

WORLD POWER SYSTEMS REVIEW

15 August 2024

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Record breaking funding for clean energy in Britain

Renewable industry to bid for record breaking funding as the Energy Secretary unveils the largest-ever budget for delivering new homegrown clean energy projects in the UK – boosting energy security, securing cheap power for families, and unlocking economic growth and jobs for the country.

Ed Miliband announced the budget for this year's renewable energy auction is being increased by £500 million to over £1.5 billion - a record budget - helping build new green infrastructure as part of the mission to deliver clean power by 2030. Funding will accelerate the delivery of clean, cheap, low-carbon electricity to families and businesses, generated by renewable energy technologies such as wind turbines and solar panels. Families across the country have suffered during the cost of living crisis, as the UK's over-reliance on fossil fuel markets was exploited by Putin. Investing in clean energy is part of the government's plans to make Britain a clean energy superpower. This will boost the country's energy independence, so that families and businesses are never left that vulnerable again.

This includes £1.1 billion for offshore wind – the backbone of the UK's clean energy mission – which has more budget available than all of the previous auctions combined, sending a strong signal to industry to invest in UK waters.

The uplift comes on the day of the first meeting of the Clean Energy Mission Board – chaired by the Energy Secretary and attended by Ministers from across Whitehall – as part of plans for a mission-driven government. The board will meet to ensure a relentless focus on delivering the mission of clean power by 2030 and accelerating towards net zero. Industry will now bid for a share of the funding through the government's sixth renewable auction – known as the Contracts for Difference scheme – which provides developers with initial subsidies for clean electricity projects across Britain with a built-in design to keep costs low for billpayers. These subsidies are paid back when wholesale electricity prices are higher than the agreed Contract for Difference price. This was seen over Winter 2022/2023, when Contracts for Difference payments reduced the amount needed to fund government energy support schemes by around £18 per typical household.

The scheme's design means the central government's budget will not be impacted, following findings from a Treasury spending audit revealed £22 billion of unfunded pledges inherited from the previous government. Overall, the funding uplift represents more than a 50% increase on the budget previously set in March, driving clean energy investment in the UK, supporting high quality jobs in industrial heartlands and coastal communities, while protecting household bills from volatile fossil fuel prices.

Energy Minister Michael Shanks said: "It is our mission for the UK to be more energy secure and to do that we need more renewable energy projects connected to the grid and powering our homes. Increasing the budget by more than 50% will boost industry confidence to back clean energy, attracting cutting edge clean technologies to Britain as we accelerate to a decarbonised power sector by 2030."

The Contracts for Difference scheme works by developers bidding for contracts to help deliver renewable energy projects, with the scheme providing a guaranteed price for the clean electricity they generate. This gives industry greater certainty to invest, knowing that when electricity prices fluctuate, they will always get a set price for their projects. The scheme's design awards contracts through a series of competitive auctions, where the lowest price bids are successful – providing value for money and cheap power for consumers.

Building new, clean renewables also reduces exposure to volatile global gas prices which drove peak average wholesale electricity prices to record highs in 2022. Investing in

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renewables will protect household bills in the long-term and put Britain in control of its energy security. Developers can bid for more funding and bring forward more renewable energy projects, which will deliver the government's 2030 clean power target while supporting local economies grow across the country.

Following the increase, the Allocation Round 6 (AR6) budget includes:

- £1.1 billion for offshore wind, an uplift of £300 million
- £185 million for established technologies such as onshore wind and solar, an uplift of £65 million
- £270 million for emerging technologies such as floating offshore wind and tidal, an uplift of £165 million

The increase means the AR6 budget is 7 times higher than that of Allocation Round 5 (AR5).

Last week the government launched Great British Energy in partnership with the Crown Estate, backed by £8.3 billion of new money, which is estimated to create up to 20-30GW of new offshore wind developments reaching seabed lease stage by 2030. The budget increase for Contracts for Difference marks the latest milestone in the government's clean energy superpower mission, building on the lifting of the onshore wind ban and the approval of major solar farms powering the equivalent of almost 400,000 homes. Now the budget has been set, the auction will take place in August with successful projects to be announced in September 2024.

GOV.UK

<http://www.gov.uk/>

6 August 2024

Taiwan awards 2.7GW in offshore wind tender

Taiwan's Ministry of Economic Affairs (MOEA) has awarded five wind farm projects totalling 2.7GW with capacity allocations in its latest round 3.2 offshore auction.

According to the list of awards released by the MOEA, the selected projects include local developer Shinfox's 700MW Youde; Synera Renewable Energy Group's (SRE) 800MW Formosa 6; Copenhagen Infrastructure Partners' 600MW Fengmiao 2; Corio and TotalEnergies' 360MW Formosa 3 joint-venture; and Enervest's 240MW Deshuai.

A notable absence from the list was Ørsted after the Danish developer's 570MW Greater Changhua 3 proposal came in third in the initial bidding rankings in July. The MOEA said at the time that not all the ranked projects may be allocated capacity, highlighting the overlapping scope of some project sites.

The selected developers must now submit a formal notice by 11 November 2024.

On receiving an award for the largest project in the selection, SRE chairperson Lucas Lin commented: "SRE has been dedicated to offshore wind power in Taiwan since 2012, navigating through all the phases of industry development, namely demonstration, potential zones and zonal development. Our unwavering commitment to Taiwan and strong belief in its market potential have been driving us forward."

Taiwan's cumulative installed offshore wind capacity stood at 1.69GW as of 2023, with more than 2.3GW of projects currently under construction and over 25GW in development. However, on 26 July, the EU requested dispute settlement consultations at the World Trade Organisation (WTO) concerning Taiwan's use of local content criteria for offshore wind energy projects. According to the EU, the criteria and eligibility are inconsistent with Taiwan's WTO commitment to not discriminate against imported goods and services, having "a negative impact on a sector of strategic importance to the EU".

Power-Technology

<http://www.power-technology.com/>

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New Grid Connection Rules in Romania

Romania's National Energy Regulatory Authority (ANRE) has approved a competitive, auction-based mechanism for grid connections of new plants of at least 5 MW. The new rule will come into force from January 1, 2026. The approved methodology mirrors the process outlined in draft proposals published earlier this year. It will see auctions held on a yearly basis, offering 10-year allocation periods commencing from the second year after the auction. Romania's transmission system operator, Transelectrica, will determine and publish the available capacity for each zone of the grid by January 15 of each year. Then from July 1, Transelectrica will organize daily auction sessions, with starting prices calculated by dividing the total estimated value of the grid development works by the total available grid capacity.

George Niculescu, ANRE president, has said the new methodology "promotes a mechanism that ensures a competitive environment that offers better predictability in the energy system." ANRE has also made several immediate changes to Romania's grid connection processes, including new rules for financial guarantee. Previously required before concluding a connection, the guarantee is now a prerequisite for issuing any new grid connection permit above 1 MW and amounts to 5% of the connection tariff.

The guarantee, which can take the form of a bank guarantee, term deposit, or direct payment, can be enforced by the grid operator if the connection agreement is not signed, payments due under it are not made, building permit is not obtained by the legal deadline, the project is not completed by the connection agreement deadline or the investor renounces the project. The change applies to all ongoing applications for which grid connection permits have not been issued, not just future applicants. Lawyers from Bucharest-based law firm Nyerges & Partners say the changes make the financial guarantee "an efficient instrument that limits the artificial grid blockages caused by unfeasible projects or those lacking financing sources."

Other immediate changes approved by ANRE cover grid calculations at the project testing stage, mandating grid operators to submit monthly updates on grid status and offering 12-month building permit extensions, conditional of delays outside investors' control and a financial guarantee of 5% of the connection tariff. ANRE has also ordered that any ongoing grid connection application without an issued permit will be terminated on January 1, 2026, as the new auction comes into force. "Given that the timing for completing the grid connection process is largely outside investors' control and significant delays are common, this principle poses high risks for initiating new investments," lawyers from Nyerges & Partners say. The Romanian Photovoltaic Industry Association said it expects the nation to add at least 3 GW of renewables by 2026, with solar accounting for around 2 GW of the total. Statistics from the International Renewable Energy Agency show that Romania had 1,414 MW of solar installed by the end of 2022. In July, Romania's parliament adopted a bill mandating prosumers with PV systems with capacities from 10.8 kW to 400 kW to install energy storage systems.

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

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7 August 2024

Biden-Harris Administration invests \$2.2 Billion in the Nation's grid to protect against extreme weather, lower costs, and prepare for growing demand

In support of the Biden-Harris Administration's Investing in America agenda, the U.S. Department of Energy (DOE) today announced a \$2.2 billion investment in the nation's grid

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for eight projects across 18 states to protect against growing threats of extreme weather events, lower costs for communities, and catalyze additional grid capacity to meet load growth stemming from an increase in manufacturing and data centers. Funded by the Bipartisan Infrastructure Law's Grid Resilience and Innovation Partnerships (GRIP) Program, the projects selected today will catalyze nearly \$10 billion in total public and private investment to bring reliable, affordable, clean energy to Americans. This deployment of new, innovative transmission infrastructure and technology upgrades to the existing grid will add nearly 13 gigawatts (GW) of grid capacity—including 4,800 megawatts (MW) of offshore wind—allowing more clean power to reach customers across the country. These projects will create at least 5,000 good-paying jobs and upgrade more than 1,000 miles of transmission in total.

“The first half of 2024 has already broken records for the hottest days in Earth's history, and as extreme weather continues to hit every part of the country, we must act with urgency to strengthen our aging grid to protect American communities,” said U.S. Secretary of Energy Jennifer M. Granholm. “The Biden-Harris Administration is investing in the most crucial component of the nation's infrastructure, expanding and hardening the grid to allow more resilient, clean power to reach more household, and support the ongoing manufacturing boom—all while creating thousands of local jobs.”

“In order to reach President Biden and Vice President Harris' climate and clean energy goals, we need a bigger, smarter, more resilient grid,” said John Podesta, Senior Advisor to the President for International Climate Policy. “Today's awards are bringing us closer to our clean energy future by building out transmission and upgrading grid infrastructure from North Carolina to California.”

“Under President Biden and Vice President Harris's leadership, the United States is leading an unprecedented expansion in the capacity of the existing U.S. transmission network, which will further catalyze our work to deliver reliable, affordable power across the country,” said White House National Climate Advisor Ali Zaidi. “As we build out the nation's power grid to keep pace with historic manufacturing and clean energy growth, we are doing so by harnessing innovative technologies to lower energy costs, create hundreds of thousands of good-paying jobs, and take on the climate crisis. The investments we are making today will enhance the strength and resilience of our grid, especially in the face of more climate-fueled extreme weather events like wildfires, flooding, and extreme heat.”

Part of DOE's Building a Better Grid Initiative and authorized by the Bipartisan Infrastructure Law, the GRIP Program funding represents the federal government's single largest direct investment into critical grid infrastructure – part of the Biden-Harris Administration's historic actions to get grid updates funded, permitting, and deployed across the country. Today's selections are made through Grid Innovation Program grants, one of three GRIP funding mechanisms, that seek to deploy projects that use innovative approaches to transmission, storage, and distribution infrastructure to enhance grid resilience and reliability.

Across the 8 projects, over \$300 million will be invested in community workforce development, scholarships and apprentice programs, as well as grants to community organizations. GRIP projects also include strategies to ensure meaningful community and labor engagement and quality. Six of eight GRIP projects will utilize local partnerships with labor unions, at least five of which will partner with local chapters of the International Brotherhood of Electrical Workers (IBEW).

Selected projects will leverage:

Innovative transmission infrastructure to improve grid resilience and reliability and integrate more clean energy to the grid.

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- Two projects will deploy large new transmission lines: Clean Path New York (New York Power Authority) and North Plains Connector (Montana Department of Commerce). The two lines, totaling about 625 miles, will increase grid capacity by about 4,300 MW by deploying high voltage, direct current (HVDC) technology, among other things.
 - Clean Path New York will deploy HVDC cables underground and underwater to minimize right-of-way impacts that can be associated with large-scale transmission projects.
 - The North Plains Connector project, headed by the Montana Department of Commerce in partnership with the North Dakota Transmission Authority will increase interregional transfer capacity and provide instantaneous change of direction in electricity flows to support the eastern or western grid when required, improving resilience and reliability. The project will also enable the development of the Standing Rock Sioux Tribe's wind resources.

Advanced technology upgrades to deploy innovative grid technologies including advanced conductors, dynamic line ratings, microgrids, and advanced distribution management systems to increase grid capacity using existing rights of way.

- Six projects will implement innovative technologies on the existing electric grid, increasing grid capacity and transforming grid operations.
- Three projects will deploy advanced conductors at scale to upgrade about 400 miles of existing transmission lines.
- Three projects will deploy dynamic line rating, a grid-enhancing technology that can increase system utilization by enabling transmission lines to increase power flow while still operating safely.
- The Biden-Harris Administration is catalyzing national collaboration on deploying these modern grid technologies, including through a Federal-State Modern Grid Deployment Initiative.

Federal, interstate, and private sector collaboration to demonstrate innovative collaborations and partnerships, particularly across states and with the private sector.

- The RELIEF project—headed by the Utah Office of Energy Development in collaboration with the states of Arizona, Idaho, Oregon, and Wyoming, as well as the California Independent System Operator—will address system contingency issues and prevent over 5,500 hours of potential outages for 700,000 utility customers in five states.
- The Power Up New England project headed by the Massachusetts Department of Energy Resources is a collaboration with the states of Connecticut, Maine, Rhode Island, New Hampshire, and Vermont. The project will reduce wholesale energy supply costs for New England customers by about \$1.55 billion and create new offshore wind interconnections in Massachusetts and in Connecticut, which—in addition to enabling 4,800 MW of offshore wind.

The Investing in America agenda is providing the largest electric grid infrastructure investment in history to strengthen America's power grid while lowering energy costs and creating good-paying jobs. Under the Biden-Harris Administration's leadership, the U.S. is projected to build more new electric generation capacity this year than in two decades while also mobilizing to upgrade thousands of miles of existing transmission lines. This includes catalyzing nationwide collaboration on modern grid technologies and funding their deployment, accelerating transmission permitting, and increasing grid capacity to support electricity demand to support increased electrification, data centers, and manufacturing.

In addition to the Grid Innovation Program, the GRIP Program includes two additional funding mechanisms: Grid Resilience Utility and Industry Grants that provide funding to the private sector to strengthen and modernize America's power grid against wildfires, extreme

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weather, and other disruptive events that are exacerbated by the effects of climate change, with a focus on grid hardening efforts; and Smart Grid Grants fund technology investments that will increase how much power the grid can handle; prevent faults that may lead to wildfires or other system disturbances, integrate more renewable energy; and facilitate the integration of electrified vehicles, buildings, and other devices. The second round of selections for GRIP's the Grid Resilience Utility and Industry Grants and the Smart Grid Grants will be announced later this year.

ENERGY.GOV

<http://www.energy.gov/>

9 August 2024

Third Nuclear Power Plant proposal lodged in Norway

Norsk Kjernekraft has submitted a proposal to Norway's Ministry of Energy for an assessment of the construction of a power plant based on multiple small modular reactors (SMRs) in the municipality of Øygarden, west of Bergen. The proposed location is an area of up to 250 acres (101 hectares) at Buneset, 600 metres south of the transformer and the gas processing plant at Kollsnes. The location is said to be well suited for utilising existing and planned network infrastructure in the Bergen area. The power plant will enable the electrification of oil and gas installations, the establishment of new industry and safeguarding security of supply.

The site is owned by landowner and former mayor of Øygarden, Rolv Svein Rounø. Rounø earlier entered into a letter of intent with Norsk Kjernekraft and the agreement outlines that the site can be acquired for use in the construction of SMR power plants. Norsk Kjernekraft said the site has space for five SMRs, each with a generating capacity of 300 MWe. This means that the site has the potential for generating 12.5 TWh per year, corresponding to almost 10% of Norway's current total electricity consumption.

The scope of the proposed study programme submitted to the Ministry of Energy is limited to assessing what effects construction, operation and decommissioning of the power plant can have for society and the environment.

The report describes the location in question and explains how the nuclear power plant will contribute to fulfilling local, regional and national ambitions and obligations in the field of energy and climate. In addition, local conditions for the construction and operation of a nuclear power plant at Buneset in Øygarden are described, and which topics will be described in a future impact assessment. The ministry will send the report out for consultation, and then the municipality, residents and industry will be able to make their comments. If approved by the ministry, the report and input will form the basis for an impact assessment.

Norsk Kjernekraft noted that Vestland county, in which Øygarden is located, is the region in Norway with the highest greenhouse gas emissions. Large projects are planned for new power consumption in the county, among other things to electrify oil and gas installations. Øygarden municipality already has a large power deficit, and this will increase as a result of planned electrification projects and the establishment of new industry.

"This marks yet another important milestone for Norsk Kjernekraft, and it is the third notification sent to the Ministry of Energy," said the company's CEO Jonny Hesthammer. "Previous notifications have included Aure and Heim municipalities, as well as Vardø municipality. A nuclear power plant in Øygarden will make it possible to electrify oil and gas installations on land and offshore. In addition, it will enable new power-intensive industry, and improve the utilisation of the power grid in Western Norway.

"The power plant will produce electricity regardless of the weather, thereby improving security of supply throughout the country. This report will also be an important part of the

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knowledge base for the government's announced investigation into nuclear power in Norway." In June, the Norwegian government announced the appointment of a committee to conduct a broad review and assessment of various aspects of a possible future establishment of nuclear power in the country. It must deliver its report by 1 April 2026.

World Nuclear News
<http://www.world-energy.org/>

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Sineng Electric launches world's largest sodium-ion battery storage project

Sineng Electric has revealed that it has provided its string PCS MV stations for what it said is the world's largest sodium-ion BESS, and China's first 100 MWh-scale energy storage power station using sodium-ion batteries.

The project consists of 42 BESS containers with 185 Ah sodium-ion batteries, 21 power conversion systems, and a 110 kV booster station. The project is being developed and managed by Datang Hubei Energy and marks China's efforts to diversify away from lithium to more abundant sources. Datang Hubei Energy said it had started operating the project on July 2. It was connected to the grid on June 30.

As with such ESS systems, the batteries can bridge the highs and lows of renewable energy production to stabilize grids. Chinese media reported that the project in Qianjiang, Hubei province, shows that sodium-ion batteries have become a new possibility for future power grid development. Sineng Electric said that sodium-ion batteries show superior performance at low temperatures, better round-trip efficiency, and better overall safety

The company said its 2.5 MW string PCS MV solution is designed to align with the sodium-ion battery storage system's wide DC voltage range, supporting rated output power from 700 V to 1,500 V. The solution features cluster-level energy management that the company says amplifies the cluster-level balancing capabilities of sodium-ion batteries. The company says its string PCS units can endure extreme temperatures and high humidity, engineered with an IP66 protection rating.

Sineng Electric recently commissioned a 100MW/200MWh energy storage project in Shandong province. It also recently signed a supply agreement with German semiconductor chip manufacturer Infineon Technologies AG.

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13 August 2024

Proposed Anglo-Scottish electricity superhighway is first to clear final fast-track funding hurdle

Ofgem's Accelerated Strategic Transmission Investment (ASTI) framework is fast-tracking 26 major connection projects which will boost grid capacity and could deliver estimated savings of £1.5 billion.

A £3.4 billion funding package has been awarded to build a proposed new subsea and underground 500km cable between Scotland and Yorkshire which could power up to 2million homes.

Eastern Green Link 2 (EGL2) is the first of 26 projects to complete a fast-track process to secure funding through Ofgem's new ASTI framework. ASTI accelerates the funding process by up to two years, allowing electricity generated by offshore wind to be delivered to British consumers sooner.

The projects delivered via Ofgem's ASTI programme are a vital part of the work to upgrade the energy system and allow more renewable energy to be brought onto the grid.

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This will help to deliver Government's goal of clean power by 2030 and reduce our reliance on volatile international gas markets.

EGL2 will deliver a 2GW* high voltage electricity 'superhighway' cable link between Peterhead in Aberdeenshire and Drax in North Yorkshire, which will help harness the potential of British offshore wind power. Most of the cable (around 436km) will be under the North Sea with the remaining 70km buried underground onshore. Two converter stations, one at each end of the cable, are planned to help feed the electricity transported by the cable into the grid and from there onto consumers.

As part of its mission to upgrade the energy system at least possible cost to customers, Ofgem scrutinised the developers' proposal and identified over £79m of savings which have been cut from the project costs without impacting delivery or quality.

ASTI projects will not only help provide millions of consumers with access to homegrown wind energy, but by boosting grid capacity they will deliver an estimated £1.5billion of savings by reducing the need to compensate generators who are currently asked to turn off production, during times of high wind, due to lack of grid capacity.

Jonathan Brearley, Ofgem CEO, said:

"Ofgem is fully committed to supporting the government to meet its aims of getting clean power by 2030. Today's announcement is a further step in putting the regulatory systems and processes in place to speed up network regulation to achieve its aim.

"Accelerated Strategic Transmission Investment (ASTI) accelerates approval times for projects such as Eastern Green Link 2 (EGL2) by up to two years. However, streamlining the process does not mean blank cheques for developers as we are able to step in and make financial adjustments to maximise efficiency and consumer benefit."

Work on the project is expected to begin later this year and to be complete by 2029.

Ofgem has also published updates on the following ASTI projects:

Yorkshire Green

Ofgem has announced a proposed funding allowance of £294.8m for another project in its ASTI cohort, the [Yorkshire Green Energy Enablement \(GREEN\)](#) project. The project involves a proposed upgrade to the local electricity network to help transport energy generated by Scottish and North Sea windfarms to consumers. Plans include building new substations, underground cables, over 7km of overhead lines and cable sealing end compounds (where underground cables meet overhead lines). Ofgem's proposed funding allowance are now subject to consultation with the project currently slated to be operational by 2027.

North London Reinforcement Project and Scottish Hydro Electricity Transmission (SHET) Bulk Submission

The ASTI framework enables ASTI project developers to apply for Early Construction Funding (ECF). These allow project developers to apply for up to 20 per cent of total forecast project costs to fund early construction activities including land purchases, early procurement purchases and preparatory works, such as ground preparation.

Ofgem has today approved ECF requests for:

- The North London Reinforcement Project a project which involves replacing existing 275kV overhead lines with higher voltage 400kV overhead line from Pelham substation, Hertfordshire to Waltham Cross substation in Epping Forest, through Enfield, and then to Tottenham substation in Haringey. The project also involves associated works to the substations at Pelham, Waltham Cross, Brimsdown, Tottenham and Hackney
- [SHET](#) bulk submission for six onshore and two offshore projects to boost electricity transmission capacity to enable more clean energy to be transported to where it's needed

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ASTI

Delivering clean energy requires a huge amount of new infrastructure, which must be built at pace to meet Government clean energy targets.

The ASTI framework has been designed to fast track the onshore transmission regulatory funding approval process for the transmission infrastructure needed to hit clean energy targets.

The framework was developed and introduced in response to the previous Government's policy ambition to connect up to 50GW of offshore generation by 2030, which was set out in the British Energy Security Strategy (published in April 2022).

A total of 26 projects have been identified by Ofgem for progression under the ASTI process, which is designed to help ensure Transmission Operators hit 2030 offshore wind connection goals.

If all ASTI projects are delivered by their optimal delivery dates, we expect consumers will see a net benefit of up to £2.1bn in terms of reduced constraint costs and carbon savings. However, this consumer benefit is contingent upon timely project delivery.

EGL2

EGL2 proposes building an 'electricity superhighway' connection linking the Scottish and English transmission networks from Peterhead in Aberdeenshire, Scotland to Drax in North Yorkshire, England. It consists of around 436km of 2GW High Voltage Direct Current (HVDC) submarine cable laid under the North Sea and around 70km of onshore cable buried underground. Two converter stations are needed at each end of the cable to enable the electricity to be fed into the onshore transmission network required to transform the electricity to alternating current (AC) as used on onshore network.

The project is being jointly developed by [Scottish and Southern Electricity Networks Transmission \(SSENT\)](#) and National Grid Electricity Transmission (NGET) with construction planned to start in 2024, with the new connection due to be operational by 2029.

Ofgem will also publish a statutory consultation on the proposed modifications to the Transmission Operator (TO) licence conditions that will formalise the decision in the coming weeks.

Yorkshire Green

Yorkshire GREEN is an National Grid Electricity Transmission (NGET) proposed electricity transmission network upgrade to manage increasing power flows between the North and South of England.

The plans include a new substation extension at Monk Fryston, a new substation at Overton with a new overhead line connection of approximately 7km to the existing network.

North London Reinforcement Project

The [North London Reinforcement Project](#) is an NGET project to replace an existing 275kV overhead line with a 400kV overhead line from Pelham substation, Hertfordshire to Waltham Cross substation in Epping Forest, through Enfield, and then to Tottenham substation in Haringey. There will also be associated works to the substations at Pelham, Waltham Cross, Brimsdown, Tottenham and Hackney. The project is due for completion in 2028 and will boost network capacity and enable more energy to be transported via the network to where it is needed.

SHET Bulk Submission

SHET is planning to deliver six onshore reinforcement projects and two offshore projects to boost electricity transmission capacity to enable more clean energy to be transported to where it's needed.

The project includes the following onshore elements: Beaully to Loch Buidhe 400kV Reinforcement; Loch Buidhe to Spittal 400kV Reinforcement; Beaully to Blackhillock 400kV

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Double Circuit; Blackhillock and Peterhead 400kV Double Circuit; Beaulieu to Denny 275kV Circuit to 400kV; East Coast Onshore 400kV Phase 2 reinforcement.

And the following offshore elements: Spittal to Peterhead 2GW HVDC Subsea link and Arnish to Beaulieu (Western Isles) HVDC link.

Ofgem has also launched consultations on ECF requests for the following ASTI projects:

- The North West Wales (NWW) is a NGET reinforcement project which will boost electricity transmission capacity to connect consumers in the northwest of Wales to a combined total of 5.48 GW of offshore generation, including the new 700MW Awel Y Mor Offshore Wind Farm (an extension to the existing Gwynt Y Mor windfarm)
- Norwich to Tilbury project is an NGET project to upgrade to the local electricity transmission network, which is needed to connect to new generation including offshore wind farms. The project involves building 184km of overhead lines between Norwich and Tilbury as well as a new substation and is currently due to start construction in 2027
- Grain to Tilbury is an NGET project to enable the transmission of more clean energy. It involves building a 2.2km tunnel under the Thames Estuary which will replace an existing tunnel built in the 1960s and is currently scheduled for completion in 2028

Ofgem

<http://www.ofgem.gov.uk/>

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New generation of floating wind farms moves a step closer as next phase of Celtic Sea leasing round gets underway

The Crown Estate has embarked on the latest phase in its Offshore Wind Leasing Round 5, which seeks to establish a new generation of floating wind farms in the Celtic Sea off the coasts of South Wales and South West England.

First set out in December 2023, the plans represent a new chapter for the UK's world-leading offshore wind industry, with the potential to see new floating turbines generating enough renewable energy to power more than 4 million homes (up to 4.5 gigawatts). The new wind farms also open up opportunities for thousands of on-shore jobs and new investment through the supply chain.

Round 5 has also become the first leasing round to be brought to market with an agreed plan for connecting the new windfarms to the UK's electricity grid, with the Electricity Systems Operator (ESO) today publishing its Celtic Sea network design recommendation.

The second phase of the leasing process, which got underway on 8th August 2024, will see Bidders set out plans for delivering the new wind farms, as well as details on how their plans will support the delivery of wider social and economic benefits for onshore communities. It follows a series of assessments and ongoing surveys by The Crown Estate to ensure any impacts on the marine environment are properly managed.

Research published in February this year by The Crown Estate showed that the supply chain for new Celtic Sea floating wind farms could create more than 5,000 new jobs and deliver a £1.4 billion boost to the economy.

Bidders are being encouraged to be ambitious in developing their proposals, which could include initiatives linked to skills development, apprenticeship opportunities, community impact, sustainable procurement and nature restoration. Bidders will also need to outline how they intend to work with ports in the execution of their plans, identifying both a primary and alternative port that they propose to use for the assembly of the windfarms. These plans will then form contractual obligations as part of the lease agreement for successful bidders.

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This latest milestone follows the conclusion of the initial Pre-Qualification Questionnaire (PQQ) in June 2024. The response from offshore wind developers to this stage demonstrated a clear interest in Round 5, with The Crown Estate able to move forward with a strong pool of Prequalified Bidders, all of whom have demonstrated their suitability to proceed.

The Crown Estate
<http://www.thecrownestate.co.uk/>

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Brazil cuts hydro use as droughts continue impacting global hydro generation

The Electric Sector Monitoring Committee (CMSE) advised the Brazilian government to minimise hydropower usage and shift its focus to thermal sources as well as import electricity from Argentina and Uruguay, citing low water levels in the River Madeira. According to Brazil's National Water Agency, the current conditions are set to last until 30 November.

Brazil is the second-largest producer of hydroelectricity in the world, according to the World Economic Forum (WEF). Power Technology's parent company, GlobalData, reports that the country recorded 41GW of hydropower generation in 2023. The country was expected to continue high levels of hydro generation this year with large amounts of water secured in its dams, but the drought on the river Madeira, which has been an issue since mid-2023, has remained a hurdle.

Brazil is not the only country to experience this crisis; droughts have led to a significant drop in hydropower generation worldwide. China is the global leader in hydropower output. However, droughts have contributed to the decline of hydropower generation in the country since 2021. Despite its hydro capacity increasing by 7.8% between 2021 and 2023, hydropower generation did not see the same increase, registering 1,184 terawatt-hours (TWh) in 2021, 1,202TWh in 2022 and 1,141TWh in 2023, according to the WEF. The International Energy Agency (IEA) confirmed that China's hydropower generation fell by 4.9% in 2023, stating that the country's generation would have been 125TWh higher if its hydropower fleet availability had been the same as 2022. The US, another hydro powerhouse, suffered a 6% decrease in hydropower generation in 2023 due to significant water loss in the north-west from high global temperatures that halted production at its hydropower plants.

The IEA highlighted that the global shortfall in hydropower generation due to droughts drove up global emissions by around 170 tons last year as countries had to revert to conventional sources to meet their energy demands.

To combat the effect of droughts on hydropower, the WEF suggested removing regulatory barriers and providing significant financial support to develop an interconnected grid. Brazil has benefitted from this solution.

Other nations have turned to fossil fuels when droughts affected their hydro generation. Brazil, on the other hand, has been able to easily switch to other renewable sources or access rain from other parts of the country thanks to its fully interconnected grid. While droughts have hindered, and are expected to continue hindering, Brazil and the world's hydroelectricity generation, continued development of electricity infrastructure is likely to help minimise the consequences.

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