



Energy in 2014: After a calm comes the storm

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1. Introduction

For the past 64 years, BP's Statistical Review of World Energy has been providing a timely, comprehensive and objective record of global energy markets.

In my brief time since joining BP, I have come to appreciate the importance and trust placed in the Statistical Review by governments, by commentators and, perhaps most importantly, by the energy industry itself.

That was really brought home to me when Dan Yergin – author of “The Prize” and surely the undisputed king of energy market analysts – said to me that he always carries two things in his brief case just in case: his passport and a copy of the Stats review!

If it is good enough for Dan Yergin, it's certainly good enough for me!

This level of trust stems from the reputation that the BP team have built up over many years for the care and attention it takes when compiling the data.

We sweat the data, so you don't have to!

I have had the privilege of seeing that care and attention at first hand this year and it is truly impressive.

So a big thank you to the Economics Team for all your hard work and late nights over the past couple of months.

And also to the team from Heriot-Watt University, led by Professor Mark Schaffer, who again provided invaluable help and support. I am pleased that Mark and some of his team from Herriot Watt are here today – so thanks Mark to you and the team.

It is great honour for me to present this year's review of 2014.

And what a year!

The US shale revolution scaled new heights.

Oil prices plummeted.

Carbon emissions are estimated to have grown at one of their slowest rates for over 15 years.



In recent years, my predecessor Christof Rühl spoke of the eerie calm that had befallen energy markets.

The events of last year provide a stark reminder that, in energy, after a calm comes the storm.

Uncertainty and volatility are the norm, not the exception.

The turbulent and unsettled conditions that characterized global energy markets in 2014 were driven by many factors, many of them specific to particular markets and fuels.

But there were also a small number of broader, more encompassing forces, acting across the world of energy, helping to shape the global energy landscape.

I would highlight three in particular.

First, was the continuing shale revolution in the US.

In China, 2014 was the year of the horse. In energy, 2014 was the year of the American eagle, as the US shale industry went from strength to strength.

At its height last year, more than 1800 rigs were operating in the major US oil and gas plays, drilling around 40,000 new wells. Capital spending in the shale industry is estimated to have reached around \$120 billion in 2014, more than double its value 5 years earlier. The increase in productivity is even more striking, with productivity in tight oil plays increasing 7-fold since 2007.

The results were equally startling.

US oil production rose by 1.6 Mb/d in 2014, by far the largest growth in the world, and the first time any country has increased its production by more than 1 Mb/d for three consecutive years.

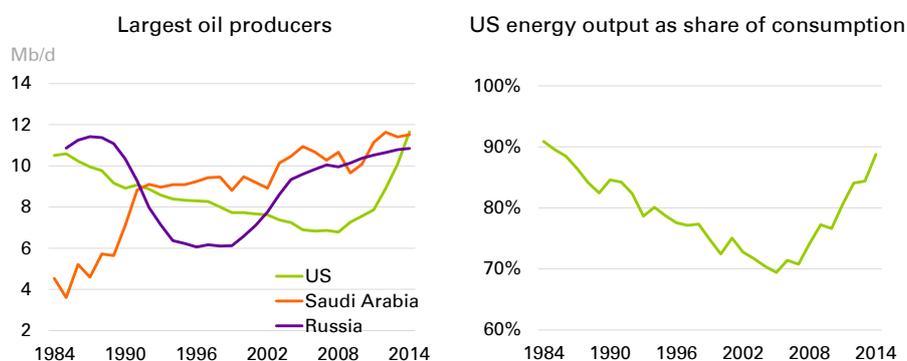
As a result, oil production in 2014 exceeded the previous peak level of US output set in 1970.

Peak oil indeed!

And perhaps most significant of all, the US passed both Saudi Arabia and Russia to become the worlds' largest oil producer for the first time since 1975.



US shale revolution



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US shale gas also continued to grow strongly, with US production accounting for nearly 80% of the total increase in global gas supplies in 2014. Over the past 10 years, US shale gas has accounted for roughly half of the increase in global supplies of natural gas.

The revised data in this year's Review, suggest that the US overtook Russia in 2013 to be the world's largest producer of oil and gas.

We are truly witnessing a changing of the guard of global energy suppliers.

The implications of the shale revolution for the US are profound.

US net imports of oil in 2014 were less than half their 2005 peak levels. The US is no longer the world's largest oil importer; that dubious honour now belongs to China.

In 2007, just prior to the financial crisis, the US was running a current account deficit of 5% of GDP – a key part of the so-called global imbalances that underpinned the financial crisis. Importantly, US energy imports accounted for almost half of that deficit.

Just seven years later, in 2014, US energy imports comprised just 1% of GDP, and US production accounted for almost 90% of its energy needs – a level not reached since the mid-80s.

As we will come on to see, the impact of the US shale revolution spread far beyond the Lower 48.

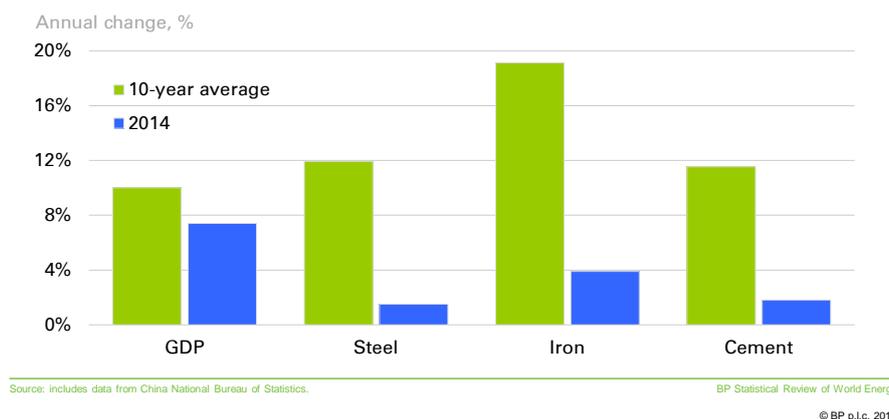
The second factor driving global energy markets last year were developments in China.

If the American eagle soared in 2014, the Chinese horse quickened its pace of adjustment.

Chinese GDP growth slowed to 7.4% in 2014, significantly weaker than the double digits growth rates we had become used to in the first 10 years or so of this century.

This slowing was accompanied by a continuing shift in the pattern of growth, with real estate investment and parts of industrial production decelerating sharply. As a consequence, growth in some of China's most energy-intensive sectors such as steel, iron and cement – sectors which had thrived during China's rapid industrialization – virtually collapsed in 2014, as more service-orientated parts of the economy came to the fore.

Chinese GDP and energy-intensive sectors



This changing pattern of economic growth caused the growth of China's energy consumption to slow sharply to just 2.6% in 2014, less than half its average over the past 10 years (6.6%) and the weakest rate of growth since the late 90s.

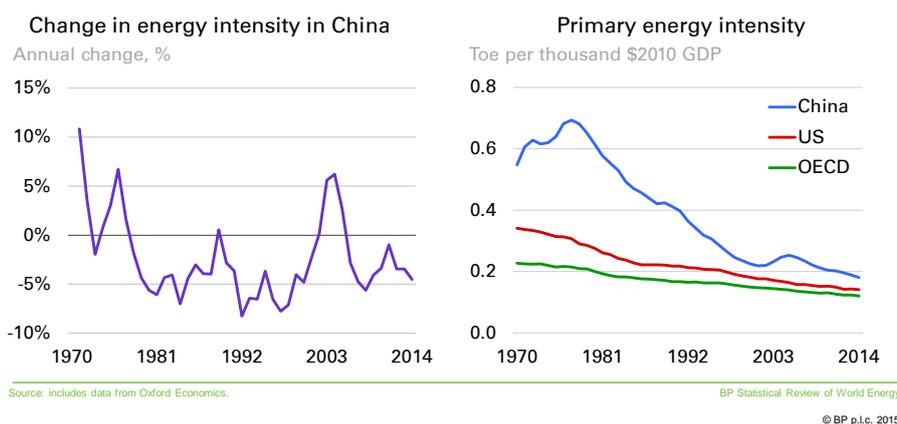
Although the slowdown in China's energy growth is striking, the implied reduction in energy intensity – i.e. the reduction in the average amount of energy needed to produce each unit of GDP – was not particularly exceptional relative to that seen over the past 20 years or so.

So in that sense, the slowdown in China's consumption growth doesn't look extraordinary or without precedent.

Even so, there are good reasons for thinking that this faster pace of energy reduction may not signal the beginning of a new trend. Those exceptionally low levels of growth reached in the energy-thirsty sectors – iron, steel and cement – are perhaps unlikely to

be sustained, pointing to the possibility of some bounce-back in energy demand. More generally, we might expect to see the rate of decline in China's energy intensity to taper off gradually as it converges to the levels of more developed economies.

Energy intensity in China



Monitoring those developments will be a key task for future Statistical Reviews.

For this year's Review, the focus is on tracing out the implications of this sharp slowing in the growth of the world's largest energy market.

The third over-arching factor acting across the global energy landscape in 2014 was the continuing focus on climate and environmental issues.

Climate concerns were an obvious focus in 2014 as global leaders and campaigners mapped their course to Paris at the end of this year.

Considerable attention was also placed on broader environmental concerns, with a number of significant regulatory announcements, including in both the US and China.

These policy initiatives, together with changing societal preferences and technological improvements have – as we will see – an important bearing on the fuel mix and the role of non-fossil fuels.

The focus on climate and environmental issues also garners significant attention for developments in reserves of fossil fuels.

Total proved reserves of fossil fuels were essentially unchanged last year.



The big picture remains one of abundant reserves, with new sources of energy being discovered more quickly than they are consumed. Total proved reserves of oil and gas in 2014 were more than double their level in 1980, when our data begin.

The issue is not whether we will run out of fossil fuels, but rather how we should use those ample reserves in an efficient and sustainable way.

In that context – as Bob stressed – it's important not to lose sight of the fact that over 1 billion people on our planet don't currently have access to electricity. For those most-affected regions, particularly in Africa and India, policymakers face the pressing need to improve the accessibility and availability of energy necessary for the well-being of their citizens and for the strength of their economies. And it's important to recognize that imperative has an important bearing on energy developments in those regions.

So how did these different forces – the strength of US shale, the rebalancing of China's economy, and the continued focus on climate and environmental concerns – play out last year across the global energy markets?

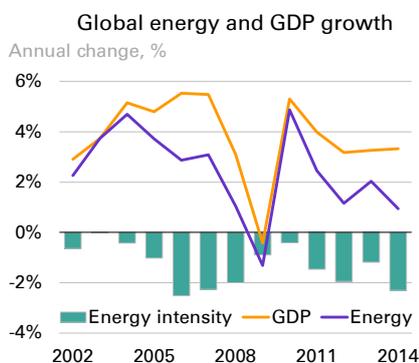
2. Key features of 2014

Standing back for a moment from the particular gales affecting some markets and the dark clouds sitting over others, the big overriding picture of 2014 was one of surprisingly weak growth in energy demand, coupled with greater resilience in production growth and a consequent softening in energy prices.

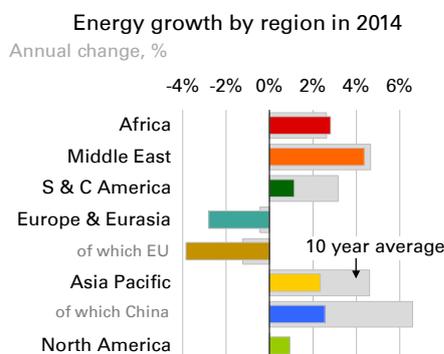
Growth of primary energy consumption slowed to just 0.9% last year, which, absent the financial crisis, is the slowest growth of energy demand since the late 90s. As in much of the past decade, all of the increase in demand was from emerging economies, with energy consumption in the OECD continuing to fall.



Energy and the economy



Source: includes data from Oxford Economics.
Note: GDP growth based on Purchasing Power Parity measure of GDP.



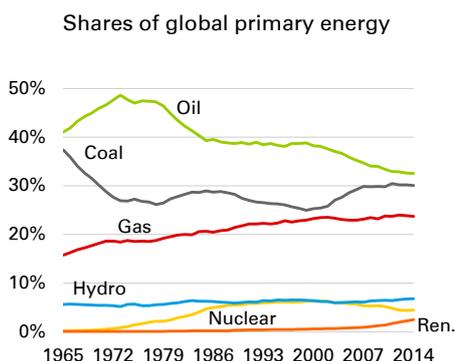
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The general weakness in energy demand wasn't restricted solely to China. Energy consumption grew more slowly than recent averages in all regions except North America (0.9%) and Africa (2.8%), with a notable fall in EU demand (-3.9%).

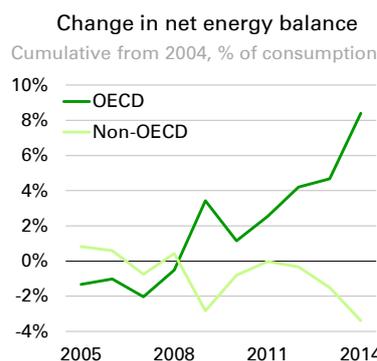
The sharp deceleration in energy demand occurred despite the global economy expanding (3.3%) at a similar rate to 2013. Instead, the slowdown in energy demand reflected a further fall in energy intensity (-2.3%). A significant part of that reduction can be traced to one-off weather-related impacts, particularly in the EU. But over and above that, was that impact from the rebalancing of the Chinese economy.



Fuel mix and energy imbalances



Note: energy balance is defined as energy production minus energy consumption.



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Oil (0.8%) was the fastest growing fossil fuel for the first time since 1997. Even so, oil still lost share within primary energy for the 15th consecutive year. Coal (0.4%) and gas (0.4%) also lost ground. The share of non-fossil fuels reached an all-time high of almost



14%, with the shares of hydro (6.8%), nuclear (4.4%) and renewable power (2.5%) all increasing.

Energy production grew by 1.4% in 2014, similar to 2013 (1.6%), although weaker than its 10-year average (2.2%). This relative stability in aggregate supply growth masked significant differences across fuels: with a sharp acceleration in oil supply offset by the first decline in coal production since the Asian financial crisis in 1998.

Although developing economies accounted for all of the increase in energy demand, supply growth was dominated by the OECD, which accounted for over 80% of the increase in supply. Over the past 10 years or so, the OECD has enjoyed a significant improvement in its energy balance, with the non-OECD balance deteriorating over this period.

So that's a 10,000 feet overview of last year's data. To get at the stories underpinning those developments we need to get closer to the ground by looking at the individual fuels.

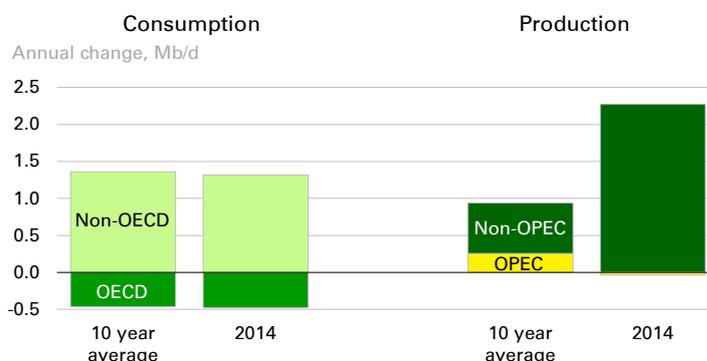
3. Fuel by Fuel

Oil

Oil was at the epicentre of the 2014 energy storm, as a number of the over-arching forces came together.

The data for 2014 as a whole make clear that the sharp fall in oil prices was a supply story. The increase in oil consumption in 2014 was very close to its recent historical average. There was nothing exceptional about demand growth in 2014. In contrast, supply growth last year was almost off the charts, with global production increasing by over 2 Mb/d, more than double its 10-year average.

Oil market in 2014



Note: consumption and production totals include biofuels.

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This strength was driven by non-OPEC production, which increased by 2.1 Mb/d in 2014 – the largest increase on record. US production predictably set the pace, but this strength wasn't solely restricted to the Lower 48: Canada (315 Kb/d) and Brazil (232 Kb/d) also enjoyed record increases in production, with output in both countries reaching record highs.

In contrast, OPEC production was broadly unchanged (36.6 Mb/d). The share of production across OPEC members continued to be affected by supply disruptions in the wake of the Arab Spring. Relative to production levels at the end of 2010, total supply disruptions to both OPEC and non-OPEC production increased a little to close to 3 Mb/d, with those disruptions concentrated in Libya (1.3 Mb/d) and Iran (860 Kb/d).

On the demand side, oil consumption grew by 0.8 Mb/d, entirely driven by increase in non-OECD demand (1.3 Mb/d). The growth in Chinese consumption (390 Kb/d) was a little below its recent historical average, but still accounted for almost half of the increase in global oil demand. As in 2013, the gains in Chinese oil demand were driven by gasoline consumption, supported by the increasing purchasing power of Chinese households. In contrast, growth in the demand for fuels which are more exposed to the rebalancing away from heavy industry and infrastructure, such as diesel, remained very weak by historical standards.

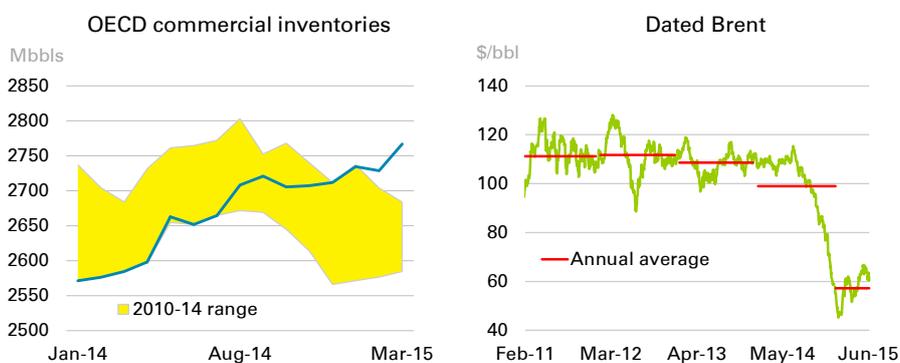
OECD oil consumption fell by almost 500 Kb/d in 2014, in line with its 10-year average, with slightly larger than usual declines in Japan (-220 Kb/d) and Europe (-200 Kb/d), offset by growth in the US (70 Kb/d). The relative strength of US demand appears to reflect the effects of both the cold winter and of lower pump prices stimulating transport demand in the second half of the year.

The eerie calm that pervaded oil markets during 2011-2013 reflected two powerful forces coincidentally offsetting each other. US tight oil powered away throughout much of this period. But at the same time, Middle East and North African supply was retarded by the events surrounding the Arab spring. The net effect was that global oil supply increased by an annual average of just over 1Mb/d in 2011-13, broadly in line with global consumption.

That balancing act came to an abrupt end last year. The exceptional growth in non-OPEC supply far exceeded incremental supply disruptions which, together with a softening in the growth of oil consumption relative to 2013, led to a growing supply imbalance and a consequent build-up of inventories.

OECD oil inventories began at relatively low levels, but rose steadily throughout the year, increasing by almost 150 Mbbbls over 2014 as a whole. More recent data suggest that this stock build continued through the first part of this year, with OECD stocks close to a 10-year high. Not surprisingly given the centre of the supply strength, this build-up of stocks was most pronounced in the US, with US commercial crude stocks at their highest levels since 1930.

Oil inventories and price



Source: includes data from the International Energy Agency © OECD/IEA 2015 and Platts.

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The price impact of this supply imbalance grew only gradually, such that Dated Brent averaged \$109 in the first half of 2014, close to its 2013 average. But as the supply imbalance widened and stocks accumulated, prices began to fall. Dated Brent peaked in the second half of June and Brent forward markets, which had generally been backwardated since early 2011, moved into contango in July.

The possibility that OPEC may respond to the growing abundance of supply by reducing its production targets probably provided some support to prices through the summer and

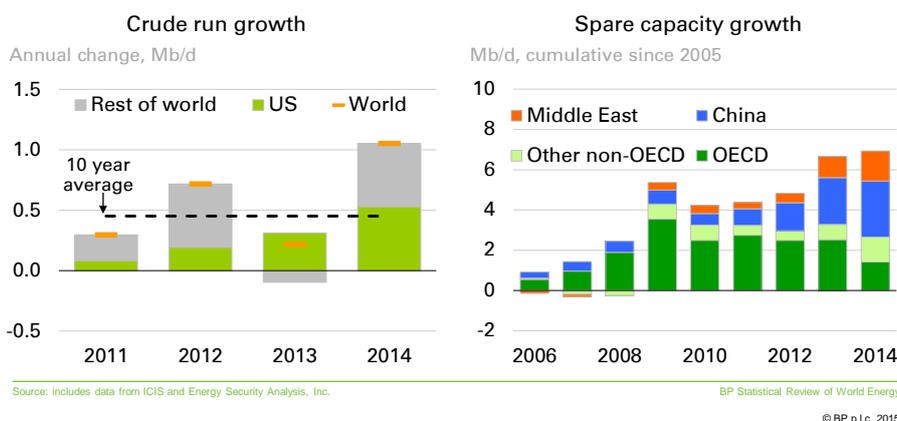
autumn, with dated Brent drifting down to around \$80 by the time of the OPEC meeting in late November. But the decision by OPEC to maintain its production levels and protect its market share broke the markets' back, causing prices to fall sharply, with dated Brent ending the year at around \$55 and reaching a daily low of \$45 in mid-January. Dated Brent averaged \$99 in 2014 – the first time it has averaged less than \$100 since 2010.

One key message to draw from these events is that, even in the oil market, prices work! The high levels of innovation and investment driving the record supply gains which underpin the current surplus were set in motion by a decade of high oil prices. And likewise, the market now appears to be responding to the prompt of lower oil prices. Data so far this year point to a strengthening of demand growth and the number of US oil rigs has more than halved since its peak in October last year.

Refining

The exceptional strength of crude supplies spurred a notable increase in refinery runs, which were up over 1 Mb/d in 2014, more than double their 10-year average. Refinery runs were stronger than the increase in product demand as refineries were incentivized to increase product stocks and so reduce pressure on crude storage. US refineries led the way, with throughputs increasing by over half a million barrels a day – the largest annual increase since the mid-80s – driven by the strength of US supplies and the consequent discounting of US crude prices.

Refinery runs and spare capacity

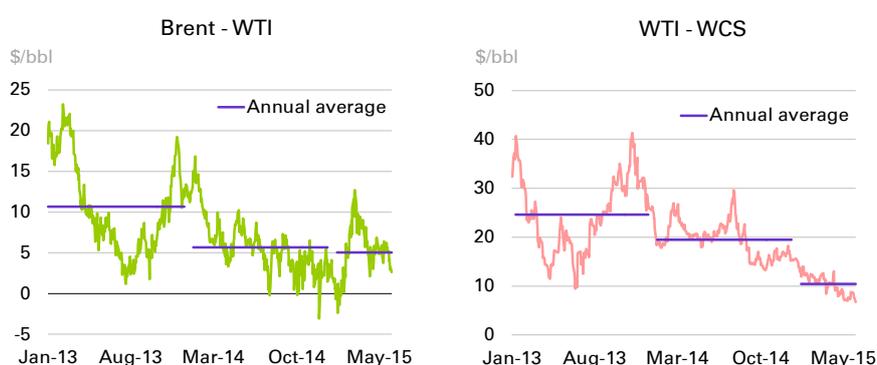


This lengthening in refining runs was broadly matched by the expansion in refining capacity: even with material reductions in the OECD, capacity still increased by 1.3 Mb/d. This growth in capacity was driven by new refineries in China (790 Kb/d) and the Middle

East (740 Kb/d), causing spare capacity to edge higher to almost 7 Mb/d above its level in 2005, when we think the global utilization rate was close to its effective maximum. Much of that spare capacity was concentrated in China and the Middle East, which have undertaken significant investments in refining capacity in recent years. Global refinery utilization remained at 79.6%, its lowest level for almost 30 years.

Improvements within US infrastructure meant that, despite the bumper growth in North American supply, crude differentials narrowed last year. The average Brent-WTI differential fell to around \$5.5/bbl in 2014, almost half its level in 2013, as the completion of new pipeline capacity eased bottlenecks at Cushing and allowed more inland crude to flow to Gulf Coast refineries. Likewise, improvements in pipeline and rail logistics contributed to the narrowing in the spread between WTI and heavy crude from Canadian oil sands, such that the spread between WTI and Western Canadian Select (WCS) narrowed from almost \$25/bbl to less than \$20/bbl in 2014 and has continued to narrow in the first half of this year.

Crude oil differentials



Source: includes data from Platts.

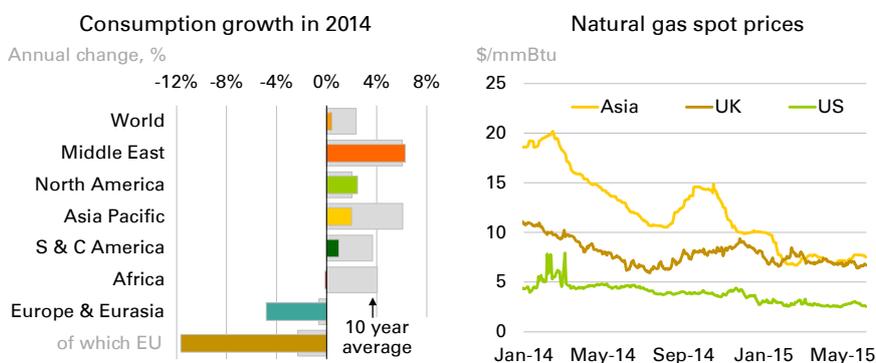
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Natural Gas

The main story on natural gas was one of exceptionally weak demand. Global gas consumption grew by just 0.4% (12 Bcm) in 2014, which, with the exception of the financial crisis, is the weakest rate of growth for almost 20 years. In contrast, growth in global gas production (1.6%, 52 Bcm) was relatively robust, causing gas prices across the globe to decline through the course of the year. This general weakening in gas prices also coincided with a further narrowing of the differential between regional gas prices, reflecting the increasing integration of global gas markets.

Global natural gas markets



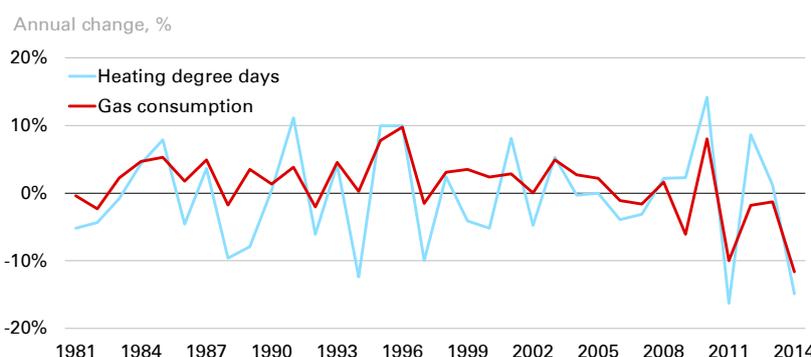
Source: includes data from Platts.

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The weakness in global gas demand in 2014 was driven in large part by EU demand, which fell by almost 12% (-51 Bcm), the largest decline in EU demand on record and causing gas consumption in Europe to fall back to levels not seen since the mid-90s. A large part of this weakness appears to stem from the exceptionally mild winter enjoyed in Europe last year, with so-called heating degree days in Europe at one of their lowest levels on record. Given the past sensitivity of gas demand to temperature variations, last year's mild winter probably accounts for the lions' share of the decline in EU demand.

EU gas demand and impact of weather



Source: includes data from Eurostat and IHS.

Note: heating degree days is an indicator of the impact of temperature on space heating demand.

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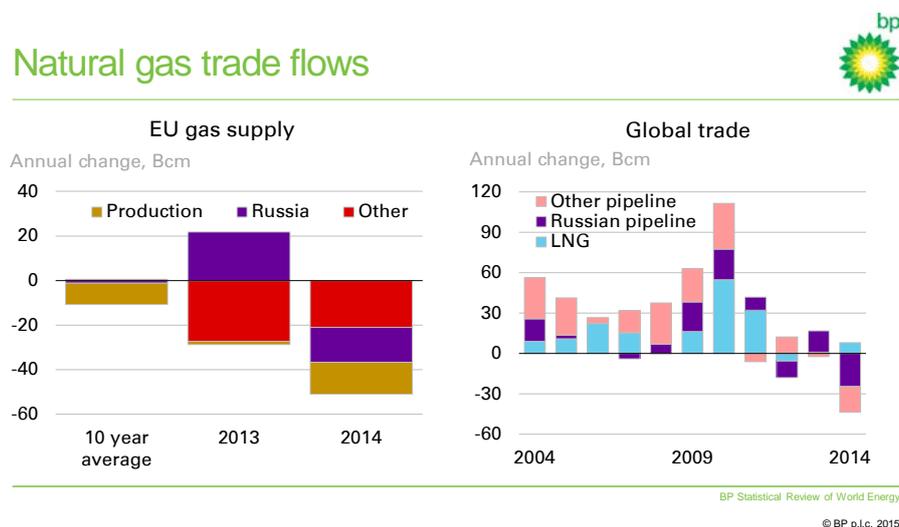
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The weakness in European demand was further compounded by gas continuing to lose share in the power sector, especially to non-fossil fuels.

On the supply side, EU gas production fell by almost 10% (-14 Bcm) in 2014, taking production to its lowest level since the early 1970s. The vast majority of that fall (13 Bcm) was accounted for by the decision by the Dutch government to cap output from the main

Groningen field reflecting concerns about possible earthquakes. But the extent of the fall in demand meant that, despite the reduction in European gas output, gas imports to the EU also declined sharply, with pipeline imports from Russia and elsewhere falling by almost 9%, their largest decline on record.

Natural gas trade flows



The weakness in pipeline gas trade was compounded by the dispute between Russia and Ukraine, which resulted in Russia's gas exports to Ukraine being turned off between June and December last year. Indeed, lower exports to EU and Ukraine, caused Russia's gas production to fall by over 4% (26 Bcm). All told, global gas pipeline trade fell by over 6% in 2014, the largest decline since our trade data began in 1989, and causing total gas trade to fall for only the second time on record.

This weakness in pipeline gas trade was partially offset by an increase in global LNG supplies, which after a pause of two years, increased by 8 Bcm in 2014, with much of that expansion coming from Papua New Guinea.

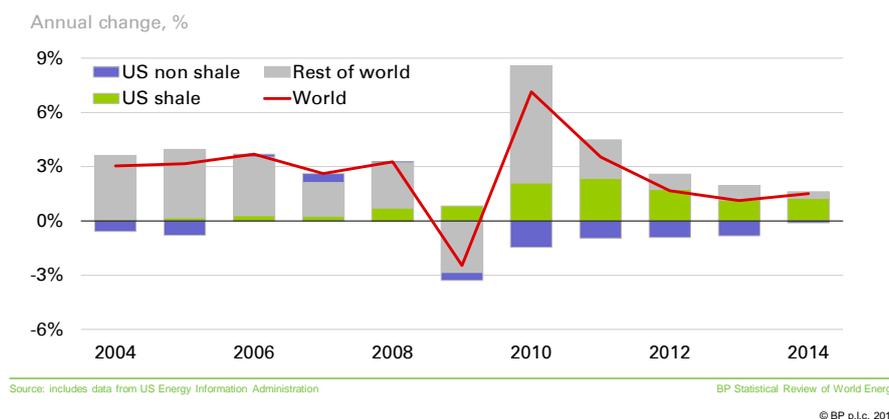
Gas consumption in Asia Pacific was also relatively subdued, with growth slowing to 2.0% (13 Bcm) in 2014, significantly weaker than its 10-year average (6%). In net terms, that slowing can be accounted for by the slowdown in Chinese energy demand, which saw growth in Chinese gas consumption decline from over 13% (20 Bcm) in 2013 to "just" 8.6% (15 Bcm) last year.

The crowding out of gas in South Korea (-5 Bcm) as nuclear capacity came back on stream was offset by pockets of strength elsewhere in Asia Pacific.

The main exception to this story of global gas weakness was, of course, the US, where gas production increased by over 6% (39 Bcm), almost double its 10-year average and

accounting for almost 80% of the increase in global gas production. All of that growth was due to increases in shale gas, which grew by over 13.2%, with the vast majority of that growth stemming from Marcellus and Utica shale. The ample supplies of domestic gas supported US consumption, which grew by almost 3% in 2014.

Global gas production and the role of the US



Coal

Turning next to coal.

For many years, the fortunes of coal have been inextricably linked to China.

To a large extent: China is coal!

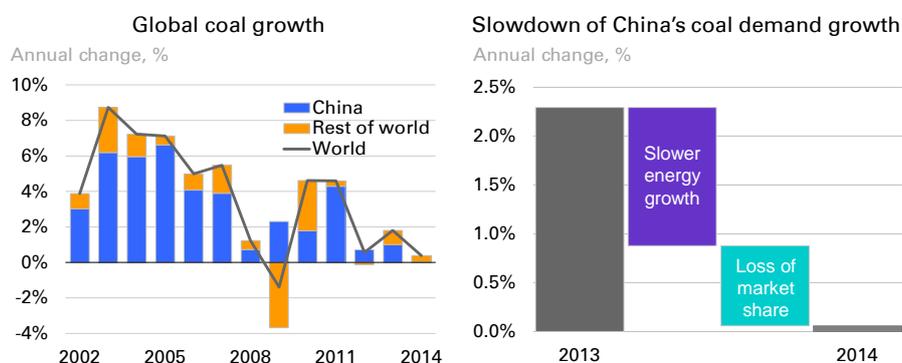
That was true as China industrialized rapidly, causing coal to be the fastest growing fossil fuel over the first 10 years or so of this century. And it was equally true in 2014 as Chinese demand braked sharply and coal became the slowest growing fossil fuel.

Global coal consumption grew by just 0.4% (15 Mtoe), its slowest rate since the Asian crisis in 1998, whilst global production fell (-0.7%, -28 Mtoe). Coal prices responded to this weakening in the coal market, with 2014 prices falling to their lowest level in 5 years.

Perhaps the single most striking number in the whole of this year's Stats Review is China's coal consumption, which is estimated to have essentially stalled in 2014, growing by just 0.1% (1 Mtoe), compared with 2% in 2013 and an average of almost 6% over the past 10 years. Chinese coal production was even weaker, falling by 2.6% (-49 Mtoe).



China coal



So what drove this pause in China's coal consumption?

In part, it's a natural consequence of the generalized slowdown in China's energy demand. As the growth in China's energy demand slowed, the growth in coal consumption naturally slowed with it. This generalized weakening can account for around two-thirds of the slowdown in China's coal consumption.

Over and above that, coal lost out relative to other fuels in China. Some of that lost ground reflected the fact that coal was disproportionately exposed to the industrial sectors most severely affected by the economic rebalancing, such as iron, steel, and construction. Coal also lost share in the power sector, in part as a result of exceptionally strong growth in Chinese hydro power (15.7%), as new capacity came on stream and high levels of rainfall buoyed utilization rates.

So what drove the pause in China's coal consumption? A mix of both structural and one-off effects.

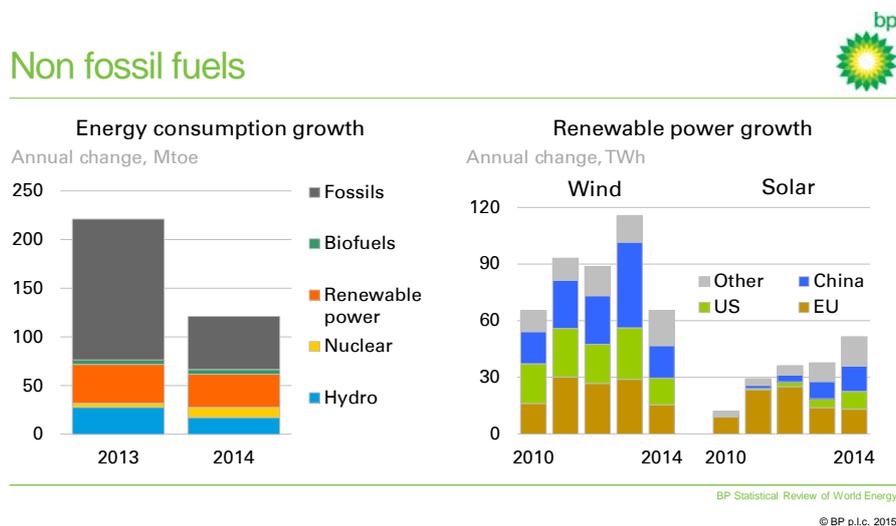
Outside of China, India provided the main source of strength for the global coal market, where both consumption (11.1%, 36 Mtoe) and production (6.4%, 15 Mtoe) grew strongly and posted the largest increments to the global demand and supply of coal. Output growth in Indonesia (2.0%, 6 Mtoe) and Australia (4.7%, 13 Mtoe), which had helped spur robust growth in coal production in 2013, fell back in 2014.

The vast majority of the increased demand for coal in India came from the power sector, enabling total power generation in India to increase by almost 10% in 2014, its strongest rate of increase since 1989. In that context, it's worth remembering that India has one of the largest numbers of people without access to electricity. In a similar vein, Africa (2%)

also increased its consumption of coal in 2014. We have to be careful about being too sweeping in our judgements about the use of coal.

Non-Fossil Fuels

Despite a backdrop of slowing energy demand and weak growth in fossil fuels, non-fossil fuels continued to grow robustly, increasing by 3.7% in 2014, comfortably above their 10-year average (3.2%). The relative resilience of non-fossil fuels meant that they provided a bigger contribution (67 Mtoe) to global energy growth than fossil fuels (55 Mtoe) for the first time for over 20 years, other than when the world economy has been in recession. This despite the fact that non-fossil fuels accounted for less than 15% of total primary energy.



Global hydro power grew by 2.0% (17 Mtoe) in 2014, slower than its 10-year average (3.3%). This aggregate growth masked quite significant differences across the globe. As in recent years, China's hydro power (15%, 33 Mtoe) remained the main source of global strength, but that strength was partially offset by weather-induced declines in Brazil (-5.5%, -5 Mtoe), Turkey (-32%, -4 Mtoe) and the US (-3.7%, -2 Mtoe).

Nuclear power grew by 1.8% (10 Mtoe), with the biggest boost provided by South Korea (12.7%, 4.0 Mtoe) as three nuclear reactors were restarted. The expansion of nuclear capacity in China (13.2%, 3 Mtoe) also supported growth, although this was offset by the one remaining operating reactor in Japan (-3 Mtoe) being taken offline towards the end of 2013. Despite growth over the past couple of years, the level of nuclear power remained 10% below its 2006 level.

For renewable energy, there is both a half-full and a half-empty story.



The half-full story is that growth in renewables (including biofuels) accounted for almost a third of the total increase in primary energy in 2014, and they provided more than 40% of the increase in power generation. So really quite significant contributions.

The half-empty story is that although growth of renewables in power remained robust (12%, 34 Mtoe) in 2014, it was below its 10-year average (15.3%) and was its slowest rate since 2003. This slowdown was driven by wind (10.2%, 15 Mtoe), which grew at less than half its 10-year rate (23.5%), in part reflecting less public policy support in the EU and US. Solar power, which is far less advanced in its development cycle, continued to grow at a breakneck speed (38.2%, 12 Mtoe). The half-empty interpretation is reinforced by the fact that, despite this strong growth, renewables accounted for only 3% of primary energy in 2014.

The half-full and half-empty stories are reconciled by the fact that the year-to-year growth of renewable energy is relatively insensitive to changes in demand conditions. Renewables continued to grow relatively robustly in 2014 despite the sharp slowdown in energy demand and as such accounted for a bigger proportion of the smaller increase in demand. Put differently, the greater sensitivity of fossil fuels to market conditions meant that, in effect, they acted as the swing energy source in response to the demand slowdown.

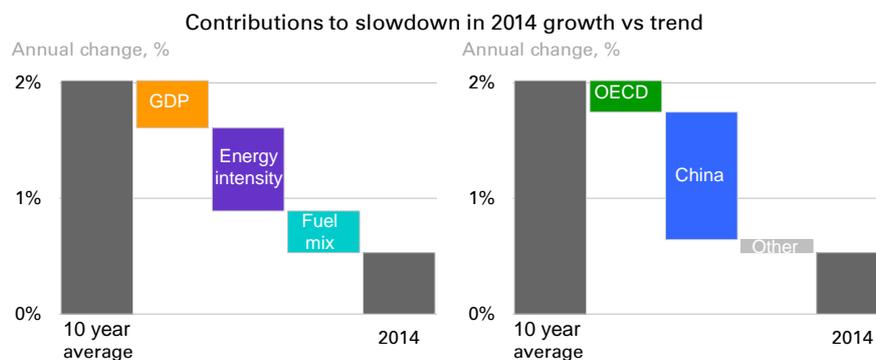
Carbon Emissions

The slower growth of energy demand, together with the shift in the fuel mix, had important implications for the growth of carbon emissions. In particular, global carbon emissions from energy use are estimated to have risen by just 0.5% (187 MtCO₂) in 2014, the slowest rate of growth for over 15 years, other than in the immediate aftermath of the financial crisis.

Emissions growth of 0.5% in 2014 compares with an average annual growth rate over the past 10 years of 2.0%. Around a quarter of the slower rate of carbon emissions in 2014 relative to that 10-year average can be attributed to weaker GDP growth: global GDP (on a PPP basis) grew by 3.3% in 2014, compared with a 10-year average of 3.7%. The most important driver – accounting for around half of the slower rate of emissions – was the faster rate of improvement in energy intensity. This largely reflects the changing structure of the Chinese economy, together with last year's unusually mild European winter causing the one-off fall in heating demand. The remainder of the slower growth reflects the greater than average reduction in carbon intensity associated with the changing fuel

mix in 2014, particularly the slowdown in coal and the greater contribution of non-fossil fuels.

Factors driving slower growth of carbon emissions



Note: these charts show, for each factor or geographic entity, the difference between its contribution to the growth of emissions in 2014 and its average contribution to emissions growth over the past decade.

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Looking at the same slowdown, but this time in terms of the contributions of different geographical regions, it is clear that the vast majority of the slowdown in carbon emissions can be attributed to China, reflecting both the sharp slowdown in consumption growth and the shift in the fuel mix away from coal.

The one trillion tonne question is whether these developments in China are likely to persist – so possibly signalling the beginning of a lower trend in emissions growth – or whether they are likely to reverse in the near future. As we saw earlier, there are good reasons for thinking that some of the slowdown in the growth of China’s carbon emissions was part of the broader structural rebalancing of the economy that is taking place and is likely to continue. But the extent of the slowdown in 2014 also reflected a number of one-off and erratic factors that are unlikely to be repeated and may even get partially reversed.

Conclusions

To conclude.

Following the earlier calm, more normal stormy conditions returned to the world of energy last year.

In years to come, it is possible that 2014 may come to be seen as something of a watershed for the energy industry. Not so much because of the near-term volatility



associated with the sharp fall in oil prices and the various adjustments that triggered. That volatility is more a return to business as usual.

But rather because some of the longer-term trends which are likely to have a huge bearing on the shape of the energy sector over coming years, came to the fore.

The heights scaled by the US shale revolution, sparking a new world order of energy supplies.

The rebalancing of the Chinese economy and its implications for global energy demand and the fuel mix.

And the increasing focus on climate and environmental issues as we all try to tackle the twin challenges of using energy efficiently and sustainably, whilst ensuring it is available and affordable to those that need it most.

So lots of interesting issues for future editions of the BP Stats Review.

Thank you.