# *WORLD POWER SYSTEMS REVIEW*

# *15 October 2024*

## 2 October 2024

### Hyundai, Kia launch advanced battery technology project

To better compete in the EV market, the automakers plan to jointly develop lithium iron phosphate battery cathode material manufacturing technology in South Korea.

Hyundai Motor Co. and Kia Corp. are collaborating to strengthen their position with emerging electric vehicle battery technology, according to a press release.

The automakers, in collaboration with Hyundai Steel and EcoPro BM, have embarked on a four-year project to develop lithium iron phosphate battery cathode material manufacturing technology in South Korea.

In addition to lowering battery production costs, the venture aims to create LFP cathode material for fast-charging technology and improved discharging performance.

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

## 2 October 2024

### China's Energy Grid Overwhelmed by Renewable Surge

- China's massive wind and solar energy capacity additions are straining the energy grid, prompting a shift in focus towards energy storage solutions.
- Energy storage technologies, particularly battery storage, are crucial for balancing the grid, mitigating market volatility, and ensuring the effective use of renewable energy.
- China's energy storage market is expected to experience significant growth, driven by the need to support the country's renewable energy ambitions and achieve zero-emissions targets.

China is building twice as much wind and solar energy production capacity as the rest of the entire world combined. While this runaway expansion is great news for the country's decarbonization goals, it is putting strain on energy grids and energy markets, even leading to occasional negative energy prices in some areas. Chinese grid officials are reportedly decreasing output from turbines and solar panels this year to avoid overwhelming power lines.

"With annual wind and solar installations booming and potentially allowing for an early peak in emissions in the world's biggest polluter, the focus has shifted from generating clean energy to making sure it can be used," Bloomberg recently reported. In order to more effectively support these massive renewable energy additions, China is getting serious about energy storage, which is heating up to be a major market in the coming months and years.

Solar and wind power are variable energy sources, meaning that their power production levels fluctuate according to the weather, time of day, and the seasons in ways that are not always predictable. This presents challenges to balancing inflows and outflows of energy to the grid, as wind and solar production cannot be manipulated to match energy demand, unlike energy derived from fossil fuels.

This is where energy storage comes in. Storage technologies capture and stockpile excess energy when renewable energy supply outstrips demand, and later feed that energy back into the grid when demand outstrips supply. This stabilizes inflows and outflows to the grid while also mitigating market volatility through a process known as arbitrage. Due to these essential energy security services, it has been argued that energy storage is the backbone of the renewable revolution.

As of July 2024 analysis from Global Energy Monitor, China was developing 180 gigawatts of large solar projects and 159 gigawatts of large wind projects. Together, these

developments amount to almost two-thirds of the entire world's incoming wind and solar capacity. But while the country's combined wind and solar capacity has topped 1,200 gigawatts, installed battery storage capacity has reached just 44 gigawatts.

While battery storage capacity has lagged far behind renewable energy capacity additions, China's energy storage is on a massive growth trajectory. Installed capacity already grew by 40% in the first half of 2024, and is expected to reach 300 gigawatts of battery storage by 2030, according to Qian Zhimin, former chairman of the Chinese mega-utility State Power Investment Corp.

Energy storage is a nascent sector and many energy storage technologies are still in the research and development phase. Batteries are just one option, and they have some distinct disadvantages, as they are only able to hold power for short time periods. However, the market is currently dominated by lithium-ion battery storage, as it is a proven technology with plenty of existing infrastructure, well-established supply chains, relatively low-cost installation, and, as luck would have it, a current surplus of manufacturing. Bloomberg reports that "battery makers have over-invested in factories in recent years, leaving the industry with massive overcapacity."

The explosive growth of the energy storage sector is therefore great news for the battery industry. To reach zero-emissions targets, it is estimated that worldwide installed battery storage capacity needs to grow to more than a terawatt (TW) by 2030, and nearly 5TW by 2050. For context, total capacity totalled less than 200 gigawatts (GW) in 2023.

China is not the only place that energy storage is taking off. Markets for energy storage are growing at a rapid clip in the United States and Europe as well. On a global scale, energy storage is heating up to be "clean energy's next trillion-dollar business." But nowhere is this buildout as important as in China, where warpspeed additions of wind and solar energy production threaten to overwhelm energy grids, undermine national energy security, and potentially even render all of those additions useless.

***OilPrice***
***http://www.oilprice.com/***

## 2 October 2024

### Iraq reports 7,100 MW loss amid gas supply shortages, urges energy conservation

On Wednesday, the Iraqi Ministry of Electricity revealed that the decrease in national gas supplies and imports from Iran to power generation stations resulted in a loss of 7,100 megawatts, urging citizens to "understand the circumstances" and conserve energy.

The ministry's media office stated, "The cessation of 450 million cubic meters (MCM) of national gas in the south, due to seasonal maintenance work for 21 days by the Ministry of Oil's teams, has restricted the load of stations in the southern region and central Euphrates by 1,500 MW."

"Meanwhile, the reduction of Iranian gas from 30 MCM daily to 23 MCM has impacted the stations' production in the central region by another 1,500 MW," it affirmed. "Additionally, the shutdown of the Iranian power transmission lines (Mirsad-Diyala, Sarpol-e Zahab-Khanaqin, Karkheh-Amarah, Khorramshahr-Basra) led to a loss of 1,100 MW in the system."

The office explained, "Due to the initiation of maintenance on generation units and preparations for the upcoming summer peak loads, approximately 3,000 MW have been taken offline, resulting in a total of 7,100 MW of the system's load being halted, which has somewhat affected supply hours."

There has been a significant decrease in electricity supply across various Iraqi governorates since Tuesday, resulting in prolonged power outages.

Notably, Iraq is the second-largest oil producer in the OPEC cartel, but despite having immense oil and gas reserves, it remains dependent on imports to meet its energy needs. Neighboring Iran continues to supply nearly a third of its power requirements.

The country needs 35,000 to 40,000 MW to provide electricity 24 hours a day without interruption. It has been suffering from a chronic electricity shortage for decades due to sanctions and consecutive wars. Residents have protested for years against the frequent power outages, especially during the summer, when temperatures can reach 50 degrees Celsius.

***Shafaq News***
***http://shafaq.com/***

## 2 October 2024

## FERC approves CAISO interconnection reforms

*Changes will enable more efficient planning and onboarding of new resources*

The Federal Energy Regulatory Commission (FERC) has approved a comprehensive series of reforms to the California Independent System Operator's (ISO) interconnection process, ruling that the changes will help "ensure that interconnection customers are able to interconnect to the transmission system in a reliable, efficient, transparent, and timely manner."

Under terms of the 103-page order issued late Monday, the approved reforms are effective today, October 1. They will enable the ISO to move forward immediately with a fair, open, and transparent process based on proactive resource and transmission planning and project viability, allowing the most advanced generation projects to move more quickly through the interconnection queue.

FERC's order called the ISO reforms "just and reasonable and not unduly discriminatory or preferential," and said the ISO can now "effectively process the largest queue cluster (of interconnection applications) it has ever received."

A new screening process central to the reforms is designed to provide interconnection customers, load-serving entities, and the ISO with greater certainty when studies of interconnection applications are complete, putting the organization on track to ensure continued reliability and achievement of California's clean-energy requirements.

"Our tariff filing for a reformed interconnection process was complex and we fully acknowledge that stakeholders had a variety of opinions on some of the details," said Elliot Mainzer, the ISO's president and CEO.

"We appreciate the ruling by FERC and what it will mean for more efficient planning and onboarding of resources and we are committed to moving forward in partnership with our many stakeholders to effectively and transparently implement the reforms. As the order requires, we will also closely monitor how well they are working."

The ISO submitted its request for interconnection process changes on August 1. The filing followed more than a year of extensive engagement with stakeholders and a wide range of industry and developer representatives who worked together to develop many of the proposal's key concepts.

The reforms are part of a larger set of foundational framework improvements being coordinated between the ISO and California's principal state energy agencies as articulated in a 2022 Memorandum of Understanding between the ISO, the California Public Utilities Commission and the California Energy Commission. The agreement sought to tighten linkages among resource and transmission planning activities, interconnection processes, and resource procurement.

When the ISO Board of Governors approved the interconnection proposal in June, Jan Shori, the Board chair, said they were needed to accommodate "explosive growth in the

number of applications for grid interconnection studies the past three years," adding that "we need a new and improved process to prioritize and determine which projects are the most viable and which will meet our resource adequacy and reliability needs in a timely manner over the next 20 years."

Under the new protocols approved by FERC, interconnection requests for projects coming into the ISO during an annual application window will be scored based on commercial interest, project viability, and system need. The projects would then be ranked for their ability to advance to the study process, where they would be more fully evaluated.

The ISO would study projects up to 150 percent of available transmission capacity, increasing the likelihood that the most viable and cost-effective projects can advance without being delayed by excessive volumes of less feasible projects. The reforms, which are also designed to keep down costs by making the entire process more efficient, include a path forward for projects if they aren't in a geographic area with existing or planned transmission.

The approved reforms were designed to build on requirements established last July by FERC Order No. 2023, which set new standards for interconnection processes around the country. FERC approved the ISO's interconnection changes pending review of the ISO's compliance filing for Order No. 2023, which was submitted in May.

To address outstanding interconnection issues that were not part of the current round of reforms, another track of enhancements is underway with stakeholders focused on deliverability allocations and more acute challenges created by recent "superclusters" which have seen unprecedented numbers of interconnection requests.

***CAISO***
***http://www.caiso.com/***

## 2 October 2024

### TotalEnergies starts power production in two Texas solar farms

TotalEnergies SE has put onstream the Cottonwood and Danish Fields solar generation projects in Texas, adding a combined 1.2 gigawatts (GW) to its installed renewable energy capacity.

With a capacity of 720 megawatts peak (MWp) from 1.4 million ground-mounted photovoltaic panels, Danish Fields is the French energy giant's biggest solar farm in the United States. It has a 225 megawatt-hour (MWh) battery storage system supplied by Saft, TotalEnergies' battery subsidiary. Seventy percent of Danish Fields' capacity has been contracted through long-term agreements with industry players. The remaining 30 percent will help decarbonize TotalEnergies' industrial plants in the U.S. Gulf Coast region. The company said that with Myrtle Solar commissioned in 2023 and Hill 1 under construction, it will have enough renewable electricity to cover the consumption of its industrial sites in La Port and Port Arthur in Texas and Carville in Louisiana.

Meanwhile Cottonwood has a capacity of 455 MWp from over 847,000 ground-mounted photovoltaic panels. The farm will also have 225 MWh of battery storage from Saft, to be commissioned 2025. Cottonwood's production has been contracted by LyondellBasell Industries Holdings BV and Saint-Gobain for their decarbonization drives.

"The start-ups of Danish Fields and Cottonwood in the fast-growing ERCOT [Electric Reliability Council of Texas] market showcase TotalEnergies' ability to deliver competitive renewable electricity to support our clients' decarbonization goals, as well as our own", Olivier Jouny, senior vice president for renewables at TotalEnergies, said in a company statement. The new renewable generation capacity brings TotalEnergies closer to its target return on capital employed (ROACE) of about 12 percent in its integrated power business, Jouny added.

As part of its growth strategy, TotalEnergies is raising investment in the power sector to ensure profitability in the energy transition. In an outlook report September 27, 2023, it said, "TotalEnergies is replicating its integrated Oil & Gas business model into electricity to achieve a ROACE of ~12 percent, equivalent to upstream Oil & Gas ROACE at 60 $/b [dollars per barrel], above the 'utility' model traditional returns".

In Texas, TotalEnergies' renewable generation capacity has now increased to four GW. Earlier this year it acquired three gas-fueled power plants in the state with a combined capacity of 1.5 GW as a fallback during disruption in its renewable power system.

The gas power plants, bought from TexGen Power LLC for $635 million, serve the cities of Dallas and Houston. The biggest of the plants in terms of capacity, the 745-MW Wolf Hollow I, is a combined-cycle gas turbine (CCGT) plant on the outskirts of Dallas. Colorado Bend I, in the south of Houston, has a 530 MW CCGT and 74 MW open-cycle gas turbine (OCGT) capacity. The La Porte plant southeast of Houston has a 150 MW OCGT capacity. In the U.S., TotalEnergies aims to raise its generation capacity to 10 GW by 2025 and over 25 GW by 2030.

"As part of its ambition to get to net zero by 2050, TotalEnergies is building a world-class cost-competitive portfolio combining renewables (solar, onshore and offshore wind) and flexible assets (CCGT, storage) to deliver clean firm power to its customers", it said announcing the startup of the two Texas solar farms. "Mid-2024, TotalEnergies' gross renewable electricity generation installed capacity was 24 GW. TotalEnergies will continue to expand this business to reach 35 GW in 2025 and more than 100 TWh [terawatt hours] of net electricity production by 2030".

***Rigzone***
***http://www.rigzone.com***

## 3 October 2024

## Biden-Harris Administration Invests $1.5 Billion to Bolster the Nation's Electricity Grid and Deliver Affordable Electricity to Meet New Demands

In support of the Biden-Harris Administration's Investing in America agenda and work to lower costs for American families, the U.S. Department of Energy (DOE) announced two critical actions in its continued efforts to support the expansion of the transmission infrastructure needed to ensure that the nation's electricity grid is reliable, resilient, and ready to meet customer demands with low-cost clean electricity. First, DOE announced an investment of $1.5 billion in four transmission projects that will improve grid reliability and resilience, relieve costly transmission congestion, and open access to affordable energy to millions of Americans across the country. Supported by the Bipartisan Infrastructure Law and administered through DOE's Grid Deployment Office (GDO), the projects selected today for the Transmission Facilitation Program will enable nearly 1,000 miles of new transmission development and 7,100 MW of new capacity throughout Louisiana, Maine, Mississippi, New Mexico, Oklahoma, and Texas, while creating nearly 9,000 good-paying jobs.

DOE also released the final National Transmission Planning (NTP) Study, a set of long-term planning tools and analyses that examine a wide range of potential future scenarios through 2050 to identify pathways to maintain grid reliability, increase resilience, and reduce costs, while meeting local, regional, interregional, and national interests and supporting the changing energy landscape. The study finds that the United States will need to approximately double to triple the 2020 transmission capacity by 2050 in order to meet demand growth and reliability needs, and hundreds of billions of dollars of cost savings can be achieved through substantial transmission expansion and interregional planning.

The Biden-Harris Administration has taken aggressive action to support these needed grid expansions, including streamlining the federal permitting process for new

transmission projects, supporting upgrades of existing lines, advancing long-term transmission planning, and delivering the largest investment in grid infrastructure in the nation's history through the Administration's Investing in America agenda.

"The U.S. transmission network is the backbone of our nation's electricity system. Though our grid has served U.S. energy needs for more than a century, our country's needs are changing," said U.S. Deputy Secretary of Energy David Turk. "DOE's approach to deploying near-term solutions and developing long-term planning tools will ensure our electric grid is more interconnected and resilient than ever before, while also supporting greater electricity demand. The Biden-Harris Administration is committed to bolstering our power grid to improve the everyday life of Americans through affordable power, fewer blackouts, more reliable power, and additional jobs across our country."

To catalyze near-term transmission deployment, today DOE announced an investment of $1.5 billion in four transmission projects through the Transmission Facilitation Program, an innovative revolving fund program that helps overcome the financial hurdles facing transmission development.

Today's investments will improve critical interregional grid connections, bring diverse clean energy resources to more customers, bolster resilience to extreme weather, and deliver hundreds of millions of dollars in direct and indirect community benefits. These investments advance the Biden-Harris Administration's Justice40 Initiative, which sets the goal that 40% of the overall benefits of certain federal climate, clean energy, and other investments flow to disadvantaged communities that are marginalized by underinvestment and overburdened by pollution. Four projects announced today will enter capacity contract negotiations with DOE:

- *Aroostook Renewable Project* will construct a new substation in Haynesville, Maine and a 111-mile transmission line with a capacity of 1,200 MW to connect the new substation to the Independent System Operator-New England (ISO-NE) system at a substation in Pittsfield, Maine. The project will provide New England with access to low-cost clean energy generated in northern Maine, while creating more than 4,200 construction jobs and 30 permanent operations jobs. *(up to $425 million potential contract value)*
- *Cimarron Link* is a 400-mile high-voltage direct-current (HVDC) transmission line from Texas County, Oklahoma to Tulsa, Oklahoma. The line will transmit 1,900 MW of firm, point-to-point capacity to deliver low-cost wind and solar energy to growing load centers in eastern Oklahoma and elsewhere in the Southwest Power Pool, while creating more than 3,600 construction jobs and 20 permanent operations jobs. *(up to $306 million potential contract value)*
- *Southern Spirit* will construct a new 320-mile HVDC line connecting the Electric Reliability Council of Texas (ERCOT) grid for the first time with electric grids in the southeastern U.S. power markets, including Midcontinent Independent System Operator South (MISO-S) and Southern Company (SOCO), which will enhance reliability and prevent outages during extreme weather events, like Winter Storm Uri that hit Texas in 2022. This line across Texas, Louisiana, and Mississippi will provide 3,000 MW of bidirectional capacity and create 850 construction jobs and 305 permanent operations jobs. *(up to $360 million potential contract value)*
- *Southline* will construct a new 108-mile transmission line that will deliver 1,000 MW of new, bidirectional capacity between Hidalgo County, New Mexico and Las Cruces, New Mexico, creating at least 150 new construction jobs and helping meet energy needs of industries investing in the region, including semiconductor, battery manufacturing, and data center facilities. *(up to $352 million potential contract value)*. Today's new selection is for Phase 2 of the Southline Project, following the prior

selection of Southline Phase 1, a 175-mile line from Hidalgo County, New Mexico to Pima County, Arizona in the first round of the Transmission Facilitation Program.

With today's announcement following prior selections of Southline Phase 1, the Southwest Intertie Project-North, and the Cross-Tie 500kV Transmission Line Project, nearly all of the legislated $2.5 billion of TFP funding is now committed. GDO will continue to evaluate the TFP revolving fund balance as projects advance in construction and relieve DOE of its current obligations. The program intends to open future funding opportunities when there are sufficient uncommitted funds available.

*Long-term Interregional Planning Benefits*

While transmission planning usually happens at the local or regional level, the National Transmission Planning Study shows that grid reliability can be maintained at the lowest cost with the highest level of reliability by coordinating interregional transmission. The NTP Study was developed in partnership with the National Renewable Energy Laboratory (NREL) and the Pacific Northwest National Laboratory (PNNL) to be used as a long-term planning tool. Key takeaways include:

- A substantial expansion of the transmission system throughout the entire contiguous United States will deliver the largest benefits and could lead to national electric system cost savings of $270 billion–$490 billion through 2050.
- Significant return on investment, with every dollar spent on transmission meaning approximately $1.60 to $1.80 in system costs is saved.
- When transmission regions coordinate to achieve resource adequacy, system costs through 2050 are lowered by $170 billion–$380 billion.

The NTP Study is designed to enhance and encourage interregional planning efforts. It does not replace industry planning or identify a specific set of transmission lines that should be built. Rather, the NTP Study identifies potential opportunities for industry planners to consider projects that would benefit customers under a wide range of future scenarios. The NTP Study development included the expansion and creation of transmission planning tools—including open-source software, new modeling capabilities, and free research licenses—that DOE now is making available to planning entities, regional transmission operators/independent system operators, utilities, and states to help advance planning of interregional transmission across the nation.

***DoE***
***http://www.energy.gov/***

## 7 October 2024

### Emergency measures on the Belgian power grid during the summer avoided due to market parties adapting their behaviour

Overall, our electricity system held up well over the summer months. The forecasts for the summer predicted quite a few days with considerable export requirements against a backdrop of low consumption and substantial renewable energy production, posing a challenge to the system. Major problems were avoided thanks to the inclement weather, with few very sunny days, higher levels of consumption, and market parties adjusting their positions in advance. Elia issued 23 warnings, and in each case the market managed to make the required adjustments. A non-Belgian system operator only had to step in very occasionally. For future summers, Elia is working with the distribution system operators on a plan to further unlock market flexibility.

Elia's summer outlook pointed in advance to very high export requirements on very windy and sunny days when there were low levels of consumption. Such scenarios can have dramatic consequences for the market and the grid. Elia therefore shared this information with the various stakeholders and devised technical measures with distribution system

operators (DSOs) that could be applied in an emergency. These included the shutdown of large-scale solar installations or onshore wind farms, including those connected to the networks of the Belgian DSOs (but not those of residential customers).

*The market played its part*

The extensive communication and issuing of market messages and warnings had a significant impact. Elia issued 23 warnings, after which we generally saw a shift in market parties' positions on the day-ahead market. In addition, Elia still managed to find sufficient flexibility products on the market on the day itself in order to eliminate the remaining imbalance. Only a few times was the assistance of non-Belgian grid operators required. In the end, there was no need to deploy the technical mechanisms developed.

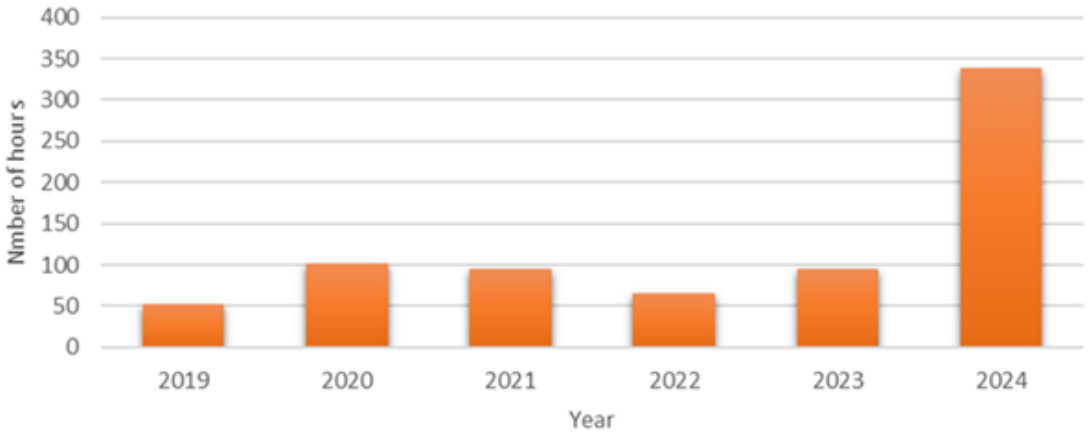
*Helped by the weather and consumption*

As well as the market parties' behaviour, this outcome was mainly due to the gloomy weather over the summer. The output of installed solar panels was significantly lower than in previous summers. A power factor of 60% to 70% occurs an average of 15% of the time in summer. This summer it was only 1.5% of the time. In addition, consumption was also slightly higher than last summer (+ 500 MW). All these factors combined meant that export requirements were lower than predicted.

*Record number of hours with negative prices*

However, maintaining the balance in a system with a lot of renewable energy remains an ongoing challenge, so further development of flexibility is urgently needed. The number of hours of negative prices on the day-ahead market is a clear sign of this. Despite the absence of major problems, we are seeing many more hours with negative prices than before. At such times we must be able to encourage consumers to use electricity. There is still a need to improve how the market works, as well as having technical mechanisms available that can be deployed when necessary. Elia is working closely with many partners to achieve this.

*Number of hours with negative day-ahead prices from April to August*




***Elia***
***http://www.elia.be/***

## 8 October 2024

## NESO publishes outlook for the Winter ahead

*NESO has today published its annual Winter Outlook report for 2024/25.*

Margins this winter are expected to be adequate, with the base case de-rated margin forecast to be 5.2GW (representing 8.8% of peak average cold spell demand). The expected margin for this winter is higher than last year, which saw a forecast of 4.4GW (7.4%).

It represents the highest forecast since 2019/20 and is broadly in line with recent winters. This assessment for Winter 2024/25 assumes a peak average cold spell demand of 59.8 GW, including operating reserve.

The higher year-on-year margin is driven by new interconnection, growth in battery storage capacity and an increase in generation connected to the distribution networks. This combines to more than offset generation retirements - such as the recent closure of Ratcliffe-on-Soar, the UK's last coal fired power station - and other temporary capacity reductions.

While NESO's forecast sets out that we expect sufficient operational surplus throughout the winter period, allowing for natural variation of demand, wind and outages, we may still see some tight days where we need to use our standard operational tools, including the use of system notices.

NESO is confident it can continue to reliably operate a changing electricity system as new technologies, and diverse forms of capacity, contribute to security of supply.

As a prudent system operator, NESO is continually planning and preparing for a wide range of eventualities. We continue to work closely with Government, Ofgem, National Gas and other stakeholders to assess emerging risks and build resilience ahead of this winter, including ongoing active engagement with neighbouring Transmission System Operators across Europe and Transmission Owners across GB.

NESO is continuing to develop tools, systems and services that provide clear and efficient routes for new technologies and all forms of capacity, including small scale flexibility, to contribute to the security of supply.

While in previous years the groundbreaking Demand Flexibility Service (DFS) has been used as an enhanced action, as part of our winter contingency toolkit, it will not perform that function this year. Instead, given the improved operational outlook for this winter DFS has been redesigned to operate in the commercial marketplace to help us manage our margins. Once approved, NESO will be able to use DFS throughout the year, allowing consumers and businesses to compete directly with power stations and renewables.

Read the NESO Winter Outlook 2024/25

Craig Dyke, director of system operations at NESO, said:

*"As we publish our first Winter Outlook as the National Energy System Operator, it is positive to see that margins forecast for this winter are the highest since 2019/20. This is driven by a range of factors such as additional generation, increased storage capacity and new interconnection.*

*"While our margin assessment has improved from previous winters, we are continuing to monitor risks and uncertainties and, if necessary, will take steps to build resilience.*

*"We and the rest of the energy industry will as always continue to prepare for a range of potential eventualities, so that we are fully prepared for this coming winter."*

***NESO***
***http://www.neso.energy/***

## 8 October 2024

## UK homes to be offered payments to cut electricity use all year round

*Plan by grid operator will help Britain's network cope with more wind and solar power*

British households and businesses will be offered payments to cut their electricity usage at times of tight supply throughout the year under plans to help the country's power network cope with an increased reliance on wind turbines and solar panels.

A scheme introduced in 2022 following Russia's invasion of Ukraine to help Britain avoid blackouts would be expanded as soon as this winter, the National Energy System Operator (NESO) said.

Called the "Demand Flexibility Service", it offers payments to households and businesses who sign up through their energy supplier to use less electricity during short periods, when it would help the operator balance supply and demand in the UK's power system. The NESO, which was bought by the UK government from National Grid for £630mn this month, has applied to energy regulator Ofgem to run the programme all year-round, it said on Tuesday.

The scheme previously ran during the winter months, with the operator using it as one of its last resorts to avoid the margin between available power and demand falling too low.

If expanded, NESO would use the scheme in a more routine way that would see electricity companies on behalf of their customers offer to cut usage when needed, as part of the operator's wider efforts to balance supply and demand. "Once approved, NESO will be able to use [the scheme] throughout the year, allowing consumers and businesses to compete directly with power stations and renewables," said NESO.

The scheme is part of a major shift that will need to take place in the way consumers use electricity as part of the transition away from fossil fuels and towards renewable energy. Operators need households and businesses to be more flexible about when they use electricity, in order to better match up with intermittent sources of supply such as wind and solar power.

This could mean, for example, running machinery or charging electric cars overnight rather than during typical peak hours in the evenings. Offering payments through the demand flexibility service is one way of encouraging this behaviour.

Suppliers taking part in previous years include British Gas and Octopus Energy, the UK's two largest household energy suppliers. Last winter, 2.6mn households and businesses took part, saving 3.7 gigawatt-hours. Suppliers were paid £3 per kilowatt-hour saved during test runs. NESO, which has been given a wider remit by the government after its purchase, is not expecting the gap between electricity supplies and demand this winter to fall to concerning levels, it said in its winter outlook forecast on Tuesday.

The closure of Britain's last coal-fired power plant at the end of September has been offset by more cables to import supply from the continent, and batteries. NESO would "continue to prepare for a range of eventualities", added Craig Dyke, director of system operations.

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

## 8 October 2024

## PJM introduces interim interconnection process for reliability

PJM is exploring a way to identify and process resources that can support reliability in the near term as it transitions to a reformed interconnection process and clears its new service requests. Donnie Bielak, Director, Interconnection Planning, introduced the Reliability Resource Initiative (PDF) at the Oct. 8 meeting of the Planning Committee.

PJM has expressed concern in recent years about having enough resources on the system to reliably serve electricity demand, as detailed in the February 2023 study, Energy Transition in PJM: Resource Retirements, Replacements & Risks (PDF). The study is part of an overarching PJM initiative, Ensuring a Reliable Energy Transition.

The following trends, in combination, are eroding PJM's reserve margins and will present reliability challenges by the end of the decade if not addressed. They include:

- Significant load growth, including large data centers and EVs
- Accelerated generator retirements due to economics and environmental policies
- New resource additions slowing due to supply chain, permitting and financing issues

- Lower reliability value of resources in the interconnection queue as measured by Effective Load Carrying Capability

The clearing prices in the capacity market for the 2025/2026 Delivery Year underscored these concerns, signaling the need for new generation.

The Reliability Resource Initiative would create a one-time opportunity to accommodate resources that support near-term reliability by placing them into Transition Cycle #2 with an abbreviated application window.

The new process is designed to have no impact on the milestone dates of Transition Cycle #2.

*Framework for Eligibility*

Projects would be assessed by their contribution to resource adequacy, with a focus on their reliability value; the date by which they could be in service; and their size in megawatts.

The number of projects accepted would be capped to minimize disruption to the Transition Cycle #2 timeline.

The process would need to be approved by the PJM Board of Managers and the Federal Energy Regulatory Commission (FERC). Due to the urgent need, this approval would be requested on an accelerated timeline with limited stakeholder engagement.

PJM is scheduling a special meeting of the Planning Committee Oct. 18 to provide a straw proposal and receive stakeholders' feedback.

Notice of a filing likely would be announced at the Nov. 21 meeting of the Members Committee. Pending approval, PJM would open Transition Cycle #2 for submissions in the first quarter of 2025.

***PJM Interconnection***
***http://www.pjm.com/***

## 9 October 2024

### 50Hertz holding company Eurogrid successfully places further Green Bonds with a volume of 1.5 billion euros

Eurogrid, the parent company of transmission system operator 50Hertz, has once again successfully launched two bonds on the market. By issuing its fifth and sixth green bonds, it has secured a total of EUR 1.5 billion for the necessary grid expansion as part of the energy transition. This is already the second billion-euro transaction for Eurogrid this year and underlines the company's excellent access to the capital market. Once again, selected projects on land and at sea will be financed, with which the integration and transportation of additional quantities of renewable electricity can be increased.

The corporate bonds have a volume of EUR 650 million (term of three years, interest rate 3.08 percent) and EUR 850 million (term of eleven years, interest rate 3.73 percent). They will be issued on the regulated market in Luxembourg with the support of BNP Paribas, Commerzbank, ING, NatWest and with the participation of ABN Amro and Royal Bank of Canada.

***50Hertz***
***http://www.50hertz.com/***

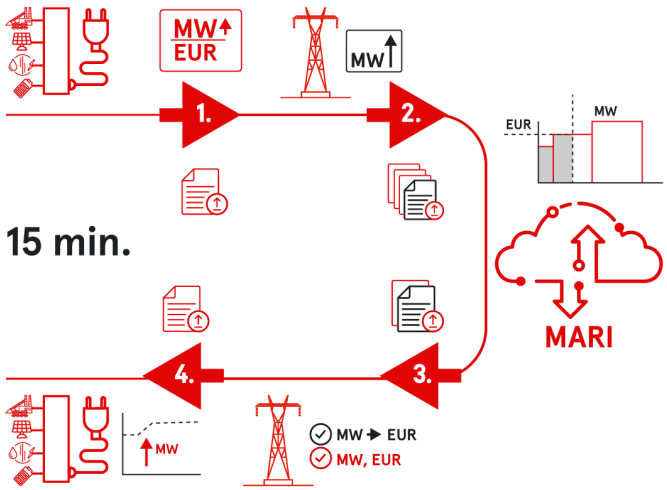
## 10 October 2024

### The Baltic states have joined the European balancing market platform MARI, creating new business opportunities for electricity market participants

A significant step towards a unified European balancing market is the October 2024 entry of the Baltic transmission system operators AS "Augstsprieguma tīkls" (AST), "Elering," and "Litgrid" into the European platform for trading manually activated balancing reserves

MARI (Manually Activated Reserves Initiative). Participation in this market will offer new opportunities for electricity producers, consumers, and large-scale battery operators in Latvia, Estonia, and Lithuania to provide balancing services to regional transmission system operators. The new balancing market will offer additional revenue opportunities for market participants, while transmission system operators will gain broader access to the resources needed to balance the power system.

"The Baltic transmission system operators' entry into the European balancing market platform is a strategically planned step towards the disconnection of the Baltic power system from the Russian power grid, planned for February 2025. After disconnection, the so-called Baltic Frequency Control Block will be created, where an independent frequency and balancing system will operate, and the reserves needed to maintain the stable operation of the power system will be provided. This will make the Baltic power system more autonomous, independent, and resilient to various disruptions and operational challenges. Additionally, joining the European balancing market platform will allow the transmission system operator to purchase the necessary balancing reserves in a regional, competitive market at the lowest possible cost, which will have a positive impact on consumer electricity prices," notes Gatis Junghāns, Member of the AST Management Board.




An important feature of the new balancing market model is that balancing services can be provided using a wide range of technologies, including electricity storage batteries, solar and wind generators, flexible consumption, and more. In the balancing energy market, participants can offer to reduce or increase their production capacity or consumption close to real-time to ensure a continuous balance between electricity production and consumption, for which they will be compensated.

Since 2018, the Baltic unified balancing energy market platform COBA has operated, where settlements were made hourly. With the Baltic states joining the European MARI platform, the trading interval is reduced to 15 minutes. The existing requirement for a minimum reserve offer for regulation—one megawatt—remains unchanged, but the new interval allows this capacity to be offered for shorter terms. This also allows smaller electricity market participants to enter the balancing reserves market with their offers. In the future, it is planned to implement a 15-minute trading interval for intraday and day-ahead electricity markets as well.

The MARI platform is being implemented across Europe in line with the requirements of the European Commission's Regulation (EU) 2017/2195, which establishes guidelines for

electricity balancing. With the Baltic states joining the MARI platform, as well as the introduction of the Baltic balancing capacity market in early 2025, the range of balancing providers will expand, creating favourable conditions for new investments in balancing reserve infrastructure. After synchronisation with the Central European Synchronous Area (CESA), Baltic transmission system operators will need to independently ensure frequency regulation and the continuous, precise balancing of consumption with electricity supply. This, along with the rapid connection of wind and solar power plants to the grid, will increase the amount of balancing reserves required by transmission system operators for the stable operation of the power system. Therefore, AST, in cooperation with the Estonian and Lithuanian transmission system operators, is introducing a regional market where operators will purchase the balancing capacity reserves needed for the operation of the electricity transmission system.

***AST***
***http://www.ast.lv/***

## 10 October 2024

### Hurricane Milton slams Florida, leaving 3.4M utility customers without power

About 71% of Tampa Electric's customers were without electricity Thursday morning after the hurricane hit land on Florida's west coast.

About 3.4 million electric customers were without power in Florida on Thursday morning after Hurricane Milton hit the state's western shore on its way toward the Atlantic Ocean, according to PowerOutage.us.

Milton, a Category 5 hurricane that slowed to a Category 3 by the time it made landfall, comes about two weeks after Hurricane Helene caused nearly 6 million power outages across the Southeast. About 63,000 customers still remain without power in North Carolina and about 35,000 customers lack electricity in Georgia in the wake of that storm, according to PowerOutage.us.

Florida Power & Light, a NextEra Energy subsidiary, reported that about 1.2 million of its 5.4 million customers were without power Thursday morning after Hurricane Milton crossed the state.

Tampa Electric, an Emera subsidiary that serves the area where Milton hit Florida's west coast, reported it had about 594,000 power outages, affecting about 71% of its roughly 840,000 customers, on Thursday morning.

About 923,000 of Duke Energy Florida's 2 million customers lacked power Thursday morning, according to the utility.

On Wednesday, the U.S. Department of Energy issued an emergency order giving Duke permission to run its 1,640-MW Citrus combined cycle plant in Crystal River, Florida, as needed to meet electricity demand and protect the reliability of the electric system due to Hurricane Milton, according to the utility.

Withlacoochee River Electric Cooperative, which serves an area north of Tampa, reported it had about 124,000 customers experiencing outages, and Peace River Electric Cooperative said it had about 54,000 customers dealing with outages.

More than 50,000 utility workers from at least 42 states, the District of Columbia and Canada are dedicated to the Milton response, according to the Edison Electric Institute, a trade group for investor-owned utilities. Workers and equipment were pre-positioned in and near Florida, EEI said.

Milton could cause widespread damage to electric distribution across Florida, according to David Kamran, assistant vice president for Moody's Ratings.

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## 11 October 2024

### Orsted exits Danish hydrogen schemes

Orsted has withdrawn from the Green Fuels for Denmark (GFDK) project and the consortium behind the 2MW H2RES hydrogen production development.

The developer said H2RES was created as a demonstration project which in its four-year project period gave the consortium's partners invaluable insights that will benefit future projects and further advance the development of Denmark's green energy sector. Head of Europe business development and P2X activities in Europe Robert Duncalf said: "The consortium has jointly decided not to continue the project since a sub-scale demonstration plant like this no longer has a relevance in the current market.

"The learnings from H2RES will play a key role for the partners in the consortium in the development of future green hydrogen solutions and all parties in the consortium see fundamental potential in green hydrogen and will individually continue to explore opportunities in the area as the market matures." As part of this decision the consortium is to be dissolved.

The move to step out of Green Fuels for Denmark follows the Danish developer's decision to de-prioritise its efforts within efuels in Northern Europe and "as such the project is no longer in line with our strategy". It added it was aware other partners in the scheme are "exploring options for continuing Green Fuels for Denmark".

The consortium working on H2RES included Green Hydrogen Systems, Everfuel Europe, DSV Panalpina, Nel Hydrogen, Energinet Elsystemansvar, and Hydrogen Denmark. Duncalf said: "We still think the vision behind Green Fuels for Denmark is good.

"However it is no longer the right fit for Orsted since we are focusing on our core business which is wind energy with green hydrogen as a relevant and complementary technology." The developer said the decision not to move ahead with GFDK and H2RES is in line with its decision to de-prioritise the development of efuels and evaluate all projects against their value creation.

"The decision does not change our existing guidance," it said. "Orsted will, as already communicated, keep the door open for green hydrogen projects, where these can complement offshore wind activities and meet our financial return requirements."

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