Energy Element / March 2018

In this issue…

Gas and power hit five and 1.5-year highs

As the "Beast from the East" hit Europe towards the end of February, which caused a surge in gas and power demand, day-ahead gas and power prices experienced extraordinary spikes. A serious of gas supply and power plant outages only acted to exacerbate price rises.

Day-ahead gas prices across the month rose 6.5% to average 54.4p/th. On 28 February, prices reached 105.0p/th, a five-year high. Below average temperatures bolstered demand, while low LNG imports and a serious of supply outages supported prices. In contrast, seasonal gas contracts fell on average by 5.3%. The largest loss came from the summer 20 contract, which lost 6.6% to average 37.6p/th.

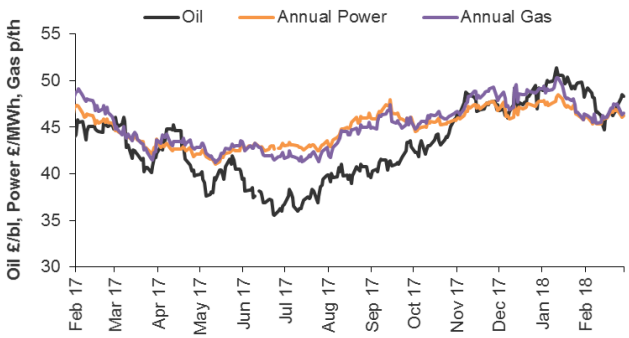
Average day-ahead power prices increased 1.3% to £51.5/MWh. On 28 February power prices reached a one-and-a-half year high of £83.5/MWh, due to a surge in its gas counterpart and several power plant outages. Seasonal baseload power contracts reversed the previous month's gains and subsided 2.1% on average. Winter 19 power experienced the largest losses, declining 2.7% to average £45.9/MWh.

EU ETS carbon hits fresh six-year high, Brent crude falls to a nine-week low

EU ETS carbon prices extended from the previous months gains, growing 12.5% to average €9.4/t, (up from €8.3/t). On 28 February prices reached €10.1/t, a six-year high.

Growth stemmed from heavy buying from speculators with expectations of increased demand from emitters preparing for 2017 compliance. Towards the end of the month, more favourable spreads for coal-fired power generation, leading to greater coal-fired output, along with rising German power prices supported prices upwards.

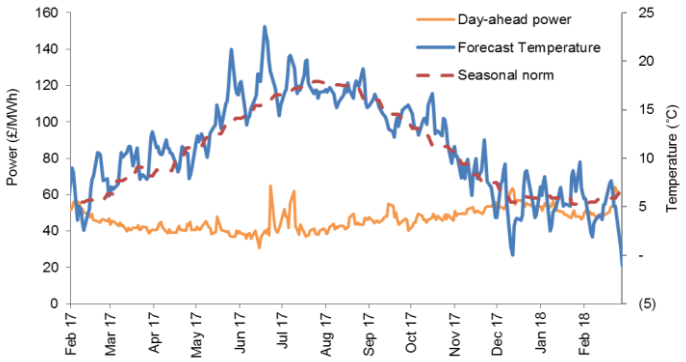
Crude oil and annual wholesale gas and power prices



Brent crude oil prices declined 4.5% to average $65.7/bl during the month, down from $68.8/bl the previous month. On 14 February prices fell to a nine-week low of $62.4/bl. Prices were driven down by concerns of rising US oil output, with the US rig count reaching a three-year high. Additionally, an unexpected rise in US crude stocks, coupled with a drop in global equities conspired to weigh on prices.

API 2 coal prices dropped 10.0% to average $80.7/t in February, down from $89.7/t the previous month. Coal prices declined at the start of the month due to robust production from Australia and South Africa. However, towards the end of the month prices did start to rise amid the cold snap throughout Europe.

Spot power prices and temperatures

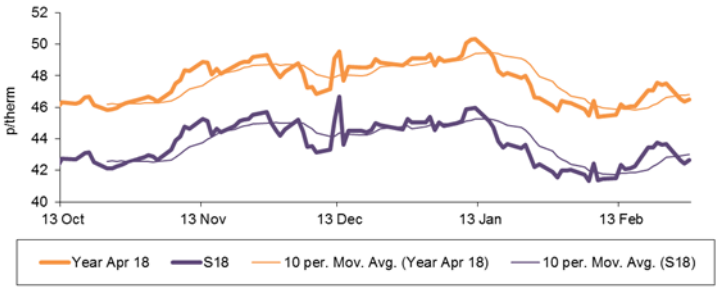


The month-ahead: Spot prices remain high in early March, but likely to wane later

The recent cold snap that plagued the end of the month, strengthening near-term power and gas prices, is forecast to last into early March. In addition, prolonged outages at the SEGAL pipeline and Kollsnes gas field will also continue until early March, tightening gas supplies.

However, as we move into Spring gas and power demand will wane, and short-term prices should drift downwards.

Annual gas prices

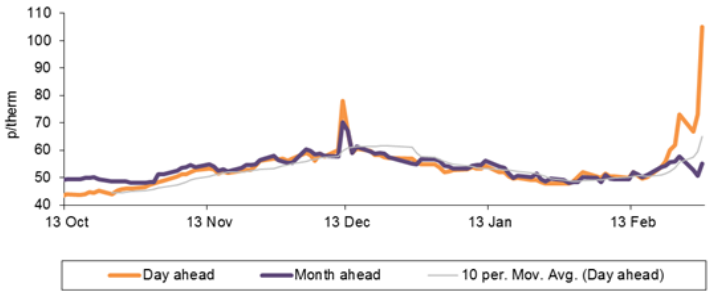


Throughout February seasonal contracts out to summer 2020 decreased from the previous month. On average these fell by 5.3%.

The largest losses were observed in the summer 20 contract which lowered 6.6% to average 37.6p/th. The summer 18 gas contract slipped 3.8% to average 42.4p/th. Winter 19 and 20 declined 5.4% and 5.3% to average 47.6p/th and 45.8p/th respectively. Summer 19 gas curtailed 6.0% to average 39.6p/th, while winter 20 dropped 4.5% to average 50.3p/th.

Annual April 18 gas declined 4.2% average 46.3p/th.

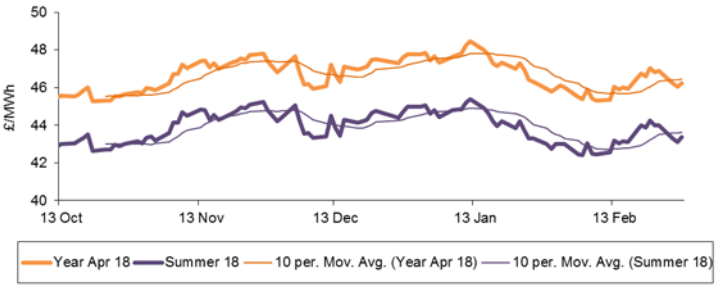
Spot gas prices



Day-ahead gas prices rose 6.5% to average 54.4p/th last month. On 28 February, prices hit a five-year high (105.0p/th). Below average temperatures causing a surge in demand, as well as low LNG imports, acted to support prices.

The month-ahead contract lifted 1.9% to 51.8p/th.

Annual power prices

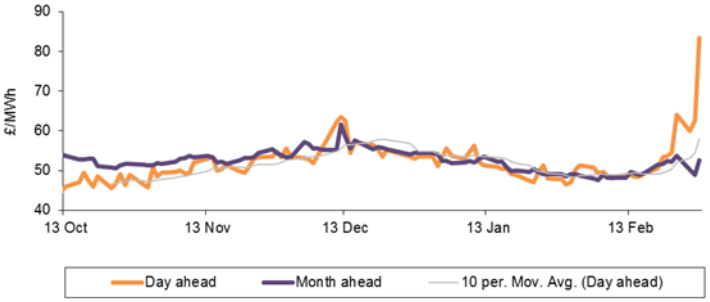


Seasonal baseload power contracts reversed the previous month's gains and subsided 2.1% on average.

Winter 19 power experienced the largest losses, declining 2.7% to average £45.9/MWh. Near-curve seasonal contracts summer 18 and winter 18 subsided 2.4% and 2.6% to average £43.2/MWh and £48.9/MWh respectively. The summer 19 and 20 power contracts lost 2.3% and 0.2% to average £40.1/MWh and £40.4/MWh respectively.

Annual April 18 power slipped 2.5% to £46.1/MWh.

Spot power prices



Average day-ahead power prices increased 1.3% to £51.5/MWh. On 28 February power prices reached a one-and-a-half year high of £83.5/MWh.

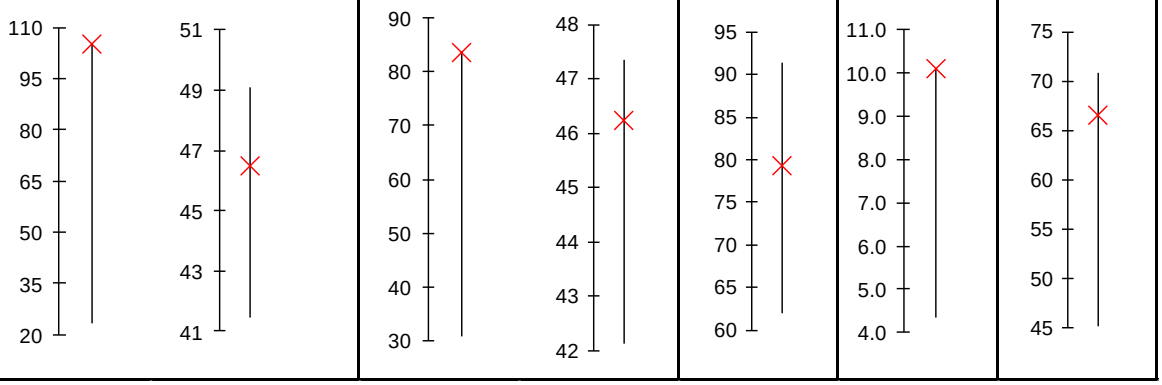
Early month gains in the day-ahead contract were driven by reduced nuclear capacity across the UK amid planned maintenance. End of month price spikes were caused by a surge in gas prices and a number of unplanned outage as power plants.

The month-ahead contract grew 0.6% to £49.8/MWh.

Key market indicators: 28/02/2018

		Gas (p/th)		Electricity (£/MWh)		Coal	Carbon	Brent crude
		Day-ahead	Year-ahead	Day-ahead	Year-ahead	($/t)	(€/t)	($/bl)
This month	28 Feb 18	105.00	46.48	83.50	46.24	79.25	10.10	66.54
Last month	29 Jan 18	47.80	46.08	47.90	45.95	91.00	9.00	70.04
Last year	28 Feb 17	45.50	44.99	46.75	42.45	67.20	5.19	55.81
Year-on-year % change		9%	3%	8%	9%	18%	95%	19%
Year high		78.00	49.09	64.75	47.35	91.50	9.79	70.79
Year low		23.50	41.47	30.75	42.13	62.00	4.34	45.15

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.

Disclaimer

Security of supply auctions deliver record low prices

The government has welcomed the results of its Capacity Market auctions which have secured future energy supplies at record low prices for homes and businesses.

The T-1 Capacity Market auction, for delivery in 2018-19, cleared in line with expectations at £6.00/kW. This was followed by the T-4 Capacity Market auction, for delivery in 2021-22, which cleared well below previous four-year ahead auctions at £8.40/kW.

Existing capacity leads the way

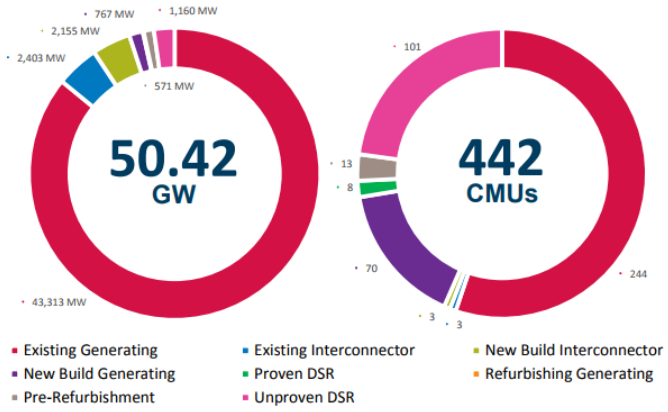
Across the two auctions, a combined 56.22GW was procured – 5.8GW within the T-1 auction and 50.42GW coming within the T-4 auction. In both cases, existing capacity was most successful – securing 81% of agreements in the T-1 auction and 86% in the T-4 auction.

Combined Cycle Gas Turbines (CCGT) were the most successful technology type in both auctions, accounting for the most agreements – 38.21% (2,215MW) in the T-1 and 45.66% (23,022MW) in the T-4.

Interconnector successes

The four-year ahead auction saw nuclear (15.72%) as its next most successful technology, while interconnectors (9.04%) secured a record amount of capacity. A total of 4.6GW of interconnectors won agreements. This figure included existing links to France, the Netherlands and Northern Ireland, as well as 2.2GW of new build interconnectors. Unproven demand-side response (DSR) (1,160MW) and new build generation (762MW) made up the rest of 4GW worth of prospective capacity to be awarded agreements in the auction.

T-4 Breakdown of Awarded Capacity by CMU Type



Source: EMR Delivery Body

In both auctions, the final results showed a slight increase in battery storage capacity – 15.3MW in the T-1 auction, while the T-4 auction saw the storage capacity procured rise marginally from 2,675MW to 2,680MW.

While the T-4 auction has secured over 50GW of capacity, the record low clearing price means little new build is coming through the auction.

T-1 auction T-4 auction

Letter highlights efforts to encourage DSR Capacity Market participation

The EMR Delivery Body detailed the efforts it has made to encourage demand side response (DSR) providers to participate in government auctions for capacity payments in a letter, dated 9 February.

The letter set out a number of steps that National Grid, in its role as the EMR Delivery Body, has taken. This includes an enhanced prequalification readiness programme, publishing improved guidance, streamlining agreement management processes and assisting DSR providers to improve auction readiness.

National Grid has proposed to make further improvements in future auction rounds. These include assessing opportunities for reducing complexity for DSR in the Capacity Market framework and processes, potentially widening participation to a wider group of providers.

EMR Delivery Body

Renewable heating scheme "not value for money": NAO

The government's scheme to encourage a switch from fossil fuel heating systems to cleaner alternatives has not delivered "value for money", according to an assessment by the National Audit Office (NAO).

It published its report on 23 February in which it found that take-up of the Renewable Heat Incentive (RHI) had been lower than expected, renewables goals and carbon reduction targets had been watered down, and that there were question marks over how much the government had overpaid to participants who had not complied with the scheme's regulations.

Much lower than anticipated

The RHI works by giving participants, both households and businesses, financial incentives to switch to renewable and low-carbon heating systems. The government had targeted for 513,000 installations under the RHI by 2020. The NAO noted these ambitions had been "too optimistic" with just 78,048 installations delivered as of December 2017. Business and industry accounted for 17,955 of these.

It means that at current rates of take-up, 111,000 installations are forecast by March 2021 – only 22% of original expectations. Meanwhile, following a Spending Review, a refocused RHI scheme was agreed in 2015. The result of this saw ambitions for renewable energy produced and for carbon reductions under the RHI cut by 65% and 44% respectively. While, as of August 2017, the government is on track to hit these revised targets, the NAO said the reduced ambitions of the RHI of renewable heat had not yet been fully replaced elsewhere.

Costs considerations

The NAO noted there was no way of reliably estimating the amount the government had overpaid to participants who had not complied with the scheme's regulations. Ofgem had calculated overpayments worth 4.4% for the non-domestic scheme and 2.5% for the domestic scheme (£3mn in 2016-17), though the NAO found "significant weaknesses" in Ofgem's estimate and said the figure could be far higher. Furthermore, the government had failed to set specific goals or clear milestones to measure progress on its goal of helping to grow supply chains to support a national transition from fossil fuel to low-carbon heating from the 2020s through the RHI.

It did note, however, that cost control measures put in place had avoided the budget problems seen in Northern Ireland's version of the scheme.

To improve the RHI, the report called for clear goals and milestones to be set for developing the supply chain, while the government was told to work with Ofgem to improvement the management of the risk of fraud, non-compliance and gaming of the scheme. The report also called for Parliament to be provided with assurance on how the costs and value for money of the RHI will be managed.

The mixed assessment reflects the poor take-up of the RHI, which is the sole subsidy program government has implemented to decarbonise heat.

NAO

Ofgem delivers outline business case for Faster Switching

Ofgem has revealed how it plans to implement a reform package to achieve reliable next-day switching.

It published its outline business case on 12 February, in which it said it will move forwards with reform package 2a (RP2a). This package will see the introduction of a Central Switching Service (CSS) to harmonise the gas and electricity switching processes where appropriate. Non-domestic switches will have a two-day working objection window.

Ofgem said it was confident that RP2a offers the highest potential positive combination of monetised and non-monetised net benefits for homes and businesses.

Ofgem

Analysis highlights energy issues within the digital economy

While digital technologies can help to transition to a low-carbon economy, a report has told policy makers not to ignore the potential impacts on energy consumption.

On 20 February, think tank, Policy Connect published a report which said that the energy cost and carbon impact of the digital economy had not yet increased to the sizeable extent previously predicted. The reasons for this were given as being high energy bills, new efficient technologies and regulations.

Despite this, Policy Connected warned there remains a risk that growing dependence on connected devices and digital technologies could see energy efficiency gains slow or stall altogether.

Big demand

The report found that information and communications technologies (ICT), which includes data centres, data transmission networks and connected devices, use significant amounts of energy – although data on this is limited. It suggested ICT represents around 3.6% of global electricity demand and around 1.4% of global carbon emissions.

With a greater number of devices and machines becoming connected in the coming years, the report warned not only will they increase electricity demand through their own consumption, but also through increased usage by data centres and network services. Energy efficiency improvements and increased renewable energy have led to total global energy consumption and carbon emissions from ICT have levelling and, in some cases, decreasing in recent years.

However, in the long term, the report said the key uncertainty is how well these efficiency improvements can keep pace with the growth of data and demand for digital services. It has been estimated that ICT solutions could enable a reduction in global greenhouse gas emissions of up to 15.3% by 2030.

View to the future

With these factors considered, the report made a series of recommendations to policy makers. It called for government to commit to collating available data on energy consumption of ICT. This would involve identifying gaps and measuring the energy use that is still unknown. It should also “shore up” technical expertise in this area as the UK considers its future relationship with the EU, while it was told to consider a “whole systems approach” to understand the life cycle energy consumption and carbon emissions of ICT.

Policy Connect also called on government to support the development and wide-scale adoption of emerging technologies to optimise systems and facilitate energy efficiencies, while it called on the public sector to “lead by example” in implementing energy management best practice.

This report touches on an area previously unexplored in depth, offering useful recommendations, and further shows the complexity of the low-carbon transition.

Policy Connect

Ofgem bans suppliers back-billing microbusiness customers beyond 12 months

Ofgem has announced that it will ban suppliers from backbilling customers for energy that was used more than 12 months ago.

On 5 March, the regulator explained that a typical backbill is £1,160 but can be much higher – leaving customers struggling financially or even in debt. While many suppliers had signed up to a voluntary agreement not to backbill past 12 months, Ofgem said that this does not protect all customers. In instances where consumers actively prevent suppliers form taking or receiving accurate meter readings, the ban will not apply.

The ban will come into effect at the beginning of May for domestic consumers and in November for microbusinesses.

Ofgem

BEIS sets out details of funding for innovative smart energy systems

On 9 February, the government revealed that the UK and South Korea had committed up to £6mn in total, from 2018 to 2021, to deliver a bilateral competition on smart energy innovation.

The competition will provide grant funding to companies and other organisations that apply for the development and demonstration of smart energy technologies and services. Eligible projects could include energy storage, demand-side response, vehicle-to-grid technologies, system integration, and flexibility trading models.

Each project team selected for innovation support will involve organisations based in UK and South Korea. BEIS said it will fund the UK Partners in each winning project, with them able to bid for a share of up to £3mn innovation funding through the competition.

BEIS

NIC welcomes progress on smart electricity network

The National Infrastructure Commission (NIC) has welcomed the progress made in transforming the UK's energy networks.

The NIC published its first Annual Monitoring Report on 16 February. It said that while the government has been slow in taking decisive action on infrastructure needs overall, "real progress" has been made on creating a smart electricity network. The report also welcomed the work done by BEIS and Ofgem in helping the UK to become a world leader in storage and securing cost-effective, low-carbon generation.

It also called on both to continue levelling the playing field for demand-side response and other flexible forms of capacity. This would be to ensure they are able to compete in the energy, capacity and ancillary services markets.

NIC

Vital Energi to deliver energy centre for university

Vital Energi has revealed it has been successful in its bid to expand Keele University's Horwood energy centre, and the installation of an additional district heating network.

The £1.3mn project will see a 70m^2 extension of the energy centre to expand the university's heat network and cater for the new Central Science Laboratories (CSL) building. It will also hold the potential for future development and expansion. The energy centre will be refurbished to make sure it is prepared for the new heat network and has both the capacity and space to add further connections in future.

The project pushes Keele University closer to its goal of becoming one of the UK's most environmentally sustainable campuses.

Vital Energi

Eight out of 10 business want to be more sustainable

A majority of small and medium-sized enterprises (SMEs) value sustainability highly, according to a survey carried out by advertising agency, 18 Feet & Rising.

The Uprising Report found, however, that seven in 10 (70%) SMEs were struggling to embed sustainable practices and strategies. Eight in 10 (80%) were planning to introduce more ethical and sustainable measures within the next five years, but many were encountering barriers. The cost of implementing sustainable practices (40%) and government not doing enough to encourage sustainable business practices (42%) were both cited.

When asked what makes a business ethical, energy efficiency (51%) was ranked as the third highest option – behind treating people fairly (75%) and sourcing materials responsibly (58%).

No link