2 March 2025

Koeberg Unit 2 safely shuts down after unplanned trip. Start-up process begins following safety review

Wind farms could be a great asset to the military as the cutting-edge technology could soon make turbines 'disappear' and become the eyes and ears of a country's forces, according to a report. Recently, Sweden rejected 13 planned offshore wind projects due to their potential impact on military radar systems. The projects were aimed at generating power amounting to 30GW. However, their cancellation over military concerns is currently reverberating around Europe. A recent report claims that AI and nanotech could make wind farms 'disappear' from the radar.

Stealth technology similar to that used in aircraft could soon be used to reduce the clutter that wind turbines cause military radar systems. Nanotechnology, artificial intelligence and mesh sensor networks could help scrub wind turbines from radar sensors and even turn them into military assets, reported Recharge News. Made of radar-absorbing materials, stealth wind turbines have poor radar signatures and these can be part of wind farms that coexist with airfields and military bases. Such systems could also help avoid interference with radar stations.

However, the stealthy turbines could increase the cost of wind farms. It's also claimed that stealth turbines, which will be made using the same radar-absorbing materials that are used in aircraft, could affect the aerodynamic performance of the blades. An effective stealthy wind turbine that uses less expensive material could be a great fit for wind farms that may coexist with airfields. Regardless of fossil-free electricity production and proposed precautionary measures, Sweden rejected projects due to their impact on national defense interests. These projects are Arkona, Aurora, Baltic Offshore Beta, Baltic Offshore Delta North, Cirrus, Erik Segersäll, Neptune, Pleione, the Skåne offshore wind park, Ski Blades, Southern Victoria, Swell and Triton. However, stealthy turbines could help the military instead of posing a challenge to the armed forces.

Back in 2016, QinetiQ developed lightweight, radar-absorbing materials that could integrate with the turbines supplied by Vestas. The company had revealed that its innovative solution was a first of its kind, and demonstrated excellent enhancement and application of what was originally defence technology. "Radar impact assessment modelling, prototype manufacturing and testing using our multiband portable radar confirmed that our stealth solution could be integrated into the turbines without significantly altering their physical characteristics or manufacturing process," revealed QinetiQ at that time. The application of QinetiQ's stealth technology to these turbines achieved a reduction of up to 99% of radar interference. As a result, the Ensemble Eolien Catalan wind farm was able to be installed near Perpignan in June 2016 – within the coordination area of the Opoul weather radar – with minimal impact.

Eskom
http://www.eskom.co.za/

6 March 2025

New England, New York grid operators prepare to collect millions in tariffs on Canadian electricity

The New York Independent System Operator and ISO New England both made tariff-related filings with the Federal Energy Regulatory Commission on Friday in advance of a 10% tariff on Canadian electricity imports that is expected to take effect Tuesday.

The tariff on Canadian energy resources is part of a broader set of duties on imports President Trump announced in January and subsequently paused for 30 days. The two

countries "have one of the most integrated international electric grids in the world," New York ISO told FERC.

The tariffs could add millions of dollars to customer bills. The grid operators say they don't believe they have a role in collecting or remitting the duties. "However, given the uncertainty surrounding these issues, the ISO deemed it necessary to make this filing," ISO New England said. There is significant uncertainty surrounding the tariffs on imported energy, but the two northern grid operators say they must be prepared. Both asked for expedited comment periods and orders from the commission.

In a Friday statement, ISO New England said it was filing with FERC a proposed mechanism allowing it to, "if directed by the federal government, collect customs duties related to electricity imported from Canada and sold into ISO-administered markets. The filing is "prudent" in light of Trump's executive orders and recent statements, the grid operator said. However, it added the ISO "also believes that the custom duties described by the Trump Administration do not appear to apply to electricity and that, even if they do, ISO New England would not be responsible implementing them."

Similarly, New York ISO said its own role in collecting the tariffs is uncertain. "There is an urgent need for clarity and certainty regarding the recovery and allocation of potential duty-related costs," it said. "It is not yet clear whether imports of electrical energy from Canada are subject to the Canadian Tariff Order or, if they are, whether the NYISO will be required to play any role in collecting or remitting duties," the grid operator said in a statement. "The NYISO believes that there are strong legal and policy arguments that the answer to both of these questions is 'no.'"

According to the New England grid operator, an estimate using import data from the last five years "indicates a 10 percent to 25 percent tariff on Canadian electricity imports could amount to Import Duties of between $66 [million] and $165 million annually." Under the New England proposal, market participants selling Canadian electricity into the ISO-administered market "will be assessed the cost of such Import Duties, which the ISO will collect based on the entity's external transaction sales into New England." The grid operator asked FERC to issue an order by the end of March, with an effective date of March 1.

The New York grid operator said its tariff provision proposals would "address the possibility that the Canadian Tariff Order could result in the NYISO having to collect and remit duties on Canadian electricity imports in the near future and potentially on short notice." NYISO is interconnected with two Canadian system operators, Ontario's Independent Electricity System Operator and Hydro-Québec, allowing the import of up to 4,600 MW, the grid operator told FERC. The interconnections also support "substantial" exports, the ISO said.

"Trade across the interties is robust. In 2024, New York State imported 7.7 TWh of Canadian electricity, which was more than any other state," the grid operator said. "That electricity was valued at hundreds of millions of dollars."

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

6 March 2025

MISO's Value Proposition exceeded $5 billion in 2024

MISO delivered more than $5 billion in benefits in 2024 through its region-wide approach to grid reliability, market operations and regional transmission planning. Since the Value Proposition analysis began in 2007, cumulative benefits have surpassed $50 billion, reinforcing MISO's role in delivering cost-effective solutions for an increasingly complex energy landscape.

"MISO's continued collaboration with our members and stakeholders has been instrumental to maintaining reliability and adding value for the 45 million people who depend on us," said MISO's President and CEO John Bear. "For every dollar spent on MISO membership, participants realized $15 in benefits – a testament to the efficiencies gained through regional collaboration."

MISO's Value Proposition analysis identifies and quantifies several key value drivers that contribute to annual savings, including more efficient use of resources, improved reliability and compliance, and a reduced need for generation assets. In 2024, the primary sources of value are:

- Resource Capacity Sharing ($2.9 - $3.9 billion) – MISO's large footprint allows energy to be shared more efficiently across the region, reducing the need for extra generation capacity and lowering costs for utilities without sacrificing reliability.
- Energy and Ancillary Services ($881 - $974 million) –Optimized market operations reduce collective production costs and enhance grid flexibility by ensuring the most cost-effective resources are deployed.
- Renewable Resource Optimization ($403 - $474 million) – MISO's regional planning lowers the overall cost of integrating renewables across the region, reducing overall capacity investment to meet renewable energy goals.

"MISO's cost-effective solutions for managing a complex grid continue to create long-term value," added Andre Porter, MISO's senior vice president and Chief Strategy Officer. "The entire region benefits from our ability to implement our Reliability Imperative efforts, including market efficiencies, grid planning and operational enhancements across a large and diverse footprint."

The full 2024 Value Proposition report, including calculations, assumptions, and supporting information, is available on MISO's website. MISO's Reliability Imperative efforts ensure the region remains reliable, secure and prepared for evolving challenges – including increasing electrification, changing resource dynamics and extreme weather. Continued investments in market enhancements, planning processes and operational coordination will sustain and grow the value MISO provides.

MISO
http://www.misoenergy.org

6 March 2025

Nigeria and UN Set up $500M Fund for Distributed Renewable Energy

Nigeria, in partnership with a United Nations agency, has established a $500m target to finance the roll-out of distributed renewable energy solutions such as solar home systems and mini-grids. The fund, backed by the Nigerian Sovereign Investment Authority and the UN's Sustainable Energy for All (SEforALL), will be managed by Africa50, an infrastructure investment platform founded by the African Development Bank (AfDB). Nigerian pension funds are also expected to invest in the initiative, SEforALL's CEO Damilola Ogunbiyi told the publication.

She emphasised that the aim is to put together a fund that would be accessible and will be in local currency for local developers. The fund is part of the Mission 300 programme, led by the World Bank and AfDB, which seeks to provide electricity to 300 million people in Africa by 2030. The programme is expected to channel tens of billions of dollars into countries that meet specific criteria, including power utility reforms and regulatory adjustments to encourage private investment.

During the Mission 300 Africa Energy Summit in Dar es Salaam, Tanzania, from 27 January to 28 January 2025, more than $8bn in new funding commitments were secured. This summit was hosted by Tanzania, the African Union, the AfDB, and the World Bank

Group. Launched in April 2024, the initiative's total estimated cost is $90bn. The two banks have already pledged up to $48bn, with the possibility of additional contributions during the implementation phase.

Africa50 CEO Alain Ebobisse mentioned in an interview in January that while the fund was being planned, its size had yet to be finalised. Separately, Africa50 is establishing a $200m fund, the Africa Solar Facility, to invest in distributed renewable energy projects across the continent, sponsored by the International Solar Alliance, the report said.

Mini-grids and solar home systems are viewed as crucial for delivering electricity to remote settlements and rural areas far from national grids. In sub-Saharan Africa, over 80% of the 570 million people without electricity access reside, including 86 million in Nigeria.

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

6 March 2025

Thorcon applies to build Indonesia's first nuclear power plant

PT Thorcon Power Indonesia (PT TPI) - a subsidiary of Thorcon International, a Singapore-based company - submitted its Site Evaluation Programme (PET) and Site Evaluation Management System (SMET) documents for approval to Indonesia's Nuclear Energy Regulatory Agency (BAPETEN) during a meeting held on 13 February at BAPETEN's Jakarta office. It was presented by Thorcon Chief Nuclear Officer Kun Chen to BAPETEN's Deputy Chairman Haendra Subekti.

"With this submission, PT TPI officially becomes the first NPP licence applicant in Indonesia's history, positioning the country for a new era of nuclear energy innovation and development," Thorcon said.

It added that it is "fully committed to addressing any feedback from BAPETEN during the review process to ensure a swift and thorough evaluation".

The submission follows almost two years of pre-licensing consultations. In March 2023, PT TPI and BAPETEN signed an agreement to officially start a '3S' (safety, security and safeguards) consultation in preparation for licensing a demonstration 500 MWe Thorcon molten salt reactor. The consultation included: a review of the master plan document for the construction of the plant; consultation on the roadmap related to the reactor prototype and the Non-fission Test Platform (NTP) facility; preparation of technical and non-technical documents related to the reactor prototype and NTP required for licensing; and consultation on reactor design approval.

PT TPI's proposed plant is based on technology developed by the US DOE Oak Ridge National Lab in the 1960s. It will feature the Thorcon 500, a 500 MWe molten salt reactor (MSR) power plant, comprised of two low-enriched-uranium-fueled 250 MWe reactors in two replaceable, sealed 'Cans'. At any one time, just one of the Cans of each power module is producing thermal power. After eight years of operation, the nuclear module is disconnected, replaced with a new one, and towed to a maintenance centre for Can replacement.

MSRs use molten fluoride salts as primary coolant, at low pressure. They may operate with epithermal or fast neutron spectrums, and with a variety of fuels. Much of the interest today in reviving the MSR concept relates to using thorium (to breed fissile uranium-233), where an initial source of fissile material such as enriched uranium needs to be provided.

"Designed for modular manufacturing, the Thorcon 500 aligns with the highest international safety standards and is expected to play a key role in Indonesia's energy transition," the company said. "After the initial plants is successfully deployed, Thorcon

intends to develop a local manufacturing assembly line for Thorcon reactors, fostering the growth of a new industrial sector in Indonesia."

A preliminary site survey conducted on Kelasa Island, located in Central Bangka in Bangka Belitung Province has identified the site as "a strong candidate" for the plant, Thorcon said. "The survey focused on safety, ecological, and site suitability factors, with initial results showing promise for further studies."

"We are thrilled to announce that PT TPI has become the first applicant for a nuclear power plant licence in Indonesia," said Chen. "This submission marks a historic moment for Indonesia, and we are proud to be leading the charge in bringing innovative nuclear energy solutions to the nation. We are fully prepared to collaborate with BAPETEN and undergo a rigorous evaluation process. Our commitment is to bring Indonesia's first operational nuclear power plant online by 2032 or earlier, supporting the country's economic growth, energy security, and sustainability."

"We recognise and appreciate the efforts of PT TPI for their proactive consultations within the 3S framework," BAPETEN's Subekti said. "This approach ensures that all safety and security aspects are addressed and will help minimise technical and administrative obstacles as the licensing process continues." The Indonesian government has committed to implementing an energy transition to reduce climate change and achieve net-zero emissions by encouraging research and development of renewable power generation technologies. The government is targeting 8 GWe of installed capacity to come from nuclear power plants in 2035, increasing to 54 GWe in 2060.

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

6 March 2025

EDF seeks clients outside France for long-term nuclear power contracts

French power giant EDF said on Thursday it will offer long-term nuclear power contracts to companies outside France as long as they are able to take delivery of the electricity. The call for interest in the contracts, known as nuclear production allocation contracts (CAPN), comes as EDF struggles to sign long-term agreements with industrial users at home, following a sharp decline in market prices.

Contracts amounting to about 10 terawatt-hours, to be offered via auction, will be open to any European company with power needs greater than 7 gigawatt-hours per year or suppliers or producers with the ability to transmit the electricity from France, EDF said in a statement. The contracts will be priced according to the cost of the nuclear fleet and decoupled from wholesale market prices, it added. They are the first to be offered to non-French consumers as well as to users with significantly smaller power demands than heavy industry, EDF said.

Reuters
http://www.reuters.com/

7 March 2025

US Agency Blocks Vote to Repeal California EV Rules

The Government Accountability Office said on Thursday the Biden administration's approval of California's landmark plan to end the sale of gasoline-only vehicles by 2035 is not subject to review and potential repeal by Congress.

Last month, the U.S. Environmental Protection Agency under President Donald Trump sent the approval to Congress saying it was properly considered a rule under the Congressional Review Act. The GAO said the decision should be considered an order and is not reviewable. As a candidate, Trump vowed to rescind waivers granted by the EPA

under the Clean Air Act to California to require more EVs and tighter vehicle emissions standards. Those rules have been adopted by another 11 states, including New York, Massachusetts and Oregon. The EPA, which last month submitted three waivers issued to California for review by Congress, said Thursday it believes those actions should properly be considered rules eligible for repeal by Congress.

California's rules require 35% of vehicles in the 2026 model year to be a zero-emission model- a figure automakers say is impossible to meet given current sales - rising to 68% by 2030. The state says the rule is crucial to meeting greenhouse gas emission reduction targets and cutting smog-forming pollutants.

Senate Environment and Public Works chair Shelley Moore Capito told Reuters that Republicans were considering next steps. Senator Adam Schiff, a California Democrat, said the GAO ruling is "clearly consistent with prior decisions" that will be "enormously helpful in protecting California's ability to protect its citizens."

The EPA under former President Joe Biden took the position that the waiver was not a rule and therefore not reviewable by Congress. California first announced a plan in 2020 to require that by 2035 at least 80% of new cars sold be electric and up to 20% plug-in hybrid models. The EPA also granted in December a waiver for California's “Omnibus” low-NOx regulation for heavy-duty highway and off-road vehicles and engines, which it also submitted to Congress. The U.S. Transportation Department is separately moving to undo aggressive fuel economy rules adopted by Biden.

Reuters
http://www.reuters.com/

9 March 2025

Distributed generation surpasses 37 GW in Brazil amid concerns over curtailment

Brazil has reached 37 GW of installed capacity in distributed generation (DG). The Brazilian Association of Distributed Generation (ABGD) projects a 20% growth in installed DG capacity in 2025, which represents more than BRL 25 billion in private investments and the generation of more than 100 thousand new jobs.

Most of the installed DG capacity is concentrated in residences (18.18 GW), followed by commercial establishments (10.63 GW), rural facilities (5.09 GW), industries (2.67 GW) and public institutions (0.41 GW). In the state ranking, São Paulo leads with 5.33 GW, followed by Minas Gerais (4.63 GW), Paraná (3.30 GW), Rio Grande do Sul (3.29 GW) and Mato Grosso (2.39 GW).

The growth of DG, however, has been accompanied by debates about its integration into the electrical system. There are allegations about the impact on the operation of the National Interconnected System (SIN), especially in relation to curtailment – generation cuts due to limitations in the transmission infrastructure. The ABGD emphasizes that DG operates in a decentralized manner and aligned with consumer demand, not depending on transmission networks to deliver energy.

“DG is the only form of generation that is born tied to the real demand of the end consumer, helping to mitigate problems in the electrical system. The real reason for generation cuts in Brazil is the lack of planning and the structural limitations of the transmission networks, problems that have no relation to distributed generation,” said ABGD President Carlos Evangelista. He emphasized that attributing curtailment costs to DG masks strategic challenges faced by centralized generation. “DG does not depend on the transmission network to transport the energy it produces. On the contrary, one of the main virtues of DG is precisely that it generates electricity close to consumption, reducing the need for investments in transmission infrastructure and relieving the burden on the electrical

system. DG also improves grid efficiency, reducing losses and reinforcing the quality of supply," Evangelista added.

ONS advocates greater control over the dispatch of distributed generation

The ONS's Medium-Term National Grid Operation Plan (PAR/PEL) indicates that, by 2029, DG capacity should reach around 50 GW, becoming the second largest source of electricity generation in the country, behind only hydroelectric power.

Considering micro and mini distributed generation and Type III plants — commonly installed close to the load, connected to the distribution grid and totaling 19.8 GW — there is a total of 53 GW, which represents 22% of the installed capacity in Brazil that is not supervised in real time and cannot be controlled by the ONS.

The distribution network may start to inject energy into the transmission network in some areas, in a larger-scale "flow reversal." "Minas Gerais, Rio Grande do Sul, Mato Grosso and Piauí stand out as those that presented the largest number of substations capable of operating with the flow of active power in the direction of the distribution networks to the transmission system," states PAR/PEL.

For this reason, ONS advocates that distribution system operators, that is, energy distribution concessionaires, assume a strategic role with greater control over these distributed energy resources and greater integration with the operation of the transmission network. The operator also reinforces the need to increase investments in dynamic voltage control equipment, such as synchronous compensators.

According to ONS, with the expected growth of DG in the coming years, by 2029 it may be necessary to cut up to 40 GW of centralized solar and wind generation during the times of day when the systems are generating. The ONS estimates that MMGD will generate around 18.35 GW in 2024, considering the midday period, while the forecast for this generation in 2029 is approximately 37 GW.

In view of this scenario, large generators have suggested that distributed generation also share in the generation cuts. New DG projects have been receiving recommendations from concessionaires to inject energy into the grid at night. This could create opportunities for the implementation of batteries, but the high tax burden and the lack of clarity regarding the remuneration for services rendered keep the technology expensive.

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

9 March 2025

300,000 homes without power after ex-Cyclone Alfred leaves destruction along Australia's east coast

Hundreds of thousands of people are under a blackout in Queensland, while flood warnings remain in place across New South Wales, after ex-Cyclone Alfred left a trail of destruction along Australia's east coast.

As of Sunday, approximately 316,540 properties in Queensland were without electricity, with the Gold Coast being the hardest hit with over 112,000 customers affected.

The storm's ferocious winds and torrential rains uprooted trees and damaged power lines, complicating restoration efforts. Energy distributor Energex said their crews were working tirelessly to restore power, but extensive damage means some areas might not see their power resumed for some days.

The Bureau of Meteorology has issued fresh flood alerts for parts of southeast Queensland and northern New South Wales as heavy rainfall continued to pose a risk of flash flooding. Regions like Brisbane, Ipswich, the Sunshine Coast, and Gympie were particularly hit. Even though the risk of high wind gusts has largely subsided, with the

remnants of the storm moving inland, gusts of 90kmph (60mph) were also possible in the state, the bureau said on its website.

Emergency services have been stretched thin, responding to numerous incidents across the affected regions. In northern New South Wales, a 61-year-old man was found dead after being swept away by floodwaters near Dorrigo. A convoy of Australian Defence Force vehicles en route to assist with flood relief in Lismore was involved in a crash, resulting in injuries to several personnel. Emergency services have conducted multiple rescues, many involving individuals attempting to drive through flooded areas.

The severe weather has led to significant disruptions in transportation and public services. Brisbane Airport reopened on Sunday but warned travellers of potential delays due to ongoing weather conditions. Public transport services have been affected, with train services and bus operations resuming but limited in certain areas. Decisions regarding the reopening of approximately 1,000 Queensland schools closed due to the storm will be made based on safety assessments, state Premier David Crisafulli said. "Where it's safe to do so, schools will reopen with the exception of the Gold Coast, where there remains some significant damage. Power loss and issues with transport," Mr Crisafulli said in televised comments from Brisbane.

Independent
http://www.independent.co.uk/

10 March 2025

Work begins on 2 GWh lithium ion-redox flow battery hub in China

Construction has commenced on the 1 GW/2 GWh Yantai Energy Storage Center in Yantai, a coastal city in eastern China's Shandong province. The CNY 3.5 billion ($490 million) project, backed by local firm Lantian Dongfang (Laizhou) Energy Co., Ltd., is a key initiative under the Shandong Energy Bureau's 2024 energy storage development plan. The development marks a significant step in Yantai's efforts to enhance energy storage deployment and renewable energy consumption.

The project is majority-owned by Yantai Energy Investment and Development Group, a state-owned enterprise, with Lantian Dongfang overseeing the investment. Construction will be carried out by a consortium comprising Lantian Dongfang and two other state-owned enterprises.

The project will be developed in two phases. The first phase will add 450 MW/950 MWh of storage capacity, with an initial 100 MW/210 MWh batch requiring an investment of approximately CNY 292 million ($41 million). According to the construction timeline, storage equipment installation and commissioning will be completed by April 2025, with grid connection scheduled for May 30, 2025. Subsequent installations will follow as part of the first phase. The facility will use a hybrid storage model, with lithium iron phosphate (LFP) batteries accounting for 95% of the system and vanadium redox flow batteries (VRFB) making up the remaining 5%. The first phase will deploy 95 MW/190 MWh of LFP batteries alongside 5 MW/20 MWh of VRFB units, with future expansions maintaining this ratio.

Lantian Dongfang officials highlighted that LFP batteries were chosen for their high energy density, cost efficiency, and mature production technology. Meanwhile, VRFBs, known for their superior safety, long cycle life (exceeding 20,000 cycles), and rapid response capabilities, will enhance the system's peak-shaving performance when integrated into the grid.

A key advantage of VRFBs lies in their ability to operate across extreme temperatures (5°C to 45°C), making them well-suited for Yantai's humid winters and hot summers. The batteries can achieve a cold start within two minutes when filled with electrolyte and switch between charging and discharging states in just 0.02 seconds. This rapid response

capability allows them to complement LFP batteries by swiftly adapting to grid demands, whether discharging power to the grid or absorbing excess electricity. Lantian Dongfang expects the project, once fully operational, to generate annual revenue of CNY 330 million ($46 million) and a net profit of approximately CNY 190 million ($27 million), underscoring its strong financial viability.

Shandong province, the first in China to surpass 100 GW of installed renewable capacity, mainly are wind and solar PV, has an urgent need for flexible energy storage solutions. According to the Shandong Energy Bureau, the province aims to install over 6 GW of new energy storage capacity and 10 GW of pumped hydro storage by the end of 2025. Yantai, as part of this strategy, plans to develop three large-scale independent energy storage hubs to support its 9 GW solar and 3 GW offshore wind capacity targets.

ESS NEWS
http://www.ess-news.com/

11 March 2025

Great Britain's First Grid Forming Battery Connects in Scotland

The National Energy System Operator (NESO) confirms the go live of the first two projects involved in its Stability Phase 2 Pathfinder to secure future network resilience.

The Stability Pathfinder Phase 2 is a forward-thinking initiative designed to enhance stability and reduce the operability risk of the electricity system, both in Scotland and across Great Britain. In total, NESO awarded ten contracts as part of this project (worth £323 million overall) to secure 11.55 GVA of Short Circuit Level (SCL) in Scotland and 6.75 GVA seconds of Inertia for Great Britain through the use of five synchronous condensers and five grid forming batteries.

The five Synchronous Condensers contracted by NESO offer stability to the electricity system like traditional generators, but without generating power. This means the system will receive the benefits of these sites whilst also helping to lower both operational costs and carbon emissions. The five Grid Forming Batteries contracted by NESO are the first-of-their kind as they provide Short Circuit Level and Inertia by mimicking the behaviour of traditional generators through their control systems.

Grid Forming Batteries are an advanced battery storage system that can independently stabilise and support the electricity system. They set their own frequency and voltage, unlike traditional batteries. This world-leading capability enables us to integrate more renewable energy sources onto the system which can be less predictable than non-renewable energy sources. This will reduce carbon emissions by increasing the capacity of renewable energy generation.

As part of the Stability Pathfinder Phase 2, these grid forming batteries and Synchronous Condensers will support the delivery of NESO's 2025 ambition for zero carbon operation of Great Britain's National Electricity Transmission Network. Announced in 2019 this ambition seeks to lay the foundation for the future operation of the electricity network by replacing the stability services offered by fossil fuel generation, to ensure that the national electricity network can be operated without relying on a single technology type. The delivery of the 2025 ambition will further future proof Great Britain's national electricity network, already one of the most resilient in the world, whilst reducing the costs associated with delivering the inertia and other services needed to operate the network.

Initially contracted as part of the pathfinder for ten years these new projects will provide access to these important stability services as carbon emitting power stations are phased out as part of the Government's 2030 Clean Power Action Plan. From 2035 these projects will have the opportunity to participate in specific markets for stability services, introducing even greater competition and greater value for money for consumers.

Matt Magill, Director of Engineering and Customer Solutions, National Energy System Operator said: “These projects will help to accelerate progress towards the transition to a sustainable future by securing network resilience for consumers in Scotland and Great Britain. These sites will support network stability during disturbances and lower the cost of maintaining inertia on the system.

This is a pivotal moment for Great Britain’s electricity networks, as the first Grid Forming Battery on the system will unlock new tools for the long-term resilience and security of supply of the electricity system, whilst supporting the delivery of zero-carbon operation.”

NESO
http://www.neso.energy/

11 March 2025

Freja Offshore Gains Key Permit for 2.5GW Offshore Wind Farm in Sweden

The permit is one of three required for construction. The next steps involve obtaining government approval for the remaining permits under the SEZ Act and the Continental Shelf Act. The company has stated in a press release that these permits have already been recommended by the County Administrative Board and SGU.

Mareld will generate 12 terawatt hours (TWh) annually, supplying electricity to two million households. With electricity demand in western Sweden projected to double by 2030 due to industrial energy transitions, Mareld will play a vital role in meeting the region’s renewable energy needs. Natura 2000 is a network of protected areas across the EU aimed at achieving biodiversity objectives.

The Bratten sea area, adjacent to Mareld’s permit location, offers an ecosystem crucial for marine species and habitats. The permit indicates that the project can proceed while considering the area’s high conservation values, demonstrating that offshore wind power can coexist with protected environments.

Freja Offshore board chairman Marcus Thor stated: “The Natura 2000 permit is welcome news and confirms our commitment to creating a sustainable wind farm that respects sensitive natural values. We are now working carefully to review the additional conditions that the permit entails for us. “Mareld, which will be one of Sweden’s largest offshore wind farms, is a crucial piece of the puzzle to meet West Sweden’s growing electricity needs. “Now we look forward to receiving a positive message from the government about the remaining permit applications in order to be able to deliver electricity on time when the need is realised.”

Power Technology
http://www.world-energy.org/

11 March 2025

2023 breaks renewable energy record

Eurostat's latest publication "Shedding light on energy in Europe - 2025 edition" is a comprehensive interactive analysis covering the state of the European Union's energy sector in 2023 and the first half of 2024. The document details the structure of energy production and consumption, the degree of import dependence, price dynamics and environmental impacts.

Despite the steady growth of renewable sources, petroleum products still accounted for the largest share of the EU energy mix in 2023, at 37.7 per cent. This was followed by natural gas (20.4%), renewable energy (19.5%), solid fossil fuels (10.6%) and nuclear energy (11.8%). Interestingly, the share of RES varied from 50.2 per cent in Sweden to 14 per cent in Luxembourg.

For the first time in EU history, renewable energy took the leading position in energy production with 46% of the total. Nuclear energy ranked second (29%), while solid fuels accounted for 17%. Some countries showed almost complete dependence on RES: Latvia - 99.4%, Portugal - 98%, Cyprus - 96.5%. Imports remained the dominant source of energy: the EU purchased 58% of its energy from outside. The main import is oil (65%), followed by gas (25%) and coal (5%). After the sanctions against Russia, its share in supplies fell to 4% (oil), 11% (gas) and 1% (coal). The US, Norway and Australia became the leaders in supplies.

In 2023, the largest energy consumer in the EU is transport (32% of final consumption), followed by households (26%) and industry (25%). Despite the growing trend of energy efficiency, fuel still accounts for 37% of consumption, while electricity accounts for 23% and RES for 25% (including indirect consumption through electricity). In the first half of 2024, household electricity prices reach €40 per 100 kWh in Germany and €37 in Ireland and Denmark. The lowest tariffs are in Hungary (€11) and Bulgaria (€12). Gas was the most expensive in Sweden (€18) and the cheapest again in Hungary (€3).

Greenhouse gas emissions in the EU in 2022 amounted to 3.2 billion tonnes of CO_2-equivalent - a 31% reduction compared to 1990. The reduction leaders are Romania (-73%) and Sweden (-72%). The EU's goal is to achieve a 55% reduction by 2030 and full carbon neutrality by 2050. In 2023, primary energy consumption in the EU fell to 1,211 million tonnes of oil equivalent, the lowest since 2005. Final consumption also fell by 3% to 894 million tonnes of oil equivalent. About 7 per cent of the path remains to be travelled before the 2030 targets are met.

In the first half of 2024, household electricity prices reach €40 per 100 kWh in Germany and €37 in Ireland and Denmark. The lowest tariffs are in Hungary (€11) and Bulgaria (€12). Gas was the most expensive in Sweden (€18) and the cheapest again in Hungary (€3). Greenhouse gas emissions in the EU in 2022 amounted to 3.2 billion tonnes of CO_2-equivalent - a 31% reduction compared to 1990. The reduction leaders are Romania (-73%) and Sweden (-72%). The EU's goal is to achieve a 55% reduction by 2030 and full carbon neutrality by 2050.

In 2023, primary energy consumption in the EU fell to 1,211 million tonnes of oil equivalent, the lowest since 2005. Final consumption also fell by 3% to 894 million tonnes of oil equivalent. About 7 per cent of the path remains to be travelled before the 2030 targets are met.

Luxtoday
http://luxtoday.lu/

12 March 2025

Ontario suspends tariff on electricity exports to US

Ontario suspended its 25% tariff on electricity exports to the United States late Tuesday, a day after it took effect. The province's Independent Electricity System Operator is keeping its "tariff response charge," but has set it to zero, down from $10/MWh, or about $7/MWh in U.S. dollars, according to the grid operator. "The IESO will continue to engage with government and neighbouring system operators including those in the United States," the grid operator said. In response to Ontario's tariff, President Trump on Tuesday said on social media he would increase tariffs on imported Canadian aluminum and steel to 50% from 25%. Trump also said he would declare a "National Emergency on Electricity within the threatened area … to alleviate this abusive threat from Canada."

Ontario paused its tariff on power exports after Ontario Premier Doug Ford and U.S. Secretary of Commerce Howard Lutnik had a "productive discussion" Tuesday afternoon, according to Ontario Minister of Energy and Electrification Stephen Lecce. Ford and Lutnik

agreed to discuss a renewed United States-Mexico-Canada Agreement ahead of the April 2 reciprocal tariff deadline, Lecce said in a letter to the IESO. However, Ontario could reinstate the export tariff "at any time," Lecce said. "Canada and the United States have long shared deep economic ties," Lecce said. "We are America's largest customer and export destination, and a trusted supplier of electricity and critical minerals."

Ontario's grid connects to the U.S. at three points in Michigan, Minnesota and New York. The province exported 14.6 million MWh, 14.2 million MWh and 12 million MWh to the U.S. between 2021 and 2023, according to Ford's office. "Today's tariff escalation and stand down offered another example of President Donald Trump's apparently growing indifference to what we have previously described as 'market-based political accountability,'" ClearView Energy Partners said.

The events may also have signaled Trump's willingness to pursue "muscular interventions" to support continued operation and possible reopening of coal-fired and other baseload power plants, the research firm said in a client note. The Trump administration may consider using section 202(c) of the Federal Power Act, possibly with the Defense Production Act, to support certain power plants in the name of resource adequacy and/or lowering power prices, ClearView analysts said.

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