



**17 May 2022**

### **Japan not considering new nuke plants despite energy security issues**

Japan is not considering building any new nuclear power plants, the country's industry minister said Tuesday, despite concerns over the nation's energy security.

"Taking into account the Ukraine crisis and concerns over a power supply crunch, we will make the most of what we have, including nuclear power," Minister of Economy, Trade and Industry Koichi Hagiuda told a press briefing. Hagiuda also said that along with new talent, resources will be directed at developing a new type of nuclear reactor.

Hagiuda's remarks apparently run contrary to a recently released interim report on a clean energy strategy for achieving a carbon-neutral society, which focuses in part on rebooting Japan's nuclear power plants to bolster energy security. Many of Japan's aged nuclear reactors, which have been taken offline in the wake of the Fukushima nuclear disaster in 2011 for safety inspections and updates, are approaching their 40-year operating limits. Hence, debate has become more vociferous within the industrial sector as to the role of nuclear power in the future of Japan's energy mix. To this end, the Japan Chamber of Commerce and Industry asked the Agency for Natural Resources and Energy on Monday to elucidate the use of nuclear power in the government's energy strategy.

The chamber of commerce called on the industry ministry body to quickly resume operations of the long-idled reactors. Of the country's 36 nuclear power plants, only 10 have been allowed to be rebooted after passing strict safety regulations following the Fukushima disaster. Last year, the government's energy mix put forward included power produced by nuclear means to be limited to 20-22 percent of the total in fiscal 2030, with new energy and renewables comprising 36-38 percent, in line with the country's commitment to achieving a carbon-neutral society by 2050.

*Xinhuanet*

<http://www.news.cn>

**18 May 2022**

### **REE finalises the work scheduled for 2021-2022 for the first phase of the new Ibiza-Formentera link**

Red Eléctrica de España (REE) has concluded in Formentera and is finalising in Ibiza the execution of the first phase of the civil works planned for 2021-2022 regarding the route of the land section of the future 132 kV electricity link between the islands.

On Formentera, civil works have been completed on the PM820 road and the section between it and the new 132 kV Formentera substation, currently under construction, on the Es Ca Marí road, including all the necessary junction chambers for the installation of the land section of the new electricity link that will bolster the existing connection with Ibiza.

In the case of the PM820 road, the final resurfacing of the asphalt road covering has also been completed, with just the installation of the relevant road signage and the painting of road markings still pending, which will be completed very shortly. On the Es Ca Marí road, the partial re asphalted and signposting has also been completed and will be fully completed once the third party works and the civil works linked to the project for the connection section between the existing 30 kV substation and the new 132 kV substation have been completed. These works will be carried out after the summer period in accordance with the indications of the competent public administration authority. Both roads, the PM820 and the Es Ca Marí road, are now reopened to traffic without restrictions.

Regarding the new 132 kV Formentera substation, the earthmoving work has been completed, the civil works are being finalised and the installation of equipment and relevant assembly works will begin shortly. The four reactors, each with a capacity of 9 MVA, which



will be installed in the new substation and which will contribute to maximising the operation of the new link, arrived on the island today.

Civil works in Ibiza have been completed on practically the entire land section of the link, with the exception of Calle Torrent -which will be finished soon- and the Puig den Valls road and the Can Bufí area, where work will resume after the summer period, in accordance with the indications of the competent public administration authority. All the junction chambers associated with the new electricity link that will bolster the existing connection with Formentera have already been installed, and today the re-asphalting campaign has begun on the roads associated with the land section of the new interconnection. Additionally, work has been completed for the enlargement of the existing 132 kV Torrent substation in Ibiza, which is the connection point on the island for the future link. The enlargement consisted mainly of equipping six new 132 kV switching substation bays, four with GIS technology (enclosed inside a building) and two of AIS technology (outdoor), as well as the installation of four 132 kV reactors of 9 MVAR each and the internal wiring for connections between equipment.

Similarly, on both islands, the horizontal directional drilling for the sea-coast approach of the link and the installation of the associated offshore to onshore junction chambers have also been completed, elements that are essential for the underwater cable laying works and for the connection with the land section; work that is planned for after the summer period. In addition, work has also been carried out to restore the natural environment. With the progress made and the schedule planned for the second phase of the works for 2021-2022 and for 2023, the expected deadlines for the commissioning of the new submarine electricity link by the end of 2023 are still on track, as long as there are no unforeseen circumstances arising from global political instability and its impact on the supply chain and other aspects of the economy, which also has a particular bearing on the islands.

The work to be performed after the summer period and in 2023 are basically the completion of the aforementioned specific civil works, the laying of cables for the land section, the configuration of the cable junction chambers, the underwater cable laying works and the new 132 kV Formentera substation, as well as all the necessary tests to ensure the operability and physical and electrical integrity of the new link between the islands of Ibiza and Formentera.

REE

<http://www.ree.es/>

## 18 May 2022

### China's Hainan Province Plans to Create EUR 7 Billion Offshore Wind Supply Chain

Chinese province of Hainan has issued an offshore wind supply chain development plan which includes creating a RMB 50 billion (around EUR 7 billion) worth supply chain industry by 2025 through building an industrial park and two manufacturing sites that will support offshore wind deployment.

The plan sees Hainan's offshore wind manufacturing industry backing the province's own offshore wind buildout as well as exporting to the Beibu Gulf Economic Belt, Southeast Asia and other regions. The Hainan Provincial Wind Power Equipment Industry Development Plan (2022-2025) is aiming to set up coordinated industrial development by focusing on the development of the equipment manufacturing industry around wind farms. This can facilitate cost reduction and easier transportation, and is favourable for agglomeration of professional services, upstream and downstream industrial chains, as well as construction, operation and maintenance, and other industries, according to the news on the Chinese Government's website.



The plan is based on the idea of concentrating as much as possible on the spatial layout and construction of the wind power industrial park, combined with the province's offshore wind farm planning, and fully considers the province's industrial aspects, park positioning, port transportation and other factors. The overall spatial layout of the industrial development includes the Western Offshore Wind Power Industrial Park and two Offshore Wind Power Equipment Manufacturing Bases, one in Dongfang and one in Yangpu.

The equipment manufacturing bases are planned to be built by 2025. According to the Hainan's Provincial Department of Industry and Information Technology, the offshore wind and its equipment manufacturing industry can contribute to low energy consumption, low emission, high technology content and high added value in Dongfang and Yangpu, whose industrial structure is dominated by the oil and gas industry. According to information from the beginning of this year, China is now leading in terms of both installed and connected offshore wind capacity after the country connected a total of 16.9 GW of offshore wind capacity to the grid in 2021.

[Offshorewind.biz](http://www.offshorewind.biz)  
[http://www.offshorewind.biz/](http://www.offshorewind.biz)

### 18 May 2022

#### Simply Blue sets out 5GW Swedish floater plans

Irish floating offshore wind developer Simply Blue Group has unveiled plans for two multi-GW projects in Sweden.

The 2GW Skidbladner wind farm would be located 100km south-east of Stockholm and the 2.75GW Herkules is planned for approximately 60km south-east of the Island of Gotland. Simply Blue Group is working in collaboration with wind energy consultancy Wind Sweden on both projects. Simply Blue Group director of market development Adrian de Andres said: "Floating wind has an important role to play in the Swedish Energy mix as well as Nordpool given it can be located further from shore and therefore its visual impact is significantly reduced. "Our project selection has focused on sites that we believe are environmentally friendly and at the same time technically and commercially feasible.

"We believe floating wind cost reductions will be steep in the next decade and therefore will be able to compete with other renewable energy sources in the 2030s.

"We are excited to bring our global floating wind expertise to Sweden while at the same time working with local companies." Wind Sweden chief executive Jeanette Lindeblad said: "Europe and Sweden are facing an increasingly urgent need to increase the production of renewable and fossil-free energy. Our collaboration with Simply Blue Group is a concrete example of how companies from different countries work together for a more sustainable future. To also be part of a project that is at the forefront of the technical development of offshore wind power, we see as both challenging and honorable."

[Renews.biz](http://renews.biz)  
<http://renews.biz>

### 19 May 2022

#### World-first trial brings renewables one step closer to restarting GB's electricity grid

A live trial in Galloway, south-west Scotland saw a hydro generator connected to the distribution network self-start, energise the local transmission and distribution network, and power up wind turbines on two wind farms within an isolated test network. There has never been a need to restart GB's electricity system from scratch and the prospect remains improbable. However, the success of the trial could create a blueprint for incorporating distributed energy resources (DER) using numerous green energy sources, to fire up



Britain's electricity system in the highly unlikely event of a shutdown of the electricity network.

The scale of the trial and its innovative approach is a world first and ground-breaking moment in the Distributed ReStart project: a collaboration between National Grid ESO, SP Energy Networks and specialist energy consultancy TNEI. Traditionally, large power stations are used to energise the higher voltage transmission network in the unlikely event of a partial or total shutdown of the electricity system, followed by a 'top-down' restoration of demand at lower voltages. The three-year Ofgem-funded Distributed ReStart project is instead trialling a 'bottom-up' approach by utilising DERs such as solar, wind or hydro, to fire up the electricity system. Its aim is to show how this process would restore demand to localised areas of electricity network and establish Distribution Restoration Zones (DRZs).

The trial was a truly collaborative effort with coordination not only required between the National Grid ESO and SP Energy Networks control rooms, but also in the coordination of multiple operational resources and people in preparation for and during the live testing. The result was establishing a stable 'power island' incorporating the hydro generator as the 'anchor', used to initially self-start and energise the local electricity network, and then power up several turbines at Glenchamber and North Rhins wind farms.

These tests proved the viability of connecting multiple DERs to a 'weak' islanded section of the electricity network, and now has the potential to be rolled out across Britain to establish working DRZs and to restore local demand in the event of a partial or total shut down of the electricity system. Using DER and green energy sources to restore GB's electricity system and increasing the diversity of providers would save millions of pounds in costs for consumers through increased competition.

It would also save hundreds of thousands of tonnes of carbon emissions by avoiding warming conventional coal and gas power stations, while boosting the ESO's plans to be able to operate a carbon-free grid by 2025 – an important milestone within the Government's own 2050 net zero target. Flexible demand companies and DERs would also secure revenue benefits for the provision of system restoration services.

Julian Leslie, Head of Networks at National Grid ESO, said: "We have one of the world's most reliable electricity networks, but our role is to be prepared for the most extraordinary of scenarios, including a nationwide power outage. This trial is a breakthrough moment for our Distributed ReStart project, which stands to improve system resilience and security of supply in a cleaner and cheaper way. We are always innovating for a greener future and the huge growth of green energy sources on distribution networks presents an opportunity to reduce our reliance on fossil fuels and co-ordinate a system restoration process using renewables. The concept of meeting our grid restoration needs by renewable generation alone has become closer to reality as a result of this trial."

Scott Mathieson, Network Planning and Regulation Director at SP Energy Networks, said: "The increasingly complex needs of our energy system, coupled with the significant increase in both demand and generation we need to accommodate on our transmission and distribution network, mean it is crucial we ensure the continued security and resilience of our electricity system. We're really encouraged by the results of this latest trial on the Distributed ReStart project, where we're seeing a real opportunity for this innovative approach to improve resilience and timelines for system restoration. Our customers are becoming increasingly dependent on their electricity supply for all of their activities, which is why we're absolutely focused on ensuring we build the network we know they need now and long into the future.

The live trial, led by SP Energy Networks, involved utilising the Kendoon hydro generator as the anchor (used to initially energise the network), along with multiple turbines at Glenchamber and North Rhins wind farms connected to the Glenluce 33 kV Grid Supply





Point (GSP). In addition, a 33 kV loadbank was connected to the test network to simulate customer demand and allow the distributed energy resources (DER) to generate.

The trial successfully:

- energised primary (33/11 kV) transformers (up to 24 MVA) from the Kendoon hydro generator operating at normal voltage levels (11 kV)
- proved the Block Load Pick Up (BLPU) capability of the anchor generator (the amount of instantaneous demand which can be applied while maintaining the frequency above 47.5 Hz)
- energised the Glenchamber and North Rhins wind farm 33 kV cable arrays, and associated turbine transformers, from the anchor generator (initially all turbines were shut down)
- connected several wind turbines at Glenchamber and North Rhins wind farms to the 'weak' islanded network (supplied from Kendoon hydro) and proved stable turbine operation both in power factor and voltage control modes
- established a stable power island with Kendoon hydro and several turbines connected across Glenchamber and North Rhins wind farms simultaneously

NGESO

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

### 19 May 2022

#### Red Eléctrica will adapt the operation schedule of the peninsular electricity system into 15-minute periods

As of Tuesday, 24 May, Red Eléctrica de España will modify the scheduling processes for planning system operation to adapt them to a quarter-hourly scheduling model (i.e., every fifteen minutes), in accordance with European Regulation (EU) 2017/2195 on electricity balancing published on 23 November 2017. In this way, the Company will begin to use 15-minute periods for the allocation and settlement of the ancillary services of the Spanish peninsular electricity system, mechanisms used by the system operator to guarantee the constant security of the system and the balance between electricity demand and generation.

The implementation of this new model will only have an impact on the system ancillary services and will in no way affect the calculation of the final price of energy (available on the Red Eléctrica website and via the redOS app). Additionally, this measure will not alter how prices are graphically displayed to the consumer, which will continue to be shown on an hourly basis, nor will it affect the operation of the day-ahead and intraday markets, which is managed by the market operator, OMIE. It will therefore have no impact on the calculation of the electricity bill of consumers.

The adaptation to the quarter-hourly schedule is the necessary preliminary step in order to connect the peninsular electricity system in 2024 to the platforms that manage the balancing services at European level and that will enable the use of international cross-border connections to be optimised and which seeks to generate the maximum possible efficiencies between all the European electricity systems. Red Eléctrica de España is taking this step to adapt its systems to this new model and to have the necessary technical tools to be able to face the future challenges derived from the integration of the Spanish system into the European internal energy market in a more efficient and agile manner.

New demand curves for Spain, the Canary Islands, Ceuta and Melilla

Coinciding with this modification, the Company is launching four new real-time demand curves: national, the Canary Islands, Ceuta and Melilla. These demand curves will be added to the 14 existing ones (the mainland electricity system, the Balearic Islands system, the systems of each of the 11 islands that make up the Balearic and Canary Islands



archipelagos as well as the Lanzarote-Fuerteventura unified system), which show the behaviour of demand and electricity generation in real-time using instantaneous values which, as of 24 May, will be displayed every five minutes.

These curves, which can be consulted on the Company's Real-time demand and generation webpage or via the redOS app or on the system operator's information portal eSIOS, show the demand forecasts (green line), the generation programmed to meet the demand (red line) and, finally, the actual demand (yellow line), in addition to the composition of the electricity generation mix as well as the tonnes of CO2 equivalent associated with each of the generation technologies.

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<http://www.ree.es/>

### 19 May 2022

#### South Sudan, Ethiopia Sign 100 MW Electricity Trade Agreement

The Republic of South Sudan has signed a Memorandum of Understanding (MoU) with regional neighbor Ethiopia for the purchase of 100 MW of electricity over the next three years. With plans to gradually increase imports to 400 MW, the MoU is key to meeting electricity demand in South Sudan, while increasing revenue for Ethiopia.

As per the terms of the agreement, the first step of the power purchase plan will entail a feasibility study conducted by both countries in the next year.

In the two years following the study, Ethiopia and South Sudan will initially construct a 357 km, 230 kv transmission line that will connect Ethiopia's Gambella region to South Sudan's Malakal region with plans to construct another 700 km line from Ethiopia's Tepi distribution center to South Sudan's capital city, Juba, thereafter.

The MoU was finalized by H.E. Peter Marcello, Minister of Energy and Dams in the Republic of South Sudan together with representatives from Ethiopia's Ministry of Finance, during a South Sudanese official visit to Ethiopia's capital Addis Ababa in the first week of May.

Energy Capital & Power

<http://energycapitalpower.com/>

### 19 May 2022

#### Canadian MoUs advance microreactor deployment

Westinghouse and the Saskatchewan Research Council (SRC) have signed a Memorandum of Understanding (MoU) on a project to locate an eVinci microreactor in Saskatchewan, while an MoU between McMaster University, Ultra Safe Nuclear Corporation (USNC) and Global First Power (GFP) will further examine the feasibility of deploying USNC's Micro Modular Reactor (MMR) at the university or an affiliated site.

The MoU between SRC and Westinghouse Electric Canada will jointly develop a project to locate an eVinci microreactor in Saskatchewan for the development and testing of industrial, research, and energy use applications.

Saskatchewan is home to the largest and highest-grade uranium mines in the world, but does not currently have any nuclear power reactors. Since 2019, it has been collaborating with the provinces of New Brunswick and Ontario - later joined by Alberta - to advance the development and deployment of small modular reactors (SMRs) to address climate change. "For 38 years, SRC was the licensed owner and operator of a SLOWPOKE-2 nuclear reactor, and we look forward to building on that experience with Westinghouse," Minister Responsible for SRC Jeremy Harrison said. "The hands-on experience SRC gained can be applied to emerging nuclear technology, such as SMRs, as we consider how to best power our future." "Modern nuclear reactors have the ability to provide the safe, clean, and



baseload power that Saskatchewan people rely on for their everyday needs," said Don Morgan, the minister responsible for provincial utility for SaskPower. "The advancement of nuclear power in our province will not only modernize our power grid, but result in billions of dollars in additional economic activity."

The eVinci is a heatpipe reactor that can produce 5 MW of electricity and 13 MW of high-temperature heat, and can operate in combined heat and power mode. Westinghouse says this "nuclear battery" provides power solutions at a different scale than centrally generated utility-scale power. It can support various applications including remote mining operations, remote communities, individual industrial heat and power scenarios, distributed hydrogen generation and integrated energy solutions.

In March, the Canadian government announced plans to invest CAD27.2 million (USD21.6 million) in the eVinci microreactor through Innovation, Science and Economic Development Canada's (ISED) Strategic Innovation Fund.

*World Nuclear News*

<http://world-nuclear-news.org/>

### 19 May 2022

#### **Shell to partner with Brazil's Açú to build green hydrogen plant**

Shell and Brazil's Porto do Açú have agreed to jointly build a green hydrogen plant, executives told Reuters, a deal that could result in the debut of the up-and-coming technology in South America's largest nation.

Under the terms of a memorandum of understanding signed on Thursday and first disclosed to the news agency, the firms will build a 10-megawatt green hydrogen plant on the premises of Açú in Brazil's Rio de Janeiro state. The plant is due to be completed by 2025. Green hydrogen is a zero-carbon fuel made by using renewable power to split water into oxygen and hydrogen, increasingly promoted as a way to clean up emissions-heavy industries such as refining and agriculture.

Açú, a massive industrial complex and port, is owned by Prumo Logística SA, which is in turn controlled by U.S. private equity firm EIG Global Energy Partners. Two subsequent, optional phases in the project would bring production to 100 megawatts by 2029, under the terms of the memorandum. The first phase alone will likely require \$20 million to \$40 million in investment, a spokesperson for Shell wrote in an e-mail, warning that those values are subject to change. While several companies have proposed building green hydrogen plants in Brazil, the Shell-Açú deal stands out as a project that will begin shortly, while production is scheduled to start in three years. Most projects proposed in Brazil have not moved past conceptual or viability stages.

The current market of consumers is extremely small. But by creating supply of green hydrogen, the consortium hopes to spur demand, while catalyzing green hydrogen usage writ large, Monique Gonçalves, head of regulatory affairs for Shell in Brazil, and Mauro Andrade, executive director of business development at Prumo, said in a joint interview. Funds to build the plant will come from a pot of resources that Brazil's oil regulator requires each producer to set aside for projects linked to research and development.

*Reuters*

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

### 22 May 2022

#### **US: Summer Will Be Brutal On Wallets — And Hurtful To Decarbonization**

It's not yet Memorial Day, and temperatures across the Mid-Atlantic region are unrelenting. Expect those digits to rise even more over the summer months — not just there



but throughout the United States. So says the North American Electric Reliability Council, which just released its 2022 Summer Reliability Assessment.

The council, known as NERC, oversees the electricity infrastructure. And while every summer has sweaty days, this one will require multiple showers a day. That means more electricity and water usage — commodities that may be in short supply.

Therein is the dilemma: the latest Intergovernmental Panel on Climate Change is equally dire, saying that human-induced climate change leads to heatwaves, wildfires, and droughts. Indeed, the world will endure several climate hazards if it doesn't limit its use of fossil fuels and prevent temperatures from increasing more than 1.5° Celsius or 2.7° Fahrenheit.

Juxtapose this scenario next to the high prices that consumers worldwide are paying to heat their homes and fill up their cars. In the United States, natural gas has risen from \$2 per million BTUs to nearly \$9 for the same unit. Now that the gas is used to cool homes, demand — and prices — will remain high. At the same time, it is a Herculean task to build a pipeline. And in Europe, those prices hit \$37 per million BTUs — caused by a confluence of events, including supply chain issues, poor energy planning, and wind energy deficits.

Can climate change and energy insecurity be reconciled? The solution is an artful path forward and not a case of throwing caution to the wind. “The supply chain issue and inflation are for real,” says Arshad Mansoor, chief executive of the Electric Power Research Institute, during a conference hosted by the United States Energy Association, in which this journalist was a panelist. “While these may be temporary issues, the United States plans to reduce its carbon emissions by 50% economy-wide by 2030.”

The electricity regulator, NERC, says that the midwest and west will get hit especially hard this summer. They may have to go through brownouts. The Midcontinent Independent System Operator could face the harshest conditions: the demand in that 15-state region that serves 42 million people jumped 1.7% compared to last year. That is compounded further by supply chain chokepoints, leading to product shortages and shipping delays. The Midcontinent system operator, which is the grid's traffic cop, is at risk because it may not have enough reserves to meet those challenges. It is the entity that calls up power sources and directs them to where they need to be, and it might be 5,000 megawatts short. It's like being devoid of savings if your car needs a new engine while your house needs a new AC unit.

Undoubtedly, battery storage will help — the devices that can harness wind and solar electrons and distribute them when the weather is not agreeable. But thus far, the high cost has kept them from providing the insurance that resource managers need. Consumers will have to turn up their thermostats and sweat it out.

“We are decarbonizing quite quickly and I'm worried about doing that right as we wait for these new technologies to become commercially viable — things like batteries,” says John Bear, chief executive of the Midcontinent Independent System Operator, at the conference. He says that while utilities are adding solar and wind power, they are retiring “thermal units” that could step up if the sun doesn't shine. He adds that natural gas plants can't get pipelines built in certain parts of the country. “We are just below our reserve margin which is not where we'd like to be,” Bear says. “When it's not windy, we need to move other controllable resources to where they need to go. It's just a matter of facilitating the right playing field.”

Most U.S. investor-owned utilities have net-zero goals — made possible by the falling cost of wind and solar energies. But the move to electrify the economy works to their advantage. And some of the early adaptors are CenterPoint Energy CNP +1.5%, Duke Energy DUK +2%, Edison International EIX +2.5%, Exelon EXC +2% Corp, PPL PPL +1% Corp., Sempra Energy, and Xcel Energy XEL +1.9%.





President Biden's aim is to produce 80% clean energy by 2030 and 100% by 2035, generating \$23 trillion in the process. Utilities are at the heart of both the problem and the solution: they contribute about 39% of all CO<sub>2</sub> emissions in the United States. To be clear, getting to net-zero does not mean the abolition of fossil fuels; instead, it means offsetting their emissions. Today, 20% of all energy used in homes and industry is electric, says EPRI's Mansoor. But that number could get as high as 60% in 2050. The grid must be modernized or expanded to manage the increased demand: four times more renewables and a flourishing electric transport sector, which is now responsible for 30% of all CO<sub>2</sub> releases.

Electrifying everything may be good for power companies. But it also requires them to invest more in the wires needed to transport electrons. Andres Carvallo, chief executive of CMG Consulting, spoke at the conference and points to the move to electric vehicles: 280 million vehicles are registered in the United States. If they all magically ran on electricity, it would require 28,000 megawatts. Thankfully, there is time to modernize the infrastructure. Only a small percentage of electric vehicles are entering the market. But more and more carmakers are promising to phase out the internal combustion engine and produce primarily electric vehicles. Those cars could comprise as many as 5-in-10 sales by 2035. The money consumers spend filling up their gas tanks will get reduced as a result.

Global citizens are feeling the heat in terms of higher energy prices. And while the economic transition may be painful, it has the potential not just to avoid a climate breakdown but also to return money to people's wallets. The change, however, has to be well-considered — not one that hopes for the best. Summer cooling bills will jump because of higher temperatures and greater demand. And it's not helped by reserve shortages, droughts, and wildfires. Energy bills and climate change are pitted against each other, and policymakers are walking a fine line. But their discussions must center on the speed of the energy conversion and not on whether to avoid the tough drive ahead.

*Forbes*

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

### 23 May 2022

#### **EirGrid Welcomes Celtic Interconnector Planning Decision**

EirGrid welcomes today's decision by An Bord Pleanála to grant approval for the Celtic Interconnector Project, subject to a number of conditions. The Celtic Interconnector is a subsea link that will allow the exchange of electricity between Ireland and France. EirGrid has been working with its French counterpart, Réseau de Transport d'Electricité (RTE), to progress plans for the Interconnector. In 2019, a funding agreement under the European Commission's Connecting Europe Facility (CEF) Energy Programme saw the project receive €530 million in funding.

Last July, EirGrid submitted the planning application to An Bord Pleanála for the Irish on-shore element of the Celtic Interconnector. This followed a series of technical assessments, consultations and engagement with the local community that took place over the preceding years. The planning application included a full Environmental Impact Assessment (EIA) Report and Natura Impact Statement. An Bord Pleanála assessed the proposal, including the landfall in Youghal, cable route, converter station and network connection and associated technologies. The board also ran a seven-week period of statutory consultation.

EirGrid chief infrastructure officer, Michael Mahon, said: "This brings us one step closer to the many benefits this project will bring, including improving the security of electricity supply, helping to achieve our climate objectives and reducing the cost of electricity. "A lot of people have been involved in this project and we recognise especially the input of communities in East Cork who have provided important feedback and engaged



constructively with the project team. "Our focus now moves to progressing the project to the construction phase, subject to the planning conditions. During this phase we will carry out ongoing detailed assessments and continue to engage with and listen to communities and stakeholders." A Foreshore Licence has been submitted for the offshore elements of the project in Ireland, and a marine licence is also required from the UK Marine Management Organisation. Subject to securing these consents, it is expected the project will be built and energised by 2026.

*EirGrid*  
<http://airgrid.io>

### 24 May 2022

#### **Germany plans to put idled coal plants on standby in case of gas supply disruption**

Germany is planning to use coal-fired power stations which would have been idled this year and next as reserve facilities in case of disruption to gas supplies from Russia, economy ministry sources said on Tuesday. The proposals, drawn up by the ministry as part of precautionary measures in case of a gas shortage, would run until March 31, 2024 as Germany tries to cut its dependence on Russian fossil fuels after the invasion of Ukraine, the sources said.

In particular, gas, which accounted for 15% of power production input last year, must be prioritised for industry and heating homes if a bottleneck arises, making it necessary to draw on idled coal capacity to fill the gaps, they said. Under the provision, a total 8.5 gigawatts (GW) of brown, hard coal-fired and a small amount of oil-fired generation capacity, all already, or due to be idled in 2022 and 2023, would be enabled by their operators to provide electricity on demand. Participation in the scheme would be voluntary and operators would be compensated from public funds for holding feedstock ready, and for providing the necessary technical assistance.

The sources said that maintaining coal capacity in a state of readiness would not mean that plants emit additional carbon emissions, stressing that the plan would not derail Germany's overall goal to stop using coal for power generation by 2030. The scheme would not drive up power prices because coal-fired generation is relatively cheaper than using gas, they added.

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

### 24 May 2022

#### **Belgium government allocates funding for SMR research**

Belgium's SCK-CEN nuclear research centre will receive a budget of EUR100 million (USD107 million) from the federal government to conduct research into small modular reactors (SMRs).

"In addition to the substantial progress of renewable energy, the government has also decided to study other technologies which could make a contribution by 2050," said Minister of Energy Tinne Van der Straeten during a ceremony to mark the 70th anniversary of SCK-CEN's founding. "To this end, the government is making EUR25 million available per year for research into fourth-generation small modular reactors for a period of four years. "This should allow to verify whether sustainable nuclear energy is technically feasible. The researchers of SCK-CEN belong to the absolute world best and are now looking for major breakthroughs in both the technological field and in the field of passive safety, non-proliferation, minimisation of long-lived waste and economic feasibility."

The government wants the funding to be used to research SMRs that do not use water as a coolant. A liquid metal - sodium or lead - or a gas must cool the reactor core. If



Belgium chooses to explore lead-cooled SMRs, it could benefit from the development pathway of the Multipurpose Hybrid Research Reactor for High-tech Applications (Myrrha) accelerator-driven research reactor. Although Myrrha is not an SMR, it shares some principles, such as compactness, the coolant, and thus fast neutrons, SCK-CEN noted.

Myrrha will be a sub-critical assembly relying on accelerated protons producing neutrons in the target to achieve periods of criticality in a low-enriched uranium core. It will be a 57 MWt accelerator-driven system in which a proton accelerator will deliver a 600 MeV proton beam to a liquid lead-bismuth (Pb-Bi) spallation target that is in turn coupled to a Pb-Bi cooled subcritical fast nuclear core. Myrrha is intended to replace Belgium's ageing BR2 research reactor, and will be used in a range of research functions including the demonstration of the concept of transmutation of long-lived radionuclides in nuclear waste, as well as producing radioisotopes for medicine. Myrrha will also be used for conducting fundamental scientific research in areas such as nuclear physics, atomic physics, fundamental interactions, solid-state physics and nuclear medicine.

SCK-CEN can transfer the lessons learned from the Myrrha development pathway to the development pathway of innovative SMRs, although the objective remains fundamentally different. "Innovative SMRs will produce electricity," explains SCK-CEN Director-General Eric van Walle. "With Myrrha, we need those fast neutrons to demonstrate that we can convert highly radiotoxic waste into waste that is no longer toxic, gives off less heat, and for the most part has a shorter lifespan. With that process, transmutation, we can reduce the ecological footprint of a future geological repository." "We realise that there is still a lot of research work to be done before Belgium can build a first SMR," added SCK-CEN Deputy Director-General Hamid Aït Abderrahim. "In order to succeed, national and international cooperation - both on a scientific and on an industrial level - is an absolute necessity. Therefore, the research constitutes the start of the search for suitable industrial partners for the realisation of the innovative SMRs."

Speaking at the 70th anniversary event, Prime Minister Alexander De Croo said: "With its unrivalled nuclear expertise, SCK-CEN will lead Belgium towards sustainable nuclear energy ... SCK-CEN has specific expertise in nuclear technology cooled with lead-bismuth. It is a world leader in this field. That puts Belgium in a privileged position."

*World Nuclear News*

<http://www.world-nuclear-news.org/>

### 24 May 2022

#### **Engineers Are Working on a Solar Microgrid to Outlast Lunar Nights**

The next time humans land on the moon, they intend to stay awhile. For the Artemis program, NASA and its collaborators want to build a sustained presence on the moon, which includes setting up a base where astronauts can live and work.

One of the crucial elements for a functioning lunar base is a power supply. Sandia National Laboratories, a research and development lab that specializes in building microgrids for military bases, is teaming up with NASA to design one that will work on the moon.

The moon base is expected to be a technological proving ground for humans to venture farther into space—such as voyaging to Mars. Therefore, a power grid will not simply keep the lights on and air pumping but also support the mining and fuel-processing facilities that will concurrently work to reduce the supply requirements from Earth.

There are, of course, some differences between designing a microgrid for a moon base and designing a similar setup used on Earth. Notably, it will need to keep astronauts alive, rather than just support a conventional household load, says Rachid Darbali-Zamora,



an electrical engineer at Sandia. For that, energy storage and power management will be critical.

The lunar habitat will include a living unit as well as a mining and processing center that will produce water, oxygen, rocket fuel, and more. The Sandia engineers therefore are looking at two direct-current microgrids, with a tie-line connecting them.

Lee Rashkin, another electrical engineer at Sandia, says that they are working to define the parameters of the tie-line. “We are looking at the voltage being a little bit higher [than the two load centers] because it is going to have to span several kilometers between [them],” he says. It would be easier to push the power through at a higher voltage because it would require less current, making it a little bit easier, he adds.

The habitation unit will be about the same size as the International Space Station, the mining and processing center a bit larger, with a distance of around 10 kilometers between them, Rashkin says. While both systems will be designed to be self-sufficient, “the tie-line is there primarily for for redundancy. If something happens to one of the [photovoltaic] generators at the habitat unit, it can import power to maintain those loads, which are critical to keep people alive,” he says.

Each system will also have its own redundancy, rerouting, and reconfiguration capabilities, Darbali-Zamora adds. “So if a particular line of the lunar habitat is serving a critical load, and that line goes down, there are mechanisms to reroute power to receive it from a source.”

Because the portions of the planned moon base will be spread across the lunar surface, the engineers also expect there will be a lot of power electronics and distributed energy resources. “Power electronics is essentially the electrical equivalent of a gearbox,” Rashkin says. “Like a gearbox converts from one speed and torque value to another, power electronics can convert from one power and voltage level to another.” These power electronic converters will be key in managing the power between the battery or the solar panels and the main bus.

The main energy source will be solar, supplemented by batteries. Unlike on Earth, there is no cloud shading on the moon, which means the lunar surface receives more direct sunlight. Darbali-Zamora sees it as an advantage in some ways, but they will have to account for lunar nights, which are approximately two Earth weeks long.

There are energy storage options, Darbali-Zamora says, depending on what kind of battery material or chemistry they want. “But the idea is, when there’s more solar generation and load demand, the solar panels will charge the battery,” he says. “Part of the work that we’re doing is defining controls that manage that, ensuring that the batteries aren’t completely depleted and that there’s synergy between the generation from the solar panels, the consumption of the loads, and the charging and discharging of the battery.”

To do this, the engineers have controls based on timescales—from units that operate at submillisecond speeds to those that work over days, planning out where the state of charge needs to be at any time. “And one of those constraints on that [latter] level of control is that the energy storage needs to be fully charged by the time the sun is gone,” Rashkin adds. All of the testing and tweaking will take place at Sandia’s Secure Scalable Microgrid Testbed, in Albuquerque. “We have emulation capabilities for all of [the specifications] being planned for the moon base,” Rashkin says. The testbed can be used to build a scaled-down representation of the lunar microgrid, and used to study the power system controllers, energy storage, power electronics, and distributed energy sources. “We’re planning on using that for a lot of our control design analysis.”

Once they have the controls, Rashkin’s team will pass it on to Darbali-Zamora’s to test in Sandia’s Distributed Energy Technology Laboratory. With power hardware-in-the-loop capabilities, they can test physical devices, such as the controllers built by Rashkin’s





team, in simulated environments, like a lunar-base simulator. There's still a way to go before their work ends up on the moon, but both engineers point out that the work they are doing is not completely decoupled from what they do terrestrially. "We are hoping that a lot of the solutions that we find in this project can be implemented here on Earth" to build better and more resilient systems, says Darbali-Zamora.

*World Energy*  
<http://www.world-energy.org/>

### 24 May 2022

#### Record Wind in Scotland Means Grid Tells Some Turbines to Stop

Wind farms across the UK are producing more electricity than the grid is able to cope with, forcing the network operator to ask some turbines in Scotland to shut down. National Grid Plc asked some wind farms connected to the local network in the west of Scotland to reduce output by 25 megawatts. While that's a tiny fraction of the record amount of wind supplies being produced by blustery weather spinning turbines across the country, it highlights the difficulties of a network still unable to store large amounts of electricity.

Britain has bet big on renewable power to curb carbon emissions, with Prime Minister Boris Johnson describing the UK as the Saudi Arabia of wind. But that has also left the country at the mercy of weather, and made it harder for grids to cope without the ability to store large amounts of electricity in batteries or use it to produce green hydrogen. Wind power peaked at 19,835 megawatts on Wednesday, enough to cover more than half of Britain's electricity needs.

Production surpassed a peak set in late January and follows record renewables output seen recently in other parts of Europe, highlighting the potential for green energy to replace expensive fossil fuels. As the UK continues to ramp up wind-farm capacity to cut its reliance on dirty fuels like coal and gas, records will start to become an increasingly common occurrence. More green output is also good news as European countries look to wean themselves off Russian energy.

Wind power peaked at 19,835 megawatts on Wednesday, according to data from National Grid Plc. The UK Met Office issued a succinct forecast for the day's weather: "Quite windy." The conditions were virtually ideal for turbines, with gusts of around 30 miles (48 kilometers) an hour measured around the country. Winds were stronger offshore, where some of the biggest farms are installed. The optimal wind speed for many turbines is about 33 miles an hour — fast enough to turn blades quickly without risking damage. When storms earlier this year set UK wind speed records, some turbines shut down for protection. Managed flows are required to maintain the grid's safety margin at times of high power production.

*Bloomberg*  
<http://www.bloomberg.com/>

### 25 May 2022

#### Hydrogen Avengers: Global Hydrogen Industry Association launched

Under the leadership of Korea, the 'International Hydrogen Association Association' was established to improve international collaboration on hydrogen in the business sector. Representatives of hydrogen associations from 18 countries, including Korea, the United States, the United Kingdom, and Denmark, launched the 'Global Hydrogen Industry Association (GHIAA)' on the 25th and held online and offline forums to discuss the future of hydrogen economic policy and the importance of private hydrogen cooperation. Officials from local companies and organizations attended the forum, including Park Il-joon, 2nd Vice Minister of Trade, Industry, and Energy, Moon Jae-do, Chairman of H2KOREA,



representatives of hydrogen associations from 17 countries, embassies from 8 countries, and SK Vice President.

Park Il-joon, Korea's Second Vice Minister of Industry, who attended the summit, gave an overview of the country's hydrogen economy policies and emphasized the need for worldwide private hydrogen collaboration. The Korea Hydrogen Convergence Alliance (H2KOREA) has been pushing for the creation of the Global Hydrogen Industry Association to boost international hydrogen collaboration in the private sector. It was formally started with the involvement of hydrogen associations from 18 different nations. In addition, Korea was elected as the first chairman at the inaugural general assembly, and a secretariat was formed in H2KOREA to head the worldwide hydrogen industry organization.

The alliance will hold regular meetings in the future to strengthen private sector-oriented industrial cooperation, establish a hydrogen network and data hub, and serve as a bridge between the government and the private sector to strengthen cooperation on global joint policies and regulations, as well as technology development and demonstration intend to accomplish it. The government intends to build a balanced ecosystem for the full cycle of hydrogen generation, distribution, and consumption, taking into account economic feasibility and technological maturity, in order to actualize a clean hydrogen-based hydrogen economy.

First, we're diversifying clean hydrogen energy sources to include solar, wind, nuclear power, and natural gas, as well as establishing large-scale hydrogen production centers at home and abroad. and create worldwide criteria for clean hydrogen certification Furthermore, the supply of hydrogen cars centered on commercial vehicles will be enhanced, as will the construction of convergence hydrogen charging stations, hydrogen and ammonia power generating technology development and demonstration, and the hydrogen power generation market. In addition, he stressed the private sector's involvement in this and requested that private international hydrogen collaboration be strengthened to create a worldwide hydrogen industrial ecosystem. Meanwhile, following the association's launch, hydrogen associations in key nations such as the United States, the United Kingdom, Germany, and Australia stated their support for hydrogen policy and industry status.

The US established the Hydrogen Shots objective and described its aim to invest approximately \$9.5 billion (about 11.8 trillion won) in the hydrogen industry through a bipartisan infrastructure investment package, while the UK quadrupled its low-carbon hydrogen production plan (5GW 10GW) and 240 million people. It announced the establishment of a 10,000-pound hydrogen fund (about 380 billion won). Germany launched a 900 million euro (1.2 trillion won) 'H2 Global' fund and stated that it intends to set up a worldwide hydrogen trading market mechanism through government subsidies.

Australia, Canada, Chile, and other countries He discussed the possibilities for production and the objective of becoming a hydrogen exporter. "Hydrogen, a significant method of developing energy independence and carbon neutrality, will play a game-changing role in the period of big energy transformation," stated Vice Minister Il-Jun Park. We're looking forward to bolstering it even further."

**Energy News**

<http://energynews.biz/>

**27 May 2022**

### **China's first salt cavern compressed air energy storage starts operation**

China's first salt cavern compressed air energy storage started operations in Changzhou City, east China's Jiangsu Province Thursday, marking significant progress in the research and application of China's new energy storage technology.



The power station uses electric energy to compress air into an underground salt cavern, then releases air to drive an air turbine, which can generate electricity when needed. The salt cavern was formed following the exploitation of the underground salt layer in the area. At about 1,000 meters below ground, the salt cavern has a storage room equal in size to 105 swimming pools. The energy storage capacity in each cycle reaches 300,000 kWh of electricity, equal to the daily electricity consumption of about 60,000 residents.

China's first salt cavern compressed air energy storage started operations on Thursday, marking significant progress in the research and application of China's new energy storage technology. "Compressed air technology could support the construction of new type power system with new energy as the main body, which can help the country achieve peak carbon emissions and carbon neutrality," said Zhou Ting, deputy director of State Grid's Changzhou branch. The energy storage was co-developed by China National Salt Industry Group Co., Ltd., China Huaneng Group and Tsinghua University.

*Xinhuanet*

<http://english.news.cn/>

### 28 May 2022

#### **Mexican regulator fines Spain's Iberdrola unit \$466 mln**

Mexico's energy regulator fined a unit of Spain's Iberdrola 9.15 billion pesos (\$466.4 million), arguing they violated a so-called self-supply power generation permit by selling electricity to their partners, according to a regulatory filing.

Iberdrola Energia Monterrey delivered energy to partners in exchange for economic compensation, which constitutes a sale that is not allowed under the self-supply figure for which the permit was granted, the Energy Regulatory Commission (CRE) said in the resolution posted on its website this week. "The described conduct is unlawful since it affects the legal rights that oblige the permit holder not to sell, resell or by any legal act transfer capacity or electric energy," the resolution said.

Iberdrola (IBE.MC) did not immediately respond to a request for comment about the fine, which CRE said can still be challenged. The resolution did not identify Iberdrola Energia Monterrey's partners, though a permit approved by CRE in 2012 lists British American Tobacco de Mexico; convenience store chain Oxxo, owned by bottler FEMSA; Kimberly Clark de Mexico and Nissan Mexicana.

*Reuters*

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

### 29 May 2022

#### **Adani Commissions India's First Wind-Solar Hybrid Power Plant Of 390 MW In Rajasthan's Jaisalmer**

Adani Hybrid Energy Jaisalmer One Limited (AHEJOL), a subsidiary of Adani Green Energy Limited (AGEL), has commissioned a 390 MW wind-solar hybrid power plant in Rajasthan. According to the company, this plant in Jaisalmer is India's first-ever wind and solar hybrid power generation plant. AGEL said that the hybrid power plant integrated through solar and wind power generation harnesses the full potential of renewable energy by resolving the intermittency of the generation and provides a more reliable solution to meet the rising power demand.

"Wind-Solar Hybrid energy is an important aspect of our business strategy which aims to meet India's growing need for green energy. This project is a part of the first construction facility by international banks in Adani Green," said Vneet S Jaain, MD and CEO, Adani Green Energy Ltd. The new plant has a Power Purchase Agreement (PPA) with the Solar Energy Corporation of India (SECI) with a tariff of Rs 2.69 per kWh, well below the Average



Power Procurement Cost (APPC) at the national level. With the successful commissioning of this plant, AGEL now has an operational capacity of 5.8 GW. "This places AGEL's total renewable portfolio of 20.4 GW well on track to meet its vision of 45 GW capacity by 2030," the company said. "The Adani Group's Energy Network Operation Centre (ENOC) platform has consistently demonstrated and aided the Group in achieving superior operational performance of the entire renewables portfolio spread across various locations in India. The ENOC platform will be instrumental in delivering industry-leading performance through this newly commissioned wind-solar hybrid power plant," it added.

Variability in Solar and Wind generation has emerged as a concern in large-scale adoption of renewables, mainly after it contributes a significant share to the energy mix. The hybridisation of wind and solar plants is developing a solution which will reduce this variability due to the complementary nature of their generation profile - solar generation is higher during the day, while wind generation can be higher at night. Hybrid projects would also have higher capacity utilisation, thus removing the intermittency challenge. Such projects also enjoy the additional benefit of reducing costs associated with sharing transmission lines. Along with hybrid power plants, peak balancing through gas and hydro generation shifting, demand management, smarter grids, and storage solutions including battery, pumped hydro, and others are expected to further help in smoothing out the variability caused due to the nature of renewable energy supply.

*Swarajya*

<http://swarajyamag.com/>