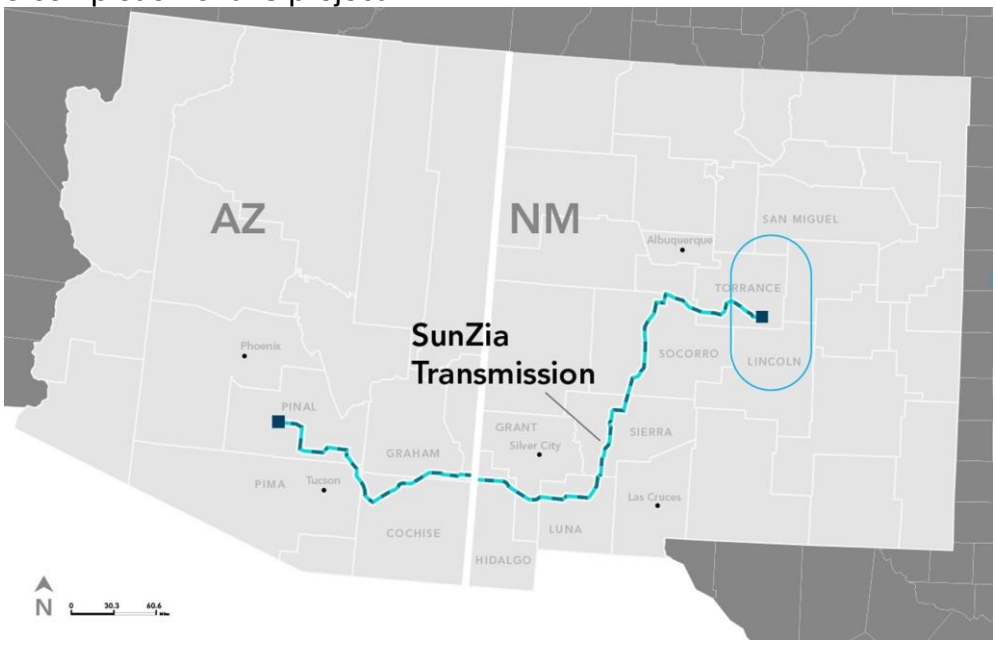
15 November 2022

Pattern Energy secures key approvals for SunZia transmission project

US-based renewable energy company Pattern Energy has secured key approvals for its SunZia Transmission project, which was acquired from SouthWestern Power, earlier this year. The Arizona Corporation Commission (ACC) has approved the company's Certificate of Environmental Compatibility application, which concludes the permitting process in the state. In addition, the renewable energy company received two separate approvals from the New Mexico Public Regulatory Commission for its 3,500MW SunZia wind project.

Located in Torrance, Lincoln, and San Miguel Counties, New Mexico, the SunZia Wind project represents the largest wind project in the Western Hemisphere. The projects continue to work with federal agencies and local jurisdictions to finalise the remaining approvals, with construction scheduled to begin in 2023, said the company. Pattern Energy CEO Mike Garland said: "The unanimous decision by the ACC to grant a Certificate of Environmental Compatibility for the SunZia Transmission line represents a major milestone towards the completion of this project.



"We are excited to get to work on the revolutionary SunZia Transmission line which will be the conduit for the largest wind project in US history, our 3,500+ MW SunZia Wind facility in New Mexico. "Once complete these projects will combine to increase the reliability of the western grid, create good jobs, and bring millions of dollars in economic benefits to Arizona and New Mexico." SunZia Transmission is a 550-mile (885km), 525kV high-voltage direct current (HVDC) transmission line that stretches between central New Mexico and south-central Arizona. It has the capacity to transport 3,000MW of clean, renewable energy, to address the needs of more than three million Americans. Both SunZia wind and transmission projects represent the largest renewable energy infrastructure project in the US, with a total investment of more than $8bn.

The projects are expected to deliver more than $1bn in direct economic benefits to governments, communities, schools, and landowners across Arizona and New Mexico. Furthermore, the SunZia projects have been developed with a commitment to local community engagement and environmental stewardship, said Pattern Energy. Arizona Regional Economic Development Foundation executive director Mignonne Hollis said: "This project is of great economic benefit with more than 2,000 construction jobs and up to 150

permanent jobs, which for our rural communities is a lifeline. “It’s vital for our county, which continues to see a decline in population, to have stable jobs come into our region.”

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

15 November 2022

Danish consortium builds 1 MW/20 MWh molten salt thermal storage facility

Hyme Energy ApS, a unit of Denmark's Seaborg Technologies, is partnering with Bornholms Energi & Forsyning (BEOF) to build its first molten salt thermal energy storage demonstrator on the Danish island of Bornholm.

“The plant is to be built in the Baltic Sea on Bornholm, close to all the planned wind turbine parks,” a company spokesperson told pv magazine. “The facility, however, will not be connected directly to a renewable energy source, it will be connected to the normal electric grid. We will store cheap ‘excess' electricity and that will mostly be from renewable sources – and as our national grid is going towards 100 % renewables, our plant will be powered more and more by renewables.” The storage facility is scheduled for completion in 2024 and will have a capacity of 1 MW/20 MWh. It will provide heat, power, and ancillary services to the local network. “After the completion of the plant, Hyme will be ready for commercial deployment of plants of up to 1 GWh or more,” said Hyem.

The company's storage technology uses renewable energy to heat the salt using electrical heaters. It is based on two-tank molten salt storage designs developed for concentrated solar power (CSP) plants. It said it has a scalable storage capacity from 250 MWh to 5 GWh. A 1 GWh facility with sodium hydroxides should be able to store heat to produce power and heat for around 100,000 households for 10 hours of discharge.

The two tanks are able to store electricity as heat at 700 C. The high temperature provides large flexibility for how energy can be extracted back out, including Rankine cycle combined heat-and-power production, Brayton cycle heat-to-power, heat storage for district heating, and industrial process heat. The technology also uses immersion heaters to store excess electricity as heat, while pumps control the flow for discharging through salt to steam heat exchangers for producing steam to drive steam turbines for co-generation in the simplest setup.

Seaborg Technologies, which makes molten salt nuclear reactors, said the storage system could have a maximum heat loss of 0.5% to 1% per day. Costs should be between 30% and 50% lower than conventional molten salt storage. Hyme said it believes it could halve the price of long-term and large-scale energy storage facilities, regardless of geographical location.

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

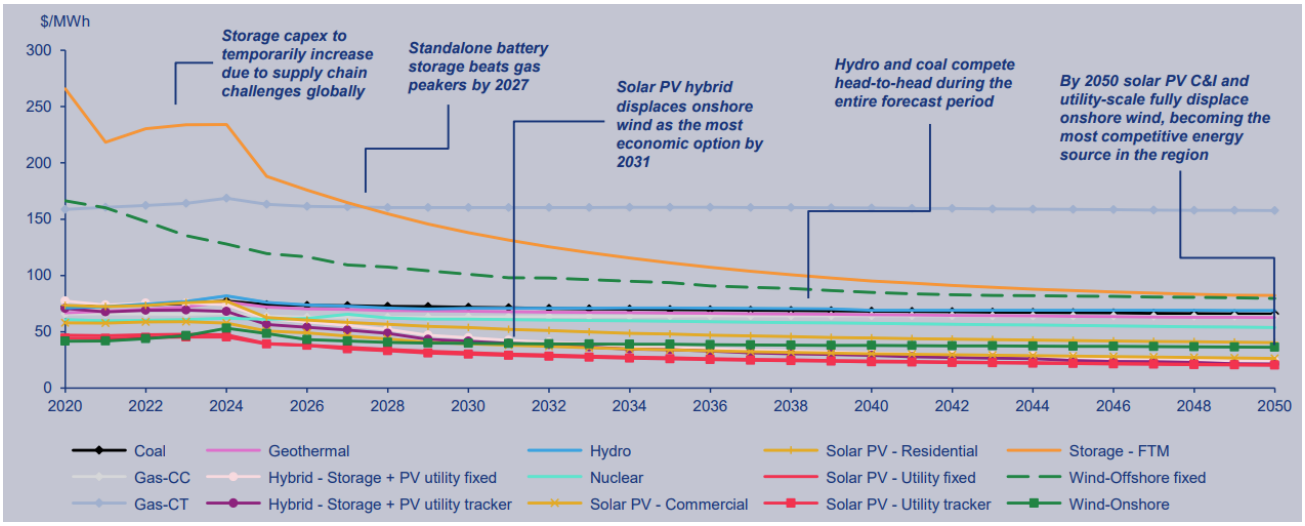
16 November 2022

Solar PV to overtake onshore wind in Latin America from 2023

Solar PV will become the most cost-competitive technology in Latin America from 2023, according to Wood Mackenzie’s latest research report, ‘Latin America levelized cost of electricity (LCOE)’ which examines the power technology and generation landscape across the region to 2050. Solar will also displace onshore wind, currently the most attractive renewable energy source in Brazil, by 2025.

Wood Mackenzie, a Verisk business (Nasdaq: VRSK), forecasts that solar will remain the lowest cost of energy of all technologies in Latin America until 2050, with US$14 per megawatt hour (MWh). Leila Garcia da Fonseca, Research Manager – Latin America Power & Renewables at Wood Mackenzie, said: “Power demand in Latin America is set to almost

double by 2040 compared to 2021 levels – a higher growth rate than North America. Yet, despite the region already being a frontrunner for renewable power generation, questions remain about how Latin America will contribute to the global energy transition effort. Our LOCE analysis reveals which technologies will be competitive up to 2050 in Latin America, helping clients get an understanding of how countries in the region are supporting global decarbonization."



Average LCOE in Latin America, 2020-2050 (US$/MWh)

Wood Mackenzie's latest report shows that exceptionally high capacity factors in Mexico will allow its solar market to achieve the lowest LCOE among all countries in the outlook, followed by Chile. Garcia da Fonseca added: "Expected solar cost reductions are significant, with average capital investment falling by 55% from 2022 to 2050. This is mainly led by technology improvements, such as bifacial modules becoming the norm across the region in the mid-term."

Offshore wind will be the most competitive in Brazil and Colombia, offering the two lowest LCOEs in the region, with US$ 79.7/MWh and US$ 57.3/MWh respectively by 2035. On-site electrolyzers preclude the need for transmission investment, which translates to an additional 13% in offshore wind LCOE reduction. However, offshore wind costs will drop 46% in the region and will not reach grid parity with other renewable technologies. "For onshore wind, current supply chain challenges and high inflation will cause a sharp increase in costs by 2024, followed by a slow recovery. Onshore wind LOCE in Latin America already falls below Combined Cycle Gas Turbines (CCGT), except for Argentina," Garcia da Fonseca said.

After 2033, onshore wind remains cheaper than gas in all countries across the region until 2050. Off-grid applications for green hydrogen production is currently the main driver for offshore projects in Latin America, with the first projects expected to be online as early as 2032. Standalone storage has the highest cost reduction rate among all technologies, averaging 64% across countries in the region. The rapid cost reduction of solar and standalone energy storage will result in extremely attractive LCOE levels for hybrid projects in the region, with US$ 21.4/MWh anticipated by 2050.

"We expect the attractiveness of conventional sources to lessen over time as ESG mandates grow. With limited opportunity for innovation, prospects for significant cost reductions for hydro and thermal plants are null. Increasing regulatory and environmental barriers will also make such projects less financeable and therefore more expensive," Garcia da Fonseca concluded.

Wood Mackenzie
http://www.woodmac.com/

16 November 2022

Nigeria approves 1,650 MW hydropower project

Nigeria has approved the construction of a 1,650 MW hydropower plant at a cost of $3 billion, making it one of the single biggest power projects in the country, the vice president's spokesperson said on Tuesday.The project would be funded under a public private partnership arrangement and located in the north central state of Benue, Laolu Akande, vice president Yemi Osinbanjo's spokesperson, said in a statement.

Akande did not say when construction would start. Increasing power supply is expected to top the agenda of the successor to President Muhammadu Buhari, who steps down after elections next year. Africa's biggest economy struggles with low power output and limited transmission infrastructure, leaving many households and businesses reliant on diesel-powered generators.

Authorities said last week the government would grant a concession to operate its $1.3 billion China-funded Zungeru hydropower plant that will come on stream in the first quarter of next year.

Reuters
http://www.reuters.com/

18 November 2022

Italian power prices more than triple

Electricity prices in Italy set an all-time record in October, the country's oldest consumer association Unc reported on Thursday.Prices for electricity, which is being sold in the Apennines on the free market, have surged 329% since October last year, and topped the Unc rating of the most expensive goods and services.

International flights followed power tariffs, with an annual increase in costs equaling 113%. Gas was next in the ranking, with prices surging more than 96% compared to last year. The Unc report comes on the heels of the latest data released by Italy's official statistics agency ISTAT, which showed that the domestic price index soared 11.8% in October from a year earlier, the highest since March 1984. Annual consumer price growth led by soaring energy costs hit 12.6% in October, jumping from 9.4% in the previous month.

Basic food items have also seen dramatic inflation in Italy, with the prices of various vegetable oils, excluding olive oil, soaring by 55% year-on-year. Butter grew by 43%, followed by sugar, which picked up 17% from September and rose by 38.8% on an annual basis. The sharp increase is expected to make the average annual food bill rise by €761 ($787), at a time when cash-strapped families are already trying to cope with soaring energy bills. For families with one child, this figure will increase to €937 ($969), for those with two children – up to €1038 ($1073), with three – up to €1240 ($1282), Unc president Massimiliano Donna has said.

RT
http://www.rt.com/

18 November 2022

Australia's Largest-Ever 1,200MW Battery Storage System to Be Built in Melbourne

Construction for the largest Battery Energy Storage System (BESS) ever deployed in the Asia-Pacific will begin in Melbourne, eventually supporting up to 1,200MW of renewable energy storage. The Melbourne Renewable Energy Hub (MREH) project is wholly owned by the Singaporean developer Equis and is being jointly developed with renewable energy provider Syncline Energy.

MREH will be built in two stages of 600MW each. The first stage is scheduled to commence construction in 2023 and commence operations in 2024. As a Project of State

Significance with the Victorian Government gazetting a Planning Scheme amendment in April 2021, MREH has now completed all required planning and environmental approvals and community impact assessments. The project will be Australia's only BESS above 200MW in capacity that connects to the National Electricity Market's (NEM) high voltage 500kV transmission system, allowing a volume of electricity to be rapidly dispatched unmatched by other battery storage systems. MREH is being uniquely developed with six separate 200MW points-of-connection to the NEM, allowing different uses and grid responses for the battery system.

Equis Managing Director, David Russell, said the project would see over $1.9 billion in Victorian investment during the course of its development. "MREH will involve over $1.9 billion of investment into Victoria, 200 full time construction jobs and 15 full time operational jobs for Melbourne's rapidly growing Northern and Western suburbs," Mr Russell said. "In addition, MREH has been developed on the basis of and the Melton community will benefit from the inclusion of underground transmission lines, the first time such technology will have been deployed in Australia. "The scale and uniqueness of MREH's approvals and development mean it will be capable of providing both short and long hour storage and response services catering to the changing demands of the National Electricity Market. "MREH's scale is also facilitating development work of a large-scale battery recycling hub and hydrogen hub utilising Melbourne's excess sewage wastewater. The result will be more investment and permanent jobs in the region."

World Energy
http://www.world-energy.org/

18 November 2022

Cambodia connects 100-MW solar park project to national grid

The Electricite du Cambodge (EDC) announced it has connected 60 megawatts of the National Solar Park project to its national grid. The National Solar Park, which has a 100MW total capacity was developed with the Asian Development Bank (ADB). "Solar generation will need to be a key part of Cambodia's efforts to expand access to affordable power while also transitioning to cleaner energy," ADB President Masatgusu Asakawa. "ADB is pleased to have supported the establishment of the National Solar Park, which is a landmark project not only for Cambodia but for all of Southeast Asia."

The project proved that Cambodia has the potential to develop a large-scale solar park in a cost-effective manner. "ADB was one of the early players in helping Cambodia increase its household access to grid electricity from 17% in 2008 to almost 90% in 2021, while also helping to reduce electricity costs nationwide," Minister attached to the Prime Minister and Managing Director of EDC Keo Rottanak said.

"ADB was the nation's first development partner to fund an earlier 10 MW grid-scale solar farm and with the new National Solar Park today, ADB is with Cambodia once again in scaling up the nation's solar contribution to more than 10% of the total generation mix in capacity terms."

Asian Power
http://asian-power.com/

18 November 2022

Biden-Harris Administration announces $13 billion to modernize and expand America's Power Grid

The Biden-Harris Administration, through the U.S. Department of Energy (DOE) today announced $13 billion in new financing opportunities for the expansion and

modernization of the nation's electric grid. Funded by the President's Bipartisan Infrastructure Law, the Grid Resilience Innovative Partnership (GRIP) program and the Transmission Facilitation Program together represent the largest single direct federal investment in critical transmission and distribution infrastructure and one of the first down payments on an over $20 billion investment under the Administration's Building a Better Grid Initiative. These federal investments will unlock billions of dollars of state and private sector capital to build transformative projects that increase the reliability of the power grid and modernize it so that more American communities and businesses have access to affordable, reliable, clean electricity – helping deliver on the President's goal of 100% clean electricity by 2035.

"We are moving swiftly to deliver cleaner, cheaper energy to every American community by building a modern and reliable electric grid," said U.S. Secretary of Energy Jennifer M. Granholm. "With nearly 70% of the nation's grid more than 25 years old, the President's agenda is making historic investments that will strengthen the nation's transmission grid to drive down energy costs, generate good-paying jobs, and help keep the lights on during extreme weather events."

Independent estimates indicate that the U.S. needs to expand electricity transmission systems by 60% by 2030 and may need to triple current capacity by 2050 to accommodate the country's rapidly increasing supply of cheaper, cleaner energy and meet increasing power demand for electric vehicles and electric home heating and reduce power outages from severe weather.

The funding announced today, along with a $2.3 billion program that funds grid resilience investments by States and Tribes to reduce impacts due to extreme weather and natural disasters, are programs under the Building a Better Grid Initiative. Launched in January 2022, the Building a Better Grid Initiative brings together community and industry stakeholders to identify national transmission needs and is investing more than $20 billion to support the modernization and buildout of long-distance, high-voltage transmission and distribution systems that are critical to reaching President Biden's goal of 100% clean electricity by 2035 and a zero-emissions economy by 2050.

The President's Bipartisan Infrastructure Law provides $10.5 billion across three programs that make up the GRIP program to enhance grid flexibility and improve the resilience of the power system against growing threats of extreme weather and climate change.

The program will deliver projects centered on

- Grid Resilience Utility and Industry Grants ($2.5 billion) fund comprehensive transmission and distribution technology solutions that will mitigate multiple hazards across a region or within a community, including wildfires, floods, hurricanes, extreme heat, extreme cold, storms, and any other event that can cause a disruption to the power system. Eligible applicants include electric grid operators, storage operators, generators, transmission owners or operators, distribution providers, and fuel suppliers.
- Smart Grid Grants ($3 billion) increase the flexibility, efficiency, reliability, and resilience of the electric power system, with particular focus on increasing capacity of the transmission system, preventing faults that may lead to wildfires or other system disturbances, integrating renewable energy at the transmission and distribution levels, and facilitating the integration of increasing numbers of electric vehicles, buildings using electricity to heat and hot water, and other grid-edge devices. The program is open to domestic entities including institutions of higher education, for-profit entities, non-profit entities, state and local government entities, and tribal nations.
- Grid Innovation Program ($5 billion) provides financial assistance to one or multiple states, Tribes, local governments, and public utility commissions to collaborate with

electric grid owners and operators to deploy projects that use innovative approaches to transmission, storage, and distribution infrastructure to enhance grid resilience and reliability.

The first round of funding announced today for GRIP is $3.8 billion for fiscal years 2022 and 2023. Concept papers are a required first step in the application process. Concept papers for the Grid Resilience Utility and Industry Grants and Smart Grid Grants are due December 16, 2022. Concept papers for the Grid Innovation Program are due January 13, 2023. A public webinar will be held on November 29, 2022, to provide additional information. Registration is required.

The Transmission Facilitation Program establishes an innovative revolving fund to help overcome the financial hurdles facing large-scale new transmission lines, upgrades of existing transmission lines, and, in select states and territories, the establishment of microgrids. The President's Bipartisan Infrastructure Law authorizes DOE, through the program, to borrow up to $2.5 billion to assist in the construction of high-capacity transmission lines with an innovative approach that can spur valuable new lines that otherwise would not get built or increase the capacity of already planned lines.

DOE
http://www.energy.gov/

18 November 2022

Vale starts up initial plants of 766-MWp solar complex in Brazil

Brazilian mining company Vale SA announced on Thursday it has initiated power generation at a 766-MWp solar photovoltaic plant in the municipality of Jaiba, Minas Gerais state. The Sol do Cerrado solar complex currently has four of its plants energised but once fully completed will comprise a total of 17 sub-parks made up of 1.4 million panels.

Vale targets full commissioning by July 2023, at which point the complex will generate enough clean electricity to meet 16% of the company's power demand in Brazil. This is equivalent to the consumption of a city of 800,000 inhabitants. The miner is pursuing 100% renewable power consumption in Brazil by 2025 and 100% globally by 2030.

Renewables Now
http://renewablesnow.com/

21 November 2022

India's Jindal wins bid to build Botswana's 300 MW coal power plant

Botswana has picked India's Jindal Steel & Power Ltd as the preferred bidder in a tender to build a 300 MW coal-fired power plant, a notice from its energy ministry showed on Monday.

It is the only fossil fuel-based power plant the Southern African country plans to procure in the next 20 years. Four companies were initially short-listed for the contract but one pulled out leaving Jindal, African Energy Resources and Minergy in a three-way race. Botswana has over 200 billion tonnes of coal resources and despite recent pressure on coal due to climate change, the diamond-dependent country is pressing ahead with monetising its coal for economic development. "The contract (is) for the design, finance, construction, ownership, operation, maintenance and decommissioning at the end of its economic life ... of a 300MW net greenfield coal-fired power plant in Botswana as an Independent Power Producer," the notice read. Jindal will finance construction of the plant and recoup its investments from selling electricity to the Botswana Power Corporation (BPC) under terms to be negotiated between the two parties.

State owned Morupule Coal Mine and Minergy's Masama are the country's only operating coal mines. Jindal Botswana country head Neeraj Saxena did not respond to

enquiries but the company told Reuters in November 2021 that it would start building a coal mine in south-eastern Mmamabula coalfields in 2022, aiming to supply the export market and the planned coal power plant.

Russia's invasion of Ukraine has triggered a global energy crisis, boosting demand for coal. Botswana has in the past months ramped up coal exports to Europe via Mozambique and Namibia, with the country's two operating mines looking to secure more new deals.

Reuters
http://www.reuters.com/

21 November 2022

Honda plugs into German VPP for grid stability proof of concept

In what the motor giant is calling a huge breakthrough for Vehicle to Grid (V2G) technology, Honda has become the first automaker in Europe to gain Frequency Containment Reserve (FCR) prequalification.

The results came after a successful grid stability proof of concept trial, which saw Honda link a fleet of mass-produced EVs to a VPP in Germany for grid balancing services. The breakthrough came from Honda's advanced research and development division, Honda R&D Europe (Deutschland) GmbH.

In the pilot with Next Kraftwerke GmbH – one of Europe's largest Virtual Power Plant (VPP) operators – Honda has now achieved certification of a fleet of mass-produced EVs for the prequalification of FCR by Ampiron GmbH in Germany. When reacting to short-term frequency deviations in the power grid, service operators rely on balancing services that automatically intervene to restore balance between supply and demand. Of these balancing services, FCR is the highest performance class for grid stabilisation and is also referred to as primary control reserve as it is the first response to frequency disturbances. The pilot utilised mass produced Honda e EVs, which qualified for support of grid stability through the instant provision of FCR to the Transmission System Operator (TSO).

A fleet of six Honda e's and six Honda Power Manager bi-directional Combined Charging System (CCS) chargers were used during the trial, in which Honda was able to fulfil the high requirements for charging and discharging, necessary to ensure stable 50Hz grid frequency. Using real-time information from Next Kraftwerke about current power capacity, Honda's own power management system is able to respond within required standard time to charging and discharging commands of the TSO to each individual vehicle. This is done while respecting the single State of Charge (SOC) preferences of the individual EV driver.

This development is a vital step for advancing the role of EVs and bi-directional charging technology for a future sustainable energy system. Maintaining consistent grid stability will become one of the major challenges for the TSOs alongside the further expansion of renewable energy sources. "The project with Next Kraftwerke enables Honda to meet the new demands of the European market and deliver on its commitment to develop technologies that are creating value for society," said Tom Gardner, senior vice president, Honda Motor Europe.

"Typically, EVs are parked and connected to a charging station for most of the day, at offices and on driveways. Honda has identified that these standing times can be better utilised to offer additional services and revenues, through smart charging and discharging based on the current power grid frequency. "This not only benefits EV owners, but also the surrounding infrastructure as we transition into an e-mobility-driven society," added Gardner.

In a recent trial, Honda also partnered with the V2X Suisse consortium to demonstrate the vital role of EVs and bidirectional charging technology in the future of energy

management.The company supplied 50 Honda e cars and 35 Honda Power Manager units to support the trial, which delivered vehicle-to-grid (V2X) energy recovery capability for car sharing operator, Mobility, at sites across Switzerland.

Smart Energy
http://www.smart-energy.com/

22 November 2022

SSE Energy Solutions launches nationwide EV charging network in Ireland with SSE Airtricity

SSE Energy Solutions has announced plans to develop a nationwide EV charging network across Ireland. The £30m partnership with SSE Airtricity will see at least 30 ultra-rapid electric vehicle (EV) charging hubs installed across Ireland over the next four years, all of which will be powered by 100% green electricity.

As part of the EV infrastructure rollout, it has been confirmed that the first hub will open at the Lough Sheever Corporate Park in Mullingar, Co. Westmeath next year. The site will be publicly accessible and designed to accommodate long-wheelbase vehicles and buses, as well as cars and fleet vehicles. As part of Phase One of the project in 2023, and subject to planning permission, additional hubs with 10 charging bays will be installed in Blanchardstown Business Park and Greenogue Industrial Estate in Dublin.

It is expected that a total of six sites will be operational by the end of 2023, with a further 10 coming online in 2024. Each ultra-rapid bay will have charging capabilities of up to 150 kilowatts (kW), sufficient to deliver 12.5 kms of range per minute of charging. SSE Energy Solutions has committed to installing 300 ultra-rapid charging hubs powered by traceable, renewable energy across the UK and Ireland over the next five years. The very first hub, on Castlebank Street in Glasgow, went live at the end of September.

A 2021 study by the UK's Association for Renewable Energy and Clean Technology found that Ireland ranked joint-last in terms of implementing charging infrastructure. The Government's 2021 Climate Action Plan has set a target of one million EVs on the roads by 2030, including private cars, heavy goods vehicles, small public service vehicles, and larger public transport vehicles. Figures released last month by the UK's Department for Transport revealed that Northern Ireland has the lowest level of charging device provision in the UK (18 devices per 100,000). In addition to announcing this nationwide infrastructure across Ireland, SSE Energy Solutions has also just completed a deal with pan-European portfolio company, M7 Real Estate, to install charging hubs at the 20 locations the company manages in the United Kingdom.

SSE
http://www.sse.com/

22 November 2022

California's last nuclear power plant gets $1.1bn lifeline

The US Department of Energy (DOE) said it would conditionally provide California utility Pacific Gas & Electric (PG&E) with a $1.1 billion grant to help prevent the closure of Diablo Canyon, California's last nuclear power plant.

The funding comes from Civil Nuclear Credit (CNC) programme, a $6 billion fund aimed at supporting the continued operation of US nuclear plants. It was born out of the infrastructure bill signed into law in November 2021. The programme allows reactor owners and operators to apply for and bid on credits to support their continued operations. PG&E filed its application for CNC funding in September 2022, the same day California Gov. Gavin Newsom signed into law legislation seeking to extend operations at Diablo Canyon for five

years beyond its current license expiration in 2025. The plant would be used as a bridge while renewable energy and other carbon-free resources come online in California.

"I welcome the news that the Department of Energy has awarded $1.1 billion to help keep the Diablo Canyon Power Plant open. This short-term extension is necessary if California is going to meet its ambitious clean energy goals while continuing to deliver reliable power. I will continue to monitor this process to ensure thorough and rigorous safety and environmental reviews are undertaken at both the federal and state levels," said US Senator Dianne Feinstein (CA). In October the state authorized a loan of up to $1.4 billion from the Department of Water Resources to PG&E to support extending operations at the nuclear plant. Another US nuclear plant is not expected to get the same support under the CNC programme.

DOE recently rejected a request for funding to reopen the Palisades nuclear plant in Michigan, according to plant owner Holtec International. Holtec bought Palisades in May 2022 to decommission the 805MW plant and applied for funding from the initial phase of the programme. The plant, formerly owned by Entergy, was shut down last Spring after generating electricity for more than 50 years. Reopening Palisades was supported by Michigan Gov. Gretchen Whitmer, who called it a "top priority" for the state.

Power Engineering International
http://www.powerengineeringint.com/

22 November 2022

Terna: by the end of 2022 connection solutions will be provided for 95 GW of new offshore wind power

By the end of 2022, Terna will provide technical connection solutions for all new offshore wind plants that have requested connection to the national transmission grid by the 31 October, for total power of approximately 95 GW.

This was the conclusion of today's workshop "Renewable Development - Offshore 2022" organised in Rome by the company led by Stefano Donnarumma — operator of the national electricity grid — together with the Italian Ministry of Environment and Energy Security (MASE) and the Italian Regulatory Authority for Energy, Networks and Environment (ARERA). During the meeting there was a review of the regulatory context and the evolution, progress and distribution of requests for connection of renewable plants in Italy, with a specific focus on offshore wind power. During 2022, Terna has seen strong growth: in October, in fact, requests for connection to the national transmission grid for new green plants reached the overall value of approximately 300 GW of power (36% solar and 74% onshore and offshore wind power). This is a significant figure, equal to four times the 70 GW demand for new renewable capacity needed to reach the climate targets EU "Fit-for-55" by 2030.

In particular, so-called "floating" offshore wind power, with creation of floating plants on the water's surface, is becoming increasingly widespread in Italian waters, thanks to technological progress on the international market. An important step forward, as confirmed by connection requests received by Terna: on 31 October 2022, requests regarding offshore wind plants had reached a total power of approximately 95 GW (more than 200% more compared to those received in December 2021). Around 80% of the requests are from southern-Italian regions and the main islands. Specifically, we can note approximately 24 GW in Sardinia, 19 GW in Sicily and 4 GW in Calabria. "Following a thorough evaluation phase, in recent months, Terna has provided connection solutions for approximately 22 GW of new offshore wind-power initiatives that have submitted requests for connection to our high- and extra-high-voltage grid, formulating a minimum general technical solution shared with each of the parties in question. By the end of the year, thanks to close collaboration

with MASE and ARERA, we will have provided the remaining 73 GW, for a total of 95 GW" stated Francesco Del Pizzo, Terna Grid Development Strategies and Dispatching Manager. "Development of renewables is as necessary as ever for the energy transition and it is essential to accelerate the process if we intend to reach decarbonisation targets, energy independence and improved competitiveness for our country. However, it is also necessary to act with a coordinated approach with regard to storage systems and, above all, investments in grid infrastructure, which represents the enabling factor for a truly sustainable and cleaner future."

The significant size of offshore wind plants to be connected to the grid, which in many cases exceed hundreds of MW of power, and the heavily unpredictable nature of wind power as a source of energy, have led to careful monitoring and researching of the issue, also through international studies and benchmarking with other grid operators, manufacturers and players in the energy industry. Analyses carried out by Terna have enabled exploration of the technological features of plants and definition of a complete picture of requests for connection to the grid, optimising the necessary connection plans. In the broader context of reaching the targets set by the "Fit-for-55" policy described in the 2022 Scenario Description Document (SDD) and of the management of connection requests, Terna has also analysed the maximum volume of renewable energy that can be received for each market zone, identifying the areas most suitable for creation of new photovoltaic plants and onshore wind plants. By using geographic IT systems, it was also possible to evaluate the existing regulatory constraints.

Terna
http://www.terna.it/

23 November 2022

Voltalia to co-develop renewable energy projects in Uzbekistan

French renewable energy company Voltalia has agreed to co-develop renewable energy projects with a total output of between 400MW and 500MW alongside the Uzbekistan government. The partnership will involve developing 200MW of solar capacity and 200MW of wind capacity, as well as 60MW/ 240MWh of battery storage.

The sites for these projects will be jointly selected by the Voltalia and the Uzbek Ministry of Energy. The cluster will have the capacity to generate 1TWh of clean energy a year, which will be enough to meet the power needs of more than 800,000 residents. The proposed projects are backed by the European Bank for Reconstruction and Development (EBRD) and are due to start coming online in 2026. Voltalia CEO Sébastien Clerc said: "This cluster project, which combines three technologies, is a first in the region. We want Uzbekistan to benefit from our long experience in multi-energy clusters, which comes from very large projects, such as Serra Branca in Brazil (wind and solar) or smaller ones, such as Toco in French Guiana (solar and storage)."

The agreement is a three-way partnership between Uzbekistan's Ministry of Energy and Ministry of Investments and Foreign Trade (MIFT) with Voltalia. The Uzbek government aims to boost the country's energy independence and achieve 8GW of renewable capacity by 2026, further increasing this to 12GW by 2030. In June this year, Voltalia announced plans to develop a solar photovoltaic cluster with more than 1.5GW of capacity in Minas Gerais, Brazil. The firm is also developing large solar clusters in the Brazilian states of Rio Grande do Norte and Bahia, which will have potential capacities of 2.4GW and more than 1GW respectively. Based in Paris, Voltalia provides renewable energy solutions designed to help drive the global energy and ecological transition.

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

25 November 2022

Chinese Groups Unveil World's Largest Offshore Wind Turbine

Two Chinese companies announced production of the largest offshore wind turbine built to date, a 16-MW unit developed by China Three Gorges (CTG) and Goldwind. The groups on Nov. 24 showed off the turbine at a factory in Fujian province. The turbine has a 252-meter rotor diameter, with a 50,000-meter sweep area. The hub height is 146 meters.

Lei Mingshan, chairman of CTG, in a statement said, "The successful rollout of the 16-MW unit marks that my country's wind power equipment industry has achieved a historic leap from 'following' to 'running alongside' and then to 'leading', creating the latest benchmark for the development of global offshore wind power equipment."

The new unit comes not long after Goldwind, based in Beijing, and CTG unveiled a 13.6-MW turbine. Goldwind has touted that Chinese turbine manufacturers are on par, and now exceeding, units produced by other industry giants including GE, Siemens Gamesa, and Vestas. Goldwind has expanded its manufacturing to other countries, and in October announced it would build a production facility in Brazil that would serve the South American market.

Chinese turbine manufacturer CSSC Haizhuang, which is part of the China State Shipbuilding Corp., in October said it planned to roll out a 16.7-MW turbine model by the end of this year. Mingshan said the new 16-MW model was developed as Chinese government officials have called for manufacturers to design advanced renewable energy technologies. Zhai Endi, chief engineer for Goldwind, in a statement said, "The 16-MW unit has made important technological breakthroughs in the R&D [research and development] and manufacturing of key core components such as large main shaft bearings and ultra-long lightweight blades."

Endi continued, "The high level of digitalization for turbine operation status monitoring can intelligently adjust the operation mode for severe weather such as typhoons to ensure the safety and efficient power generation of the turbines." China's MingYang Smart Energy group, also reportedly working on a 16-MW turbine model, earlier this month said it would deploy a 14-MW turbine in the planned 1-GW Fanshiyi offshore wind farm near Yangjiang, in Guangdong province, next year.

CTG has developed some of the world's largest power generation projects, including major hydropower projects. Those include the 10.2-GW Wudongde Hydropower Station, which earlier this year was chosen as POWER's Plant of the Year.

World Energy
http://www.world-energy.org/

25 November 2022

France's first offshore wind farm is now fully online

France's first commercial-scale offshore wind project, the 480 megawatt (MW) Saint-Nazaire Offshore Wind Farm, is now fully up and running. Eolien Maritime France (EMF), a consortium of EDF Renewables, Enbridge, and the Canada Pension Plan Investment Board, developed and owns the Saint-Nazaire offshore wind farm.

As Electrek previously reported, installation of all 80 GE Haliade 150-6 MW offshore wind turbines were completed in September. France's first wind farm, which is off the southwestern coast of France, will produce the equivalent of 20% of the department of Loire-Atlantique's annual electricity consumption. It will supply the equivalent of enough electricity for 700,000 people annually. The wind farm first produced electricity at the beginning of June, and its turbines were gradually connected to the grid. Around 100 people will continue employment in La Turballe to operate and main the wind farm. Around 2,300 people worked

on the offshore wind farm during the construction phase. he French government aims to generate 32% of its energy from renewable sources by 2030.

Electrec
http://electrek.co/

25 November 2022

The Japanese will start generating electricity from snow

The system was developed by Koji Enoki (pictured) an associate professor at Tokyo's University of Electro-Communications. Estimates show that it can produce electricity as efficiently as solar power. The snow is put into an enclosed pool and heat transfer tubes are placed in the snow.

The outside air is heated by the sun and the difference in temperature creates a convection current in a coolant inside turbine which rotates it to generate electricity. Aomori spends tens of millions of dollars every year to remove snow from roads which is then dumped in the sea. If the test works, snow will instead be taken to generating stations.

The plan is to bring the system to the onsen (hot springs) in the north of Japan which gets plenty of snow."The greater the temperature differences, the greater the efficiency of power generation," says Enoki.

Electronics Weekly
http://www.electronicsweekly.com/

26 November 2022

Serbia to start importing electricity from Azerbaijan

Serbia will start importing electricity from Azerbaijan from January 2023, Minister of Mining and Energy Dubravka Djedovic said, Trend reports via Serbian media.

"This will provide additional security to the Serbian electricity system during winter, when electricity consumption is expected to increase the most," he said. Djedovic added that the remaining issues related to the transmission of energy from Azerbaijan through Türkiye and Bulgaria are being negotiated.

Trend News Agency
http://trend.az/

29 November 2022

UK government takes major steps forward to secure Britain's energy independence

Business and Energy Secretary Grant Shapps today launches a landmark package to invest now to help secure Britain's energy independence.

Today the government is driving forward plans to build a secure energy future, creating cheaper, cleaner energy from British sources, for Britain. This includes continuing the revitalisation of the UK nuclear industry by confirming the first state backing of a nuclear project in over 30 years, part of the UK's biggest step yet in the journey to energy freedom.

The government's historic £700 million stake in Sizewell C is positioned at the heart of the new blueprint to Britain's energy sovereignty, as plans to develop the new plant are approved today. This is expected to create 10,000 highly skilled jobs and provide reliable, low-carbon, power to the equivalent of 6 million homes for over 50 years.

Today's approval comes alongside the government's continued commitment to develop a pipeline of new nuclear projects, beyond Sizewell C. To support this, the UK is working at pace to set up Great British Nuclear, the vehicle tasked with developing a resilient pipeline of new nuclear builds, with an announcement expected early in the new year.

The driving force that will power up this long-term plan is the Energy Bill, which is being driven forward in Parliament, forming part of today's once in a generation plan to put in place powers to shield Britain from global forces and secure energy for future generations.

It comes as the UK sets a new ambition to reduce energy demand by 15% by 2030. This is backed by a new £1 billion ECO+ insulation scheme, and a major expansion to the government's public awareness campaign – all of which will help households cut back on energy waste and deliver warmer homes and buildings and cheaper energy bills.

For many years the UK was a leader in the civil nuclear field, but when exchanged for gas, the UK's nuclear industry has languished behind. That's why today, the government has confirmed it will be pushing ahead with Sizewell C in Suffolk, following intentions set out in the Autumn Statement. This is expected to provide reliable and low carbon power to the equivalent of 6 million homes for over 50 years and, as it's being built, will create up to 10,000 highly skilled jobs across the UK. The historic £700 million investment will enable the British

Government will become a 50% shareholder in the project's development with EDF and will work together with the project company to raise capital investment for the project. The move is the first direct government investment in a new nuclear power project since Sizewell B, the last nuclear power station to be built in the UK, was approved for construction in 1987.

For Britain to achieve energy security, a pipeline of new nuclear is needed, alongside one large-scale project. Today the government is confirming its commitment to set up Great British Nuclear, an Arms' Length Body (ALB) which will develop a resilient pipeline of new builds, beyond Sizewell C. With support from industry and our expert adviser Simon Bowen, this vehicle will help through every stage of the development process while ensuring these projects offer clear value for money for taxpayers and consumers. The UK government can confirm today that it will back Great British Nuclear with funding to enable the delivery of clean, safe electricity over the decades to come, protecting future generations from the high price of global fossil fuel markets, with an announcement expected in the new year.

The vehicle to power up the long-term plan, the Energy Bill, is on track and will be driven forward in Parliament. The Bill has a strong focus on enabling the deployment of homegrown, low-carbon technologies such as turbocharging the nascent CCUS and hydrogen industries, in which we already have a global head start. It will also encourage competition in the energy sector – and above all it will help to create clean jobs and cheaper bills.

- With around 250 clauses, the Energy Bill is the most significant piece of primary legislation since 2013, set to liberate private investment in clean technologies, protect consumers, and reform the UK's energy system so that it is efficient, safe and resilient.
- The Bill's passage is dependent on the parliamentary timetable.
- The Bill contains a range of measures including, but not limited, to:
- bring forward business models for CO2 transport and storage, industrial carbon capture, and low carbon hydrogen production
- enable a hydrogen village trial in 2025
- establish a Future System Operator
- ensure that heat networks are regulated so that consumers are protected
- reduce the risk of fuel supply disruption from accidents, severe weather, malicious threats and more.

GOV.UK
http://www.gov.uk/