



Tom Crisp
Editor
01603 604421
t.crisp@cornwall-insight.com

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Monday 10/09 – The Green New Deal Group, an organisation including MPs and industry associations, launches a report calling for a programme of investment in green infrastructure to strengthen the economy. Bulb increases its tariff for the average customer by 11.1%, its third rise this year. Oil and Gas UK warns that a no-deal Brexit risks production shutdowns in the North Sea. Pixie Energy publishes its response to the government's Feed-in Tariff call for evidence, recommending a Transitional Offtake Tariff to support continued deployment of small low-carbon generators from April 2019.

Tuesday 11/09 – Prime Minister Theresa May announces £106mn in funding for projects developing innovative battery, vehicle and refuelling technology at the first Zero Emission Vehicle Summit. A letter signed by a cross-party group of 133 MPs and 51 peers is delivered to the Prime Minister calling for the UK to adopt a net-zero greenhouse gas emissions target before 2050. Ofgem seeks views on whether the Capacity Market rules meet their objectives. Carbon Tracker research predicts that demand for fossil fuels will peak in the 2020s due to rapid global growth in clean energy technologies.

Wednesday 12/09 – Flexitricity secures almost £500,000 from BEIS for a project that allows small to medium-sized enterprises to participate in the Balancing Mechanism. Welsh Finance Secretary Mark Drakeford announces £10.3mn of new funding for the country's marine technology sector. SSE publishes its latest trading statement, in which it described its performance in the first five months of the financial year as "disappointing" and "regrettable", with profits badly affected by weather conditions. Innovate UK finds that, for every £1 invested in low or zero emissions vehicle projects, up to £8.40 could be returned to the economy over 5-10 years.

Thursday 13/09 – DExEU publishes a series of "no deal" Brexit guidance papers on subjects including the Industrial Emissions Directive, oil and gas licensing and Projects of Common Interest, including interconnectors. Small supplier GEN4U ceases to trade, with Octopus Energy appointed by Ofgem as Supplier of Last Resort.

Friday 14/09 – Foreign Office Minister Mark Field attends the Global Climate Action Summit in San Francisco reiterating climate commitments. SSE and innogy name Martin Read as the Chairman designate for the new merged supply company. Economy Energy and OVO Energy announce price increases.

Iceberg ahead – Ofgem confirms default price cap



Robert Buckley
Director
01603 604404
r.buckley@cornwall-
insight.com

Ofgem launched its statutory consultation for the design and implementation of the default tariff cap on 6 September (*ES633*). The decision had been expected late August but in the end the regulator took extra time to assess the extensive feedback.

As we commented at the time, the May consultation set a path that developed the CMA's original 2016 methodology for its prepayment meter (PPM) cap. We suggested (*ES620*) that "it looks like we are headed towards a cap that is very close in form if not in all detailed respects to the CMA's PPM cap pitched below the safeguard tariff". With a model now proposed that iterates the initial version and a direct debit dual fuel average rate for Great Britain for winter 2018-19 of £1,136 (incidentally exactly the same as the default cap), we were not too far out.

As we discuss in this week's *Energy Perspective*, the political arguments to restrain prices by over £100/ year have fallen away as wholesale prices continue to increase, with £75 widely cited as the typical saving now available for disengaged customers. Ofgem's estimates for supplier costs and headroom nevertheless put real pressure on suppliers. We also comment on how the cap might influence the competitive dynamic in the market ahead of its introduction now scheduled for 1 January 2019.

Titanic

Ofgem has turned around a very detailed model with substantiating assumptions and commentary in a short time. Alongside its main consultation is an impressive supporting suite of documents with no less than 11 appendices of which one is the impact assessment, three supplemental models, five annexes and three further documents including the draft licence conditions to deliver the cap. The annexes discuss the construction of the various cost models and the considerable feedback on them received from stakeholders.

Ofgem has expended a lot of effort in building up the framework. Perhaps due to the very short timescale, contradictions sometimes show, especially on wholesale and policy costs. For all this hard work, the regulator's impact assessment

in effect says introducing the cap will transfer £2bn over 2019 and 2020 to customers on default tariffs. This estimate includes "the illustrative indirect impact of potential changes to tariff prices below the cap level in order to offset the negative revenue impacts of the cap".

The claimed £1bn/ year is delivered mainly at the expense of suppliers and intermediaries. So far, so expected and, for some, rather painful. But if the overall quantum of the consumer gain plays to the headlines, the discussion of the "hard to monetise" aspects of the decision highlights several areas where the cap will have profound consequences. They include consumer distributional aspects, consumer engagement, supplier efficiency, suppliers' wholesale hedging, innovation and the potential for non-price competition and the longer-term effects on the market after the removal of the cap. In the round Ofgem's expectation is that the cap will deliver "significant direct savings to default tariff customers, and distributional benefits to vulnerable customers."

The crux of it is this: "Savings could reduce from around £200 - £300 to £100 - £150, with savings primarily offered by medium and small-sized suppliers. This could reduce switching perhaps by as much as 50%, other things being equal", and this lower engagement "could allow suppliers to increase fixed tariffs to offset lost revenue from default tariffs. Furthermore, "five of the Big Six "need to improve efficiency to make normal profit" with gains achieved representing "long-term benefits" to consumers.

The band played on

Savings available are based on the expectation that the Big Six will have to cut their standard variable tariffs (SVTs) to comply with the cap.

The £1,136 direct debit cap figure averaged across GB is £120 lower than the most expensive SVT offered by Scottish Power. But on Ofgem's figures the cap is currently below the SVTs offered by all 10 larger suppliers apart from OVO Energy (though it too is to raise its SVT above the cap from 17 October). British Gas's is a consistent £70 above the cap for both standard credit and direct debit terms across all 14 supply regions.

But at the regional level a very different picture emerges (see Figure 1). Some like E.ON UK with £75-£80 national differential see that mirrored in the premiums in their "home" areas (marked in red in the chart). SSE and npower are in a similar



situation, albeit the merged company will start life with more trimmed from its SVTs from the latter than the former. The situation for EDF Energy and Scottish Power is more complex; both have one region where the cap is asking them to cut significantly more —London for EDF Energy and Merseyside and North Wales for Scottish Power. Both also have the need to cut more than the average. London also has the highest proportion of customers on standard credit terms as well, suggesting that, if these users are supplied by EDF Energy, it faces a double squeeze.

Do the differentials between SVTs reflect differences in efficiency as Ofgem suggests? They may do, but they certainly suggest that there will be a differential impact on the suppliers, and implicitly that scale is still important in domestic energy retail. The most profitable suppliers, as recorded through the segmental accounts in recent years, have been SSE and British Gas. The least profitable domestic energy suppliers in the last two years have been the three smallest; Scottish Power, EDF Energy and npower.

Ofgem clearly believes most of the Big Six and some other suppliers can do a lot to improve their efficiency. It has benchmarked suppliers' costs and decided a level for the cap of lower quartile minus £5, equivalent to £78.30 per customer per year for electricity and £89.26 for gas. It presents an analysis that shows an overall range from just over £60 to just under £140 and suggests that its cap level is 15% above a "cost frontier".

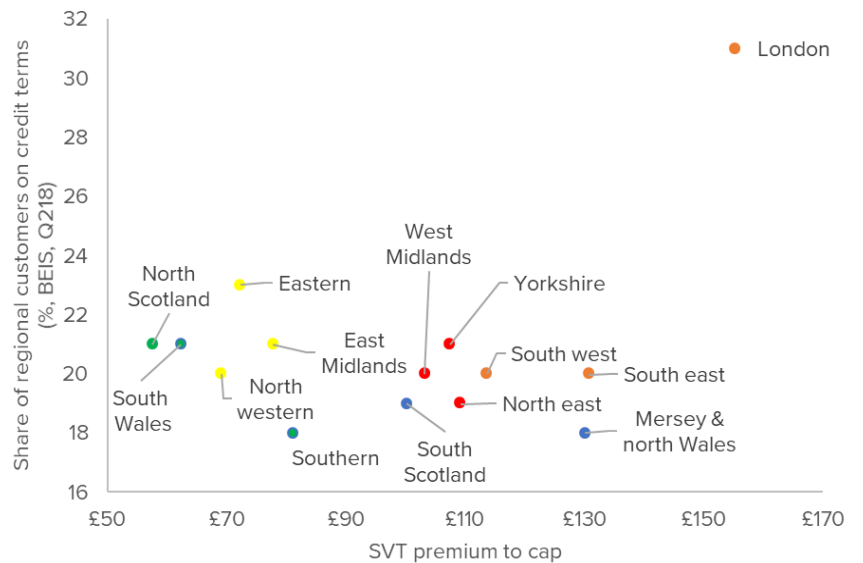
Controversially, Ofgem's measure includes smart metering provision costs, which many in the industry feel were under-provided for in the safeguard tariff and are equivalent to a quarter of the total allowances set. It promises to look again at these assumptions later next year with provision for a specific element to be added to account for the costs of the roll-out.

Given the gap between existing SVTs, cutting costs to meet the cap will be a significant challenge for many suppliers. Using technology to improve efficiency, cutting staff costs and scaling up are three responses that can be expected and all are embodied in the proposed SSE/npower merged company.

Navigating by the stars

Among the things that suppliers outside of the Big Six will find more difficult is wholesale trading,

Figure 1: Dual fuel SVT premiums to the price caps by region for the electricity incumbents (Ofgem medium TDCV)



Source: Cornwall Insight

especially now that Ofgem looks poised to suspend the Market Making Obligation, with rumours rife that it is poised to confirm this shortly.

The cap will profoundly change hedging strategies and approaches to risk. Ofgem has iterated the CMA's clunky forward curve only formula but with an additional allowance for electricity shaping costs and within-season changes. But ironically the wholesale market itself is showing now the limitations of any formula-based approach, even before it has been applied in anger.

Wholesale cost allowances under the cap are derived based on a demand-weighted average of energy for the coming year by reference to average seasonal contract prices in the six months two months before the six-month cap period. The costs for winter 2018-19 are just over £60/MWh for electricity and about 57p/th for gas.

The market now is 20% above those levels, making them impossible to hedge anew at this time. To have hit the targets in such a rising market as the current one, a supplier would have to be lucky or have already structured a wholesale deal with a matching formula.

For its part Ofgem seems contradictory on the purpose of the wholesale formula. On the one hand in its annex on wholesale costs it describes its approach as "not to provide suppliers with a specific hedging strategy" but to "estimate an allowance that is set at a realistic level to cover suppliers' costs". Yet it also comments in its overview document that "as the cap progresses we expect suppliers to change their historical

Default tariff cap timeline

19 July 2018 - *Domestic Gas and Electricity (Tariff Cap) Act 2018* gains Royal Assent

25 May 2018 – Ofgem initially consults on design and implementation of default tariff cap

13 September – consultation opens on final tariff cap design opens

27 September – webinar for stakeholders

3 October – disclosure room closes

8 October – consultation response deadline

November – publication of the final versions of the impact assessment, licence modifications and notice of baseline values

1 January 2019 – default tariff cap implemented

1 April 2019 – first revision of default tariff cap

purchasing strategies to ones that more closely reflect the costs set by our allowance”.

We expect this move to already be underway with the larger companies getting there first by virtue of their upstream contracts and bigger balance sheets. But for those not in this position, a cap will be extremely difficult to manage.

Head for the lifeboats

Suppliers should be much more comfortable with the treatment of other costs, including policy schemes, which are essentially passed through using publicly available data from scheme administrators.

With incentives to beat administrative expectations on costs baked into the Renewables Obligation and the Energy Company Obligation (ECO), the Big Six at least will have the expectation they can secure compliance at a lower cost than the cap. And again scale and balance sheets will play their part, allowing better access to the Roc market and the ability to manage their own ECO compliance.

The Big Six have well-established processes for delivering ECO. Anecdotal evidence and the complete collapse of the BEIS administered brokerage scheme suggest that compliance can be secured at levels significantly below targets set by the scheme administrator.

It is the medium suppliers — who Ofgem and the CMA have taken such store by in deriving their cap formulas — who stand to be squeezed here most. The irony for medium suppliers often the best way for them to comply is to purchase over-performance from the Big Six. And those suppliers which remain below the ECO and WHD thresholds

will effectively see these cost allowances as extra headroom.

All at sea

The default price cap is the logical conclusion of political and regulatory desire to stop disengaged consumers paying for rising bills set by apparently inefficient suppliers. Its consequences are likely to be profound.

We believe that competition under a price cap will be as much about beating the cap's component costs as it will about out-competing rivals. Competitive activity will centre on three areas: wholesale trading, controlling their own costs and cutting the costs of complying with policy schemes. Even before the SSE/npower merger, the price cap is putting scale back at the heart of the market.

Ofgem implicitly recognises this down-grading of competition by noting switching is likely to fall by around 30% as prices converge, an effect we have already seen under the PPM cap.

At the moment the average medium supplier fix is £1,082 (£54 below the cap), with the smallest suppliers at £993 (£147 below). One switching site tells us that it considers £10/ month, £120/ year savings critical to get switching; differentials below this level deter engagement.

Furthermore, with wholesale costs continuing to rise it is likely that fixed deals will continue to increase so we could be in a situation where the cap could well be below many fixed deals come 1 January. This will have the effect of consumers switching from fixed deals to SVTs or pushing customers to very small suppliers who will then grow through the policy thresholds much quicker.

Both would be perverse outcomes, and we expect there will be others.



CartoonStock.com

DExEU detail consequences of no-deal Brexit

Tom Crisp, t.crisp@cornwall-insight.com

A second series of papers were published by relevant government departments on 13 September, setting out contingency arrangements for if No Brexit deal is achieved.

Subjects covered included:

- the Connecting Europe Facility (CEF)
- operating an oil or gas business
- merger review and anti-competitive activity, and
- industrial emissions standards.

The CEF supports the development of interconnected trans-European networks in the fields of transport, energy and digital services. Over the period of 2021-27, the CEF is set to support €8.7bn of energy projects.

The paper guaranteed that the developers of the relevant projects should be able to progress their Projects of Common Interest that gained support before Brexit day in the knowledge that CEF energy grants awarded to UK organisations before exit will be underwritten by UK government guarantee.

The CEF regulation as it applies in UK domestic law will be revoked and specific powers will be introduced to enable payment of the awards in place of the CEF grant awards. Any CEF energy grant awards to UK organisations, which are not honoured in full by the European Commission, will be underwritten. Projects supported under the current CEF round include the NEMO, FAB and North Sea Link interconnectors.

In terms of oil and gas the established regime for hydrocarbon licensing and environmental issues will continue to operate. The government will amend the relevant legislation to ensure broad continuity. The legislative changes will have “no impact” on energy sector businesses, whose residual obligations under the legislation covered will remain unaltered. The 60 days oil-stocking obligation applies to the UK both as a member of the International Energy Agency and the EU, so will be unaffected.

The emissions regime will also continue to apply. The *EU Withdrawal Act 2018* maintains established environmental principles and ensures that existing EU environmental law will continue to have effect

Brexit timeline

18-19 October – EU Summit, seen by commentators as the most likely opportunity for a final agreement on future relations

13-14 December – Last European Council of 2018, seen as last practical date for an Article 50 divorce deal to be signed

January-February 2019 – Last window for Parliamentary approval of any Brexit deal

29 March 2019 – Brexit day

31 December 2020 – expected end of “temporary customs arrangements” imposed through backstop agreement

in UK law, including the Industrial Emissions Directive (IED). However, the EU will no longer hold powers to determine Best Available Techniques under the IED. The upcoming Defra Clean Air Strategy

On competition policy, the government intends to make no changes beyond what is necessary to manage the implications of Brexit – principally removing references to EU law and institutions, and duties on UK bodies which relate to current EU obligations.

All businesses operating in the UK will continue to have to comply with UK competition law. Anti-competitive agreements and abuses of a dominant market position that affect competition within the UK will continue to be prohibited. The Competition and Markets Authority and sectoral regulators will continue to investigate possible breaches of UK competition law.

If the UK has left the EU in a no deal scenario, the EU will no longer begin investigations into the UK aspects of mergers or cases involving anti-competitive conduct in the UK. Instead, the Competition and Markets Authority and regulators with competition enforcement powers (including Ofgem) will only investigate anti-competitive conduct that affects UK markets under UK competition law.

These papers give some welcome clarity and establish broad continuity post-Brexit. A further tranche of papers is expected in the coming weeks.

BEIS

Stakeholders urge government to accelerate EV transition

Tom Lawson, t.lawson@cornwall-insight.com

Ahead of the UK's first Zero Emission Vehicle Summit on 11-12 September in Birmingham, a range of businesses, NGOs and policymakers have called on the government to introduce measures to speed up the country's electric vehicle (EV) uptake.

To build on its *Road to Zero Strategy*, released in July, the government announced at the time that it would hold a summit to bring together ministers, industry leaders and sector representatives to help develop the zero-emission vehicle market. In the run-up to this, several organisations have launched initiatives to get across to the government their point of view.

Demand for EVs continues to increase in the UK, with the latest Society of Motor Manufacturers and Traders (SMMT) sales figures (see Figure 1) revealing plug-in and hybrid registrations for August were up 23% on August 2017. However, SMMT's Chief Executive Michael Hawes warned it would be "wrong to view the market as booming".

Figure 1: Electric and alternative fuel registrations, August

Vehicle category	Aug 2018	Aug 2017	% change	YTD 2018	YTD 2017	% change
Plug-in Pure electric	659	476	38.4%	8,980	9,030	-0.6%
Plug-in Other electric	3,322	1,243	167.5%	28,913	19,695	46.8%
Hybrid Petrol-electric	3,494	2,228	56.8%	52,861	42,257	25.1%
Hybrid Diesel-electric	14	21	-33.3%	286	492	-41.9%
Cars eligible for the Plug-In Car Grant	3,568	1,605	124.2%	33,792	25,491	32.6%
Total new cars registered	94,094	76,433	23.1%	1,571,986	1,640,241	-4.2%

Source: SMMT

The debate on barriers to EV uptake has also continued. On 9 September it was reported in *The Guardian* that SSE believes slow decision-making and a mix of approaches to implementation by local councils in London have delayed its plans to install EV charging points. It said that three years ago it had hoped to have 6,000 charge points in the city by now, but that it had installed just 762.

However, a survey by NGO Transport & Environment published on 7 September found that public chargers are only used for 5% of EV charging events. The organisation said this suggested a lack of EV choice, and availability was the principal barrier to uptake.

Ahead of the summit, a letter was addressed to Prime Minister Theresa May on 7 September from 15 organisations including Energy UK,

RenewableUK, Aviva and Sky. It said that UK industry was "ready to support a rapid transformation" of vehicles and called for government to accelerate the phase-out of new petrol and diesel vehicles, bring the 2% company car benefit-in-kind tax rate forward to 2019-20 to help eliminate short-term barriers to EV uptake and to introduce measures such as sales targets to help meet consumer demand.

Similarly, the Aldersgate Group – an alliance of industry, NGOs and policymakers – published a briefing paper on 11 September outlining suggestions to the government to accelerate the transition to zero-emission vehicles.

It made four key recommendations for this to be achieved, calling on the government:

- to introduce fiscal incentives until EVs reach cost parity with conventional vehicles
- to consider mandatory EV sales targets as a backstop if supply does not increase
- to accelerate roll-out of charging infrastructure to support 100% new EV car and van sales by 2030, targeting funding where the market will not deliver, and
- to prepare for long-term developments in autonomous vehicles and disruptor businesses such as car sharing services.

Beyond this, it also called for clarity on UK emissions regulations post-Brexit (see p.5).

The group highlighted the importance of such measures in capitalising on the estimated EV market opportunity of £1-2tn/ year by 2030 and as much as £7.6tn a year by 2050.

Executive Director of the Aldersgate Group Nick Molho said: "Significantly cutting emissions from road transport is both an urgent environmental imperative and a unique economic opportunity for the UK." He added: "We will only get there however if the government provides much greater clarity on how vehicle emissions need to reduce in the 2020s."

Activity following publication of the Road to Zero Strategy is now picking up. We will provide a detailed review of the Zero Emission Vehicle Summit next week.

[Aldersgate Group](#) [Energy UK](#)

Scottish government outlines renewed low-carbon economy plans

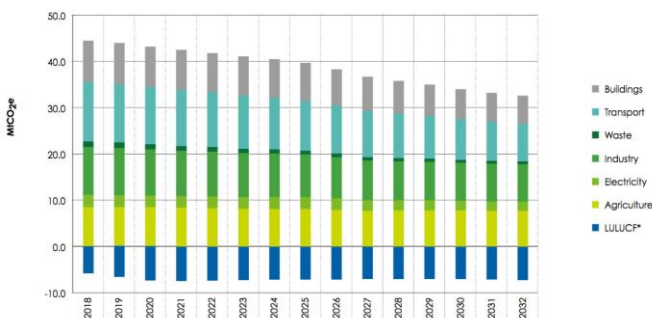
Nick Palmer, n.palmer@cornwall-insight.com

Scotland's First Minister Nicola Sturgeon set out the *Programme for Government 2018-19* on 4 September, announcing measures intended to accelerate the transition to a high-innovation and low-carbon economy.

The *Programme for Government* is an annual document that sets out the Scottish government's plans and ambitions for the coming year.

Over recent months the government has given several indications of its plans for greater low-carbon ambitions. In February it published a plan in for greenhouse gas reductions up to 2032 (see Figure 1), and in May the government's new *Climate Change Bill* was introduced. The latter outlined plans to adopt net-zero carbon emissions by 2050 goal. The *Programme for Government* included measures that will enable the government to achieve these ambitions.

Figure 1: Reduction in greenhouse gas emissions for different sectors of Scottish economy up to 2032



Source: Scottish government

Offshore wind will continue to be supported, with a fresh £2mn of funding pledged to support innovation and reduce costs. The next year will also see the government consult on a new *Sectoral Marine Plan*, identifying future locations for large-scale offshore wind projects.

A total of £15mn is to be spent on 1,500 new electric charge points to be installed in businesses, homes and public buildings. This measure is intended to encourage more individuals and businesses to make the switch to electric vehicles (EVs).

To further assist EV uptake, Sturgeon confirmed that the Scottish government would more than double the Low Carbon Transport Loan fund from £8mn to £20mn. Additionally, the next year will see the introduction of 500 new ultra-low emission

vehicles for the public sector, alongside more than 100 new green buses.

Sturgeon also included in the programme the announcement that the Scottish National Investment Bank will provide finance for new greenhouse gas emissions reduction infrastructure across the country.

The Scottish government also intends to pursue its plan to deliver a publicly-owned not-for-profit energy company by 2021 to support efforts to tackle fuel poverty, with a consultation on the preferred model to take place later this year.

The North Sea remains a central priority for the Scottish government. A further £5mn funding round of the Decommissioning Challenge Fund will be run in 2018 to provide support across the Scottish supply chain. The programme stated that, with 20bn barrels of recoverable oil, North Sea production could be maintained for at least another 20 years.

On energy efficiency, the Scottish government has consulted on the potential legislative requirements to underpin *Energy Efficient Scotland* and the potential for new legislation if needed. This included district heating regulation, in which it will set out the next steps in the coming year.

The Programme also announced funding for creation of a new national infrastructure bank, following the implementation plan published in February.

On 13 September, as pledged in the Programme, the Scottish government launched a Just Transition Commission to advise on how Scotland achieves a carbon-neutral economy. The specific form that the Commission will take, and its wider membership, are currently being considered and will be announced later this year.

Scottish Conservative Leader Ruth Davidson criticised the plan to launch an energy supplier on 4 September, describing it as “a new state-owned energy company that so far has not produced any energy”. She also called for the “confused and cluttered” strategy to be redrawn, with a focusing instead on sustainable energy.

Scotland continues to show a higher level of ambition around the low-carbon economy than the UK as a whole.

Scottish government



Parliamentary update – Week 36 2018

Tom Crisp, t.crisp@cornwall-insight.com

Through a Ten Minute Rule Motion on 12 September, Rebecca Pow (Conservative, Taunton Deane) introduced the [*Energy Consumption \(Innovative Technologies\) Bill*](#). This would require the Secretary of State to undertake a public consultation on innovative technologies and energy consumption in households and commercial properties and take steps to deliver change. She highlighted a series of technological innovations such as smart heating controls, hydrogen boilers and community heat networks that could play a major role in a future energy system. Pow said a consultation “will do a great deal to stimulate greater innovation, reduce energy consumption and meet this government’s energy needs.”

The Second Reading of the Bill is on 23 November.

A Westminster Hall debate was held on 12 September on [Shale Gas Exploration: Planning Permission](#). Lee Rowley (Conservative, North East Derbyshire) opened the debate, referencing the current MHCLG consultation on the topic, which the government is due to conclude in November. He outlined concern on the proposals and claimed the shale gas industry was too controversial and had too chequered of history in the UK.

Bob Seely (Conservative, Isle of Wight) added that it was “very poor precedent for the government effectively to force through something that is locally unpopular in many area”.

Energy and Clean Growth Minister Claire Perry responded that the UK whether to develop domestic supplies of unconventional gas, or instead “import increasing amounts of foreign gas and effectively be at the behest of other nations that do not share our interests”. She added that the government was not overriding local decision making; stating that there were plenty of opportunities for decision makers to express their views in the pre-consultation stage.

Also on fracking, at [Prime Ministers Questions](#) on 12 September, Justin Madders (Labour, Ellesmere Port and Neston) asked if the government agreed that local councils need the power to stop unsuitable developments. Theresa May responded that it has “always been the case, across the planning structure that we have here in the United Kingdom, that there are decisions taken at local level, but there are also decisions—sometimes

those local decisions are referred—at a national level.”

The Lords EU Financial Affairs Sub-Committee held a hearing on [Brexit and the European Investment Bank](#) on 12 September. Witness James Richardson, Chief Economist of the National Infrastructure Commission, noted that on the whole private finance should be relatively easy to come by for large infrastructure projects post-Brexit, but those that focussed on new technologies might encounter problems.

In a [Written Answer](#), published on 12 September, Claire Perry confirmed that the government’s current view of the cost of onshore wind power is £63/MWh in 2020, falling to £60/MWh in 2030. She also confirmed BEIS are currently undertaking a further review of its evidence on levelised costs of electricity generation.

Other interesting PQs were answered on [battery storage](#) and [collective switching](#).

Two Early Day Motions (EDMs) of interest were tabled last week:

- [EDM 1598 Fracking and Local Communities](#) was tabled on 10 September by John Mann (Labour, Bassetlaw). The motion rejects the government’s National Planning Policy Framework and calls on the government to give local residents the power and influence in planning in their communities, and
- [EDM 1596 Need for Coal to make steel and cement in the UK](#) was tabled on 10 September by Ronnie Campbell (Labour, Blyth Valley), noting that coal is used for non-electricity generating purposes and that without a domestic source, the UK will have to import supplies.

The Commons and Lords rose for the party conference recess on 13 September and return on 9 October.

The Liberal Democrat Party Conference will be held in Brighton 15-18 September, the Labour Party Conference will be held in Liverpool 23-26 September and the Conservative Party Conference will be held in Birmingham on 30 September to 3 October.

[Links underlined above.](#)

MPs urge May to implement net-zero emissions target

A letter signed by a cross-party group of 133 MPs and 51 peers has been delivered to Prime Minister Theresa May, calling for the UK to adopt a net-zero greenhouse gas emissions target before 2050.

Sent on 11 September, the letter said that fully implementing a net-zero emissions target would “cut energy bills by improving the efficiency of our homes and businesses” and “get rid of the exhaust pipe emissions that pollute the air we breathe”. It added that moving to a net-zero economy would put the UK at “the forefront of the race for investment in clean industries, creating jobs all around the UK and inspiring the next generation”. The group said it reached its conclusion based on existing advice from the Committee on Climate Change, the likely conclusion of the upcoming Intergovernmental Panel on Climate Change report, and that other countries have set net-zero targets with dates between 2030 and 2050, including France, Norway, Sweden, Iceland and New Zealand.

The letter was followed by a call from business leaders for a worldwide net-zero emissions target for 2050 to accelerate the transition towards a low-carbon economy. At the Global Climate Action Summit in San Francisco on 12 September, the Prince of Wales’ Corporate Leaders Group, whose member companies include EDF, pharmaceutical company GSK and Lloyds Bank, said firms were unlikely to reduce carbon emissions to zero and deliver *The Paris Agreement* without “ambitious and unequivocal” targets set by governments.

[The Climate Coalition](#)

Compliance requirements outlined for medium combustion generators post-Brexit

The Environment Agency has issued full guidance for compliance with the *Environmental Permitting Regulations 2018*, which transposes the Medium Combustion Plant Directive (MCPD) and incorporates regulations on Specified Generators (SGs).

Published on 6 September, the guidance covers compliance for medium combustion plants (MCPs), which are generators with a thermal input of between 1MWth and 50MWth, regardless of fuel type, while the SG provisions capture all generators below 50MWth. They include rules on the emission of sulphur dioxide, nitrogen oxides and particulates. Two types of permits are available: standard permits for low-risk MCPs, and bespoke permits for more complex ones, such as aggregated stacks or mobile MCPs that will operate in an Air Quality Management Area.

By 20 December, new MCPs (those put into operation from that date) must be permitted and comply with the Emission Limit Values (ELV), while operators of currently existing plant have until 1 January 2024 if these are over 5MWth, or until the start of 2029 for 1-5MWth. SGs are divided into Tranche A and B depending on the electricity supply contract they may have. Tranche B generators have until 1 January 2019 to be permitted, while Tranche A 5-50MWth generators with emissions above 500mg/m³ have until the start of October 2019.

By 1 January 2025, all existing plant above 5MW must comply with the ELVs and any remaining Tranche A 5-50MWth generators must be permitted. This extends to cover all other Tranche A generators by 1 January 2030.

[Environment Agency](#)

BEIS launches smart meter thermal efficiency funding

The government launched a £5mn funding scheme on 12 September to develop, test and demonstrate technologies that measure the thermal performance of homes using smart meter and other data.

These have been termed Smart Meter Enabled Thermal Efficiency Ratings (SMETER). Of this funding, up to £4.1mn is provided for innovation projects to develop SMETER tools, for which applicants may apply for funding up to £1mn. The government is also providing up to £900,000 for a Technical Assessment Contractor to independently test and demonstrate SMETER tools developed during the innovation projects. Challenges applicants will have to consider include the technical side of measuring thermal performance, data protection and privacy and the range of skills required.

Phase 1 of the competition will run between January and September 2019.

[BEIS](#)



Scottish government looks to stimulate renewed North Sea exploration

Figures released by the Scottish government on 12 September revealed that the value of Scottish oil and gas sales rose by 18.2% between 2016-17 and 2017-18, as the administration pledges to rebuild exploration activity.

The *Oil and Gas Production Statistics for Scotland 2017-18* also showed that despite the slight decrease of 1.7% in the latest year, production of oil and gas remains 23.1% higher than the level recorded in 2014-15. Production of crude oil and natural gas liquid (NGL) was fractionally up over the year, increasing by 0.5%.

Minister for Energy, Connectivity and the Islands Paul Wheelhouse called on the UK government to bring forward measures to rebuild exploration activity and to maximise economic recovery, while also providing an immediate boost to the supply chain.

However, the call to expand fossil fuel production was labelled as contradictory by the Scottish Green Party against a background of higher ambition on climate change. Mark Ruskell, the Scottish Greens' climate and energy spokesperson, said: "You can't have a long term energy and climate strategy based on more of everything, the transition away from oil and gas needs to accelerate now, taking the jobs with it into renewables. "

[Scottish government](#)

Welsh marine technology sector wins EU funding

The Welsh Finance Secretary Mark Drakeford has announced that £10.3mn of EU funding has been won for the design and testing of a fully-submerged membrane-style wave energy converter, said to be able to produce electricity on a commercial scale. The announcement was made on 11 September.

The design and testing will provide a foundation for developer Bombora Wave Power Europe to construct and commercialise the technology from its Pembrokeshire base. The entire project will cost £15mn and is expected to create up to 20 skilled jobs in the South Wales area, helping the local economy. The EU and Welsh government have both previously invested in Wales' marine industry, including demonstration zones in Pembrokeshire and Anglesey and the provision of support for technology developers based in Wales.

Professor Drakeford said: "Developers from across the globe are showing an active interest in developing projects in Welsh waters, recognising Wales has one of the best marine energy resources and support structures to be found anywhere."

[Welsh government](#)

UKERC charts rise of UK community energy projects

The UK Energy and Research Centre (UKERC) has estimated that there are around 300 community organisations running active energy generation projects, as well as "a range of others" engaged in demand-side projects.

The findings come in a report released on Tuesday 11 September, which tracks the progress of community energy in the UK since its emergence in the late 1990s. UKERC said that community energy has grown as a result of technological developments and schemes such as the Feed-in Tariff (FiT) introduced in 2010, which it said "produced a boom in the sector", particularly for solar generation. The report warned: "Recent cuts to FiT rates and other policy changes place community energy at a crossroads. Some renewables activity will continue, but groups are exploring a wide range of activities, partnerships, and business models."

This research will be covered in-depth in [Energy:2030](#) Issue 9.

[UKERC](#)

Our latest Chart of the Week explores [Where next for Carbon Price Support?](#)

Last week's Cornwall Insight blogs included [Pixie Energy enjoys second anniversary](#). See p.20 for a full event write-up.



Ofgem confirms SoLR changes

Josephine Lord, j.lord@cornwall-insight.com

The regulator issued a statutory consultation on 7 September on modifications to the Supplier of Last Resort (SoLR) arrangements, principally on the process for a Last Resort Supply Payment (LRSP).

Ofgem's decision follows a consultation in June ([ES624](#)) on proposed changes that seek to enable a potential SoLR to recover costs associated with honouring credit balances for customers who have switched away from the failing supplier at the date the supplier fails. It also proposed a range of other changes to ensure any claim for credit balances represents the actual amounts owed to customers by the failed supplier and to provide appropriate flexibility in the timings for the process to make an LRSP claim.

In October 2016 Ofgem issued revised guidance on SoLR, stating that it would normally give preference to those suppliers who commit to protect any customer credit balances and to those who say they will not make a claim via the arrangements for LRSPs. It added that it may depart from this depending on the specifics of the supplier insolvency. Generally, it expects suppliers that volunteer to be a SoLR to offer to cover all or the majority of associated costs and to honour any credit balances customers hold. This reflects the value the supplier will obtain through the expansion of their customer base.

Current arrangements do not, however, enable suppliers to recover the costs of credit balances through the backstop cost recovery mechanism – the LRSP. But Ofgem considered that, where appropriate and subject to its consent, this should be allowed. The regulator welcomed that a majority of the 20 responses received to its consultation supported the change, which will only apply in the scenario where the SoLR had not waived their right to make a LRSP claim as part of the SoLR selection process.

The regulator is taking forward licence changes to limit the costs a SoLR may recover for protecting credit balances to avoid the risk of inaccurate and inappropriate cost recovery. These will ensure any claim takes account of consumption that has not been billed at the date of the SoLR's appointment and also represent the net position of the customer across both gas and electricity.

Ofgem confirmed a series of amendments to provide the SoLR and the Authority with greater

flexibility to make and decide on a LRSP claim. These include removing the sunset provision of six months from a Last Resort Supply Direction and moving back the deadline for a LRSP claim from twelve months after the SoLR event to a date decided by Ofgem, or five years if none is given. The three-month deadline for Ofgem to determine a different amount from the LRSP claimed will also be removed.

The regulator considers that a more flexible LRSP process will allow the SoLR to exhaust the liquidation process of the failed supplier in the first instance and take this into account in their claim, thereby reducing uncertainty.

Ofgem has also decided to enable LRSP claims to recover costs from all customers, rather than those in the geographic areas in which the premises supplied by the failed supplier were located, as is currently the case. It considers that, as the SoLR arrangements protect customers overall, including by ensuring ongoing trust and confidence in the retail market, it is more appropriate that the costs can be recovered from all customers.

Eight respondents raised issues and concerns on the SoLR process and the regulator's approach to licensing suppliers. Ofgem said many called for the barrier to market entry to be raised and for tougher mandatory monitoring of suppliers. Some called for stricter regulations to protect consumers against risky business models or for certain models, such as those based on payment in advance, to be banned outright. The regulator said that it is currently reviewing its approach to licensing suppliers and will consult on initial proposals to change the licensing regime in the coming weeks.

Responses are due by 8 October. If Ofgem makes the licence modifications, they will take effect no less than 56 days after its decision.

The SoLR powers were again invoked last week as Octopus Energy was directed to take on the customers of GEN4U (see p.13).

The changes help ensure the SoLR arrangements are workable and robust in the face of their increasing use.

The focus now turns to Ofgem's upcoming proposals that may seek to make supplier entry more demanding.

Ofgem



DCC's SMETS1 service delayed

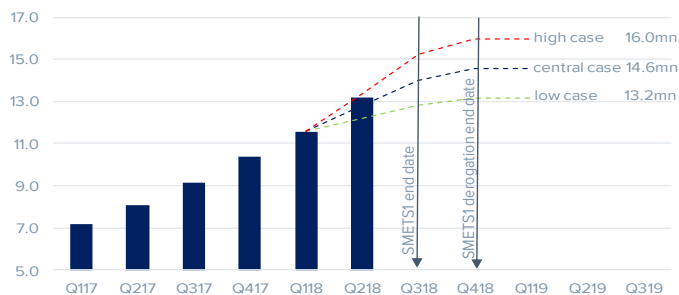
Rowan Hazell, r.hazell@cornwall-insight.com

The launch of the service which will allow SMETS1 meters to be enrolled into the national Data Communications System (DCC) looks set to be delayed, after BEIS issued a direction to push back the deadlines for device and user system testing for SMETS1 meters.

The government has held a long-standing policy that all major populations of SMETS1 meters are to be enrolled in the national communications system. Currently suppliers use their own data and communications systems to provide smart services for SMETS1 meters. These services are usually provided by Smart Meter System Operators (SMSOs), but with a number of these existing in the market, customers often lose smart functionality if they switch to a different supplier that is utilising a different SMSO.

BEIS has admitted that less than half of SMETS1 customers switching supplier are able to maintain smart functionality. There are now over 11mn SMETS1 meters installed and suppliers are continuing to install the meters, meaning that the interoperability problem is becoming an ever more pressing issue. As shown in Figure 1, our forecasts – based on extrapolations of existing install rates – suggest that SMETS1 meter installs could now hit 15mn.

Figure 1: Projected installations of SMETS1 meters



Source: Cornwall Insight

In January 2017, the Secretary of State directed the DCC to create a plan for the delivery of a SMETS1 service which would be fully interoperable between suppliers, in accordance with Condition 13 of the DCC licence. Since then, work has been undertaken by the DCC to prepare the SMETS1 system, and BEIS has consulted on proposals to require suppliers to take all reasonable steps to enrol their SMETS1 meters into the new service or replace them with SMETS2 meters.

On 18 July, BEIS directed a number of changes to the Smart Energy Code (SEC), the DCC licence, and the supply licences to adapt the regulatory framework so that SMETS1 meters could be enrolled in the DCC systems. The changes saw device and user system tests (DUST) extended to SMETS1, so that users could check that devices and interface systems work appropriately with the DCC. The new concept of SMETS1 pending product combinations testing (PPCT) was also introduced, allowing suppliers to test new device versions that are not yet on the Eligible Product Combination (EPC) list.

From 31 July to 15 August, the DCC consulted on plans to request a pushback of the deadline for the provision of the SMETS1 DUST and PPCT services from 31 August to 30 November. The DCC said that the Licence Condition 13 (LC13) plan for SMETS1 initial operating capability to go live at the end of November and middle operating capability to go live at the end of March 2019 cannot be maintained, which in turn impacts on the ability to provide the SMETS1 DUST and PPCT. The requested change to the deadline, published on 20 August, is intended to ensure that the DCC does not breach the SEC while it plans to re-consult on the LC13 plan. The revised plan is currently being finalised, with the consultation planned for the end of September.

Following the DCC's request, on 30 August BEIS issued a direction to amend the date from which the DCC is required to provide SMETS1 DUST and PPCT to 30 November. It was acknowledged that the DCC would not be in a position to make the testing services available from 31 August, and BEIS also noted the DCC's suggestion that the revised date of 30 November may require further amendments following the finalisation of a revised SMETS1 delivery plan.

BEIS said that it is important the DCC's updated plan sets out a credible and evidence-based path to the delivery of its SMETS1 service.

With the SMETS1 service set to be delayed and SMETS2 meters still not ready to be rolled out at scale, it looks like the interoperability issues facing the smart meter roll-out will be around for some time to come.

DCC

BEIS

Views sought on effectiveness of Capacity Market rules

Ofgem issued an open letter on 11 September, seeking views on whether the Capacity Market (CM) rules meet their objectives. The regulator is required under the *Electricity Capacity Regulations 2014* to carry out a review of the CM rules within five years of the scheme coming into force.

The objectives of the CM are to ensure timely investment in capacity to ensure security of supply at a minimum cost to customers, and to avoid unintended consequences that could arise through distortions in competition. In particular, the regulator is interested in views on whether the CM rules meet their objectives and whether these could be met in a less burdensome way.

Given BEIS is conducting a review of the CM in parallel, which may consider changes to the CM framework and policy, Ofgem does not consider it appropriate to make substantial changes to the rules during this process. However, it has identified a number of priority areas which require examining in a future programme of work. The regulator said that there could be a more efficient way to assess and implement changes to the CM rules, while giving the industry a greater responsibility in assessing the value of amendments.

Also under consideration is whether the objectives of the rules could be achieved with less burden on participants. The regulator's review will also consider the appropriateness of secondary trading arrangements to ensure that participants have the correct incentive and opportunities to engage in the secondary trading market. It has also been identified that the appropriateness of National Grid's incentives to deliver the CM could be increased to ensure that they remain fit for purpose.

A new process for administering rules changes will be consulted on during winter, along with any urgent and priority amendments to the rules. A stakeholder workshop will be held on 16 November to gather views ahead of the consultation. The Ofgem review will be concluded in the first half of 2019, so that it can inform BEIS's wider five-year review.

[Ofgem](#)

Octopus Energy becomes last resort supplier for GEN4U

The regulator has issued directions to appoint Octopus Energy as Supplier of Last Resort (SoLR) for GEN4U's customers after the supplier ceased to trade. The decision, announced on 13 September, will see Octopus Energy take on approximately 500 domestic customers from the supplier. GEN4U has been in credit default under the BSC since 23 July and has been unable to sign up new customers and register contracts since that time.

Explaining its decision, the regulator said that it had not requested expressions of interest from suppliers to act as SoLR given the small number of GEN4U customers, and because the recent appointment of Octopus Energy as SoLR for the customers of Iresa. Octopus Energy agreed to offer the same protections to GEN4U's customers that it has provided to Iresa's former customers, so Ofgem considered that its decision was in line with its principal objective to protect the interests of consumers. Additionally, it said that it would be disproportionate to conduct a further competitive selection process for a small number of customers.

The regulator has also revoked GEN4U's electricity and gas supply licences after the company began winding up, and it noted that Octopus Energy will be contacting GEN4U's customers in the coming days.

[Ofgem – Direction \(electricity\)](#)

[Ofgem – Direction \(gas\)](#)

[Ofgem – Revocation notices](#)

DNOs miss out on Losses Discretionary Rewards

No payments will be made to Distribution Network Operator (DNO) groups under tranche two of the RII0-ED1 Losses Discretionary Reward (LDR), Ofgem announced on 11 September. Up to £10mn was available to DNOs during 2018-19 to incentivise the network operators to better understand and manage electricity losses on their networks.

The first tranche of the LDR saw £3.8mn awarded across the six DNO groups. For tranche two, the network operators were expected to provide evidence of the outputs achieved and actions taken, in particular demonstrating how processes set out in tranche one had been built upon. The regulator said that, although the submissions intended to show the progress made, there had not been enough evidence provided for each award criterion to justify any rewards.



It said that some of the DNOs had not given enough detail on how the progress made from tranche one to tranche two would help feed into losses in RIIO-ED2, and the DNOs had not provided enough detail on the outcomes of the collaborative Energy Networks Association technical losses working group. There were concerns that some DNOs were not considering the network in a holistic manner, and Ofgem also said that there was not enough evidence on whether the work on losses was being undertaken as part of other funding mechanisms such as the Network Innovation Allowance.

Tranche three of the LDR is in 2020-21. Ofgem said that it expects this to largely be a backward-looking assessment of losses management achievements, along with considering preparations for RIIO-ED2. It said that submissions should fully meet all the criteria, with thorough yet concise evidence provided in order to achieve a reward.

Ofgem

Domestic air source heat pumps comprise majority of RHI accreditations

Air source heat pumps made up the majority (1,000 of the 1,430) Domestic Renewable Heat Incentive (RHI) accreditations made during the period May to July 2018. The total figure, however, was the lowest for the past 12 months, down from 2,158 in Q2 2017.

The latest report, issued by Ofgem on 31 August, details scheme activity in Q1 of Year 5 of the Domestic RHI scheme and confirms 457 accreditations were made in May, 502 in June and 471 in July. This included 36 legacy accreditations commissioned between 15 July 2009, when the RHI was first announced, and 9 April 2014.

The cumulative total for air source heat accreditations is 20,151, followed by 9,369 for biomass and ground source heat pumps and solar thermal accreditations reaching 4,277 and 3,654, respectively. The report noted that payments made to date for biomass are £163.2mn and for ground source heat pumps amount to £86.5mn. Total payments made in relation to air source heat pumps were reported as amounting to £61.8mn, with the least amount paid for solar thermal at £7.8mn.

Additionally, in the last 12 months, 1,292 accreditations have been made to Registered Social Landlords (RSLs), 94% of which are air source heat pumps, taking payments to RSLs to date to £18.3mn.

Ofgem



Energy Supplier Compliance Portal

To maintain compliance, it is vital you clearly understand your obligations in an increasingly complex regulatory environment. Risk is inherent in the energy business, but the pace and complexity of change exacerbates those risks further. In parallel, the enforcement regime is strengthening.

Updated every quarter with the latest information, the Energy Supplier Compliance Service is an invaluable fact file of information to refer to on supply activities. To ensure you are kept informed of developments in the interim the Portal is supplemented by an ad-hoc Alerts Service. It sets out the current and upcoming requirements you face as a supplier throughout the customer journey in an easy to understand format with links to Ofgem guidance and best practice.

For more information, or to subscribe contact
Vicky Simonds

☎ 01603 604415

✉ v.simonds@cornwall-insight.com

CORNWALL INSIGHT

CREATING CLARITY

Energyst reveals high interest in demand-side response

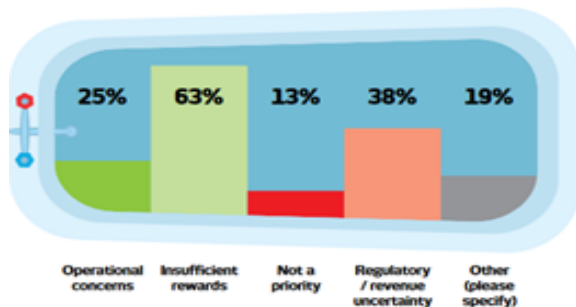
Tom Palmer, t.palmer@cornwall-insight.com

On 13 September, the *Energyst* held its 4th annual demand-side response (DSR) event – *Aligning Risk and Reward* – as well as publishing the results of an annual survey.

The survey of 134 participants confirmed:

- 83% of participants would be interested in DSR if it did not affect their operations
- 68% of those that are active in DSR remain satisfied with the outcome
- 42% stated return on investment was not high enough
- 40% identified a risk of disruption to core business, and
- two-thirds of respondents are considering battery storage.

Figure 1: If you have the potential to provide more flexibility, what is stopping you?



Source: *Energyst*

National Grid introduced the day with a review of their activities under the *System Needs and Product Strategy* in opening up markets and listening to feedback on changes to balancing services.

The first session focussed on the role of local flexibility markets. Both UK Power Networks and Western Power Distribution outlined their *Flexibility First Roadmap* and their recent tenders, enabling the opportunity for DSR to capture alternative and contracted revenues.

James Johnston from Piclo announced that it had secured Scottish Power Networks in using its platform for DSO trials, taking it to five, leaving just Western Power Distribution to go it alone.

Daniel Barret from the Greater London Authority outlined their plans for FlexibleLondon alongside their ongoing plans to establish an energy company.

This was followed with a review of recent policy and regulatory changes. Caroline Brag from the Association of Distributed Energy also gave an overview the Medium Combustion Plant Directive and the impacts on the industry (see pg. 9).

Cornwall Insight Principal Consultant Tom Palmer followed this with a review of how Ofgem's Targeted Charging Review and Forward Looking Charges and Network Access work programmes could change conditions for DSR and embedded generation.

It was then the turn of Henrietta Stock at SES Water to consider the business risks of DSR on their business. Stock said, while there will be extra revenue, the risk to business interruptions remains a priority when considering participation. Npower and Enel X shared the platform to discuss the existing value of DSR in the market, which they estimated to be around £85k/MW gross margin per year, but dropping to below £40k/MW by 2020 with changes in the market and network charges.

The event was then completed with a look at storage, with Vikas Ahuja from NHS Trust and Michael Nagle from Luton Airport considering their desire to get involved in DSR, but both expressed concerns over the interactions with those optimising the assets in the commercial markets and implications for their energy independence.

Peter Dennis of food firm Philip Dennis Foodservice outlined his company's 4MW of battery storage purchases in front of the meter and behind the meter. Asked if he would do it again, he was quick to say that he would only consider behind the meter storage owing to concerns with the interaction with the aggregator to independently manage the asset, contractual complexities and challenges with the DNO.

The DSR market has become far more complex for participants, with decreasing revenues in both the balancing services market and capacity market, alongside changes in network charging. There is optimism around the ability to jump between different revenues, yet despite this a number of reservations exist on contractual structures and asset operation.

Energyst

Carbon Tracker predicts fossil fuel peak in 2020s

Jess Scragg, j.scragg@cornwall-insight.com

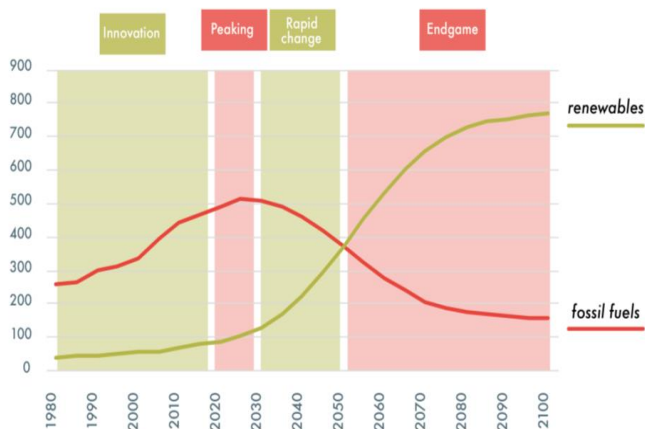
The latest Carbon Tracker report, *2020 Vision: Why You Should See Peak Fossil Fuels Coming*, has predicted that fossil fuel supply is set to peak between 2020 and 2027, with the most likely date being 2023 due to the rapid global growth of renewables technologies.

The report identified four phases of energy transition. The current phase is the innovation phase, which is set to end in 2020.

There will then be the peaking phase from 2020-30, which is when Carbon Tracker predicts renewables to become large enough to supply all incremental demand and trigger a decline of fossil fuel requirements. This will occur when solar and wind make up 6% of total global energy supply.

The other phases are the phase of rapid change, from 2030-50, and the endgame, from 2050 onwards (see Figure 1).

Figure 1: The four phases of the energy transition



Source: Shell via CarbonTracker

Solar and wind deployment is forecast to grow at a rate of 15-20%/ year due to technology-driven learning curves and falling costs of solar, wind and lithium-ion battery technologies.

The average global cost of solar PV electricity has fallen from \$350/MWh in 2010 to \$80/MWh in 2018, with auction results predicting a further decline to \$50/MWh by 2020. Analysis from the International Energy Agency (IEA) was cited as anticipating renewables to cost less than fossil fuels in every major region of the world by 2020.

Emerging economies such as China and India are another factor driving the energy transition. As these countries have less existing fossil fuel

infrastructure, investment in renewable technology is viewed as a more attractive option to support their rapid growth. China is currently the largest deployer of wind and solar technology. The IEA predicts that 27% of energy demand growth in the next 25 years will come from India and 19% from China.

Peak demand date is also predicted to be sooner than expected because of more government policies in support of renewables as governments strive to meet their emissions objectives. Taxes on the fossil fuel sector are emerging as another means of meeting these goals now that renewables no longer require government subsidies.

The transition is set to have a “highly disruptive” effect on the energy market, increasing competition and leaving stranded assets in the fossil fuel sector. There is currently some \$25tn worth of existing fossil fuel infrastructure, and this will increase before peak demand is passed. It will also have a large impact on countries such as Kuwait, which relies on fossil fuel exports for 45% of its GDP.

The report argued that the decline of fossil fuels has already commenced, with construction of coal power is coming to a halt in China and power station closures in the US and Europe.

Furthermore, many key industry players may overestimate the time they have before peak demand is reached; BP, the IEA and OPEC have all said they do not expect peak fossil fuel demand for another generation or more.

Report author Kingsmill Bond said: “Investors anticipate, so they will typically react even before companies see peak demand. This is what happened recently in the coal and European electricity sector transitions. We believe that investors will start to react faster as the energy transition works its way through the world’s capital markets. As each sector is impacted, it becomes easier for the market to anticipate something similar happening to the next sector.”

The decline in dependence on fossil fuels will be key in meeting climate objectives, but the sector may be ill-prepared for such a disruptive change to occur so soon.

Carbon Tracker

North Sea future at risk as drilling activity hits a new low

Tom Crisp, t.crisp@cornwall-insight.com

Trade association Oil and Gas UK published its annual *Economic Report* on 11 September, illustrating how, while production costs and efficiency on the basin have made significant progress, low drilling activity and supply chain constraints pose a longer-term danger.

Over the last year the oil market continued to be characterised by uncertainty around the balance between supply and demand. The International Energy Agency (IEA) has forecast that total annualised demand growth will increase by around 1.4mn barrels per day (bpd) throughout 2018. Demand growth throughout the first half of the year was greater than this (1.5mn bpd), largely driven by cold weather conditions across Europe and the US, increased refining demand in the US and strong global economic performance.

In positive news for the North Sea basin, operating costs have halved and are now being sustained at around \$15/ barrel of oil equivalent. There continues to be a “relentless focus” within companies to maintain unit operating costs (UOCs) at the current improved position. UOCs halved (in US dollar terms) between 2014-16, due to the increased production and reduction in costs. These were identified as the “greatest UOC reductions across comparable global basins”.

Production is on track to be 20% higher than 2014, driven by major developments such as Quad 2014, Kraken and Catcher, all of which have continued to ramp up production towards peak rates within the first half of 2018.

Moreover, more major new projects have been sanctioned by Exploration and Production companies so far this year than the last two years combined. A total of 36 new fields have commenced production since 2014, with 12 coming onstream in 2017.

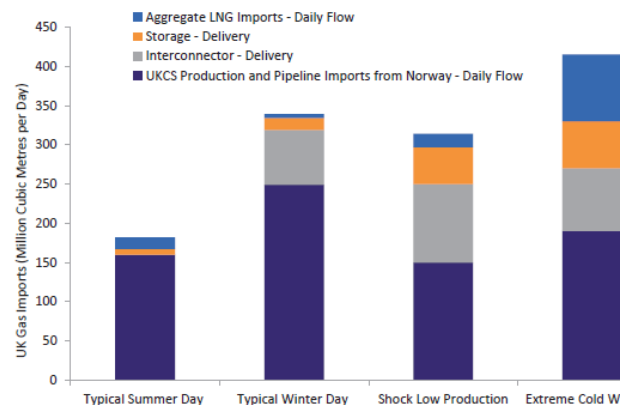
However, the positive signs of recovery were seen as not being felt across the whole sector. Total exploration activity this year is expected to be the lowest since 1965. The capacity of the supply chain has been reduced in recent years, as “revenues and margins continue to be squeezed.” This low rate of development drilling is reflective of a combination of reduced infill drilling on existing fields and fewer wells in greenfield developments – the result of the decline in the number of fields being sanctioned and the relatively small size of

new fields. The scarcity of capital has also meant that only the most competitive and economic wells have been drilled.

The analysis warned that by 2021 there could be capacity constraints emerging across the supply chain, as a result of the reductions in recent years and an expected increase in new development activity at home and abroad. The constraints are expected to be felt most across drilling and wells services and within engineering and subsea sectors.

The implications of a significant drop off in North Sea production was illustrated in the report, with an extremely cold winter scenario requiring significant expansion in LNG, storage and interconnector supplies (see Figure 1).

Figure 1: UK gas supply scenarios – additional supply required over and above indigenous supply



Source: Oil and Gas UK

Chief Executive of Oil and Gas UK Deirdre Michie added: “Choosing the correct direction of travel is critical to securing our ambition for the future, outlined in *Vision 2035*, published in June 2018. The sector deal is a further important step in delivering this vision. Essential for security of energy supply, supporting hundreds of thousands of skilled jobs and contributing billions to the economy, this is a vital industry.”

This annual report is essential reading for those following the oil and gas sector and the changing challenges for the UK Continental Shelf. There remains significant activity, and new entry and new projects continue apace.

Oil and Gas UK

National Grid announces frequency response auction trial

On 31 August National Grid published a letter to industry providing more detail on the auction trial for its Frequency Response (FR) service. The potential for such a service was first referenced in the *Product Roadmap* covering frequency response and reserve services in December 2017, which outlined a trial of an alternative method of procurement for a small volume of FR.

Since December National Grid has been compiling industry views in order to aid the development of the project design. It has also been seeking an appropriate supplier to deliver the trial, which has now been identified and contractual discussions close to finalising.

The letter summarises the trial and auction design, which will last 24 months and start in December this year. The auction will procure four products: high frequency dynamic response, low frequency dynamic response, high frequency static response and low frequency static response. Auctions will be held every Friday morning, with the first delivery window starting at 23:00 on the same day. This will facilitate access to the frequency response market to non-traditional technology types such as wind and improve market access for DSR providers, both of which are less forecastable compared to other technology forms.

A webinar will be held on 27 September that will give greater detail of the auction process, algorithm design, and product design. A development timeline for the project is also set to be published, giving parties visibility on when each phase of the project is due for completion.

[National Grid](#)

SSE profits impacted by weather and price caps

On 12 September SSE published its latest Trading Statement, detailing its results for the first five months of the financial year.

The statement showed its adjusted operating profit was £190mn lower than expected. Just under half of this was attributed to increased gas prices and other commodity price changes creating higher than expected costs of energy. The remainder was accounted to relatively dry, still and warm weather which has affected output from SSE's windfarms and hydro stations.

SSE expects its adjusted operating profit for the six months to 30 September to be down 50% on the same period in 2017. In its wholesale division, this comprises a significant reduction in adjusted operating profit in generation and an adjusted operating loss of around £100mn resulting from its trading arrangements. The supplier's trading activities are expected to return an operating loss of £300mn over the full financial year.

Commenting on Ofgem's proposed default tariff cap, the supplier said an implementation date of 1 January 2019 is expected to result in the adjusted operating profit being significantly lower than SSE expected at the start of the financial year.

Chief Executive Alistair Phillips-Davies said: "SSE's financial performance in the first five months has been disappointing and regrettable. The underlying quality of SSE's businesses remains strong, with regulated networks and renewables providing the core of what will be an infrastructure-focused SSE group in the years ahead."

We will have a fuller comment from Cornwall Insight Associate Peter Atherton on the results next issue.

[SSE](#)

European offshore Wind Deployment Centre opens

On 7 September Scotland's First Minister Nicola Sturgeon officially opened the European Offshore Wind Deployment Centre (EOWDC) in Aberdeen Bay.

The Vattenfall development's 11 wind turbines – two 8.8MW and nine 8.4MW – have the largest turbine capacity in commercial operation in the world and are expected to produce around 312GWh/ year. The total installed capacity of the EOWDC is 93.2MW and the project cost the Swedish developer €350mn (£312mn).

Vattenfall added that the site will be used to test future wind power technology and that the EOWDC was "one of the first testing facilities of its kind". The aim of the project is to increase offshore wind's competitiveness as a generation technology.

Magnus Hall, CEO of Vattenfall, said: “The success of our wind power investments over the past decade, and the ambition of Scottish and UK governments to transform the energy and transport sectors, give us confidence in our UK future.”

[Vattenfall](#)

New dedicated AD venture set up

Three renewable energy infrastructure investors announced on 5 September the formation of a new business dedicated to investing in anaerobic digestion (AD) plants across the UK and Ireland. The new company, Bio Capital, is being financed by Aurium Capital Markets, Equitix and Helios Energy Investments. It is targeting greenfield and operational assets, comprising both gas-to-grid and electricity generation facilities.

Bio Capital has already acquired the largest operational AD plant in Scotland from Energen Biogas. The plant currently processes 120,000 tonnes of food waste every year and generates 33GWh of electricity and 44GWh of biogas. The biogas is then converted into biomethane for use in the gas network.

Steven Blase, a partner at Aurium, said: “With as many as 50 new gas-to-grid plants expected to be built in the UK over the next 18 months, AD is set to play a key role in driving the UK’s renewable energy capabilities. At the same time, we believe that the renewables sector is poised for a consolidation phase, and we will be well placed to take advantage of growth opportunities as they arise.”

[Aurium](#)

Gemserv acquires digital transformation and cyber security consultancies

Professional services firm Gemserv has acquired two consultancies in digital transformation and cyber security. Gemserv is involved in high-profile projects across the energy market including the smart meter roll-out. It has bought ASE Consulting and Aproz Risk for an undisclosed sum and will create a combined group with annual revenues of more than £20mn.

Chief Executive of Gemserv Alex Goody said: “The pace of change in the energy sector is accelerating and technology and data advances means it is increasingly connecting with other sectors such as transport and telecoms. These acquisitions will help Gemserv keep ahead of developments by enhancing our digital expertise.”

[Gemserv](#)

Van fleet operators commit to switch diesel for electric

Environmental group Clean Air Day announced on 6 September that 16 of the UK’s largest van fleet operators have pledged to invest a combined £40mn in the next two years on electric vans to improve air quality.

The group has committed to doubling the amount of electric vans operating in the country, deploying 2,400 electric vans by 2020. The companies also pledged to replace a further 18,000 diesel vans by 2028 if enough charging infrastructure is in place and competitively priced electric vans are available. Anglian Water, ENGIE, Network Rail, Tesco and United Utilities are amongst those that have signed up to the pledge.

Clean Air Day hopes to encourage manufacturers to step up investment in electric vans and accelerate the roll-out of the technology. Referencing research from the University of Oxford and the University of Bath, it highlighted the health damage from older diesel vehicles costs the NHS and society £2.2bn/ year. Vans contribute 30% of the UK’s road transport nitrogen oxide emissions, costing three times more per vehicle to the UK’s health than cars.

Bex Bolland, Head of Air Quality at Global Action Plan, said: “For the first time, we know just how quickly van fleet leaders aim to adopt electric vehicles. Their collective purchasing commitments show manufacturers that demand is thriving.”

[No link](#)

Delivering local markets – Pixie Energy’s 2nd annual conference

Cornwall Insight’s sister company Pixie Energy held its annual conference at Norwich Cathedral on 10 September, giving an update on the progress of a range of local energy workstreams and hearing from key external speakers on the theme of market transformation.

Pixie Energy Founder Nigel Cornwall opened the conference highlighting how, with such a large volume of distributed generation deployed, local energy is already a reality. The narrative from central government is one of the importance of decentralised markets, but subsidy support is increasingly falling away, such as with proposed closure of the Feed-in Tariff. The focus of the conference was how Pixie Energy was bringing tangible proposals for change to East Anglia.

Alex Jakeman, Innovation Project Lead at UK Power Networks (UKPN), gave an overview of the distribution network operator’s (DNO’s) perspective on the changing energy landscape and how to respond with innovation. Some 9GW of distributed generation has connected across UKPN’s networks in the last five years. With a wide range of drivers of change, by 2030 the DNO envisages a world including peer-to-peer energy trading, 2mn electric vehicles in East Anglia and smart meters giving far greater visibility of power flows on the networks. To prepare for such a world, UKPN is pursuing its Active Response project (see Figure 1), which acts to shift power from substations with a high demand load, to those that are under-utilised. This avoids reinforcement and could deliver £271mn in savings by 2030.

Cornwall then outlined progress in Pixie Energy’s flagship Norwich Virtual Energy Community (NVEC) project. This would be aiming to utilise “sandbox” innovation derogations to allow multiple suppliers to provide electricity to the same meter. The NVEC

will initially deploy around 50-100kW of domestic solar panels and 30kW of domestic batteries on 10-15 sites in Norwich and North Norfolk. Energy generated by the solar arrays will be used by the host households or stored in the batteries. Other participants in the scheme will then have a chance to purchase this energy for their own use.

The initial project will be in place by December 2018, doubling in size by April 2019 as part of phase two, with the project growing in scale from there. The licensed supplier would be Green Star Energy, but other parties would be able to access supply at batteries and electric vehicle charging points. e-POWER would be fulfilling the role of the behind the meter reconciliation agent.

The project was also looking at developing further pilots based around other mixes of technology and working with other suppliers involved with the project. Pixie is also working with local firm Ashton Shaw to deliver a crowd-funding programme to deploy more renewable assets.

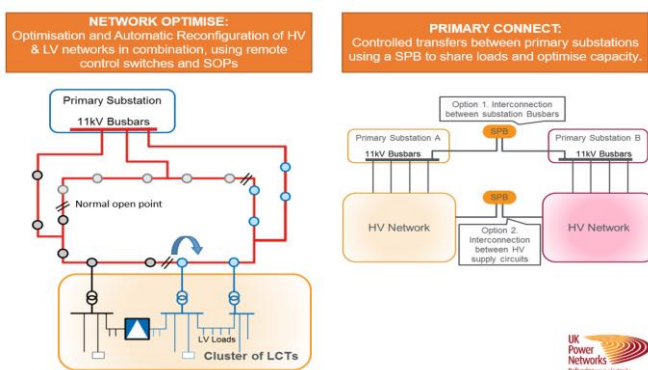
Another Pixie project was introduced by Tom Andrews – the Energy Company Obligation (ECO) Switch initiative. He set the scene that domestic suppliers with more than 250,000 accounts presently will be mandated under ECO3 to fund £640mn in bill savings through offering energy efficiency upgrades, and the threshold is set to fall. However, many newer obligated suppliers struggle to locate suitable customers to offer upgrades to, and the search costs could be prohibitive.

BEIS already offers an ECO brokerage service, but the level of measures traded has been very low. The ECO Switch project by contrast joins up data from councils and social hosting providers with energy suppliers and energy efficiency installers. The scheme will operate as two auctions, with local authorities listing measures targeting appropriate households, pricing up measures, with multiple suppliers bidding to provide the funding to install appropriate measures.

The scheme intends to progress with a flexible governance approach, taking particular care not to fall foul of data governance considerations, with all household information anonymised. The platform is set to launch in 2019, and a platform provider would shortly be identified.

Pixie Energy’s Dan Starman then gave a preview of learnings from the upcoming Ipswich flexibility feasibility report. He outlined the benefits to be

Figure 1: UKPN Active Response models



Source: UKPN

accrued from local flexibility, including arbitrage, avoided reinforcement and lower consumer costs. The behind the meter value of flexibility was put at as much as £500/MWh for peak periods of the day, with a series of consumer archetypes created to explore how flexibility can most valuably be captured.

In a question and answer session, Cornwall reiterated the need for a retained FiT export tariff after March 2019, to bridge the gap between the status quo and five years' time when rising retail costs and falling technology costs will make domestic solar commercial without any form of support. Pixie Energy's FiT closure consultation response had been turned into an insight paper, and it is available [here](#).

The headline speaker for the second session was Paul Bourgeois, Head of Sustainability at Cambridgeshire and Peterborough Combined Authority, gave an overview of the current state of Local Energy East, the regional hubs and energy strategy development.

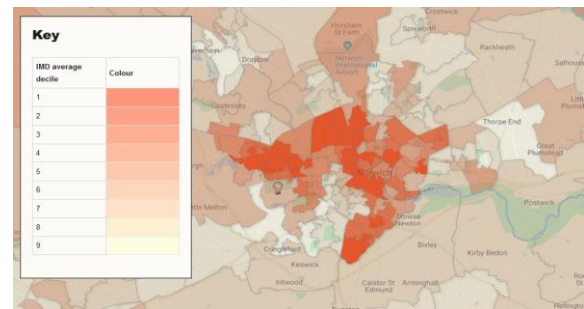
The BEIS-funded Greater South East Energy Hub is a collaboration of 11 Local Economic Partnerships (LEPs), who are working together to increase the number, quality and scale of local energy projects being delivered across the South East of the UK. Many local energy projects within LEP areas are currently not reaching delivery, either because they are too small to meet investor criteria or there is lack of resource and technical expertise to deliver them. The Hub will operate via a new team of eight experts – three of which are in place – who will help to consolidate and up-scale local energy projects. Individual and multi-LEP energy strategies will provide the initial evidence base for the Hub to begin its work in late 2018.

After the two-year BEIS-funded timeframe has elapsed, the project must move to become independent and self-sustaining, with ambitions for a £50mn annual pipeline of projects.

The Local Energy East project has been supported by Pixie Energy's mapping work. Neil Mearns outlined how the service now has more than 40 layers of data available across East Anglia and Lincolnshire, allowing key stakeholders far greater visibility of the correlation of inter-related factors. For example, collating datasets on vulnerability (see Figure 2), can tie into other work such as the ECO Switch project. A similar exercise is now being undertaken by Pixie in Scotland, but the ambition is to establish a national facility.

Cornwall Insight's Anna Moss then summarised innovation in energy supply markets. Energy has

Figure 2: Norwich customer vulnerability – indices of multiple deprivation



Source: Pixie Energy

traditionally viewed a homogenised product, with suppliers now looking to provide either choice or convenience. Change is happening, with 25% of the market now supplied by non-Big Six suppliers. Future innovation is likely to centre on the move towards suppliers increasingly offering additional services alongside energy provision, such as electric vehicle charge point access or installation.

There then followed a panel discussion chaired by Cornwall Insight CEO Gareth Miller. He identified how public money is “increasingly moving out of subsidy and into innovation”. John McPate of Green Star Energy argued more should be done from the central and local government levels to ensure engagement. Mark Billsborough of Co-op Energy highlighted how suppliers come into market for reason to promote a particular technology or mission, but market entry costs and now price caps limit the space for innovation. Jack Peck of Powervault argued that aggregated up domestic storage installations can compete with more established players, while Cornwall Insight's Ed Reed said retail market innovation will likely lead to a tension between products necessarily being more complex (i.e. providing energy, aggregation opportunities, and routes to market for on-site generation) and the need to make them fair and transparent for customers.

Nigel Cornwall concluded the conference, warning how future programmes need to learn the mistakes of the past from mushrooming ad hoc micro-generation deployment. A whole system approach, including heat and transport decarbonisation, was needed as battery storage stimulated further transformation, and that could only be effected by bottom-up initiatives reflecting widely different local conditions.

Regular updates on all Pixie Energy's projects are available on the Pixie Energy website. Register [here](#) for updates. Tom Crisp is Editor of Energy Spectrum.

Gas

All gas contracts fell last week reversing recent trends of sustained upwards price movements.

Day-ahead gas declined 4.0% to 71.5p/th. The contract started the week at a fresh six-month high of 76.3p/th as the gas system was undersupplied, but later fell as the system became oversupplied with forecasts of warmer weather. October 18 gas decreased 4.6% to end the week at 70.6p/th.

Seasonal gas contracts fell 2.2% on average. All contracts hit fresh highs on 11 September, with winter 18 peaking at 81.7p/th as the contract was supported by EU ETS carbon hitting a fresh 10-year high. Prices fell towards the end of the week, with winter 18 down 3.5% to 76.5p/th week-on-week.

Electricity

All power contracts also dropped last week.

Day-ahead power lost 4.2% to £66.6/MWh. Prices started the week at £67.9/MWh and then declined with a significant rise in wind generation following a recent period of low output. October 18 and November 18 power fell, losing 4.3% and 4.6% to £67.3/MWh and £71.4/MWh respectively.

Week-on-week, seasonal contracts were down 3.0% on average, despite all seasonal contracts hitting fresh record highs at the start of the week. Winter 18 power, which peaked at £75.4/MWh on 10 September, ended the week down at £71.3/MWh (down 3.4% from the previous week).

Oil, coal and carbon

Brent crude oil prices rose for the fourth consecutive week, gaining 0.3% to average \$78.2/bl, up from \$77.9/bl. Prices continued to gain ahead of the upcoming US sanctions on Iran, which led to speculation of tightness in the market and led prices to a fresh three-and-a-half year high of \$80.0/bl intraday on 12 September.

API 2 coal rose 1.8% to average \$95.9/t last week. According to vessel tracking data, global coal shipments have grown by 3.8% between January and August this year, up to 835.5mn tonnes.

Average EU ETS carbon prices rose for the twelfth consecutive week, increasing 9.9% to €23.2/t, up from €21.1/t the previous week. EU ETS carbon hit a fresh 10-year high of €25.8/t on 10 September. However, prices fell from this high to below €19.0/t on 13 September, experiencing its biggest daily drop since 2006.

