WORLD POWER SYSTEMS REVIEW

1 August 2024

15 July 2024

Grid incident in south-eastern part of the Continental Europe power system – Update

Following the blackout incident in the south-eastern part of Continental Europe on 21 June, today ENTSO-E, ACER and regulators and transmission system operators (TSOs) in the region held the first meeting of their joint Expert Panel. The Expert Panel will investigate in detail the root causes of this incident and will make recommendations in a final report, which will also be made public. With this update, ENTSO-E reports on the sequence of events of the incident which, thanks to the coordinated efforts of the affected TSOs, was concluded within a few hours with the power supply restoration.

On 21 June 2024 at 12:24 CET, due to a major incident in the Continental Europe power system region, a large part of the transmission systems of Albania, Montenegro, Bosnia and Herzegovina as well as Croatia suffered a voltage collapse followed by a total blackout in this area. The rest of the Continental Europe power system was not significantly affected by the incident.

Figure 1 depicts the area affected by the voltage collapse and disruption of electricity supply:

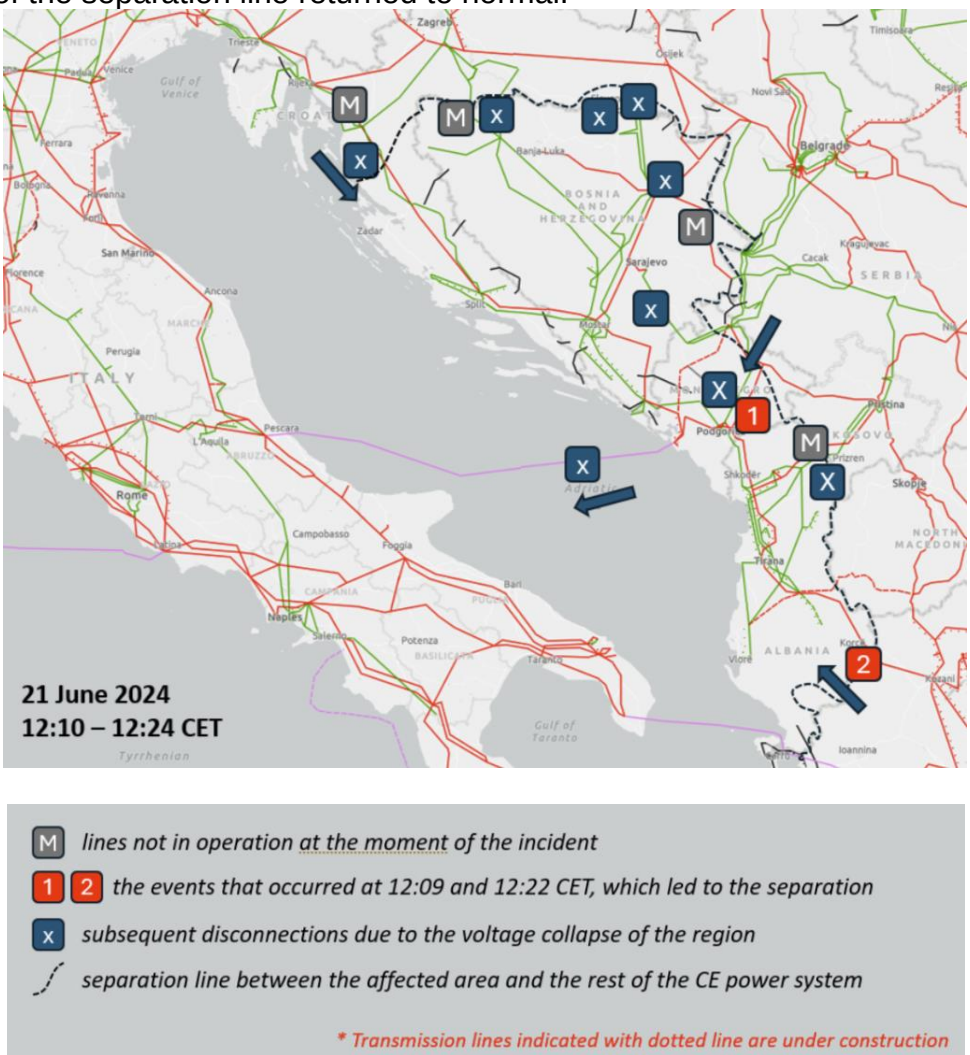
Figure 1 – Geographic area affected by the incident of 21 June 2024 (in black).

Just before the incident, the affected area was importing about 2000 MW from neighbouring countries and exporting 417 MW to Italy through the HVDC sub-sea cable between Montenegro and Italy (Monita).

Within a short period of time (at 12:09 and 12:22 CET), two unexpected tripping of overhead lines occurred. Immediately after the second tripping at 12:22, the voltage started to drop in a wide area. These voltage drops continued until they reached such low levels to cause high currents and further low voltages on many lines in the region. This triggered protection devices to disconnect these lines, resulting in the separation of the affected area (indicated in black in Figure 1) from the Continental Europe power system. The affected area continued to experience a voltage decrease as well as a frequency drop. Finally, this led to a blackout in the affected area. The investigations conducted so far, have yielded the following sequence of events:

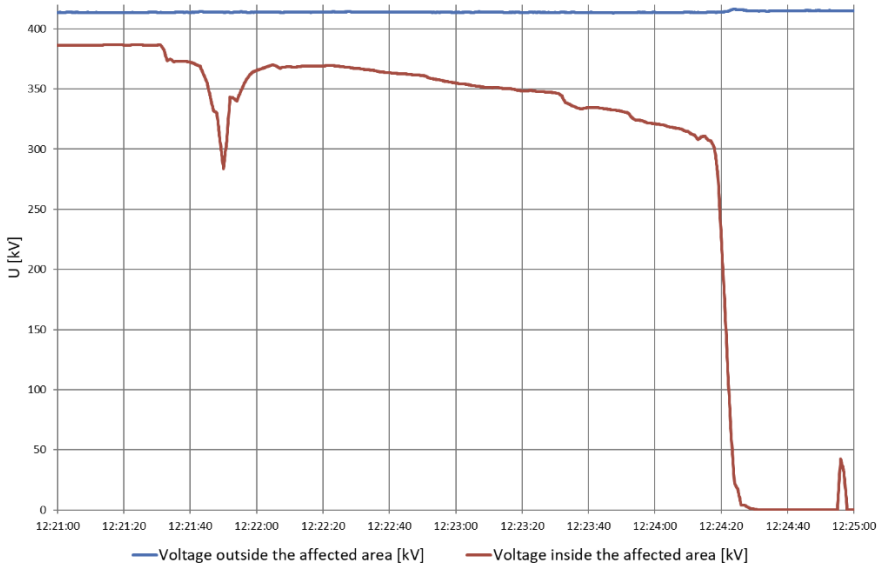
- At 12:09 CET, the 400 kV line Ribarevine - Podgorica2 in Montenegro tripped due to a short circuit. Following this outage, the loading of several other lines increased, without creating grid overloads, nor voltage or frequency problems.
- At 12:22 CET, the 400 kV line Zemblak – Kardia between Albania and Greece tripped due to a short circuit as well. Both tripping events thus resulted in an (N-2) incident with several system state violations in terms of line loading and voltage. Following this second trip, the voltage in the South-Eastern part of the Continental Europe power system started to decrease rapidly.
- At 12:24 CET, due to the continued drop in the region, several lines disconnected one after the other, due to undervoltage and overcurrent protections, causing a system separation.

The cascading power line tripping quickly led to a voltage collapse and a disruption of electricity supply in the affected area. Voltages continued to drop to zero, whereas on the other side of the separation line returned to normal.



Sequence of events at the beginning of the incident on 21 June 2024
Figure 2 - Sequence of events at the beginning of the incident on 21 June 2024

In the non-affected area (indicated in blue in figure 1), the voltage restored very quickly to 400 kV and the frequency remained within the normal interval (between 49.95 and 50.05 Hz).



Voltages in the region during the event on 21 June 2024
Figure 3 – Voltages in the region during the event on 21 June 2024

After the disruption of electricity supply, the affected TSOs worked together in a coordinated effort to restore the voltage on the 400 kV grid, which was restored in less than 3 hours. Subsequently, the power to local load was restored shortly thereafter.

All information published to date, including the present communication, is subject to the results of a detailed investigation on the incident. The investigation follows the legal framework under the Commission Regulation (EU) 2017/1485 of 2 August 2017 (System Operation Guideline), where National Regulatory Authorities and ACER are invited to join with the TSOs in the Expert Panel.

In line with the provisions of the aforementioned Commission Regulation (EU) 2017/1485, ENTSO-E will present the results of the investigation to the Electricity Coordination Group and will subsequently publish them once the analysis is completed.

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

16 July 2024

EIA: Data center, crypto operations in 10 states drive all US commercial power sales growth since 2019

U.S. commercial sector electricity use grew 1% last year from 2019 levels, but the growth was driven by data center development in 10 states, according to the Energy Information Administration.

The agency expects electricity sales to the U.S. commercial sector will grow 3% this year and by 1% in 2025, largely driven by the development of large-scale computing facilities such as data centers and cryptocurrency operations, the EIA said in a June 28 report. Commercial sector electricity demand in the 10 states with the most demand growth jumped 10%, or by a total of 42 billion kWh, between 2019 and 2023, according to the EIA. Demand in the 40 other states fell 3%, or by 28 billion kWh, in the same period. Virginia, Texas, South Carolina and Arizona led the way with the highest commercial sector demand growth while Pennsylvania, New York, Illinois and New Jersey had the largest losses in commercial sales, the EIA said.

Sales in North Dakota jumped 37% in the four-year period, the most of any state, according to the agency. The EIA said it revised its outlook upwards for commercial sales

after reviewing information from utilities and grid operators. The agency made the largest changes to the South Atlantic and West South Central census divisions, which account for 40% of U.S. commercial demand. The South Atlantic division includes eight states from Maryland to Florida and the District of Columbia, and the West South-Central division includes Arkansas, Louisiana, Oklahoma and Texas. The EIA expects commercial sales in the South Atlantic division will increase 5% this year and 2% in 2025, and by 3% and 1% in the same years in the West South Central division.

The U.S. power sector produced 5% more electricity in the first half this year compared to the same period in 2023, driven by a hotter-than-normal start to summer and growing commercial sector demand, the EIA said in its short-term energy outlook, released July 9. The EIA said it anticipates U.S. generation growth will slow to 2% in the second half of this year from the second half of 2023 as commercial sector demand growth slows because of the agency's expectation that space cooling use by the sector will be similar to the same period in 2023.

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

17 July 2024

Bipartisan Senate bill proposes $12B for DOE's AI work to spur energy breakthroughs, other advances

FASST will "transform the vast repositories of scientific data produced at DOE user facilities to be AI-ready and build the next-generation of highly energy efficient AI supercomputers," the agency said Tuesday.

DOE in April published a pair of reports concluding AI can help manage the U.S. electric grid, including reducing emissions and lowering costs — but also warning that AI could expose the country to a host of risks, including cyber or physical grid attacks, and supply chain compromises, if deployed "naïvely." AI "is an innovative technology that can help unleash breakthroughs in energy technologies and enhance our national security," Secretary of Energy Jennifer Granholm said in a July 16 statement. "FASST builds on DOE's role as the nation's steward of advanced supercomputing and research infrastructure."

According to a fact sheet distributed by DOE, the initiative will focus on four related areas:

- Making AI-ready datasets available to government, industry and scientific community partners to train, test and validate AI models;
- Building the next generation of energy efficient, AI-enabled supercomputing platforms and algorithms to leverage scientific computing with machine learning and digital infrastructure;
- Accelerating discovery across all branches of science and;
- Revolutionizing the way DOE delivers on its science, energy and security mission.

"AI-accelerated scientific discoveries can lead to affordable batteries for electric vehicles, breakthroughs in fusion energy, new cancer-fighting drugs, and help assure our national security," the agency said. Sen. Joe Manchin, I-W. Va., and Sen. Lisa Murkowski, R-Alaska, introduced legislation to advance the FASST initiative on July 10. It requires the secretary of energy to report to Congress annually on the "progress, findings, and expenditures" of the initiative's programs, and sets an annual budget of $2.4 billion over five years. "As AI technology takes the world by storm, the United States needs to meet the moment quickly and effectively before our adversaries do," Manchin said in a statement.

"Deploying our existing lab infrastructure and scientific expertise for AI instead of starting from scratch will also safeguard taxpayer dollars and allow for us to move quickly."

The legislation also establishes a network of AI research clusters built on DOE's existing infrastructure, calls for an AI "risk evaluation and mitigation program" to evaluate security risks, and directs the Federal Energy Regulatory Commission to initiate a rulemaking around the use of advanced computing to expedite the interconnection queue process. The legislation also directs DOE to study the growing energy demand of data centers and AI. The Electric Power Research Institute in May published a report concluding data centers could consume 9% of the United States' electricity generation by 2030, about double the amount consumed today. AI queries require about ten times the electricity of traditional internet searches, the report said. "AI can be used to reduce energy use in data centers and advanced manufacturing streamlining operations identifying new ways of processing data and information," West Monroe's DeCotis said. "The Department's efforts should set a standard by which AI capabilities and use can advance innovations and discoveries in scientific, energy and natural security communities."

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

23 July 2024

More than 1,300 customers enrolled in Duke Energy's new solar and storage incentive program

Duke Energy has enrolled more than 1,300 customers in North Carolina in its new PowerPair pilot, a one-time incentive-based program that offers up to $9,000 in incentives for residential customers who install a new solar plus battery system. The pilot program was approved by the North Carolina Utilities Commission (NCUC) in January 2024 and launched in May 2024. The total incentive is based on the approved capacity of the solar array and battery installed. "North Carolina already ranks fourth in the nation for overall solar power with approximately 45,000 Duke Energy customers generating about 350 MW through solar panels," said Meghan Dewey, vice president of products and services for Duke Energy. "PowerPair is a valuable solution for our customers ready to invest in solar plus storage for their homes. It is one of several ways we're helping our customers save energy and money, while continuing to explore new ways to help manage low carbon grids of the future."

Participants in the pilot may choose to enroll in PowerPair on a residential solar choice rider (RSC) or through a net metering bridge rider (NMB) and receive a one-time incentive of up to $9,000. NMB customers additionally enroll in the company's new Power Manager and EnergyWise Home battery option and receive additional monthly bill credits for allowing Duke Energy to periodically adjust their battery system's operating setting for a temporary period to provide stored electricity back to the grid."Duke Energy is diving headfirst into our next iteration of solar rebate programs to match the increased need to pair solar and battery," said Dewey.

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

23 July 2024

Bipartisan energy permitting bill ups FERC transmission siting authority, requires interregional planning

"Bipartisan permitting and transmission reform is a welcome development to keep energy costs down and supplies reliable," Devin Hartman, director of energy and environmental policy at the R Street Institute, said in an email Tuesday. Moving the

legislation will be “challenging” this year, and the best odds of action may be during the “lame duck” session after the election, Hartman said.

If the bill doesn’t pass this year, it moves permitting and transmission reform up the agenda for the next Congress, Hartman said, pointing to buy-in from the previous Congress that made last year’s permitting reform possible. “As grid reliability authorities continue to reveal the merits of transmission expansion, I would expect momentum for interregional transmission reform to build as well,” Hartman said.

Manchin, who will exit Congress when this term ends, has been pushing for permitting reform legislation for several years. The bill grew out of hearings held by the Senate Energy and Natural Resources Committee and bipartisan discussion, according to Manchin, the committee chairman. “Ranking Member Barrasso and I have put together a commonsense, bipartisan piece of legislation that will speed up permitting and provide more certainty for all types of energy and mineral projects without bypassing important protections for our environment and impacted communities,” Manchin said in a press release.

The bill sets deadlines for filing suits over energy and mineral projects, sets requirements for onshore and offshore oil, gas, coal and renewable energy leasing and permitting as well as for transmission siting. It also includes provisions on hard rock mining and sets a 90-day deadline for the Secretary of Energy to grant or deny liquefied natural gas export applications, according to a summary of the legislation.

The bill orders FERC to issue a rule on interregional transmission planning within 180 days of the legislation’s enactment, according to the summary. The rule would require neighboring transmission planning regions to draft joint interregional transmission plans, and to establish rate treatments for interregional transmission planning and cost allocation.

The bill requires transmission planners to consider advanced conductors and reconductoring as a way to maximize the transmission capabilities of existing infrastructure and rights-of-way, according to the summary. It requires that interregional plans account for a minimum list of reliability and affordability benefits and contain criteria for regions to select facilities that improve reliability, protect or benefit consumers and are consistent with the public interest, the summary said.

Reflecting FERC’s existing practice, a project’s cost would be paid for only by those who benefit from it, according to the summary. “Customers receiving no benefit or benefits that are trivial in relation to the costs shall not be made to pay,” the summary said.

The bill also changes FERC’s existing backstop siting authority for interstate electric transmission lines. It eliminates the authority of the Secretary of Energy to designate a National Interest Electric Transmission Corridor and establishes a process that allows individual applicants to propose national-interest projects, according to the summary. It allows FERC to approve compensation to communities hosting transmission facilities, the summary said.

The bill would also:

- Require the North American Electric Reliability Corp. to conduct reliability assessments on proposed federal rules, regulations or standards that are likely to cause violations of electric reliability standards or resource adequacy requirements;
- Establish deadlines for permitting renewable energy projects on federal land;
- Set a goal of permitting 50 GW of renewable energy projects on federal land by 2030 as well as 30 GW of offshore wind;
- Require annual federal geothermal lease sales; and,
- Mandate certain “categorical exclusions” under the National Environmental Policy Act for developing transmission or distribution facilities on federal land.

The bill includes key elements contained in the SPEED and Reliability Act and the BIG WIRES Act offered by Sen. John Hickenlooper, D-Colo., and Rep. Scott Peters, D-Calif.

"While this is a strong first step, there is still much work to be done and I look forward to continuing my talks with House Natural Resources Chairman Bruce Westerman on our own permitting reform proposal," Peters said in a statement Monday.

Congress should build on the bill's "framework" to develop "comprehensive permitting reform that supports America's transition to an economy built on advanced energy," according to Advanced Energy United, a trade group. "This bipartisan proposal provides a good foundation on which to build a comprehensive package of legislative reforms," Harry Godfrey, AEU managing director, said in a press release. "Both parties agree that unreasonable timetables and fragmented planning processes are making it too difficult to invest and build." The bill would help improve grid reliability and U.S. economic competitiveness by speeding up transmission development, according to Americans for a Clean Energy Grid.

"FERC gaining plenary authority for transmission siting — just like it has for natural gas — would represent an important change in how the federal government permits transmission infrastructure in a timely and transparent manner," Christina Hayes, ACEG executive director, said in a statement. The Sierra Club urged support for the Clean Electricity and Transmission Acceleration Act, proposed by Reps. Sean Casten, D-Ill., and Mike Levin, D-Calif., which the group said offers a "real solution" to permitting issues without including "handouts" for the fossil fuel industry.

"We urge Congress to put forward real solutions to build a clean energy economy, and not pair those reforms with more attempts to pad the pockets of fossil fuel executives under the guise of reducing emissions," Mahyar Sorour, Sierra Club Beyond Fossil Fuels policy director, said in a press release.

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

24 July 2024

Sulzer's submersible mixers part of Europe's Colossal Project for wastewater treatment

As part of one of the largest investments in Europe for wastewater treatment, a plant near Naples, Italy, was equipped with innovative technologies to improve water quality while minimizing energy usage. At the core of effective denitrification operations are Sulzer's XRW 400 submersible mixers with a permanent magnet motor, which could cut energy costs by up to EUR 45'000.

The large-scale project aims at improving the quality of the coastal environment and the waters around Naples by revamping and upgrading key water and wastewater treatment facilities in the region. This program represents the most considerable European investment in water purification and decontamination for the past 20 years, supporting the treatment of wastewater from over 4.5 million inhabitant equivalents (900'000 m3 of water per day) in the region. One of the five facilities selected is among the largest in Europe. Established in the 1970s, it gathers wastewater from a large area in the northern part of Naples and has a processing capacity of 240'000 m3 of water per day (1.2 million inhabitant equivalents). To continue supporting the region, key improvements were required to optimize the sewage treatment process and energy consumption while ensuring regulatory compliance.

To meet the objectives set out for the successful re-functionalization and modernization of this infrastructure, a leading water and waste service specialist contacted Sulzer. The companies have a longstanding relationship and, through multiple international collaborations, it has been able to learn more about Sulzer's state-of-the-art technologies and services, growing its confidence in the ability of its partner to deliver well-suited solutions. In particular, there was enthusiasm to adopt 28 of Sulzer's highly energy efficient

mixers, such as the XRW 300 range of submersible units, for the 14 denitrification tanks within the wastewater treatment plant.

Used to remove nitrogen from wastewater effluents, the tanks installed in the facility have an unusual geometry, being 22 m long but only 7.85 m and 4.8 m in width and height. Therefore, it was necessary to specify mixers featuring propellers with a limited diameter, which are typically regarded as difficult to adjust in order to minimize energy usage.

Elisabetta Sardi, Area Manager at Sulzer, explains: "To address the specific needs of this application, we suggested the use of our XRW 400 submersible mixers. These are extremely compact, delivering an effective processing of wastewater, and are equipped with Premium Efficiency IE3-equivalent, sensorless, permanent-magnet motors that are controlled by variable frequency drives. This means that they can adjust their speed to suit the real-time environmental conditions rather than maintaining a set speed at all times. As a result, it is possible to reduce energy use whenever possible, delivering significant benefits when it comes to operational costs and environmental performance."

Water Technology
http://www.water-technology.net/

25 July 2024

New York gets federal funding to demonstrate fire-safe long-duration energy storage

A pair of fire-safe long-duration energy storage (LDES) projects will be installed at two regionally diverse sites in New York State to demonstrate their viability in varying geographical settings for different load characteristics, Governor Kathy Hochul announced today, on the heels of federal funding.

The projects will be developed by the New York Power Authority (NYPA), Rockland County-based Urban Electric Power (UEP), and the Electric Power Research Institute (EPRI). One installation will be in Westchester County's Grasslands Reservation, and the other will be built on the State University of New York's (SUNY) Oneonta campus.

Each system will be 300 kilowatts with 12 or more hours of operation and offer the potential for reducing electric bills through demand charge reduction from peak shaving. The SUNY Oneonta project will also support a forthcoming on-site solar project, helping to achieve the campus' long-term clean energy plans. The exact site locations will be determined as part of the first phase of work. Construction will begin in 2026 and the facilities will be operational in 2028.

The DOE is partially funding the endeavor to catalyze impactful long-duration energy storage (LDES) demonstration projects capable of delivering electricity for 10-24 hours, surpassing the conventional short-duration systems that lithium-ion can typically support. Made possible by the Infrastructure Investment and Jobs Act, the more than $6.5 million in DOE funds will cover half the $13.1 million project cost. According to the DOE, today's energy storage technologies are not sufficiently scaled or affordable to support the broad use of renewable energy on the electric grid. Today's announcement supports the Climate Leadership and Community Protection Act goals and marks progress towards New York's nation-leading six gigawatts of energy storage by 2030.

"Energy storage that ensures a safe and reliable power supply is critical to New York's clean energy future," Governor Hochul said. "By supporting leading-edge projects—such as these installations that provide extended storage duration—we will validate new technologies and illustrate how grid storage can be safely and effectively integrated into communities throughout the state." The Power Authority, the nation's largest state utility, will partner with UEP, a battery manufacturer based in Pearl River, to help LDES systems overcome the technical and institutional barriers to achieve wider adoption. EPRI, an independent, non-profit energy research and development (R&D) organization, will provide

technical and industry expertise and guidance on technology readiness, safety assessment, test protocol development, techno-economic analysis, operations plan, and the community benefits plan.

"The Power Authority is invested in pursuing the development of the technology needed that will support the integration of renewable generation while also ensuring that power is available during peak demand periods," said New York Power Authority President and CEO Justin E. Driscoll. "This cutting-edge, long-duration energy storage project seeks to demonstrate a safer clean energy technology, illustrating New York State's leadership in accelerating the transition to renewable resources and validating the use of these systems in meeting customer needs and commercial viability."

The Power Authority will support the storage projects with energy education outreach programs to under-resourced communities located near the demonstration sites. NYPA, through its established environmental justice program, will support a community benefits plan focused on educational programming, providing STEM, career and college readiness, and adult energy literacy workshops on energy storage. A community stakeholder working group will be formed involving local schools, governments, universities, community colleges, and community organizations. The working group will steer the development and deployment of programs that will prioritize underserved populations.

The projects will use fire-safe battery technology that can be implemented in urban or rural settings to demonstrate a stable energy supply during periods of high demand and in extreme weather conditions. They will employ UEP's zinc manganese dioxide batteries, utilizing fire-safe chemistry and low-cost, domestically available, earth-abundant raw materials with existing supply.

Per UEP, the batteries have the same chemistry as household batteries and are expected to show comparable performance to lithium-ion batteries without the inherent safety and supply chain issues. A successful demonstration could enable market adoption of the company's technology by proving decreased risk and reducing demand on grid infrastructure through reduced peak demand load. The batteries have been successfully piloted on smaller scales at several energy storage installations, the company says.

"It's an honor to provide the energy storage solution for these groundbreaking projects," Urban Electric Power CEO Sanjoy Banerjee added. "As the demand for long-duration energy storage grows, UEP's innovative zinc-manganese technology stands out as a cost-effective and safe alternative. These projects are set to enhance the resilience of New York's electrical grid and demonstrate the critical contribution of zinc batteries towards a sustainable energy landscape."

NY.GOV
http://www.governor.ny.gov/

25 July 2024

SMRs feature in Indian budget

The Indian government has announced plans to partner with the private sector to develop small modular reactors in a 2024-25 budget announcement which recognises a significant role for nuclear in the country's future energy mix. The budget was presented to Parliament by Minister of Finance Nirmala Sitharaman, who said nuclear energy is expected to form a "very significant" part of the energy mix for Viksit Bharat, the government's strategy to make India into a completely developed nation by 2047.

The first budget since Prime Minister Narendra Modi won a third successive term in office in the general election which took place earlier this year sets out the detailed roadmap for the government's pursuit of its development goal, in line with the strategy set out in an

interim budget presented in February. Energy security is one of nine priorities for achieving Viksit Bharat that was identified in the interim budget.

"Towards that pursuit, our government will partner with the private sector for (1) setting up Bharat Small Reactors, (2) research & development of Bharat Small Modular Reactor, and (3) research & development of newer technologies for nuclear energy," Sitharaman said in her budget speech. "The R&D funding announced in the interim budget will be made available for this sector." The budget allocates a total of INR24,969 crore (USD2.983 billion) to the Department of Atomic Energy (1 crore is 10 million).

Sitharaman said the government intends to bring out a policy document on "appropriate" energy transition pathways "that balances the imperatives of employment, growth and environmental sustainability". As well as the commitment to nuclear energy, the budget includes a major project to install rooftop solar, and a policy for promoting pumped storage projects, which the government says will help to facilitate the integration of the growing share of renewable energy. A project to build a full-scale 800 MWe commercial Advanced Ultra Super Critical thermal power plant will receive fiscal support from the government, and a roadmap for transitioning 'hard to abate' industries to focus on emission targets will be formulated, she said.

India currently has 23 operable nuclear reactors providing some 7,425 MWe of generating capacity, with seven units currently under construction, including both Indian-designed and Russian-designed units as well as one fast breeder reactor. It has plans for a fleet of Indian-designed and built 700 MWe pressurised heavy water reactors as well as for large reactors from overseas vendors, including further Russian-designed VVER reactors in addition to those already in operation and under construction at Kudankulam in Tamil Nadu.

More recently, Indian attention has also been turning to small modular reactors (SMRs): In August 2023, Minister of State Jitendra Singh told the country's parliament that the government was considering options for SMRs, and looking at ways to allow the participation of the private sector and start-ups in such projects.

India's Atomic Energy Act of 1962 prohibits private control of nuclear power generation: only two government-owned enterprises - NPCIL and Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI, set up to build and operate fast reactors) - are legally allowed to own and operate nuclear power plants in India. But the possibility of involving other public sector and private corporations in the country's future expansion plans has been under consideration for some time. Earlier this year, government sources said India was planning to invite private firms to invest some USD26 billion in its nuclear energy sector, and holding talks with several private firms to secure investments to support the construction of some 11,000 MWe of new nuclear capacity by 2040.

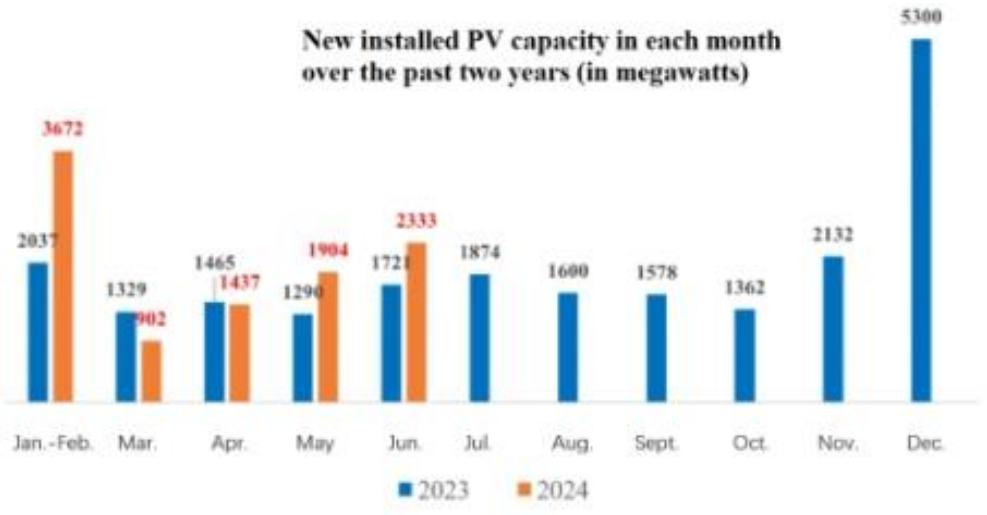
World Nuclear News
http://www.world-nuclear-news.org/

25 July 2024

China installs 102.48 GW of new photovoltaic power in the first half of 2024

China added 102.48GW of new PV installations between January and June 2024, according to the latest data from China's National Energy Administration.

Notably, the second quarter saw a significant increase, with an average of over 17GW of new installations per month. On July 20, the National Energy Administration released the statistics on the national power industry from January to June. In the first half of 2024, China's new PV installations reached 102.48GW, a year-on-year growth of 30.68%.



In February, Wang Bohua, the honorary chairman of the China PV Industry Association, predicted that new PV installations in China for 2024 would be between 190GW and 220GW. Compared to the new installed capacity of 216.88GW last year, this forecast indicates that he does not expect the installed capacity to continue to grow rapidly this year. Another point of concern is that over the past year, due to the continuous decline in industrial chain prices, China's PV enterprises have fallen into the dilemma of incremental non-profit increase, which has also directly led to a general decline in China's PV product exports in H1 of this year.

According to the data released by the General Administration of Customs of China, from January to June this year, the total export value of domestic PV main materials was US$18.979 billion, a 35.07% decrease from the previous year. In Q2, the export value of China's PV main materials remained generally stable at US$ billion.

Evwind
http://www.evwind.es/

26 July 2024

Dutch set to win EU nod for $2.2 bln state aid for new nuclear reactor

The Dutch government is set to secure EU approval for 2 billion euros ($2.2 billion) of state aid to build a nuclear reactor to produce medical isotopes for cancer treatment, people with direct knowledge of the matter said on Thursday. The European Commission approval is conditional on a pledge from the Dutch government that the medical isotopes would not be sold below cost, the people said, following a complaint from U.S. maker of radioactive medical isotopes SHINE Technologies. The EU decision could come as early as Friday, one of the people said.

The EU executive, which acts as the bloc's competition enforcer, declined to comment on its discussions with the Dutch authorities or the outcome or timing of the talks. "The Commission is in close and constructive discussions with the Dutch authorities as regards public support to the PALLAS project with a view to ensuring the compatibility with the EU Treaties, while avoiding undue distortions of competition in the production and supply of medical radioisotopes," a Commission spokesperson said.

The Dutch Ministry of Health, Welfare and Sport declined comment. The Netherlands, a leading producer of medical isotopes, proposed a new nuclear reactor for medical isotopes following concerns that shortages would arise after 2030. "Government-subsidised

companies should not be allowed to block innovative private-market solutions from serving patients due to pricing below cost due to illegal subsidies," SHINE Technologies said in an email. The U.S. company complained to the Commission last year, saying that the Dutch state had no legal basis to grant state aid for the new reactor.

Reuters
http://www.reuters.com/

29 July 2024

Data centres consumed 21% of Ireland's metered electricity in 2023

The Central Statistics Office for Ireland has released metered electricity consumption statistics for 2023, showing that data centres in the country took a 21% share of the total usage. Data centres used more electricity than the total amount for urban dwellings (18%) and for rural dwellings (10%). For both categories, electricity consumption has remained steady since 2022. Urban housing used marginally less electricity in 2023 than in 2022 (a drop of 1%). By comparison, the load taken by data centres has rapidly increased: in 2015, data centres used 5% of metered electricity, rising to 18% in 2022. In the one year since, that has risen to 21%.

An article published by local outlet RTE in April 2024 revealed that Ireland has 82 data centres, with 14 more under construction and planning approved for 40 more. This could lead to a 65% growth in the coming years. All of the technologies housed in data centres demand high amounts of electricity, not least the cooling systems necessary to prevent hardware failures. The critical components of a data centre – routers, switches, firewalls, storage systems, servers, and application-delivery controllers – all generate significant heat. Beyond this, data centres are operational for 24 hours of the day, every day of the year. They might run multiple servers simultaneously on top of other, high-density computing. Locating data centres near renewables is one way that companies aim to ensure relative sustainability. One reason for Ireland's proliferating data centre landscape is its cooler climate, meaning that less power is needed to prevent the systems from overheating.

Data centres also support artificial intelligence (AI). Technology firm Microsoft is set to overshoot its 2030 sustainability goals because of the energy demands of developing its AI technologies. As the company pushes to run its data centres on renewable energy, locations like Ireland will be attractive, due to the proximity to renewable energy generation sites. Interest in Ireland as a future tech hub is a critical component of foreign and private investment in the country and renewable sources must meet the resulting high energy demand. Since 2021, Ireland's Climate Action Plan has included a target to increase the share of electricity generated from renewable energy sources to 80% by 2030.

A Cornwall Insight report highlighted that there is a 'policy vacuum' for long-duration energy storage (LDES) technologies, threatening Ireland's 2030 renewable energy target. Further, the consultancy found that Irish wholesale power prices are a third higher than elsewhere in Europe; senior modeler Sarah Nolan attributed this, at least in part, to data centres.

Current+
http://www.current-news.co.uk/

30 July 2024

Wind and solar energy overtake fossil fuels to provide 30% of EU electricity

Wind turbines and solar panels have overtaken fossil fuels to generate 30% of the European Union's electricity in the first half of the year, a report has found.

Power generation from burning coal, oil and gas fell 17% in the first six months of 2024 compared with the same period the year before, according to climate thinktank Ember. It found the continued shift away from polluting fuels has led to a one-third drop in the sector's emissions since the first half of 2022. Chris Rosslowe, an analyst at Ember, said the rise of wind and solar was narrowing the role of fossil fuels. "We are witnessing a historic shift in the power sector, and it is happening rapidly."

The report found EU power plants burned 24% less coal and 14% less gas from the first half of 2023 to the first half of 2024. The shift comes despite a small uptick in electricity demand that has followed two years of decline linked to the pandemic and Ukraine war. "If member states can keep momentum up on wind and solar deployment then freedom from fossil power reliance will truly start to come into view," said Rosslowe. Europe is among the biggest historical polluters that have contributed the planet-heating gas that has made extreme weather more violent, but it also has some of the most ambitious targets to clean up its economy. Since Russia's invasion of Ukraine, European leaders have sped up their shift to renewables with stronger rhetoric and looser permitting rules.

But while solar power has boomed, the wind industry has struggled with high inflation on top of continued opposition from politicians and the public. The EU installed a record 16.2GW of new wind power capacity in 2023, according to the lobby group Wind Power Europe, but this was about half of what was needed that year to meet its climate targets for the end of the decade. Scenarios modelled by the Intergovernmental Panel on Climate Change (IPCC) and International Energy Agency show that most of the electricity needed to power a clean economy will come from rays of sunlight shining on panels and gusts of wind spinning turbines.

The Ember report found 13 member states generated more electricity from wind and solar than from fossil fuels in the first half of the year. Germany, Belgium, Hungary and the Netherlands hit that milestone for the first time, the authors found. Andrea Hahmann, a scientist at Denmark Technical University who co-wrote an IPCC report chapter on energy systems, said the development was "significant but not surprising". "Strong winds were prevalent during the first six months of 2024 in northern Europe, where most wind energy is generated," she said. "The 'crossing of the lines' demonstrates that the EU's electricity transition is possible, and we should not give in to pessimism. The renewable energy targets that must be met are substantial but achievable with the proper policy measures."

This article's headline was updated on 30 July 2024 to make clear that it is wind and solar energy that make up 30% of EU electricity. With other renewables such as hydropower included, the proportion would be 50%. The graphics were also updated to make clear that the source data came from the whole of the EU, rather than just 13 member states.

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