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Tata Power hit by cyberattack, says company

India's Tata Power late on Friday reported a cyberattack on its IT infrastructure that impacted some of its systems. The company said it has taken steps to retrieve and restore the systems, adding that all critical operational systems are functioning. It also has put in place restricted access and preventive checks for employee and customer-facing portals and touch points, the company added.

It further said it has taken steps to retrieve and restore the affected machines, adding it put in place security guardrails for customer-facing portals to prevent unauthorized access. The Mumbai-based electric utility company, part of the Tata Group conglomerate, did not disclose any further details about the nature of the attack, or when it took place. That said, cybersecurity firm Recorded Future in April disclosed attacks mounted by China-linked adversaries targeting Indian power grid organizations. The network intrusions were said to have been aimed at "at least seven Indian State Load Despatch Centres (SLDCs) responsible for carrying out real-time operations for grid control and electricity dispatch within these respective states." The attacks were attributed to an emerging threat cluster Recorded Future is tracking under the name Threat Activity Group 38 (TAG-38). The company further assessed that the targeting is intended to facilitate information gathering related to critical infrastructure assets or is likely a precursor for future activities. China refuted the allegations that it was involved, stating "many of U.S. allies or countries with which it cooperates on cybersecurity are also victims of U.S. cyberattacks."

The Times of India

<http://timesofindia.indiatimes.com/>

17 October 2022

Germany extends life of nuclear power plants until next April

German Chancellor Olaf Scholz has ordered the country's three remaining nuclear power stations to keep operating until mid-April, as Berlin battles to avert an energy crunch this winter. Originally Germany planned to phase out all three by the end of this year. Mr Scholz's order overruled the Greens in his coalition, who wanted two plants kept on standby, to be used if needed. Nuclear power provides 6% of Germany's electricity. Germany was due to shut down its three remaining nuclear power plants by December 31, under plans drawn up by then-chancellor Angela Merkel following the Fukushima tsunami and nuclear disaster of 2011.

But the FDP said the facilities should be given a reprieve, arguing that it was wrong to take generating capacity offline when Germany was facing a shortage of energy. Gas and power prices have soared this year in response to Russia shutting off gas pipes, forcing dozens of companies to close down production and triggering mounting protests over rising heating bills. The Greens, however, insisted that all three plants be shut down as scheduled by the end of the year. Under pressure from the FDP and the conservative opposition, Robert Habeck, the Green economy minister, later backpedalled, announcing that two of the three — Isar 2 in Bavaria and Neckarwestheim 2 in the south-western state of Baden-Württemberg — would be kept on standby rather than shut down.

In late September he went further, acknowledging that the two facilities would probably have to continue operating in the first quarter of 2023. He blamed the "tense" situation on the French electricity market, where several nuclear power stations have suffered outages. The FDP, however, continued to put pressure on Habeck, saying the life of the third plant, Emsden in the northern state of Lower Saxony, should also be extended and that all three should be allowed to stay online till 2024. On Monday, Scholz intervened

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to end the row, saying in a statement that the government would create “the legal basis” to allow Isar 2, Neckarwestheim 2 and Emsden all to operate beyond December 31 — “until April 15, 2023 at the latest”. But Scholz’s move is a bitter pill for the Greens to swallow. Delegates to a Green party conference held over the past few days in Bonn passed a resolution backing Habeck’s plans to keep Isar 2 and Neckarwestheim 2 on standby, but affirmed the closure of Emsden by the end of the year. In the wake of the vote, Lindner warned the Greens not to set “red lines”. The Greens had rejected the FDP demand to let the plants run till 2024 because that would have forced the operators to acquire new fuel rods — a development the Greens said was unacceptable. Scholz sweetened his statement on the three nuclear plants with some gestures towards the Greens. He said the government would introduce an “ambitious” new law to improve energy efficiency, and also legislation bringing forward to 2030 the phaseout of coal in North Rhine-Westphalia, Germany’s most populous state. The deadline for coal use in Germany had originally been scheduled for 2038. Scholz’s pledge builds on an agreement announced this month between the government of North Rhine-Westphalia, the federal government and the energy company RWE.

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

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Cuba replaces energy minister as hours-long blackouts stir unrest

Cuba’s communist-run government replaced its energy and mines minister with Vicente de la O Levy, head of the state-run electronics company, official media reported on Monday, as the country struggles to contain hours-long blackouts that have stirred rare protests across the island. The newly appointed O Levy formerly served as director of the National Electric Union, the state’s grid operator, and spent time in Venezuela, a close ally of Cuba, as a delegate from the island’s energy sector.

The government thanked the former energy minister, Nicolás Liván Arronte, for his service and said he would be assigned new responsibilities. The announcement, on the state-run television broadcast, did not make clear the reason for replacing Arronte. But the decision comes as Cuba battles one of its worst-ever energy crises, made acute by the coronavirus pandemic and harsh U.S. sanctions implemented under the administration of U.S. President Donald Trump. Those sanctions have remained largely in place under Trump’s successor, Joe Biden. The government also announced on Monday it would replace the head of the state-run grid operator. Blackouts, which now span 12 hours a day or more, touch a political nerve in Cuba. The rolling outages began earlier this year and have spread across all of the country’s provinces - including, more recently, the capital, Havana. Cuba’s electric grid collapsed following Hurricane Ian in late September, prompting scattered protests across Havana. Several protests have since taken place in provincial towns and cities as the outages persist or worsen in some areas. Cuba’s Prosecutor’s Office on Friday said it was investigating cases that followed the hurricane in which protesters had “perturbed public order and citizen peace,” including alleged incidents of arson, blocking public roads and vandalism, and assault against law enforcement officers.

Reuters
<http://www.reuters.com/>

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New Swedish government seeks expansion of nuclear energy

Sweden’s incoming centre-right coalition government has adopted a positive stance towards nuclear energy, calling for state-owned energy company Vattenfall to investigate

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the possible restart of Ringhals units 1 and 2, as well as to prepare for the construction of new reactors. The Christian Democrats, the Liberals, the Moderates and the Sweden Democrats released their written agreement on policies - referred to as the Tidö Agreement - on 14 October. The four parties together have a narrow parliamentary majority after elections on 11 September. Ulf Kristersson will formally take office as prime minister on 18 October. The far-right Sweden Democrats will not be part of the coalition, but the government will need its support to achieve a parliamentary majority for its policies.

With regards to energy, the Tidö Agreement says the energy policy goal is "changed from 100% renewable to 100% fossil-free". It says the partners "will devise and implement political reforms to secure the energy supply and achieve an effective climate transition ... technology neutrality is restored". The parties said the conditions for investments in nuclear power must be strengthened. The new government will provide special credit guarantees totalling SEK400 billion (USD35.7 billion), "with more generous terms than today's system". It added: "The boundaries in today's system of green credit guarantees need to be reviewed so that the credit guarantees can also be used for new construction of nuclear power".

The policy document says that new rules must be introduced which prevent politics from arbitrarily shutting down nuclear power plants. "Nuclear power must be guaranteed the right to operate and produce electricity as long as the facilities are in good condition and operated safely," it says. "If the state forces a closure, owners must be entitled to compensation". Sweden's ban on restarting closed reactors must be removed, the agreement says. It calls for a thorough investigation of what would be required to restart Ringhals 1 and 2 to be carried out "unconditionally and quickly".

The parties also call for the removal of prohibitions in the Environmental Code to allow new reactors in other locations than today and to have more than ten reactors in operation at the same time. "Vattenfall should immediately start planning new nuclear power at Ringhals and other suitable locations," the Tidö Agreement states. The agreement says necessary regulations should be developed to create the conditions for the construction and operation of small modular reactors (SMR) in Sweden. In addition, the permitting process for nuclear power plants must be shortened. The government intends to introduce a new rule in the Environmental Code, which means that only one authority may be a party to a permit matter. The designated authority will be responsible for coordination with any other authorities with an interest in the matter. A special rule in the Environmental Code will also be introduced which means that permit matters relating to new nuclear power must be treated with high priority. The Radiation Safety Authority has been assigned the task of proposing how the permit process for new nuclear power can also be shortened considerably.

Sweden's six nuclear power reactors provide about 40% of its electricity. In 1980, the government decided to phase out nuclear power, but in June 2010 parliament voted to repeal this policy. The country's 1997 energy policy allowed ten reactors to operate longer than envisaged by the 1980 phase-out policy, but also resulted in the premature closure of the two-unit Barsebäck plant. In 2015, decisions were made to close four older reactors by 2020. Ringhals 1 and 2 were closed at the end of 2020 and 2019, respectively - several years earlier than planned due to the economic impact of punitive taxes. When it announced its intention to close the plants, in October 2015, Vattenfall said: "Market conditions and the impact of the high output tax have prompted us to limit investments in Ringhals 1 and 2." In June this year, Vattenfall announced it was initiating a pilot study to assess the conditions for proceeding with a decision to build at least two SMRs adjacent to the Ringhals plant. The study is expected to be completed by around late-2023 or early-2024.

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

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UK could face 'three-hour' blackouts in 'deepest, darkest' weekdays, warns NGENSO

Britain's National Grid said on Thursday there could be periods where electricity supply is tight this winter, given uncertainty over supplies of Russian gas to Europe, but that it expects to be able to meet demand.

Countries across Europe are making contingency plans for winter after Russia reduced natural gas flows and said supplies could be cut further or even stop. Many European leaders believe those actions are a reaction to Western sanctions on Russia in response to its invasion of Ukraine.

"While Britain is not reliant on Russian gas to the extent that the rest of Europe is, it is clear that the cessation of flows of gas into Europe could have knock-on impacts, including very high prices," National Grid's Electricity System Operator (ESO) said in an early winter outlook published on Thursday. Wholesale British gas prices have hit record highs this year, following Russia's Feb. 24 invasion of Ukraine, in turn pushing up energy prices for consumers. A cap on the most widely used domestic energy contracts is expected to rise by around 65% in October.

Gas-fired power plants were responsible for more than 40% of Britain's electricity production last year while the fossil fuel is also used to heat around 80% of British homes. National Grid ESO said its modelling showed the tightest period for electricity demand and supply is likely to be in the first half of December. During tight periods it can use its tools to bring more supply to the market, such as issuing electricity margin notices which alert generators that more power is needed, it said. ESO has already secured contracts with operators of some coal-fired power plants to keep them open longer than scheduled to provide back-up electricity if needed this winter.

ESO's base-case scenario assumes there are no disruptions to fuel supplies for power plants such as gas, and that power links with Europe are able to provide imports when needed. It said however that issues with France's nuclear power fleet mean there could be more exports of power to France from Britain when Britain's electricity system is not tight. ESO said average cold spell electricity demand is expected to peak at 59.5 gigawatts (GW) this winter, similar to last year.

Its base case for de-rated margin, which is a measure of the amount of excess capacity expected above peak electricity demand, is currently 4 GW for winter 2022/23, or 6.7% of capacity. National Grid ESO is a separate legal entity within National Grid and is responsible for overseeing the country's electricity supply. In a separate announcement, National Grid's gas transmission team said its current scenarios for winter gas demand range from 363 million cubic metres/day (mcm) for a mild winter to 465 mcm/day for a cold winter. Further details on likely gas supply and demand scenarios are expected in September, National Grid said. Full winter outlooks for both gas and electricity supply will be published in autumn.

Energy Live News

<http://www.energylivenews.com/>

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Red Eléctrica has successfully completed the 132 kV subsea electricity link between Lanzarote and Fuerteventura

The new 132 kV cable significantly strengthens the quality and security of supply and reduces dependence on fossil fuels on both islands. The impact of the interconnection on the environment was significantly reduced thanks to the fact that the link between the islands

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is mainly underwater and that the land sections of the cable on the islands are buried underground.

The new 132 kV interconnection between Lanzarote and Fuerteventura is now a reality. Red Eléctrica has successfully completed the new 132 kV inter-island link between the Playa Blanca substation on Lanzarote and the La Oliva substation on Fuerteventura. The new cable significantly improves the security and quality of supply on Lanzarote and Fuerteventura and enables them to continue making progress in the energy transition. Thanks to this interconnection, it will be possible to maximize the evacuation of renewable energy under safe conditions for the electricity system and reduce both the dependence on fossil fuels and the CO₂ emissions on both islands.

The inauguration ceremony, which took place at the Playa Blanca substation, was attended by the President of the Canary Islands, Ángel Victor Torres; the Regional Minister for Ecological Transition, the Fight against Climate Change and Territorial Planning, José Antonio Valbuena; the Commissioner for the Promotion of Sustainable Energy in Island Systems, Marc Pons; the Chairwoman of Redeia (the group to which Red Eléctrica belongs to), Beatriz Corredor; the President of the Island Council of Lanzarote, María Dolores Corujo; the Mayor of Yaiza, Óscar Noda, and the Councillor for Works and Services of La Oliva, Luis Alba.

The President of the Canary Islands, Ángel Victor Torres announced that the work on the submarine connection between La Gomera and Tenerife will soon have its environmental impact statement approved and remarked that "there is still a long way to go, but the Canary Islands are moving towards a new, more sustainable model" thanks to the involvement of the public administrations, businesses and society in general on the Canary Islands. He also pointed out that "we will be spearheading the green transition in Europe, and to this end, we have been awarded the largest amount of funds in history: 467 million euros for the Sustainable Energy Strategy on the Islands from the Recovery, Transformation and Resilience Plan".

Red Eléctrica has invested 36 million euros in this link, with a route that uses the latest techniques in terms of environmental protection and that ensures its integration into the environment. Thus, the infrastructure consists of a 14.5 km underwater route, running at a maximum depth of 80 metres, and two land-based underground cable sections of 1.8 km on Lanzarote and 645 metres on Fuerteventura. Exhaustive prospecting, cartography and bathymetric mapping work were carried out in the design of the underwater cable route, which in turn provided in-depth knowledge of both the seabed and other highly relevant aspects such as currents, water and sediment quality and the biological state of the sea fauna and flora communities present along the route.

Additionally, horizontal directional drilling techniques were used for the link's sea-coast landing points, where the cable transitions from the sea to the land by way of offshore to onshore junction chambers, to protect the cables close to the coast, while at the same time minimising its impact on the beaches and the coastal strip. The new interconnection bolsters the other existing one, commissioned in 2005, which is a 66 kV alternating current electricity link. Thanks to the new link and the redundancy provided by this new interconnection, the robustness of the electricity system on both islands is strengthened and the possibilities and conditions for their maintenance are improved, something that helps eliminate and/or reduce generation constraints.

Red Eléctrica has made significant investments to strengthen the transmission grid on these islands and which have proven essential to help cover electricity demand and integrate new renewable energy on the islands. In 2022 alone, 6 new MW of solar photovoltaic power capacity have been commissioned which, added to the existing renewable energy capacity, totals 123 MW of installed capacity (98 MW wind and 25 MW

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solar photovoltaic). Moreover, it should be noted that the installed renewable power capacity on these islands has almost doubled since January 2019.

Since 2011, Red Eléctrica has invested around 268 million euros in both the development of new grids and in the renovation, improvement and maintenance works of the transmission grid assets on Lanzarote and Fuerteventura. Among other facilities, 7 new substations have been built, including the new Playa Blanca, Tías and Callejones substations on Lanzarote and their connections to the grid, as well as this new submarine link between Lanzarote and Fuerteventura. Furthermore, a major effort has been made with the renovation of practically the entire grid acquired from Unelco Endesa to adapt it to the quality standards of Red Eléctrica. Similarly, the 2021-2026 Electricity Transmission Grid Planning contemplates the bolstering of the 132 kV axes on both islands, as well as the construction of new substations and the enlargement of existing ones, essential actions to be able to have a safe and robust electricity system that meets the current and future needs of the islands.

REE

<http://www.ree.es>

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Siemens Gamesa calls for quotas on EU-made wind turbines

The head of one of Europe's largest wind turbine manufacturers has called for a quota on the amount of EU-produced turbines installed in the region, as the sector seeks to compete with cheaper Chinese imports and the bloc pushes for energy security.

Siemens Gamesa's chief executive Jochen Eickholt told the Financial Times that if Europe was serious about its energy independence and the role of wind power, turbines should be considered as critical and strategically important infrastructure, with measures introduced to support the industry.

"If our product is critical to the infrastructure of our countries, then certainly, not for 100 per cent of the installations but certainly for a certain portion of the installations [in Europe], you need to have things in your own hands," said Eickholt. "That means there needs to be an element of knowing how to operate these things and manufacturing these things," he said, adding that even if certain geopolitical tensions or supply chain disruptions happened, Europe would "perhaps not have the cheapest answer, but would have an answer". European wind turbine manufacturers have been struggling financially, cutting jobs and closing factories, even as the EU, under the RePowerEU plan, aims to lift the share of renewable energy from 32 per cent of total production to 45 per cent by 2030. WindEurope, the industry body, reckons wind energy capacity will reach 510GW, from 190GW now.

Siemens Gamesa, the third-largest maker last year by newly installed turbines, suffered a loss of €1.2bn in the nine months ended in June, 233 per cent more than the loss suffered in the same period a year earlier. It recently announced it was slashing 2,900 jobs, or 10 per cent of its global workforce. The rising cost of key materials such as steel and copper as well as supply chain disruptions have all weighed on the European sector.

Manufacturers have also come under increasing pressure from Chinese rivals boosted by rapid wind adoption in their home country and that often offer much lower prices. Top Chinese manufacturers accounted for 53.5 per cent of new global turbine installations last year, according to the Global Wind Energy Council, up from 36.6 per cent in 2018. Eickholt said there was "definitely a risk" that the wind turbine industry would come to look like the solar panel industry, where Chinese manufacturers dominate the market and the supply chain, a situation on which the International Energy Agency warned in its July report.

"You have to see that we are meeting Chinese competition across the global markets and also increasingly in Europe," the chief executive said, adding that Chinese

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manufacturers often received “additional support, typically from national or regional sources”, and that their innovation funding was in some cases 10 times higher than the Europeans. “At the end of the day, we feel that there is an imbalanced battle, or at least we do not have the same level of opportunities here,” Eickholt said. “We are asking for a level playing field.”

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

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Sen. Warren leads probe of Bitcoin impact on Texas power grid, ERCOT use of demand response ‘subsidies’

Seven lawmakers led by Sen. Elizabeth Warren, D-Mass., have asked the Electric Reliability Council of Texas for data on the energy consumption of Bitcoin miners, including what impact the cryptomining sector may be having on energy costs to local families and businesses.

In particular, Warren’s Oct. 12 letter seeks information on Bitcoin miners’ participation in ERCOT demand response programs that pay large consumers to reduce energy consumption in times of grid stress. These “subsidies” to miners “feed back into the worsening climate crisis,” according to the lawmakers. Texas could host up to 20% of the world’s cryptomining computing power worldwide by the end of next year, by some estimates. Miners say their energy use can help keep the grid reliable because it is a flexible load that acts like a demand side battery.

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

19 October 2022

World’s largest single-phase battery goes online in California

Axium Infrastructure and two Canadian Solar subsidiaries, Recurrent Energy and CSI Energy Storage, have installed and activated what they describe as the world’s largest single-phase energy storage facility. The Crimson Storage project features 350 MW/1,400 MWh of standalone battery energy storage, delivering flexible power to California’s grid.

The project is held by a fund managed by Axium (80%) and Recurrent Energy (20%). CSI Energy Storage operated as the turnkey system integrator of the project, delivering engineering, procurement, and construction services. “The Crimson Energy Storage project epitomizes California leadership – clean energy, innovation, and economic development through good, union jobs,” said California Governor Gavin Newsom.

The project is located in the California desert on Bureau of Land Management (BLM) land. BLM approved the project in May 2021, marking the first standalone energy storage project to be approved on BLM lands under the Biden-Harris administration. “The project represents another major step forward in the Biden-Harris administration’s goal of a carbon pollution-free power sector by 2035,” said Karen Mouritsen, state director of BLM California. Upon activation, Crimson Storage became the largest active single-phase storage project in the world, and second-largest energy storage project currently in operation of any configuration. The project holds two long-term contracts with utilities Southern California Edison and Pacific Gas and Electric. Both contracts are part of reliability mandates made by the California Public Utilities Commission (CPUC).

- Southern California Edison: 200 MW/800 MWh 14-year and 10-month contract with Southern California Edison under a full tolling agreement.

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- Pacific Gas and Electric Company: 150 MW/600 MWh 15-year contract with Pacific Gas and Electric Company for resource adequacy only; Recurrent Energy and Axium will operate the battery system in the California wholesale power market.

“Recurrent Energy began developing Crimson Storage and our larger energy storage pipeline in 2015 when no large-scale storage projects yet existed,” said Shawn Qu, CEO of Canadian Solar. “Last year, we started bringing these projects to fruition also thanks to our CSI Energy Storage team.”

[pv-magazine](http://www.pv-magazine.com/)

<http://www.pv-magazine.com/>

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Landmark agreement signed to progress Australian interconnector

The Australian, Tasmanian and Victorian governments have reached a funding agreement to build the 1,500 MW bi-directional Marinus Link interconnector between Victoria and Tasmania. The Australian government funding is part of the \$20 billion Rewiring the Nation plan to transform the country's electricity grid.

The agreement formalizes the joint ownership of Marinus Link between the Australian, Victorian and Tasmanian governments. According to Premier of Tasmania Jeremy Rockliff, this low-cost financing from Rewiring the Nation will reduce the annual cost of Project Marinus for electricity customers by up to half. “By working together, we have been able to achieve a solution that will see, once Marinus Link is built, Tasmanian customers to pay no more than 15 per cent of estimated total project costs across both the Marinus Link and North-West Transmission Developments,” Rockliff said.

For customers of the National Electricity Market (NEM) including Victoria, Tasmania, New South Wales, Queensland and South Australia, the projected savings on wholesale power costs are up to \$103 each year. “Delivering Marinus Link, and unlocking further development of renewables, enables plentiful clean energy supply for the growth of new and existing business and industry right here in Tasmania. We will stay fully self-sufficient in clean, renewable energy,” said Marinus Link Board Chair Samantha Hogg. “Marinus Link unlocks new clean energy projects in both Tasmania and Victoria, creating regional jobs for decades to come. Together with the North West Transmission Developments (NWTD), Marinus Link will deliver 2,800 direct and indirect jobs, and a further \$2.9 billion of economic benefits in Tasmania and Victoria.” The final investment decision (FID) is expected in late 2024.

[Offshore-energy.biz](http://www.offshore-energy.biz)

<http://www.offshore-energy.biz/>

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EIB shows strong commitment to TenneT's grid expansion in Bavaria

The European Investment Bank (EIB) is providing electricity transmission system operator TenneT with a senior loan of €450 million. The project comprises the construction of a 185 km long electricity transmission corridor — the Ostbayernring — connecting Redwitz to Schwandorf in the south-east of Germany. The project is part of the federal grid expansion plan that aims to increase the grid's capacity and prepare it for better integration of renewable energy. There has recently been a significant increase in the renewable energy available in the northern parts of Germany near the North Sea and the Baltic Sea, while several thermal and nuclear power plants in Bavaria have been shut down. The existing grid structure has to be adapted to the challenges of transporting energy from north to south, but also within the regions.

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The Ostbayernring will play a key role for the Oberfranken and Oberpfalz regions. Along its route, there is already often significantly more energy produced from wind power and photovoltaic plants than is needed locally. In the future, this green energy will be transported to the major centres of consumption. It is an important step for the energy transition and security of supply. As the existing structure would not be able to fulfil the security of supply criteria in the future without enhancement, the capacity of the transmission network between Redwitz and Schwandorf must be increased. As the project supports the integration of renewable energy, the loan is eligible for climate change mitigation under the EU taxonomy criteria.

The project will deliver excellent economic benefits, as it will help reduce the current, significant grid management costs caused by the existing bottleneck. In the future, it will also set the conditions for increases in cross-border transmission capacity with the Czech Republic, thereby strengthening the European energy system. The EIB and Tennet, the only cross-border electricity transmission system operator in Europe, are long standing partners. With this 9th loan, the overall EIB financing of projects with TenneT has increased to €2.1 billion. In Germany it's the third transaction, including Nordlink, interconnecting Norway and Germany across the North Sea, as well as connecting Offshore windfarms to the German grid. EIB Vice-President Kris Peeters said: "The new electricity line is crucial for the integration of an increased amount of regenerative and volatile energy into the power grid in Bavaria. The EIB is proud to continue the longstanding partnership with Tennet by supporting their first green-loan project. The upgrade of the Ostbayernring will help reduce greenhouse gas emissions in Germany and benefit energy-security in Europe as a whole."

TenneT Chief Financial Officer Arina Freitag added: "We welcome the fact that EIB is once again underlining its commitment to our grid expansion projects and thus to the energy transition. The Ostbayernring is a good example of how sustainable financing can strengthen security of supply and the green transformation of an industrial region at the same time."

Tennet

<http://www.tennet.eu>

20 October 2022

Switzerland: Groundbreaking ceremony for the new transformer at the Mettlen substation

The Mettlen substation (municipality of Eschenbach, canton of Lucerne) is an important node in the Swiss transmission grid and helps to ensure a secure supply of electricity to central Switzerland. To strengthen this in the long term, Swissgrid is expanding the transformer system at the Mettlen substation. The groundbreaking ceremony marked the start of construction work for two new transformers, which will go into operation in 2024 and 2026 respectively.

In the first stage of the project, the existing foundation of the reserve pole will be removed to create sufficient space for the new transformer stands. The first 800-MVA transformer will be delivered and put into operation in 2024. The existing 600-MVA transformer can then be dismantled and the remaining old transformer foundations removed. This will make it possible to build the new transformer stands for the second transformer. If everything goes according to plan, the project will be completed once the second 800-MVA transformer has been commissioned at the end of 2026.

A 380/220-kV transformer system with a 600-MVA transformer and a reserve pole is currently installed in the Mettlen substation. This transformer will be replaced by two new 380/220-kV transformers, each with a throughput of 800 MVA and each with three single-phase transformers. The new transformer system will also include a reserve pole that can be used for both transformers. The total project costs amount to CHF 70 million.

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The contract for the engineering, fabrication, delivery and installation of the transformers was put out to public tender, and the contract was awarded to Siemens Energy. Engineering will be completed in autumn 2022, after which the first transformers will go into production at the Siemens Energy plant in Weiz, Austria.

Swissgrid

<http://www.swissgrid.ch/>

20 October 2022

ENTSO-E: Early insights of Winter Outlook Report 2022-2023

ENTSO-E releases early insights for the upcoming Winter Outlook. Stay tuned for updates throughout the winter.

- Early insight results of the Winter Outlook show tight adequacy situations for the electricity system across Europe this winter. Projections based on electricity TSOs' early data collection show a stressed situation in many countries which should however be manageable with appropriate mitigation, preparation, coordination, and operational measures. Our study also investigates additional risks that may worsen the electricity adequacy situation this winter: the impact of prolonged or increased unavailability of nuclear plants in France, Sweden and Finland, constraints on the availability of coal/lignite fuels in Poland and Germany, and an increased demand for electricity caused by a switch from gas to electric residential heating.

- Reducing demand for electricity, i.e. cutting electricity consumption by 10% and reducing peak load by 5% as foreseen in the recently adopted EU Regulation for an emergency intervention to address high energy prices, will mitigate the adequacy risk significantly.

- Gas remains crucial to maintain adequacy of the power system in Europe this winter and in the absence of new measures and investments also in coming years. The volume of gas needed at minimum – even if it is the last available resource for electricity generation - this winter corresponds to about a third of the total gas storage level in Europe, in line with previous winters.

- ENTSO-E continues monitoring the situation and will release by 1 December 2022 its comprehensive Winter Outlook report considering updated data and complemented with an analysis of the contributions of non-market resources.

- The adequacy challenges faced by Europe's power system must be managed proactively. Electricity TSOs are taking measures at national level and tightly coordinating at regional and pan-European levels via short-term adequacy forecasts and operational cooperation between TSOs and Regional Coordination Centres. Cross-border exchange capacities and efficient market operation are crucial to maintain adequacy in an efficient manner.

ENTSO-E

<http://www.entsoe.eu/>

21 October 2022

Power transmission operators in Nordic and Baltic countries warn of challenging winter

Transmission system operators of the Nordic and Baltic countries have jointly conducted an analysis of the adequacy of electricity supply resources in the region for the coming winter. The report recognizes that the coming winter is one of the most challenging in recent years due to the unfavorable conditions in the European energy markets. The war in Ukraine is affecting the electricity, gas and coal markets, as energy imports from Russia have been reduced or stopped due to sanctions imposed by European Union member

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states, while water storage in European hydroelectric power plant reservoirs is lower than usual before the winter season as a result of the dry summer.

The total power supply capacity for the upcoming winter in the region is sufficient, however, the capacity reserve is small and there are many uncertainties. The analysis does not show the need to limit consumption, however, such a possibility is not excluded. Therefore, transmission system operators inform the public and prepare an action plan for such a scenario as well. Supply restrictions could be implemented in case of extreme necessity, according to a report jointly prepared by transmission system operators.

In addition, regardless of the sufficiency of electricity supply capacities in winter, high electricity prices are expected because energy supplies are limited and uncertainty in energy markets is high. Therefore, it is useful for consumers to analyze and reduce their consumption during periods of high prices, which also improves the adequacy of electricity supply capacities.

AST

<http://www.ast.lv/>

24 October 2022

Chinese City Plans 43.3 GW Offshore Wind Development, Green Hydrogen Production

The municipal government of China's city of Chaozhou, Guangdong Province, has issued a new five-year plan for energy development which, among other things, kick-starts preliminary work on the potential development of two offshore wind projects with a total capacity of 43.3 GW.

The energy development plan, the city's fourteenth, covers the period until 2025 and has been issued to the county, district and other relevant governments that will work on its implementation from the local level. According to the plan, the authorities responsible for the implementation will take advantage of the "unique" conditions of the area offshore Chaozhou identified for offshore wind development, as well as of the capabilities of the Chaozhou Port, to build a 10 GW "offshore wind power base" in Guangdong Province. During the five-year period of the plan, and in accordance with national requirements and the deployment plan of the province, local governments will work to facilitate "demonstration development and construction of the Chaozhou offshore wind power project" first and then promote the large-scale development of the project.

The offshore wind projects for whose realisation this plan is meant to set the stage are located at two sites in the exclusive economic zone outside the territorial sea line in the south of the Chaozhou City, named Guangdong East Site 6 and Guangdong East Site 7. The total capacity of 43.3 GW is planned to be deployed by first installing 10.8 GW at Guangdong East Site 6, located offshore Chaozhou City and Shantou City. The project site is located some 72 kilometres away from shore at its nearest point and about 160 kilometres at its farthest point, in water depth of 15-50 metres. Guangdong East Site 7, which would accommodate 32.5 GW of offshore wind capacity, is located to the southeast of Chaozhou City, in water depth of 11-50 metres. The project would 75 kilometres away from the shore at its nearest point and about 185 kilometres at its farthest point.

With this capacity, the two wind projects are expected to produce more power than all of the power plants in Norway combined, according to Bloomberg which first reported on the potential 43.3 GW development in English. The identified sites offshore Chaozhou are said to be in a "unique area of Guangdong Province" where wind speed reaches 9.4-10m/s, the wind power density reaches from 750W/m² to 850W/m², allowing for a very high utilisation rate of about 3,800-4,300 hours per year.

Looking at Chaozhou's new plan, as part of the broader ambition for this offshore wind development, local governments are also instructed to explore the potential for other

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infrastructure such as green hydrogen production, an integrated energy island, and aquaculture farming. The plan also drafts all the necessary components to make the offshore wind projects happen, including the implementation and improvement of systematic and effective environmental protection policies and increasing policy support for the development of the green energy industry in terms of finance, taxation, finance, and spatial planning.

Furthermore, the plan also includes exploring the establishment of new research and development (R&D) institutions that will work on “cutting-edge technologies” from solar photovoltaic, offshore wind, to hydrogen production from offshore wind power, as well as on the development of key industrial technologies. All of this will contribute to the addition of “new energy formats” such as offshore wind power, energy storage, and integrated energy services to the overall energy mix in Chaozhou City and Guangdong, since the plan outlines actions to be taken in multiple areas to ensure the city’s and the province’s energy security and net-zero goals. Besides the massive offshore wind capacity, the plan also blueprints the development of numerous projects from other sectors, both further development of existing projects and the realisation of new ones, including LNG and oil and gas, hydropower, photovoltaic, as well as energy storage and grid infrastructure.

China currently accounts for 45 per cent of the world’s installed offshore wind capacity, after connecting 12.7 GW of new offshore wind farms to its grid last year, according to the figures recently published by World Forum Offshore Wind (WFO).

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24 October 2022

Terna signs joint development agreement with Meridiam and Boundless Energy for the development of business in the USA

Terna USA, the recently founded new company of the Terna Group, Meridiam and Boundless Energy have signed a Joint Development Agreement aimed at joint business ventures in the United States in the electricity-transmission field.

The agreement establishes a partnership that will leverage a unique expertise of the three partners, capturing business opportunities connected to the acquisition, development and implementation of large onshore and offshore electricity transmission infrastructure projects in the United States. The current scenario of the electricity system in the USA dictates the need to build new important transmission infrastructure connecting areas of the country where demand is higher with areas characterised by greater availability of renewable sources. These projects are often complex from both a technical perspective, as they must be created using underground or undersea cables, and from a development perspective, involving multiple states or regions of the USA.

Specifically, Terna, the operator of the Italian national electricity grid, led by Stefano Donnarumma, will provide its expertise in large-scale projects with underground and undersea cables, including the Tyrrhenian Link, an undersea project that will connect Campania, Sicily and Sardinia, totalling approximately 970 kilometres (over 1,242 miles) and, in a world first, involving the laying of cables at depths exceeding 2,000 metres (over 6,560 feet) below sea level.

Meridiam is an independent investment Benefit Corporation under French law that has over US\$ 18 billion of assets under management. The firm specializes in the development, financing, and long-term management of sustainable public infrastructure projects in three core sectors: sustainable mobility, critical public services and innovative low carbon solutions.

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Boundless Energy, a US based developer of transmission projects that optimize the capacity and reliability of the US grid, will bring its proven experience and solid technical background, along with a portfolio of projects already developed in many different areas of the United States. In fact, Boundless Energy has successfully managed the development and implementation of “Neptune”, a 40 km undersea connection between New Jersey and Long Island, which went live in 2005.

“The signing of this agreement with Meridiam and Boundless Energy represents an important step in strengthening our international presence and entering a market with attractive growth prospects” commented Giacomo Donnini, Chief of Major Projects and International Development for the Terna Group. “Through partnership with two prominent and highly experienced players in the sector, Terna can pursue important business goals with a capital-light strategy, contributing to development of the US electricity system and increasingly integrating energy generated from renewables such as solar and wind power”.

Terna

<http://www.terna.it/>

26 October 2022

New Jersey Marks Milestone for Offshore Wind Using PJM’s State Agreement Approach

The New Jersey Board of Public Utilities today selected a package of onshore transmission solutions that, in conjunction with prior action, will enable the achievement of injecting 7,500 MW of offshore wind capacity by 2035. The Oct. 26 order issued by the NJBPU was informed by technical analysis performed by PJM staff under PJM’s State Agreement Approach, through which states can access PJM’s expertise and existing planning process to cost-effectively develop and optimize the transmission improvements necessary to support the reliable interconnection of public policy resources. In its role as a regional transmission operator and system planner, over a two-year period, PJM provided the NJBPU with assistance as it analyzed 80 proposals submitted by 13 developers through PJM’s competitive planning process.

“Today’s action by the NJBPU represents an important milestone in the development of offshore wind in the U.S.,” said PJM President and CEO Manu Asthana. “We see the State Agreement Approach as a model for how states can leverage PJM’s processes to advance their policy goals.” New Jersey is the first PJM jurisdiction to use the State Agreement Approach (PDF), a provision incorporated into PJM’s Operating Agreement during implementation of FERC Order 1000, approved by FERC on March 22, 2013. New Jersey is leveraging the process and tapping into PJM’s expertise to advance its offshore wind objectives. In Order 1000, FERC required regional grid operators to “provide for the consideration of transmission needs driven by public policy requirements in the regional transmission planning processes.” The State Agreement Approach enables a state or group of states to propose a state-initiated project that could potentially realize state public policy requirements as long as the state (or states) agrees to pay all costs of the state-selected buildout included in the Regional Transmission Expansion Plan (RTEP). PJM looks forward to continuing to work with New Jersey and our other states as they advance their offshore wind goals and other energy policies.

PJM Inside Lines

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China: world’s largest salt cavern compressed air storage project breaks ground

Construction has started on a 350 MW/1.4 GWh compressed air energy storage project in Shangdong, China. Compressed air energy storage (CAES) is expected to play a

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key role in China's clean energy push and the latest project announcement attests to the fact. According to a media statement from the state-owned Assets Supervision and Administration Commission of the State Council, construction started on a 350 MW/1.4 GWh CAES project in the province of Shandong on September 28.

Once completed, the Tai'an demonstration project is expected to be the world's largest salt cavern CAES project, comprising two units for a total of 600 MW. The 350 MW system, which will be delivered in the first phase, is being jointly built by China Energy Engineering Group and Tai'an-based Taian Taishan New Energy Development to the tune of CNY 2.23 billion (\$311 million).

The unit is based on the 325 C low-melting point molten salt high-temperature thermal insulation compression technology. It has a designed energy storage and charging time of eight hours and a discharging time of four hours. Once both units are delivered, the Tai'an project will be capable of generating about 1 billion kWh of power annually.

According to the Commission's announcement, the project "will help boost advanced new-type energy storage technology, encourage consumption of renewable energy and improve recycling of the waste salt cavern resource." CAES is not a new technology. The first system (290 MW) was installed in Huntorf, Germany, in 1978 and is still in operation today. In 1988, the Alabama Electric Cooperative's 110 MW CAES plant also began operations in North America. However, CAES seems to have been given a new lease on life in recent years with several large-scale projects announced in the United States, Israel and Canada.

China's CAES ambitions are particularly big. Last month, the Chinese Academy of Sciences switched on a 100 MW compressed air energy storage system in China's Hebei Province. The facility can store more than 132 million kWh of electricity per year. The country's largest operational CAES system is currently a 60 MW plant built by Chinese state-owned energy group Huaneng, Tsinghua University, and China National Salt Industry Group in Changzhou, Jiangsu Province. The facility features a salt cavern, situated 1,000 meters underground and owned by China National Salt Industry Group. The system has an efficiency of more than 60% and is expected to reach a power generating capacity of 1 GW.

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