In this issue...

- Cold November sees gas and power rise
- Wholesale market snapshot
- 3 Key market indicators
- 4 Conservatives and Labour propose different visions for energy
- 5 Smaller parties put forward energy policies
- 6 UN: "bleak findings" on emissions gap

Cold November sees gas and power rise

Day-ahead gas and power contracts both rose significantly in November, despite a drop in all seasonal contracts.

Day-ahead gas prices rose 45.4% to average 38.42p/th in November, with temperatures staying below seasonal normal levels throughout the month causing an increase in gas-for-power demand. Temperatures averaged 7.2°C, an average of 1.2°C below seasonal normal levels. Price gains were capped by increasingly high LNG send-out, with UK storage hitting a five year high of 93.7% in mid-November and send-out continuing momentum seen in late October. The December 19 and January 19 gas contracts lost 10.2% and 9.6% respectively as the global oversupply of LNG looks to weigh upon prices over the coming winter season.

Day-ahead power gained 21.9% to average £46.05/MWh in November and peaked at £53.00/MWh on 15 November, the highest price since February 2019. Fluctuations in wind power largely dominated the direction of power prices, with especially low wind generation mid-month resulting in higher prices. December 19 power fell 7.0% to average £47.71/MWh while January 19 power dropped 6.3% to £50.59/MWh. Seasonal power contracts moved down 3.6% on average, with summer 20 power dropping 4.1% to £45.02/MWh.

Oil prices volatile on trade talks, EU ETS lacking direction

Brent crude oil gained 5.0% to average \$62.53/bl in November. As with previous months, prices in November have been dominated by US-China trade talks and the possibility of

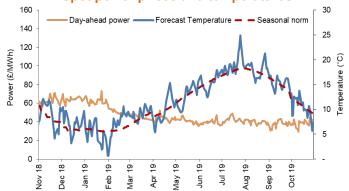
further OPEC cuts. On the former, prices began to rise in November with reports of optimism from the talks. Optimism stumbled late in the month when China told the US that it would take "firm counter measures" in response to the signing of a bill supporting protesters in Hong Kong by President Donald Trump. The meeting of OPEC allies in Vienna early in December will likely shape the direction of oil prices in the near future.

EU ETS carbon prices inched up 0.2% to average €24.60/t in October, with prices currently lacking directionality in a

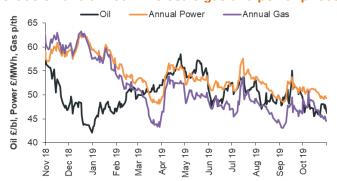
previously volatile market. Carbon prices will likely find greater movement after the UK general election on 12 December, though the decision by the EU to announce a climate emergency could see prices surge, with more countries now being pressued to phase out all fossil-fuel subsidies in 2020.

API 2 coal prices dropped further in November, falling 4.9% to \$63.80/t as global demand continues to weaken. Although European countries are beginning to phase out coal generation, China is still looking to expand the use of coal, with a new mine opening in Northeast China last month.

Spot power prices and temperatures



Crude oil and annual wholesale gas and power prices

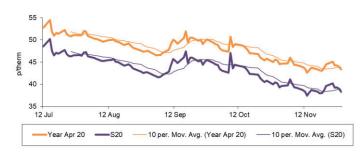


The month-ahead: A mild December forecast with comfortable supply

With temperatures forecast to be close to seasonal norm levels in December, the balance between supply and demand is expected to be comfortable. This has beenaided by expected continuation of strong LNG send-out. Oil prices are expected to reflect the outcome of the OPEC+ meeting at the beginning of December, and EU ETS prices should find direction on the outcome of the general election.

Catalyst Commercial Services' independent approach enables clients to manage their exposure to energy price risk, while at the same time benefiting from a first-class service from a range of major and independent suppliers. Catalyst Commercial Services' procurement solutions make it simple, so contact a member of the team to discuss requirements.

Annual gas prices



All seasonal gas contracts fell in November, down 5.2% on average, continuing the fall of the previous month. Summer 20 gas was 8.3% lower, averaging 38.39p/th. Winter 20 gas was 5.6% lower to finish the month at 49.08p/th.

The annual April 20 gas contract dropped 6.8% to average 44.03p/th, 20.3% lower than in November 2018 when it averaged 55.22p/th.

Spot gas prices



Day-ahead gas prices rose 45.1% to average 38.35p/th in November. The contract rose to a near sixth month high of 42.40p/th on 29 November. The December 19 contract also decreased, falling 10.2% to 41.76p/th.

The price leap in November was largely due to a drop in temperatures to well below seasonal normal levels. Downward pressure was added by further strong LNG send-out with UK reserves at the highest levels seen for six years.

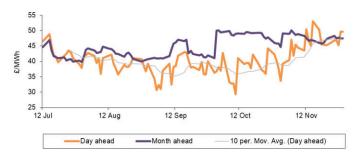
Annual power prices



Seasonal power contracts moved down 2.7% on average, with summer 20 power declining 4.1% to £45.02/MWh and winter 20 power falling 3.1% to £52.41/MWh, with the winter contract hitting the lowest levels since early 2018.

The annual April 20 power contract fell again in November, declining 3.6% to average £48.71/MWh. This was 9.4% below November 2018 when the contract was at £53.79/MWh.

Spot power prices



Day-ahead power gained 21.9% to average £46.05/MWh in November. The highest levels seen since February earlier this year. December 19 power fell 7.0% to average £47.71/MWh, while the January 20 power contract dropped 6.3% to £50.59/MWh.

Day-ahead prices naturally rose as temperatures dropped in November, though low wind power in the middle of the month provided strong upwards pressure on power prices.

Key market indicators: 29/11/2019

	Gas (p/th)		Electricity (£/MWh)		Coal	Carbon	Brent crude
	Day-ahead	Year-ahead	Day-ahead	Year-ahead	(\$/t)	(€/t)	(\$/bl)
This month 29 Nov 19	42.40	43.35	49.60	48.50	63.15	25.10	63.55
Last month 31 Oct 19	21.75	44.56	33.75	49.31	63.60	25.97	60.69
Last year 30 Nov 18	62.55	54.98	60.50	54.11	86.15	20.80	60.05
Year-on-year % change	(32%)	(21%)	(18%)	(10%)	(27%)	21%	6%
Year high	67.00	60.53	61.20	62.66	89.75	29.66	75.54
Year low	19.30	43.07	43.30	48.18	62.60	18.60	53.82
This table shows the price at the end of this month compared with prices from the previous month and year. The graphs show the position of this month's prices with a red X and the range of prices over the year is represented by the black line.	75	65 T 60 - 55 - 50 - 45 - 40 -	65 T 60 - 55 - 50 - × 45 -	60 T 55 + 50 + ×	95 T 85 - 75 - 65 - ×	35 T 30 - 25 - × 20 -	80 T 75 - 70 - 65 - × 60 - 55 - 50

Commodities

Carbon: EU Emissions Trading Scheme carbon is quoted as over-the-counter (OTC) latest opening prices. All carbon prices are in euros per tonne (€/EUA).

Coal: Coal is quoted as OTC latest opening prices. All coal prices are in US dollars per tonne (\$/t).

Electricity: UK power base-load and peak-load are quoted as OTC latest opening prices. All UK electricity prices are in pounds per megawatt hour (£/MWh).

Gas: UK National Balancing Point (NBP) gas is quoted as OTC latest opening prices. All UK gas prices are in pence per therm (p/th).

Oil: Brent crude oil is quoted as OTC latest opening prices. All Brent crude oil prices are in US dollars per barrel (\$/bl).

Language/ terms

Bearish: A bearish market shows a general decline in prices over a period of time.

Bullish: A bullish market shows a general increase in prices over a period of time.

Curve: A graph of forward prices over a future time period.

Margin: The indicated UK imbalance of a given settlement period. It is the difference between the sum of the indicated generation available, and the national demand forecast made by National Grid.

Over-the-counter (OTC): The trade of a commodity directly between two parties, often on standardised terms.

Spark/ Dark spread: The theoretical net income of a gas/ coal-fired power plant from selling electricity having purchased the necessary fuel. The clean spark/ dark spread is this net income adjusted for the cost of carbon.

Disclaimer

This monthly news and pricing bulletin is produced by Cornwall Insight in conjunction with Catalyst Commercial Services exclusively for the customers of Catalyst Commercial Services and provides general information and commentary on energy market trends. The opinions contained in this bulletin constitute the current opinions of Cornwall Insight and/or Catalyst Commercial Services and are produced for informational purposes only. This bulletin should not be construed as an offer, recommendation or solicitation to buy, sell or deal in any commodity, product or security or to enter into any trading or investment activity whatsoever. Any use by you or any third party of any information or other material contained in or associated with this document signifies agreement by you or them to these conditions. The report makes use of information gathered from a variety of sources that have not been subject to independent verification. Neither Cornwall Insight nor Catalyst Commercial Services gives any representation or warranty as to the accuracy or completeness of the information collected from market participants or from sources in the public domain. Neither Cornwall Insight nor Catalyst Commercial Services make any warranties, whether express, implied or statutory regarding or relating to the contents of this report and specifically disclaim all implied warranties, including, but not limited to, the implied warranties of satisfactory quality and fitness for a particular purpose. While Cornwall Insight and Catalyst Commercial Services consider that the information and opinions given in this bulletin and all other documentation are sound, all parties must rely on their own skill and judgment when making use of it. While every effort is made to ensure the accuracy of any information or material contained in or associated with this document, neither Cornwall Insight nor Catalyst Commercial Services, their affiliates and employees, either individually or collectively accept any responsibility for any representation or warra



Conservatives and Labour propose different visions for energy

Ahead of the 2019 General Election, both the Conservatives and Labour have published their manifestos, laying out their plans for energy policy.

The Conservatives published its manifesto on 24 November, promising action on energy efficiency and renewables. Significant investment pledges include:

- £9.2bn for energy efficiency measures in households, schools and hospitals.
- £1bn to create a fast-charging network that will ensure everyone is within 30 miles of a rapid EV charging station.
- £800mn to build a fully deployed carbon capture storage (CCS) cluster by the mid-2020s.
- £500mn to help energy-intensive industries to transition to low-carbon techniques.

The Conservatives will uphold its pledge to deliver 40GW of offshore wind capacity by 2030, as well as enable new floating wind farms. The party will also uphold its moratorium on fracking, until a time that scientific evidence shows categorically that it can be done safely. The party reiterated its target of net zero greenhouse gas emissions by 2050. Spending will total £2.9bn for public sector decarbonisation over a five-year period, £800mn for CCS over three years (from 2022), £500mn for Industrial Energy Transformation over eight years and £600mn over six years for EV infrastructure.

Labour's manifesto was published on 21 November, promising a "net zero carbon energy system within the 2030s" and significant nationalisation. The party aims to deliver "nearly 90% of electricity and 50% of heat from renewable and low carbon sources by 2030". This would be achieved through the development of 7,000 new offshore wind turbines, "enough solar panels to cover 22,000 football pitches" and new nuclear power "needed for energy security".

On ownership of the energy system, Labour would:

- Establish a new UK National Energy Agency to own and maintain the national grid infrastructure and oversee the delivery of our decarbonisation targets.
- Establish 14 new Regional Energy Agencies to replace the existing "district network operators" and hold statutory responsibility for decarbonising electricity and heat and reducing fuel poverty.
- Bring the supply arms of the Big Six energy companies into public ownership.

Labour aims to invest in public transport to make people less reliant on cars. It would also commit to ending the sale of new internal combustion vehicles by 2030. Labour would invest in electric vehicle charging infrastructure and in electric community car clubs. The transition of public sector car fleets and public buses to zero emissions vehicles is to be accelerated. The automotive sector would be supported through investment in three new gigafactories and four metal reprocessing plants.

Conservatives

Labour

National Grid and SSE move to protect shareholders

In response to Labour's plans to nationalise GB's energy networks and the supply arms of the "Big Six" energy companies, both National Grid and SSE have announced plans to move offshore to protect assets. Reported by the BBC on 24 November, National Grid and SSE have created overseas holding companies to transfer the ownership of its gas and electricity businesses outside of the UK, following Labour's pledge to renationalise the rail, electric and water industries in its General Election manifesto. National Grid confirmed that it has shifted its gas and electricity business to subsidiaries in Luxembourg and Hong Kong "to protect shareholder assets".

SSE explained that it has moved its electricity distribution business and its electricity transmission network into a Swiss holding company. The company said: "Switzerland is a party to the Energy Charter Treaty, and the incorporation of a Swiss company is also an additional safeguard, which SSE does not believe would be required in practice, should SSE's electricity networks businesses and interests in SGN become the subject of proposed legislation for nationalisation."

BBC SSE

Smaller parties put forward energy policies

The smaller parties – the Liberal Democrats, the SNP and the Greens – also put out their manifestos, promising different visions for the energy sector. Depending on the outcome of the election, these smaller parties could play an important role.

The Liberal Democrats have promised to legislate for a 2045 net zero target in their 2019 General Election manifesto, as well as renewable generation expansion, housing retrofitting and public transport investment.

Published on 20 November, the manifesto sees the party promising to restructure the government around climate change. It would establish a Department for Climate Change and Natural Resources, appoint a cabinet-level Chief Secretary for Sustainability in the Treasury to coordinate government-wide, and require every government agency to account for its contribution towards meeting climate targets.

The party aims to achieve at least 80% renewable electricity by 2030, through removing "restrictions" on wind and solar and building more interconnectors to guarantee security of supply. It would also introduce a ban on fracking.

The SNP would demand that the UK government accelerates its net zero progress to meet Scotland's targets to achieve a 75% reduction in emissions by 2035, net zero carbon emissions no later than 2040 and net zero greenhouse gas emissions by 2045. It would propose a Green Energy Deal which would "ensure renewable energy schemes get the long-term certainty needed to support investment".

The SNP would oppose new nuclear power plants, instead prioritising investment in "cleaner, cheaper" forms of generation. The SNP is opposed to fracking and will not issue licences for new unconventional oil and gas development, and Scotland's planning framework will not support development using unconventional oil and gas extraction techniques.

The Greens would spend £100bn a year on tackling the climate emergency. It would introduce new support to pave the way for wind to provide around 70% of the UK's electricity by 2030. The party would "transform" the planning system to support more renewables.

The party would also introduce new support for solar, geothermal, tidal and hydro to increase its contribution the UK's energy supply by 2030. It would invest in more interconnectors with mainland Europe. Subsea – connections to Norway and Iceland to link GB to their hydro and geothermal power supplies "will be particularly encouraged".

The party would deploy demand-side management and "significantly improve the efficiency" of the electricity grid, doubling its capacity. Energy storage capacity would be expanded so that electricity from peak periods of renewable electricity generation can be effectively stored. Storage solutions would include: domestic solar batteries; storage as heat in hot water cylinders and thermal stores; and smart control of electric vehicle (EV) battery charging.

A carbon tax would be applied on all fossil fuel imports and domestic extraction, based on the amount of greenhouse gas emissions caused by burning it. There would also be a carbon tax on imported energy, based on embedded emissions. The carbon tax would be raised progressively over a decade to render fossil fuels unviable. Fracking would be banned and all subsidies to the oil and gas industries would be removed.

Liberal Democrats SNP Green Party

Public support for renewables reaches 84%

Published on 7 November, the Department for Business, Energy and Industrial Strategy's (BEIS) latest Public Attitudes Tracker – Wave 31 – revealed that support for renewable energy rose from 82% in June 2019 to 84% in September 2019, with opposition to renewable energy falling to 2%. The public has continued to support renewable sources. Solar energy has remained consistently high and support for offshore wind has risen from 71% in July 2013 to 85% (Figure 1). Furthermore, onshore wind reached highs of 78%; offshore wind (81%); wave and tidal (80%); and biomass (70%), have reached the highest points since the tracker began.

Support for fracking has reached a low of 11%, with those in support citing the need to use all available energy sources (40%), reducing dependence on fossil fuels (31%) and the UK's dependence from other countries for its energy supply (23%). The number of people opposed to fracking has reached record highs of 44%, with common reasons ranging from the loss and destruction of the natural environment (57%) and the risk of earthquakes (48%).

BEIS

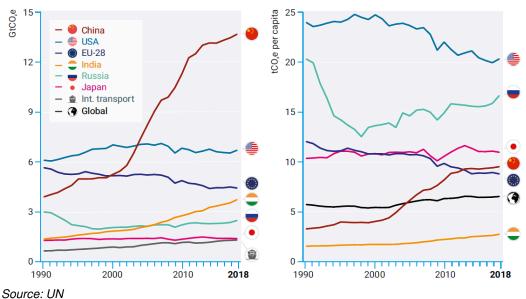
UN: "bleak findings" on emissions gap

The UN published the tenth edition of its Environment Programme Emissions Gap Report, concluding that greenhouse gas (GHG) emissions have risen at a rate of 1.5% per year over the last decade.

In the report, published on 26 November, the UN described the summary findings as "bleak", saying that countries have collectively failed to stop the growth in global GHG emissions. GHG emissions stabilised briefly only between 2014 and 2016. Total GHG emissions. including from land-use change, reached a record high of 55.3 GtCO2e in 2018. Carbon emissions from fossil fuel-derived energy use grew 2% in 2018, reaching a record 37.5 GtCO2 per year.

G20 members account for 78% of global GHG emissions. Collectively they

Top greenhouse gas emitters, excluding land-use change emissions due to lack of reliable country-level data, on an absolute basis (left) and per capita basis (right)



are on track to meet their limited 2020 Cancun Pledges but seven countries are currently not on track to meet the 2030 Nationally Determined Contributions (NDC) commitments. The Paris Agreement requires each party to prepare, communicate and maintain successive NDCs that it intends to achieve.

In 2030, the UN says, annual emissions need to be 15 GtCO2e lower than current NDCs imply for the 2C goal, and 32 GtO2e lower for the 1.5C goal. The UN recommends a "dramatic strengthening" of the NDCs in 2020 – ambitions must increase three-fold to achieve well below the 2C goal and more than five-fold to achieve the 1.5C goal. Had serious climate action begun in 2010, the UN argues, the cuts required per year to meet the projected emissions level for 2C and 1.5C would only have been 0.7% and 3.3% per year on average. Since this did not happen, the required cuts in emissions are now 2.7% per year from 2020 for the 2C goal and 7.6% per year on average for the 1.5C goal.

The report stresses the importance of looking at emissions per capita, as well as total emissions, when considering the impact that different countries have. Figure 1 shows that China's emissions in GtCO2e dwarf that of other large countries and the EU. When emissions per capita are considered, China falls behind the US, Russia and Japan.

UN

CBI manifesto urges action on net zero

The CBI published its own manifesto on 17 November ahead of the 2019 General Election, urging action on net zero.

The trade association urged for the next government to make 2020 "a year of action on long-term challenges", including a cross-party strategy for achieving net zero including heating and transport; a new business/government partnership on the scale of Beveridge to reskill 9mn people by 2030; and a recommitment to local industrial strategies and devolution to tackle regional inequality.

CBI Director-General Carolyn Fairbairn said: "The starting point must be long-term solutions to long-term problems. Use the combined skills of enterprise and politics to set out clear strategies to make education fit for the pace of technology change, tackle the climate crisis, and ensure all parts of the UK can share in growth."

CBI



REA: Britain lags behind in facilitating investment in system flexibility

Regulatory uncertainty, lack of visibility on returns, and technical challenges are hindering investment in flexibility services as more renewables come online, risking delays in the UK's energy transition, according to a report by the Renewable Energy Association (REA). Flexibility enables electricity users such as businesses to take advantage of cheaper electricity through changing consumption behaviour or even selling back electricity generated on site.

Published on 13 November, The Energy Transitions Readiness Index, issued by the Association for Renewable Energy & Clean Technology and commissioned by Eaton and Drax, reviewed regulation and market access, social and political support for the energy transition, as well as the deployment of technologies such as smart meters in nine northern European countries. Britain ranked eighth and scored poorly on several factors, such as a clear and stable regulatory and market framework. The report also noted potential difficulties accessing the distribution network and a lack of progress on delivering smart electric vehicle charging. Whilst Germany, Britain and France lagged behind, the Netherlands topped the league table, followed by Finland, Sweden, Denmark, Ireland and Norway.

REA

Renewables hits 35.5% of electricity generation share in Q219

Renewables' share of electricity generation hit 35.5% in Q219, up from 32% in Q218, according to new government statistics released on 28 November. Renewable electricity capacity was 45.9GW at the end of the second quarter of 2019, a 7.9% increase (3.4GW) from a year earlier, with two thirds of the annual increase coming from wind.

As weather conditions for renewable generation were similar in both quarters, this is largely due to increases in capacity. More than half (52.6%) of generation in Q219 was from low carbon sources. This was down from Q218 (53.6%) because planned and unplanned outages at five reactors substantially reduced nuclear generation over the period (down 21%).

Total energy production was 1.9% lower than in the second quarter of 2018. Industrial consumption fell by 1.4% and transport consumption fell by 1.3%. On a temperature adjusted basis, final energy consumption fell by 3%.

Government

A cross-sector coalition urges for a post-election pact on net zero

An open letter signed by over 40 academics, policy specialists, trade bodies and businesses has called upon major political parties to agree to a post-election pact on climate change. Published on 28 November, the letter has called on political parties to adopt the same bipartisan approach when it comes to implementation post-election.

The letter warns that without a coordinated approach to mitigating climate change, the UK risks missing our all-important carbon targets.

Signatory organisations include National Grid ESO, the Renewable Energy Association (REA), the Energy Networks Association, Imperial College London, Community Energy England, Scottish Renewables and the Solar Trade Association.

REA

Renewable generators criticise Ofgem's TCR decision

The Renewable Energy Association (REA) and Solar Trade Association (STA) released statements on 21 November criticising Ofgem's Targeted Charging Review (TCR).

Chief Executive of the REA Dr Nina Skorupska said: "These reforms mean that businesses and homes which have taken responsible steps to install low carbon technologies will effectively pay more to use the wires needed to support the system." Additionally, the STA estimated that partial reform could entail a potential loss of ~£2.5/MWh in additional revenue for solar PV. The STA added that it is disappointed that the prospect of full BSUoS reform remains on the table, but welcomed Ofgem's decision to launch a second BSUoS Task Force to further examine the question of how to fairly allocate the cost of balancing the transmission system.

REA STA