WORLD POWER SYSTEMS REVIEW

15 December 2023

1 December 2023

France's EDF sells Europe's first green bonds for nuclear energy

The European Union's green taxonomy and subsequent legislation opened the way for nuclear energy projects to get green financing. After its first green loan for the purpose, French state-owned power utility EDF raised EUR 1 billion through a green bond issue, the first of its kind in Europe.

EDF launched a senior green bond issue for its existing nuclear fleet, for a nominal amount of EUR 1 billion, with a 3.5-year maturity and a 3.75% fixed coupon. Net proceeds will be used to refinance capital expenditures in existing French nuclear reactors in relation to their lifetime extension, the government-controlled energy company said.

The issue is aligned with the EU taxonomy, the statement adds. It is the first in Europe. After heated discussions, the EU allowed through its green taxonomy in 2022 for some nuclear energy projects to be labeled green. The endorsement continued with subsequent legislation. After the taxonomy was adopted, EDF immediately included the technology in its green financing framework. It also took a green loan for the purpose in November 2022.

The transaction enables the further strengthening of the structure of the balance sheet, EDF added. The bonds will be admitted to trading on the regulated market of Euronext Paris on December 5. The company said it expects the bonds to be rated BBB / Baa1 / BBB+. It would match the group's credit scores at S&P, Moody's and Fitch, respectively.

Bloomberg reported earlier that EDF sought to raise at least EUR 500 million. The issue was several times oversubscribed. EDF issued the equivalent of EUR 10 billion in green bonds in the past ten years, according to its website. The bonds are technically green, but they are specifically earmarked for nuclear energy rather than a variety of renewables and climate action, as many investment funds and banks don't buy such securities.

EDF wants in on Slovenia's nuclear power plant project

In other news from the sector, Canada indicated it would issue green-nuclear bonds by the end of March. It is the first time a sovereign borrower included the technology in its framework. The government sold its first green bonds in March 2022. Canada is the home of the world's inaugural green-nuclear bond package, issued in 2021 by Bruce Power. As for EDF, it has just signed several agreements with Canadian, Czech, French, Indian, Polish and Italian companies. The deals are aimed at developing local supply chains for EPR technology (European pressurized reactors) and the small modular reactor (SMR) projects of its Nuward subsidiary.

Furthermore, it proposed to Slovenia's GEN energija to support the construction of two EPR1200 units and alternatively one EPR unit.

Balkan Green Energy News
http://balkangreenenergynews.com/

1 December 2023

South Africa approves 1 GW solar project

Eskom has granted a permit to German developer Soventix for a 1 GW solar project under development in the town of De Aar, South Africa. The installation will be one of the first projects of this size to be connected to the South African state-owned power utility's transmission network.

Soventix said in a statement that construction of the first 342 MW phase of the project will begin from the first quarter of 2024. "The scope and planning of this project will pave the way for other developers and IPPs to connect projects of this size to the network in the future," said Soventix. The project was developed under the South African Renewable

Energy IPP Procurement (REIPPP) program of the Department of Mineral Resources and Energy.

For operational reasons, the company split construction into three stages. In July 2022, the rights to the first phase of the project were sold to South African operator Solar Africa, which is expected to either resell the completed project or generate green electricity certificates. Soventix is developing phases two and three of the project, ultimately bringing it to 1 GW. The company has also developed agrivoltaic tests during different phases to collect data. The De Aar power plant is based on single-axis solar tracker technology. Soventix said it plans to evaluate opportunities to couple the project with sheep farming, the most widespread agricultural activity in the region.

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

2 December 2023

This new drone tech will spin wind turbines through the winter

Damp and cold conditions have long plagued the efficiency of wind power. When ice forms on rotor blades, it induces rotational imbalance, leading to increased wear and tear.

A team of experts from the Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM and the Fraunhofer Institute for Manufacturing Engineering and Automation IPA has pioneered a solution to safeguard wind turbines against the menace of ice. The project, named "TURBO — Temporary coating by means of drones," introduces a cost-effective alternative that could revolutionize the way wind energy is harnessed and maintained. Traditionally, combating this issue has been an expensive endeavor. From integrating heating mats into blades to using helicopters for de-icing agent application, operators faced substantial costs and production interruptions as the turbines would have to be shut down, often for days.

“Drones that are only used when needed offer a cost-effective alternative,” said Andreas Stake, project manager at Fraunhofer IFAM, in a statement. Although this isn’t the first time drones have been used to clear ice off turbine blades, it still isn’t an off-the-shelf solution that fits all scenarios and comes with its share of challenges. The key challenge was to develop an environmentally friendly coating material that adheres well to the rotor blades and remains durable for an extended period to ward off ice. The team at Fraunhofer IFAM created a prototype coating made from urea and wax that meets these criteria. This coating material can be efficiently applied using a spray technique, ensuring quick drying. The efficacy of the coating was rigorously tested in an ice chamber, confirming its ability to reliably protect against frost formation.

To apply the coating precisely, the team at Fraunhofer IPA designed specialized equipment. An airless pump system with a lance and nozzle featuring a diameter of just 0.3 millimeters, enables the spraying of droplets as small as 100 micrometers. This precision ensures that even at wind speeds of 35 kilometers per hour, the coating can be accurately applied to the crucial edges of the rotor blades where ice first begins to form when wet, cold air hits the turbine.

The success of the project hinged on sophisticated fluid dynamic simulations. Dr. Oliver Tiedje, project manager at Fraunhofer IPA, and his team utilized their extensive experience in modeling coating processes to determine crucial technical parameters. "Our decades of experience in modeling coating processes really helped us out. We were able to draw on this expertise," Dr. Tiedje explained. “However, we did have to adapt the process parameters to the complex geometry of the wind turbines.”

Buoyed by their achievements, the researchers are now collaborating with industry partners to refine the technique further and prepare it for mass production. They see

applications extending beyond wind turbines, with potential uses in protecting overhead lines in rail transport and refurbishing challenging-to-reach parts of buildings

The project, supported by 19 companies across various sectors— including coating and raw material manufacturers, manufacturers of drones, and operators of wind turbines— was submitted as an Industrial Collective Research project (IGF) and received funding from the Federal Ministry for Economic Affairs and Climate Action (BMWK).

Interesting Engineering
http://interestingengineering.com/

4 December 2023

China's renewable energy capacity tops 1.4 TW

China's NEA said last week that the country's total installed renewable energy capacity has exceeded 1.4 TW, which represents approximately 49.9% of the nation's total electricity generation capacity. The capacity includes 420 GW of hydropower, 404 GW of wind power, 536 GW of solar, and 44 GW of biomass.

NEA said that by the end of 2023, China's national renewable energy power installation will exceed 1.45 TW, with wind and solar power installations surpassing 1 TW. China added 191 GW of new renewable energy installations between January and October of this year, up 90.8% year on year, and accounting for 76.4% of the country's new power installations.

This new capacity includes 8.44 GW of hydropower, 37.31 GW of wind power, 142 GW of solar, and 2.32 GW of biomass. It is expected that in 2023, China's new installation of wind and solar PV will exceed 200 GW.

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

4 December 2023

Sichuan, Yunnan Provinces to Improve Electricity Mix as Hydropower Struggles to Meet Demand

Southwestern Sichuan and Yunnan provinces, which account for around 43 percent of China's hydroelectricity generation, are looking to diversify their power generation sources in order to guarantee electricity supply as increased factory activity and long periods of drought put pressure on its hydroelectricity output.

The construction of more secure and reliable power generation systems needs to be accelerated to reduce the reliance on hydropower, Sichuan Governor Huang Qiang said at a recent conference. Sichuan province used to be solely a generator of power, but now it also buys electricity, Huang said. Alternative sources of power such as wind and solar energy should be increased.

There have been changes in the supply and demand of electricity in Yunnan province, Governor Wang Yubo said. Sichuan's power shortage is due to a big jump in demand caused by both industrial development and accelerated urbanization, Ma Guangwen, deputy head and secretary-general of Sichuan Energy Association, told Yicai. Also, no new power generation sources have been established, and the amount of electricity distributed outside the province needs to be guaranteed.

Until last year, the biggest problem the two provinces faced in terms of power generation was oversupply. They even had to keep some hydropower plants idle as they could not use up all the electricity. But since 2018, Yunnan and Sichuan have been encouraging energy-hungry industries such as electrolytic aluminum, polysilicon and battery producers as well as Big Data companies to settle in the two provinces to try and use up the excess hydropower capacity.

But in the case of extreme events, such as a prolonged dry spell, the hydropower stations struggle to generate sufficient electricity. Last year, drought hit southwest China and both provinces had to introduce power rationing, forcing some businesses to halt production. And this year does not look like it will be much better. Since last month, eastern parts of Yunnan as well as the west and south of southwestern Guizhou province have experienced extremely dry weather, according to Zhang Jiancheng, deputy director of the National Meteorological Center.

Yunnan's electrolytic aluminum sector, which will churn out one fifth of the country's total at over 8 million tons a year once all the capacity comes online, is being affected by six rounds of power rationing in Dehong Dai and Jingpo Autonomous prefectures that started on Nov. 1, according to information released in late October. Sichuan's grid needs an additional installed capacity of over 50 million kilowatts by 2025, according to the five-year-plan issued by the province at the end of last year.

The province plans to boost the proportion of wind-and-solar-generated electricity to 19.3 percent by 2025 from 6.3 percent in 2021 and thermal power should climb to 16.6 percent from 15.9 percent, the report said. This will allow the ratio of hydropower to fall to 64.1 percent from 77.8 percent.

Yicai
http://www.yicaiglobal.com/

4 December 2023

Australian utility tests nickel-hydrogen battery

AGL and United State-headquartered energy technology company SLB have signed a memorandum of understanding (MOU) to pilot a nickel-hydrogen battery – expected to be the first of its kind in Australia – at AGL's Torrens Island site in Adelaide.

SLB will supply AGL with a 180 kW/360 kWh nickel-hydrogen battery for the two-year pilot program which is expected to commence in 2025. The pilot project will test the operational performance of the technology, with the battery providing storage for on-site power use.

Travis Hughes, general manager of AGL's Energy Hubs unit, said nickel-hydrogen battery technology is an example of the battery technologies the company is exploring as part of its broader ambition to add up to 5.9 GW of firming capacity to its portfolio by 2035. "This is the first new battery technology AGL is piloting since it established an emerging battery technology team," he said, noting that nickel-hydrogen technology could be a potential alternative to the lithium-ion solutions that currently dominate the stationary energy storage market.

"Nickel-hydrogen batteries have been identified as a technology which may offer different benefits when compared with lithium-ion batteries such as the potential for a longer cycle life, the potential to withstand a greater temperature operating range – meaning more potential applications and reduced need for cooling – and the potential cost benefits associated with these advantages," he said.

While the Torrens Island pilot is expected to be the first deployment of a nickel-hydrogen battery in Australia, the technology is not new. Nickel-hydrogen batteries consist of a stack of electrodes inside a pressurised gas tank. The cathode is nickel hydroxide and the anode is hydrogen. When the battery is charging, a catalytic reaction generates hydrogen gas. During discharge, the hydrogen oxidises and converts back to water.

The technology has been used for decades in aerospace applications but the use of expensive platinum catalysts has ruled out the use of the batteries in grid-scale scenarios.

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

4 December 2023

ADB, Indonesia to retire 660MW coal plant almost seven years early

The 660-megawatt coal-fired power plant (CFPP) Cirebon-1 in Indonesia will likely be retired almost 7 years earlier than scheduled as a result of discussions with the plant's owners and the Government of Indonesia under the Energy Transition Mechanism (ETM) program of the Asian Development Bank (ADB).

A nonbinding framework agreement signed at COP28 by ADB, Indonesian state-owned power utility company PT PLN, independent power producer PT Cirebon Electric Power (CEP), and the Indonesia Investment Authority (INA) stated that they have conditionally agreed to shorten the power purchase agreement for Cirebon-1 and end the plant's obligation to provide electricity in December 2035 instead of the original July 2042. The transaction is to be finalized in the first half of 2024.

Indonesia Minister of Finance Sri Mulyani gave a keynote speech at the event where she witnessed the signing together with ADB President Masatsugu Asakawa.

CFPPs typically operate for 40 years or longer. Since Cirebon-1 was commissioned in 2012, retiring the plant in 2035 would avoid over 15 years' worth of greenhouse gas emissions. Replicating this transaction with other power plants in Asia and the Pacific and beyond, would achieve significant carbon dioxide emission reductions.

"This framework agreement is a key development for this transaction and Indonesia's energy transition that will lead to a significant cut in greenhouse emissions," said Mr. Asakawa. "We are grateful to the Government of Indonesia and to Cirebon Electric Power for their perseverance and leadership on the energy transition. ADB will continue to work closely with our partners in Indonesia and across the region to demonstrate that coal and other fossil fuel plants can be retired early in a just and affordable manner—a win for climate and a win for communities."

"ETM provides an innovative approach for companies like CEP to make the transition from coal to clean energy while providing reliable and affordable power for Indonesia's energy infrastructure," said CEP President Director Hisahiro Takeuchi. "This framework agreement is a significant step towards finalizing this transaction. We are proud to be working in partnership with the Asian Development Bank, PLN, and Indonesia Investment Authority."

"PLN is committed to being the leader in Indonesia's energy transition toward net zero emissions in a just and affordable manner," said PLN's President Director Darmawan Prasodjo. "PLN has put great effort into decarbonizing by cancelling 13.3 GW of planned CFPP, terminating a power purchase agreement of 1.3 GW CFPP, and halting new developments of CFPP. Early coal retirement is an extraordinary initiative that requires international support such as ETM. Working through the ETM with CEP signifies PLN's commitment to clean energy and exemplifies collaborative actions taken by PLN to accelerate energy transition in Indonesia."

"INA's mandate is to contribute to Indonesia's sustainable economic development and build wealth for the country's future generations," said Chief Executive Officer Ridha D. M. Wirakusumah. "We are committed to enhancing our partners' efforts for scaling up ETM activities. This journey towards reducing carbon emissions is key to our transition to renewable energy, crucial for Indonesia's resilience and prosperity." ETM is a scalable, collaborative initiative that leverages a market-based approach to accelerate the transition from fossil fuels to clean energy. It will use concessional and commercial capital to retire or repurpose coal and other fossil fuel plants on an accelerated schedule and help direct investments toward reliable and affordable clean energy.

The framework agreement is subject to the conclusion of due diligence including environmental, social, and just transition reviews. The framework agreement is also subject to the results of an ongoing study of the technical and financial impact of the early closure of the plant on PLN's electricity system—currently being undertaken by PLN and ADB. The agreement confirmed the parties will continue discussing the financing scheme for the early retirement of Cirebon-1, as well as the impact of its early retirement on PLN's plan to meet power demand through more clean energy or renewable energy generation.

So far, ADB's ETM program is active in five countries: Indonesia, Kazakhstan, Pakistan, the Philippines, and Viet Nam, with ETM in Indonesia at the most advanced stage. It is also considering transactions in two other countries. ADB is committed to achieving a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty. Established in 1966, it is owned by 68 members—49 from the region.

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

6 December 2023

Moldova, Romania to sign Memorandum on interconnection of natural gas and electricity networks

Ministries of Energy of Moldova and Romania will sign a Memorandum of understanding on implementation of projects for the interconnection of natural gas and electricity networks on December 11. Its signing was authorized at today's cabinet meeting.

Referring to the natural gas sector, the Memorandum provides for the possibility to increase the natural gas transport capacity and expand Iasi-Ungheni-Chisinau gas pipeline through the construction of a gas transport pipeline - Chisinau Belt. The Ministry of Energy noted that the goal could be achieved by late 2031.

In terms of electricity, the Memorandum sees 400 kV Overhead Power Line Suceava - Balti, extension of the 400 kV Suceava station and the 400 kV Bălti station, the project of the 400 kV Overhead Power Line interconnection between Străşeni and a power station on the territory of Romania, established by CNTEE Transelectrica SA, as well as the development of the existing 110kV Huşi-Cioara electricity interconnection line. Moldelectrica company will integrate into the balancing market administered by CNTEE Transelectrica SA. State Secretary of the Ministry of Energy Cristina Pereteatcu said "the advancement of the investment projects set in the Memorandum will increase the degree of security in the supply of energy resources of Moldova and Romania, and will contribute to the diversification of sources and supply routes at regional level".

Moldpres
http://www.moldpres.md/

6 December 2023

World's first 4th-generation nuclear power plant goes into commercial operation in China

China's Shidaowan nuclear power plant, the world's first fourth-generation reactor, has begun commercial operations, one of the companies behind its development said.

The high temperature gas-cooled reactor (HTGR) went online following a week-long (168 hours) continuous operation test, state-owned China National Nuclear Corporation (CNNC) said in announcing the feat on Wednesday. Fourth-generation nuclear reactors are designed to be successors for the existing, often water-cooled, nuclear reactors in operation around the world. The reactor at the Shidaowan plant in China's eastern Shandong province is part of a global push for safer, more sustainable and efficient nuclear operations.

Instead of using water to cool the system, the high-temperature reactor will be cooled using helium gas, offering a promising way to develop more inland nuclear plants, as they will not need to be located next to a water source. High-temperature reactors can produce heat, power, and hydrogen, and would help China and the world “become carbon neutral”, said Zhang Zuoyi, dean of the Tsinghua University Institute of Nuclear and New Energy Technology and chief designer of the Shidaowan reactor project.

Xinhua
http://news.cn/

6 December 2023

Decommissioning permit issued for German reactor

"The dismantling programme for the fifth and last nuclear power plant in Baden-Württemberg has thus been approved in all sub-scopes within the framework of nuclear law," EnBW said. The company had previously obtained decommissioning permits for Neckarwestheim 1, the Obrigheim plant and for units 1 and 2 of the Philippsburg plant. EnBW applied in July 2016 for a permit to decommission and dismantle Neckarwestheim 2.

"EnBW is thus the first operator of nuclear power plants in Germany for whose nuclear power plants all dismantling permits have been obtained," the company said. "In addition, EnBW is the only operator in Germany to date that has already received dismantling approval for two plants before they were finally shut down. In 2019, EnBW had done this for the first time for Philippsburg 2 and was now able to repeat this for Neckarwestheim 2".

EnBW noted, "After the public announcement, the approval can be challenged during the appeal period of one month at the Mannheim Administrative Court". In August 2011, the 13th amendment of the Nuclear Power Act came into effect, which underlined the political will to phase out nuclear power in Germany. As a result, eight units were closed down immediately: EnBW's Phillipsburg 1 and Neckarwestheim 1; EOn's Isar 1 and Unterweser; RWE's Biblis A and B and Vattenfall's Brunsbüttel and Krümmel. The remaining reactors were scheduled to shut by the end of 2022.

However, in October last year, the German federal cabinet approved an executive decision by Chancellor Olaf Scholz to allow the country's three remaining nuclear power plants to continue operating beyond the end of 2022. It approved a draft amendment to the Atomic Energy Act which enables the Emsland, Isar 2 and Neckarwestheim 2 plants to operate until 15 April 2023 at the latest.

"This means that Neckarwestheim 2 can be quickly shut down and dismantled after the statutory end of power operation on April 15, 2023," said Environment Minister Thekla Walker. "The Ministry of the Environment, as the responsible supervisory authority, will closely and intensively accompany the dismantling that is now beginning". Neckarwestheim 2 is a 1400 MWe pressurised water reactor that began operating in 1989. It generated more than 11 TWh of electricity in 2022. Unit 1 of the Neckarwestheim plant was shut down in 2011 and has been dismantled since 2017.

"Today's receipt of the dismantling permit for Neckarwestheim 2 is not only an important step for the Neckarwestheim site, but also a strong signal that EnBW is serious about implementing the energy transition," said Jörg Michels, Managing Director of the EnBW nuclear power division. "Our master plan for decommissioning, which we defined more than ten years ago, aims, among other things, to ensure the safe and speedy decommissioning of our nuclear power plants.

Since dismantling requires approval, our strategy was designed to obtain these approvals. Now we are the first in Germany to have all the necessary permits. We are very proud of this and would like to thank all of our colleagues who have made this possible with their years of commitment".

The last fuel rods from the Philippsburg nuclear power plant, also in the state of Baden-Württemberg, have today been removed the site. Since March 2022, the fuel still remaining in the storage pool of unit 2 has been packed into 40 casks and transported to the onsite interim storage facility of BGZ Gesellschaft für Zwischenstorage mbH.

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

7 December 2023

Invenergy announces formation of Jersey HVDC Link initiative

Invenergy, a prominent privately held developer, owner, and operator of sustainable energy solutions, has officially introduced Jersey Link—a renewable energy transmission initiative aimed at fostering a robust clean energy market in New Jersey, the US. The company acquired this early-stage project, previously recognised as Atlantic Power Transmission, from Blackstone Infrastructure Partners, who will continue to provide ongoing support for the initiative. Aligned with New Jersey's ambitious goal to incorporate 11,000MW of offshore wind by 2040, Invenergy's Jersey Link project stands out as an innovative, scalable, and all-encompassing High-Voltage Direct Current (HVDC) transmission solution. This initiative is designed to facilitate the seamless integration of up to 3,600MW of new offshore wind into New Jersey's grid, thereby supplying power to millions of homes across the state.

Investing in transmission infrastructure is crucial to meeting the expanding electricity demands in America, and it has the potential to spur substantial economic growth. This investment not only directs funds into the economy but also creates new skilled job opportunities, particularly benefiting coastal communities through revitalisation efforts. Invenergy's Jersey Link project continues to build on a robust labour coalition that initially backed Atlantic Power Transmission.

As it progresses, the initiative is committed to advancing workforce development through strategic labour partnerships, further contributing to the growth and sustainability of the local economy. Invenergy has a substantial commitment to New Jersey, serving as the lead developer for the Leading Light Wind project—an American-led offshore wind initiative that recently submitted a bid to supply up to 2,400MW of clean energy to the state. Beyond its local involvement, Invenergy is a global pioneer in state-of-the-art High-Voltage Direct Current (HVDC) transmission, a crucial technology for the seamless integration of clean energy.

Currently, Invenergy is at the forefront of developing over one-third of the proposed HVDC transmission capacity in the US. This includes the ambitious 5GW, 800-mile Grain Belt Express, which stands as the highest-capacity transmission line in the US, geared towards delivering affordable and reliable power to the Midwest and other regions. Leveraging its extensive experience in development, project execution, and HVDC technology, Invenergy's Jersey Link initiative is poised to create a technically robust, economically viable, and constructible project.

New Jersey's decision to employ the State Agreement Approach of the PJM grid operator for a second time, along with initiating another competitive solicitation for offshore wind transmission, is a strategic move to address the challenges associated with individual transmission lines for offshore projects. This decision aligns with the recommendations of the US Department of Energy's National Transmission Needs Study, released in October.

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

7 December 2023

At COP28, U.S., Canada, France, Japan, and UK Announce Plans to Mobilize $4.2 Billion for Reliable Global Nuclear Energy Supply Chain

Leaders from the United States, Canada, France, Japan, and the United Kingdom today announced plans to mobilize $4.2 billion in government-led investments to develop a secure, reliable global nuclear energy supply chain. These investments will enhance uranium enrichment and conversion capacity over the next three years and establish a resilient global uranium supply market free from Russian influence.

This announcement, made at the Net Zero Nuclear Summit on the sidelines of the United Nations Framework Convention on Climate Change's 28th Conference of the Parties, follows last week's pledge by 22 countries to triple nuclear energy capacity globally by 2050. Nuclear energy is key to achieving global net-zero greenhouse gas emissions by 2050 and keeping the goal of limiting temperature rise to 1.5 degrees Celsius within reach. To achieve these goals, the United States and other countries will need a reliable and secure supply chain for uranium. The full statement is below. On the occasion of the 28th Conference of the Parties of the United Nations Framework Convention on Climate Change (COP28), convened in the United Arab Emirates, on this 7th day of December, 2023;

Recognizing that we five nations of the G7, organized in Sapporo, are collectively responsible for 50 percent of the world's uranium conversion and enrichment production capacity;

Recognizing the global aspirational goal to triple nuclear energy generation by 2050 and, particularly, the need for resilient supply chains, including fuel, to deliver safe and secure nuclear technologies as affirmed in the Net Zero Nuclear declaration;

The nations colloquially known as the "Sapporo 5," to include the United States, Canada, France, Japan, and the United Kingdom:

Resolve to promote public-private investment in enriched uranium production capacity free from Russian material;

Resolve to establish a resilient global uranium supply market free from Russian influence and the potential to be subject to political leverage by other countries;

Resolve to work towards enabling the investment of government or private-led financial resources necessary to increase our own conversion and enriched uranium production capacity and to advance efforts to secure reliable nuclear fuel suppliers;

Underscore our announcements to pursue at least USD $4.2 billion in government-led and private investment in our five nations' collective enrichment and conversion capacity over the next three years, with a view to catalyze private sector finance, without prejudice of open market rules among like-minded nations;

Invite nuclear electricity generating utilities or direct nuclear energy industrial end-users of like-minded nations to develop long-term supply strategy that signals and provides confidence to the industry to make the relevant investment to increase their capacity;

Invite all likeminded nations seeking reliable nuclear energy partners to join us in securing the global uranium supply chain.

ENERGY.GOV
http://www.energy.gov/

8 December 2023

World's largest concentrated solar power project launched in Dubai

Dubai has inaugurated the world's largest concentrated solar power (CSP) project within the 950MW fourth phase of the Mohammed bin Rashid Al Maktoum Solar Park in the UAE. The project was launched by UAE Prime Minister and vice-president Sheikh

Mohammed bin Rashid Al Maktoum. The fourth phase comprises three hybrid technologies: a 600MW parabolic basin complex, a 100MW CSP tower and 250MW photovoltaic solar panels. The project also features 70,000 heliostats that track the movement of the sun. The thermal energy storage capacity of the fourth phase is 5.9 gigawatt-hours. The CSP tower is the tallest in the world at 263m. The phase was designed and built by Noor Energy 1, which will also operate it.

The Dubai Electricity & Water Authority (DEWA) holds a 51% stake in Noor Energy 1, while Acwa Power holds 25% and the Chinese Silk Road Fund the remaining 24%. Entailing an investment of Dh15.8bn ($4.3bn), the project was built under an independent power producer model. It will generate clean energy for 320,000 households while reducing carbon emissions by 1.6 million tonnes annually. Sheikh Mohammed bin Rashid Al Maktoum stated: “The UAE has a clear vision to transform itself into one of the world’s most sustainable nations. Our journey towards sustainability is comprehensive, encompassing advanced clean energy projects across diverse renewable sources, and innovative solutions integrated into various spheres of the economy and society.

In September 2023, UAE energy company Masdar reached an agreement with DEWA to build and operate the 1.8GW sixth phase of the project. To be built with an investment of Dh5.51bn, this phase will bring the total capacity of the Mohammed bin Rashid Al Maktoum Solar Park to 4.6GW.

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

8 December 2023

Connecting Europe Facility: Nearly €600 million for energy infrastructure contributing to decarbonization and security of supply

EU Member States have endorsed a Commission proposal to invest €594 million of EU funds in eight cross-border energy infrastructure projects under the Connecting Europe Facility (CEF) for Trans-European Networks for Energy. In the last call for funding proposals open to Projects of Common Interest (PCIs) from the 5th PCI list of November 2021, five carbon dioxide (CO2) networks projects, one gas storage project, and two projects in the electricity sector have been selected for funding.

At a time when there is increasing momentum for the development of carbon capture, storage and utilization (CCUS) to decarbonize hard-to abate sectors, an unprecedented amount of CEF funding for works (almost €480 million) will be awarded to four CO2 transport and storage projects. They constitute the first building blocks of a future Europe-wide carbon value chain that are scheduled for completion before the end of the decade and are therefore expected to contribute to the EU’s 2030 decarbonization objectives. A maximum of €189 million is intended for a CO2 export hub in the port of Dunkirk in France, called D’Artagnan. CEF will support the construction of a collecting pipeline and an export terminal to provide industrial sites in the port and its hinterland with a route to export their captured CO2 to storage sites abroad.

€157 million will be awarded to CO2 infrastructure in the port of Rotterdam in the Netherlands, consisting of an import terminal for the reception of CO2 from carbon capture sites in various Member States (CO2NEXT project, €33 million in CEF grant) and of a 200 km undersea trunkline (Aramis project, €124 million in CEF grant) connecting the port to the future CO2 storage site in a depleted gas field offshore. Finally, €131 million is intended for the Northern Lights initiative, a cross-border project linking CO2 capture initiatives in several EU Member States with a future storage site at sea on the Norwegian continental shelf. The proposed CEF grant will support the expansion of the CO2 import terminal in Øygarden in Norway and the construction of a 100 km offshore pipeline to the storage site.

Regarding the electricity sector, funding for works worth €100 million will be awarded to the Gabreta smart grids project, located between Czechia and Germany. Gabreta will allow for the integration of renewable electricity, notably by reducing bottlenecks in connection requests, improving grid controllability, and enabling innovative market solutions. The existing Depomures natural gas storage facility in Romania will receive funding worth €12.77 million to increase its working capacity and its daily injection and withdrawal rates. In line with the REPowerEU Plan, the upgrade of the Depomures storage makes an essential contribution to market integration and natural gas security of supply for Romania and its neighbouring countries by mitigating the lack of storage capacity in a region greatly affected by the gas crisis.

The EU CCS Interconnector, a CO2 infrastructure project Gdansk in in Poland, and the project to reinforce the Lonny-Achêne-Gramme electricity interconnector between France and Belgium will both be awarded CEF funding for studies necessary to their implementation, worth €2.54 million and €1.22 million respectively. Today's announcement follows the Commission's call for proposals for PCIs in April 2023, the evaluation of applications by the Commission and a positive vote by Member States on the Commission's proposal in the CEF Coordination Committee, which took place on 7 December 2023. The formal adoption of the decision will follow in the coming weeks. The 2023 call for proposals for PCIs was the last call open to projects that had been granted PCI status based on the previous TEN-E Regulation (EU) 347/2013, via the 5th PCI list adopted in November 2021. Therefore, natural gas projects were still eligible to apply for it. Every two years, the Commission adopts an EU list of PCIs. In November 2023, the Commission adopted a new list based on the revised TEN-E Regulation (EU) 2022/869, which also includes Projects of Mutual Interest (PMI) between EU Member States and third countries.

Energy infrastructure projects that obtain the PCI or PMI status are eligible for a CEF Energy grant for studies or for works. To be selected as a PCI or PMI, infrastructure projects must have a cross-border dimension, present overall net benefits for the Union, contribute significantly to sustainability of the energy system and have positive impacts in terms of market integration, competitiveness or security of supply. In the period 2014-2020, CEF-Energy allocated €4.6 billion to studies and works supporting the implementation of 109 PCIs. In the period 2021-27, €5.9 billion are available for CEF-Energy, and grants worth a total of 1.66 billion have already been awarded.

EU
http:/ec.europa.eu/

9 December 2023

Iran, Qatar to connect power grids through sea

Iran is capable of exchanging electrical energy with all the countries that have a land border, but so far, the infrastructure of connecting the power network through the sea has not been prepared with the neighbors that the country has a maritime border with.

Qatar seems to be the first country that Iran will connect its electricity network with through the sea. One of the most important documents signed by the two countries during the visit of the Iranian president and his accompanying delegation to Qatar was the memorandum of understanding on an electrical connection between Iran and Qatar with a capacity of 1000 megawatts. According to an official in Iran Power Generation, Distribution and Transmission Company (Tavanir) the project is currently being pursued.

Mehr News Agency
https://en.mehrnews.com/

9 December 2023

Sri Lanka experiences a temporary power outage after a main transmission line fails

Sri Lanka experienced an island-wide power outage for several hours Saturday after a system failure in one of the main transmission lines, the country's power and energy ministry said.

The power outage began Saturday evening and continued for several hours."Step by step restorations are underway and it may take few hours to completely restore the power supply," said the ministry in a statement. Sri Lanka largely depends on hydro power for power generation, while coal and oil are used to cover the balance. During the dry season, the country is compelled to use more thermal power for generation of electricity.

Sri Lanka experienced several hours of daily power cuts last year for several months due to plunging water levels powering hydroelectric dams. The power crisis worsened as Sri Lanka faced difficulty in importing sufficient stocks of oil and coal after the country's foreign reserves were depleted during an unprecedented economic crisis.

Sri Lanka plunged into am economic crisis in 2022, creating severe shortages and drawing strident protests that led to the ouster of then-President Gotabaya Rajapaksa. It declared bankruptcy in April 2022 with more than $83 billion in debt — more than half of it to foreign creditors. Under new President Ranil Wickremesinghe, a continuous power supply has been restored. But there has been growing public dissatisfaction with the government's efforts to increase revenue by raising electricity rates and imposing heavy new income taxes on professionals and businesses. Sri Lanka has sought the support of the International Monetary Fund to rescue the economy.

The IMF agreed in March to a $2.9 billion bailout package, releasing the first payment shortly thereafter. However, the IMF delayed the second tranche, citing inadequate oversight and debt restructuring. An IMF review in September said Sri Lanka's economy was recovering but the country needed to improve its tax administration, eliminate exemptions and crack down on tax evasion. Sri Lankan government officials have expressed confidence over the last two weeks that the IMF would provide the $334 million installment before the end of the year since the island nation received required financial assurances from its bilateral creditors, including China, Japan and India.

AP News
http://apnews.com/

11 December 2023

Brazil to resume electricity imports from Venezuela after four years

Brazil will resume electricity imports from its neighbor Venezuela after more than four years of hiatus, Brazil's energy and mines ministry and energy firm Ambar said on Monday. The move is expected to reduce energy costs for consumers in the Brazilian state of Roraima, which is the country's only state not connected to the national grid.

The Brazilian government late last month authorized Ambar, an energy trading company controlled by the J&F group, to import electricity generated by the Guri hydroelectric plant in Venezuela in a process that should begin soon, according to Ambar.

The authorization is valid until January of next year. Brazil stopped buying energy from its neighbor in 2019 after relations between the countries deteriorated under Brazil's former President Jair Bolsonaro. Since then, the state has used electricity from costly diesel-fired plants. "Ambar is offering the energy at an average cost 50% lower than the price currently paid by consumers to supply the state of Roraima," the company said in a statement.

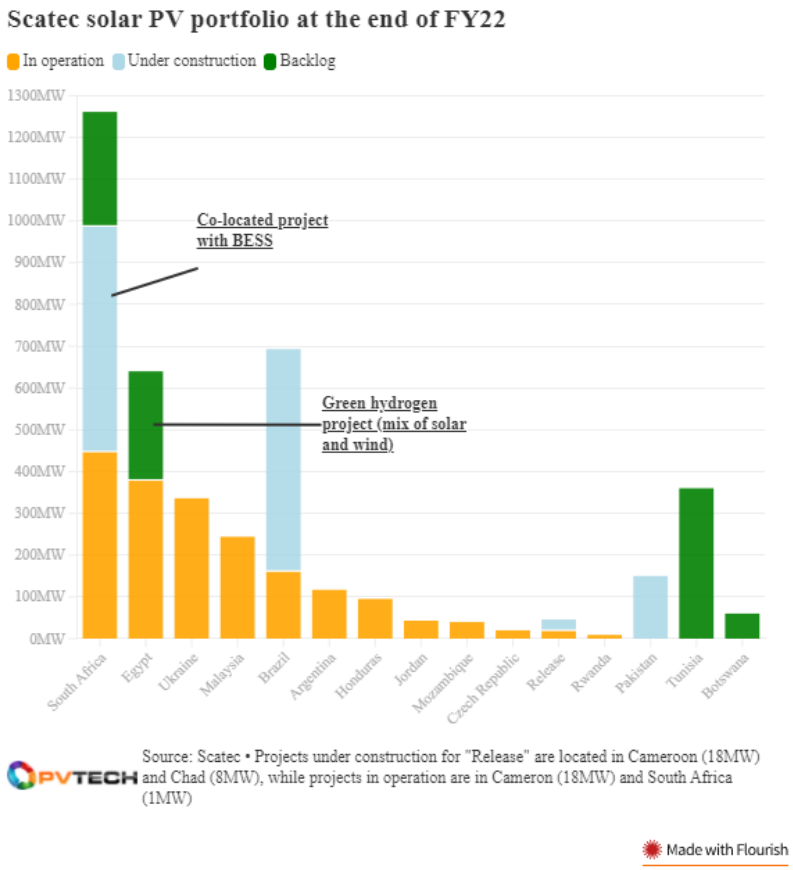
Reuters
http://www.reuters.com/

12 December 2023

Scatec completes 540MW solar-plus-storage project in South Africa

Norwegian independent power producer (IPP) Scatec has commissioned a 540MW solar-plus-storage project in South Africa.

Located in the Northern Cape province, the Kenhardt project consists of three solar plants and a battery energy storage system (BESS) with a capacity of 225MW/1,140MWh. Under a 20-year power purchase agreement (PPA) with state-operated utility Eskom signed last year, the project will deliver 150MW of power to the national grid between 5am and 9:30pm.



Data on the chart as of the end of fiscal year 2022. Chart: PV Tech.

The project had an investment of nearly US$1 billion and was Scatec's largest project commitment, with the debt provided by a group of lenders which includes the Standard Bank Group, acting as lead arranger, and British International Investment (BII). The combination of solar PV with battery storage will allow for dispatchable power to be supplied during peak demand from the battery and improve grid stability, an issue that has been persistent in South Africa for years.

With a strong presence in South Africa, as shown in the chart below, Scatec reached financial close on three solar plants earlier this year which will have a combined capacity of 273MW. Terje Pilskog, CEO of Scatec, said: "This is more than just a power plant; it's a testament to the limitless potential of integrating solar and battery storage to meet the evolving energy needs of today and tomorrow." Early in the year, the IPP sold its 42% equity share in a 258MW solar PV project in the country with the capital used to invest in renewables.

PV-tech
http://www.pv-tech.org/

13 December 2023

European Commission announces additional €680 million investment package for the Western Balkans under the Economic and Investment Plan

Today, the European Commission announced a new €680 million investment package to support five flagship investments in rail transport and renewable energy in the Western Balkans. This is the sixth financial package under the EU's Economic and Investment Plan for the Western Balkans, which is expected to mobilise €16.6 billion in investments. Projects have been prepared in close cooperation with the Western Balkans partners and international financial institutions.

European Commission President, Ursula von der Leyen, said: "In an increasingly fragmented world, we need an even stronger and united community of values. Enlargement is key to achieve this. While we continue to work together on accession, we need to take decisive actions to bring the Western Balkans closer to our economy. With the projects worth €680 million just approved, we are accelerating our shared journey towards a green and better-connected future by upgrading transport links and harnessing renewable energy. Together, we are laying the foundations for sustainable growth and closer integration, demonstrating once again our strong commitment to the region's prosperity and its path towards EU membership".

The €680 million investment package, includes €253.2 million in EU grants from the Instrument for Pre-accession Assistance (IPA III), favorable loans from international financing institutions, and contributions from the Western Balkans, has been endorsed on 8 December by the Operational Board of the Western Balkans Investment Framework (WBIF).

The five new projects approved cover the following two priority sectors:

Sustainable transport: reconstruction of Corridor VIII railway line in Albania and rehabilitation of Bar – Vrbnica railway line in Montenegro. These projects will contribute to upgrade the Western Balkans' railway transport to TEN-T standards and ensure integration with the EU railway network.

Clean energy: construction of two wind farms in Bosnia and Herzegovina and deployment of a solar photovoltaic power plant in Albania. These projects support the transition to low-carbon economies, and foster sustainable development in the region.

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http:/ec.europa.eu/