WORLD POWER SYSTEMS REVIEW

1 February 2023

18 January 2023

France's RTE grid operator says most risks to power supply behind us

France's RTE power grid operator said on Wednesday the threat of power outages has receded after high energy prices and milder temperatures pushed consumption lower and nuclear supply picked up, though some risks remained.

RTE said in a report that power consumption had fallen 8.5% since the start of the winter, and that risks to French power remained at "medium" for the rest of the season, lower than envisioned in a September analysis. An increase in energy prices and inflation have pushed down power demand in all sectors, particularly industry. Nuclear supply has also approached 45 gigawatts (GW) and should slightly exceed this level by the end of January, before decreasing in February, the grid operator said.

"Today, most of the risks are behind us," RTE head Xavier Piechaczyk told Franceinfo radio earlier. Some limited risks to power supplies remained if there was a long and severe cold wave in the second half of February, he added. Two of the nuclear reactors affected by stress corrosion are expected to return to operation by the end of the month, and an additional two are seen returning in February. That should lead to nuclear availability of between 40 and 45 GW by the end of February, RTE said.

However, the improvement to supply remains dependent on the stress corrosion, which could be affected by workers taking part in a planned strike over pension reforms. French workers across multiple sectors including energy are expected to go on strike on Thursday to protest the government's planned pension reforms. The French government has in past months urged households and businesses alike to cut their electricity use by 10%.

Reuters
http://www.reuters.com/

19 January 2023

Electricity prices surged 14.3% in 2022, double overall inflation: US report

Consumers paid 14.3% more for electricity last year on average, than in 2021, more than double the overall 6.5% rise in prices, according to Consumer Price Increase data released Jan. 12 by the U.S. Bureau of Labor Statistics. Month to month, electricity prices rose 1% while the overall CPI decreased by 0.1%. The price of residential electricity is projected in the coming years to rise more slowly, the Energy Information Administration said Jan. 10. It jumped to 15.07 cents a kWh last year, from 13.66 cents per kWh in 2021. It's projected to rise to 15.45 cents a kWh this year and by a penny in 2024. Electricity to heat homes is expected to cost 10.2% more this winter over last year, or $1,359 for the season, according to the National Energy Assistance Directors' Association.

The inflationary spiral gripping the economy since the end of 2020 is easing. Overall December price increases were down from a 7.1% year-over-year rise in November, and represented the sixth straight month of year-over-year declines after peaking at 9.1% in June. Year-over-year price inflation for electricity peaked at 15.8% in August, according to the BLS. Tyson Slocum, director of Public Citizen's Energy Program, said domestic electricity prices are "tethered to global calamities," specifically Russia's 11-month war against Ukraine that has roiled global markets. Energy costs are regressive, taking a bigger share of income from low-income consumers than from the affluent, he said. To cut costs, consumers must improve efficiency. But renters can't make the investments needed to boost energy efficiency, Slocum said.

The Inflation Reduction Act is expected to help fund energy efficiency improvements, but it's "still heavily tax incentive-focused," he said, putting it out of reach of many

consumers. More than 20 million families, or about one of six in the U.S., were behind on their utility bills as of Nov. 7, according to NEADA, which represents the state directors of the federal government's Low-Income Home Energy Assistance Program. Families owed about $16.1 billion as of last August, double the amount at the end of December 2019, NEADA said. The average amount owed increased to about $788, from $629.

The EIA said it expects retail electricity sales will decline due to a milder summer this year compared to 2022 and about 10% fewer cooling degree days. U.S. generation in EIA's forecast will decline in 2023, following a drop in electricity consumption this year and trend up in 2024. Generation from renewable sources is the main contributor to growth in U.S. electricity generation, EIA said. The forecast share of U.S. renewables generation will rise to 24% this year and 26% in 2024, from 21% in 2022. The EIA said natural gas consumption, production and exports broke records in 2022 as real average prices hit a 14-year high. U.S. natural gas consumption reached record levels last year due partly to increased use in the electric power sector.

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

19 January 2023

OSU-led wave energy testing facility reaches key construction milestones

The last major pieces of the contract to build the wave energy test facility PacWave South have been executed, paving the way for the completion of the Oregon State University-led facility off the coast of Newport.

PacWave South will be the first utility-scale, grid-connected wave energy test site in the United States. The facility will offer wave energy developers the opportunity to try different technologies for harnessing the power of ocean waves and transmitting that energy to the local electrical grid. PacWave project leaders recently authorized the procurement of more than 80 kilometers of cable that will deliver wave-generated energy to a shoreside facility where it can be fed to the local electrical grid. They also just finalized the contract for construction of the shoreside facility, said Burke Hales, PacWave's chief scientist and a professor in the OSU College of Earth, Ocean, and Atmospheric Sciences.

The ocean test site will be located on a sandy-bottomed stretch of the Pacific Ocean away from popular commercial and recreational fishing reefs about seven miles off the coast of Newport. The site will have four different test "berths," which combined can accommodate up to 20 wave energy devices at any one time. Power and data cables buried below the seafloor will connect the ocean test site to the shoreside facility in Seal Rock, south of Newport. Louisiana-based industrial electrical services contractor R.T. Casey is overseeing the procurement, construction and installation of the cable for PacWave. The cables will be manufactured in Norway by the Paris-based firm Nexans, which also has facilities in the U.S.

The cable manufacturing process is expected to begin soon and will take about a year. The goal is for the cables to arrive in the Pacific Northwest in the spring of 2024 for installation in the summer of 2024, Hales said. Once installed, the subsea cables will come ashore at the Driftwood Beach State Recreation Site, where they will connect to terrestrial cables in an underground vault. The terrestrial cables will connect to the shoreside facility on Northwest Wenger Lane, just off Highway 101 in Seal Rock. Corvallis-based contractor Gerding Builders has been selected to construct the shoreside facility; work on that piece of the project is expected to begin in the spring of 2023, said PacWave Deputy Director Dan Hellin. With key support from Wyden, Oregon Sen. Jeff Merkley and Oregon Rep. Suzanne Bonamici, the recently enacted federal fiscal year 2023 omnibus appropriations legislation

provides for an additional $22 million in funds to continue construction of the PacWave project.

In 2022, crews completed the installation of underground conduits that will house the subsea and terrestrial cables that will carry wave-generated energy from the devices to the shoreside facility. To install the more than 6 miles of conduit, crews used horizontal directional drilling to make four offshore bores that were each more than a mile long, Hellin said. At the shoreside facility, which operates similar to a power substation, the wave-generated power can be connected to the local power grid, which is operated by the Central Lincoln People's Utility District. PacWave South's connection to the power grid will provide wave energy developers with the ability to test the efficacy of their devices as well as mechanisms for turning the energy they capture into a commodity with value on the energy market.

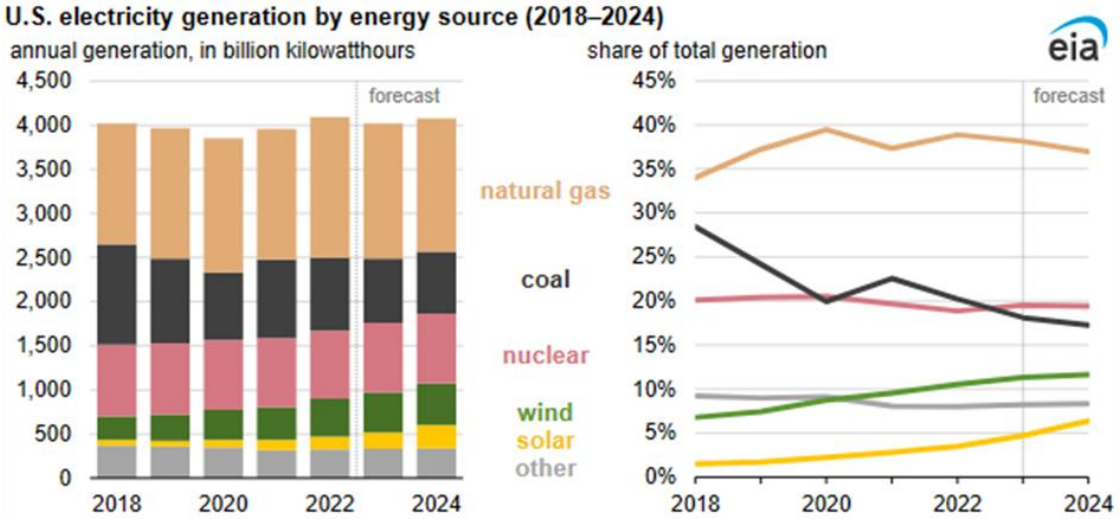
Based on current timelines, PacWave could be operational in 2025. The U.S. Department of Energy has already identified and provided funding to a slate of wave energy developers who will begin testing their devices once the PacWave facility is completed, Hales said. Oregon State has pursued development of a wave energy test facility for more than a decade to accelerate the development of this industry. There currently is no U.S. facility for developers to measure the electrical and environmental performance of their devices at this scale. PacWave South is supported by grants from the U.S. Department of Energy, the state of Oregon and other public and private entities. Oregon State's College of Earth, Ocean, and Atmospheric Sciences is managing the construction and operation of the more than $80 million facility.

OSU
http://today.oregonstate.edu/

19 January 2023

EIA: Increasing renewables likely to reduce coal and natural gas generation over next two years

In our latest Short-Term Energy Outlook, we expect that increased U.S. power generation from new renewables capacity—mostly wind and solar—will reduce generation from both coal-fired and natural gas-fired power plants in 2023 and 2024. With the new solar and wind projects coming online this year, we forecast these two energy sources will account for 16% of total generation in 2023, up from 14% last year and 8% in 2018. In contrast, our forecast share of generation from coal falls from 20% in 2022 to 18% in 2023; the forecast share from natural gas declines from 39% to 38%.



One of the most significant shifts in the mix of U.S. electricity generation over the past few years has been the rapid expansion of renewable energy resources, especially solar and wind. The U.S. electric power sector operated about 74 gigawatts (GW) of solar photovoltaic capacity at the end of 2022, which is about three times the capacity at the end of 2017. U.S. wind power has grown by more than 60% since 2017 to about 143 GW of capacity.

Based on planned additions reported to EIA, solar capacity will expand another 63 GW (84%) by the end of 2024, which is consistent with its declining construction costs and favorable tax credits. As a result of this expected increase in solar capacity, we forecast that the solar generation share will rise from 3% of U.S. generation last year to 5% in 2023 and 6% in 2024. Scheduled growth in wind power is slightly slower this year than in recent years, at about 12 GW of new planned capacity over the next two years. The forecast wind generation share in 2023 remains relatively similar to last year, averaging 11%, and then increases to 12% in 2024.

Much of the growth in solar capacity is in Texas and California, where natural gas has been the primary source of electricity. A growing share of generation from renewables, combined with our forecast of less overall electricity demand this year, displaces some natural gas generation, which will decline slightly, falling from 39% in 2022 to 38% this year and to 37% in 2024. We also expect that the coal generation share will decline by two percentage points to 18% this year, as lower natural gas fuel costs make coal a less competitive source for electricity supply. Our forecast of coal generation falls again in 2024 to 17%.

EIA
http://www.eia.gov/

19 January 2023

French nuclear, hydropower availability down 12% as strike gets under way

French nuclear and hydropower availability late on Wednesday was running about 12% below levels seen earlier in the day, the outage table of state-controlled nuclear group EDF showed as a nationwide strike over pension reform got under way. The table showed availability reduced by 5 gigawatts (GW) at seven nuclear reactors and down by another 340 megawatts (MW) at hydropower plants. Workers in sectors including transport, education and energy across France are due to take part in the strike on Thursday, with major protest marches expected in Paris and other cities.

Unions are up in arms over plans by President Emmanuel Macron's government to raise the retirement age by two years to 64 in order to keep the pension system out of the red.

Reuters
http://www.reuters.com/

19 January 2023

Bulgaria energy strategy includes four new nuclear reactors

Energy minister Rossen Hristov has set out an energy strategy for 2023 to 2053 for Bulgaria, which includes plans for two new reactors at Kozloduy and two at Belene. Hristov, who has been energy minister in the current interim government, took office in August. He outlined the strategy at a round table with President Rumen Radev, Prime Minister Galab Donev and others.

The aim of the energy strategy is for Bulgaria "to remain a leader in the production and export of electricity in the region". It notes that the country's energy industry had exported more than 12 terawatt hours of electricity for about EUR3 billion (USD3 billion) in

the past year - "this makes the sector one of the largest exporters in the country" and enabled measures to limit the high electricity prices, demonstrating how "the sector has a serious impact on maintaining the competitiveness of the entire economy".

The four new reactors would ensure continuation of nuclear energy even after the current two reactors are decommissioned, with Hristov saying Bulgaria had all the prerequisites for the development of nuclear energy with trained staff, traditions, infrastructure and licensed sites. The strategy sees the continued use of coal to 2030 before reducing its use to zero by 2038 - the timeline is designed to allow the "preservation of energy and national security" with all producers asked "to optimise their activities in order to reduce carbon emissions, so that the longer use of coal does not come into conflict with the European goals for decarbonisation".

The strategy also includes expansion to 7GW of solar and 2GW of wind by 2030 and 12GW of solar and 4GW of wind by 2050, plus 870MW of new hydropower projects by 2030 and 1270MW by 2050. There will also be an expansion of hydrogen production, to reduce natural gas imports, and the introduction of 600MW of battery storage by 2030 and 1.5GW of seasonal storage systems by 2050, according to the BTA news agency. There will also be modernisation of about 2000 kilometers of the electricity transmission network.

Bulgaria's two operating Russian-designed VVER-1000 reactors at Kozloduy - units 5 and 6 - generate about one-third of the country's electricity. Their first grid connections were in 1987 and 1991, respectively, and they have both been through refurbishment and life extension programmes to enable extension of operation from 30 to 60 years. Kozloduy 1-4 reactors were VVER-440 models which the European Commission had classified as non-upgradeable and Bulgaria agreed to close them down during their negotiations to join the European Union in 2007.

The Belene project in northern Bulgaria has been for the construction of two 1000 MWe units, using Russian VVER-1000 designs. Preliminary site works began in 2008, and contracts for components including large forgings and I&C systems were signed with suppliers, but the project was stymied by financing problems and was suspended in 2012. In 2019, the then government advertised for a strategic investor to participate in the Belene project to build two large reactors, but said that neither funding guarantees nor long-term electricity sales contracts would be offered.

In January 2021, the Bulgarian Council of Ministers approved plans for a seventh unit at Kozloduy and said discussions had been held with the USA's Westinghouse about making maximum use of the Russian-supplied equipment already purchased for the Belene project, which was at the time said to be worth about BGN1.3 billion (USD810 million). Last week, Bulgaria's National Assembly voted by 112 to 45, with 39 abstentions, in favour of a draft decision asking ministers to negotiate with the US government for the new AP1000 unit at Kozloduy and urged action by 1 March to speed up the process for approval and construction of the unit as well as initiating a licensing and environmental impact assessment procedure for another reactor, which would be unit 8 at Kozloduy.

The country has had four elections in two years which have so far failed to produce a permanent government. The left-of-centre BSP was asked earlier this week to see it if it could put together a big enough coalition to form a government, after two other parties failed in their efforts to do so. In a speech this week setting out the record of his interim government Prime Minister Galab Donev highlighted energy policy, saying: "In conditions of an energy crisis without a strategic document that sets clear goals for the development of the sector, every government will resemble a person in a dark room looking for the key to the light."

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

20 January 2023

NRC Certifies First U.S. Small Modular Reactor Design

The U.S. Nuclear Regulatory Commission (NRC) issued its final rule in the Federal Register to certify NuScale Power's small modular reactor. The company's power module becomes the first SMR design certified by the NRC and just the seventh reactor design cleared for use in the United States. The rule takes effects February 21, 2023 and equips the nation with a new clean power source to help drive down emissions across the country.

The published final rule making allows utilities to reference NuScale's SMR design when applying for a combined license to build and operate a reactor. The design is an advanced light-water SMR with each power module capable of generating 50 megawatts of emissions-free electricity.

NuScale's VOYGR™ SMR power plant can house up to 12 factory-built power modules that are about a third of the size of a large-scale reactor. Each power module leverages natural processes, such as convection and gravity, to passively cool the reactor without additional water, power, or even operator action. The NRC accepted NuScale's SMR design certification application back in March 2018 and issued its final technical review in August 2020. The NRC Commission later voted to certify the design on July 29, 2022—making it the first SMR approved by the NRC for use in the United States.

"SMRs are no longer an abstract concept," said Assistant Secretary for Nuclear Energy Dr. Kathryn Huff. "They are real and they are ready for deployment thanks to the hard work of NuScale, the university community, our national labs, industry partners, and the NRC. This is innovation at its finest and we are just getting started here in the U.S." NuScale is currently seeking an uprate to enable each module to generate up to 77 megawatts. The NRC is expected to review their application this year.

The U.S. Department Energy provided more than $600 million since 2014 to support the design, licensing, and siting of NuScale's VOYGR SMR power plant and other domestic SMR concepts. DOE is currently working with Utah Associated Municipal Power Systems (UAMPS) through the Carbon Free Power Project to demonstrate a six-module NuScale VOYGR plant at Idaho National Laboratory. The first module is expected to be operational by 2029 with full plant operation the following year. UAMPS finished subsurface field investigation activities at the proposed INL site and expects to submit a combined license application to the NRC in the first quarter of 2024.

NuScale Power has 19 signed and active domestic and international agreements to deploy SMR plants in 12 different countries, including Poland, Romania, the Czech Republic, and Jordan in addition to the Carbon Free Power Project.

Energy.gov
http://www.energy.gov

20 January 2023

1000kV Jingmen-Wuhan UHV Power Transmission and Transformation Project Put into Operation

On December 28, the 1000kV Jingmen-Wuhan UHV AC power transmission and transformation project across Hubei Province went into operation. It is a national key project of the "13th Five-Year Plan", which took 20 months to complete. The 1000 kV Jingmen-Wuhan UHV AC power transmission and transformation project is a major initiative of State Grid Corporation of China (State Grid) to implement China's new energy security strategy. The project includes a new 1000kV substation in Wuhan, which is connected to the first UHV substation in China, the 1000kV Jingmen Substation, through 234 km long 1000kV transmission lines. With a total of RMB 6.5 billion investment, the project has built 458 tower

bases in 11 counties (cities and districts) in Hubei, which can strongly promote the transformation and upgrading of Hubei Power Grid to a large power grid with both transmission and receiving ends and hybrid AC/DC connections.

After the project being put into operation, an E-shaped UHV AC backbone grid will be formed in Central China, effectively increasing the transmission capacity of the ±800 kV Northern Shaanxi-Hubei UHV DC lines by 2 GW to 6 GW, increasing the power transmission capacity of the west-to-east power transmission channel in Hubei Province by 2.8 GW to 13.55 GW. At the same time, the project also significantly improves the power mutual aid capacity of Hubei and neighboring provinces, providing strong support for Hubei during the winter power consumption peak. The main channel of the UHV power grid in the national "14th Five-Year Plan" passes Hubei. Therefore, it has become the main venue of the national UHV project construction, and 8 UHV projects (5 AC and 3 DC) have been continued and newly started. With the steady progress and smooth operation of a series of UHV projects, the geographical advantages of Hubei Power Grid will be fully shown, effectively blostering the energy resource shortage of Hubei with advanced grid infrastructure, and eventually achieving the goal of "generating and transmitting coal power and sourcing electricity from all over the country".

EE Online
http://electricenergyonline.com/

24 January 2023

Power returns to cities in Pakistan day after massive outage

Power had returned to most cities across Pakistan on Tuesday, a day after a nationwide breakdown left the country of 220 million people without electricity. The outage started around 7:30 am (0230 GMT) on Monday, a failure linked to a cost-cutting measure as Pakistan grapples with an economic crisis. Energy Minister Khurram Dastgir Khan said on Monday evening that power was being gradually restored. Electricity largely returned to mega cities Karachi and Lahore overnight, but with localized and brief falls in connection continuing.

The capital Islamabad and other cities, including Rawalpindi, Quetta, Peshawar and Gujranwala, also reported that the lights were back on. However, some rural areas were still waiting to be reconnected. The country's power system is a complex and delicate web, where problems can quickly cascade. Khan said a variation in frequency on the national grid caused the cut, as power generation units were turned on early Monday morning. The units are temporarily switched off on winter nights to save fuel, he had told reporters earlier.

Localized power cuts are common in Pakistan, and hospitals, factories and government institutions are often kept running by private generators. But the machines are beyond the means of most citizens and small businesses. In parts of northern Pakistan, temperatures were due to drop below freezing overnight with supplies of natural gas — the most common heating method — also unreliable due to load-shedding. The economy is already hobbled by rampant inflation, a falling rupee and severely low foreign exchange reserves, with the power cut piling extra pressure on small businesses. In the garrison city of Rawalpindi, homeware trader Muhammad Iftikhar Sheikh, 71, said he was unable to demonstrate electronic products to browsing patrons. Schools mostly continued either in the dark or using battery-powered lighting. Mobile phone services were also disrupted as a result of the outage, the Pakistan Telecommunication Authority tweeted. A similar breakdown in January 2021 affected the entire country, after a fault occurred in southern Pakistan, tripping the national transmission system.

Arab News
http://www.arabnews.pk/

24 January 2023

National Grid Demand Flexibility Service to run again tonight

Households with smart meters will again have the opportunity to earn credit against their energy bills tonight by taking part in the Demand Flexibility Service run by National Grid and participating energy suppliers, writes Kevin Pratt.

The service, which is designed to reduce energy consumption at peak times and underpin security of supply, will last from 4:30pm to 6pm. Last night (Monday) saw the scheme operate for the first time after a series of trials last year – it ran from 5pm to 6pm, with an estimated one million households taking part.

The financial reward – usually paid as a discount off the next bill – is determined by how much energy is not used compared to normal during the period in question. A household reducing consumption by one kilowatt hour could be in line for savings of £3 – £6, according to National Grid, although it is up to individual suppliers to determine the actual amounts. To take part, you need a smart meter, and your energy supplier must be signed up to the scheme – it will contact you the day before the Service operates if this is the case.

If your supplier is not participating, you may be able to use an independent company that will draw the relevant details from your meter via an app. Details of the participants can be found here. Both domestic and business consumers are eligible. The scheme is not primarily intended to reduce overall demand across England, Scotland and Wales, where it operates. Rather, the intention is to smooth the spike in demand at peak times and ease pressure on the grid, thus avoiding power outages.

National Grid says it is running the scheme as a precaution and that people should not be worried about power cuts. Industry observers say the issue has arisen for a number of reasons, including the UK's lack of storage capacity for natural gas, which is used to generate electricity, and calm weather conditions, which have reduced output from windfarms. The Grid is also considering bringing mothballed coal-fired power stations back into operation as further back-up, especially if the cold snap continues. At present, the ability to trigger the demand management service is scheduled to run until the end of March.

Forbes
http://www.forbes.com/

24 January 2023

UK warms coal power plants to boost energy supply

For a second day in a row, National Grid has asked three coal-fired generators to be put on standby in case electricity supplies run low later today. On Sunday, Britain's electricity system operator asked Drax to start warming two of its coal units at its North Yorkshire power plant and EDF to do the same for its West Burton plant.

Industry sources told ELN that warming a coal-fired unit involves a series of technical tasks which prepares the plant to run safely, including removing gases from the boiler and bringing its turbines up to speed so it can synchronise with the grid. It is estimated that Drax, in collaboration with National Grid, sourced an additional 400,000 tonnes of coal, which together with the existing stock it holds, is enough for nearly 1TWh of electricity generation.

Last year, National Grid ESO said that operators of coal-fired power stations were expected to be paid up to £420 million to extend the operational lifespan of the plants this winter and provide backup power to the grid.

Last night, ELN approached Drax to ask about the warming up of its coal units. A Drax spokesperson told ELN: "At the request of the government, Drax agreed to delay the planned closure of its two coal-fired units and help bolster the UK's energy security this winter. "National Grid ESO instructed the units to be warmed yesterday so that they were

ready to generate power should the country require it today. “That instruction was stood down last night and we do not now expect the coal units to be required to run during the peak period this evening.”

Energy Live News
http://www.energylivenews.com/

24 January 2023

Algeria, Italy agree to build new energy pipeline

Algeria and Italy agreed on Monday to build a new pipeline to carry Algeria's gas and electricity to Europe.

At a joint press conference with visiting Italian Prime Minister Giorgia Meloni, Algerian President Abdelmadjid Tebboune said the project will make Italy "a key distributor of Algerian energies to Europe." For her part, Meloni said in the light of the energy crisis in Europe, Algeria can "become a pioneer supplier at the African and global levels via Italy to all Europe," noting Algeria is Italy's first trading partner in Africa.

She also expressed Italy's aspiration to diversify partnership with Algeria, especially in the areas of digital infrastructure, communications, biomedicine, industry, and renewable energies.Earlier in the day, Algeria and Italy signed several cooperation agreements during a ceremony co-chaired by Tebboune and Meloni. The Italian prime minister arrived on Sunday in Algeria for a two-day working visit.

Xinhua
http://english.news.cn/

24 January 2023

Generators, transmission utilities, others back ISO-NE storage-as-transmission plan, with conditions

Generators, transmission utilities and others support, with some conditions, ISO New England’s application to the Federal Energy Regulatory Commission to establish a storage as transmission-only asset, or SATOA. The New England States Committee on Electricity told FERC it supports ISO-NE’s application and electric storage facilities as transmission-only assets “should enhance the competitiveness of future solicitation processes, ultimately resulting in more cost-effective transmission solutions and benefits to consumers.” Advanced Energy United, an industry association, said it supports approval of the SATOA proposal and urged ISO-NE and FERC to view it as a “first step and learning opportunity” for a “more robust and flexible” use of energy storage.”

ISO-NE said in its application to FERC that SATOA would be activated to relieve the strain on a surviving transmission line after others were knocked out by a storm or during controlled outages. It’s looking to establish a SATOA rule by July 1, 2024, and asked FERC to approve its request by March 29. FERC has recognized that electric storage facilities may serve as transmission assets under some circumstances for greater efficiency and cost-effectiveness, ISO-NE said in its Dec. 29 filing. Beginning in 2010, FERC, in orders and policy statements, “opened the door” for consideration of electric storage as transmission assets, ISO-NE said in its filing. The proposed change would establish a separate class of energy storage resources that would not participate in the wholesale markets and would have a minimal impact on wholesale electricity prices.

By integrating a storage resource into transmission equipment, storage-as-transmission can add or absorb electricity for power flows on transmission lines over a period of time. Storage used this way can add to transmission line capacity or serve as an alternative to building transmission projects, according to American Clean Power. Advanced Energy United said ISO-NE’s proposal limits the use of SATOAs that could “constrain

deployment of energy storage in New England as a tool to cost-effectively meet system needs." For example, limiting SATOAs to participation as transmission-only assets and not allowing any market participation would prevent full use of the assets, AEU said.

The New England Power Generators Association told FERC it does not oppose ISO-NE's application. It asked FERC to request that the ISO-NE internal and external market monitor evaluate and report on price suppression related to the dispatch of SATAOs and the competitiveness of SATOA solicitations. First Light Power, a Burlington, Massachusetts, owner and operator of about 1,400 MW of hydroelectric generating facilities, including pumped storage hydroelectric plants and lithium-ion battery installations, also said it's not against the application. But it said it would "strongly oppose" efforts to expand SATOA operations that could have an adverse impact on First Light Power's pumped storage resources relying on competitive market revenue. Vermont Electric Power Co. and Vermont Transco support ISO-NE's application. But it called for modifications including eligibility for SATOA for selection as the preferred solution to provide dynamic voltage support in all studies that identify system voltage needs.

The New England States Committee on Electricity told FERC it supports ISO-New England's application and electric storage facilities as transmission-only assets "should enhance the competitiveness of future solicitation processes, ultimately resulting in more cost-effective transmission solutions and benefits to consumers." The Union of Concerned Scientists said ISO-NE's approach "omits the opportunity for transmission upgrades that can be made by large generators using storage." FERC should address transmission functions available from storage more broadly than what ISO-NE has proposed, it said. The scientists' group urged FERC to use its decision authorizing ISO-NE's SATOA to make storage-as-transmission a "technology solution that can expedite the construction of grid facilities for generation as well."

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

25 January 2023

GreenGo Energy to develop €8bn green energy park in Denmark

Danish firm GreenGo Energy has partnered with Ringkøbing-Skjern Municipality for the development of a 4GW green energy park. Named Megaton, the project will be built at the future Stovstrup 400kV substation east of Tarm in Ringkøbing-Skjern municipality. Its development will require a total investment of €8bn ($8.7bn).

The Megaton energy park will cover 4,000ha of land and consist of onshore solar and wind projects, in addition to a 2GW offshore wind project that GreenGo plans to develop. Clean energy generated by the renewable assets will be supplied to the energy park, which will have a 2GW electrolysis infrastructure. Megaton is expected to come online before 2030 and will have the capacity to produce one million tonnes of green fuel a year. Once operational, it will be one of the largest fully integrated energy parks in the world.

The project is part of the Danish government's plan to reduce Denmark's carbon emissions by 70% by the end of 2030. GreenGo Energy noted that the renewable energy assets will have the capacity to generate 11.5TWh of green power a year, which is equivalent to more than 30% of the country's current total power consumption. The company estimates, however, that 85% of the green electricity will be absorbed by Megaton Energy Park to produce green fuels.

In addition, the project will produce more than 1TWh of surplus heat for the district's heating system. GreenGo Energy CEO Karsten Nielsen said: "With the Megaton project and the development of one of the world's largest energy parks in Western Jutland, we will once again put Denmark on the world map as a leader in the transition to 100% green power and

the green fuels that are necessary to achieve the global climate goals towards 2050. “We are pleased that the city council in Ringkøbing-Skjern municipality is just as ambitious on the green transition as GreenGo Energy.”

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

26 January 2023

French market watchdog puts EDF takeover on hold

The French Financial Markets Authority (AMF) has suspended the state's full takeover of EDF until the Paris Court of Appeal rules on a lawsuit brought by minority shareholders in EDF challenging the deal.

EDF's board of directors on 27 October approved an offer by the French state to renationalize the company by increasing its shareholding in EDF from 84% to 100% in a deal worth almost EUR10 billion (USD10 billion). The following month, the AMF approved the simplified public tender offer filed by the French state for the equity securities of EDF, with an offer price of EUR12.00 per EDF share and EUR15.52 per OCEANE (existing shares not already held by the French state). The offer was open from 24 November to 22 December inclusive. A group of minority shareholders took the case to the Paris Court of Appeal arguing that the price offered to EDF shareholders was too low. The employee shareholding fund Actions EDF and the non-profit organizations Energie En Actions and Association pour la Défense des Actionnaires Minoritaires are seeking the annulment of the clearance decision on the offer.

On 20 January, the Ministry of Economy, Finance and Industrial and Digital Sovereignty announced that the state had crossed the threshold of 90.00% of the capital and theoretical voting rights of EDF on a fully diluted basis. "Consequently, the state will be able, at the end of the offer, to proceed with the implementation of the squeeze-out on EDF shares from when it converts the EDF OCEANEs already in its possession". The AMF has now announced that the simplified public tender offer will be closed on 3 February, pending the decision of the Paris Court of Appeal. EDF said the French State has undertaken not to implement a squeeze-out procedure prior to the Court of Appeal's decision on the claim on the merits. Should the Court of Appeal confirm the AMF's clearance decision, the French State will request the AMF reopens the offer for a period of ten trading days after the court's decision. It will then proceed with the squeeze-out if the conditions are met.

In the event that the court annuls or amends the AMF's clearance decision, the French state will return the securities acquired in the offer (both through the semi-centralised offer and through market acquisitions) to former shareholders and/or holders of OCEANEs who so request. Should the French state file an amended draft simplified public tender offer (followed by a squeeze-out) at a more favourable price as a result and following the court's decision, to pay an additional price to shareholders and/or holders of OCEANEs (having tendered their securities in the semi-centralised offer or having sold it on the market within the offer) who have not requested the return of their securities but who request payment of the additional price.

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

27 January 2023

OX2 to develop 1,400 MW offshore wind farm outside the coast of Finland

OX2 has initiated the development of the offshore wind farm Tyrsky in the Gulf of Bothnia in the Finnish economic zone. The project that is estimated to have a total installed capacity of 1,400 MW and will be included in OX2’s project development portfolio for the first

quarter, 2023. OX2 received a research permit for the Tyrsky wind farm from the Finnish government last year. Next step is to perform an Environmental Impact Assessment (EIA). The licensing period is estimated to about 4 years and the wind farm could be in operation around 2030. The wind farm will be located in an area southwest of Vaasa, about 30 kilometers northwest of Kaskinen. It will comprise about 100 turbines and have an annual production of about 6TWh. OX2 has two major offshore wind farms in Finland since before and is also developing offshore wind farms outside Åland and Sweden. At the end of the third quarter the portfolio of offshore wind projects was 18.3 GW.

OX
http://www.ox2.com/

27 January 2023

Turkey aims to produce hydrogen at $2.40/kg by 2035

The Turkish government has released a new strategic roadmap for hydrogen technologies. The country plans to produce hydrogen at $2.40/kg by 2035, and aims to halve this figure by 2050, according to the Turkish energy minister, Fatih Donmez. Renewable energy price trends, water availability, local demand, and the flexibility of national support schemes are supporting the hydrogen price forecasts. Gulmira Rzayeva, senior visiting research fellow at the Oxford Institute for Energy Studies said Turkey will import electrolysis technology over the medium term. “So far, Turkey has not this kind of technology,” she explained. “As of now, if the country decides to go for green hydrogen, it needs to import electrolyzers.” She added that the country will invest in innovation to produce electrolysis technology domestically within the next decade. “Turkey will try, in the next years, to replicate the success story we have seen in PV technology,” she said. “A decade ago, it was importing 100% of PV technology – now it produces locally up to 90% of its PV technology.” The Oxford Institute for Energy Studies Research Fellow said that the country aims to blend up to 2% to 5% hydrogen into gas grids before 2030, 10% by 2040, and 20% by 2050. Rzayeva said that Turkey will increase its PV energy production with or without hydrogen. “Factoring in hydrogen production, the rise will be even stronger than the expected targets.” For now, Turkey expects solar installed power to reach 52,900 MW by 2035. Renewable energy sources, which had a 16.7% share in primary energy consumption in 2020, are expected to increase to 23.7% in 2035.

“The Turkish government is pushing very aggressively to support PV, mostly through feed-in-tariffs and auctions. For each auction, the cost of both wind and solar is decreasing. The government is supporting renewables by providing purchasing guarantees for 10 years,” said Rzayeva. “The company can sell it to the government or on exchange platforms also at higher prices. There is a huge interest.” For now, the primary hurdle for Turkey's hydrogen ambitions comes from policy uncertainty – mainly in the European Union, said Rzayeva. “From a business point of view, it is very uncertain what the market will be in a few years. There is no market regulation or design,” she said. “There are many risks to investing in hydrogen production and export facilities. It will take some time for Turkey to have a clear picture.”

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30 January 2023

India asks utilities to not retire coal-fired power plants till 2030

India has asked utilities to not retire coal-fired power plants till 2030 due to a surge in electricity demand, according to a federal power ministry notice reviewed by Reuters, just over two years after committing to eventually phase down use of the fuel.

The energy-hungry nation said last May it plans to reduce power generation from least 81 coal-fired plants over the next four years, but the proposal did not involve shutting down any of its 179 coal power plants. India has not set a formal timeline for phasing down coal use. "It is advised to all power utilities not to retire any thermal (power generation) units till 2030 and ensure availability of units after carrying out renovation and modernisation activities if required," the Central Electricity Authority (CEA) said in a notice dated Jan. 20 sent to officials in the federal power ministry.

The CEA, which acts as an advisor to the ministry, cited a December meeting where the federal power minister had asked that ageing thermal power plants not be retired, and to instead increase the lifetime of such units "considering (the) expected demand scenario". The federal power ministry did not immediately respond to emailed requests for comment. India, the world's second largest-consumer, producer and importer of coal, fell short of its 2022 renewable energy addition target by nearly a third. Coal accounts for nearly three-quarters of annual electricity generation. Power demand in India has surged in the recent months due to extreme weather, rising household use or electricity as more companies allowing employees to work from home, and a pickup in industrial activity after easing of coronavirus-related restrictions.

Peak power demand met - a measure of maximum power supplied during the day - rose to a record of as much as 210.6 GW on Jan. 18, 1.7% surpassing the previous peak of 207.1 GW at the height of an intense heatwave last April that caused India's worst power crisis in six and a half years. "Peak power demand has already risen 5% this year. If it increased by another 3-4%, we could be staring at another crisis," a senior official at a utility in a southern Indian state said. "There is no question of retiring old coal units," the official said, speaking on condition of anonymity because he is not authorized to speak to the media.

Reuters
http://www.reuters.com/

30 January 2023

Indian coal miner commissions utility-scale floating PV array

India's SCCL has commissioned its first floating solar power plant at the Singareni Thermal Power Station (STPS) in Jaipur, in the Indian state of Telangana. State-owned SCCL is setting up a 15 MW (AC)/19.5 MW (DC) floating solar power plant at the STPS reservoir. In the first phase, it commissioned 5 MW of floating solar capacity. It expects to finish the second 10 MW phase by the end of March. The 5 MW(AC)/6.5 MW(DC) floating solar plant was executed by Hyderabad-headquartered Novus Green Energy Systems.

“The plant uses transparent glass-to-glass solar modules, which are more efficient than traditional solar modules,” said Anshuman Yenigalla, managing director of Novus Green. Novus Green's in-house teams built the 5 MW floating PV plant. The solar panels were manufactured at its facility in India. Domestic supplier FloatVolt provided the floating boards. “The project faced several challenges, such as the design and manufacturing of floating boards meeting all testing standards and fixing frameless glass-to-glass modules onto the float boards,” said Yenigalla. “The overall design was vetted by the Indian Institute of Technology (IIT), making it the first floating solar project to be vetted by a premium institute like IIT.”

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