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# Energy Spectrum 698

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## Week in review

**Monday 13/01** – Mayor of London Sadiq Khan's London Power white label energy supplier is launched in partnership with Octopus Energy. Ørsted and Equinor announce plans to lead a newly established Action Coalition to represent the offshore wind sector.

**Tuesday 14/01** – The Electric Vehicle (EV) Energy Taskforce publishes a report, making recommendations to the government on EV and energy policy. The European Green Deal's Investment Plan is presented, which the EU says would lead to €1trn investment from both the public and private sectors.

**Wednesday 15/01** – Business Secretary Andrea Leadsom defends her government's record on plans for tackling climate change during a debate on A Green Industrial Revolution in the Commons. SSE completes the sale of SSE Energy Services to OVO Energy for £500mn.

**Thursday 16/01** – The Prime Minister appoints former Bank of England Governor Mark Carney as a key COP26 adviser. National Infrastructure Commission Chair Sir John Armitt calls for the government to subsidise charging solutions in rural and hard-to-reach areas that are unlikely to be served by the market in the short term. The Scottish government signs a deal with Crown Estate Scotland to increase the number of offshore wind contracts in Scotland.

**Friday 17/01** – The Department for Transport announces it will invest £3.4mn in wireless charging for electric taxis in Nottingham. SSE announces that construction on the 3.6GW Dogger Bank windfarm has begun.

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## Tubthumping – the E3C report on the 9 August power cut



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On 3 January, Ofgem issued its assessment and recommended actions following the power outage on 9 August 2019. On the same day the Energy Emergencies Executive Committee (E3C) published its final report into the power system disruption.

The blackout highlighted how challenging balancing a system with increasingly decarbonised and decentralised resources will be. This week’s *Energy Perspective* aims to highlight how the proposed changes can contribute to achieving a net zero electricity system.

Ofgem concluded some parties had not met their licence and code obligations and the parties agreed to make voluntary payments. Ofgem announced Hornsea One Ltd and RWE would each pay £4.5mn for failing to remain connected following the lightning strike on 9 August and UKPN agreed to pay £1.5mn to Ofgem after reconnecting customers without instructions from the Electricity System Operator (ESO).

### Definitions

#### Low Frequency Demand Disconnection (LFDD)

is a Distribution Network Operator system which disconnects demand to maintain stability when frequency falls to a certain level.

**Rate of Change of Frequency (RoCoF)** is the time derivative of the power system frequency.

**Security and Quality of Supply Standards (SQSS)** set out criteria and the methodology for planning and operating the electricity transmission system.

Some new information was released as part of these reports, as well as recommendations on how to improve the processes surrounding reserve provision, technical compliance and Low Frequency Demand Disconnection (LFDD) – see Figure 1 for the LFDD stage of system demand disconnection from a fall in frequency..

### I get knocked down

While Ofgem does not believe the ESO was responsible for the events on 9 August, and even performed well in restoring the system given the scale of the issue, it has identified issues with the

### Summary of the event

- At 16.52 there was a lightning strike affecting the transmission system.
- The protection system operated to clear the fault on the circuit.
- Vector shift protection was activated resulting in the loss of 260MW of embedded generation.
- Two simultaneous power losses (737MW at Hornsea and 244MW at Little Barford) occurred independently of each other.
- Frequency began to fall as the cumulative loss was greater than the secured amount being held through response services (1GW).
- The increase in the Rate of Change of Frequency caused an additional 350MW of embedded generation to trip.
- Frequency was arrested at 49.1Hz.
- Additionally, one of the gas turbines at Little Barford tripped resulting in an additional 210MW loss.
- No further reserve was available, and Frequency fell to 48.8Hz and the LFDD kicked in.
- Disconnection of demand and reserve services allowed frequency to be restored to 50Hz within 5 minutes.
- Supplies were restored by DNOs within 45 minutes.
- Two DNO regions reconnected customers before receiving instructions from the ESO.

Source: National Grid ESO

processes and procedures used in managing the system.

Ofgem noted that the ESO was applying the Security and Quality of Supply Standard (SQSS) properly and securing against the largest transmission in-feed loss of 969MW from the Saltend group of generators with 1GW of response.

However, the regulator found that a potential fault on a transmission circuit could have resulted in the loss of the Saltend generator group and exceeded the Vector Shift protection mechanisms on distributed generators. This could have resulted in a total generation loss of 1,600MW, in excess of the reserve and response the ESO was holding.

Ofgem noted the ESO has an internal policy of only securing against transmission and distribution



losses where there are credible risks to the transmission system (such as bad weather) or where it is economic to do so (the cost of holding reserve is low enough). Concerns were also raised about the modelling used to evaluate the system, with the ESO using samples from 2016-17, while the regulator felt using larger samples from more recent periods would be appropriate.

Additionally, Ofgem characterised the performance of frequency response providers as “generally inadequate”, with primary response under-delivering by 17% and secondary response providers under-delivering by 14%. It highlighted commercial and mandatory providers of dynamic primary response as notably poor performers, underdelivering by 25%.

**Don’t cry for me, next door neighbour**

Transmission connected generators are required to comply with the Grid Code which sets out the conditions on the system they must be able to comply with, known as the Fault Ride Through requirements. Following a fault on the transmission system, generators must remain connected and be able to recover output to at least 90% within 0.5s.

Both Hornsea and Little Barford, which accounted for 1,378MW of the generation loss during the event, were unable to remain connected and were therefore in breach of the Grid Code and have agreed to voluntarily pay £4.5mn each to Ofgem’s redress fund. The discrepancy between speed sensors and high-pressure conditions on Little Barford’s turbines have not been fully established but Ofgem’s preliminary view is that these were caused by the fault conditions.

Ofgem has identified that Hornsea had modelled performance issues with its voltage control system at full load prior to 9 August and had planned to issue a software update on 13 August. However, it had not informed the ESO as it had not foreseen the issue occurring at lower than full load.

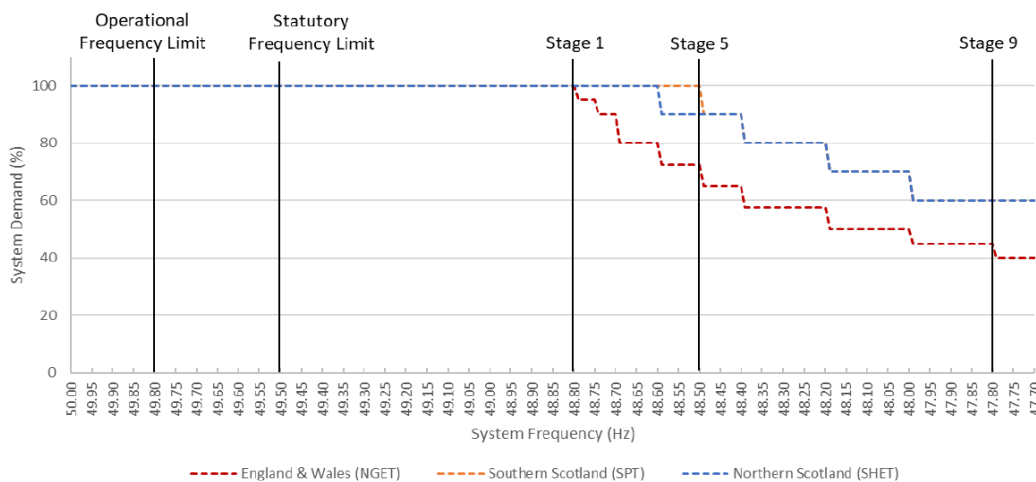
**Oh, Danny boy**

It has been estimated the total loss of embedded generation during the event was between 1,300MW and 1,800MW, with five main causes:

- Vector Shift protection which led to approx. 150MW loss.
- RoCoF protection which led to 350MW-430MW loss.
- An unexpected 200MW loss when some generators disconnected at 49Hz.
- A 100MW loss from an unknown cause identified by an unexpected increase in demand.
- The LFDD causing embedded generation to become disconnected led to an additional 550MW loss.

The E3C noted there was a “significant possibility” distribution connected generation losses exceeded transmission connected losses. These additional and unknown losses have raised concerns there are generators operating incorrect protection settings. Ofgem noted some generators may have manufacturer settings within their internal systems that caused them to de-load in response to the fall in system frequency below 49Hz.

**Figure 1: LFDD stages of system demand disconnection against a fall in system frequency**



Another concern raised by Ofgem was the requirement of the Distribution Network Operators (DNOs) to disconnect 5% of demand at 48.8Hz, on average the DNOs disconnected 4% of demand. The regulator believes the principal cause was the margin of error on the LFDD relays and if the frequency had dropped lower, they would have activated. Another factor would have been the level of distribution connected

Source: E3C Committee



generation, which would affect the net demand being disconnected by the relay.

The E3C highlighted the Grid Code does not require DNOs to make a provision for essential services, such as hospitals, airports, refineries and rail services. It noted some essential services were affected, such as power supplies to the Wirral Line, two hospitals, one water treatment works and Newcastle airport.

There was also wider disconnection as a result of internal protection equipment at many sites, which detected the drop in frequency and automatically switched to back-up supplies. In the case of some of these systems, there was a failure of the on-site internal power supplies which caused disruptions.

### **But I get up again**

The key change for the ESO will be a review of the SQSS, which should address the explicit requirement to consider the impact of distributed generation on security, looking at using cost-benefit analysis to reflect low likelihood events and simultaneous loss events. The ESO is expected to review and raise modifications to the SQSS panel by April 2020.

The ESO is also expected to present solutions to provide increased visibility on how much reserve and response it is holding and how secure it believes the system is. Ofgem has added a system operation review to its forward work plan from January 2020 and will work with the joint Ofgem-BEIS review into governance to look at the core roles of the ESO.

The key impact of the event for embedded generators will be the focus of the regulator on the impact of distributed network-connected generation. Also important are the recommendations that the regulatory framework be strengthened and clarified to ensure generators are compliant with the technical requirements and the possibility of licensing smaller generators to ensure enforcement of the technical settings.

Licensing embedded generators could be a contentious issue as the status as a “licence exemptible” generator is the driver behind embedded benefits and commercial set-ups where suppliers can take on distribution connected generators as part of the Supplier Volume Allocation (SVA) process.

To improve the effectiveness of the LFDD relays, the E3C will conduct a fundamental review of the

LFDD scheme considering the impact of distributed generation, interactions between balancing services and better targeting of non-essential loads.

### **You’re never gonna keep me down**

The key lessons the industry needs to learn from the events of the 9 August need to focus on the changes in the sector due to the past decade’s increasing decentralisation of the electricity market. This has been driven by falling costs for smaller generators like wind, solar and reciprocating engines. This trend is likely to continue and it is even possible that combinations of renewables and storage could become cheaper than grid power.

To balance an increasingly decentralised system, with the additional challenges of decreasing inertia and stability, more and deeper intervention and involvement from the ESO and DSOs will be required. Beyond reforms to the SQSS it is vital transparency and open access to data on all aspects of the network are incubated, and a digital twin is built with accurate up to date information to assess effects of connections, policies and outages across the network.

This should come with governance changes as well, and it is time for a level playing field for the technical provisions smaller generators must comply with compared to larger transmission connected generators. This also applies in licensing (so technical compliance can be enforced) but also service and data provision. Perhaps we could see a light touch common set of requirements for all generators, with generators wishing to participate in balancing or wholesale markets having to increase their regulatory burden.

We understand that most of the current LFDD relays operate on the 33kV network and don’t have a granular understanding of the loads connected to them. Ofgem notes that operating the LFDD by isolating individual sites is “Infeasible” – however if the future DSOs are expected to have a more granular understanding of their systems, both the generation and demand connected to it, and given the falling costs of communications equipment, there should be little technical impediment to operating more targeted LFDD relays.

The key question concerns how much customers are willing to pay for more targeted demand disconnections.



## Nuclear policy, fuel poverty action and more criticised in debate

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**Business Secretary Andrea Leadsom led a debate on a Green Industrial Revolution in the Commons on 15 January, defending her government's record and plans on climate action.**

The Business Secretary praised the power sector's rapid decarbonisation and the setting of the 2050 net zero target. She said: "Our target of net zero by 2050 has been set on the basis of its [the Committee on Climate Change's] recommendations so that we can grow our economy, sustain our future and contribute to tackling global climate change in a way that is sustainable for the UK, with the creation of green growth, so I am confident in that regard."

Leadsom continued: "We will bring forward more measures throughout the year to help us to meet that target of net zero."

Shadow Business Secretary Rebecca Long-Bailey made several criticisms of government policy and action. She said that the 2050 net zero target is not good enough, arguing that the UK needs to be ahead of the curve. She highlighted that the UK is still off track to even meet the old target of an 80% reduction in emissions by 2050.

The Shadow Business Secretary also criticised the Queen's Speech, highlighting that most of the climate section looks backwards to the government's record over the past 12 months. She continued: "There is reference to £400mn of funding for electric vehicle (EV) charging infrastructure, but this was first announced in the 2017 Budget."

On EVs, Long-Bailey said: "They are not cheap and most people cannot afford them, so we have a duty to create the market by providing incentives."

Long-Bailey continued: "The government should use their own procurement to ensure that their fleets are electric by a specified date, and we should ensure that fleet operators are incentivised to make their fleets electric so that the vehicles can transition into the second-hand car market."

Concerning carbon capture and storage (CCS), the Shadow Business Secretary said: "There are, of course, welcome features in the Queen's Speech, such as the commitment to invest

£800mn to develop the UK's first carbon capture and storage cluster by the mid-2020s. But I remember the time in 2010 when the coalition made a £1 billion commitment to CCS before scrapping it again in 2015."

SNP spokesperson for Energy and Climate Change Alan Brown criticised the current barriers to onshore wind. He said: "When we consider renewables and wind in particular, it is a reminder that the transmission charging regime is a straitjacket around Scotland. The punitive charges, especially in the north of Scotland, can be a deal breaker for some developments."

He continued: "The charging system needs a complete overhaul to allow deployment of renewable energy for maximum benefit."

Brown also criticised the government's "nuclear obsession", highlighting the National Infrastructure Commission's recommendation that only one new nuclear power station should be built due to the costs of renewables coming down.

He then turned his attention to fuel poverty, arguing that the Energy Company Obligation (ECO) has not been effective.

He said: "The Committee on Fuel Poverty states that that is not helping the people who require it the most. In effect, that means that those who struggle to pay their bills for energy costs now pay extra on their energy bills for ECO, which is then funding energy efficiency measures for those most likely to be able to afford them."

Green MP Caroline Lucas said that power sector decarbonisation has been mostly as a result of the phase out of coal "and there is little sign of the policy required to ensure that the necessary reductions continue". She also highlighted the Green New Deal Private Members Bill that she and Labour MP Clive Lewis introduced in the last Parliament, saying that she intended to reintroduce it in this Parliamentary session.

*The sheer variety of charges levelled against the government in this debate over energy policy – ranging from renewables support, nuclear policy, net zero and fuel poverty – demonstrates just how much the government must address in the upcoming Budget and long-promised Energy White Paper.*



# Funding priorities outlined for Scotland’s climate action

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**The Climate Emergency Response Group (CERG) has outlined 12 immediate actions and estimated funding requirements to support Scotland’s contribution to limiting its impact on accelerated global climate change.**

*Funding the 12 Immediate Actions for Scotland’s Climate Emergency Response* was published on 9 January. These actions were launched in August 2019 and were adopted by the Scottish government as part of its *2019 Programme for Government* (PfG) to support its target of achieving net zero carbon emissions by 2045.

The report provides an estimate for the Scottish budget requirement in 2020-21 in the context of a three-year budgetary commitment to five policy proposals (see Figure 1). The 2020-21 budget proposal is £507mn, while the estimated three-year commitment is £2.3bn.

**Figure 1: Policy proposals that require spending commitments in the Scottish Budget**

CERG policy proposal	2020-21 budget proposal	Estimated 3-year commitment
Agricultural Transformation Fund	£34mn	£100mn
Four Green Growth Accelerator projects	£6mn	£206mn
Zero Emission Cities	£166mn	£500mn
Building retrofit	£240mn (domestic)	£900mn (domestic)
Heat pump sector deal	£61mn	£598mn
<b>Total</b>	<b>£507mn</b>	<b>£23.bn</b>

Source: CERG

Focusing on the energy-related proposals, the CERG recommends that the Scottish government commits to work with local authorities and the private sector to approve at least four Green Growth Accelerator Projects by 2023.

The zero emission cities policy focuses on the decarbonisation of transport. It can be achieved through a combination of demand management, electrification, increased public transport use and

increased walking and cycling. The CERG recommends that the Scottish Ultra Low Emission Bus Scheme should be quadrupled to £12mn. The group welcomes the PfG commitment to invest £500mn over the next few years to improve bus priority infrastructure. Scottish government electric mobility schemes should be expanded to include E-bikes, an electric vehicle (EV) loan fund, and business and public sector EV fleets.

The CERG recommends that the budget for fuel poverty and area-based programmes, grants, loans, engagement, support and advice should be at least doubled to £240mn.

A Scottish Heat Pump Sector Deal would provide clear long-term market signals for the accelerated installation of heat pumps in Scotland. Public funding will initially be the cornerstone of the Sector Deal, creating the market scale needed to encourage industry growth and to drive down costs. There should also be commitment to a large-scale heat pump fund, a hybrid heat pump demonstrator programme, a rural heat pump fund and supply chain support.

Seven other immediate policy actions do not require capital spend but do require sufficient civil service capacity deployment to develop and implement. These include mobilising £11bn of annual public procurement to support product and service innovation, as well as establishing a public-interest company to invest in and operate carbon capture and storage infrastructure. It also includes enhancing building standards, completing plans for increased renewable electricity generation and dedicating the Scottish National Investment Bank to deliver on the climate emergency.

*This is an aspirational programme which the Scottish government has indicated (through inclusion of it in the 2019 Programme for Government) it is broadly supportive of. It is important to note that the delay to the UK Budget means that the Scottish Budget will be out first, so the overall spending power of the Scottish government will be subject to change.*

# CAS calls for marked increase in energy efficiency spend

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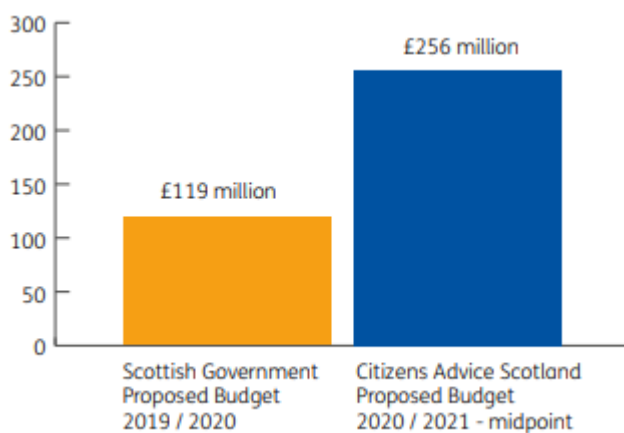
**Citizens Advice Scotland (CAS) has called on the Scottish government to contribute at least £256mn a year to help make Scottish homes more energy efficient.**

The charity network published a briefing paper entitled *The Estimated Costs of Improving the Energy Efficiency of Scotland's Homes* on 3 January. It outlines the scale of the challenge to improve the energy performance of Scotland's housing stock.

CAS estimates that the total investment required to bring the energy performance of homes in Scotland up to at least Energy Performance Certificate (EPC) C by 2040, in line with the Energy Efficient Scotland (ESS) target, is approximately £11.1bn. This is over £3bn more than the Scottish government's cost estimate.

The key recommendation is that the Scottish government should contribute at least £256mn towards £555mn of investment a year. It currently contributes £119mn a year (see Figure 1). CAS believes this funding increase, which represents 0.3% of public sector spend, is also necessary to meet the Scottish government's fuel poverty target.

Figure 1: Proposed annual budget totals



Source: CAS

CAS outlines how much total investment is needed in each tenure to bring properties up to EPC C. To achieve EPC B in the social sector and EPC C in the owner occupier and private rented sectors, it would cost between £5.81bn and £16.39bn over the course of the 20-year

programme. This calculation is based on the current method and cost of upgrading the energy efficiency of homes. The expected Scottish government contribution is £7.79bn over the 20-year lifetime of EES. £485mn would be required for the first 12 years and £167mn for the last eight years.

CAS believes existing schemes, such as Home Energy Efficiency Programmes for Scotland (HEEPS), are appropriate to deliver the increased funding. It does however recommend a range of financial incentives, such as council tax rebates, to help households upgrade their homes in the owner occupier sector.

It also recommends provisions are made for:

- A major public awareness and education campaign.
- A one-stop shop for advice, information and consumer redress.
- A boost in funding for Trading Standards Scotland.
- A new Quality Mark to ensure adequate consumer protection.

Citizens Advice Scotland spokesperson Dr Jamie Stewart said: "Doubling the budget for Energy Efficient Scotland will not only make increased financial support available for those who need it, but should be used to raise awareness of schemes and incentives." He continued: "It should also be used to jump-start the momentum within the social and private rented sectors and strengthen consumer protection and enforcement of traders installing energy efficiency measures."

*The owner-occupier sector is the priority target in the Scottish housing sector, with 931,000 homes below EPC C (compared to 211,000 in the private rented sector). The Scottish government appears to be addressing this, as it is currently seeking views from homeowners on a legally binding standard for home energy efficiency from 2024 onwards. The question remains if its ambitious aims can be met by the necessary funding.*

# Fundamental changes will provide ‘fairness’ in meeting net zero

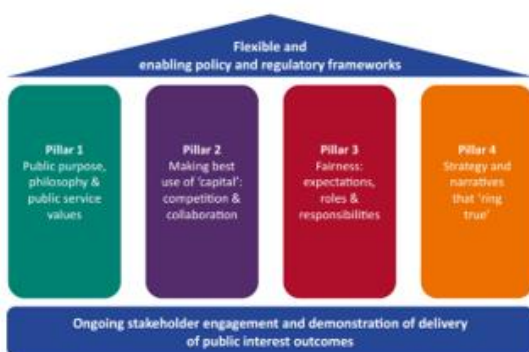
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Sustainability First has released its initial findings for its *Fair for the Future Project*, which has assessed how retail, network, gas and electricity companies can address the politics of fairness as the UK’s transitions towards net zero.

Published in January, the three-year project houses several workstreams: developing a ‘Sustainable Licence to Operate’; building a framework to map political and regulatory uncertainty and risk, alongside what a ‘Sustainable License’ means for reform of policy and regulatory frameworks.

The report noted that the RII0-2 price control review, as well as ongoing political uncertainty are continuing to deliver environmental, social and technological change. Tensions remain between the way in which technology is enabling decentralised models of service delivery to unlock the demand side, but it will be vital for businesses to assess the implications this could have for cross subsidies that have previously protected groups of customers. Regulatory models, particularly government policy, are struggling to keep pace. The deregulation-nationalisation spectrum is also playing a key role throughout the sector’s energy transition. Sustainability First has developed a concept of a ‘Sustainable License to Operate’ in the utilities sector (Figure 1). In order to mitigate social and environmental outcomes, the report noted that a responsible body should be identified, as well as which parties should reap rewards to ensure fairness.

**Figure 1: A concept of a ‘Sustainable License to Operate’ for the utilities space**



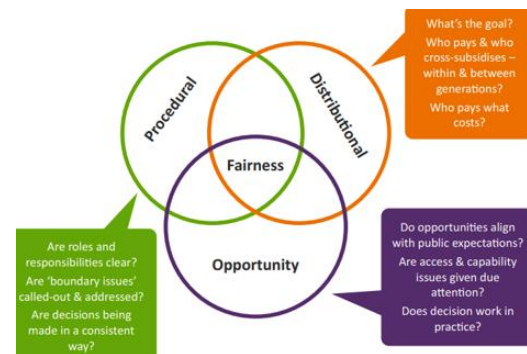
Source: Sustainability First

Various challenges have also been noted in order to achieve this, such as counteracting historical

practice, where high returns were previously earned by monopoly utilities; on top of dynamic risk factors which can lead to political uncertainty and regulatory risk; and to ascertain how to integrate these in decision-making processes to ensure a proactive approach.

Figure 2 shows the various elements of fairness within the sector. The organisation has specifically called for the launch of a policy framework of duties for making decisions, particularly with regards to conflicts of interest around inter-generational equity, and to break down silos that could get in the way of developing integrated and circular solutions that use limited resources more efficiently. Additionally, the report advised for regulators to undertake new duties in a flexible way which facilitates fairness and enables new markets to develop.

**Figure 2: dynamic risk factors shaping political uncertainty and regulatory risk**



Source: Sustainability First

Although current tight price control environments remain, the report advised for the utility sector to be further incentivised to accept the advantages, as well as the growth of ‘environmental markets’ and subsequent demands for Environmental, Social and Governance factors from investors, which will encourage businesses to assess the advantages of a business led approach.

*Policy and regulatory requirements will continue to shape wider approaches to ongoing standards, but it will be vital for all parties across the energy sector to agree on an approach to deliver positive environmental, social and technological outcomes which will support customers and industry.*



## Parliamentary update: week 3

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Business Secretary Andrea Leadsom (Conservative, South Northamptonshire) led a [debate in the Commons](#) on a Green Industrial Revolution on 15 January, defending her government's actions on climate change.

SNP spokesperson for Energy and Climate Change Alan Brown (Kilmarnock and Loudoun) responded by highlighting that the Committee on Climate Change said that "policy ambition and implementation now fall well short of what is required" to achieve the target of net zero by 2050.

The Business Secretary replied: "The government has taken the advice of the CCC in setting our legally binding commitments to net zero by 2050. Throughout the year, we will set out precisely how we think we can achieve that."

The *Petroleum (Amendment) Bill [HL] 2019-20 Private Members Bill* received its [first reading in the House of Lords](#) on 15 January.

Introduced by Baroness Sheehan (Liberal Democrats), the Bill aims to prohibit licensing to search and bore for petroleum and onshore hydraulic fracturing activities; to amend the principal objective for the Oil and Gas Authority (OGA) to be to meet the 2050 net zero target; and to impel the OGA to produce strategies which include the phasing out of the extraction and use of petroleum and transitional planning towards renewable energies.

Speaker of the House of Commons Lindsay Hoyle [announced on 16 January](#) that the election of select committee chairs will take place on 29 January, with nominations closing at 4pm on 27 January.

We will follow the inquiries and announcements from the [BEIS Committee](#), the [Science and Technology Committee](#) (Chair Norman Lamb stood down before the 2019 General Election) and the [Environmental Audit Committee](#) (Chair Mary Creagh lost her seat in the 2019 General Election).

The results are expected to be announced by the Speaker as soon as possible after the ballots close.

13 January was the deadline for [Labour leadership](#) contenders to get at least 22

nominations from other Labour MPs. Five candidates made it through to the next round:

- Shadow Brexit Secretary Keir Starmer – 88 nominations.
- Shadow Business Secretary Rebecca Long-Bailey – 33 nominations.
- Backbencher Lisa Nandy – 31 nominations.
- Backbencher Jess Phillips – 23 nominations.
- Shadow Foreign Secretary Emily Thornberry – 23 nominations.

Each candidate will now require either 5% of Constituency Labour Parties or at least 3 affiliates (at least 2 of which shall be a trade union) comprising 5% of affiliated membership to be successfully included on the ballot. The final date for CLPs and affiliates to submit their nomination is 14 February.

Notable written answers last week include:

- The government is [working to develop a new policy framework](#) for the long-term decarbonisation of heat. It has committed to publishing a policy roadmap in summer 2020. This will set out the programme of work required to enable key strategic decisions in the first half of 2020 on how we achieve mass transition to low carbon heating.
- The government is [currently consulting](#) on a meaningful and achievable increase to the energy efficiency standards for new homes to be introduced through the Building Regulations in 2020, as a stepping stone to the Future Homes Standard in 2025. A further consultation will follow, in the coming months, proposing changes to the energy efficiency standards for non-domestic buildings and for building work to existing homes and non-domestic buildings; and on preventing overheating in new buildings.
- The government is [reducing the cumulative impact of energy and climate change policies](#) on industrial electricity prices for energy intensive industries, including the steel sector. This includes over £300m of compensation to the steel sector since 2013.



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## Prime Minister appoints Mark Carney as key adviser for COP26

Announced on [16 January](#), Prime Minister Boris Johnson has appointed outgoing Bank of England Governor Mark Carney as a key adviser for the UN climate change conference, COP26.

Carney will help the government drive “ambitious action” from across the financial system ahead of the UK summit in November.” The role will also complement Carney’s work as UN Special Envoy for Climate Action and Finance, where he will assume both roles upon stepping down as Governor of the Bank of England this year.

The Prime Minister said that banks, pension funds and insurers have a significant role to play in directing investment to tackle climate change. However, this requires significant changes in behaviour and considerable new investment.

COP26 President Claire O’Neill said: “Everyone has to be in if we are to successfully tackle climate change and the Governor’s expertise will be a huge boost in helping us to harness the power of global financial markets, companies and investors to hit net zero emissions.”

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## Treasury provides £71mn for clean energy developments in former steelworks

On [10 January](#) the Treasury announced £71mn of new funding for a business zone on the former site of the SSI Steelworks in Redcar, with developments including clean energy. The funding will be used to demolish existing buildings and to help prepare the site for redevelopment to attract new businesses and investment. It will also help The South Tees Development Corporation secure some of the land.

The Development Corporation will then set out a strategy later in 2020 which will lay out the Tees Valley’s vision to establish the areas as a “leading location for clean energy, low carbon and hydrogen, including the application of industrial decarbonisation and clean growth technologies”.

The area is one of the largest redevelopment opportunities in the country, and the Development Corporation plans to develop it into a business park, attracting companies from a range of industries and creating thousands of jobs once the area is fully developed.

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## Government invests £3.4mn in wireless charging trials in Nottingham

The Department for Transport (DfT) announced it is investing £3.4mn in wireless charging for electric taxis in Nottingham.

Announced on [17 January](#), the trials could provide an alternative to plugs and chargepoints, meaning multiple taxis can recharge at once, supporting drivers to charge up more easily. The DfT said that this technology could be rolled out more broadly for public use as electric vehicle uptake increases. The DfT said the technology, allowing for shorter and more frequent bursts of charging, will also benefit cars with smaller batteries, ending range anxiety for drivers.

Ten Nissan and LEVC electric taxis will be fitted with wireless charging hardware for six months. The project is a collaboration between organisations including Cenex, Sprint Power, Shell, Nottingham City Council, Parking Energy, Transport for London and Coventry University. Nottingham City Council will own the vehicles and provide them to drivers rent free.

This news came the day after Islington Council announced it has entered into a partnership with Moixa and Honda to deliver a smart EV charging project to optimise its vehicle fleet. Announced on [16 January](#), both parties will support the council to achieve its ultra-low emissions zone (ULEZ) emissions standard across its fleet of 500+ vehicles and help Islington to achieve its 2030 net zero carbon emissions target.

Five bi-directional Vehicle to Grid chargers, manufactured by EVTEC and Honda will be installed with Moixa’s GridShare software outside Islington Town Hall. When EVs are plugged in to all of the chargers, the smart technology can also provide enough power to cover the whole town hall base load.

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## Scottish offshore wind supply chain boosted under new agreement

The Scottish offshore wind supply chain is expected to benefit from a new agreement aiming to increase the number of offshore wind contracts in Scotland, the Scottish government revealed on [16 January](#).

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The agreement between the Scottish government and Crown Estate Scotland, which was reached following a summit in Edinburgh, will require developers to agree on supply chain commitments when applying for offshore wind leases.

Scotland's Economy Secretary, Derek Mackay, said: "Scotland is the ideal location for offshore wind, but recent projects have not delivered the significant economic opportunities we want to see for Scottish businesses."

"The Scottish government has been calling for the offshore sector to do more by awarding contracts to our indigenous supply chain, but recent disappointments suggest that more has to be done."

"The measures agreed with Crown Estate Scotland will help to release more of those economic benefits for the Scottish economy and ensure that the Scottish-based supply chain is considered when tendering for work or making long-term conditions."

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## RenewableUK urges more support for renewables as installations drop

RenewableUK has called on the government to reverse barriers to onshore wind development and other renewables development as figures showed that new installations dropped in 2019.

The figures, published on 14 January, showed that, in 2019, 629MW was installed in the UK, compared with 2018's 651MW. This followed the record high of 2,683MW installed in 2017, when 343 projects started generating. The trade association said this boom was a result of developers acting to beat the main deadline to qualify for government support.

RenewableUK highlighted that only two onshore wind projects – three turbines totaling 1.9MW – received planning approval in England in 2019 and just one new project was submitted into the English planning system, with a capacity of 5MW. No projects were approved or submitted in Wales last year.

In Scotland, 556MW (26 projects) were consented last year, and 1,969MW (35 projects) submitted into the planning system. 25MW (25 projects) were approved in Northern Ireland and 127MW (52 projects) entered the planning system.

RenewableUK Head of Policy and Regulation Rebecca Williams said: "These figures highlight that the current approach is falling short on delivering renewable energy capacity at the level needed for net zero. This is a flashing red warning light on our net zero dashboard and we urgently need a new strategy from the government."

She continued: "Onshore wind is one of the cheapest low carbon technologies in the UK, quick to build, and it's hugely popular as the Government's own opinion polls show 78% of people support it. As Ministers get down to work at the start of a new decade, we need to see new policies which support the full range of clean power sources to transform our energy system."

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## GB arm of IRENES project kicks off

The GB launch event for the Integrating RENewable energy and Ecosystem Services (IRENES) project was held on 10 January at Anglia Ruskin University in Cambridge. The project, which is funded by €1.5mn (£1.3mn) from the European Regional Development Fund, aims to show that energy policy can incorporate an ecosystem services approach to deliver additional benefits to both people and to the environment.

Over the course of the four year project, teams of academics from 10 universities in five countries – the UK, project lead Italy, Germany, Romania and Estonia – will address a range of existing policy instruments, seeking to understand and share best practice on the wider environmental management of the low-carbon economy. In GB, the key policy instrument is the Clean Growth Strategy and Anglia Ruskin University will be working alongside the University of East Anglia.

We will be reporting further on the IRENES project and the launch event in sister publication [Energy:2030](#). For more information, to request a free trial or to discuss subscription options contact Neil Mearns at [n.mearns@cornwall-insight.com](mailto:n.mearns@cornwall-insight.com) or call 01603 542119.



## Gas distribution networks set out RIIO-2 plans

Josephine Lord, [j.lord@cornwall-insight.com](mailto:j.lord@cornwall-insight.com)

**Ofgem called for evidence on 13 December on the business plans of the electricity and gas transmission companies (see [ES696](#)), the ESO (see [ES695](#)) and the four companies which own the eight main gas distribution networks.**

Cadent, which owns four of the networks, said it planned to replace around 1,700km of old and high-risk pipes annually to meet its statutory obligations, reduce leaks and also prepare the network for the transportation of hydrogen. Its environmental action plan also includes preparing to deliver clean gas at scale through the HyNet North West project. The company plans to become a carbon neutral business by 2026 and target methane leakage reductions of between 14-17% by 2026. It said it is putting forward a “transformational” plan that will deliver over £500mn of efficiencies over the eight-year period from 2017-18 to the end of RIIO-2. It expects to drive a 10% real reduction in customer bills to less than £120 a year, primarily as a result of totex and other efficiencies.

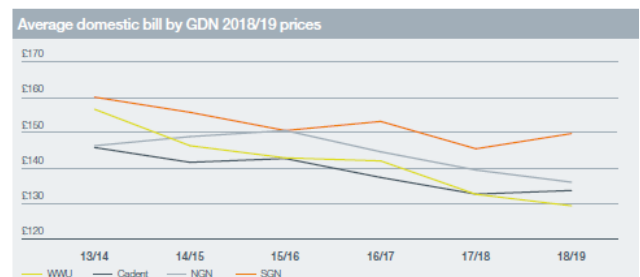
Northern Gas Networks (NGN) said its business plan will deliver a £34mn per year average reduction in revenue compared to RIIO-1 that will deliver an 8.6% reduction in annual bills – a fall from around £139 to £127. This will be made possible through: embedding all the significant efficiency gains made over RIIO-1 into regulatory allowances for the period and delivering further productivity gains; and a 40% reduction on returns to shareholders from 6.7% to 4% (both Real RPI). NGN said it is the most efficient gas network and it expects to reduce costs by £575mn over the RIIO-2 period.

From 2021 it plans to invest a further £800mn in the network to ensure even greater levels of reliability and safety, getting gas back on more quickly after a supply interruption and cutting reinstatement times from five days to three. It plans to reduce gas leakage by a further 23%. The company intends to reduce its business carbon footprint by 47% by the end of RIIO-2. It claims to have led the industry in developing the case for hydrogen to replace natural gas, and plans several “real world” trials for RIIO-2.

Wales and West Utilities (WWU) plans to slightly increase its annual totex spend by £11.8mn to £236.4mn compared to RIIO-1; it plans to deliver

a 0.5% compound efficiency improvement. Bills are expected to be an average of £133 a year (in 2018-19 prices), in line with the RIIO-1 average (see Figure 1). WWU plans to invest £400mn in its mains replacement programme. The company said it plans to deliver a net zero ready network by 2035. In terms of meeting the needs of consumers and network users, WWU said that its ambition in RIIO-1 was to deliver outstanding levels of gas safety, reliability and customer service and that it would continue to stretch itself in RIIO-2. On financeability, the company said that its business plan should be financeable but would not be if Ofgem’s current assumptions of the cost of capital were applied.

**Figure 1: Average domestic bill (2018-19 prices)**



Source: West and Wales Utilities

Scotia Gas Networks (SGN) said its business plan would reduce its share of customer bills by 10% and 6% in its Scottish and Southern networks respectively. It will achieve this through average annual efficiency benefits of £15.2mn. Like-for-like totex will reduce to £563mn a year 4.5% lower than the last three years of RIIO-1. Service enhancements are planned to cost £54mn. SGN plans to build to UK’s first 100% hydrogen network to heat customers’ homes and to match Scotland’s 2045 net zero ambition across both its networks. It aims to help 250,000 vulnerable customers to use energy safely, efficiently and affordably.

Responses are requested by 10 February; open hearing will take place in March and April.

*Overall, key business plan themes include greater efficiency, responsiveness to users’ needs - particularly from the stakeholder engagement process - and environmental issues, including preparing for extensive use of hydrogen.*

# Networks set out delivery plan for TCR reforms

Josephine Lord, [j.lord@cornwall-insight.com](mailto:j.lord@cornwall-insight.com)

**The Energy Networks Association (ENA) has issued the Project Initiation Document (PID) for the Targeted Charging Review (TCR) reforms, setting out a plan and timetable for the steps to achieve implementation.**

Issued on 20 December, the PID discharges a Ofgem direction to relevant network licensees to present a detailed plan to ensure that the TCR decisions are capable of implementation by 1 April 2021 for transmission and 1 April 2022 for distribution. It sets out how the ESO and distribution network operators (DNOs) will work together and collaborate with other relevant industry stakeholders and it will be updated throughout the project.

There are three project phases. An initiation phase, that has already started, includes establishing workgroups and reporting structures and drafting modification proposals. The development phase comprises code development, consultation with industry and approval of code changes. A final implementation phase covers the required system and data changes.

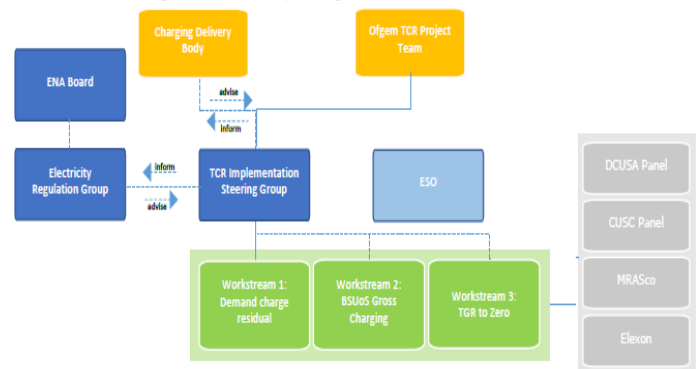
The project has been structured into three workstreams: Demand Charge Residual; Balancing Services Use of System (BSUoS) Gross Charging; and Transmission Generator Residual (TGR) to Zero. For each workstream, the PID sets out its scope and an assessment of the potential implementation options. It also sets out assumptions, risks and dependencies as well as a high-level timetable with key milestones. Each workstream will include a cross-code assessment to understand which other industry codes require changes as a result of the DCUSA and CUSC modifications to implement the charging changes.

One of three CUSC proposals for the demand charge residual workstream, CMP332 *Transmission Demand Residual Banding and Allocation (TCR)* has already been raised and two further on definitions and on billing and liabilities are awaited; the four DCUSA proposals on demand residuals are also awaited. Under the indicative timetable set out in the PID, both the CUSC and DCUSA proposals are planned to be approved by Ofgem in June 2020.

CMP333 *BSUoS – Charging Supplier Users on Gross Demand* has been raised to implement gross BSUoS charging and under the timetable

the final modification report will be delivered to Ofgem for decision at the latest by 4 May. CMP327 *Removing the Generator Residual from TNUoS Charges* has been raised to set the generator residual charge to zero while also ensuring that the EU cap on annual average charges is between €0-2.5/MWh. This is being considered alongside existing proposal CMP317 on the costs to be included in the compliance assessment. The indicative plan is for these to go to Ofgem for decision on 8 June.

Figure 1: Project governance structure



Source: ENA

The project governance structure (see Figure 1) includes a TCR Implementation Steering Group (ISG) whose role will be to direct the delivery of the project. The ISG will be chaired by the ENA and consist, at minimum, of a single representative from each DNO plus one independent DNO and the ESO. Any proposed deviations from the PID that are likely to cause a significant change to the key plan milestones will be managed by the ISG and escalated to the Electricity Regulation Group (ERG), which has an advisory but not a formal decision-making role.

The ISG will also report to the Charging Delivering Body, which will help coordinate the development and implementation of required changes to the network charging and access arrangements. The ISG will primarily liaise with the regulator through its TCR Project Team. Secretariat services will be provided by the ENA.

*There now follows an intense period of activity as workgroups assess and develop the code modification proposals; the pace of development planned looks challenging, given the risks and dependencies identified.*

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## Ofgem proposes Orders on nine suppliers to become DCC users

The regulator issued on 10 January notices of proposal to issue Final Orders on nine energy suppliers as a result of their being in breach of the requirement to be Data Communications Company (DCC) users.

All suppliers were required under their licences to become DCC users from 25 November 2017, or on exiting the controlled market entry process. Until the suppliers are DCC users, customers with a DCC-connected smart meter who switch to any of the nine suppliers will lose the functionality of their smart meter on switching. This means they will operate as traditional meters, including requiring manual reads. Ofgem considers that this causes consumer detriment and could undermine consumer confidence in the smart meter programme and the switching process. If issued, the Final Orders would require each supplier to be a DCC user by 31 March and would ban it from taking on new customers from the date of the Final Order. The Orders would remain in place until the supplier became a DCC user.

The nine suppliers are: Ampoweruk; Better Energy Supply; Daligas; Enstroga; Entice Energy Supply; Euston Energy (trading as Northumbria); Green Energy Supply; Symbio Energy; and UK National Gas. Ofgem issued a Final Order in March 2019 against Avro Energy for not being a DCC user, which was revoked when the supplier became compliant. Responses are requested by 3 February.

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## DCUSA code modifications raised for Targeted Charging Review reforms

Four DCUSA modifications which aim to implement certain elements of Ofgem's Targeted Charging Review (TCR) decision relating to the residual elements of distribution use of system charging were raised on 14 January.

DGP361 *Ofgem Targeted Charging Review (TCR) Implementation – Calculation of Charges* considers the introduction and calculation of a single fixed residual charge for domestic Low Voltage connected customers, and the introduction and calculation of sets of banded fixed residual charges for other consumer groups. DGP359 *Ofgem Targeted Charging Review (TCR) Implementation – Customers: Who Should Pay?* considers the process for determining which customers should be subject to a residual fixed charge. This would determine which electricity is final demand, allowing electricity used for storage and generation purposes to be exempt from the charges.

DGP358 *Ofgem Targeted Charging Review (TCR) Implementation – Determination of Banding Boundaries* looks at the determination of residual charging band boundaries for non-domestic distribution-connected customers. Specifically, it looks to set boundaries at the 40<sup>th</sup>, 70<sup>th</sup>, and 85<sup>th</sup> percentiles. DGP360 *Ofgem Targeted Charging Review (TCR) Implementation – Customers: Allocation to Bands and Interventions* aims to create a method for allocating and reallocating customers to the residual charging bands. The data used to allocate customers is proposed to be 24-month average annual consumption or 24-month average agreed capacity as appropriate. Where this data is not available, it is proposed that current agreed capacity is used where available, or annual consumption where not. It also looks at the creation of a dispute and rebate process.

The modifications were sent to workgroup by the Panel on 15 January, and will initially be considered jointly.

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## ESO consults on C16 licence statement changes

The ESO issued its annual consultation on 13 January on proposed changes to the C16 licence statements, which follows a stakeholder workshop and an informal consultation. The ESO has addressed responses to issues already raised through these.

Changes are proposed to the Procurement Guidelines that set out the kind of balancing services the ESO may be interested in buying and the purchasing mechanisms it expects to use. Proposed changes include: updating the frequency of tenders; the addition of Intraday Trading limits and Network Transfer Capabilities in relation to the interconnector; and the removal of products no longer required.

Changes to the Balancing Principles Statement, that defines the broad principles of how and when the ESO will use balancing services and other balancing actions, include an updated implementation date for Project TERRE and removal of reference to Demand Turn Up. Proposed changes to the Balancing Services Adjustment Data, which sets out the information on balancing services that will be taken into account when determining the imbalance price, are proposed in order to reflect the approval of P371 that requires the

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inclusion of non-Balancing Mechanism (BM) Short Term Operating Reserve and non-BM fast reserve in the imbalance price calculation. Updates to the Applicable Balancing Services Volume Data methodology, that sets out information on balancing services that will be taken into account in determining imbalance volumes, include changes arising from P354 that will adjust the suppliers' imbalance volumes for non-BM balancing services provision by their customers, aligning with provision in the BM. Responses are requested by 10 February. A report to the Authority will be prepared and, if approved, the revised statements will be effective from 1 April.

## National Grid Gas consults on RIIO-2 system operator incentives

In a consultation issued on [19 December](#) National Grid Gas (NGG) set out its proposals for gas transmission system operator financial incentives for the RIIO-2 price control. It currently operates under ten separate incentives that relate to areas including capacity constraint management, residual balancing, shrinkage, demand forecasting and stakeholder engagement and satisfaction and which earned it £28.8mn in 2018-19. NGG considers that the existing areas that are targeted by the incentive are the right ones for RIIO-2 and should stretch it beyond its RIIO-1 performance but should also take into account increasing operational challenges as the energy landscape evolves. It has proposed a structure and parameters for each of the incentives, with changes to the previous targets, caps and collars presented where applicable, with supporting analysis.

Responses are requested by 30 January. NGG will then produce a document summarising any feedback and any further recommendations it draws from it that either support its RIIO-2 business plan proposals or that demonstrate a case for change.

## Storage residual charges to be removed from April 2021

On [18 December](#) Ofgem approved DCP341/2 *Removal of Residual Charging for Storage Facilities in the CDCM and EDCM* for implementation on 1 April 2021. The modifications will prevent storage facilities from facing the distribution demand residual elements of network charges.

Ofgem indicated as part of its Targeted Charging Review (TCR) that storage should not pay the distribution demand residual. It decided that to deliver the changes as quickly as possible, the necessary modifications should be raised by industry outside of the TCR.

DCP341 will introduce three new Distribution Use of System charges for storage facilities connected at the Low Voltage and High Voltage levels, which will mirror the existing half-hourly metered tariffs but exclude the residual element. For storage sites connected at the Extra High Voltage (EHV) level, DCP342 amends the calculations for demand scaling in the EHV Distribution Charging Methodology to indicate that storage sites should not be subject to residuals. It will also ensure the changes do not create a shortfall in revenue from residual charges.

Both modifications will require suppliers to provide assurance to the network operators that Meter Point Administration Service-registered storage facilities meet the requirements for residual charge exemptions. Central Meter Registration Service-registered sites will need to provide their own confirmations. Ofgem said that the changes will reduce existing distortions to cost-reflective signals on storage and demand customers until an enduring solution is implemented under the TCR, which should robustly calculate final demand for residual charging.

### In case you missed it...

- [Podcast – 4 December – Oliver Archer Home is where the smart is](#)
- [Pixie Chart of the Week – 14 January – Tom Lusher – UnBEVlievable: EV sales break records in 2019](#)
- [Editor's Pick – 14 January – Josephine Lord – Editor's Pick: AEMC takes forward system resilience measures](#)
- [Blog – 15 January – Tom Palmer – Constraints – can't stop loving you](#)
- [Cornwall Insight Chart of the Week – 16 January – Lucy Dolton – En-Route to market in 2020?](#)



## Muted growth in renewables across Q419

Lucy Dolton, [l.dolton@cornwall-insight.com](mailto:l.dolton@cornwall-insight.com)

The latest quarterly update of the Renewable Energy Planning Database (REPD) was published on 14 January, providing an overview of current and planned renewable energy projects across Great Britain and Northern Ireland. The database provides a view of renewable energy and storage projects with technology type, location, planning and development progress specified for each site.

According to the December database, growth in renewables was muted, as less than 100MW of new renewable capacity came online in the final three months of 2019. This equates to an increase of just 0.2% on the previous database, bringing the total operational capacity to 41.2GW.

Whilst changes in overall capacity were marginal over the past quarter, some notable changes were observed. Decreases were seen in pipeline biomass capacity and operational onshore wind capacity, while increases were seen in solar and battery storage projects.

Regarding the decrease seen in planned biomass projects, five sites in England and one in Scotland left the pipeline, a total reduction of 71MW and 85MW respectively. Of these changes, four projects were listed as abandoned, with planning permission expiring on the remaining two.

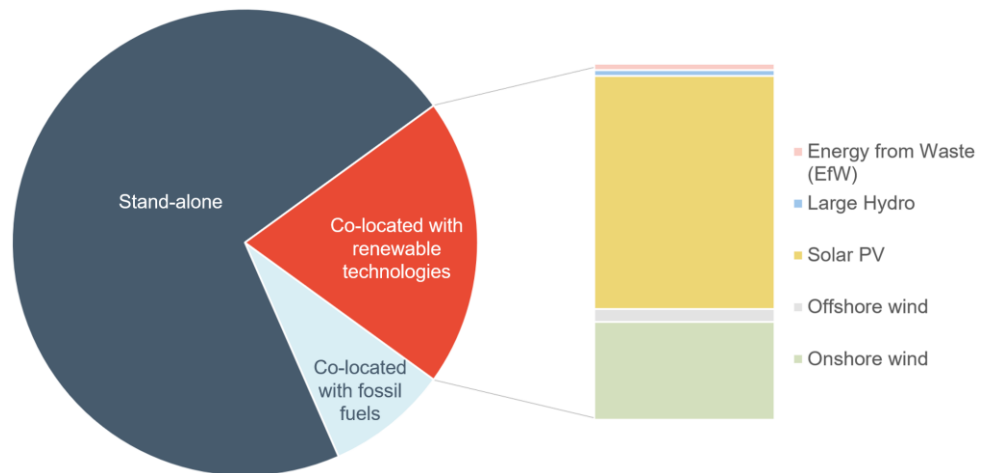
In Scotland, operational onshore wind capacity decreased by 0.1% despite the number of sites remaining unchanged. Looking at attributable changes, the REPD database paints a mixed picture. For example, the Corriemoillie resubmission saw recorded capacity increase by 5.9MW as turbine capacity ratings were revised up from 2.85MW to 3.20MW. In contrast, the entry for the windfarm at St John's Hill recorded a 9.2MW decrease in capacity, despite no other details changing.

In contrast, solar PV and storage projects increased in Q419. Operational solar PV capacity increased by 39.3MW with 86MW growth in the

pipeline. Operational storage capacity rose by 47MW, with over 440MW added to the pipeline.

Unsurprisingly a notable proportion of the pipeline battery storage capacity is expected to co-locate with other renewable technologies (Figure 1). According to the REPD database – where specific co-location with RE data is given for 38 of the 44 sites – 21 are planned to co-locate with solar PV. This interest in co-locating battery storage with solar PV is due to the compatibility of solar PV and lithium battery technologies, with the predictability of solar generation profiles aiding the business case for storage.

Figure 1: Battery storage pipeline breakdown by co-location status and technology type



Source: REPD, Cornwall Insight

The overall minimal changes to operational and pipeline capacity have likely been as a result of the underlying political uncertainties towards the latter end of 2019, which acted to inhibit growth in renewables. Looking towards the next quarter, the increased certainty following the general election should restore some momentum to developers and we would expect a greater number of projects to come to market before the next quarterly update is published.

*We continue to follow renewable generation development closely, with our Subsidy-free Renewables Tracker service set to launch in the coming weeks. For further information, please contact James Brabben at [j.brabben@cornwall-insight.com](mailto:j.brabben@cornwall-insight.com).*



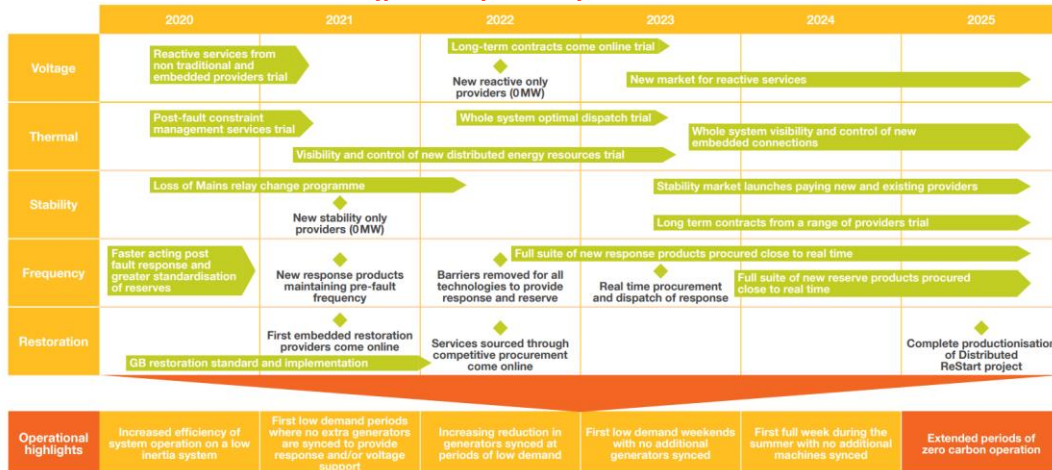


# National Grid ESO Operability Strategy Report 2019

Sam Nicholls, [s.nicholls@cornwall-insight.com](mailto:s.nicholls@cornwall-insight.com)

National Grid Electricity System Operator (ESO) has outlined plans to transform the existing electricity grid into a zero carbon network by 2025. The ***Operability Strategy Report***, released on 8 January, highlights how the development of new services will enable the ESO to achieve its 2025 target.

Figure 1: Operability milestones



Source: National Grid ESO

The report first explains the importance of reforming response and reserve markets. New, faster acting frequency response products will be needed as the generation mix changes and system inertia drops. It also highlights that new frequency services will be split by pre- and post-fault products (frequency response for within and outside the operational range limits respectively) and aims to procure products closer to real time.

It is acknowledged that, as renewables' share of generation increases, so does the requirement for the ESO to grow the size of its response and reserve fleet. The rise in asynchronous generation sources such as solar exposes the system to greater rates of change of frequency (RoCoF), and new generators will increase the largest potential system loss. To assist with rising asynchronous generation sources that reduce system inertia, the ESO has **released minimum specification requirements** for Virtual Synchronous Machines (VSM). By allowing asynchronous generation sources to have grid-forming capabilities (i.e. mimic some capabilities of synchronous generators), the ability of the ESO to balance the grid in real time is enhanced through the provision of synthetic inertia.

The ESO said the implementation of the Replacement Reserve product (accessed through

project TERRE) and the opening of the BM through Wider Access are two of the most significant developments in reserve and balancing for several years. With Wider Access already implemented and the RR expected to be introduced in summer 2020, these initiatives will increase the range of reserve providers available to the ESO.

In its Voltage chapter, the ESO says that it is removing barriers for new providers to provide reactive services through its Power Potential and Pathfinder projects. The ESO is also collaborating with Distribution Network Operators to enable greater understand of implications of these providers solving transmission issues relating to voltage.

Claiming to be “on the cusp of a new restoration standard”, the ESO also highlighted its plans to open up system restoration services to a wider variety of technologies, and to smaller generators than the current Black Start service provides. The ESO also revealed that its ***Accelerated loss of mains Change*** programme has gone live. The programme targets reducing the number of generators with inappropriate loss of mains protection settings, aiming to offset the volume of generation at risk of disconnecting should a large loss (and a high RoCoF), or electrical fault (a high vector shift) occur.

*National Grid ESO is laying the foundations for meeting its target of being able to balance a 100% low carbon system by 2025. This is a significant challenge which the ESO has recognised and will lead to new services and more of them as the system becomes more challenging to predict and respond to. With more decentralisation the ESO will need to reach new parties it has not interacted with before and this will increase the level of intervention across the market, this is a key roadmap for the future of flexibility.*



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## SSE Energy Service sale to OVO Energy completes

The sale of SSE Energy Services Group Ltd to OVO Energy limited was completed on 15 January for an enterprise value of £500mn, comprising £400mn in cash and £100mn in loan notes. The deal was agreed on a 'Locked Box' approach, which set the date for the transfer of the economic interest in SSE Energy Services at 30 June 2019.

Included in the sale is OVO Energy taking on the liability for the Renewables Obligation for SSE Energy Services from 1 April 2019. The net cash proceeds of the sale will be used to reduce SSE's net debt.

The deal sees OVO Energy take 8,000 staff of SSE's GB domestic energy supply business and increase its customer accounts to over 5mn. For the meantime the two entities will operate alongside each other while the leadership teams of both companies develop a detailed integration plan to bring the two businesses together.

Chief Executive of SSE Alistair Phillips-Davies said: "We are very pleased to be completing this transaction, which we firmly believe is the best outcome for the business, its customers and its employees. The sale is in line with our clear strategy, centred on developing, operating and owning renewable energy and electricity network assets, along with growing businesses complementary to this core. SSE enters the new decade as a more focused group, even better positioned to lead the low carbon transformation required to achieve the UK's vital net zero commitment in the years to come."

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## Mayor of London's 'London Power' white label launched

The Mayor of London-backed London Power company launched on 13 January. The company has partnered with Octopus Energy for a white label supply agreement and will see any profits reinvested into programmes which help to achieve the Mayor's social and environmental goals. London Power offers one-year fixed and prepayment tariffs and supplies 100% renewable electricity.

The Mayor said that any profits that City Hall makes will be reinvested into community projects helping Londoners living in fuel poverty, working to tackle the climate emergency and striving to achieve the target of making London a zero carbon city.

CEO of the Renewable Energy Association Nina Skorupska said: "By adopting this model, City Hall has shown themselves to be one of the pioneers in the move towards a net zero UK."

CEO National Energy Action Adam Scorer said: "We need to use every opportunity to combat fuel poverty in London. It's great to see another important development in the Mayor's fuel poverty strategy."

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## Ørsted and Equinor partner to lead offshore wind coalition

On 13 January, Ørsted and Equinor announced plans to lead a newly established Action Coalition which will represent the offshore wind sector. Formed in response to the September 2019 Call for OceanBased Climate Action made by the High-Level Panel for a Sustainable Ocean Economy, the coalition will highlight the actions that industry, financiers and governments can take to sustainably scale-up offshore wind to contribute to the UN Sustainable Development Goals and global decarbonisation goals.

The coalition includes Mainstream Renewable Power, Shell, Siemens Gamesa, TenneT and The Crown Estate. Additional partners also include the Global Wind Energy Council and the UN Global Compact. Initial outputs will be announced at the UN Ocean Conference in Lisbon in June 2020.

Senior vice president for wind and low carbon at Equinor Stephen Bull said: "Collaboration between nations and companies is needed to accelerate the sustainable deployment of ocean renewable energy. This Action Coalition includes leading industry players in offshore wind and we are working together to unleash the full potential of offshore wind globally."

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## UK's low carbon and renewable energy economy turnover was £46.7bn in 2018

On 16 January, the Office of National Statistics (ONS) published its annual *Low Carbon and Renewable Energy Economy, UK: 2018* survey, which estimates the size of the UK's green economy, including turnover, employment, investment and trade.

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The survey revealed that turnover in the UK low carbon and renewable energy economy (LCREE) was estimated to be £46.7bn in 2018, where the energy efficient products sector has remained the largest component of the UK LCREE in 2018, accounting for 36% (£16.7bn) of UK LCREE turnover.

The low emission vehicles sector accounted for 59% (£3.1bn) of total UK LCREE exports (£5.3bn) in 2018, where the total investment in the LCREE rose by 48% between 2015-18, standing at £8.1bn in 2018. This was mainly due to a rise in acquisitions by the offshore wind sector (up £3.5bn between 2015-18).

We will look more closely at these statistics in a future edition of *Energy Spectrum*.

### Shell Energy Europe signs deal to provide carbon neutral gas for Pozitive Energy

Shell Energy Europe has signed an exclusive five-year trading agreement with green energy supplier Pozitive Energy to supply it with carbon neutral gas (with carbon offsets, or renewable gas certificates). Pozitive Energy announced the deal on 16 January.

Offering 100% green electricity, Pozitive Energy specialises in supporting multi-site organisations such as retailers, hotels and restaurant chains, property management companies, care homes, petrol stations and government organisations

CSO of Pozitive Energy Steve Daniels said: "The agreement provides security for both our customers and the partners we work with to supply them. The continuity of supply allows us to offer longer term contracts and to further invest in the software and IT systems which enable everyone to work faster and smarter, resulting in even lower costs to our customers."

Foundation

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6 February 2020 | London

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## What energy challenges does the new government face?

**The 2019 General Election delivered a resounding result in favour of the Conservative Party. Cornwall Insight Associate Peter Atherton considers some of the key ramifications of the result for the utility sector in the UK.**

### Nationalisation off the table?

The people most celebrating the Tory victory in December's election were likely the shareholders in the UK's network utility companies. National Grid (NG), for example, saw its share price rise almost 10% in the days following the election. Indeed, since mid-September NG's share price had risen by 21% when it hit its recent highs. Similarly, in the water sector, Severn Trent's share price rose some 15% in the aftermath of the election.

These share price reactions are of course understandable. The threat by Labour to re-nationalise the utility network companies had been a considerable overhang on the share price valuations of the network companies. It was less the threat by Labour to re-nationalise that worried investors but rather that Labour had made it clear they would pay well below historic market valuations that was the real drag on share prices.

With the specific risk of re-nationalisation now off the cards for the foreseeable future, the share prices of the network companies will once again be largely driven by a combination of their regulatory settlements, company performance, and the movement of global bond yields.

But it is worth noting that, for example, NG's share price, despite its post-election bounce, is still well off its 2016-17 highs. This perhaps reflects a number of factors.

First, it will likely take some time for the impact on investor confidence of Labour's threats to completely fade. The spectre of a British government expropriating assets has been raised and, worryingly, the policy gained considerable public support. Second, it is clear from both the PR19 in water and RIIO-2 in electricity, that the regulators are determined to bear down on returns to equity – and therefore dividends to shareholders.

### Network regulation

Although there was little in the Conservative manifesto on the future of network regulation, it is nevertheless an area ripe for reform. The industry

and the new government need to reflect on the popularity of Labour's plans. Most opinion polls showed that the public was in favour of reform and that trust in the current set up of privately owned companies, subject to independent regulation, is low. If public discontent remains high, then eventually political action will follow. The key is to convince the public that the networks are being run primarily for the national interest and that profits gained for shareholders are the result of excellent performance.

A second driver behind future reform comes from the cost and complexity of regulation process as we now have it. Price controls – scheduled to last for five years – are now taking around three-and-a-half years to negotiate. The complexity of the process and of the settlements themselves is staggering. Huge amounts of management time is now devoted to the process and very few people outside the regulator and companies understand what is being negotiated.

Regulators have attempted to protect consumers by digging ever deeper into the operations and management of the companies. But this merely leads to ever greater complexity, and complexity nearly always works in favour of the companies in the end. Only Ofgem appeared to be surprised when the network companies smashed their return targets under the unfathomably complex RIIO-1 price controls. A smart regulator would die in a ditch for simplicity, but our network regulators embrace and wallow in complexity much to the detriment of the public.

### Regulating for net zero

A third driver for reform will be the need to move forward to deliver government mandated climate change targets. The adoption of net zero as a legal target poses significant new questions for the network companies. It is not at all clear that the current system of fixed price control periods lasting five years (with deals negotiated years in advance) provide a suitable basis for tackling this challenge.

For example, the RIIO-2 price control for transmission will run from 2021 to 2026 and has been painstakingly negotiated over the last two years. But the level of uncertainty as the shape of the power and energy sector in the 2020's is huge. Why fix everything for five years?

I suspect therefore that calls to fundamentally overhaul our system of network regulation will



grow. A reforming government with a five-year mandate provides the perfect opportunity to scrap the current bloated system and replace it with a slimmed down and flexible system that encourages innovation and energises the industry to meet the challenges of this decade.

### The nuclear question

One key decision the government will definitely need to take this year is over the future of nuclear power. The current plan to decarbonise power relies upon a new nuclear fleet being built, to at the very least, replace the existing advanced gas-cooler reactor fleet as they close. In theory, alternatives to nuclear do exist. More offshore wind, greater use of storage, carbon capture usage and storage, or increased interconnected capacity all have their advocates.

However, every time the government has looked at this question, it has concluded that new nuclear offers the best option in terms of; proven technology, system security and long-term cost effectiveness. Therefore, government policy has been consistent in its support for more nuclear stations to be built.

Unfortunately building nuclear power plants is anything but easy. The EDF and Chinese backed Hinkley Point C is the only station currently under construction. This project has, of course, been heavily criticised for the £92.50/MWh (2012 money) Contract for Difference that it was awarded. In recent months, both the NuGeneration (Moorside) and Horizon (Wylfa) projects have fallen by the wayside, leaving only EDF's Sizewell C project as a realistic prospect.

However, EDF has made it clear that it will not finance Sizewell C on balance sheet – i.e using its own equity. Rather, the company proposed that a Regulated Asset Base (RAB) model be used. This is a politically controversial idea as it means that consumers will start paying for the asset from the beginning of construction. But EDF states that only by adopting the RAB model can the

estimated £20bn cost be financed at a sufficiently low cost so that the station's output is affordable.

The urgency for the government to make a decision on Sizewell C this year comes from two factors. First, EDF wants to move its workforce from Hinkley Point C to Sizewell C and utilise the carefully put together supply chain. By doing this EDF estimates that it can reduce the cost of Sizewell C by 15-20%.

Second, if the government is to meet its climate targets, it will need to commit to new nuclear soon or throw all its weight behind finding an alternative. The government simply doesn't have time to dither for a few years.

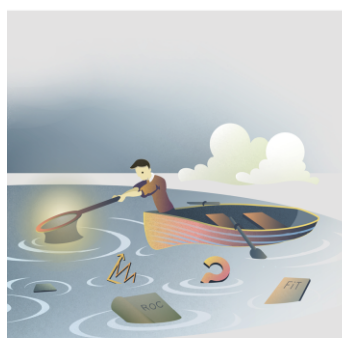
### COP26 – a chance to show leadership

Another factor that will influence government action this year is the COP26 conference that will be held in Glasgow in November – something which was highlighted in the Queen's Speech following the election.

This is the UN's annual climate change 'meeting of parties' and interestingly will take place immediately after the US presidential election. As the host of COP26, the UK will be very keen to show leadership on decarbonisation. At the least, the government will be expected to put some flesh on the net zero by 2050 target that was adopted last summer. Therefore, expect a flurry of initiatives ahead of COP26.

The government certainly faces some key decision points in the coming months. The general thrust of policy is set and has been for years – that decarbonisation is a priority and that the energy sector will be in the vanguard.

But some of the cans that have been kicked down the road (decarbonising heat for example) will need to be addressed once and for all and the decision on nuclear will have to be made. And, as outlined above, it is high time that network regulation receives a total overhaul.



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## Gas

Day-ahead gas fell 1.5% to 28.90p/th, following continued mild weather and bearish signals in the EU ETS and Brent crude oil markets, last week. February 20 gas was down 7.8% at 28.65p/th, and March 20 gas decreased 8.5% to 27.95p/th.

All seasonal gas contracts declined last week, down by 6.0% on average. Summer 20 and winter 20 gas dropped 8.0% and 6.9% respectively, subsiding to 27.41p/th and 40.55p/th. The Annual April 20 contract lost 7.4% to 33.98p/th, 14.7% lower than the same time last month (39.85p/th), and 39.0% lower than the same time last year (55.73p/th).

## Electricity

Most baseload electricity contracts followed their gas counterparts, although the day-ahead contract rose 6.5% to £38.50/MWh following a decrease in wind generation near the end of the week. February 20 power slipped 4.1% at £38.35/MWh, and March 20 power decreased 4.0% to £37.45/MWh.

All seasonal power contracts declined last week, down on average by 22.8%. Q220 power moved 2.4% lower to £37.56/MWh while summer 20 power decreased 3.3% to £37.43/MWh and winter 20 fell 4.2% to £46.65/MWh. The Annual April 20 contract lost 3.8% to £42.04/MWh, which was 9.6% lower than the same time last month (£46.48/MWh), and 24.9% lower than the same time last year (£55.98/MWh).

## Oil, coal and carbon

Brent crude oil fell 4.1% to average \$64.68/bl despite recovering to above \$65.0/bl on 17 January. Crude prices continue to decline following lowered tensions in the Middle East, where at present, it looks as though there will be no significant disruption to Brent crude oil supply.

EU ETS carbon slipped 0.1% to average €24.49/t as prices fluctuated midweek on strong EUA auction turnout.

API 2 coal fell 2.0% to average \$56.28/t as the trend of a bearish coal market continues, despite rare gains seen in the previous week.

