15 June 2023

UK's National Grid in talks with Drax to keep coal plant online

The manager of Britain's electricity network is in talks with the owner of one of the country's last two remaining coal-fired power plants to stay open for another winter, as part of efforts to avoid energy supply disruption.

National Grid ESO is seeking to reach a deal with Drax to keep online two coal units totalling 1.3 gigawatts of capacity — about 2 per cent of peak daily demand — near Selby, North Yorkshire, despite the UK power company already having started shutting down the facility. The move, disclosed on Thursday in the electricity system operator's winter outlook report, follows a government request amid concern about further energy market shocks. In a further push to avoid blackouts, people will also be able to again earn money in return for cutting electricity usage at peak times this winter, extending a scheme introduced last year at the height of the energy crisis.

National Grid ESO said in its report that its "base case" was for healthy supplies, with a buffer slightly higher than last year, at 4.8GW or roughly 8 per cent above demand. However, it added: "In light of the continued risks and uncertainties the electricity system operator continues to explore the potential availability of additional operational options." The UK has almost entirely pushed coal out of the electricity system as part of efforts to cut carbon emissions, with the fossil fuel accounting for less than 2 per cent of the generation mix last year compared with 30 per cent in 1990.

French energy group EDF and FTSE 250-listed Drax were both due to shut down their last coal units in the UK in September last year, leaving Düsseldorf-based Uniper as the only operator still running up to the government's final coal phaseout date of October 2024. But the two companies were asked by the UK government to keep their plants online last winter to help provide emergency back-up electricity. Uniper also kept open a unit it planned to shut down. All three were paid for doing so.

The request came amid turmoil in energy markets caused by Russia's war on Ukraine and outages on France's nuclear fleet, which affected imports of electricity from France to Britain. The spare plants were warmed up several times but only used once, in March, during a cold snap and as strikes further dented output in France.

Drax said it was not yet in formal negotiations to reopen and had previously indicated that restarting its facility would be technically complicated. The company said: "As we announced in April, we have closed our coal units at Drax and have started the decommissioning process. Since then, we have had various discussions with government and ESO, but we are not in negotiations to extend their availability into the coming winter."

Financial Times
http://www.ft.com/

15 June 2023

FERC Finalizes Plans to Boost Grid Reliability in Extreme Weather Conditions

FERC today finalized two rules to help improve reliability of the bulk power system against threats of extreme weather that may cause unacceptable risk to life and economic harm.

The first rule directs the North American Electric Reliability Corporation (NERC) to develop a new or modified reliability standard to require transmission system planning for extreme heat and cold weather conditions over wide geographical areas, including studying the impact of concurrent failures of bulk power system generation and transmission equipment and implementing corrective actions as needed. The second rule directs transmission providers to submit one-time reports describing their policies and processes

for conducting extreme weather vulnerability assessments and identifying mitigation strategies.

"Make no mistake: Reliability at FERC is Job No. 1," FERC Chairman Willie Phillips said. "For the first time, reliability standards will require planning for extreme heat and cold weather. NERC will develop the standards, and once we approve them transmission owners and operators will identify the elements of their systems that are vulnerable to extreme heat and cold and develop solutions to address those vulnerabilities."

The new rules stem from the Commission's June 2021 technical conference on Climate Change, Extreme Weather and Electric System Reliability. A presentation at today's Commission meeting, which outlined preliminary assessments from the FERC and NERC teams studying the December 2022 Winter Storm Elliott, underscored the need for the new rules. Since 2011, the country has experienced at least seven major extreme weather events, each of which stressed electric grid operations.

FERC
http://www.ferc.gov/

16 June 2023

Litgrid starts construction of Darbėnai switchyard, important for the Baltic Sea region

Litgrid, the Lithuanian electricity transmission system operator, starts construction of a 330 kV switchyard in Darbėnai, Kretinga district. The switchyard, which is considered to be the future energy hub of western Lithuania, will increase Lithuania's energy security and commercial trade opportunities, and will contribute significantly to the growth of renewable electricity generation.

The project, which is aimed at preparing for synchronisation with the continental European grid, will integrate the Harmony Link international offshore interconnector with Poland into the country's electricity system and will distribute the electricity generated by the 1400 MW offshore wind farms across the country via the West Lithuanian transmission lines.

"Darbėnai is an important energy hub for Lithuania and our partners. The uniquely designed switchyard being built here is directly linked to major energy projects such as Harmony Link and offshore wind farms. Darbėnai is the first point of entry for the huge amounts of energy needed to meet the country's and the region's electricity needs. From Darbėnai, the electricity will continue its journey through the transmission lines of Western Lithuania to the centre of the country, and can be further exported to neighbouring countries", says Rokas Masiulis, CEO of Litgrid.

The operator received the construction permit for the switchyard in mid-June. The switchyard is unique in that it is planned to connect power lines for as many as three different purposes - offshore and onshore wind, as well as the Harmony Link offshore link. The Darbėnai switchyard will also be equipped with a 700 MW Harmony Link converter station for the offshore link with Poland. This will be the third converter station in the country. The first converter station for the NordBalt international link with Sweden is located in Klaipėda, while the second for the LitPol Link international link with Poland is in Alytus. The 330 km long Harmony Link offshore cable from Darbėnai to Poland's Żarnowiec substation will allow more flexibility in responding to the electricity market. When needed, the electricity has to be supplied, and in case of surplus - exported.

Offshore wind farms with high energy potential will also be connected to the Darbėnai switchyard. The power plants, which will be built in two phases about 30 km off the coast of Palanga, will have a capacity of 700 MW each. The Darbėnai switchyard will also be the starting point of the newly constructed Western Lithuania 330 kV transmission line highway. The corridor will stretch from Darbėnai all the way to the Kruonis pumped storage power plant, more than 350 km in total, and will be used to distribute electricity flows from Western

Lithuania, where renewable energy is rapidly developing, and Eastern Lithuania, where electricity consumption is growing. The Darbėnai switchyard will also contribute to the development of continental renewable energy sources. It will connect the 330 kV Darbėnai-Bitėnai transmission line and, in the future, a 110 kV switchyard will allow for the integration of more continental green local generation into the transmission grid.

The reliability of the electricity transmission network will also be enhanced by works planned to the north-east of Darbėnai. The plan is to build 330 kV power transmission lines Darbėnai-Mūša (by 2033), Mūša-Panevėžys (2032), and to extend the Varduva switchyard into a transformer substation (2033). Once Litgrid's team implements these projects, power flows will be evenly distributed not only from west to east, west to south, but also north to south. This will strengthen Lithuania's electricity transmission system and further increase its resilience to disruptions. The Darbėnai switchyard is planned to be completed by 2025.

Litgrid has already implemented 6 synchronization projects in total. These include the extension of the 330 kV Bitėnai transformer substation, the construction of the 110 kV Pagėgiai-Bitėnai line, the reconstruction of the 330 kV Elektrėnai Complex-Vilnius line, the extension of the LitPol Link, the testing of an emergency connection to the continental European grid via the LitPol Link synchronous link, and the optimization of the transmission network of North-Eastern Lithuania.

So far, Lithuania, Latvia and Estonia, together with Russia and Belarus, operate in an IPS/UPS system where the electricity frequency is centrally regulated in Russia. Connection to continental European grids and synchronous operation with Poland, Germany and other continental European countries will be ensured by 2025 at the latest.

Offshorewind
http://offshorewind.lt/

16 June 2023

Power plants remain vulnerable to outages in extreme cold, despite warnings, FERC-NERC find

The majority of power plant outages during Winter Storm Elliott were caused by freezing, mechanical and electrical, and fuel issues, echoing problems from previous cold spells, FERC staff said.

Despite previous warnings, U.S. power plants remain vulnerable to not working during bitter cold, according to an initial assessment of Winter Storm Elliott prepared by the Federal Energy Regulatory Commission and the North American Electric Reliability Corp.

About 70,000 MW was unable to run in frigid weather in late December across the Midwest and Eastern United States, leading to rolling power outages of more than 5,000 MW in the Southeast, according to a presentation at FERC's monthly meeting Thursday.

The majority of power plant outages during the cold snap were caused by problems with freezing, fuel supply, and mechanical and electrical issues, FERC staff said, noting those problems occurred in the last five major extreme cold spells that have happened in the U.S. since 2011.

Like in Winter Storm Elliott, there was a sharp drop in natural gas production and electric use was higher than forecast in some areas during some of those cold events, according to the presentation.

The need to weatherize power plants and other recommendations issued after previous cold weather events remain valid and if they had been fully implemented would have eased the problems during Winter Storm Elliott, FERC staff said.

"We're seeing the same three causes, so therefore we think that it makes all the sense in the world to continue full steam ahead on implementing prior recommendations," Heather Polzin, reliability coordinator for FERC's enforcement office, said about power plant

outages. Anticipating grid vulnerabilities is becoming harder in the face of extreme weather, according to FERC Commissioner Allison Clements. “It shows that reserve margins are an increasingly inadequate tool to predict winter sufficiency,” she said. “Two of the regions that suffered rolling outages during Winter Storm Elliott — TVA and Duke [Energy] — were not even identified in NERC’s 2022-23 winter assessment as anything more than a low risk of load shed.”

FERC Commissioner Mark Christie said weatherizing power plants raises market issues. “It’s fine to mandate weatherization, but you can’t separate that issue from the issue of market design, and how do you pay for it?” Christie said. “Weatherization requires capital expenditures. Energy markets don’t compensate for capital expenditures. That’s what the capacity market was set up to do.”

NERC oversees grid reliability, but no entity is responsible for making sure the gas system is reliable, FERC acting Chairman Willie Phillips said. “I believe this is a reliability gap,” Phillips said during a media briefing. “I, once again, call for some entity to have responsibility for the gas system’s reliability. It doesn’t have to be FERC, but someone needs to have responsibility for that.”

With support from FERC and NERC, the North American Energy Standards Board is considering options for better harmonizing the electric and natural gas systems.

In the first of three planned meetings, the NAESB Gas-Electric Harmonization Forum meets June 16 to discuss 19 proposed recommendations for better meshing the gas and power sectors. The recommendations call for increased information sharing between power plant operators and pipeline companies. They also call for a study to determine if the natural gas system can meet future power plant needs.

Separately, FERC approved two rules Thursday that aim to improve grid reliability during extreme weather.

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

16 June 2023

Shell Commits $1 Billion to Hydrogen and CCS Investments

In a significant move toward decarbonization, oil giant Shell has announced its plan to invest up to $1 billion annually in hydrogen and carbon capture and storage (CCS) technologies in 2024 and 2025. The capital expenditure will primarily target regions such as Northwest Europe, the Middle East, and North America, where Shell has an existing presence, policy support is in place, customer demand is expected to be strong, and a pathway to profitability is visible.

Huibert Vigeveno, Shell’s Downstream Director, emphasized the need for stronger policy and regulatory support to foster the development of these technologies. Vigeveno cited the Inflation Reduction Act (IRA) in the United States as an example, which offers tax credits and subsidies for green hydrogen production and CCS projects. The IRA provides tax credits of up to $3 per kilogram of green hydrogen produced, supporting the commercial viability of such initiatives. While specific details regarding the proportion of funding allocated to hydrogen and CCS were not disclosed, Vigeveno mentioned the Holland Hydrogen 1 project in the Netherlands as a hydrogen production facility that would source its energy from a Shell offshore wind farm. However, further information regarding Shell’s plans for hydrogen remains to be seen.

Shell’s investment strategy aligns with its aim to prioritize hard-to-abate sectors, including biofuels and electric vehicles, where profitable opportunities for emission reduction exist. The company recognizes that the transition to a low-carbon future will not follow a linear path, but Shell aims to position itself as a resilient and profitable investment case

throughout the energy transition process. Looking ahead, Shell is expected to provide an update on its energy transition strategy in early 2024, outlining its comprehensive approach to addressing climate change and achieving long-term sustainability goals.

Energy News
http://energynews.biz/

19 June 2023

UK air conditioning demand prompts government to rekindle coal

In response to surging demand for air-conditioning during June heatwaves, National Grid, the UK's electricity system operator (ESO), has resorted to using coal to generate electricity, marking the end of a 47-day streak without the fuel on the UK power grid. The decision has drawn criticism from environmental campaigners, who argue that relying on coal-fired power plants undermines efforts to combat climate change.

June temperatures have soared above 30°C (86˚F) and meteorologists have predicted a 45% likelihood of Britain experiencing a hot summer, almost 2.3 times higher than the usual figure. Consequently, the increased demand for power from air conditioning units is straining the electricity grid. Globally, air conditioning accounts for approximately one-fifth of total electricity consumption in buildings, according to the International Energy Agency. To meet the additional power demand, the ESO asked Uniper, owner of the Ratcliffe-on-Soar coal-fired power station in Nottinghamshire in the UK, to activate one unit, reported the Guardian last week. Another unit was warmed up to cater to the evening peak in power usage. This decision was driven by low wind generation and planned maintenance at the Torness nuclear power station in Scotland, which resulted in a reduction of available generation by a further 1.3GW, said the consultancy LCP Delta. A fault on the 1.4GW North Sea Link interconnector between the UK and Norway a week earlier also cut power flows in half while it was repaired.

Green campaigners have expressed dismay over the fresh reliance on coal. Ami McCarthy, political campaigner for Greenpeace UK, emphasised the need for upgrading the energy grid to support renewable energy sources. "It is a sign of failure that the National Grid is turning to one of the most polluting forms of power generation to deal with a summer heatwave that we know has been made worse because of climate change," McCarthy told the Guardian's Alex Lawson.

National Grid has previously advised consumers to enhance the energy efficiency of their air conditioning units by cleaning or replacing reusable filters, closing windows and doors, and using curtains to block sunlight and heat. Ratcliffe-on-Soar power station, among several coal-fired plants placed on standby over the winter, had its fourth unit's lifespan extended by two years following fears of blackouts in Britain after Russia's invasion of Ukraine. However, all units are now scheduled to shut down by September 2024 as part of the UK's phase out of coal for power generation.

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

19 June 2023

US: hundreds of thousands without power in record-breaking Southern heat wave

A weekend of severe storms left thousands of people without power in the American South just as the region grapples with a massive heat wave that forecasters expect will continue bringing dangerously high heat to the region through Wednesday.

The National Weather Service is predicting heat indices could approach 120 degrees in some parts of Texas on Monday, and are advising people to stay inside and stay hydrated since the conditions could lead to heat exhaustion or other heat-related illnesses.

The sweltering temperatures come as many in the southern U.S. have suffered with days-long power outages that have yet to be resolved—as of Monday morning, power outages are affecting more than 200,000 people in Oklahoma, 85,000 in Texas, 80,000 in Louisiana, 45,000 in Mississippi, 30,000 in Arkansas and 15,000 in Alabama.

In some areas like Shreveport, Louisiana, residents have been without power since Saturday night and power is not expected to return until Tuesday, the Times-Picayune reported.

The weekend's severe storms also produced at least one tornado in Mississippi. Overnight Sunday, a tornado stormed through a town 70 miles east of Jackson, Mississippi, killing one person and injuring 19 more. Eric Carpenter, a meteorologist with the National Weather Service in Jackson, told the New York Times it was possible that multiple tornadoes hit the area overnight but that survey crews would have to determine that on Monday. The extreme weather comes days after another set of storms reportedly killed three people late Thursday night in the Texas Panhandle, another person in Mississippi and a fifth in Florida.

Forbes
http://www.forbes.com/

19 June 2023

Drought-depleted hydropower drives China to turn to coal

China has leant hard on coal-fired power plants as well as wind and solar generators to make up for a shortfall in hydroelectric generation as a result of low rainfall across the south since the middle of 2022. China's generation increased by +173 billion kilowatt-hours (+5.3%) in the first five months of the year compared with the same period in 2022, data from the National Bureau of Statistics (NBS) showed.

Big increases from mostly coal-fired thermal generators (+149 billion kWh), wind farms (+79 billion kWh) and solar generators (+19 billion kWh) offset a fall in hydro production (-82 billion kWh). The two provinces of Sichuan (354 billion kWh) and Yunnan (296 billion kWh) in southern China produced almost half of the country's total hydro-electric power (1,352 billion kWh) in 2020. But total precipitation at Yibin on the Sichuan-Yunnan border was just 336 millimeters in the second half of 2022 compared with a seasonal average of 765 millimeters in 2014-2021. Precipitation in the first five months of 2023 was 244 millimeters compared with the prior nine-year average of 291 millimeters, which has depleted reservoir and river levels.

As a result, nationwide hydro generation in the first five months of 2023 was the lowest for the time of year since 2015, despite the commissioning of massive new dams and generating stations. South China's drought and reduced hydro generation explains why the central government has encouraged coal miners to maximize production and coal-fired generators to stockpile fuel. Coal mine production increased by +98 million tones (+5.4%) to a record 1,912 million tones in the first five months of 2023, roughly in line with the rise in thermal generation (+6.6%).

Coal imports increased by +86 million tones (+90%) in the first five months as generators and steelmakers took advantage of lower international prices to rebuild inventories. Renewable generation from wind and solar is increasing rapidly as the government attempts to cut emissions and reduce dependence on expensive and potentially unreliable energy imports. In the short term, however, coal remains essential to meeting fast-growing growing electrical demand and maintaining transmission. Large numbers of new coal-fired plants are being authorized and built to meet short-term load growth and reliability requirements even as government plans to reduce the share of coal-fired generation in the medium and long-term.

On the consumption side, demand growth in the first five months continued to show a clear bias towards industry rather than households. Consumption by primary industries rose +11% while the service sector grew by +10% but manufacturing was up by just +5% and households by +1%. Consumption rose +8% in high-technology and equipment manufacturing but only +3% in consumer goods, according to data from the China Electricity Council. The pattern is consistent with a sluggish rebound in consumer goods spending after the pandemic as households stay cautious about their finances and prioritize travel and in-person services after repeated lockdowns in 2022.

Reuters
http://www.reuters.com/

19 June 2023

Iberdrola to build Europe's largest on-site photovoltaic plant for SABIC in Spain

Iberdrola, as part of its commitment to the decarbonization of the economy, has achieved the latest milestone that will enable its partner SABIC to meet its sustainability and decarbonization targets at the Cartagena industrial complex, in the Murcia region.

The company has obtained the relevant planning consent to begin construction of the largest solar photovoltaic (PV) plant for on-site self-consumption in Europe, following the signing of a long-term renewable energy purchase agreement (power purchase agreement, [PPA]) with SABIC, whereby Iberdrola commits to supply electricity from renewable sources for the next 25 years to SABIC's industrial complex based in La Aljorra, Cartagena while avoiding the emission of 700 000 t of CO2 over the period.

The 100 MW PV plant, which will be located on land owned by SABIC, will require an investment of more than €60 million, and commissioning is expected for 2024. The facility will include more than 260 000 solar modules, which will increase Iberdrola's current renewable capacity in the Region of Murcia.

"This is a very important milestone for the development of a unique self-consumption facility from which to supply renewable energy in the long term. Thanks to this agreement, Iberdrola supports SABIC's commitment to sustainability and contributes to transforming the industry towards a cleaner and more sustainable energy model," said Raquel Blanco, Iberdrola's Director of Global Customers and PPA.

Blanco stressed that PPAs "have proven to be a great tool for customers to secure long-term, sustainable renewable energy while gaining greater certainty in the performance of our energy assets, thus contributing to the growth of renewable energy. And this is just the beginning as we continue to work together with SABIC to implement additional solutions to achieve full decarbonization globally."

"SABIC is delighted to see the final permits granted to build the Cartagena solar plant, which will bring SABIC one step closer to having the world's first plant of this size operating 100% on renewable energy. This is an important milestone in SABIC's journey to transition all global operations to clean energy by 2050, while continuing on our roadmap to carbon neutrality", said Bob Maughon, EVP Sustainability, Technology, and Innovation, CTO and CSO of SABIC

The agreement reached between the two companies also reinforces Iberdrola's commitment to new partnerships through bilateral contracts that promote energy supply at competitive and stable prices with large customers committed to sustainable consumption. Iberdrola and SABIC are also working together to define the best strategy to fully decarbonize their Cartagena plants from 2028 and are analyzing possible collaborations in other regions.

Energy Global
http://www.energyglobal.com/

20 June 2023

EEX and Nasdaq Commodities Announce Intention to Transfer Nasdaq's European Power Business to EEX

The European Energy Exchange (EEX) and Nasdaq, Inc. (Nasdaq: NDAQ) today announced they have reached an agreement under which EEX will acquire Nasdaq's European power trading and clearing business, subject to receipt of customary regulatory approvals. The transaction will involve the transfer of existing open positions in Nasdaq's Nordic, French, and German power futures as well as European carbon emission allowance futures (EUAs) to EEX's clearing house European Commodity Clearing (ECC). No financial details of the deal are disclosed.

Nasdaq Clearing AB, along with the clearing infrastructure to support it, is not part of the sale. Nasdaq will continue to own and operate Nasdaq Clearing AB to provide comprehensive clearing services for Nasdaq Nordic's equity derivatives, fixed income derivatives, and other financial derivatives contracts.

As part of the agreement, EEX will update the current Nordic power market structure, replacing Electricity Price Area Differential (EPAD) contracts with zonal futures contracts, a proven and successful market model in many other European power derivatives markets.

Until the receipt of regulatory approvals, Nasdaq will continue to operate its European power trading and clearing business as usual. On receipt of the required approvals, Nasdaq will inform the market about the timing for the transfer of existing open positions to EEX.

Nasdaq
http://www.nasdaq.com/

21 June 2023

ENTSO-E: Further increase in the trade capacity with the Ukraine/Moldova power system

On 20 June 2023, the Transmission System Operators (TSOs) of Continental Europe have decided to increase the electricity trade capacity limit from Continental Europe to Ukraine and Moldova to 1,200 megawatts (MW), which represents an increase of 150 MW from the previous value.

Since June 2022, the TSOs of Continental Europe have regularly increased the capacity which is available for commercial electricity exchanges with Ukraine and Moldova, taking into account power system stability and security operational learnings.

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

21 June 2023

Kenya, Tanzania Electricity Line to Be Launched This Year

Kenya has completed the construction of its portion of a Ksh43 billion ($309.26 million) electricity transmission line that will allow power imports and exports with neighbouring Tanzania before end of year.

Energy Cabinet Secretary Davis Chirchir Tuesday said Kenya was installing meters along the transmission line of 507.5-kilometres ahead of the commissioning by December. The line whose timely completion was plunged into doubt after compensation delays for persons affected by project along the wayleave on the Kenyan side is critical to boosting power supply between the countries. The Kenya's line runs from Isinya substation to Namanga and its about 93 kilometres.

The line with an intended transfer capacity of 2,000 megawatts will allow the two countries to sell excess electricity to one another besides allowing the two economies to tap hydropower from neighbouring Ethiopia. "The 400 kv (kilovolt) line is finished and we should

commission the line before the end of the year and this will allow the two countries to share excess power," Mr Chirchir said Tuesday. "Between now and September, we are installing meters since stringing is already over along the Isinya-Namanga section that had been delayed over wayleave compensation."

Tanzania first disclosed plans to export power to Kenya in 2016 and had targeted to make the first shipments to Nairobi by 2018. Ethiopia is currently the biggest source of Kenya's electricity imports under a 25-year deal that started in November last year. Kenya shipped 218.29 million kilowatt hours (kWh) from the Horn of Africa nation in the three months to March with a further 69.31 million kWh shipped from Uganda. Kenya did not import any units from Tanzania in the period. The Kenya-Tanzania line will also link East African and the Southern African electricity pools, enabling sharing of power between the two regions in a bid to boost supply.

Business Daily
http://www.businessdailyafrica.com/

21 June 2023

China to build $4.8bn nuclear power plant in Pakistan

China has entered into an agreement to build a 1.2GW nuclear power plant worth $4.8bn in Pakistan, CNN reported. Pakistan's Atomic Energy Commission and China's National Nuclear Corporation have signed a memorandum of understanding.

Pakistan Prime Minister Shehbaz Sharif, who witnessed the signing, hailed the investment, stating that work on the Chashma-V nuclear plant will begin immediately. To be located in Chashma in the Mianwali district of Punjab province in Pakistan, the nuclear power plant will help the country shift away from fossil fuels. Prime Minister Sharif described the agreement as a token of increasing economic cooperation between the two countries and vowed to complete the project without any delay.

Quoted on CNN, Sharif stated: "Investment from China in this project to the tune of $4.8bn sends a message loud and clear that Pakistan is a place where Chinese companies and investors continue to show their trust and faith." He also expressed hope that Pakistan will emerge from current economic challenges with support from friendly countries such as China. He criticised Pakistan's previous government under former Prime Minister Imran Khan for delaying the project. The cash-strapped country, which is struggling to save itself from a balance of payments crisis, thanked China for offering a discount of $100m and for not rescheduling the costs despite the deferment of the project, originally set to begin two years earlier in 2021. Pakistan has two other nuclear power plants, Karachi Nuclear Power Plants 2 and 3, with a capacity of 3GW.

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

22 June 2023

Extreme Weather, Cyber and Physical Security Continue to Create Reliability Challenges

NERC's *2023 State of Reliability* (SOR) finds that overall, the North American bulk power system (BPS) remains highly reliable and resilient. However, extreme weather events continue to pose the greatest risk to its reliability and stability. Transmission system reliability has improved significantly for the fifth consecutive year, and the rate of protection system misoperations also continues to improve. Conventional generation, challenged by more frequent extreme weather, experienced its highest level of unavailability overall since NERC began gathering generator availability data in 2013. In addition, cyber security compromises and increased physical attacks on critical infrastructure in the latter part of 2022 reinforce the need for further development and adaptation of reliability standards and guidelines.

"Today's BPS transmission system is continuing to show improvements in reliability and resilience, despite more common and extreme weather trends. However, higher overall outage rates for coal and gas generation, as well as some utility-scale solar generation not operating as necessary for reliability, indicate that there is still significant work to be accomplished to accommodate the rapidly changing weather and generation resource mix in conjunction with electrification of the economy in a reliable manner," said Donna Pratt, NERC's performance analysis manager.

The SOR provides analysis of past BPS performance, through a detailed comprehensive, analytical review of BPS reliability for the 2022 calendar year. Additional findings arising this year indicate that the dynamic performance of inverter-based resources (IBR) must be improved if the BPS is to benefit from the rapid expansion of this resource.

The 2023 SOR includes several actions taken by NERC related to the findings and recommendations:

• NERC issued a Level 3 essential action alert in May 2023: *Essential Actions to Industry - Cold Weather Preparations for Extreme Weather Events*. This was the first time that NERC has issued a Level 3 alert, which is the highest severity level in its classification structure.

• NERC revised three standards as a result of the 2019 cold weather event. Those standards became effective April 1, 2022; additional standards revisions resulting from the 2021 cold weather event are ongoing.

• NERC expanded its reliability assessment data requests to further measure preparedness during cold weather events.

• NERC issued a Level 2 alert on issues related to IBRs on March 14, 2023. The alert was issued after NERC analyzed multiple large-scale disturbances involving widespread loss of IBRs, which resulted in abnormal performance across several Bulk Electric System solar photovoltaic generating resources.

• NERC recommends immediate industry action to implement published guidelines and ensure the reliable operation of the BPS with increasing penetrations of IBRs.

• NERC recommends that IBR modeling requirements need significant improvement to ensure that high-quality, accurate models are used during reliability studies so performance issues can be identified before they occur during real-time operations.

• NERC's Electricity Information Sharing and Analysis Center (E-ISAC) gathered and distributed industry threat intelligence providing in-depth analysis of information products that addressed specific areas of concern to the industry. The E-ISAC produced 242 analytical products in 2022.

The 2023 SOR Overview and 2023 SOR Technical Assessment provides objective and concise information to policymakers, industry leaders and regulators on issues that affect the reliability and resilience of the North American BPS while providing strong technical support for those interested in the underlying data and detailed analytics. Specifically, the report identifies system performance trends and emerging reliability risks; reports on the relative health of the interconnected system; and measures the success of mitigation activities deployed.

NERC
http://www.nerc.com/

25 June 2023

Loadshedding in Pakistan worsens as shortfall exceeds 8,500MW

Hours-long power outages continue across Pakistan, with metropolises not having electricity for five to six hours, while the situation in rural regions is worse. As back-to-back power cuts continue to plunge masses into darkness amid heatwave, people's patience is

wearing thin but the government failed to keep sufficient power supplies in the wake of limited resources and skyrocketing prices.

With the huge increase in consumption, the total energy requirement stands at 28,500 megawatts, whereas the current system is providing 20,000 MW. It's a double whammy for people who are paying huge prices for utility bills and could not get sufficient energy to cope with the scorching heat.

Meanwhile, the federal government continues to defend the grim situation, and power minister said nearly 3 percent of feeders in the national power grid are facing over 4-hour power outages.

Daily Pakistan
http://en.dailypakistan.com.uk/

26 June 2023

World's largest hydro-solar power station fully operational in China

The world's largest and highest-altitude hydro-solar power plant, which generates power through a water-light complementary manner, entered full operation in China on Sunday. For the first time, the Kela photovoltaic power station boasts of an installed capacity scale of 1 million kilowatts for a hydro-solar power grid. It can fully charge 15,000 electric vehicles with a range of 550 kilometers in just one hour.

The plant, situated in the Yalong River Basin of the Tibetan Autonomous Prefecture of Garze in southwest China's Sichuan Province's Yajiang County, will cover the needs of 700,000 households for a whole year with its annual generating capacity of 2 billion kilowatt-hours (kWh). "This is equivalent to 600,000 tonnes of standard coal and will reduce carbon dioxide emissions by more than 1.6 million tonnes," Yang Zhiwei, the construction project manager, PowerChina Chengdu Engineering Co., (PowerChina Chengdu), told China Media Group (CMG).

With a reliance on sunlight to generate electricity, the power generation of PV stations fluctuates between day and night amid weather events. The hydropower component can help to regulate all instability in such supply manner, therefore, providing stable and high-quality clean energy.

The Kela PV power plant is next to National Highway 318, a key transport route linking Sichuan and the neighboring Xizang Autonomous Region. With an area exceeding 16 million square meters, it is bigger than 2,000 standard football fields. The plant is built at an altitude of around 4,600 meters, which is equal to the altitude of the Ali region in Xizang, the Third Pole in the world, and 1,000 meters above the altitude of the city of Lhasa.

A total of 527,000 photovoltaic foundation piles are installed in the power station, which has the same weight as 222 C919 aircraft, China's first domestically constructed large passenger plane that just completed its initial commercial flight. If these photovoltaic piles were connected, the total length would exceed 1,400 kilometers, which is 11 times the total length of the Beijing-Tianjin Railway.

Nearly 50,000 tonnes of steel were used for the PV powerhouse, enough to build another grand venue of the National Stadium (Bird's Nest) which held the 2022 Beijing Winter Olympics opening ceremony.

More than 2 million photovoltaic modules were assembled, and the components can cover the area of three Beijing Daxing International Airports, with a transportation distance of 2,400 kilometers, spanning half of China.

Construction of this grand power station has been quick and efficient. Despite encountering extreme cold weather, the project team undertook and fulfilled the tough task in just six months. To the highest efficiency, a total of 7,000 PV bracket foundations were

installed within 24 hours, together with 1,200 sets of PV brackets, 33,000 pieces of PV modules and 30 box transformers.

As China strives to ensure energy security and achieve its dual carbon goals, Kela is the first hydropower station built during the 14th Five-Year Plan period (2021-2025) on the Yalong River Clean Energy Base. The Design and Research Institute of the PowerChina Chengdu began project planning for Kela in 2016, with construction starting in July 2022. Being the first phase project of the Yalong River's Lianghekou Hydropower Station, which was put into operation in March with a total installed capacity of three million kilowatts, electricity generated by Kela will be connected to the Lianghekou and then integrated into the power grid. The two will help to shape a grand renewable energy base.

Upon completion, the Yalong River Clean Energy Base, with an installed capacity exceeding 100 million kilowatts and annual power generation of around 300 billion kWh, will be sufficient to serve 100 million households for a year. In addition, the project will ultimately emerge into one of the world's largest green, clean, and renewable energy bases, leading to achieve the goals of peak carbon emissions and carbon neutrality, optimizing national energy structure, and boosting industries including agriculture, tourism, and transportation.

CGTN
http://news.cgtn.com/

26 June 2023

Bureau Veritas Secures Multi-Million East Anglia Three Contract

Bureau Veritas has been awarded a major contract to provide integrated site services for ScottishPower Renewables' 1.4 GW East Anglia Three offshore wind farm in the UK.

Under the multi-million-pound contract, Bureau Veritas will provide quality, fabrication management, and inspection services, representing ScottishPower Renewables within a significant portion of the project supply chain.

In addition, the company will also be responsible for overseeing the quality control of the construction works as the project moves into the offshore installation phase.

"We're proud to be working with ScottishPower Renewables through our BV Green Line of Renewables services and solutions and building on our own strong reputation and technical capabilities in the offshore wind sector. As an impartial partner, our focus will be on reducing overall project risk, ensuring quality and promoting best practice across the development of East Anglia THREE, and utilising our global team of experts", said Darren Taylor, Sector Lead-Renewables at Bureau Veritas.

East Anglia Three, which was awarded Contracts for Difference (CfD) in July last year from the UK Government, is located approximately 70 kilometres from shore in the Southern North Sea. The project will feature 95 monopile foundations that are planned to be installed by Seaway 7. Construction of East Anglia Three started last year with onshore work on the converter station in Suffolk and along the land cable route, while offshore work is scheduled to begin next year. The offshore wind farm is expected to be fully completed in 2026.

"It's great to have Bureau Veritas on board and bringing its world-leading skills and experience to this exciting project, which will not only deliver a green energy boost, but will support significant investment and jobs both directly and throughout the supply chain", said Ross Ovens, Managing Director of ScottishPower.

Bureau Veritas has a track record of more than 250 GW in offshore and onshore wind and solar and supports major power companies globally. Its shop inspection team can act as a second party for developers and OEMs, acting as a representative of its client, or as an accredited or voluntary third party.

offshoreWIND.biz
http://www.offshorewind.biz/

28 June 2023

Drax rules out keeping UK coal plants open this winter

Power group's decision comes despite government request to maintain North Yorkshire facility. The owner of one of Britain's two remaining coal-fired power station has ruled out keeping it open this winter, despite a request from the government to explore doing so in a push to avoid energy supply disruption.

Drax said on Wednesday that "technical, maintenance and staffing reasons" meant its two coal units near Selby, North Yorkshire, could not continue to operate, having started to be decommissioned at the end of April.

The announcement leaves just one coal-fired power station open in Britain — Ratfcliffe-on-Soar in Nottinghamshire, run by Düsseldorf-based Uniper — although that is due to close next year as the country phases out the fuel to cut carbon emissions.

It will also raise questions over security of electricity supply and prices for this winter, with the system's overseer National Grid unable to call on Drax's 1.3 gigawatts of coal capacity, about 2 per cent of peak demand on a cold day, in the event of shortfalls.

National Grid's electricity system operator, the division that manages the electricity network, is forecasting overall healthy supplies this winter, with more generation from other sources online than during last winter.

But this month it disclosed that it was in talks — which have now ended — with the FTSE 250 listed power group about keeping Selby online, in view of continuing "risks and uncertainties" linked to Russia's war on Ukraine.

Other contingency measures include plans to pay households to cut usage at peak times, as part of a "demand flexibility service" introduced in 2022.

Drax was due to close the units in September last year, but National Grid paid it to keep them open last winter as Russia's invasion roiled energy markets and outages on France's nuclear fleet hit exports to Britain. Uniper and French energy group EDF were also paid to keep back-up coal stations in Britain running.

The spare plants were warmed up several times but only used once, with those of EDF, which have since also shut, fired up in March as strikes in France further dented output there.

Financial Times
http://www.ft.com/

28 June 2023

Renewable Energy Projects Trapped in PJM's Interconnection Queue Would Create Thousands of New Jobs, Billions in Capital Investment

New ACORE Analysis Quantifies How Each Mid-Atlantic State Would Economically Benefit from Projects Currently Awaiting Grid Connection

The low-cost, clean power that American businesses and homeowners are demanding is ready for deployment, but thousands of renewable energy projects are stuck in grid interconnection queues across the country, facing long delays and rising costs. Nearly all the active projects currently seeking grid connection across America are wind, solar, and battery storage projects that, if developed, could help meet decarbonization targets, create new jobs, and drive significant capital investment.

In a first-of-its-kind analysis being released today, the American Council on Renewable Energy (ACORE) quantified the potential economic benefits of the onshore renewable energy projects awaiting grid connection in PJM, the largest electricity market in the United States. Findings from the report, *Power Up PJM*, show that if these renewable projects could be brought online at the pace PJM was approving projects in the recent past

(from 2011 to 2016), 34 gigawatts of new renewable power could reach commercial operation in the region over the next four years, enabling nearly 200,000 job-years and approximately $33 billion in capital investment.

"Tens of billions of dollars and thousands of good-paying jobs are being left on the table because of broken interconnection and transmission planning processes," said ACORE President and CEO Gregory Wetstone. "The current grid backlog is unprecedented. With commonsense reforms, grid planners and operators could ease the logjam in our nation's interconnection queues, accelerating the renewable transition and delivering meaningful economic and health benefits to states across America."

To begin addressing these issues, the Federal Energy Regulatory Commission (FERC) recently approved a set of procedural reforms that have kickstarted a four-year transition period for PJM to evaluate pending interconnection applications. ACORE's new analysis focuses on the 2,003 renewable energy projects in this transition cycle for PJM and includes a state-by-state breakdown of the potential job creation and capital investment these projects can deliver. Virginia is projected to see the most benefits, with the potential for over 50,000 job-years and $8.5 billion in capital investment, followed by Illinois (nearly 32,000 job-years, $5.5 billion in capital investment), Ohio (over 29,500 job-years, $4.8 billion in capital investment), and Indiana (nearly 29,000 job-years, $4.7 billion in capital investment).

"The interconnection queue is so much more than a series of engineering formulas," said Dana Ammann, Policy Analyst for the Sustainable FERC Project at the Natural Resources Defense Council (NRDC). "Unlocking the interconnection queue is key for states to realize well-paid, green jobs and economic opportunities under the Inflation Reduction Act."

The report also quantifies how interconnection reforms could have yielded even greater benefits – an additional 100,000 job-years and nearly $17 billion in capital investment over the next four years – if PJM had proactively planned more transmission. *Power Up PJM* concludes with a set of recommendations for both PJM and FERC that would help improve the interconnection process and reduce future backlogs.

ACORE
http://www.acore.org/