WORLD POWER SYSTEMS REVIEW

1 May 2025

15 April 2025

"Monument to green madness": the US will close a solar power plant for two billion

Americans are discussing in social networks the closure of the most expensive solar power plant in the country, which was built for their money. Due to unprofitability, the $2.2 billion station will cease operation at the beginning of next year.

"The Ayvanpa solar power plant, built under Barack Obama, has failed and will cease operations in early 2026. And this is $1.6 billion in federal loans, $535 million in grants, $600 million in tax credits and massive investor write—offs. A scam paid for by US taxpayers," the millionaire Wall Street Apes blogger writes on Twitter. Among those who picked up his message was Republican Senator Mary Miller. "Never believe the scam on the new green deal," she wrote. Ayvanpa is three solar thermal power plants with a capacity of 386 MW in the Mojave Desert in California. The breakthrough megaproject was launched in 2013.

"It is the world's largest solar thermal installation. Created by the joint efforts of NRG, Google and BrightSource Energy, Ivanpah produces enough clean renewable electricity to power 140,000 homes. Ayvanpa has almost doubled the volume of commercial solar thermal energy produced in The United States," Bechtel said.

However, this year the operator NRG announced that the station will be gradually closed and the last operations will be completed in early 2026. Buyers Pacific Gas and Electric Company (PG&E) and Southern California Edison (SCE) have terminated contracts for the supply of electricity until 2039 to reduce their own costs.

According to LowereBill, Ivanpakh lost to other solar power plants. The megaproject consists of heliostats.

"The advent of photovoltaic solar panels has changed everything: the prices of photovoltaic panels have fallen by more than 70%, making them more cost-effective for both utility companies and homeowners. Utility companies such as PG&E have begun to withdraw from contracts with Ayvanpa in search of cheaper alternatives for consumers. At the same time, new investments in solar energy are now investing in simpler and faster-to-deploy photovoltaic systems that do not require the complex infrastructure required by CSP," the publication writes.

The Research Institute of Entrepreneurship reacted more harshly to the failure of the station. "The plant has experienced one problem after another, despite the confident promises made by the owners and the Ministry of Energy from the very beginning. (One day the station caught fire due to the displacement of the mirrors.) The performance turned out to be so low that PG&E exercised its right to terminate the contract, the negotiations on which were completed; there is no doubt that towers 1 and 3 will cease operation in about a year," writes senior researcher Benjamin Seicher.

He noted that his friend Dan Kish from the Energy Research Institute suggested that President Trump declare the closed Ayvanpa facility a "National Monument of green Madness." According to the EIA, the share of solar power plants in total electricity production in the United States amounted to about 4% in January 2025. At the same time, 78% accounted for gas, coal and nuclear energy.

EA Daily
http://eadaily.com/

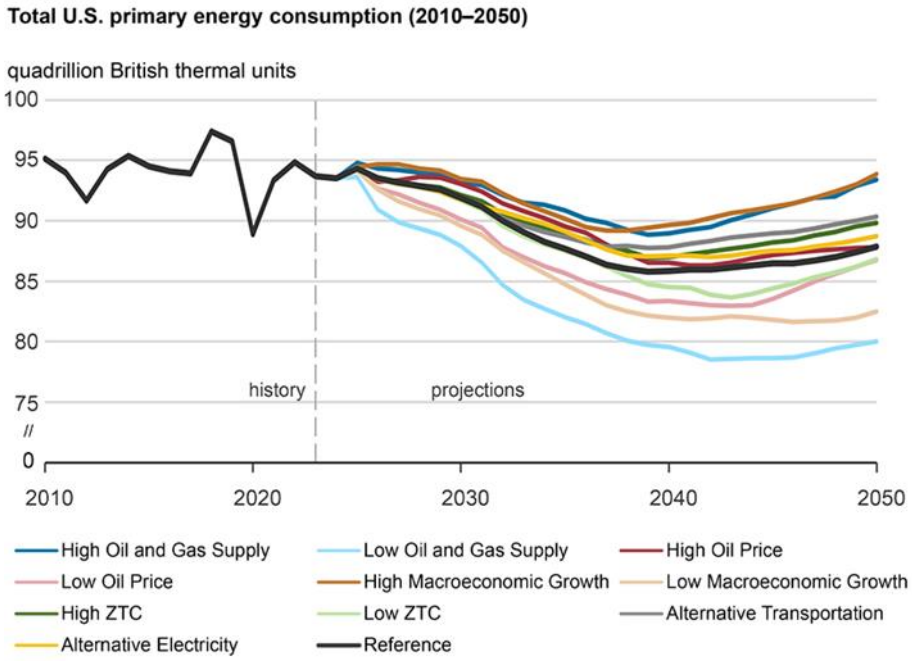
15 April 2025

EIA Projects Demise of Coal, Rise of Renewables

The U.S. Energy Information Administration predicts sharp increases in renewable power generation and sharp decreases in coal-fired power in its 2025 Annual Energy Outlook, released April 15.

The EIA also projects an overall decrease in U.S. energy consumption over the next decade, with subsequent increases so small that 2050 levels still are lower than 2024 levels.

The agency notes that the numbers vary among the modeling scenarios used, and it makes clear the projections were created using the laws and regulations in place in December 2024 — a month before a president who supported energy conservation was replaced by one moving to increase energy production and consumption.



The EIA and its parent agency, the Department of Energy, now work for President Donald Trump. The April 15 release of the AEO was accompanied by a DOE spokesperson's attack on President Joe Biden's policies and affirmation of Trump's policies.

Some of the projections in the outlook — such as a drop in nuclear generation capacity — seem to run counter to recently stated priorities. Others, such as the rise of renewables and demise of coal, reflect Biden policies that Trump is trying to reverse.

Changes in annual metrics projected from 2024 to 2050 include:

- Net electricity available to the grid will jump from 4,139 billion kilowatt-hours (BkWh) to 6,045 BkWh.
- Natural gas generation will drop from 1,901 BkWh to 1,270.
- Nuclear generation will drop from 777 BkWh to 736.
- Coal generation will drop from 660 BkWh to 7, with the biggest decrease — 402 BkWh to 52 — coming from 2029 to 2032.
- Renewables will jump from 1,060 BkWh to 4,680.
- Average end use electricity prices (in 2024 dollars) across all sectors will drop from 13 cents/kWh to 12.1 cents.
- Electricity purchased for vehicle charging will jump from 0.06 quadrillion British thermal units (quads) to 2.68 quads, with residential users accounting for 59% of the total and commercial 41%.
- Heating degree days will decrease 5.4% nationwide per year, and cooling degree days will increase 15.7%.
- Energy consumption intensity will drop from 91,300 BTU/square foot to 84,900 in commercial settings and from 52,300 to 40,800 in residential settings.

- Annual generation by major renewables will jump from 0.4 BkWh to 174 BkWh for offshore wind, 16 to 56 for geothermal, 201 to 1,791 for grid-connected solar, 242 to 273 for hydroelectric and 446 to 1,908 for onshore wind.

While the U.S. produced more crude oil and natural gas per year than any other country ever during the Biden administration, Biden also led policy changes that promoted renewables over fossil fuels.

Trump railed against this during his campaign and initiated a sharp change of course on the first day of his second term. His administration continued this narrative as it commented on the AEO. DOE spokesperson Andrea Woods said the report reflects Biden's short-sighted energy policies and the disastrous path they set for the countries. It does not, she said, reflect the policies enacted by Trump. The department, she said, is working now to advance coal, natural gas and nuclear energy to promote affordable, reliable and secure energy and build U.S. energy dominance.

RTO Insider
http://www.rtoinsider.com/

15 April 2025

Trump administration orders a stop to Empire Wind construction

Interior Secretary Doug Burgum alleged that the offshore wind project was "rushed through by the prior administration without sufficient analysis or consultation among the relevant agencies."

The U.S. Department of the Interior has directed the Bureau of Ocean Energy Management to order the 810-MW Empire Wind 1 project to cease all construction until further review, Interior Secretary Doug Burgum announced Wednesday. In a letter to BOEM, Burgum alleged that the project was "rushed through by the prior administration without sufficient analysis or consultation among the relevant agencies as relates to the potential effects from the project." The letter said that construction will remain halted until "further review is completed to address these serious deficiencies."

Empire Wind developer Equinor said in a Thursday release that the project "will safely halt" all offshore construction, but it added that "Empire is engaging with relevant authorities to clarify this matter and is considering its legal remedies, including appealing the order." Empire "is in the process of ascertaining the impact on the project and project financing" of the construction halt, Equinor said. "Equinor US Holdings Inc has provided guarantees for the equity commitment in the project financing. In a full stop scenario, the USD 1.5 billion will be repaid from the equity commitment to the project finance lenders and Empire Offshore Wind LLC will be exposed to termination fees towards its suppliers."

Upon taking office, President Trump issued an executive order that withdrew all federal waters from offshore wind leasing — and paused permitting, approvals and loans for all onshore and offshore wind projects — until the completion of a six-month review of offshore wind from Burgum.

"Pursuant to that review, staff of the Department of the Interior [have] obtained information that raises serious issues with respect to the project approvals for the Empire Wind Project," Burgum wrote. "In light of these revelations and consistent with the President's instructions, I am directing you to exercise your authority to order Empire Wind to cease all construction activities on the Empire Wind Project."

Empire Wind 1 is being built offshore New York and is a "fully federally permitted project [which had] already put shovels in the ground before the President's executive orders," New York Governor Kathy Hochul, D, said in a Wednesday release.

"I will not allow this federal overreach to stand," Hochul said. "I will fight this every step of the way to protect union jobs, affordable energy and New York's economic future."

BOEM approved Empire Wind 1's construction and operations plan in February — one of the final steps in the process of authorizing an offshore wind project, according to the agency. The only subsequent steps are the lessee's submission of a facility design report and fabrication and installation report.

Citizens for Responsible Energy Solutions President Heather Reams said in a Wednesday release that "while today's announcement is disappointing, President Biden's reckless administrative actions following the election have forced each decision to be re-reviewed — even those which undertook full lengthy permitting processes."

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

15 April 2025

South Africa finally has a masterplan for a renewable energy industry

About 85% of South Africa's electricity is produced by burning coal. The country's move to renewable energy means that the coal industry will be phased out. To this end, the South African cabinet recently approved the country's first renewable energy masterplan, which sets out what's needed to establish new renewable energy industries. Ricardo Amansure of the Centre for Sustainability Transitions researches the move towards renewable energy and how communities can benefit from this. He explains what the masterplan aims to achieve, what problems it might face, and how it can succeed.

It is an industrial strategy that sets out how South Africa can set up a new manufacturing industry in renewable energy and battery storage value chains. The masterplan was developed by the government, some sections of organised labour, a non-profit organisation advocating for renewable energy, and representatives of the renewable energy industries. It sets out a framework to produce renewable technologies locally. These include solar photovoltaic panels, wind turbines and batteries. The masterplan has been drawn up so that it aligns with South Africa's existing national target of adding 3–5 gigawatts of renewable energy capacity each year to 2030. This is a scale that can support the development of local manufacturing hubs. (One gigawatt can supply electricity to about 700,000 average homes.) This steady supply will be enough to give businesses and investors the confidence to commit to long-term investments in local manufacturing hubs. These are zones where renewable systems and components are produced or assembled for domestic and export markets.

The state-owned electricity company, Eskom, has not directly guaranteed that it will buy 3-5 gigawatts of renewable energy each year. But the government's national electricity plan (the Integrated Resource Plan) provides a strong indication of future demand. The masterplan also aims to attract at least R15 billion (US$784 million) in investment by 2030 and train "green workers" for employment in 25,000 direct jobs. These roles range from factory work and logistics to engineering and construction. Many will be for youth and semi-skilled workers.

South Africa already has a Just Transition Framework to ensure that the shift to a low-carbon economy is fair, and does not leave workers, communities or regions behind. The masterplan is aligned with this. It aims to support Black-owned companies and small-scale and community-based initiatives, especially in places affected by the looming loss of jobs in the coal industry.

However, it is not a response to the country's frequent power cuts and won't decide how electricity is generated. Energy system plans like the integrated resource plan and Energy Action Plan do this. (They focus on power generation, securing a constant energy supply, and expanding the electricity grid.)

In 2023 alone, the country spent over R17.5 billion (US$905 million) on solar and battery imports. This is unnecessary because South Africa sits on reserves of manganese, vanadium, platinum and other rare earth elements. These are the critical ingredients for manufacturing clean energy systems and storage, which could be made locally. South Africa already produces solar panels, steel towers for wind turbines, and electrical cabling. Some local firms also assemble inverters and balance-of-system technologies used in solar and battery systems. The potential to grow renewable energy industries is there. Factories making solar, wind and battery storage components will be financed through private sector investment and government incentives and support. These include tax breaks, localisation requirements, and support in special economic zones. As manufacturing demand increases, expansion is planned into offshore wind and next-generation (longer duration) batteries.

Between now and 2030, the masterplan has these aims:

- To fast-track government procurement of renewable energy, ensuring reliable energy planning, and expand the electricity grid to handle new projects.
- To develop an industry producing key components like wind turbine towers, solar mounting structures and batteries.
- To promote inclusive development by supporting Black-owned firms, small businesses and former coal communities. This is to make sure that everyone gets their fair chance to take part in green economic opportunities.
- To grow local skills and innovation. Training and education institutes and the energy industry will partner to make renewable energy skills part of national curricula and workplace training pipelines. They will need the support of government's higher education ministry.

A few urgent actions are required:

- The government must publish updated procurement rules with a clear and enforceable set of localisation targets. This will give local manufacturers confidence that they'll have a market to sell renewable energy to.
- South Africa's official electricity plan, which still emphasises the role for coal-fired power, must be realigned with the renewable energy masterplan.
- Eskom may need support from government and development financiers to expand the grid at the pace needed.
- Training institutions must modernise their courses and train more students to work in the solar, wind, battery storage and green hydrogen sectors.
- The government must create incentives that make it easier for local and international investors to be part of the industry. Red tape – long waits for environmental approvals, land rezoning and licensing processes – must be cut. Simplifying and speeding up these procedures, while maintaining safety and environmental standards, would improve investor confidence.

Conversation
http://theconversation.com/

15 April 2025

China to keep building coal plants through 2027, state planner says

China plans to keep building coal-fired power plants through 2027 in regions where they are needed to meet peak power demand or stabilise the grid, according to government guidelines for upgrading the coal power system released on Monday.

That policy may raise questions about China's commitment to phasing down coal use during the 2026-2030 period, although it says new coal projects are considered a back-up for renewable generation whose output depends on sunlight and wind conditions.

The guidelines, issued by the state planner and energy regulator, say that newly built coal plants should have 10-20% lower carbon emissions per unit of power output than the 2024 fleet, and also call for upgrades to some existing coal plants to meet those conditions. Newly built and upgraded coal plants should also be able to safely and reliably adjust their output to help meet peak power demand.

The plan follows a report from the China Coal Association last week that said China's coal consumption would not peak until 2028 - later than other forecasts that said China's coal consumption could peak this year. Rising coal usage in the power and chemicals sectors this year will support a small uptick in consumption, the association said, offsetting declining demand from the steel and building material industries.

Reuters
http://www.reuters.com

17 April 2025

Puerto Rico restores some power after blackout

Nearly 65 percent of Puerto Rico's more than 1.4 million utility customers had their power back by Thursday night, a day after a blackout knocked all of the island's functioning power plants offline and left the entire nation in the dark.

Service was unlikely to be fully restored before the early hours on Friday, Josué Colón, Puerto Rico's energy czar, told reporters. It would take that long, he said, to get all of the island's functional power plants back online after the systemwide shutdown.

"We should have much of the population with electricity today," Gov. Jenniffer González-Colón said Thursday afternoon. She said that one power plant had suffered serious damage, but that even so, service should be fully restored by Friday.

As of 9 p.m. Thursday, more than 949,000 customers — nearly 65 percent of the total — had electricity, according to Luma Energy, the private contractor that operates the island's power transmission system. A customer of the utility could be a house, an apartment building, a business, a government building or some other facility.

Among the critical institutions that were back online Thursday were a number of hospitals and all of the island's airports, including the airport in San Juan, the capital.

The blackout occurred as a result of a series of failures in the power transmission system, Luma said, but the cause of those failures had not yet been established. The company has asked for three days to identify the likely cause.

The company said a preliminary review indicated that something had gone wrong with a protective system intended to keep a breakdown on a single line from shutting down the entire power grid, and that a transmission line in western Puerto Rico might have been affected by overgrowth.

Ms. González-Colón, who was elected last year after campaigning on a promise to cancel Luma's contract, said the utility was required to patrol its lines by helicopter to spot overgrowth and prevent it from causing disruptions. Luma said it had been complying with that requirement but did not say when that particular transmission line had last been checked.

The governor also questioned whether the system was able to handle the higher demand for power during any holidays, noting that the blackout on Wednesday had occurred during Holy Week, when many Puerto Ricans are on vacation, and that a similar blackout had occurred on New Year's Eve. The island loses an estimated $230 million a day when the power is out, she said.

Puerto Rico's outdated and inefficient power system has suffered from years of mismanagement, lack of investment and poor maintenance. Its weaknesses became

evident when Hurricane Maria devastated the island in 2017, leaving many residents without power for months afterward.

Nearly eight years later, the island still faces a looming power generation shortage. Officials warned last month that the supply would probably not be sufficient to meet peak demand over the summer. The government has solicited bids for an additional operator or operators to provide more power on the island.

In Puerto Nuevo, a residential subdivision in San Juan, Wilfredo Alverio, 57, sat outside under his carport Wednesday evening, chatting with a neighbor. A small generator powered most of his house, ensuring that his 88-year-old mother, who has Alzheimer's, was comfortable in her bedroom.

The New York Times
http://www.nytimes.com/

18 April 2025

US Distributed Solar Grew 5.4 GW in 2024

The Institute for Local Self-Reliance (ILSR) released its 2024 report, "The State(s) of Distributed Solar," detailing the adoption of distributed solar across the United States. Of the 32 gigawatts (GW) of total solar capacity installed in 2024, 5.4 GW was distributed, encompassing residential, commercial, industrial, and community solar owned by individuals, small businesses, or public entities.

The report highlights states with significant distributed solar growth. California added 1.5 GW, and New York contributed 0.94 GW. States like Maine (44%), Arkansas (37%), Oregon (35%), Montana (35%), and South Dakota (32%) saw capacity increases exceeding 30% compared to 2023. In New Hampshire and Arkansas, all solar growth was distributed, while Massachusetts and Montana saw over 90% of their growth in this category.

Despite a 25-31% decline in the residential solar market, as reported by Ohm Analytics, 23 states and the District of Columbia now have approximately one in 25 households with rooftop solar, up from 21 states in 2023. Community solar, which enables access for those unable to install solar due to financial or structural barriers, is supported by policies in 19 states, promoting local decision-making and adoption.

ILSR's 2024 Community Power Scorecard outlines ideal community solar policies, emphasizing no capacity caps, fair compensation, simplified billing, and support for low- and moderate-income subscribers. Using its Community Solar Tracker, ILSR identified nine states—Colorado, Hawai'i, Illinois, Maryland, Massachusetts, Minnesota, New Jersey, New York, and Oregon—with notable community solar saturation.

Minnesota leads with over 150 watts of distributed solar per person, equivalent to more than three in 50 households having rooftop solar, with 47% of its solar capacity from community solar. New York (39%) and Massachusetts (20%) also have significant community solar shares. Oregon doubled its community solar capacity, while Illinois saw over 50% growth.

John Farrell, director of ILSR's Energy Democracy Initiative, and Timothy Denherder-Thomas, general manager of Cooperative Energy Futures, addressed challenges in a Just Solar Coalition presentation: "The clean energy transition requires both utility-scale and distributed generation and encouraged maximizing local solar to maximize local benefits." They noted utility opposition to distributed solar due to guaranteed returns on their own infrastructure investments.

The top five states for total solar capacity in 2024 were California (39.4 GW), Texas (25.4 GW), Florida (13.8 GW), North Carolina (7.3 GW), and Arizona (1.8 GW). For distributed solar saturation, Hawai'i, Maine, Massachusetts, California, and Arizona led,

based on installed capacity per person. Massachusetts, California, Arizona, Nevada, and New York ranked in the top ten for both metrics.

ILSR's analysis combined its community solar data with U.S. Energy Information Administration figures on small-scale solar, using state population estimates to calculate per capita distributed solar. This report underscores the growing role of distributed solar in the U.S. energy landscape, supporting local economies and sustainable energy access.

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

19 April 2025

Georgia suffers second major power outage in month

A blackout occurred in Georgia due to an accident on April 19. This is already the second instance of mass power outages in Georgia this month, according to the news website Echo of the Caucasus, Report informs via RBC-Ukraine.

The Georgian State Electrosystem company stated that on April 19 an accident occurred on the Kavkasion power transmission line. As a result, power outages took place in Tbilisi and other Georgian regions.

Georgian energy officials did not report the cause of the accident. The power system is gradually being restored. According to Echo of the Caucasus, electricity has already been restored to part of the consumers in Tbilisi and the regions.

In the capital of Georgia, due to the blackout, trains on the first metro line were forced to stop. As a result of the accident, the power system of the unrecognized Abkhazia was also left without electricity.

This is already the second large-scale blackout in Georgia in April. The first occurred on the night of April 9.

Report.az
http://report.az/

22 April 2025

There is a new green energy problem in Europe: too much sun

In April in the countries The EU has soared the production of electricity from solar power plants. However, this did not bring joy. Too large volumes overload power systems and make green energy projects unprofitable.

According to the Institute of Solar Systems. According to Fraunhofer, in April, the share of solar power plants in electricity production in Germany rose to 24.8%. Whereas the average for this year is 12%, and in the hottest months of summer it does not exceed 28%.

The situation is similar in other EU countries. The solar energy season is getting longer and more intense, which threatens to disrupt the market and overload power systems with a parallel drop in electricity prices.

In most EU countries, wholesale electricity prices this April are higher than a year ago. For example, in Germany — 78 euros and 62 euros per MWh, respectively. However, if the trend continues, electricity from the sun will constantly fill the market, knocking prices below zero, and will eat up the income of green generation, scaring off investors, Bloomberg believes.

The problem of green energy is its instability and the lack of technology of powerful storage facilities where electricity could be stored. This situation is well known in the EU, where they are already beginning to doubt their plans for the development of solar generation.

Analysts note that the slowdown is not surprising. "After the boom during the gas crisis, the urgency of switching to solar energy for citizens has weakened, as their bills are

normalizing. Developers face difficulties for various reasons. The energy system is not keeping pace with the growth curve of solar energy, and the construction of cost—effective solar power plants is becoming increasingly difficult," the document says.

SolarPower Europe noted that they expect low annual growth rates of 3-7% in the period from 2025 to 2028.

EA Daily
http://eadaily.com/

23 April 2025

China's power system achieves record clean energy output in Q1 2025

China's clean electricity generation reached a new high in the first quarter of 2025 (Q1 2025), with more than 951 terawatt hours (TWh) produced, a 19% increase from the same period in 2024, citing data from energy think tank Ember.

This growth outpaced other major markets such as Europe and the US, and raised the clean power share in China's generation mix to a record 39%. Wind farms led as the top source of clean electricity, contributing 307TWh and accounting for 13% of the total generation.

Solar power also recorded a 48% surge in output to 254TWh, representing a record 10% of total generation. Utility-scale solar capacity in China exceeded 880GW in 2024, more than any other country. This was due to new capacity additions, which for the first time allowed solar and wind to surpass hydropower dams in electricity generation during the January–March period.

Hydroelectric power production also increased by 7% to 226TWh, while nuclear energy saw a 13% rise to 117TWh. These developments enabled China to reduce reliance on fossil fuels, with coal-fired power output dropping by 4% to 1,421TWh and gas-fired plant output decreasing by 4% to 67TWh. The 19% increase in China's clean generation far exceeds the 6% growth in the US and contrasts with a 5% decline in Europe's clean power output.

China's lead is expected to widen, particularly with the anticipated boost in solar output during the peak months of July and August. With more than 720GW of solar projects in the pipeline, including the 100GW Great Solar Wall, China's dominance in clean energy is expected to continue. The Great Solar Wall, being developed in Inner Mongolia and neighbouring regions, is scheduled to be completed by 2030. In addition to clean energy expansion, China intends to keep building coal-fired power plants through 2027 under government upgrade plans.

Power Technology
http://www.power-technology.com/

25 April 2025

Japan's first barge-type floating wind turbine enters commercial operation

The Hibiki floating wind turbine project, located 15 kilometers off the Kitakyushu coast in Japan, has begun commercial operation, according to the project consortium. This 3 MW two-bladed turbine, the first steel barge-type floating wind system in Japan, started its commercial phase following a successful demonstration period.

The Hibiki system features an Aerodyn SCD 3 MW two-bladed turbine mounted on Ideol's Damping Pool floating foundation. Initially commissioned in May 2019, the project was part of a demonstration study led by Glocal under the New Energy and Industrial Technology Development Organization (NEDO). The study concluded in March 2024, after which Glocal assumed full control and established Hibiki Floating Wind Power (HFWP) to manage and operate the wind farm.

The 3 MW turbine generates electricity supplied to Kyushu Electric Power Company. Glocal oversees the operation and maintenance of the facility, while SMFL Mirai Partners handles asset management. The project's special-purpose company includes investors such as Renewable Japan, KEMCO, Gojin Group, and Chugoku Electric Power, reflecting strong regional collaboration.

As Japan's second commercialized floating wind turbine and the first of its kind using a steel barge design, Hibiki marks a significant step in the country's renewable energy development. The project demonstrates the viability of floating wind technology in deep waters, where traditional fixed-bottom turbines are less feasible.

The consortium highlighted the project's role in advancing sustainable energy solutions. A spokesperson for Glocal stated: "The successful transition of Hibiki to commercial operation showcases the potential of floating wind systems to contribute to Japan's energy needs." The turbine's innovative design and robust performance during the demonstration phase have paved the way for its integration into the regional power grid.

Hibiki's operation aligns with efforts to expand renewable energy capacity in Japan, leveraging the country's offshore wind resources. The project's completion of the NEDO demonstration phase and its subsequent commercialization underscore the effectiveness of collaborative efforts between industry, research organizations, and energy companies. The Damping Pool foundation, designed to stabilize the turbine in challenging marine conditions, has proven reliable, offering a model for future floating wind projects.

The consortium plans to monitor the turbine's performance to optimize operations and maintenance strategies. This milestone supports Japan's broader goals of increasing clean energy production and reducing reliance on conventional energy sources, contributing to a sustainable energy future.

Offshore.biz
http://www.offshorewind.biz/

25 April 2025

Spain hits 65.8 GW of solar projects with grid permits in March

Spain now has 65.8 GW of solar projects with grid-connection permits, says the country's energy agency. Total renewable energy installations with grid permits hit 129.5 GW by the end of March, up 15.5% from February.

Spain had approximately 129.57 GW of renewable energy projects with grid-connection permits by the end of March 2025, according to the latest report from Spanish trade body APPA Renovables.

This represents a 15.5% increase from the end of February. Another 52.61 GW of projects have submitted grid-connection requests, marking a 7% decline from the February. The approved capacity includes 65.8 GW of PV arrays, 2.58 GW of hybrid clean energy projects, 8.95 GW of batteries, and 2.75 GW of pumped-hydro storage capacity.

Renewable energy contributed 14,587 GWh to Spain's power generation mix in March, or 61.6% of the total. Wind power accounted for 28.3% of the total, hydropower for 18.1%, and solar for 12.9%. Spain exported 2,381.1 GWh and imported 844.3 GWh in March. It sent 1,388.4 GWh to France and imported 197.3 GWh, exported 775.7 GWh to Portugal and imported 619.3 GWh, shipped 197.1 GWh to Morocco and received 27.7 GWh, and exported 19.9 GWh to Andorra.

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

28 April 2025

Incident in the power systems of Spain and Portugal

On 28 April 2025 soon after 12h30 CET, a major incident occurred in the power systems of Spain and Portugal.

The incident resulted in a black-out in the power system of both countries. Some areas close to the border of France with Spain were also affected by the incident, albeit for a very limited duration

The utmost priority is the restoration of the power system. The established procedures and protocols for restoring the voltage of the electricity system have been activated immediately. Power system restoration is currently ongoing and some regions of the Iberian Peninsula have already been energized thanks, among others, to the support of the power system resources such as hydro-power plants and the existing interconnections with France and Morocco.

The TSOs of Spain and Portugal are providing continuous information of the restoration process.

ENTSO-E
http://www.entsoe.eu/

28 April 2025

Ten new reactors approved in China

China's State Council has approved five nuclear power projects - Fangchenggang Phase III, Haiyang Phase III, Sanmen Phase III, Taishan Phase II and Xiapu Phase I - with a total of 10 reactors, including eight Hualong One units.

The construction of the reactors was approved during a 27 April meeting of the State Council, presided over by Premier Li Qiang. China General Nuclear (CGN) announced it has received approval for Phase II (units 3 and 4) of its Taishan nuclear power plant in Guangdong province, as well as Phase III (units 5 and 6) at its Fangchenggang plant in China's Guangxi Autonomous Region. It said the four units will adopt its HPR1000 (Hualong One) pressurised water reactor technology. Taishan 3 and 4 will each have a capacity of 1200 MWe, while Fangchenggang 5 and 6 will have a capacity of 1208 MWe.

CGN said that it is currently "carrying out various preparatory work for the construction of the above-mentioned units in an orderly manner, the full construction of which will begin when the Permit for Nuclear Power Station Construction has been obtained from the National Nuclear Safety Administration". China National Nuclear Corporation (CNNC) said

it had received approval for Phase III (units 5 and 6) at its Sanmen nuclear power plant in Zhejiang province. It plans to build two Hualong One reactors, each with a rated power of 1215 MWe.

The construction of two Hualong One units has also been approved at the Xiapu site in Fujian province as a joint project between CNNC and Huaneng Power International. Two CFR-600 sodium-cooled pool-type fast-neutron reactors are currently under construction at the Xiapu site. The State Council also approved the construction of two CAP1000 reactors - the Chinese version of the Westinghouse AP1000 - as units 5 and 6 at the Haiyang site in Shandong province in a project led by State Power Investment Corporation. The site already hosts two AP1000 units, and two CAP1000 units are under construction. According to China Daily, the ten newly approved reactor projects represent a combined investment of over CYN200 billion (USD27.4 billion).

The State Council has approved ten or more new reactors annually since 2022. China currently has 58 operable reactors with a total capacity of 56.9 GW. A further 30 reactors, with a total capacity of 34.4 GW, are under construction, according to World Nuclear Association figures.

WWN

http://www.world-nuclear-news.org/

29 April 2025

Power restoration underway after major outage in Spain and Portugal

Power has begun to return to Spain and Portugal following the significant outage on 28 April 2025 that disrupted daily life across the Iberian Peninsula.

The blackout, which began around 10:33 GMT, led to the grounding of planes, the halting of public transport, the shutdown of stores, the closure of Spanish oil refineries and the suspension of routine operations in hospitals, as reported by Reuters.

Spain's Interior Ministry declared a national emergency, deploying 30,000 police officers to maintain order while emergency cabinet meetings were convened in both Spain and Portugal.

Spanish Prime Minister Pedro Sanchez, who discussed the situation with NATO Secretary General Mark Rutte, said that Spain experienced a loss of 15GW of electricity generation in five seconds – 60% of national demand. Such extensive outages are unusual in Europe, and the cause remains under investigation. Portugal indicates that the problem began in Spain, while Spain attributes it to a break-up in its connection to France.

Portuguese Prime Minister Luis Montenegro has stated that there was "no indication" to suggest that a cyberattack caused the blackout. Board member of Portuguese grid operator REN Joao Conceicao mentioned the possibility of a "very large oscillation in electrical voltage, first in the Spanish system, which then spread to the Portuguese system."

Spain's grid operator REE attributed the blackout to a connection failure with France, which led to a disconnection between the Spanish and French grids and the subsequent collapse of the Spanish electric system. The blackout lasted for several hours and power was gradually restored in most areas of both countries by Monday evening, 29 April.

In Spain, power returned to the Basque Country, Barcelona and parts of Madrid, with around 61% of electricity restored by late on Monday. Spanish energy company Enagas activated emergency systems to meet demand, and REE's systems operations chief Eduardo Prieto indicated that normalising systems would take "several hours."

In Portugal, power returned to many municipalities, including Lisbon city centre, with REN reporting that 85 out of 89 power substations were back online by late Monday. Hospitals in Madrid and Catalonia managed critical patient care using backup generators, while all routine medical work was put on hold.

The Portuguese authorities reported that traffic signals also experienced widespread disruptions, and the metro was suspended in both Lisbon and Porto. Spanish Prime Minister Pedro Sanchez stated that 35,000 train passengers were successfully evacuated from stranded trains.

In addition, the blackout caused internet traffic to plummet by 90% in Portugal and 80% in Spain, according to global internet traffic monitor Cloudflare Radar. Such extensive power outages in Europe previously occurred in 2003 and 2006. In 2003, a malfunction in the hydroelectric transmission line connecting Italy and Switzerland led to a widespread power failure throughout Italy, lasting approximately 12 hours. Three years later, in 2006, an overburdened electrical grid in Germany resulted in power disruptions that affected various regions in Europe and reached as far as Morocco.

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