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Commodities gain and power hits a 30-month high

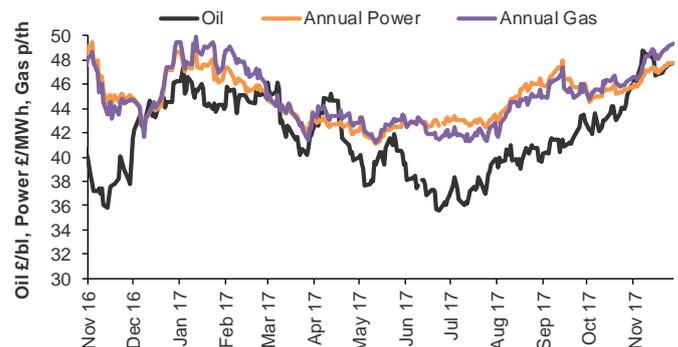
Day-ahead power prices reached a 30-month high in November, whilst strong gains were observed across gas contracts. Brent crude oil, API 2 coal and EU ETS carbon prices extended from last month's gains to reach fresh multi-year highs.

Power prices climbed 9.0% to £50.9/MWh, reaching a 30-month high (£53.5/MWh) on 27 November, following a series of planned nuclear outages throughout the UK that tightened supplies and supported prices. Seasonal power contracts grew 3.2% on average last month. Summer 18 power expanded 3.8% to average £44.4/MWh, growing from £42.8/MWh the previous month. Winter 18 power lifted 3.7% to £49.6/MWh and grew to a two-year high of £50.4/MWh on 24 November.

Day-ahead gas prices rose 14.8% to average 52.2p/th, increasing from 45.5p/th in October. Prices were supported by tighter supplies and higher demand in winter months. All seasonal gas contracts experienced gains in November, as contracts from summer 2018 out to winter 2020 lifted 3.9% on average. The largest gains were observed in the summer 18 gas contract, which increased 5.2% to average 44.5p/th. On 27 November the contract rose to 45.70p/th, exceeding a two-year high. Winter 18 gas rose 4.6% to 51.8p/th. Throughout the month, winter 18 gas reached 52.9p/th on 27 November, its highest price since February 2015.

Coal reaches a four-year high, oil 28-month and EU ETS carbon 22-month

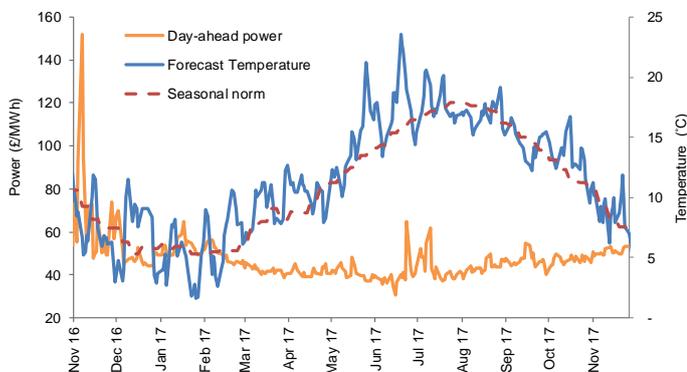
Crude oil and annual wholesale gas and power prices



API 2 coal prices lifted 3.0% to average \$85.0/t in November. On 10 November prices reached \$88.9/t, a fresh four-year high. Prices were supported by strengthening oil prices. Nevertheless, price gains were capped by weakening Chinese demand due to efforts to meet tough domestic air quality targets.

Brent crude oil prices rose 9.3% to average \$62.6/bbl throughout November, up from \$57.3/bbl the previous month. On 7 November prices reached a 28-month high of \$64.1/bbl. Early month highs owed to rising tensions between Saudi Arabia and Iran concerning recent conflicts in Yemen. Large periods of the month were dominated by expectations that OPEC and non-OPEC members would extend cuts to the end of 2018.

Spot power prices and temperatures



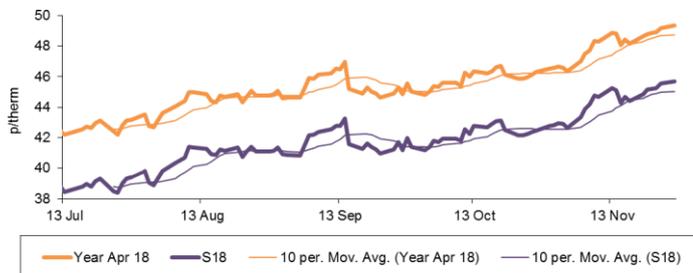
EU ETS carbon prices grew 4.5% to average €7.6/t. On 6 November EU ETS carbon reached €7.9/t, a 22-month high, with prices boosted by burgeoning European coal demand.

The month-ahead: Power supplies across Europe to tighten this winter says Entso-e

The European transmission system operator group Entso-e forecasts tight power supplies for the UK this winter. In its Winter 2017/18 Outlook, it claims in an event of cold spells, low renewables generation and low French nuclear output the country, along with many across Europe, could experience supply risks. Increased power imports are expected this winter as a result.



Annual gas prices

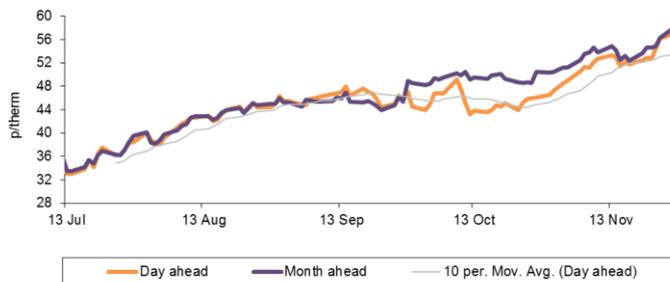


All seasonal gas contracts experienced gains in November, with the front season contracts undergoing the highest growth.

The largest growth was observed in the summer 18 gas contract, which increased 5.2% to average 44.5p/th. On 27 November the summer 18 gas contract rose to 45.70p/th, exceeding a two-year high. Winter 18 gas rose 4.6% to 51.8p/th.

The annual April 18 gas contract lifted 4.8% to 48.2p/th.

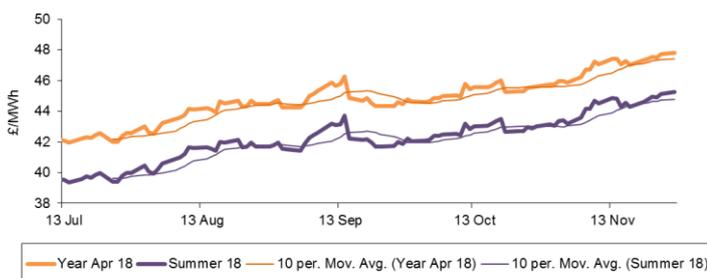
Spot gas prices



Day-ahead gas prices across the month boosted 14.8% to average 52.2p/th, up from 45.5p/th throughout October. With colder temperatures increasing demand for gas and robust exports to Europe, predominantly during the start of the month, coupled with tighter supplies, forced near-term prices upwards. Unplanned outages across three UK gas facilities and at the Oseberg gas field in Norway helped to support prices towards the end of the month.

The month-ahead gas contract grew 4.5% to average 53.9p/th.

Annual power prices

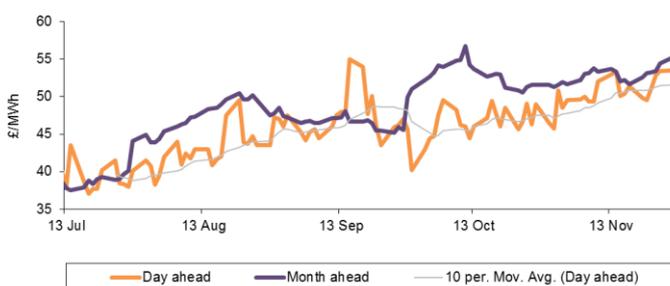


All seasonal baseload power contracts increased during November, with contracts from summer 18 to summer 2020 averaging a rise of 3.2%.

Summer 18 power expanded 3.8% to average £44.4/MWh, growing from £42.8/MWh the previous month. Winter 18 power lifted 3.7% to £49.6/MWh and grew to a two-year high of £50.4/MWh on 24 November.

The annual April 18 power contract went up 3.7% to £47.0/MWh.

Spot power prices



Day-ahead power climbed 9.0% to £50.9/MWh, the contract reached a 30-month high (£53.5/MWh) on 27 November. A series of planned nuclear outages throughout the UK aided in tightening supplies. Outages included Dungeness B, Hartlepool and Sizewell B, with the latter not in full operation until 22 December.



Energy Element / December 2017

Key market indicators: 28/11/2017

		Gas (p/th)		Electricity (£/MWh)		Coal (\$/t)	Carbon (€/t)	Brent crude (\$/bl)
		Day-ahead	Year-ahead	Day-ahead	Year-ahead			
This month	28 Nov 17	56.75	48.74	54.80	47.40	85.50	7.67	63.25
Last month	27 Oct 17	46.10	46.28	48.95	45.63	85.00	7.22	59.12
Last year	28 Nov 16	48.50	43.89	73.75	41.11	66.00	4.85	47.36
Year-on-year % change		17%	11%	26%	15%	30%	58%	34%
Year high		61.00	49.91	152.00	49.45	88.90	7.91	64.12
Year low		23.50	41.47	30.75	42.13	59.15	4.15	44.64

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.

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.

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Industrial Strategy prioritises clean growth

The government published its Industrial Strategy White Paper on 27 November, listing the move to cleaner economic growth as “one of the greatest industrial opportunities of our time.”

The strategy framed clean growth as one of its four “Grand Challenges” to place the UK at the forefront of the industries of the future. It explained that under one estimate, the UK’s clean economy could grow at four times the rate of GDP while £100bn of annual exports could be supported by the country’s clean economy by 2030.

It also claimed businesses will feel the effects of changes to shift towards cleaner energy “throughout the economy”, expecting the reallocation of “trillions of pounds of public and private finance towards the pursuit of cleaner growth.”

Prospering from the energy revolution

The government explained that it agreed with the principle of a “whole systems approach” to the decarbonisation of energy infrastructure systems, as advocated by many stakeholders. It subsequently pledged to position the UK as a leader in clean and efficient power, transport and heat “through an integrated approach to decarbonising these increasingly connected systems.”

The strategy labelled developing “smart systems for cheap and clean energy across power, heating and transport” as one of its early priority areas. It explained the national electricity grid, a great British technical achievement, now faced the challenge of being remodelled to fit the needs of a changing electricity system. This would allow it to handle numerous sources of clean energy and use new technologies to store energy and manage demand. To support this transition the government unveiled a new smart energy programme, entitled *Prospering from the energy revolution* under the Industrial Strategy Challenge Fund.

The government pledged to support the growth of markets for technologies that will create synergies between systems. These include energy storage, smart meters, vehicle-to-grid charging and heat networks.

Energy efficient buildings

Alongside its new smart energy programme, the government also revealed plans to transform construction. It said there is a need to create affordable places to both live and work that are safer, healthier and use “dramatically less energy”. It noted that global demand for efficient buildings is “rising rapidly” due to pressures such as the need to cut emissions.

Reducing business energy costs

The government also reiterated its commitment to minimising business energy costs. It referenced the framework for achieving clean growth and affordable energy that had been set out within the Clean Growth Strategy. This included encouraging greater investment in energy efficiency measures and technologies, a new scheme to support investment in industrial energy efficiency and support for businesses to improve their energy productivity.

The strategy stated that government will consult on widening eligibility for the exemption schemes for energy intensive industries. The government announced in July that energy intensive industries (EIIs) would be made exempt from the indirect costs of some of the government’s renewables schemes to boost competitiveness. It had shifted from a compensation scheme to make the cost saving more direct and easier for industry to access. It explained that the exemptions could be widened to address potential “intra-sectoral competitive distortions”. They would also take into consideration their impact on consumer bills.

In the longer-term, the government said that innovation would be “crucial” to reducing costs. Around £2.5bn was pledged in the Clean Growth Strategy by 2021, with up to £100mn investment to come in supporting innovation in low-carbon industrial processes and technologies. Further opportunities to support innovation and cost reductions will be explored through the Industrial Strategy Challenge Fund and negotiation of Sector Deals.

While much of the energy-related content of the Industrial Strategy is reiterated from the Clean Growth Strategy, it is encouraging to see clean growth as one of the government’s four key areas moving forwards.



Government rules out further low-carbon levies in Budget

In an energy-lite Budget, government announced there will be no new low-carbon levies until the burden of current renewable subsidies falls.

The Budget, published on 22 November, said a new set of low-carbon cost controls will be introduced post-2021, when the current control – the Levy Control Framework (LCF) – expires. The LCF sets an annual budget for the levy on electricity consumers' bills that can be spent on subsidising the deployment of renewables through government's Renewable Obligation, Feed-in Tariff and Contracts-for-Difference schemes.

Government said it will replace the LCF with "The Control", which will rule out further new subsidy for renewables schemes until the costs of current schemes fall. However, the new control does not affect planned spend, such as the committed £557mn for future renewables auctions. Government also added that "The Control" does not rule out future support for any technology. Confirmed costs to date are expected to peak in 2023-24 at £8.7bn in 2011-12 prices and, on the basis of government forecasts, there will be no new low carbon levies until 2025.

The government also said it felt the total carbon price, the cost applied to carbon pollution to encourage a reduction in emissions, was set at the right level. It said the total carbon price will remain at a similar level until the end of unabated coal use. Finally, government confirmed it would set the Climate Change Levy for 2020-21 and 2021-22 at Budget 2018.

Mixed reaction

The announcements drew mixed reaction, with EEF, the manufacturer's organisation, welcoming the commitments made on carbon pricing and low-carbon levies. EEF said the Budget had recognised the challenges faced by UK businesses due to uncompetitive electricity prices.

However, EEF expressed disappointment at the omission of any further detail regarding the energy efficiency scheme promised within the Conservative's election manifesto. The CBI noted businesses will have to consider the implications of the new control for low-carbon levies, though welcomed the "greater clarity" for the UK carbon price. It said this would be a positive for investors, adding it was important it was matched with sufficient support for energy-intensive industries.

Renewables groups have expressed disappointment, calling the Budget a missed opportunity as it effectively rules out new low-carbon spending for the time being.

James Court, Head of Policy and External Affairs at the Renewable Energy Association (REA), said: "Considering this is coming only a couple of months after the much vaunted Clean Growth Plan, it's hugely disappointing." RenewableUK Chief Executive, Hugh McNeal, said that while the Budget provided "a little more certainty" for the industry, it was missing the ambition to take "full advantage of the UK's global-leading renewables industry at such a crucial time for our country."

Transport backing

Making his speech to the Commons, Chancellor Philip Hammond said that while future vehicles will be driverless, they will be electric first. Hammond added that the development and adoption of electric vehicles is a change that must come soon for "our planet". Hammond outlined government commitments to provide £400mn towards the rollout of charging infrastructure for electric vehicles, £100mn for plug-in grants and £40mn for research and development into charging technologies.

This was followed by an Automotive Sector Deal within the Industrial Strategy, one of the first sector deals to be announced. The deal outlines priorities to maximise opportunities in the transition to electric, connected and autonomous vehicles.

The government described the automotive sector as an "area of genuine competitive advantage" and said it was "perfectly placed" to take advantage of emerging markets in ultra-low emission vehicles.

There is a real contrast in the ambition laid out in both the Clean Growth Strategy and Industrial Strategy, compared with the more pragmatic and business as usual stance taken by the Budget.

Treasury EEF CBI REA RenewableUK



Distributed energy solutions can bring substantial savings: report

In a new report, Centrica has revealed that distributed energy solutions could achieve almost £1bn of savings on annual energy spend and deliver an £18.5bn boost to the UK's overall economic growth, if adopted by three key sectors.

Published on 23 November, *Powering Britain's Economic Future*, highlighted the potential benefits available if the industrial, healthcare and hospitality, hotel and leisure sectors were to adopt distributed energy solutions. The sectors – which account for a quarter of the UK economy - could adopt solutions such as battery storage, onsite power generation, demand-side response (DSR) and energy saving devices to realise the benefits.

Big savings

The report explained that many businesses and organisations were not using energy effectively. It assumed that solutions would be deployed by 50% of organisations within the key sectors. In the industrial sector, which has the second highest electricity prices among the G7, the report found annual energy savings of £540mn were possible. Furthermore, if just 50% of businesses within the sector were to adopt distributed energy solutions £13.9bn could be created for UK gross value added.

The report said energy cost reductions could be key for the NHS, which is spending over £6.5bn a year on maintaining and running its estate and facilities. It found NHS England could make an annual saving of £130mn, reducing energy costs by 20%. It noted that the additional benefit would be even higher if the private sector also adopted available opportunities. Meanwhile, annual savings of over £300mn can be achieved across the hospitality, hotel and leisure sector, leading to a combined potential saving of £980mn.

Next steps

Commenting on the report, Jorge Pikunic, Managing Director of Centrica Distributed Energy and Power, said: "The challenge now is for industry and Government to make this a reality." The report called for BEIS, public sector organisations and the Committee on Climate Change to undertake "urgent assessments" on how new solutions could reduce both energy costs and carbon emissions. It further urged the UK government to review the incentivisation of businesses to use distributed energy solutions as well as the markets and schemes available to reward flexibility.

With renewed backing for the Smart Systems and Flexibility Plan in the Industrial Strategy, this report shows the benefits available for businesses that are willing to make the transition to a smarter energy system.

Centrica

Benefits if 50% of three key sectors utilised distributed energy solutions



Source: Centrica

Government targets non-domestic smart innovation

The government has launched a new £8.8mn competition to develop innovative approaches to energy management using smart meter data, tailored to the needs of smaller non-domestic sites. The competition will look to drive innovation in the energy services market in the priority non-domestic sectors of hospitality, retail and schools. It will help organisations to cut costs and become more energy efficient, allowing them to boost productivity and contribute to UK emissions reductions targets. Up to nine projects will be selected to receive initial funding.

BEIS



New tool launched to help reduce energy costs

A new tool has been launched using artificial intelligence to connect, aggregate and optimise distributed energy assets, enabling businesses to cut energy bills.

Aggregate Industries and Open Energi have joined forces to launch the Dynamic Demand 2.0 system. The platform allows businesses to stack demand flexibility value streams, while it determines which assets to use and when to maximise savings without impacting performance. It means businesses can optimise consumption by avoiding peak price periods and improving operational performance.

The developers noted that implementing the system allows the potential for a 100% renewable system, balanced by real-time demand flexibility.

[Aggregate Industries](#)

First business joins Centrica's Cornwall Local Energy Market trial

The Olde House holiday cottage site, near Wadebridge, has become the first business to join Centrica's Local Energy Market (LEM) trial in Cornwall.

The £19mn project aims to test the role of flexible power generation and storage in up to 150 homes and businesses across the UK. Participants will be rewarded for being more flexible with their energy consumption, helping to reduce pressure on the local grid.

The Olde House will use a 1MW energy storage facility installed by redT energy to better manage the energy it uses from its own solar generation – a 250kW solar array – and the grid. The solar array was installed in 2011 to provide power to the site, which includes an onsite electric vehicle charging station.

[Centrica](#)

Natwest unveils business energy audit scheme

Natwest has announced it will launch an energy audit service for businesses, to help businesses reduce energy bills while increasing efficiency and supply security.

The scheme marks a first for a British bank and uses a new technology to allow the service to make checks faster than in the past. Any UK-based firm spending around £10,000 a year on energy, or above, is eligible for the scheme. Natwest states the scheme could help businesses save a minimum of 20% from their annual energy spend. It is estimated a typical investment of £10,000 in efficiencies would see payback in a year to 18 months.

The service is available through Natwest in England and Wales, its parent, Royal Bank of Scotland, and Ulster Bank in Northern Ireland.

[No link](#)

Cyber defence chief says Russia attacked GB energy networks

Cian Martin, Chief Executive of the National Cyber Security Centre (NCSC) has confirmed that Russian cyber operatives have attacked Britain's media, telecommunications and energy sectors over the past year.

Speaking at the Times Tech Summit on 15 November, Martin said that during its first year in operation, the NCSC had responded to over 600 "significant incidents". Martin encouraged organisations to get the basics, including passwords and cyber security awareness, right. The NCSC Chief Executive also called on organisations to feedback on whether the right advice was being provided and whether the and right things were being done to fix the digital environment. He promised to implement recommended measures to improve the basic levels of cyber vulnerabilities in the UK.

[NCSC](#)
