Bord Gáis Energy Index
Understanding energy

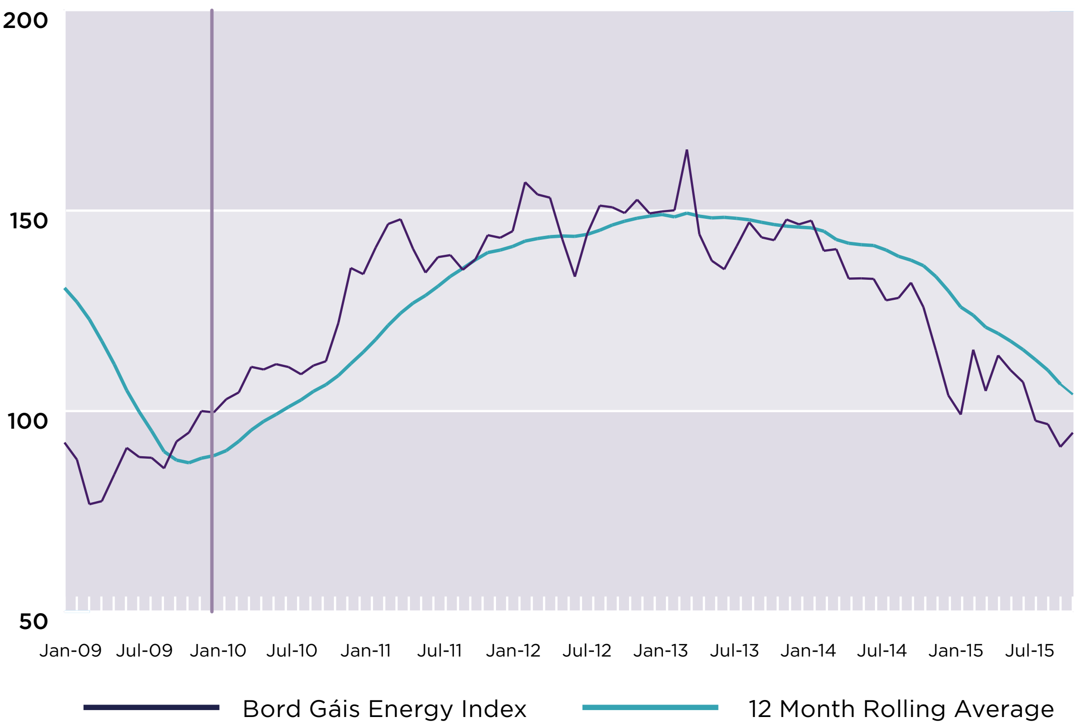
OCTOBER 2015

BGE/EI/UE/1115

Bord Gáis Energy

Bord Gáis Energy Index
October 2015

Bord Gáis Energy Index (Dec 31st 2009 = 100)



%	
4	1 Mth
-3	3 Mth
-25	12 Mth

Summary

The October 2015 Bord Gáis Energy Index rose by 4% month-on-month due to stronger Brent crude oil, European coal and wholesale electricity prices. A weaker euro versus the US dollar and sterling contributed to the month-on-month rise in the Index as the oil, coal and gas used in Ireland trades in dollars and pounds.

Oil prices now appear to be at the mercy of market forces which reflects a significant departure from the past when OPEC, tensions with Iran, the Arab Spring and Islamic State kept prices in a range of between US$100 – US$110 in the years from 2011 and 2014 despite booming US production. Prices now reflect the current supply glut.

In October 2015 the Index stood at 95, which is a four point jump from the record low of 91 points in September 2015.

HOT TOPIC

- The recent peak in oil prices (and other commodity prices) has led to a hugely expanded global natural gas reserve in recent years
- Added to the much reported global oil supply surplus, is now an associated natural gas surplus
- According to Eclipse Energy, a unit of Platts, UK wholesale gas prices will be lower than where they are currently priced, as a result of this expanded reserve and potentially greater LNG arrivals
- Eclipse forecasts that UK wholesale prices could fall to a level at parity with the US wholesale prices which have fallen dramatically in recent years due to growth in supplies as a result of the shale gas revolution

Why have global gas supplies expanded?

Peak oil theory reached fever pitch in 2008 and extended not just to oil but coal and even food. Record high global commodity prices naturally broadened the exploitable gas reserve base. New gas has been sourced (and will be sourced) from various supplies such as coal seam gas (CSG), floating LNG and shale gas.

(Continued overleaf)

Bord Gáis Energy Index (continued)

CSG is a type of unconventional natural gas. It is made up primarily of methane gas (generally 95-97%) and is found in coal seams at depths of 300m-1000m underground. The Santos-operated Gladstone LNG project which shipped its first cargo in October is a coal seam gas to LNG project. Australia is expected to add 60 million tons per annum of new LNG capacity by end of 2020.

Floating LNG (this is a water-based LNG operation employing technologies designed to enable the development of offshore natural gas resources) is expected to provide the means to monetise formerly stranded gas reserves too far from land to warrant a pipeline to shore method of development. The world's first FLNG project – Malaysian state oil company Petronas' Floating LNG 1 – is expected to start production in early 2016, and will be followed by Shell's Prelude project offshore Australia in 2017.

All this comes on top of the development of shale gas in North America, which has increased US' proved gas reserves from 6.7Tcm in 2007 to 9.8Tcm at end of 2014. This has promoted the development of the emergent US LNG export industry, the first cargoes from which should hit the market in 2016.

Investments in LNG production and transportation technologies have also been key factors in the expansion of gas supplies that has resulted in the current gas surplus.

The benefits of more mobile gas

This new wave of gas that can arrive anywhere in the world in the form of LNG represents a new source of supply for countries formerly dependant on pipeline gas. In the past Europe's lack of supply diversity meant that contractual structures evolved amid a high degree of market captivity and the mutual interdependence of single source pipelines that have led to Long Term Contracts, oil indexation arrangements, third-party access exemptions, take-or-pay obligations. The new gas wave has the potential to erode these arrangements and liberalise the markets to the benefit of the end user.

According to Platts, Western Europe has excess under-utilised LNG import capacity and two new LNG terminals have been built on the Baltic Sea coast, one in Lithuania and one in Poland. LNG therefore presents a threat to Russian supplies as buyers become less captivated and seek to reduce their reliance on single source Russian gas. The legacy of the Ukraine crisis has raised question marks around the security of gas supplies. Amid weak economic growth and competition from coal and renewables, Europe is unlikely to build additional LNG import infrastructure. However, LNG's primary value is often in the optionality it provides and there is a need for additional LNG infrastructure if pipeline supplies are unwilling to meet the price which that infrastructure implies.

Will more mobile gas lead to global price divergence?

In recent years we have seen huge differentials between regional gas markets with the starkest being between gas in the US at sub-$3/MMBtu and spot LNG sold into Asia at as much as $20/MMBtu. Asian prices spiked following the closure of Japan's nuclear fleet due to the Fukushima disaster, nuclear problems in South Korea and rising LNG demand from China. Now, amid increasing LNG supply the price differential between Asian and other gas regions/hubs, including the UK, has narrowed substantially. The price convergence now seen suggests that a global gas market has indeed been created. Key to this has been the advent of LNG. Most importantly, given the gas glut, the differential between regional pricing is the cost of transportation. These prices have converged at the lowest point as suppliers cannot price gas sufficiently to recoup long-term investment costs.

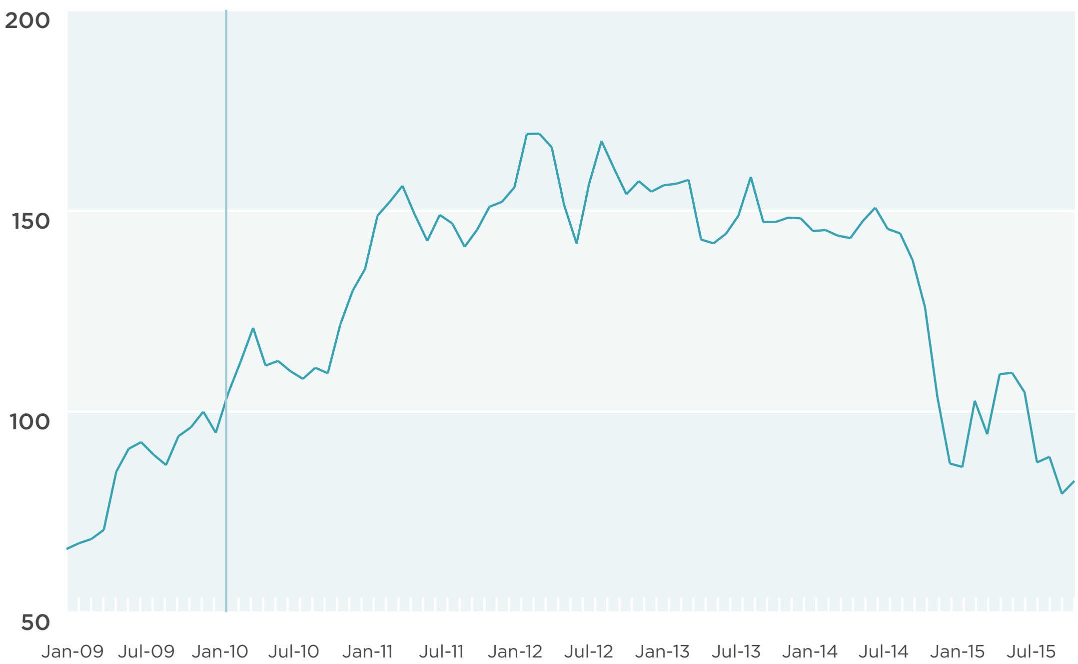
Will the gas glut continue?

As prices converge at the lowest price, there is a threat to new LNG export capacity. However, LNG capacity offers strategic value to sellers to access markets beyond the reach of pipelines or to monetise an unexploited natural resource. For buyers, it erodes their dependency and capacity to pipeline interconnections. According to Platts, "since the momentum behind the build out of new LNG capacity is substantial – lasting out to 2020 – and the volumes large – a potential increase of 55% on the LNG volumes traded in 2014 – it is likely that the LNG market will take some time to rebalance. The gas industry is thus in the early stages of a cyclical hangover that has some time to run".

Bord Gáis Energy Index

October 2015

Oil Index



%	
4	1 Mth
-5	3 Mth
-34	12 Mth

*Index adjusted for currency movements.

Data Source: ICE

Oil

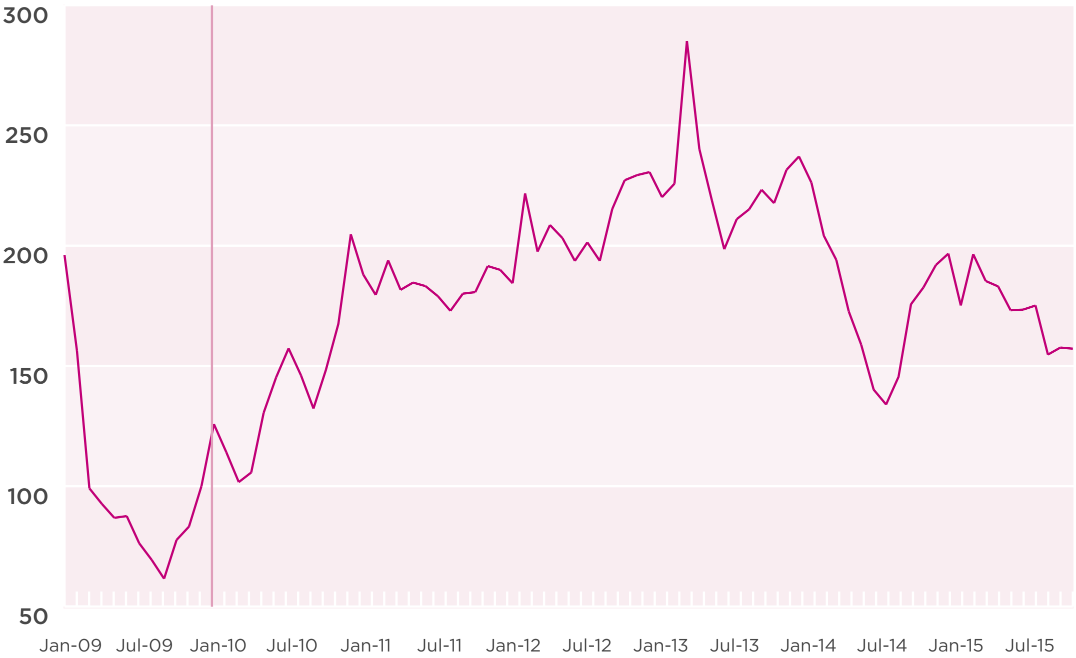
- Month-on-month the front month Brent crude oil price was little changed and closed October at US$49.56, a gain of just US$1.19 a barrel
- However, intra-month prices were choppy as the market reacted to daily supply and demand factors
- Prices are now being governed by the laws of supply and demand and this development marks a departure for now from OPEC's influence on global prices

Month-on-month the front month Brent crude oil price was little changed having closed October at US$49.56 following a September close of US$48.37. The front month Brent crude oil price recorded an intra-month closing high of US$53.05 on October 8. Prices rallied on concerns that Russian military operations in Syria could raise the risk of oil flow disruption in the region and minutes from the U.S. Federal Reserve's policy meeting that implied a further delay in higher interest rates. Prices hit a low of US$46.41 on October 27 on persistent concerns about global over supply. Traders awaited weekly data that was expected to show another increase in already-high U.S. crude inventories (the inventory news was less supportive of prices than expected and Brent crude rose the following day). On the day, traders also remained cautious ahead of the U.S. Federal decision and China's Fifth Plenum. The price movement intra-month revealed the choppy nature of the market as traders assess prices in response to the latest supply and demand news.

With little hope of an OPEC output cut, prices are being governed by the laws of supply and demand and this development in itself is remarkable. Output has behaved as it should when prices are low: American production is expected to fall until mid-2016. Stocks are high, yet only now are up to US$200 billion-worth of big investment projects being cancelled. Global demand remains firm, but uncertainty about the strength of the world economy hangs over it. The interplay of these three factors is making prices unusually choppy. This is healthy and reflects a significant departure from the past when OPEC, tensions with Iran, the Arab Spring and Islamic State kept prices in a range of between US$100 – US$110 in the years from 2011 and 2014.

Bord Gáis Energy Index
October 2015

Natural Gas Index



%	
0	1 Mth
-10	3 Mth
-14	12 Mth

*Index adjusted for currency movements.

Data Source: Spectron Group

Natural Gas

- In sterling terms the average wholesale UK Day-ahead gas price weakened 4% month-on-month. However, euro zone buyers of British gas did not see these benefits as the euro weakened against other major currencies
- Despite rising demand, the surge in LNG terminal sendout (see this month's Hot Topic) contributed to ample gas supplies and lower wholesale prices in Britain

The average Day-ahead wholesale UK price for October was 39.45 pence per therm, which in sterling terms is 22% lower year-on-year and 4% below the September outturn. The October outturn in recent years was 50.32p in 2014, 64.87p in 2013 and 64.24p in 2012.

Low temperatures mid-month, an increase in exports to Belgium and high storage injections helped push total demand 14% higher, year-on-year, over the month. However, this increased demand was comfortably met by a surge in LNG terminal sendout, which more than tripled on the year to 1.44 bcm. A total of 12 LNG deliveries were recorded in October - the highest monthly total for the year to date and up three from the nine deliveries in September.

Further out on the curve prices continued to soften in October. The front season, summer 2016, contract traded 2.7p/th lower over the month, while winter 2016 finished the month 2.8p/th lower at 41.14p/th. Gas prices fell despite an increase in oil prices over the month as the market anticipates increased LNG supplies in 2016 (see this month's Hot Topic). A wave of new LNG projects, particularly from the United States and Australia, are forecast to push the LNG market deeper into oversupply in the coming years on the expectation of a 44% increase in global liquefaction capacity by 2020.

As reflected in the continued weakness in wholesale prices in early November, the market prices remain soft in the short-term on the expectation of weak seasonal demand due to warmer weather in November and strong supply. However, unforeseen events cannot be ruled out especially given the dependence in the UK and Ireland on imported gas that are sensitive to events anywhere from Japan to the US that can trigger supply disruption.

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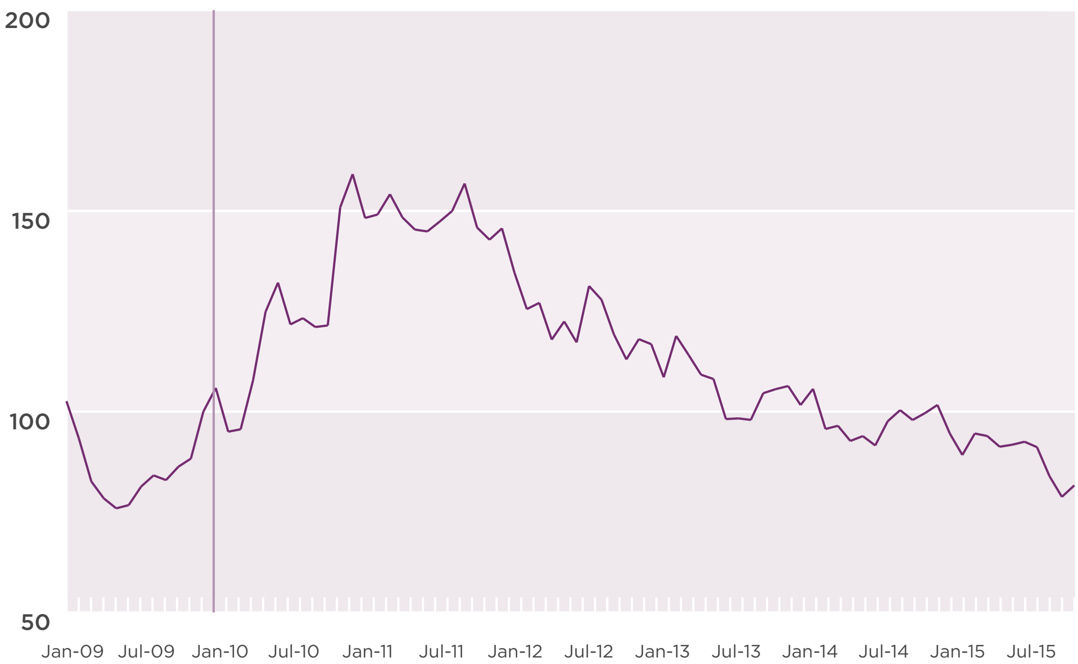
Coal Index



%	
4	1 Mth
-10	3 Mth
-18	12 Mth

*Index adjusted for currency movements.

Data Source: ICE

Coal

- Month-on-month there was a modest rise in European coal prices
- Concerns over reduced Russian supplies and elevated buying interest supported European coal prices in October

With little volatility, the ICE Rotterdam Monthly Coal Futures Contract rose modestly in price from the record lows during September to close at US$52.45/mt on October 30. This represents a US$1.05/mt gain month-on-month.

During the month prices received a boost on concerns that spot Russian availability in northern Europe might be tighter than expected. It was reported that the monthly coal futures price received support due to the lack of Russian coal availability and the rebound of the general energy commodity complex in early October (the front month Brent crude oil price recorded an intra-month closing high of US$53.05 on October 8) rather than an ongoing mine workers' strike in South Africa (the market is not reportedly concerned about the strike affecting the export market, as stocks at Richards Bay Coal Terminal remained high and there were expectations that the industrial action would be resolved soon).

It was reported that Russian coal rail volumes transported to Latvian ports had dropped by around 30%. However, prices did not rally on these concerns as European coal hubs are receiving more US coal and even some Colombian coal cargoes are available for the first quarter of 2016. In addition traders are saying that there was more than enough coal supply in the Amsterdam-Rotterdam-Antwerp trading hub to go around, with about 1 million mt of South African coal heading to Rotterdam in the next few months. Toward the end of the month, buying pressure at the very front of the CIF ARA curve continued to push up nearby November and December European thermal coal futures. The support is reportedly due to some European utilities being short of spot physical coal.

The outlook for European coal prices is to remain around the US$50/mt given that the market is long and there is no producing country that shows any major issues. However, it is not long enough that a supply problem could not turn it tense, such as with a strong winter in Europe, a prolonged rainy season in Colombia, or an extended miners' strike in South Africa.

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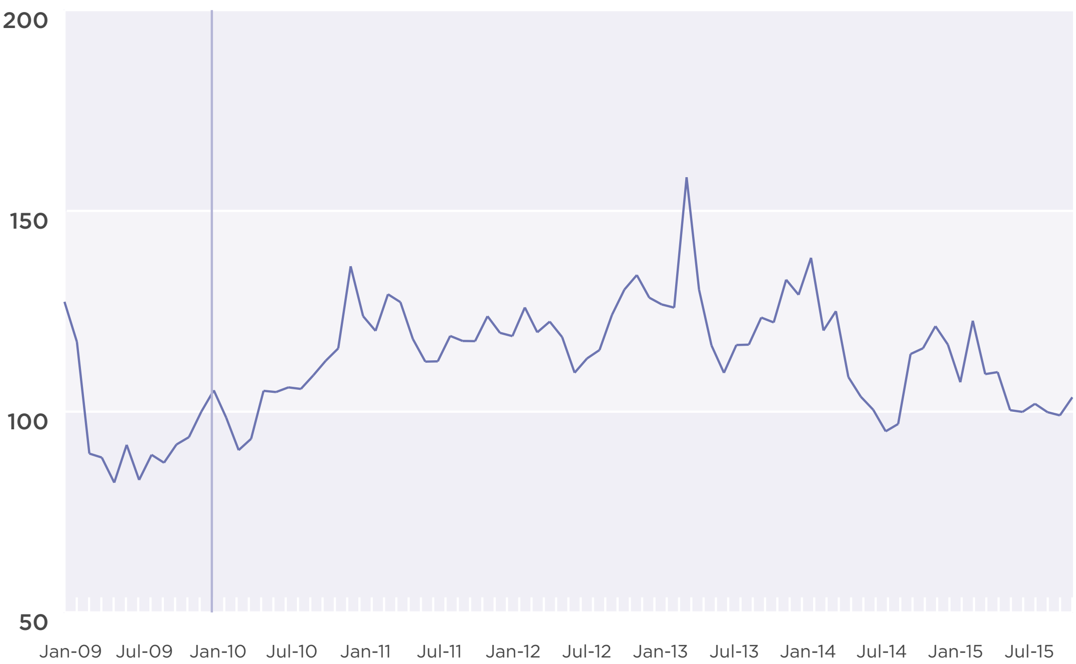
Electricity Index



%	
5	1 Mth
2	3 Mth
-11	12 Mth

Data Source: SEMO

Electricity

- Irish wholesale prices rose slightly month-on-month with demand starting to edge towards more typical winter levels
- The rising wholesale electricity price can be attributed to a combination of rising demand which was up approximately 4% on September levels and low or inconsistent wind

Despite falling UK prompt gas prices in sterling terms, Irish wholesale prices rose slightly month-on-month with demand starting to edge towards more typical winter levels. Month-on-month the average wholesale price of electricity rose by 5% in October. Excluding supplier capacity payments the average wholesale price for October was €49.72 compared to €48.97 in September, a rise of €0.76/MWh on the average monthly wholesale price.

In general the wholesale price of electricity can be assessed by examining three components:

- the UK wholesale cost of gas
- the European-wide price of emitting one tonne of carbon
- the clean spark (in general terms, the clean spark is what a gas powered generator receives in energy payments from the market once the cost of producing a unit of electricity is deducted)

The wholesale cost of imported gas from the UK decreased month-on-month by 4% in sterling terms but due to the weakness of the euro this decrease was not seen by euro zone buyers of British gas. The influence of steady wholesale gas prices was offset by the growing demand and low wind levels observed for most of October.

A monthly clean spark of over €9/MWh was recorded in the month, which was up markedly on the sub €7/MWh observed in September. The average spark year-to-date is close to €7.25/MWh. The rising spark can be attributed to a combination of rising demand which was up approximately 4% on September levels and low or inconsistent wind. Month-on-month wind levels were down approximately 3% in October but even when the wind was blowing, wind patterns proved to be inconsistent and levels often dropped during periods of high demand, triggering spikes in spark.

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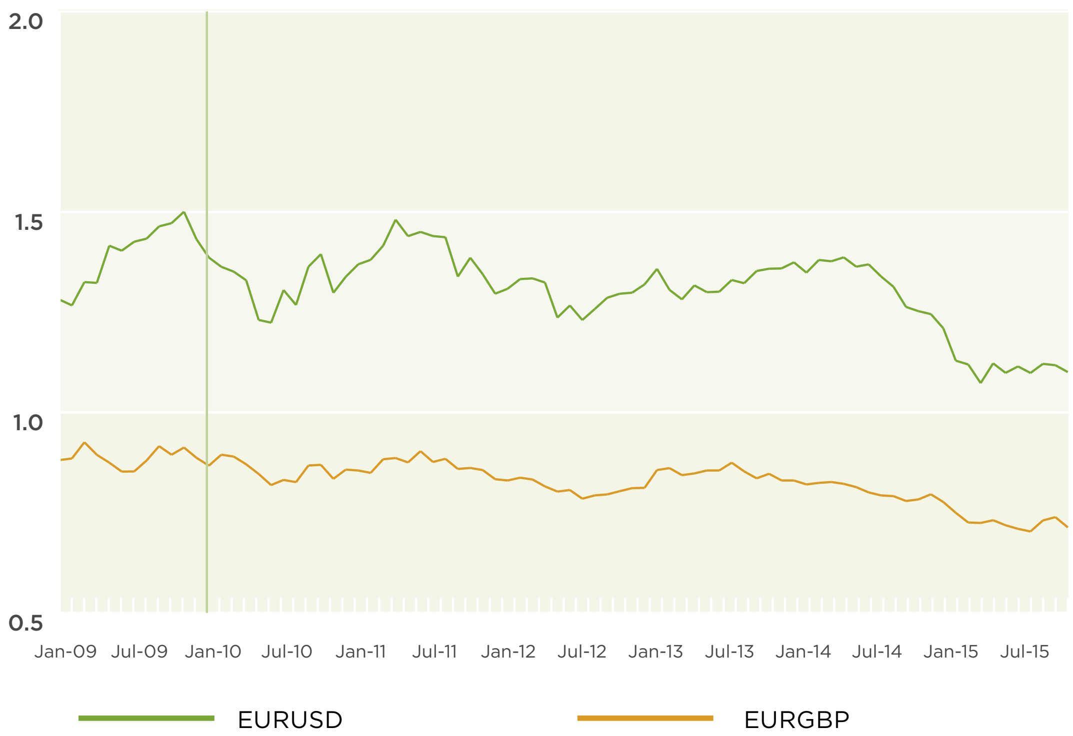
FX Rates



EURUSD %

-2	1 Mth
0	3 Mth
-12	12 Mth

EURGBP %

-3	1 Mth
1	3 Mth
-9	12 Mth

FX Rates

- In October the euro weakened against the US dollar and sterling on the expectation that the ECB will provide additional monetary stimulus to the euro zone economy
- Sterling and the dollar benefited from expectations of rate hikes
- Given the decisions facing the ECB and the Federal Reserve and Bank of England, the first great divergence in monetary policy since the financial crisis of 2008 is looming

Again FX movements have been dominated by the market's assessment of rate hikes in the US and UK (the sooner the markets expect a hike, the stronger these currencies become). The possibility that the ECB will provide further support to the euro zone economy (the more support the ECB offers, the weaker the euro becomes).

During the month the Federal Reserve left rates unchanged at a target range of 0-0.25%, but a change in the tone of its policy statement gave the dollar a boost. Policymakers downplayed the risks to America's economy from global economic headwinds and left open the possibility of a rate rise in December. In the UK, several of the bank's rate-setters doggedly believe that inflation, now essentially zero, will soon rise to the 2% target; and the quarterly growth of 0.5% reported in October for the third quarter did not dampen expectations.

With lots of chatter about a Bank of England rate increase early next year the pound is gaining in strength. In contrast to the expectations engulfing the Bank of England and US Federal Reserve on when they will scale back their accommodative policies, the chatter from the ECB is that Draghi is willing to re-examine in December the degree of monetary policy accommodation it is providing. Renewed declines in energy prices and slowing global trade are making it harder for the Frankfurt-based ECB to meet its inflation target of just under 2 percent, with price gains slipping into negative territory in September. The ECB has yet to detail how it could adjust its existing 1.1 trillion-euro (US$1.2 trillion) quantitative-easing program or add other stimulus but expectation of an adjustment weighed on the euro following signals given at the Governing Council's meeting on October 22 that the ECB is willing to add further monetary stimulus. Given the decisions facing the ECB, the Federal Reserve and Bank of England, the first great divergence in monetary policy since the financial crisis of 2008 is looming. So watch out for excitement in foreign-exchange markets in the weeks ahead.

Market Outlook

In early November the International Energy Agency (IEA) released its annual outlook for oil prices. Below is a synopsis of the report:

The outlook for demand

The IEA said oil demand would rise by less than 1 percent a year between now and 2020, a slower pace than necessary to quickly mop up an oil surplus that has driven prices to multiyear lows. As reported by the Financial Times, the slowdown in oil demand growth follows a near 15-year surge in consumption, driven by the rapid industrialisation of China and other emerging market economies. But Beijing is now moving away from dirtier fuels and to less energy-intensive growth as it moves towards a more consumer-led economy.

According to the IEA we are approaching the end of the single largest demand story in energy history with the slowdown in Chinese demand and this has contributed to the collapse in oil prices along with the drive for efficiencies and climate change policy. Pledges made in advance of the Paris climate talks in December, would be a further catalyst in the move towards a low carbon and energy efficient future. Further evidence of China's dramatic economic slowdown emerged in October on the news that its foreign trade in October again fell sharply against the same month last year. Imports were down by 18.8%, compared with 20.4% in September. Exports fell by 6.9%, worse than the 3.7% decline the previous month. Total trade for the first ten months of 2015 was down by just over 8% year-on-year.

The outlook for prices

The IEA does not expect crude oil to reach US$80 a barrel until 2020, under its "central scenario", as excess supplies are slowly soaked up. After 2020, oil demand growth is expected to grind almost to a halt, increasing just 5 percent over the next 20 years. However, a prolonged period of lower oil prices could not be ruled out according to the IEA. In this "low oil price" scenario, the agency said prices would stay close to US$50 a barrel until the end of the decade and would not rise to US$85 until 2040. According to the Financial Times, after years of oil above US$100 a barrel, the "lower for longer" mantra has become part of the industry lexicon, promoted by traders, bankers and even the IEA itself as global inventories swell and storage fills up. The global oil market remains oversupplied by at least 1million barrels a day. Since November, production outside of the OPEC cartel from countries such as the US has taken a hit. But it has been far more resilient than expected. Meanwhile, production from the cartel — led by Saudi Arabia and Iraq — has increased, helping to keep prices low.

Should we be concerned about low oil prices?

According to the head of Abu Dhabi's Department of Economic Development, oil at US$50 a barrel is a "gift to the world" as prices should be low enough to spur economic growth. However, there are supply concerns associated with a prolonged period of lower prices and Saudi officials warned last week that investment cuts and oil prices at about US$50 for an extended period of time would have a "substantial and long-lasting" impact on future oil supplies and could lead to a price spike. The global oil and gas industry will need to keep spending US$630billion on exploration and production each year just to maintain output at current levels as aging fields decline. But the IEA expect investment to be cut by 20 percent this year and to drop further in 2016. These cuts will ultimately reduce non-OPEC supply growth in the years ahead. US drillers have cut the number of rigs in use by an unprecedented 63 percent in the past year and daily production has fallen by 450,000 barrels from its June peak. The IEA expect that US shale production will plateau at 5million barrels a day early next decade and then gradually decline as costs increase and operators exhaust the most prolific areas.

By 2040 global oil supplies could be in the hands of a few

By 2040, with the decline in non-OPEC supplies, OPEC could account for almost half of global oil production. An over-reliance on a small number of producers would of course trigger concerns. However, by 2040 the IEA expect that oil consumption in the US, the EU and Japan will have dropped by 10million barrels a day because of rising prices, efforts to phase out fuel subsidies, energy efficiencies and increased use of alternative fuels.

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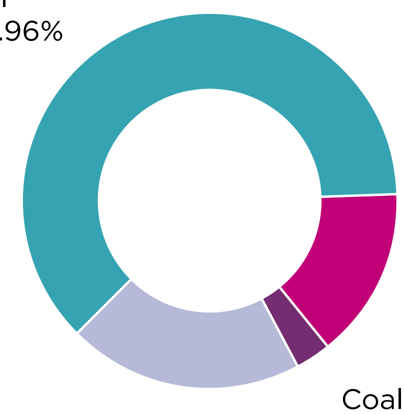
Re-weighting of Bord Gáis Energy Index

Following the SEAI's 2011 review of energy consumption in Ireland, there was a 6.4% drop in overall energy consumption. Oil continues to be the dominant energy source with most of the oil used in transport and the remainder being used for thermal energy. For the purposes of the Bord Gáis Energy Index, the total final energy consumption in Ireland fell 1,089 ktoe (toe: a tonne of oil equivalent is a unit of energy, roughly equivalent to the energy content of one tonne of crude oil) between 2009 and 2011. This fall was made up of a 1,022 ktoe drop in oil consumption (down 13.5%), a 20 ktoe drop in natural gas (down 12.6%), a 7 ktoe drop in electricity (down 0.3%) and a 40 ktoe drop in coal (down 10.98%). The Bord Gáis Energy Index has been re-weighted in January 2013 to reflect the latest consumption data. The impact has been minimal and has resulted in slight reductions in the share of oil and gas and a slight increase in the weighting of electricity in the overall Index.



For more information please contact:

Bord Gáis Energy — **Pressoffice@bge.ie**
or Alan Tyrrell at PSG Plus 086 850 8673