, [but] remain deeply concerned by several provisions" cutting back those credits the House version did include. "Every single one of these signatories voted for a House bill that undermines the clean energy economy, noted that it would hurt their own constituents, voted for the bill anyway, then begged the Senate to make a difference," Jeffries said. "That is not how we should be legislating in the United States House of Representatives … It limped out of the House by a single vote, so every single signatory on this letter could have stopped the bill."

The bill restricts the ability of projects to qualify for the tech-neutral clean electricity 45Y production tax credit and 48E investment tax credit, shortens the timeline for those credits, and ends the 25D residential solar credit after this year. The 25E, 30D, 30C and 45W electric vehicle credits will terminate after Sept. 30. While clean energy advocates and congressional Democrats maintain that the final version of the bill goes too far in slashing IRA credits, some Republicans wanted to see more significant cuts.

Utility Dive
http://www.utilitydive.com/

3 July 2025

Malaysia PM Says $10 Bln Committed to National Grid Upgrade

A record-breaking heat wave in Europe is warming up the river water that some nuclear power plants use for cooling, prompting operators to shut down at least three reactors at two separate sites.

Late on Sunday, operators shut down one of the two reactors at the Golfech Nuclear Power Plant in southern France after forecasts that the Garonne River, from which it draws water, could top 28 degrees Celsius, or roughly 82 degrees Fahrenheit. The Beznau Nuclear Power Plant in Switzerland, built along the Aare River near the country's northern border, followed suit, shutting down one of its reactors on Tuesday and the other on Wednesday.

Both plants are designed to keep their reactors at safe temperatures by cooling them with river water, which is then pumped back out at higher temperatures. Regulations in both countries require operators to reduce energy production when the rivers get too hot, in order to protect downstream environments. The operator of the Beznau plant, Axpo, said that "excessive warming of the already-warm river water during hot summer periods is to be prevented in order not to place additional strain on flora and fauna." In a statement, Axpo confirmed that a limit of 25 degrees Celsius had been exceeded for several days in a row.

Other river-cooled nuclear reactors, including one at the Bugey plant in southeastern France, have reduced their power generation. Temperatures across Europe have regularly exceeded 100 degrees Fahrenheit this week, though forecasters say relief is on the way over the weekend.

When most reactors in the United States and Europe were built, mainly from the 1960s into the 1980s, they were not designed with climate change in mind. As global temperatures have risen, precautionary power plant shutdowns because of heat have increased in frequency.

While energy losses are typically low, a 2024 report by Cour des Comptes, an administrative court in France that audits and helps to regulate government spending, found that the country may see the amount of electricity lost because of climate-related shutdowns triple or quadruple by 2050.

Nuclear power is France's top source of energy, with the country's 18 nuclear plants providing nearly two-thirds of the country's electricity needs. In Switzerland, nuclear power accounts for roughly a third of all energy consumed. Neither this week's shutdown in France nor the one in Switzerland was expected to have significant effects on power generation. "The Swiss power grid remains stable," an Axpo statement said. "Other generation capacities, particularly hydropower plants, are able to compensate for the temporary shutdown of the Beznau Nuclear Power Plant." Local reports indicated that the French grid operator also expected to have sufficient supply to meet energy demand.

In 2022, however, a heat wave, coupled with a drop in generating capacity, prompted France's nuclear authority to temporarily relax its rules regulating the maximum downstream temperature of water discharge. Similarly, in Switzerland, the Beznau plant continued operating during that year's hot temperatures. "This is the first time that the plant has had to be shut down due to water temperature," a representative of the Swiss Federal Office of Energy said. "In 2022, despite excessively warm water in the Aare River, the plant continued to produce electricity because the electricity supply situation did not allow for a shutdown." The Swiss energy office added that a temporary reduction in production had occurred "several times in recent years." All nuclear power plants take in and release water, but the amount varies based on their design.

Many plants and animals are sensitive to thermal pollution, which occurs when human activity changes the temperature of natural bodies of water, like rivers. Warmer water holds less oxygen and becomes more susceptible to algal blooms. When power plants suddenly begin operating or turn off, fish can be killed from the sudden changes in temperature.

Effects on wildlife aren't the only risk that heat waves pose to nuclear power plants. If the water they take in is too hot to begin with, it may not be effective in cooling reactors, making operation unsafe. In 2012, a nuclear plant in Waterford, Conn., was shut down when the surrounding bay became too hot to keep the site cool.

According to Marcus Amme, a member of the European Nuclear Society's High Scientific Council, all of Switzerland's nuclear power plants have safety certifications, required by Switzerland's nuclear regulatory authority, that confirm their facilities can withstand heat waves with a maximum air temperature of at least 40 degrees Celsius, or 104 degrees Fahrenheit.

NY Times
http://www.nytimes.com/

4 July 2025

ČEPS dealt with a major power outage and restored supplies within hours

Shortly before 12:00 today, 4 July 2025, the V411 transmission line was disconnected due to a phase conductor falling. This resulted in an outage of the sixth unit of the Ledvice power plant. These outages caused the V208 line to become overloaded, resulting in the disconnection of the V401 line at the Krasíkov substation. Subsequently, part of the transmission system was disconnected, rendering this part inoperable. The event affected nine transmission system substations, leading to power outages in the Liberec, Ústí nad Labem, Hradec Králové, and Central Bohemia regions, as well as parts of Prague.

Electricity production dropped by approximately 1,500 MW, while consumption decreased by around 2,700 MW. Based on Section 54 of the Czech Energy Act (No. 458/2000 Coll.), the ČEPS dispatch center declared a state of emergency for the entire Czech Republic, effective 4 July 2025, at 12:00. ČEPS power engineers immediately began working to restore the electricity supply.

By 14:00, the transmission system substations supplying the Prague area (Malešice, Chodov, Čechy Střed and Řeporyje) were back in operation. By 15:00, operation of all the remaining affected substations was also restored. Repairs to the V411 line began immediately and were completed shortly after 22:00. Following the successful restoration of the system, the ČEPS dispatch center terminated the state of emergency for the entire Czech Republic effective at midnight on 4 July 2025.

CEPS
http://www.ceps.cz/

8 July 2025

DOE: Load growth, plant retirements could drive 100x increase in blackouts by 2030

Blackouts could increase by 100 times in 2030, relative to today's averages, if the United States continues to shutter power plants and fails to add additional firm capacity amid rising demand, the U.S. Department of Energy said in a Monday report.

The report includes a uniform methodology to identify regions at risk of power outages and guide federal reliability "interventions," DOE said. The report was required by President Donald Trump's April executive order which directed the agency to respond to an "energy emergency" he declared in January.

But clean energy advocates say the report appears to exaggerate the risks, and undercount the contributions of wind, solar and battery storage resources. "If the analysis is overly pessimistic about advanced energy technologies and the future of the grid, consumers will end up paying too much for resources we no longer need," Caitlin Marquis, managing director at Advanced Energy United, said in an email.

DOE's report assumes 104 GW of plant retirements by 2030, alongside the addition of 210 GW of new generation — but only 22 GW of the additions will be "firm, reliable, dispatchable generation. Modeling shows annual outage hours could increase from single digits today to more than 800 hours per year. Such a surge would leave millions of

households and businesses vulnerable," the report said. "We must renew a focus on firm generation and continue to reverse radical green ideology in order to address this risk."

Average Loss of Load Hours could jump from 8.1 annually to 817.7 under some scenarios, the report said. It estimated an additional 100 GW of new peak capacity is needed by 2030 — of which, 50 GW is attributable to data centers.

"Data centers can be built in 18 months, but it takes more than three times as long to add new generation required to service those data centers," DOE said in a fact sheet accompanying the report. Even assuming no retirements, DOE said its model found outage risks in several regions rise more than 30-fold, "proving the queue alone cannot close the dependable-capacity deficit."

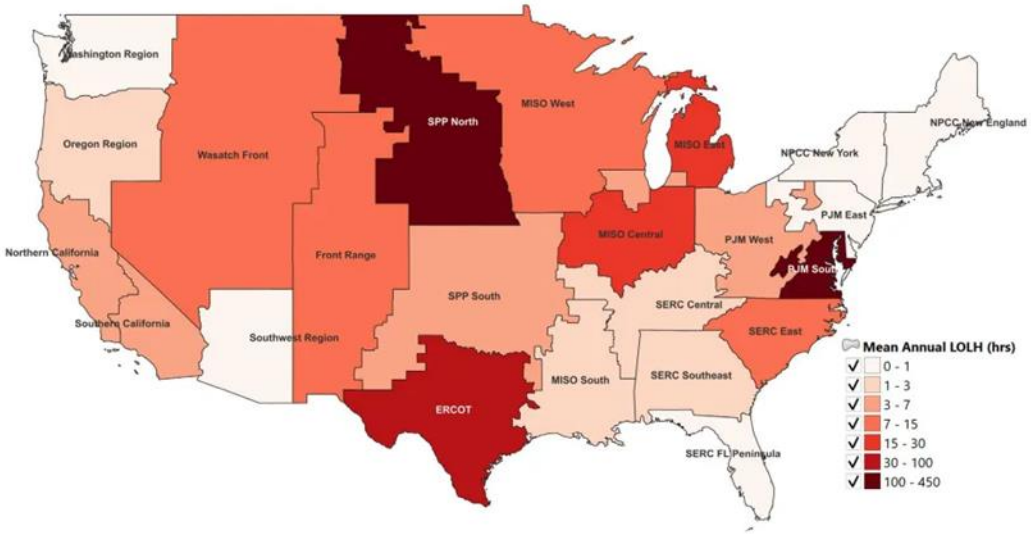


Figure 1. Mean Annual LOLH by Region (2030) – Plant Closures

"This report affirms what we already know: The United States cannot afford to continue down the unstable and dangerous path of energy subtraction previous leaders pursued, forcing the closure of baseload power sources like coal and natural gas," Energy Secretary Chris Wright said in a statement.

America's Power, which represents the coal sector, praised the report. The analysis "is further proof that the premature retirement of coal plants is putting the reliability of the U.S. electricity grid at risk," America's Power President and CEO Michelle Bloodworth said in a statement. "Baseload power sources like coal are being replaced by less reliable sources like wind and solar. These renewables are not capable of meeting the constant 24/7 electricity demands required for AI, data centers, and other advanced technologies."

The report includes a methodology that DOE says it will use to identify which generation resources within a region are critical to system reliability. The methodology uses hourly datasets for load, generation and interregional transfer capabilities for the 23 U.S. electric subregions. DOE said it developed its outage risk estimates by running simulations using 12 different years of historical weather, with every hour based on actual data for wind, solar, load and thermal availability. Clean energy advocates say they have doubts about the agency's methodology. DOE's study "appears to exaggerate the risk of blackouts and undervalue the contributions of entire resource classes, like wind, solar, and battery storage," AEU's Marquis said.

"We are working quickly to dig into the numbers to unpack how DOE reached its conclusions," Marquis said. "But it's troubling that the report was not subject to public input and scrutiny, especially since the Executive Order that mandated it calls for it to be used to identify power plants that should be retained for reliability." The methodology "is another

attempt to push the false narrative that our country's energy future depends upon decades-old coal- and gas-plants, rather than clean renewables," Sierra Club Senior Attorney Greg Wannier said in an email.

The Federal Energy Regulatory Commission and the states "are already well equipped to meet any projected resource needs through the existing regulatory process, which ensures that electricity demand is reliably met at the least public cost," Wannier said. "Any effort by DOE to override this process to forcibly keep coal plants online past their planned retirements would be an extraordinary and unlawful overreach of its regulatory authority." In May, DOE issued an emergency order under section 202(c) of the Federal Power Act, directing Consumers Energy to delay, by about three months, shutting down a 1,560-MW, coal-fired power plant in Michigan. Earthjustice and other groups have asked the agency for rehearing, and said they may go to the courts to challenge the order.

"Determining the reserve margin and 'critical' resources are complex decisions with severe health and economic consequences that Congress rightly entrusted FERC to oversee using a robust public adjudication process," said Christine Powell, deputy managing attorney for Earthjustice's clean energy program. DOE's methodology "attempts to usurp that process, and would impose billions of dollars and harmful pollutants on consumers without any corresponding benefits for anyone except for the coal industry."

DOE's analysis "doesn't support President Trump's strategy of using emergency declarations to stop power plants from carrying through with their plans to retire," said Jennifer Danis, federal energy policy director at the Institute for Policy Integrity.

"The Trump administration's own study has found that no present emergency exists in the two regions where it already issued 202(c) orders," Danis said. "Reforms may be needed to ensure better planning for future resource adequacy to power AI, but they should focus on improving existing markets and planning standards, as well as speeding up new resource interconnection, rather than forcing customers to pay to keep old, inefficient plants online."

Utility Dive
http://www.utilitydive.com/

8 July 2025

Severe Storm Batters Hungary, Biggest Power Outage in 30 Years

Due to Monday's storm, around 2,200 firefighters were called out by early evening, mainly in Bács-Kiskun, Békés, Csongrád-Csanád, Hajdú-Bihar, Pest, and Veszprém counties, as well as in Budapest, stated Dániel Mukics, spokesperson for the National Directorate General for Disaster Management.

In most cases, fallen trees and broken branches were removed from roads, buildings, railroad tracks, and cars. Several buildings were damaged or left without power in the largest power outage of the past three decades. In Budapest, for example, a tree fell on a transformer station on Margaret Island, and the wind tore off 100 square meters of the roof of the National Széchényi Library.

Four hundred emergency calls were received in Csongrád-Csanád County, mainly from Szeged and Hódmezővásárhely (both in southeastern Hungary). In Fejér County, the most damage was in Székesfehérvár (central Hungary) and the surrounding area, where a tree fell on railway tracks and tore down the overhead power lines. A high-voltage power line broke next to the M7 motorway, causing a fire and traffic disruption.

Two hundred and fifty reports were received in Bács-Kiskun County, where trees fell on houses in several places and the wind damaged a roof structure in Soltszentimre (southern Hungary). Nearly 300 reports were registered in Szabolcs-Szatmár-Bereg County,

with power outages and road obstructions in several towns. Firefighters are working continuously to repair the damage.

"Today, a powerful and widespread storm has hit Hungary. The most significant damage occurred in northern Hungary, around Lake Balaton, in the Buda agglomeration and in the Great Plain. Hundreds of thousands of households are currently without power," Prime Minister Viktor Orbán said on his Facebook page on Monday evening.

The Prime Minister emphasized that they had been in contact with the leaders involved in the restoration efforts throughout the evening. "Disaster management, firefighters, MÁV (national railway), Magyar Közút (Hungarian Public Roads), and employees of companies responsible for power supply will be working throughout the night and tomorrow to remove roadblocks as quickly as possible, restore public services, and ensure that public transport can resume," Orbán stated.

Hungary Today
http://hungarytoday.hu/

9 July 2025

SPP publishes report on April 26, 2025 load-shed event

SPP published its comprehensive report on the April 26 load-shed event in Northwest Louisiana that analyzes the event, identifies the main causes that led to the need to shed load, examines how SPP responded during and after the event, and provides actionable recommendations and improvements to prevent similar incidents from occurring in the future.

"We recognize the impact the April 26 power outages had on communities in Northwest Louisiana. Our detailed analysis has identified specific areas for improvement, and we are actively working with the affected utilities to address those areas. We remain firmly committed to supporting our member companies in keeping communities reliably powered."

The April 26 Load Shed Report is available on SPP.org now.

SPP
http://www.spp.org/

9 July 2025

Solar power reduced New England power grid demand by 5% in 2024

Solar power installations that are not directly connected to the region's grid reduced the amount of electricity consumed by New Englanders in 2024 by about 5%.

Photovoltaic (PV) systems that are considered "behind all meters" last year reduced demand on New England's bulk electric system by an estimated 5,266 gigawatt-hours (GWh)—enough electric energy to power about 600,000 homes for a year.

The region consumed roughly 117,000 GWh of grid electricity in 2024. Without demand reductions from behind-all-meters PV, consumption from the grid would have been about 122,000 GWh.

Behind-all-meters PV includes rooftop and other solar installations connected to local electricity distribution systems, rather than the regional transmission system. These resources do not participate in the region's wholesale electricity markets and are not monitored or dispatched by ISO New England. However, the ISO gathers data from distribution companies and other sources in order to estimate their current capacity and output, and to forecast their capacity and output in the future.

The ISO began tracking behind-all-meters PV production in 2014, when solar installations reduced grid demand by an estimated 519 GWh. The 2024 results show the region's behind-all-meters PV output has increased by a factor of 10 over the last a decade.

Between now and 2034, annual energy output from these resources is expected to more than double.

In terms of nameplate capacity, behind-all-meters PV made up 53% of New England's solar fleet in 2024.1 That fleet also includes other types of solar resources that participate in the markets and provide verified production data to the ISO, either in real time or later.

The ISO in 2022 began producing an annual tally of the capacity of and energy output from all solar resources in the region. In that time, the region's total solar capacity has grown 40%, while solar generation has increased 30%.

ISO Newswire
http://isonewswire.com/

10 July 2025

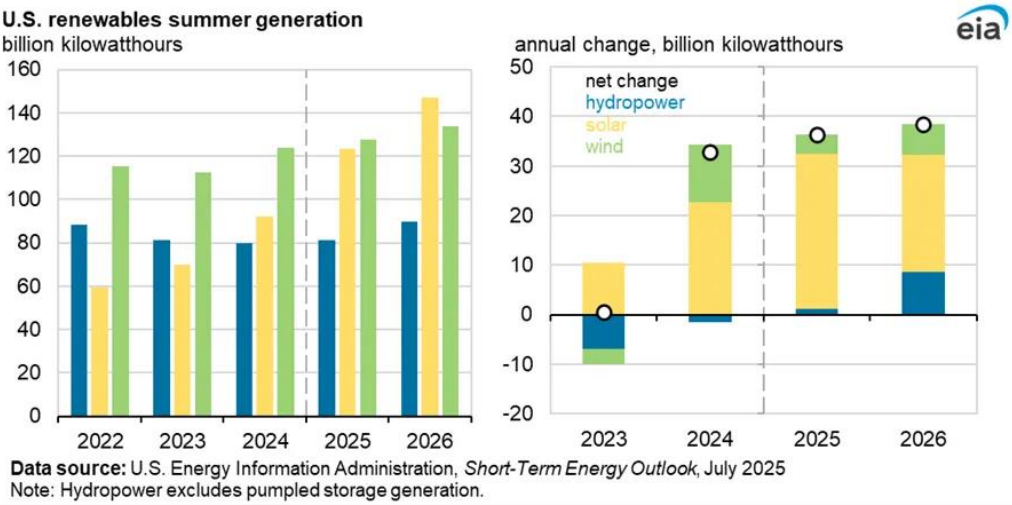
EIA: Solar generation expected to rise by a third this summer

Despite open hostility from the Trump administration toward renewable sources of power, solar in particular is expected to be a larger part of the energy mix this summer and going forward, the U.S. Energy Information Administration said in a Tuesday report.

The electric power sector will generate 124 billion kWh from solar this summer, 34% more than it did during the June-September 2024 period, according to EIA's Short Term Energy Outlook.

"Solar generation has grown quickly in the past few years as more capacity is installed, a trend we expect to continue this summer," EIA said. "By summer 2026, we forecast solar generation will grow by another 19% to 147 BkWh, which means solar would surpass wind to become the leading source of renewables generation during the summer."

Wind is expected to generate roughly 130 BkWh this summer, according to EIA. Growing solar has displaced some gas generation in some areas, EIA noted. "With higher generation from renewables and increased fuel costs, we expect U.S. natural gas generation will fall by 4% in 2025 followed by an increase of 2% in 2026," it said.



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, July 2025
Note: Hydropower excludes pumped storage generation.

EIA's analysis comes as the White House has taken steps to hamstring solar and wind development, while trying to incentivize coal and gas. On Monday, President Donald Trump issued an executive order seeking additional restrictions on wind and solar, even as the renewables sector saw the 45Y and 48E clean energy tax credits slashed by budget legislation signed into law on July 4.

"Unreliable wind and solar energy sources displace affordable, dispatchable energy, compromise America's electric grid, and denigrate the beauty of our Nation's natural landscape," according to a fact sheet published Monday by the White House. But experts say the Trump administration is undervaluing the contributions of variable resources to grid

reliability. On Monday, the Department of Energy published a report concluding blackouts could increase by 100 times in 2030, relative to today's averages, largely due to rising demand, generation retirements and higher penetrations of renewables.

DOE's study "appears to exaggerate the risk of blackouts and undervalue the contributions of entire resource classes, like wind, solar, and battery storage," said Caitlin Marquis, managing director at Advanced Energy United.

Utility Dive
http://www.utilitydive.com/

10 July 2025

SEK Provides €800M Loan for Eastern Green Link 2 Project

The Swedish Export Credit Corporation (SEK) has finalized a €800 million loan agreement with National Grid Electricity Transmission to support the Eastern Green Link 2 (EGL2) project, a high-voltage direct current (HVDC) subsea transmission initiative connecting Scotland and England. This project aligns with the UK's Net Zero strategy to decarbonize its electricity network.

EGL2, a joint venture between National Grid Electricity Transmission and SSEN Transmission, involves a 505km subsea cable linking Peterhead in Aberdeenshire to Drax in North Yorkshire. The 2GW HVDC cable will enable electricity transfer capable of powering two million homes upon completion. The project, with an estimated total cost of €5 billion, is set to be operational by 2029, following final approval from Ofgem in August 2024.

SEK's financing facilitates Swedish and European exports, including contributions from Hitachi Energy, to National Grid's portion of the project. The loan, classified as a Green Loan, adheres to international standards for environmental sustainability and supports global climate goals. SEK's funding is backed by EKN's Green Export Credit Guarantee and involves collaboration with Société Générale and BNP Paribas.

Marica Bixo, SEK's Global Trade and Export Finance Director, stated: "This is a strategically important investment that strengthens the UK's renewable energy infrastructure. We are proud to contribute by financing Swedish technology with global impact. Green and sustainable financing is a priority area for us, and this project clearly supports the transition to a low-carbon economy."

In February 2024, Prysmian Group, an Italian cable solutions provider, secured a €1.9 billion contract for EGL2. The agreement covers the design, manufacturing, installation, testing, and commissioning of the HVDC cable system essential for the project's electricity transmission.

The EGL2 project enhances the UK's renewable energy infrastructure by enabling efficient power transfer between regions, supporting the transition to sustainable energy sources. By facilitating the integration of renewable energy, the initiative contributes to energy security and environmental goals, benefiting millions of households while promoting advanced technology exports from Sweden and Europe.

NS Energy
http://www.nsenergybusiness.com/

13 July 2025

China completes "power expressway loop" around southern Xinjiang desert

China has finished construction of a 4,197-km extra-high voltage power transmission loop around the Tarim Basin, home to the country's largest desert, marking a major infrastructure milestone in southern Xinjiang Uygur Autonomous Region.

The final section of the 750-kilovolt (kV) loop, now the country's largest of its kind, was connected on Sunday, capping a 15-year project involving nine substations and nearly

10,000 steel towers, according to a subsidiary of State Grid Xinjiang Electric Power Co., Ltd., which constructed the project.

Dubbed a "power expressway loop," the project is expected to become fully operational by November 2025, the company said. Tarim Basin is home to the Taklimakan Desert, the world's second-largest drifting desert. For centuries, relentless sandstorms have battered the oases of southern Xinjiang, isolating them not only in terms of distance but also from the prospects of development.

Officials and experts say the project could put southern Xinjiang on a fast track to development and boost new energy supply nationwide. The transmission line passes through extreme terrain, from the shifting sands of the desert to the high altitudes of the Kunlun Mountains. Roads were built on the fly to transport materials across 50-meter-high dunes and in strong desert winds, while in the mountainous sections, cableways were used to haul nearly 3,000 tonnes of tower components, said Li Jun, a manager with the company.

To minimize the project's environmental impact, particularly on native desert plants such as populus euphratica, engineers adjusted tower heights, made minor route modifications, and will lay more than 480,000 square meters of straw checkerboard, a widely used method in China to stabilize sand, Li explained.

As of the end of May, installed new energy capacity around the Tarim Basin had reached 36.69 million kilowatts -- driven by abundant solar and wind resources.

The new grid loop allows electricity from wind, solar, hydro and thermal sources to be transmitted in less than a second, stabilizing the power supply for industries and households across southern Xinjiang, including the prefectures of Kashgar and Hotan. Electricity consumption in southern Xinjiang rose to 73.7 billion kilowatt-hours in 2024, nearly seven times the level in 2010, with peak power load projected to reach 14.45 million kilowatts this year, up 14.29 percent from 2024, State Grid Xinjiang Electric Power Co., Ltd. has revealed.

This transmission loop was not part of the original blueprint when construction began in 2010. But surging power demand, spurred by rapid growth in sectors such as energy, mining, agriculture and tourism, prompted the integration of multiple segments into a full ring. "The 750-kV power loop is like timely rain for southern Xinjiang, where the existing 220-kV transmission lines could no longer meet the growing demands of development," said Dilshat, an official from Qiemo County, located in the heart of the desert.

Dilshat added that the "power expressway loop" enables large-scale electricity transmission across Xinjiang and even beyond. With its abundant power generation capacity, Xinjiang serves as a key hub in China's west-to-east power transmission program. According to Xin Chaoshan, an expert at the State Grid Xinjiang Electric Power Co., Ltd., the new loop allows solar power generated in this region to flow eastward, helping ensure stable electricity supply nationwide.

Developing 100 million kilowatts of photovoltaic power in southern Xinjiang and transmitting it to eastern and central regions of China could allow those regions to reduce thermal power capacity by 25 million kilowatts, according to company estimates.

The new power grid complements a growing network of infrastructure around the Taklimakan Desert, including highways, airports and railway lines. "A multidimensional transport system is beginning to take shape, providing strong support for Xinjiang's high-quality development," said Guo Sheng, deputy director of Xinjiang's transport department. Once plagued by poverty and underdeveloped infrastructure, southern Xinjiang has seen notable progress in recent years. Its GDP rose from 481.7 billion yuan (about 67.39 billion U.S. dollars) in 2021 to 612.8 billion yuan in 2024, a 27.2-percent increase. Industrial added value surpassed 152.97-billion-yuan last year, with over 200 new major industrial enterprises established.

Behind these figures lies China's unrelenting efforts to expand development opportunities for residents across the region, whether on the plateau or in remote villages tucked deep within the desert. The new power grid is expected to deliver tangible benefits to more people. In Karanggutag Village, located in the Kunlun Mountains, electricity supply has become more stable since parts of the power loop were activated in April. The number of local shops has grown from four in 2018 to the current 48, with each equipped with a refrigerator or freezer. "Now we can finally think about buying larger home appliances," said local resident Abdubesir Yehya. "Many families are even adding new energy vehicles to their wish lists. Things that were once out of reach are now becoming reality."

Xinhua
http://english.news.cn/

14 July 2025

Bold and sustained action on clean energy "imperative" now and beyond 2030

In our first Future Energy Scenarios (FES) report as NESO, titled Future Energy Scenarios: Pathways to Net Zero 2025, we outline our expectation to see electricity demand increase from 290 Terawatt-hour (TWh) today to as much as 785 TWh by 2050. This surge emphasises the need to accelerate the delivery of clean electricity, bioenergy, hydrogen, and energy storage solutions. A clean future in Great Britain also requires empowering homes and businesses to embrace low-carbon heating and adopt energy efficiency measures as part of everyday life.

Pathways to Net Zero

FES 2025 presents three potential pathways to achieve net zero, each varying in its reliance on electrification, hydrogen, bioenergy, and consumer engagement. A common thread among these pathways is the significant reduction in annual emissions, potentially halving to around 200 megatonnes of CO2 a year within the next decade and further shrinking to 100 megatonnes of CO2 by 2040 with the right infrastructure in place.

The changing role of renewables

Britain's energy infrastructure undergoing a huge transformation, with wind and solar expected to increase grid capacity by up to 98% by 2050. Hydrogen will play a pivotal role, powering the network with between 98 and 325 TWh by the middle of the century. We also believe electric vehicles (EVs) will become the largest source of flexibility, providing 51 GW at peak, which is more than gas fired generation provides today.

How do we get to net zero?

Great Britain's net zero journey has four key waves. Having laid the initial foundation, the focus now shifts to the second wave: scaling up markets by 2030 to integrate new low-carbon technologies to deliver clean power. Success in this phase will pave the way for the third and fourth waves, leading to growth and completion by 2050.

Fintan Slye, Chief Executive of NESO:

"Over the past year, we have run the electricity system at 95% zero-carbon for the first time and phased out coal entirely from our energy system. But this isn't enough. We need to go further and faster, accelerating the roll-out of clean energy technologies is imperative to help deliver a clean and affordable energy system in the long-term.

"The choices made today will shape the success of each wave of Britain's transition. That means speeding up the adoption of energy efficiency measures, empowering households and businesses to make informed choices on things like demand flexibility, purchasing an electric car and switching to low-carbon heating."

Strategic measures for success

FES 2025 highlights several crucial measures to ensure a secure and affordable transition to net zero:

- Rapid development of infrastructure for electricity, gas, hydrogen, and carbon capture.
- Promotion of energy efficiency measures, innovative tariffs, and demand flexibility to save money for consumers.
- Incentives for the industrial sector to switch to low-carbon fuels and embrace carbon capture and storage (CCS).

NESO
http://www.neso.energy/