

Competing Fuels Tracker

Issue 8 / January 2017



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Editorial

Trump and China: on a collision course?

The new US president has threatened to boost coal, cut emissions regulations and introduce tariffs on Chinese goods. His counterpart in Beijing, meanwhile, has stressed the need to do exactly the opposite.

THE RELATIONSHIP BETWEEN the United States and China will face challenges in 2017 that could affect the pecking order of fuels in the global energy mix.

The leaders of the two countries are pursuing diametrically opposite paths. Whereas US President Donald Trump has bragged about reviving the fortunes of coal and other fossil fuels, China has taken on the mantle of global leadership in climate change policy and is working to cut coal consumption to reduce the health damage caused by urban smog. Whereas Trump has raised the threat of protectionism, Chinese President Xi Jinping has stressed the need for multilateralism.

In his inauguration speech, Trump stated repeatedly that his policies would be founded on the doctrine of "America First" and that he would protect the jobs of US workers. In contrast, speaking at the World Economic Forum in Davos, Switzerland, Xi stressed the need for free trade, global cooperation and support for clean energy. "We should adhere to multilateralism, honour promises and abide by rules; one should not select or bend rules as he sees fit," he said. Although he did not name the US, it is difficult not to see Xi's comments as a side-swipe at the incoming leadership of Trump.

DIFFERENT DIRECTIONS

Xi also delivered a strong defence of the Paris Agreement to limit greenhouse gas emissions, saying it was a hard-won deal and that all signatories should stick to it. China's commitment to meet climate change mitigation commitments under the Paris Agreement was repeated by a series of Chinese corporate attendees at Davos, who reiterated the need to switch from coal to renewables and gas. The 13th five-year plan, covering 2016-2020, also reiterates this need.

In contrast, Trump has frequently stated he will do everything in his power to support coal. He has promised to bolster the US oil, gas and coal industries by undoing federal regulations, including those curbing carbon dioxide emissions. He also suggested pulling America out of the Paris Agreement, calling it expensive for US industry.

Trump also threatened during his election campaign to impose import tariffs on Chinese goods, and he outraged Chinese sensitivities soon after his election win on 8 November by taking a congratulatory call from Taiwan's president.

From their public comments, the US and China are on a collision course, and a crash is imminent. But will it happen?

Trump has vocally supported shale development, and US oil and gas production is forecast to rise if global prices recover. But the switch to gas from coal by US utilities in 2016 was led by economics as much as policy. If gas remains competitive with



Press Association

coal, US coal producers will need to export to survive.

Trump has said he will prioritise US jobs in any agenda to reshape the energy industry, while Xi's main economic challenge has been to sustain growth in the face of a widely anticipated slowdown. If Trump were to impose import tariffs on Chinese goods, it could lead to a tit-for-tat response by Beijing that would hurt both sides.

Although Trump will boost domestic infrastructure spending, a revival in the US of energy-intensive industries such as steel, which has benefited from access to cheap shale gas, will depend in part on finding markets abroad for US products. Tariffs could also kill the international market for high-quality metallurgical coal, which is dominated by China.

CLIMATE CHANGE CLIMBDOWN?

Meanwhile, although the Trump administration will not deliver the leadership on climate change that was provided by the previous president, Barack Obama, his appointees appear to be toning down the rhetoric against green energy development.

Rick Perry, Trump's nomination for energy secretary, looks set to increase energy infrastructure spending, which will boost jobs. Perry recently resigned from the board of directors of Energy Transfer Partners, the company building the Dakota Access Pipeline, which is opposed by groups including Native Americans and environmentalists.

Speaking at a Senate confirmation hearing, Perry acknowledged climate change was a reality and that global warming was caused in part by human activity. But he argued that action to combat it should not cost US jobs. This is quite different from Trump in campaign mode, who called climate change a "phoney" environmental issue and at one time alleged it was a hoax perpetrated by China to undermine the US.

Rather than pulling out of the Paris Agreement, Trump's team is more likely to try to kill the Clean Power Plan, which was intended to reduce carbon dioxide emissions from power utilities but is already tied up in litigation. This may be opposed by states such as New York and California. Trump will also seek to rein in the Environmental Protection Agency, which coal supporters blame for waging a "war on coal".

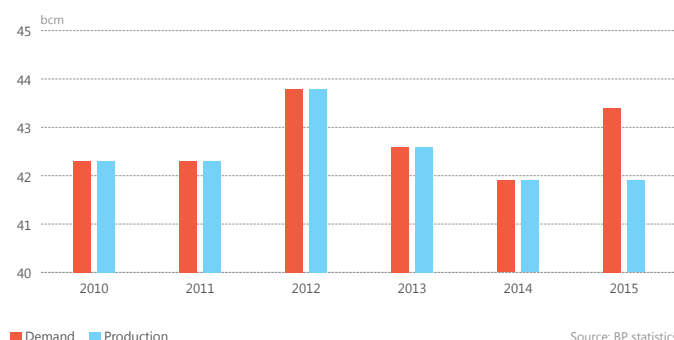
Country insight

Pakistan – opportunities for gas in power

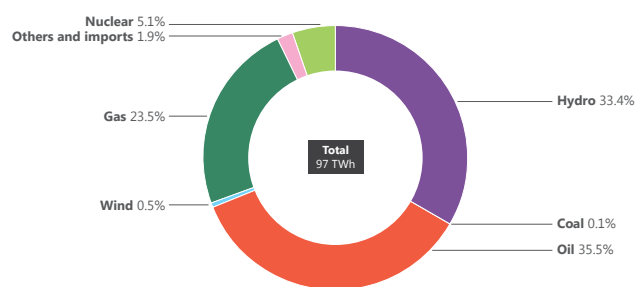


- Gas accounts for around 50% of Pakistan’s energy mix. Gas-fired power accounts for roughly 24% of Pakistan’s electricity generation. The country started importing LNG in 2015, when its total gas demand was around 43 billion cubic metres.
- Pakistan suffers from electricity shortages. Blackouts are weighing on the economy, and it has been estimated that in recent years less than 75% of the population has had access to electricity. Illegal tapping of the power supply is a major problem for the government and for utilities.
- Oil is the leading source of fuel for Pakistan’s power sector. It is also the most expensive, and its share of the country’s power mix has increased because of a lack of gas. The government has been trying to diversify away from oil, but the fuel still generated approximately 36% of Pakistan’s electricity in 2015.
- Pakistan generates little of its electricity from coal, but the country plans to increase its coal-fired capacity to provide greater amounts of cheap electricity. Coal’s share of the energy mix is consequently expected to grow over the next 10 years, but the fuel still faces significant hurdles. Around 7 GW of proposed new coal-fired capacity looks likely to be shelved because of a lack of investment, and opponents have criticised the government’s plans because they are at odds with the need to reduce carbon emissions.
- Although Pakistan plans to bring large amounts of new renewable capacity online, with the aim of having renewables account for at least 10% of the energy mix by 2025, the country is starting from a low base. Wind generation produced less than 1% of Pakistan’s power in 2015.
- Pakistan’s energy demand is expected to increase. Rising gas imports will see higher volumes of the fuel used in power generation and result in it displacing oil. However, the share of gas in the country’s total energy mix is anticipated to fall to around 35% by 2025.

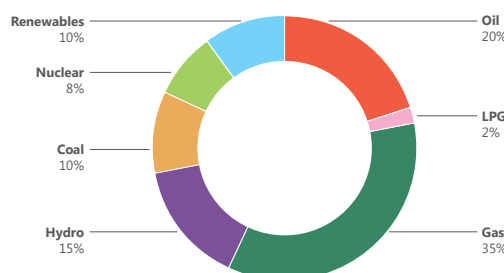
PAKISTANI GAS DEMAND



PAKISTANI GENERATION OUTPUT 2015



PAKISTANI ENERGY MIX 2025



Electricity markets

UK MARKET

THE SPREAD BETWEEN peakload and baseload UK electricity prices narrowed sharply in January as fears of winter supply shortages dissipated. The ICE front-month baseload futures price strengthened by 2.8%, to £55.37/MWh, in the first half of January from an average of £53.84/MWh in December, but prices remain far below the peak of £82.44/MWh seen on 3 November. UK baseload futures averaged £71.65/MWh for November as a whole.

In contrast to the modest gains in baseload prices, UK peakload prices dropped further, extending the losses seen in December. Front-month peakload prices fell by 5.5% in H1 January, to £66.25/MWh, down from an average £70.15/MWh for December as a whole. Peakload prices averaged £115.46/MWh in November.

The sharper fall in peakload prices resulted in a narrowing of the peakload-baseload spread to £10.87/MWh in H1 January, down from £16.31/MWh in December as a whole and from peak levels of £43.81/MWh in November. This reflects a return to more normal seasonal differentials, although the spread remains wider than the average £6-7/MWh seen in recent years at this time of the winter. This narrowing of the peakload-baseload spread is reflected in both futures and continuation contracts.

Shutdowns at nuclear plants in France led utilities to buy more gas to meet power generation needs over the winter, boosting prices. French nuclear regulator the ASN ordered safety checks at 18 of France's 58 commercial reactors.

CONTINENTAL EUROPE

Dutch electricity prices recovered in H1 January after falls in December. The Endex front-month baseload futures contract strengthened to €43.66/MWh, up by 7.9% from an average of €40.85/MWh in December as a whole. Peakload prices rose less than baseload prices, averaging €54.14/MWh in H1 January compared with €51.50/MWh in December – a gain of 5%.

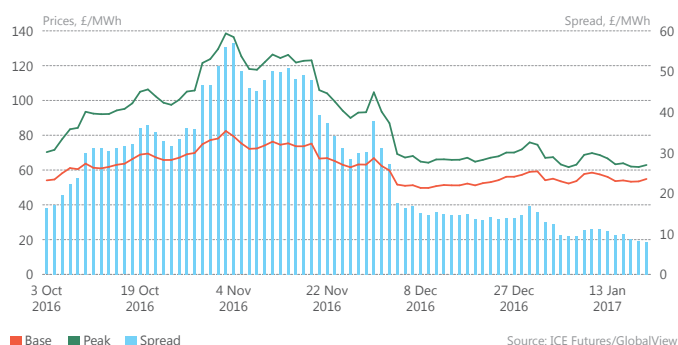
Italian baseload power prices strengthened to €56/MWh in H1 January, a gain of 7.6% from average December levels. Peakload prices strengthened by only 2.6% over the same period, resulting in a narrowing of the peakload-baseload spread to €7.43/MWh from €7.80/MWh in December.

ELECTRICITY FUNDAMENTALS

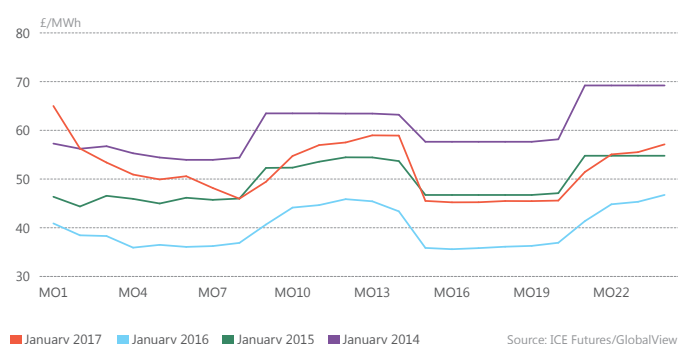
Total electricity production in OECD Europe was 0.6% higher in the first 10 months of 2016 than in the corresponding 2015, period, according to monthly data from the International Energy Agency (IEA). Total electricity production during the period was 2.83 PWh, the IEA said. The IEA's *Monthly Electricity Statistics* estimated that power consumption in the 35-member group rose by 0.4% in the first 10 months of 2016 compared with the corresponding period in 2015, to 8.63 PWh. Among OECD countries, electricity consumption rose by 0.6% in the Asia Pacific region during the period and by 0.2% in the Americas.

The Energy Information Administration forecasts a 5% rise in electricity consumption by the residential sector in the United States compared with last winter, and as much as 9% growth if winter is cold. Among US households, 39% rely on electricity as their primary heating source, with regional figures ranging from 63% in the south to 15% in the northeast.

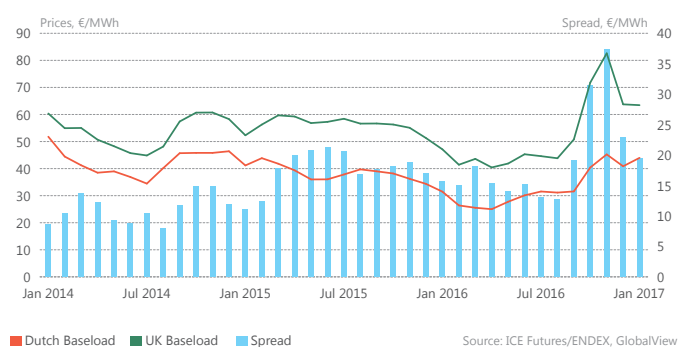
UK ELECTRICITY PRICES



UK BASELOAD FORWARD CURVE



UK-DUTCH POWER SPREAD



ELECTRICITY OVER THE COUNTER VOLUMES (GWH) IN 2016

Market	Bilateral	Cleared	Grand total
UK power	1,335,901	1,165	1,337,066
German power	4,334,156	1,183,727	5,517,883
French power	938,286	256,175	1,194,461
Nordic power	n/a	308,684	308,684
Italian power	277,279	299,676	576,955
Spanish power	74,625	86,966	161,591
Netherlands power	174,198	41,212	215,410
Belgian power	40,915	6,036	46,950
Central & Eastern Europe	449,006	3,104	452,109
Other power	241,158	12,094	253,252
Total European power	6,529,621	2,197,673	8,727,295

Source: London Energy Brokers Association

Coal markets

ASIA PACIFIC

NEWCASTLE COAL FUTURES prices averaged \$84.6/t in H1 January, a drop of 2% from the December average of \$86.5/t. Richards Bay prices in South Africa rose by around 2% in the same period, causing Newcastle coal to trade at a modest discount, which stood at \$2.85/t at the time of publication. Although this is the opposite of the traditional relationship between the Richard's Bay and Newcastle prices, it is not uncommon at this time of year because of seasonal demand trends. Newcastle coal spiked to a \$20/t premium over Richard's Bay in November. This was the result of strong buying to cover trading positions – the supply to the market has tightened because the Chinese government has directed the country's mines to reduce their production. China targeted a 250 mt cut in its coal output in 2016.

The cuts have buoyed the back end of the Newcastle forward curve, which stands at just above \$70/t – almost \$30/t higher than a year earlier. China is planning more cuts in its coal production during 2017. The country's *Xinhua* news agency has reported that the northern province of Shanxi, which supplies around one-quarter of China's coal, will cut its output of the fuel by 20 mt this year. Coal production in Shanxi fell to 738 mt between January and November 2016, a year-on-year drop of 15%. The province had shut down 25 coal mines with a combined output of 23.3 mt by October last year and had limited utilisation at its remaining mines to 84%.

China plans to cap its coal consumption at 4.1 billion tons by 2020 under its 13th Five Year Plan, reducing the share of the fuel in the country's energy mix from 64% in 2015 to 58% by the end of the period. The share of gas is projected to rise to 10% while the share of renewables will increase to 15%.

UNITED STATES

United States President Donald Trump has promised to revive the US coal industry, but this is unlikely to be achieved unless exports increase; the scope for domestic consumption gains beyond those forecast by the Energy Information Administration (EIA) for 2017 is limited.

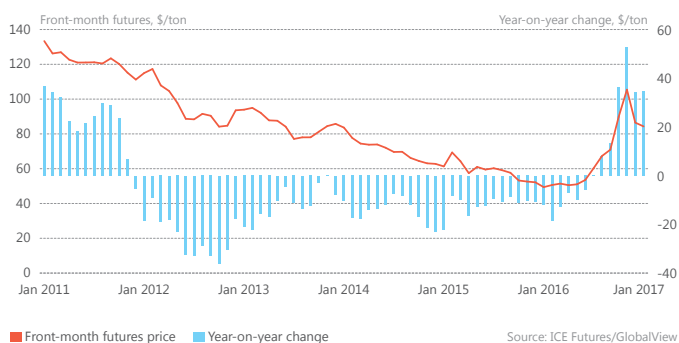
US coal production fell by 18% – equivalent to 158 mt – in 2016, to 739 mt, according to the EIA. This is the lowest amount of coal the country has produced since 1978 and the largest decline on an annual basis since records began in 1949.

The EIA forecasts that rising coal-fired electricity generation in the US this year will lead the country to produce an extra 51 mt of the fuel, an increase of 7%. The majority of the extra output will come from the Western and Interior regions. The power sector accounts for more than 90% of US coal consumption and is forecast to use an extra 41 mt of the fuel this year, an increase of 6%. This is a result of rising gas prices and a need to generate more electricity. Coal use by the US power sector fell by 60 mt, or 8%, last year compared to 2015 because of mild weather early in the year and competition from cheap gas.

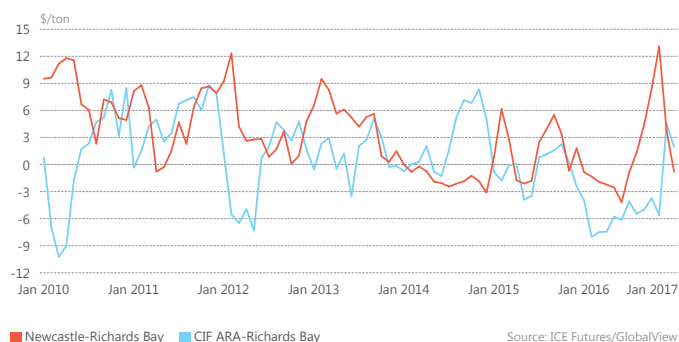
However, the EIA said these trends are expected to reverse in 2018, leading to an 11 mt (or 1%) decline in coal consumption by the power sector. US coal production is expected to increase only slightly in 2018, with output growth in the Western region offset by declines in the Interior and Appalachia regions.

US coal exports could be boosted by Trump's promise to lift

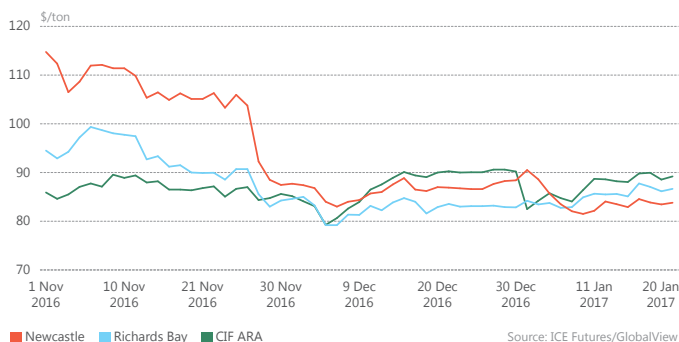
NEWCASTLE AUSTRALIA FUTURES PRICES



COAL LOCATION SPREADS



ICE COAL FRONT-MONTH FUTURES



regulations from the fossil fuel sector, although such a move was not incorporated in the EIA's 2017 and 2018 projections. The EIA forecasts the US will export 54 mt of coal in 2017 and 2018. This would represent a further decline from 2016, when exports dropped by 18 mt (24%), to 56 mt – their lowest level since 2006. The country is estimated to have imported 10 mt of coal in 2016 and is forecast to take in nearly 11 mt in both 2017 and 2018.

EUROPE

Coal markets in the Amsterdam-Rotterdam-Antwerp (ARA) region were mixed compared with their average levels in December. ARA coal futures on the ICE exchange averaged \$85.91/t in H1 January, down by 1.58% from December as a whole, but had strengthened to \$89.20/t by 20 January. This is roughly where they were trading on 9 November last year, when prices reached a settlement peak of \$89.55/t. Prices were supported by cold weather in early January and delays to restarts at French nuclear plants.

Oil prices relative to gas

THE RALLY IN oil prices after December's OPEC agreement to cut production with the support of non-OPEC countries quickly ran out of steam. Several OPEC members have hinted they are implementing the deal, which requires the cartel to limit output to 32.5 million barrels per day (MMb/d) from 1 January 2017. The degree of compliance will be known only when OPEC's January production figure is published in its monthly oil market report, due on 13 February. Non-OPEC countries, led by Russia, pledged cuts of nearly 600,000 b/d.

Oil use in the power sector has been in structural decline for many years as the main demand centres phase out the use of liquid fuels in favour of natural gas. With global oil prices expected to remain volatile in the next few months, the use of fuel oil and crude oil in power generation – and of heating oil and kerosene in residential and commercial heating – is expected to remain limited.

HEAVY FUEL OIL

Fuel oil use in the power sector continues to decline, and higher oil prices relative to gas look set to accentuate this trend.

Direct crude burn by Saudi Arabia's power sector typically declines beyond summer, resulting in lower oil production. The kingdom's efforts to promote the use of non-associated gas in its power sector are reducing its need to burn crude. JODI oil data suggests that direct crude burn by Saudi power plants averaged 492,000 b/d in October 2016, marking a fall of 26.2% on an annual basis. Sharp year-on-year declines in Saudi Arabia's direct crude burn are also expected in 2017.

Among the Asian countries that burn fuel oil for power generation, Japan's fuel oil stocks were healthy as winter began and refinery production was higher than at the same time last year, according to the latest data from the Ministry of Economy, Trade and Industry. Although gas prices have risen in tandem with oil prices, they are not at a level that would encourage strong buying of heavy fuel oil.

Strength in low-sulphur fuel oil was seen in the Mediterranean in January because of the need to supply deliveries to Greece, Cyprus, Malta and West Africa in 2017.

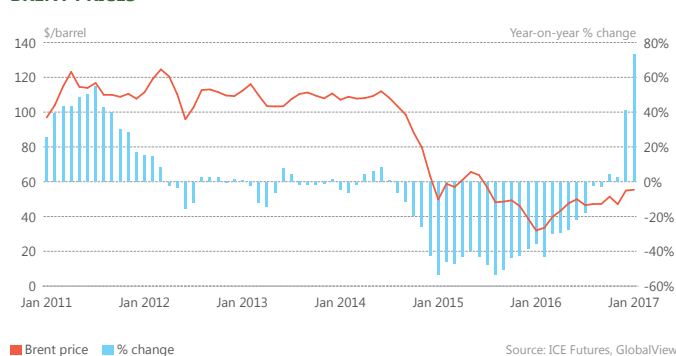
HEATING OIL, KEROSENE AND LPG

Heating oil remains widely used in the northeast of the United States, where it competes with gas, and in a few European countries such as Germany. Meanwhile, kerosene and LPG are still widely used in Africa and Asia, including Japan, China and South Korea. Use of these fuels typically rises in the northern hemisphere winter.

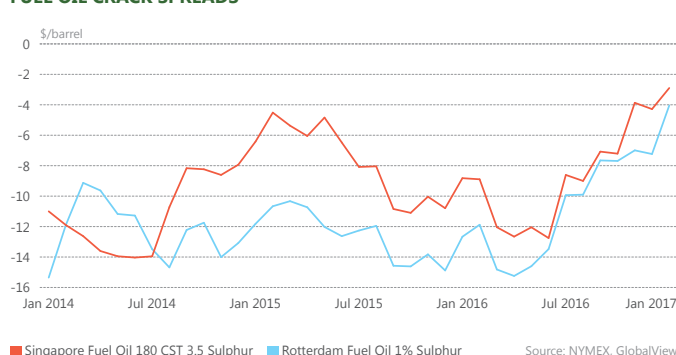
Around 22% of homes use heating oil in the northeastern US, much higher than the national average of 5% but down from 27% five years ago. Energy Information Administration scenarios for household use of heating oil project that consumption this winter will be 15% higher than last winter, which was unusually mild, and could be as much as 25% higher in colder weather scenarios. Heating oil stocks are comfortable due to high US refinery runs, and reduced use of distillate fuels in other sectors.

In past years, electricity prices in New England have faced winter spikes because of constrained fuel supplies. The region's power industry is now more reliant on gas, which supplies 50% of the region's electricity compared with 37% in 2005.

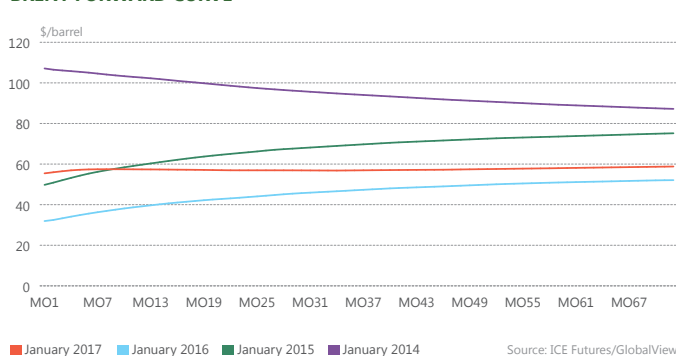
BRENT PRICES



FUEL OIL CRACK SPREADS



BRENT FORWARD CURVE



In Asia, the Singapore gasoil crack spread is expected to widen in January because of high demand for the fuel in Europe and Indonesia, together with refinery outages in Russia and the Middle East and Africa region. Cold weather in parts of Europe has also helped boost demand for gasoil.

A surplus of NGLs produced in association with shale oil and gas has resulted in a global glut of LPG, including propane and butane – both of which are used in space heating. An anticipated rise in US shale production in 2017 because of higher crude oil prices should result in a continued weakness in LPG prices over the year.

Propane inventories in the US, which were at record levels throughout last winter, entered the heating season this year at even higher levels. Nearly 5% of US households are heated primarily with propane, mainly in poorer parts of the country. New export facilities will allow the US to continue exporting even if winter demand for the fuel is boosted by cold weather.

Hydropower and renewables

RENEWABLES

POWER GENERATION FROM renewable energy in the OECD countries rose by 10.9% in the first 10 months of 2016, to 719.1 TWh. This boosted the share of renewables in the power mix to 8.3%, from 7.8% previously. The biggest gains were among the American countries in the 35-member organisation, which saw renewable generation rise by 23.6%, to 283.9 TWh, boosting the share of renewables to 6.6%, from 5.6% previously. The United States contributed the bulk of this increase. Renewable generation in the US rose by 22%, or 42.4 TWh, while generation from fossil fuels such as oil, gas and coal dropped by 3.5% despite lower prices.

The outlook for renewables looks set to be hampered by US President Donald Trump’s plans to aggressively roll back environmental regulations put in place under his predecessor, Barack Obama. The Energy Information Administration released its *Annual Energy Outlook 2017* on 5 January.

The report forecasts a growing share of renewables in the longer-term energy mix, but the estimates are based on the assumption that existing policies – including the Clean Power Plan, tax credits for renewables and California’s SB-32 Global Warming Solutions Act – will be left in place. Under this scenario, growth in gas and renewables would result in falling generation from coal.

Although it is not yet known exactly what further acts and executive orders will be rescinded under the new administration, it is unlikely the status quo will last long. A statement posted on the White House website on 20 January – the day of Trump’s inauguration – said the incoming administration will be committed to eliminating Obama’s Climate Action Plan and the Waters of the US rule, which it said were “unnecessary and unhelpful policies”.

More modest gains in power generation from renewables were seen in Asia Pacific and the European OECD countries, where power generation from renewable energy increased by 8.1% and 3.1% respectively in the first 10 months of 2016. This boosted the share of renewables in the power mix in Asia Pacific from 4.20% to 4.60%, while in Europe the figure was little changed, at 12.9%.

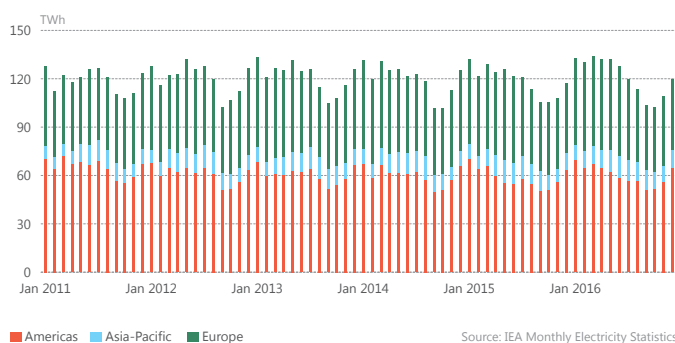
Renewables look set to win back market share in the coming years in Germany as the 2017 Renewable Energy Sources Act sets new rules for funding. Rather than being fixed by the government, rates of funding for renewables will be determined by dedicated auction schemes from 2017. The Offshore Wind Act was adopted as part of the package of measures and will introduce auctions for offshore wind installations with the goal of boosting installed capacity to 15 GW between 2021 and 2030.

Renewable power generation in Germany was slightly lower in 2016 than in 2015, as cheap fossil fuels made a comeback in the electricity sector. The share of renewables in the German power mix dropped in 2016 to just under 20% of overall generation.

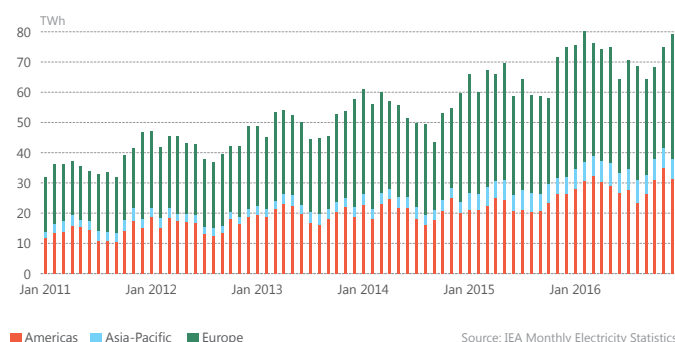
HYDROPOWER

Hydropower generation looks to have increased slightly in the OECD countries as a whole in 2016, although growth was largely confined to the Americas with no real growth in Europe or Asia, according to the latest International Energy Agency (IEA) data, which covers the period between January and October 2016.

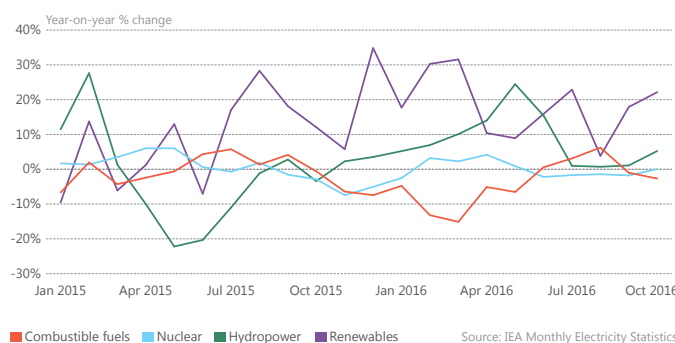
OECD HYDROPOWER GENERATION



OECD RENEWABLES GENERATION



RENEWABLES GROWTH IN THE US



The IEA data showed a 2.4% increase in hydropower generation in the 10 months to October 2016 across the 35-member group, with hydropower’s share of the electricity mix rising from 13.8% to 14.2% over the period. Hydropower’s share in electricity generation was little changed in Europe and Asia Pacific OECD countries, but rose from 13.9 to 14.3% in the Americas – largely the result of a 100 TWh increase in US hydro generation.

Latin American hydropower generation has also continued to strengthen. Brazil is expected to see healthy rainfall in Q1 2017. Forecasts suggest a 40% chance of above-average rainfall in northern and northeastern parts of the country – regions that suffered drought in Q1 2016. This will significantly reduce Brazil’s power sector gas demand. Higher hydropower generation will also limit gas demand growth in Colombia’s power sector. Forecasts suggest a 45% chance of above average rainfall in Colombia during Q1 2017, in contrast to the drought seen in Q1 2016.



Global Gas Analytics

Competing Fuels Tracker is published monthly by Interfax Europe Ltd, a subsidiary of Interfax Information Services Group.

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