1 November 2023

Ørsted cancels two offshore wind projects along New Jersey coast

Danish energy company Ørsted announced Tuesday that it is abandoning two of the eight offshore wind projects it has in development in the U.S., citing project delays, permitting timelines, and increased interest rates. The company will "cease development" on Ocean Wind 1 and 2, but said it will be moving ahead with the 700-MW Revolution Wind farm offshore Rhode Island and Connecticut along with partner Eversource. Ocean Wind 1 and 2 were Ørsted's largest projects in development, with a planned capacity of 1,100 MW and 1,148 MW, respectively. "We are extremely disappointed to announce that we are ceasing the development of Ocean Wind 1 and 2," CEO Mads Nipper said in a release.

New Jersey's Gov. Phil Murphy called the company's decision "outrageous" in a Wednesday release, saying it called into question Ørsted's credibility and competence, and that he had directed his administration to review the state's legal pathways for ensuring that Ørsted "fully and immediately honors its obligations."

Ørsted is recognizing $4 billion in impairments as a result of the canceled projects and financial struggles with ongoing projects. The cancelation of Ocean Wind 1 alone resulted in an impairment of around $2.8 billion, the company said. Offshore wind projects in the U.S. have hit a slew of financial difficulties and other challenges recently, with several developers moving to exit their power purchase agreements in the face of rising costs. Nipper said that the company remains committed to the U.S. renewables market, and values the efforts made by the federal government to support the offshore wind industry, but that "significant adverse developments from supply chain challenges, leading to delays in the project schedule, and rising interest rates" led Ørsted to this decision.

The company has also "updated its view" on assumptions regarding factors like "tax credit monetization and the timing and likelihood of final construction permits," the release said. "We will now assess the best way to preserve value while we cease development of the projects," Nipper said. "At the same time, with an attractive forward-looking value creation, we progress the Revolution Wind project into the construction phase."

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

1 November 2023

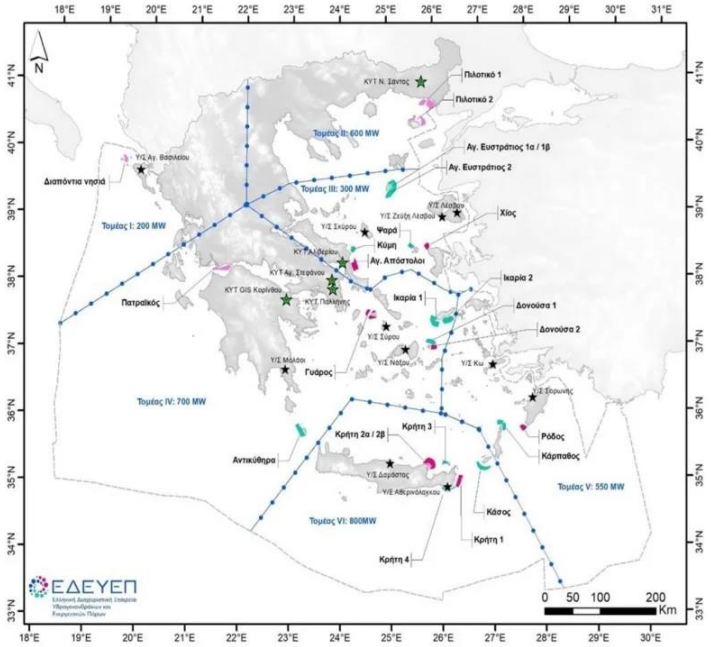
Greece announces offshore wind energy program, targets 4.9 GW by 2032

The long-awaited draft of the offshore wind energy development program was announced today by the Hellenic Hydrocarbons and Energy Resources Management Company (HEREMA) and the Ministry of Environment and Energy. During a special event, the offshore wind program was presented with its strategic environmental impact assessment (SEIA). It consists of 25 areas covering a total of 2,712 square kilometers, with an estimated minimum capacity of 12.4 GW. The majority of the proposed offshore areas are suitable for floating wind power technology.

The plan, which has already been submitted to the Spatial Planning Directorate of the Ministry of Environment and Energy, qualifies ten eligible areas for development by 2030-2032. The overall capacity of approximately 4.9 GW is mainly for floating projects. The said zones do not include the marine area between Evros and Samothraki, which is defined as an area for the development of pilot offshore wind projects.

This is the list of Offshore Wind Farms Organized Development Areas (OWF-ODA) eligible for the medium-term development phase: Eastern Crete, where it is estimated that projects with a total capacity of 800 MW will be developed; Southern Rhodes, with a maximum installed capacity of between 300 MW and 550 MW; Central Aegean, with a

maximum installed capacity of between 200 MW and 450 MW; Evia-Chios axis, with a maximum installed capacity of 300 MW; Ionian Sea, with a maximum installed capacity of 450 MW. The following map shows the marine regions for offshore wind development with respective capacities:



In addition, HEREMA commissioned the Foundation for Economic and Industrial Research (IOBE) to conduct a study on the economic benefits of the development of offshore wind in Greece. It includes the assessment of the importance of developing a domestic supply chain for their construction and operation, the key findings of which were presented at the event.

According to the study, the deployment of offshore wind can boost the gross domestic product by up to EUR 1.9 billion per year on average over the period 2024-2050 while annual government revenues can rise up to EUR 440 million, said George Maniatis, Head of IOBE's Sectoral Studies Department. Over the same period, it can make a significant contribution to employment, supporting up to 44,400 jobs per year.

The Greek Wind Energy Association, ELETAEN, said the national program is a positive step for the development of the sector. However, mistakes made in onshore wind must not be repeated, it warned. ELETAEN added that a flexible licensing system must be applied together with the rapid construction of international power interconnections to make the most of this opportunity.

Balkan Energy News
http://balkangreenenergynews.com/

1 November 2023

J-Power to shut 2 coal-fired power plants in 2025

Japan's Electric Power Development(J-Power) (9513.T) said on Tuesday it will shut two 500 megawatts (MW) coal-fired power plants at its Matsushima power station in southern Japan to help achieve its 2025 target of cutting carbon dioxide (CO2) emissions.

The move comes as utilities step up efforts to decarbonise their facilities to combat global warming. Japan's second-biggest coal-fired power generator after JERA will permanently close the No.1 plant and suspend the No.2 plant at the end of March 2025,

though it will build a gasification facility at the No.2 plant to restart it in 2028 with greater efficiency and lower emissions.

"Through the closure and suspension, we will be able to achieve our 2025 target of cutting CO2 emissions by 9.2 million tonnes, or 19%, on 2013 levels," President Hitoshi Kanno told a news conference, noting it will also increase the use of biomass and cut the utilisation rate of other coal power plants."We will continue operation in Matsushima with an aim of making it as a leading carbon-free thermal power plant in Japan by using biomass and ammonia fuels as well as deploying carbon capture utilisation and storage (CCUS) in the future," he said. After implementing the gasification technology, the reformed No.2 plant will be able to reduce its emissions by more than 10%, he said. J-Power, which owns coal-fired plants at nine sites with total generation capacity of 8.8 gigawatts (GW), will consider downsizing some coal power plants and converting others to CO2-free power plants, Kanno said. For the current fiscal year to end-March, the company lowered its net profit estimate by 12% to 67 billion yen from 76 billion yen due to lower electricity sales, falling power prices overseas and a glitch at one of its local power plants.

Reuters
http://www.reuters.com/

1 November 2023

MISO selects Ameren to build 2nd competitive LRTP Project

MISO has awarded Ameren Transmission Company of Illinois (ATXI) the lead in building a pair of lines and substation in northwest Missouri, the second competitively bid project stemming from the RTO's $10 billion long-range transmission plan (LRTP).

The Ameren subsidiary plans to partner with the Missouri Joint Municipal Electric Utility Commission on development of the $84 million, 345-kV Fairport-Denny project, extending to the Iowa-Missouri border. ATXI plans to sell 49% of the project to the Missouri state utility agency just before the project is placed in service in 2030. MISO said ATXI was one of four developers to submit project proposals, with LS Power Midcontinent, NextEra Energy Transmission Midwest and Transource Energy offering nine. MISO does not reveal the companies behind non-winning bids, although it said one developer submitted six proposals based on differing designs. It said proposals ranged from $84 million to $134 million for project implementation. MISO originally estimated the Fairport-Denny project would cost $161 million. The RTO said cost differences between proposals came down to conductor size, substation design and tax liabilities.

Jeremiah Doner, MISO's director of cost allocation and competitive transmission, said ATXI's proposal incorporates "strong cost containment and a sound design." MISO said ATXI pledged annual revenue requirement caps and carefully considered pre-construction studies and proposed routes. "Ameren's proposal, submitted with its partner MJMEUC, had a substantially lower cost than that of the next closest proposal, which was 36% higher based on the annual costs to customers over 40 years," Doner said in a press release.

MISO said ATXI will execute a selected developer agreement. Doner said MISO looks forward to "working closely with the developer, regulators and other stakeholders to support a successful and on-time completion of the project." In a press release, ATXI President Shawn Schukar said the project bid was the "result of a collaborative effort with many community partners who have the best interests of our state in mind."

He said ATXI will continue to solicit input from the community to build affordable transmission projects. MISO is simultaneously managing multiple RFPs related to the first LRTP portfolio. The grid operator opened an RFP for another LRTP project in March. It seeks bids on the $556 million Denny to Zachary to Thomas Hill 345 kV project, part of which will link up with the Fairport-Denny project. Proposals are due Nov. 14. (See MISO Begins

LRTP's 2nd RFP Process.) The half-billion-dollar solicitation is MISO's most expensive request for proposals.

The grid operator also opened two other RFPs in July: the $12 million Deadend to Tremval 345-kV project in Wisconsin and a $23 million, 345-kV line segment from the Iowa-Illinois border to the Ipava substation in Illinois. It will select developers for the trio of projects over 2024. In May, MISO selected LS Power's Republic Transmission to build the $77 million Hiple 345-kV line at the Indiana-Michigan border. It's MISO's first competitive project surfacing from the LRTP. (See MISO Picks Republic Transmission for 1st LRTP Competitive Project.) In MISO, competitive transmission developers must be members and must be prequalified to bid on competitive projects. Developers must include a $20,000 application fee and a $100,000 initial deposit to have their bids considered by MISO.

MISO's decision to go with ATXI for the LRTP competitive builds comes as a right of first refusal (ROFR) bill for downstate Illinois fizzled out, with supporters last week acknowledging they don't have enough votes in the Democratic-controlled General Assembly to overrule Gov. J.B. Pritzker's August veto of the ROFR portion of energy legislation approved in the spring. (See Ill. Gov. Vetoes Downstate ROFR for MISO Regional Tx Projects.)

The bill would have given ATXI exclusive rights to build regional MISO transmission lines in its territory and shut down MISO's competitive bidding process for future projects in downstate Illinois. ATXI backed the legislation. Recently, ATXI Chairman and President Leonard Singh wrote in a letter to state lawmakers that the company had been "subjected to well-funded misinformation campaigns by out-of-state developers and special interests" who opposed the ROFR. Singh said a ROFR would keep transmission projects under state — rather than federal — control and remains "the best option to prevent unnecessary delays in construction and hundreds of millions of dollars in potential cost overruns." Rep. Larry Walsh (D-Elwood), who sponsored the original measure, said he would reintroduce even broader legislation in spring that seeks to install a permanent ROFR on transmission projects for all utilities in the state.

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

2 November 2023

Terna signs key agreements for Italian innovation in Silicon Valley

Terna's agreements with institutional partners in San Francisco aim to supercharge Italy's innovation ecosystem on a global scale, nurture pioneering Italian start-ups and small businesses, and open up direct pathways to the U.S. market.

Giuseppina Di Foggia, Terna's CEO and General Manager, and Sergio Strozzi, Consul General of Italy in San Francisco, signed a Letter of Intent, establishing their united commitment to empowering Italian start-ups seeking growth opportunities and local tech collaborations. At the same time, Massimiliano Garri, Executive Vice President for Innovation & Market Solutions at Terna, and Alberto Acito, Director of the Italian Innovation Centre at INNOVIT (Italian Innovation and Culture Hub), signed a Memorandum of Understanding, essentially defining a roadmap for achieving their common goal over the next three years. There will be joint initiatives to accelerate and bolster high-potential Italian companies in Terna's network, helping them build relationships and unlock business opportunities. Terna and INNOVIT will also join forces to promote the open innovation initiatives they will each be launching.

Terna can now leverage its strong presence in San Francisco to scout and back innovative Italian companies in California that wish to embark on energy transition projects, also taking the opportunity to evaluate potential experimental activities and investments.

Italy's electricity transmission grid operator has been forging partnerships in Silicon Valley since 2020, but it wasn't until the latter half of 2022 that its presence truly reinforced in this tech Mecca. Terna's Innovation Antenna in San Francisco is the gateway to Silicon Valley's innovative spirit and serves as a direct point of contact for up-and-comping companies in the U.S. Terna's San Francisco-based Innovation Team is on a mission to scout ground-breaking projects that tackle energy transition challenges and build dynamic relationships with start-ups, as well big companies, in American and Italy. Terna is already putting the knowledge gained in California to good use back home in Italy, testing out various robotics, drones and augmented reality projects.

INNOVIT is promoted by the Directorate General for the Country System of the Ministry of Foreign Affairs and International Cooperation, in collaboration with the Italian Embassy in Washington and the Consulate General in San Francisco. It is managed with the support of ICE - the Agency for the Promotion of Italian Enterprises Abroad - and the Italian Cultural Institute in San Francisco. Its mission is to stimulate innovative entrepreneurial ideas, catalyze cross-border innovative projects, and accelerate their international development, enabling Italian entities to establish a stable presence in Silicon Valley and across the United States. It is a strategic initiative of the Italian government to promote innovation within the national system in the United States. Since October 2022, the management of the Italian Innovation Center at INNOVIT has been entrusted to the Giacomo Brodolini Foundation, a think-and-do tank for innovation and local development, and Entopan Innovation, an incubator and accelerator within the Harmonic Innovation Group.

TERNA
http://www.terna.it/

2 November 2023

Expanding transmission capacity between MISO and PJM would save consumers billions of dollars

Consumers are paying billions of dollars a year due to transmission constraints between the Mid-Atlantic and Midwestern grid regions, and those costs are expected to increase with decarbonization and electrification efforts, according to a new report released today from the American Council on Renewable Energy (ACORE) and Grid Strategies.

The analysis, Billions in Benefits: A Path for Expanding Transmission between MISO and PJM, shows how increased interregional transmission between the PJM Interconnection (PJM) and the Midcontinent Independent System Operator (MISO) can save consumers more than $15 billion by reducing the need for power plant capacity, as well as ongoing savings that can exceed $1 billion per year by allowing more affordable power to flow across a broader geographical area. The congested seam between the regions also harms reliability by limiting the ability to import power, particularly during events like Winter Storms Elliott and Uri that disrupted electricity supply and demand in one region but not the other.

"Expanded transmission ties between MISO and PJM would significantly broaden the electricity menu for consumers in both regions, diversifying what's available and when," said Grid Strategies Vice President and report author Michael Goggin. "Building these lines would allow consumers to tap into generators from the Dakotas to the East Coast, reducing electricity bills and improving reliability." The report outlines various steps the grid operators, states, the Federal Energy Regulatory Commission, and other stakeholders can take to develop more workable mechanisms for planning and paying for interregional transmission.

"Interregional transmission lines have helped save American lives during extreme weather events, yet today's transmission planning processes do not value the added

reliability they provide our grid," said ACORE President and CEO Gregory Wetstone. "Consumers should not be forced to endure outages when study after study shows additional line capacity would help keep the lights on and reduce power costs." The report identifies proactive multi-value planning as the gold standard for regional planning that should also serve as the model for interregional transmission. Absent that process, MISO and PJM should improve their coordination on transmission planning.

"The U.S. Department of Energy has found that the MISO-PJM seam has the greatest need for expanded interregional transmission ties," said American Clean Power Association (ACP) Vice President of Markets and Transmission Carrie Zalewski. "In fact, the intertie with MISO accounts for around 80% of PJM's total need for interregional transmission. These grid operators must collaborate on the transmission planning necessary to bridge this gap, preserve reliability, and benefit millions of customers. Transmission planning is happening in silos across the country, and it is costing ratepayers billions of dollars," said Solar Energy Industries Association (SEIA) Senior Vice President of Policy Sean Gallagher. "This siloed approach to transmission planning limits resource availability during times when we need power most, jeopardizing both grid reliability and our energy security. If we want to expand transmission infrastructure and better coordinate reliability efforts, we need Congress and the Federal Energy Regulatory Commission to make interregional transmission planning a top priority."

ACORE
http://acore.org/

6 November 2023

ISO-NE, NEPOOL file to delay 2025 capacity auction by one year

ISO New England and the New England Power Pool (NEPOOL) are seeking approval from the Federal Energy Regulatory Commission (FERC) to delay by one year Forward Capacity Auction 19 (FCA 19), currently scheduled for February 2025. The auction will secure obligations from resources to be available during the 2028/2029 capacity year, with the qualification process beginning in early 2024.

Forward Capacity Auction 18, scheduled for February 2024 to cover the 2027/2028 capacity year, would not be affected. Delaying FCA 19 by one year would allow the ISO and stakeholders more time to complete the Resource Capacity Accreditation (RCA) project. FCA 19 was scheduled to be the first auction to include the updated capacity accreditation changes developed through the RCA project, but the discovery of a modeling issue has slowed the project's completion. ISO New England now expects to file its RCA proposal with FERC in August 2024. Further, a delay will afford the region more time for ongoing discussions regarding revising the forward, annual capacity market to a prompt and/or seasonal market. ISO New England has engaged Analysis Group to provide a report looking at the tradeoffs associated with these options ahead of making a recommendation to the New England states and stakeholders early next year. ISO New England and NEPOOL have requested FERC approve the one-year delay for FCA 19 by January 2, 2024.

ISO Newswire
http://isonewswire.com/

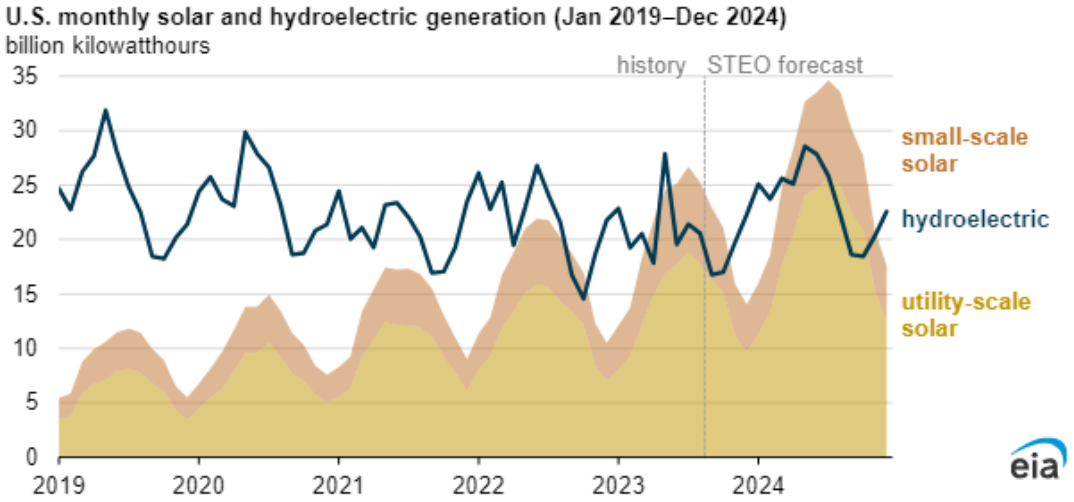
7 November 2023

EIA expects U.S. annual solar electricity generation to surpass hydropower in 2024

We forecast that the United States will generate 14% more electricity from solar energy than from hydroelectric facilities in 2024, according to our Short-Term Energy Outlook (STEO). Our forecast is driven by continued growth in new utility-scale and small-scale solar facilities. For the first time in September 2022, the United States had more solar-

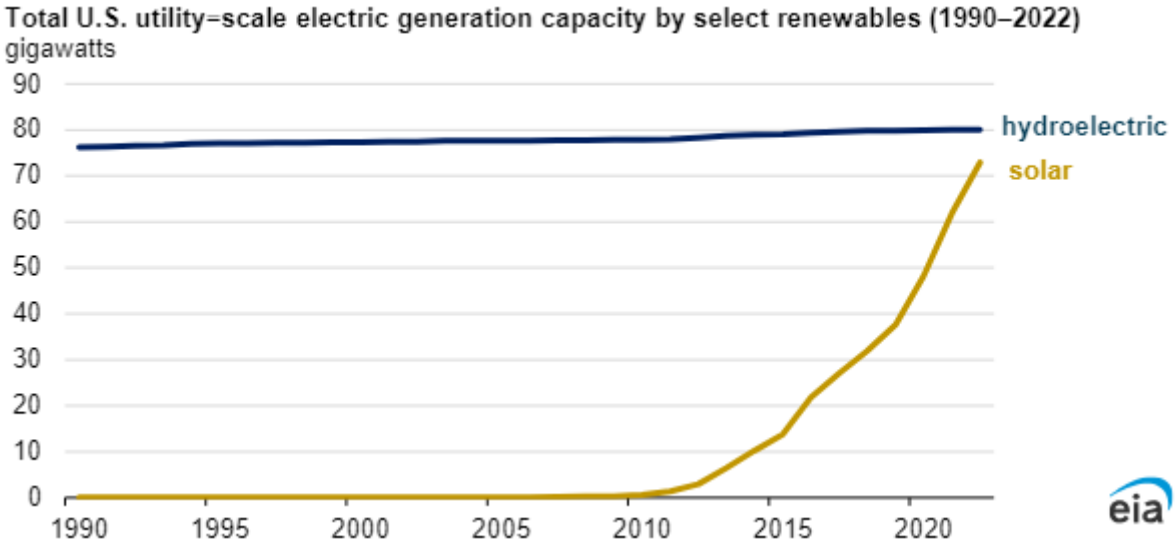
generated electricity than hydroelectric generation on a monthly basis, according to our Electric Power Monthly. That month, U.S. solar power plants and rooftop solar generated about 19 billion kilowatthours, (kWh) compared with 17 billion kWh from U.S. hydropower plants.

Solar power outpaced hydropower again this summer due to exponential growth in installed solar capacity. From 2009 to 2022, installed solar capacity increased at an average rate of 44% per year, and installed hydroelectric capacity increased by less than 1% each year. In our STEO, we expect annual solar generation to surpass annual hydropower generation in 2024 for the first time. In 2019, annual wind generation surpassed annual hydropower generation. The growth of U.S. solar and U.S. wind generation are following a similar pattern, both largely following growth in installed capacity.



Incentives such as investments tax credits have encouraged growth in renewable generation capacity. By August 2023, installed U.S. solar capacity totaled more than 125 gigawatts (GW), including 80 GW of utility-scale solar capacity and an estimated 45 GW of small-scale solar capacity. Hydroelectric capacity in the United States has remained relatively steady at about 80 GW for the past few decades.

Weather patterns reduced U.S. hydroelectric generation through August this year. Hydropower generation depends on seasonal hydrologic conditions and long-term weather trends. Although weather patterns also affect solar and wind generation, the biggest contributor to additional generation from these sources is they have had the fastest growth in generating capacity.



During times of high demand or high prices, hydroelectric generators have reservoirs that can store water to be released through dams to generate electricity. This ability to control the output is limited by long-term hydrologic conditions and other complications associated with water rights and recreational uses. Despite these challenges, hydropower continues to be a key source in the hourly pattern of generation in areas like the Pacific Northwest.

IEA
http://www.eia.gov/

7 November 2023

FERC, NERC release Final Report on lessons from winter storm Elliott

FERC and the North American Electric Reliability Corporation (NERC) today released the final report on Winter Storm Elliott, the Christmas 2022 storm that contributed to power outages for millions of electricity customers in the Eastern half of the country. The 167-page report recommends completion of needed cold weather reliability standard revisions initially identified after 2021's Winter Storm Uri, and improvements to reliability for U.S. natural gas infrastructure. The report's release today comes two days before FERC convenes its Annual Reliability Technical Conference.

The report calls for robust monitoring of how the industry is implementing cold weather Reliability Standards. Also, NERC should obtain an independent technical review of the causes of cold-related mechanical and electrical generation outages to identify preventive measures. The report also states that congressional and state legislation or regulation is needed to establish reliability rules for natural gas infrastructure to ensure cold weather reliability. Finally, the report recommends the North American Energy Standards Board convene a meeting of gas and electric grid operators and gas distribution companies to identify any needed communications improvements and suggests an independent research group analyze whether additional gas infrastructure is needed to support grid reliability. FERC and NERC will host a webinar for industry at the end of November to discuss the recommendations in more depth. Details will be sent out closer to the event date.

FERC
http://www.ferc.gov/

7 November 2023

European Commission to create SMR Industrial Alliance

In response to calls from the nuclear industry, research community and nuclear safety regulators, the European Commission will establish an Industrial Alliance dedicated to small modular reactors (SMRs) in early 2024, European Commissioner for Energy Kadri Simson has announced. The Commission set up a European SMR pre-Partnership in June with the overall objective of identifying enabling conditions and constraints, including financial ones, towards safe design, construction and operation of SMRs in Europe in the next decade and beyond in compliance with the EU legislative framework in general and to the Euratom legislative framework in particular.

Speaking at a European Small Modular Reactor Partnership event in Bratislava, Slovakia, on 6 November, Simson said: "After a long and intense work of preparation, we must now draw conclusions on the opportunity and potential for establishing a European Industrial Alliance on SMRs. Industrial alliances are a tool to facilitate stronger cooperation and joint action between all interested partners. Industrial alliances can play a role in achieving key EU policy objectives through joint action by all the interested partners.

"A successful deployment of SMRs by the next decade will be an important and timely milestone on our path to climate neutrality by 2050. I am confident that the EU can have a leadership role in achieving technological maturity for SMRs. This means to me that the first SMRs must be connected to the European electricity grid within a decade at the latest. This must be our goal." Simson noted that analyses undertaken by the European SMR pre-Partnership have suggested that an industrial alliance "is the appropriate concept" for the European SMR Partnership. The Stakeholders' Forum - which took place in Brussels on 26 October - "confirmed interest and readiness" for an industrial alliance, she added.

"With a clear mandate from the Member States willing to use this technology in their energy mix, this determination of the stakeholders calls on the Commission to do its part and prepare the establishment of an Industrial Alliance on SMRs. I believe that there is today both the political opportunity and the industrial case to promote the development of SMRs in Europe. I stand ready to initiate within the Commission the necessary steps to establish the EU Industrial Alliance for SMRs early next year." Simson said skills and industrial competence, licensing, management of used fuel and radioactive waste will need to feature prominently in the next steps towards a European initiative on SMRs.

The announcement of the creation of the industrial alliance was welcomed by Yves Desbazeille, Director General of European nuclear trade body Nucleareurope: "SMRs are expected to bring many benefits to the EU as a whole in terms of helping to decarbonise hard-to-abate sectors, as well as creating jobs and generating economic growth in the EU. The groundwork has been laid by its predecessor, the European SMR pre-Partnership and we are delighted that the European Commission is now giving its full backing to this key technology of the future."

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

8 November 2023

Masdar and partners to develop 1.1GW Al Henakiyah solar power plant

A consortium made up of Masdar, EDF Renewables, and Nesma Renewable Energy has signed a power purchase agreement (PPA) with Saudi Power Procurement (SPPC) to develop, build, and operate the 1.1GW Al Henakiyah solar power plant in Saudi Arabia. The PPA will last for a period of 25 years. To be located in the Al Madinah province, the Saudi Arabian solar photovoltaic (PV) project entails an estimated cost of $1bn. It is scheduled to achieve financial close in early 2024 and is expected to be connected to the grid in 2025. Once operational, the Al Henakiyah solar power plant will generate clean energy to power over 190,000 households annually.

Besides, the solar PV project will eliminate more than 1.8 million tonnes of carbon dioxide every year. Masdar CEO Mohamed Jameel Al Ramahi said: “The Kingdom is a key strategic market for Masdar, and we are committed to supporting the Ministry of Energy and the SPPC achieve the targets set out under Vision 2030 and the Saudi Green Initiative, as the country accelerates its green transition toward net zero emissions by 2060.” The consortium won the Al Henakiyah solar project after its bid of $16.84/MWh was determined to be the most cost-competitive.

According to Masdar, the solar PV power plant will contribute towards Saudi Arabia’s goal of increasing the share of the renewables in the country’s energy mix to around 50% by 2030. Furthermore, the first five years of operations at the Al Henakiyah solar power plant will employ 50% of Saudi nationals. The proportion is expected to increase to 75% during the project’s entire operational life. EDF Renewables chairman and CEO and EDF Group renewable energies senior executive vice president Bruno Bensasson said: “Together, we are geared to navigate the dynamic landscapes of clean energy enabling a sustainable and

prosperous future for Saudi Arabia while supporting the Kingdom's Vision 2030 to produce 50% of its electricity from renewable sources."

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

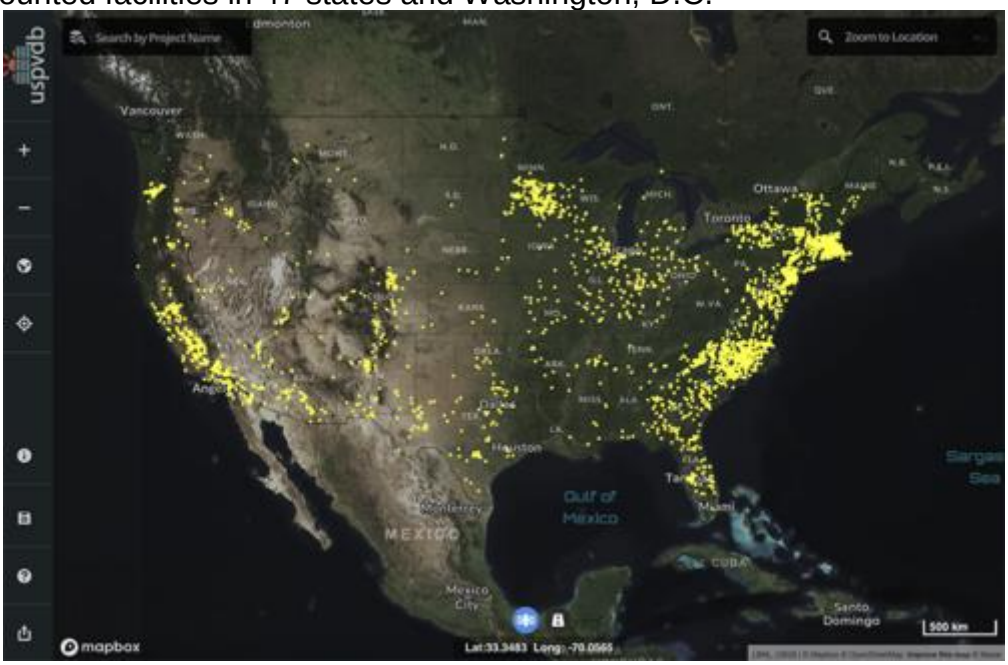
8 November 2023

New database maps large-scale solar projects across the country

The U.S. Geological Survey (USGS) and the U.S. Department of Energy's (DOE) Lawrence Berkeley National Laboratory (LBNL) released the largest and most comprehensive database to date on large-scale solar energy projects in the United States. The U.S. Large-Scale Solar Photovoltaic Database (USPVDB) includes the location, size and other characteristics of large-scale solar projects. This new public resource will enable researchers to observe trends in large-scale solar development as well as inform siting and planning for future deployment contributing to the Biden-Harris Administration goals to decarbonize the electricity sector by 2035.

Ground-mounted solar could require 5.7 million acres by 2035 and as much as 10 million acres in 2050 in order to achieve the Administration's decarbonization goals. The USPVDB is part of DOE's ongoing research to reduce the cost and understand the impacts of siting solar and to develop strategies for maximizing benefits from large-scale solar facilities to host communities.

The USPVDB is a comprehensive dataset of U.S. large-scale solar PV energy project locations and characteristics that makes the data easier to access and more accurate than existing datasets. Since 2020, DOE's Energy Information Agency has hosted an interactive database with coordinates of the central point of large-scale solar facilities. The USPVDB augments this information by providing data on the total footprint area and detailed attributes of each facility, including panel technology type, axis type, year of installation and generation capacity. The dataset includes ground-mounted solar facilities constructed through the end of 2021 with capacities greater than 1 MWDC. It includes more than 3,900 large-scale solar ground-mounted facilities in 47 states and Washington, D.C.



Researchers, decision-makers and other stakeholders can use the data to analyze the role of solar energy in decarbonizing the U.S. electric grid, improve studies on the interactions between PV facilities and the natural environment, plan investments in PV

infrastructure and more. The dataset, which will be updated annually, will be downloadable in multiple formats and accessible via an online map viewer.

This work builds on expertise developed through the creation and maintenance of the DOE-supported U.S. Wind Turbine Database, which contains locations and technical specifications for more than 72,000 wind turbines.

USGS and LBNL will host a webinar to explain the database and the online viewer November 16 at 1 p.m. ET. Register for the webinar or read a paper describing the dataset. This work is funded by the DOE Solar Energy Technologies Office (SETO) and the USGS Energy Resources Program.

Solar Power World Online
http://www.solarpowerworldonline.com/

8 November 2023

Texas voters approve $10B energy fund, with most going to build gas-fired power plants

The Texas Senate in April approved a $10 billion "energy insurance program" that aimed to improve grid reliability through development of 10,000 MW of new gas-fired generation. That measure did not find support in the House, however, leading to the proposal voters approved yesterday.

The Texas Energy Fund will be administered by the PUCT, with a total pot of $7.2 billion available to support any new construction or upgrade that results in at least 100 MW of dispatchable generation coming online and interconnecting to the Electric Reliability Council of Texas grid before June 1, 2029. Another $1.8 billion will support the development of microgrids and backup power for critical facilities across the state, and $1 billion will go to grid modernization, weatherization and other efforts in the non-ERCOT portions of Texas.

PUCT staff has been working since the summer to prepare for implementation of the energy fund, according to commission Executive Director Thomas Gleeson. "With voter approval of the fund, we will push forward developing the program and design transparent processes to ensure the administration of the [Texas Energy Fund] is timely, fiscally responsible, and effective," he said. The fund "is another vital tool to ensure the reliability and resiliency of the Texas electric grid."

Texas has been working to bolster its electric grid since Winter Storm Uri in 2021 resulted in widespread blackouts and led to the death of almost 250 people in the state. Regulators spent much of 2022 considering market enhancements and incentives for power generation facilities. The Texas Energy Fund is a "very significant step" in developing new power plants, according to Vinson & Elkins counsel Winston Skinner. The PUCT "will have significant discretion in prioritizing projects and setting performance standards developers must meet to receive money for these new facilities," Skinner said. But not everyone has confidence in the state's regulators to oversee the fund.

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

9 November 2023

NERC: much of North America faces 'elevated risk' of blackouts in extreme winter conditions

Most of the North American electric grid can manage through normal peak winter conditions, but in extreme weather NERC said there are heightened risks extending across much of the eastern two-thirds of the continent. "As observed in recent winter reliability events, over 20% of generating capacity has been forced off-line when freezing temperatures extend over parts of North America that are not typically exposed to such conditions," the report warns. "When electricity supplies become constrained, [bulk power

system] operators can face a simultaneous sharp increase in demand." The Federal Energy Regulatory Commission in February approved new cold weather reliability standards for U.S. generators. NERC proposed the standards in response to Winter Storm Uri in 2021, when Texas faced widespread blackouts and almost 250 people died. "Additional cold weather standards recently adopted by NERC's Board have been filed for FERC approval," John Moura, NERC's director of reliability assessments and performance analysis, said in a statement. "This is a positive development in ensuring industry is prepared for extreme cold weather.

Other issues NERC identified include the growing complexity of forecasting winter load and the curtailment of electricity transfers between reliability coordinators and balancing authorities. "While the curtailments alleviate an issue in one part of the system, curtailments can contribute to supply shortages or affect local transmission system operations in another area," NERC said.

In the southern areas of the Midcontinent ISO market, NERC's winter reliability report warned extreme cold-weather "can cause high generator outages from inadequate weatherization or insufficient natural gas fuel supplies." In New England, gas transportation infrastructure could be constrained if fuel is diverted for consumer heating needs.

Across the PJM Interconnection territory and in some portions of the U.S. Southeast, severe cold can cause a spike in forced outages. "Forecasted peak demand has risen while resources have changed little in these areas since Winter Storm Elliot caused energy emergencies across the area in 2022," NERC said. "Generators are vulnerable to derates and outages in extreme conditions." This winter's anticipated reserve margin in the Southwest Power Pool is 38.8%, "more than 30 percentage points lower than last winter; this is driven by higher forecasted peak demand and less resource capacity," NERC said.

The Electric Reliability Council of Texas, which manages most of the state's grid, could see "a significant number" of forced outages in extreme cold temperatures, NERC said. Load growth is also driving a risk of reserve shortages, according to the report, though ERCOT has issued a request for proposals to increase operating reserves by 3,000 MW. Saskatchewan Power, in Canada, could face insufficient operating reserves in normal peak conditions due to falling reserve margins, planned generator maintenance and the retirement of a 95 MW gas-fired unit.

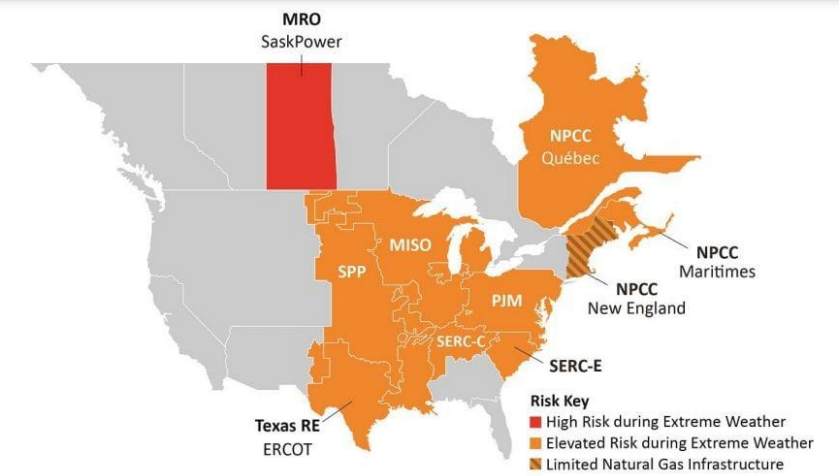


Figure 1: Winter Reliability Risk Area Summary

Seasonal Risk Assessment Summary	
High	Potential for insufficient operating reserves in normal peak conditions
Elevated	Potential for insufficient operating reserves in above-normal conditions
Low	Sufficient operating reserves expected

It is only a matter of time before a widespread grid disruption occurs, according to Mark Spurr, legislative director at the International District Energy Association and president of engineering and consulting firm FVB Energy. Spurr pointed to a confluence of three trends: an increase in severe weather events due to climate change, rising peak electricity demand and a growing dependence on natural gas. “A massive grid disruption is inevitable,” he said, because those factors are “getting worse, not better.”

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

9 November 2023

UAMPS and NuScale Power terminate SMR Nuclear Project

Utah Associated Municipal Power Systems (UAMPS) and NuScale Power Corp. (NuScale) have mutually agreed to terminate the Carbon Free Power Project (CFPP), a small modular reactor (SMR) project that was planned for construction on Idaho National Laboratory (INL) property near Idaho Falls, Idaho.

“Despite significant efforts by both parties to advance the CFPP, it appears unlikely that the project will have enough subscription to continue toward deployment. Therefore, UAMPS and NuScale have mutually determined that ending the project is the most prudent decision for both parties,” the developers said in an announcement issued on Nov. 8.

UAMPS is a political subdivision of the State of Utah that provides comprehensive wholesale electric-energy, transmission, and other energy services, on a nonprofit basis, to 50 community-owned power systems throughout the Intermountain West, including in Utah, California, Idaho, Nevada, New Mexico, Oregon, and Wyoming. The CFPP was a major project for UAMPS. At one point in time, it was envisioned to be a 720-MWe power plant comprised of 12 NuScale SMR power modules. As time progressed and member subscriptions for plant production lagged expectations, the project was scaled back to six modules with a combined capacity of 462 MWe.

During the CFPP Project Management Committee (PMC) Meeting held in October, CFPP Project Director Shawn Hughes delivered a comprehensive project update. He reported that CFPP had met or exceeded all planned milestones to date. Furthermore, he assured the PMC that the Combined License Application (COLA) was progressing as planned and was on track for submission to the Nuclear Regulatory Commission in January 2024. The focus of the team at the time was on “the completion of the remaining tasks of the COLA and conducting section reviews of the application to ensure quality and accuracy.”

In an update issued by UAMPS in October, the entity said, “The project’s progress not only represents major achievements for CFPP as a specific entity but also within the broader context of the development of small modular nuclear reactors.” All indications were that the project was on schedule for the first NuScale Power Module to begin generating power in 2029, with the remaining modules coming online for full plant operation by 2030, but the project came to an abrupt halt on Wednesday.

In October, Standard Power, a provider of infrastructure as a service to advanced data processing companies, announced it had chosen NuScale Power’s SMR technology to power two facilities it plans to develop in Ohio and Pennsylvania. NuScale also has a memorandum of understanding with Nucor Corporation to explore co-locating SMR power plants to provide baseload electricity to Nucor’s scrap-based electric arc furnace (EAF) steel mills. The companies said they will also explore an expanded manufacturing partnership through which Nucor, the largest steel producer and recycler of any type of material in North America, would supply Econiq, its net-zero steel products, for NuScale projects.

Power Mag
http://www.powermag.com/

9 November 2023

AEMO delivers more reforms for the NEM – including two new markets

AEMO recently introduced two new markets and other important reforms into the National Electricity Market (NEM), taking significant steps forward in delivering a modern power system to meet Australia's future energy needs.

These reforms are part of AEMO's NEM Reform Program, established to prioritize the efficient design and implementation market reforms in collaboration with industry as outlined in the reform implementation roadmap. AEMO Executive General Manager Reform Delivery, Violette Mouchaileh, said that these reforms delivered in the last few months support secure, reliable and affordable energy.

In October, two 'very fast' Frequency Control Ancillary Services (FCAS) markets were launched, the first new markets since the NEM's inception 25 years ago. "To date, 7 participants with 19 facilities have registered to provide Very Fast FCAS services to the NEM. These new services can be procured by AEMO within 1 second - much faster than the previous 6 second response. "In an energy system increasingly challenged to maintain security and reliability with the growth of renewable energy sources, introducing these markets is expected to help keep the power system secure following sudden generation and power-system outages, while also incentivizing investment in fast-acting, firming technology like batteries," Ms. Mouchaileh said. Additionally, through another NEM Reform initiative, Integrated Energy Storage Systems (IESS), AEMO implemented Aggregated Dispatch Conformance (ADC), a new feature that enables participants with aggregate systems to dispatch energy from a combination of technology types.

"Co-located or aggregate systems – such as wind and solar, or solar and a battery – are becoming essential drivers of the energy transition due to their capacity to generate and store cheap and low-emissions energy," Ms. Mouchaileh said. "This change has made it easier for participants with aggregate systems to manage and dispatch their energy in the most cost and energy efficient way, while also maximizing the amount of cheap and sustainable energy flowing to consumers," she said.

Aside from these NEM reforms, AEMO has also introduced a new Medium Term Projected Assessment of System Adequacy (MT PASA) interface to collect and publish critical information about scheduled generator availability, including reasons and timing, and unit recall time. This initiative will improve the quality and transparency of information on generation availability, helping market participants make decisions about supply, demand and transmission network outages in the NEM. Together, these changes, implemented across various NEM systems in collaboration with industry participants, have uplifted AEMO's capacity to respond to the changing conditions in the energy system and support investment in an efficient resource mix.

AEMO
http://www.aemo.com.au/

10 November 2023

How power companies profited prom Italy's Covid lockdown

On March 21, 2020, Italy halted all non-essential industry as it navigated the first major outbreak of Covid-19 outside of China. With demand for electricity – and its wholesale price – already slumping, it looked like a lean moment for the energy business.

But Roberto Bracco and his power-trading team at Repower AG, a Swiss electricity company, had spent more than a decade deploying a trading pattern that raked in large sums even on the slowest days Bracco knew his company's gas-powered generating plant might lose money if it sold electricity into Italy's regular power market – known as the "day-

ahead" because it's settled a day in advance. But he also knew the plant could stay out of that market entirely and perhaps do far better.

Whenever day-ahead trading fails to yield enough electricity for any particular area, Italy's grid manager, Terna SpA, must fill the gap by buying power in an ancillary market that's almost always more expensive. In that so-called "dispatch" market, Repower's plant at Teverola, a town known for its buffalo mozzarella, had long held strong market power: It's one of three power plants near Naples that are together crucial for keeping the region's lights on. To Bracco, there was only one choice. Teverola disappeared from the day-ahead but offered electricity in the dispatch market at €490 per megawatt hour – roughly 18 times the average day-ahead price on that day. Terna accepted Teverola's offer for 24 hours straight, and Repower brought in €1.88 million instead of the €100,840 available in day-ahead, according to a Bloomberg News analysis of Italian electricity records. What would have been a losing day in the regular market, according to Bracco, turned into a huge gain. Terna then billed Italian businesses and consumers for all of it.

From 2018 through 2022, companies that used this approach received €3.9 billion more in dispatch premiums than the day-ahead price would have offered, according to Bloomberg's analysis of millions of Italian power-trading records. There's nothing illegal about this practice – and Repower and other producers defended it, saying they had to avoid losses in the often-volatile and low-paying day-ahead market. The day-ahead "has always been the primary market for the sale of the plant's production," Bracco said in a statement responding to a detailed list of questions sent to Repower.

Bloomberg's analysis shows that roughly half of the time when companies collected a dispatch premium, the day-ahead market would have been unprofitable – based on a widely accepted industry formula used to determine gas-fired power plants' hourly generation costs. Even excluding times when wholesale prices were low, firms brought in large sums. That includes the operators of three key plants in Naples. In 2020 alone, dispatch premiums totaled €1.2 billion – or 238% more than companies would have received at the day-ahead price. Last year, Italian power authorities introduced an attempt at reform. Terna now pays many producers an annual fee to guarantee supply while capping dispatch prices at levels linked to production costs.

Long before 2022, Italy's dispatch market left consumers vulnerable to what regulators have called an electricity "game" that benefits firms with strong market power. Created two decades ago, the dispatch market was intended to apply a competitive free market to the problem of providing enough electricity to fill all of Italy's needs. But the design was flawed. If traders can choose between one option that offers them tight margins and another that can make them huge sums, it's a sign that the market isn't perfectly competitive, experts said.

Energy supply in Italy flows freely in the north, where power lines connect in every direction from Turin to Milan to Venice. But the rest of the country follows narrow stretches of coast along either side of the mountains that run the length of the "boot," with fewer generators to call upon. Terna and the regulator, ARERA, continued looking for ways to bring costs down. But they faced a looming danger: Traditional fuel-burning plants were being decommissioned as renewables grabbed market share, leading to what Terna called a "strong reduction" in supply over the previous decade. Long-term, this threatened to put consumers at an "unacceptable" risk of blackouts and shortages, Terna said. That's why Terna introduced its capacity market.

In the end, 2020 had become an unexpected boon for Italian power firms. In filings and calls with investors, several pointed to dispatch income as a key reason why. In January 2022, after Terna launched its new capacity market, output for the dispatch market immediately crashed. On most days in the past year, the power Teverola pumps out has

been purchased in the regular day-ahead market. With the dispatch market withered, “the contribution to earnings made by Teverola was way below expectations and the results of previous years,” Repower said when announcing its 2022 results. Repower’s Italian business broke even during the first half of 2023.

ARERA said in a statement that its capacity incentives “drastically reduced” the problem of high dispatch costs, “solving problems that arose and overcoming critical issues that had arisen in previous years.”

Bloomberg
http://www.bloomberg.com/

10 November 2023

China to guarantee payments to coal power producers based on capacity

China's state planner said on Friday that coal-fired power producers will be guaranteed payments based on their installed capacity, as the country seeks to ensure stability of supply while transitioning towards variable renewable power sources.

The move, which will take effect from Jan. 1, 2024, was widely anticipated by analysts, and comes as the world's biggest coal consumer is increasingly in the spotlight for its expanding coal power capacity ahead of the COP28 summit at the end of the month.

Coal plants in most of China's regions will be able to recover around 30% of their capital costs between 2024 and 2025, state planner the National Development and Reform Commission (NDRC) said in a notice.

The payment will take the form of a tariff paid to coal-fired power producers by the grid company, which is collected from industrial and commercial end-users through a surcharge. The capacity payments will be calculated based on fixed costs of 330 yuan ($45.25) per kilowatt per year for coal plants.

Beginning in 2026, the capacity payment rate will be increased to at least 50% in all regions, the notice said. The NDRC did not immediately respond to Reuters' faxed request for comment. China has added 226 gigawatts of extra generating capacity so far in 2023, led by a dramatic increase in solar capacity (129 GW) along with smaller increases in thermal (39 GW), wind (33 GW) and hydro (8 GW). However, the variability of power output from weather dependent renewable sources and concerns over domestic energy security have led policymakers to continue to see coal as a backstop in the country's grid system, with new coal-fired power plants continuing to be built.

Analysts said the move was important to ensure the financial viability of seldom-utilised, backup coal power, which is used for demand peaks or when renewable power generation is insufficient.

Chinese coal power producer stocks rallied on the news. Shares in Shanxi-based coal power producer Jinneng Holding Group (000767.SZ) were up 4.6% on Friday, while Jiangxi Ganneng (000899.SZ) rose 4.4%, and Hunan-based Datang Huayin Electric Power Co (600744.SS) increased 1.8%. However, observers also cautioned that the policy could risk entrenching inefficient coal power in China's energy system, despite its rapid expansion of renewable power generation capacity. China currently has 243 GW of coal-fired capacity permitted and under construction, according to a report by the Centre for Research on Energy and Clean Air.

Reuters
http://www.reuters.com/