Bord Gáis Energy Index

Understanding energy

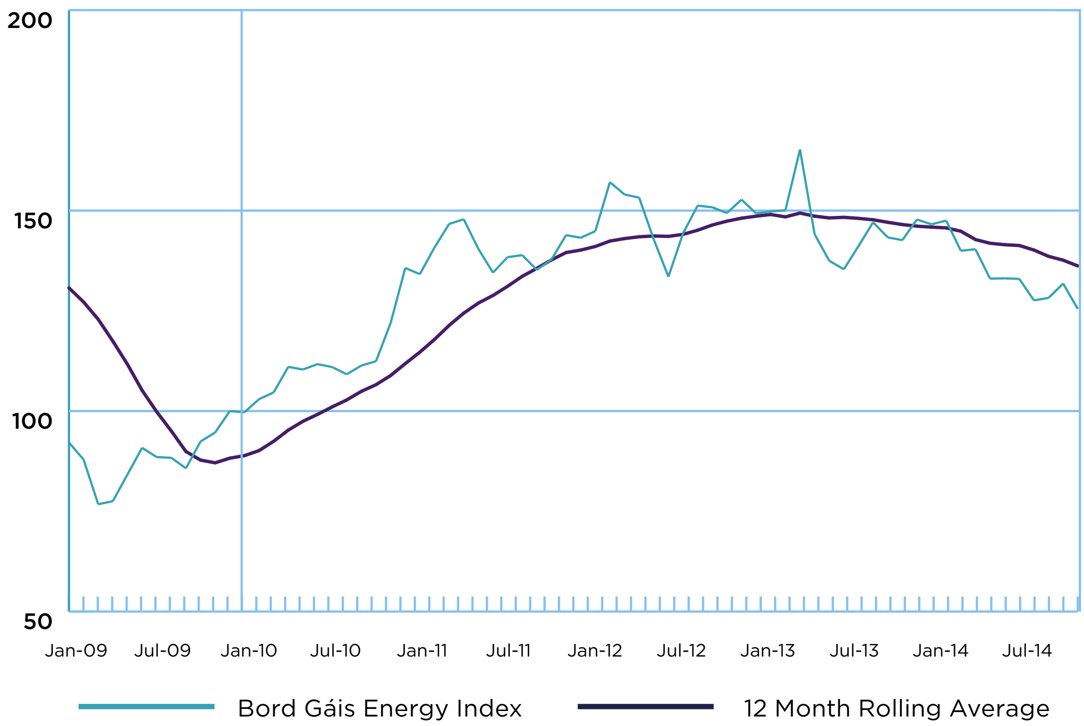
OCTOBER 2014

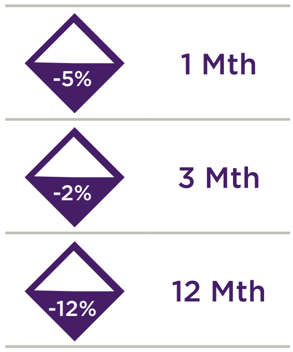
BGE/EI/UE/1114

Bord Gáis Energy Index

Significant Decrease in Global Wholesale Oil Prices (-9%) as Bord Gáis Energy Index Falls by 5%

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





Summary

The October Bord Gáis Energy Index fell 5% month-on-month due to a plunge in global oil prices.

Having traded at over US$115 per barrel in June, oil prices have fallen by over 25%. For some the fall reflects the reality of a new era in world oil, with the global emergence of North American supply being a key factor. With global oil supply growth outstripping demand, there is a glut of oil in what is appearing as a Post Oil Peak new reality. In response to surplus supplies and a shrinking market for OPEC oil, key producers such as Saudi Arabia and Iran reportedly slashed prices to defend market share. Despite reports of a price war being described as premature, the market did interpret these price cuts as evidence of a new era in the oil markets against a backdrop of slowing economic growth, particularly in Asia, and wholesale prices fell dramatically.

In October 2014 the Index stood at 125.

According to a UN-backed expert panel, the unrestricted use of fossil fuels should be phased out by 2100 if the world is to avoid dangerous climate change. To achieve this the panel is of the view that most of the world's electricity can - and must - be produced from low-carbon sources by 2050. The report suggests renewables will have to grow from their current 30% share to 80% of the power sector by 2050. A central plank of EU climate policy is the Emissions Trading Scheme (ETS). The purpose of the scheme is to restrict the overall volume of greenhouse gases that can be emitted by the power plants, factories and other fixed installations. The ETS covers around 45% of the EU's greenhouse gas emissions. Due to the scheme, when these businesses emit carbon, they pay a price for that. The higher the price of a carbon credit, the higher the cost for the business and the higher the incentive for that business to avoid that cost. However, as these credits are currently being offered into an over supplied market the cost of emitting carbon is considered too low to push heavy carbon emitters out of the system. Despite the environmental impact there are short-term economic advantages to low prices as power plants, factories and other fixed installations are currently paying less for the carbon they emit. Lower costs are welcome at a time when EU economies are struggling to grow. As other economic regions do not face similar carbon costs, a low price helps Europe compete. Environmentalists and carbon investors say high prices are necessary because the system is failing to send an adequate price signal for low carbon investments. If it's cheap to emit carbon, utilities and businesses have little incentive to invest in new technologies. To address the low cost of emitting carbon, the European Commission has taken steps to address growing surplus allowances. These actions have pushed the price of emitting a tonne of carbon from a low of €2.88 per tonne to the current price of €6.59 per tonne but the cost is still relatively low compared to historic costs of near €38 per tonne. A failure to 'green' the economy will mean that the EU will remain fixed and overly dependent on fossil fuels and perhaps vulnerable to future shortages and price spikes. Of course the warning from the UN-backed expert panel is perhaps a more pressing reason for change and higher carbon prices will encourage less coal burn across Europe. Coal is by far the most polluting source of electricity, with more greenhouse gas produced per kilowatt hour than any other mainstream fossil fuel. Due to weak European coal prices, the amount of electricity generated from coal has been rising in some European countries and this will be a cause for concern. As an example of how commercially advantageous it is to burn coal, based on current prices and the cost to emit a tonne of carbon, it is estimated in early November that wholesale gas prices in the UK would have to fall over 14p/th in December or over 25% to replace heavy coal plant emitters with cleaner gas plants. So despite the environmental concerns and the Commission's efforts to push up the price of carbon, Europe's main climate change policy has a lot to do.

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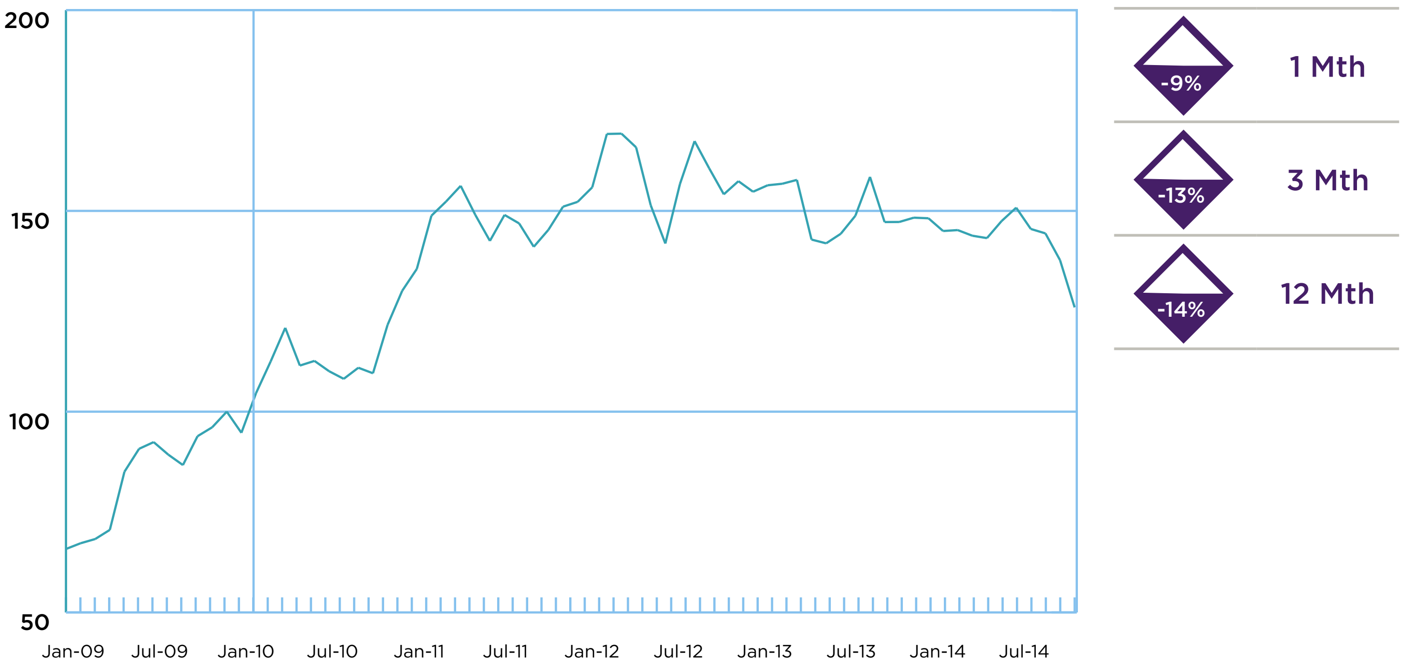
Oil Index



*Index adjusted for currency movements.

Data Source: ICE

Oil

In October Brent crude oil prices plunged to a low of US$83.78 per barrel. Having traded at over US$115 per barrel in June, oil prices have fallen by over 25%. For some the fall reflects the reality of a new era in world oil. Oil's dramatic fall was initially triggered in September by an International Energy Agency report that projected lower 2014 and 2015 global oil demand growth due to a weaker growth outlook for Europe and China. Weaker global growth coupled with a resurgence of North American supply weighed heavily on prices.

Downward momentum continued in October on reports that Saudi Aramco (the Saudi Arabian national petroleum and natural gas company) reduced its prices in all regions. In early November Saudi Aramco continued to slash prices when it lowered the premium for Arab light relative to US Gulf Coast. The move could be interpreted as an attempt by Saudi Arabia to challenge the growing threat of the US tight, light oil revolution to its dominance of global oil markets. In response Iran reportedly cut its official selling prices in Asia. As OPEC supplies fight to retain market share in an increasingly competitive global market for OPEC oil, reports of a "price war" circulated. News that Saudi Arabia increased production in September amid robust global supplies contributed to the bearish sentiment that has gripped the market in recent months. The picture of robust supply in a post peak oil world was further bolstered with news of a month-on-month production growth out of Libya and Iraq. A growing expectation that OPEC would not cut its production targets at its next meeting in Vienna on November 27 also weighed on the market. The market expects OPEC to remain neutral unless the price of oil drops below US$80 per barrel.

Despite the overall weakness in prices month-on-month, Brent crude prices did bounce modestly from a low of US$83.78 per barrel mid-month to close at US$85.86 per barrel. Why? Despite rising Saudi Arabian production, it supplied less to the market month-on-month with a greater share of its production going into storage. Short-term demand fundamentals were also supported by data showing higher crude purchases out of China. After a net draw of 15 million barrels from June to August, Chinese crude stocks increased by 14 million barrels a day in September as crude prices softened. The timing of this crude purchase acceleration brought a pillar of price support. Libyan oil production growth, despite being positive, appeared to stall somewhat at around 0.8-0.9million barrels a day and expectations that it would reach 1.5million barrels a day by November fizzled out.

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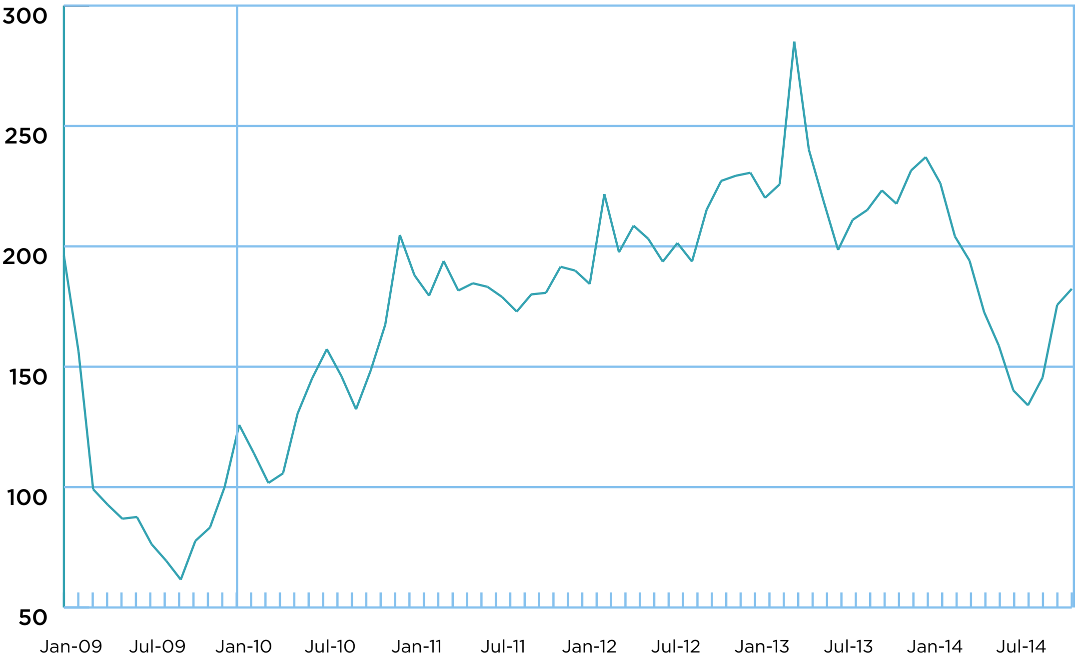
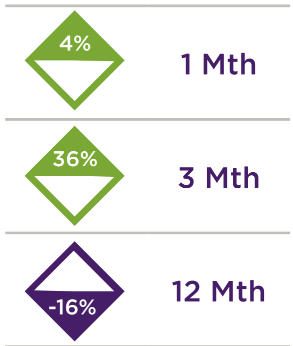
Natural Gas Index





*Index adjusted for currency movements.

Data Source: Spectron Group

Natural Gas

The average Day-ahead gas price for October was 50.24p per therm (p/th), a 4.3% increase on the September average of 48.15p/th. A seasonal reduction in temperatures of 2.5°C in October pushed demand up from an average of 164mcm per day in September to 201mcm, a 23% increase in demand which nudged prices higher. Minor supply issues also contributed to higher prices. UK gas supplies were impacted by a combination of minor North Sea outages and a continued reduction in LNG supply flows, which fell from an average of 30mcm per day in September to 14mcm. This left the system undersupplied, particularly during the middle of the month, and supported prompt prices.

The average price of 50.24p/th remained the lowest average October Day-ahead price since 2010, when the outturn was 45.5p/th, and compares favourably with prompt prices 2011-2013, which were 54p, 64.2p and 64.85p respectively. Despite the month-on-month increase, low wholesale prices are being driven by historically high stocks and no evidence that winter 14/15 has arrived.

After several rounds of tough talks a deal was reached, through EU mediation, for Russia to resume gas supplies to Ukraine. Russia moved on June 16 to turn off gas supplies to Ukraine after complaining that Ukraine had failed to pay off its debts, estimated at over US$5bn by Russian state-run giant Gazprom. Moscow's decision in April to raise the price of gas sold to Ukraine by 80% from US$268.5 per 1,000 cubic metres (cu m) to US$485 was a key reason for the dispute. The agreement reached will require Ukraine to make two payments this year to clear most of its gas debt. There will be an immediate US$1.45bn payment followed by a second tranche of US1.65bn with both payments based on a unit price of US$268.5 per 1,000 cu m. This was the price Ukraine was paying before Russia cancelled discounts and the price rose to US$485 per 1,000 cu m. Ukraine has US$3.1bn of IMF aid in a special account. The balance of the debt will be paid in 2015. However, the quantity and price are the subject to international arbitration with a decision expected next summer. New Russian gas supplies will cost Ukraine US$378 per 1,000 cu m to the end of 2014, and US$365 per 1,000 cu m in the first quarter of 2015. The resolution of this dispute was important to Europe as a series of stress tests on 38 European countries warned that any prolonged disruption of Russia's gas supply could have left households "out in the cold". As Ukraine requires Russian gas over the winter period, European countries feared that in the absence of resolution, Ukraine would have siphoned off western bound supplies. Russia supplies around 30% of the EU's gas, around half of which is transited through Ukraine. Ukraine foresees buying up to 4bcm before the end of the year under the agreement. Supplies for 2014 will resume as soon as Ukraine makes the first debt repayment and

(Continued overleaf)

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Natural Gas Index (continued)

transfers pre-payments for new volumes. Supplies for 2015 depend on Ukraine making the second debt payment by the end of the year. The resolution of this dispute in October contributed to significant falls in forward wholesale gas prices with the front months down on average by over 4p/th. Similar weakness was seen in the forward quarter and seasonal contracts.

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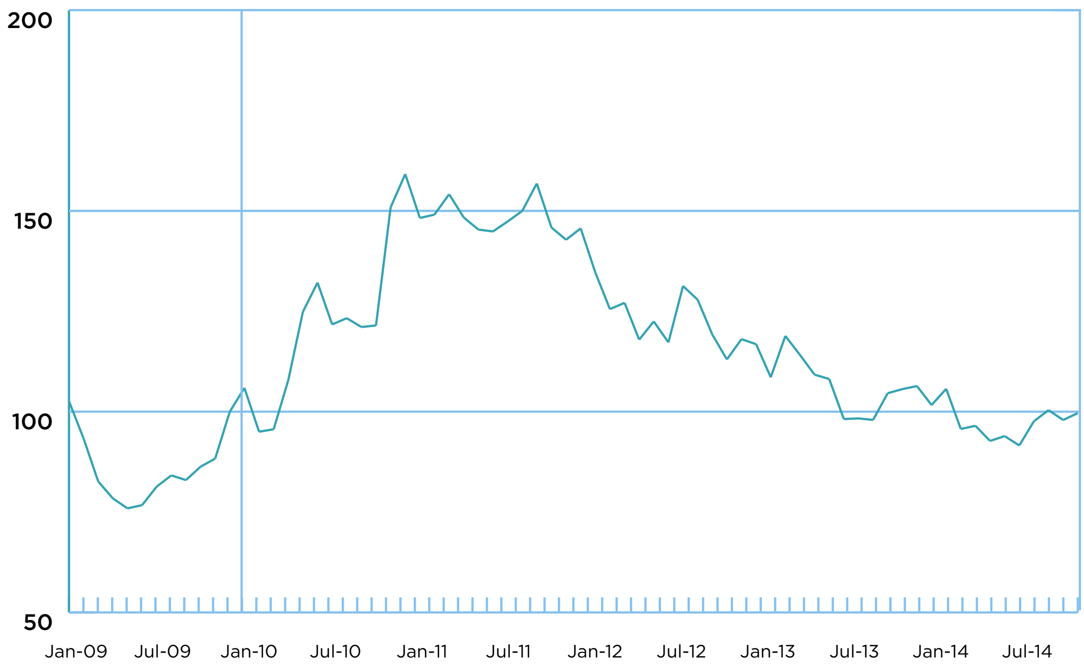
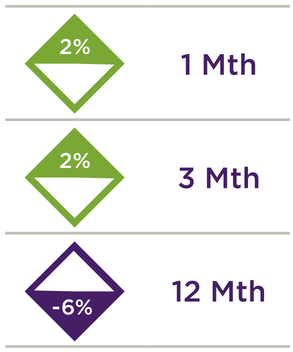
Coal Index





*Index adjusted for currency movements.

Data Source: ICE

Coal

In euro terms the front month European wholesale coal futures contract rose 2% month-on-month with the rise attributed to a stronger US Dollar. However, in Dollar terms, prices were more-or-less unchanged and closed at US$72.85/mt compared to the September close of US$72.20/mt. On October 16 the price closed at a monthly low of US$71.95/mt which was also close to a five year low. Normally Q4 is a time for prices to pick up due to rising weather related demand but with winter 14/15 failing to make an appearance, wholesale coal prices remained soft. Supplies also remain robust with reports that Colombian producers are “relaxed” as their production costs are less than US$50/mt. The European coal market continues to be described as “oversupplied”. Russian producers, as well as miners in other countries, are reportedly receiving “good margins” when selling thermal coal to Europe, due to the weak Ruble and other local currencies and a strong dollar. Weaker European gas prices, falling Brent crude prices and concerns about future euro zone and global economic growth also weighed on sentiment.

Across a wide range of commodities, prices are falling and sometimes falling fast. The Bloomberg commodity index - which acts as a benchmark for commodity investment - fell to its lowest level in five years towards the end of October. Prices are being pushed down by the increasing supply of most commodities and a weakening global economy, including a slowing China, the world’s largest consumer for many of these raw materials. Whether it is oil, corn, iron ore, coal, cotton or copper, prices are falling quickly.

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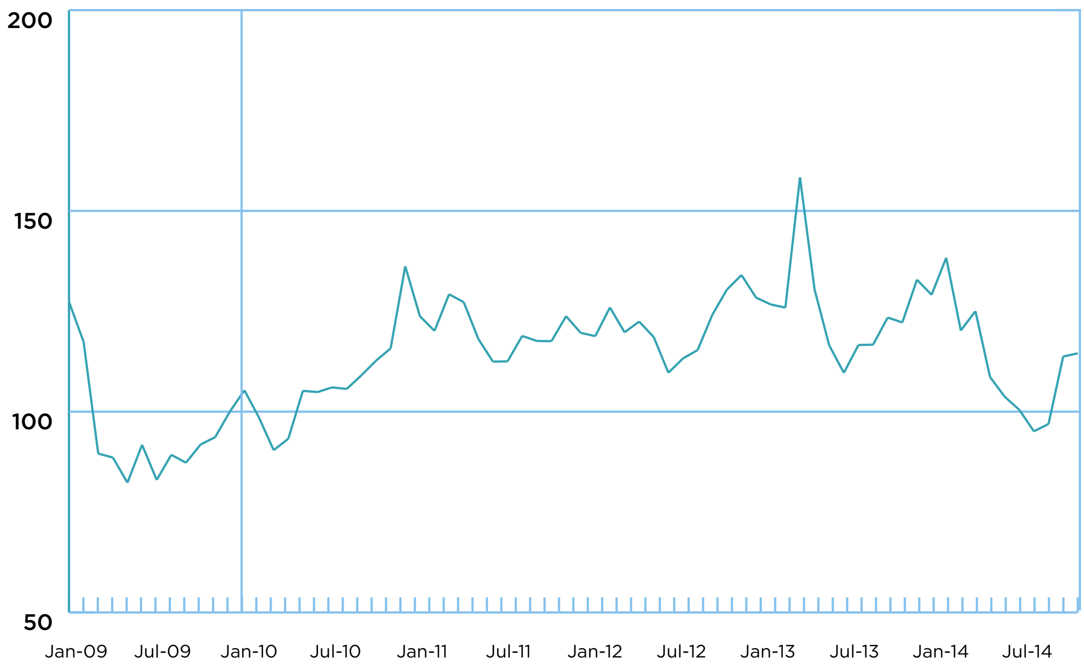
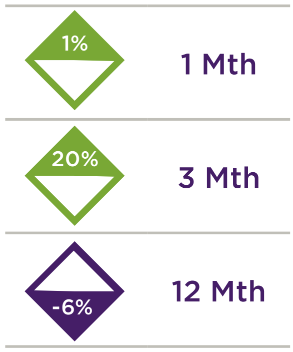
Electricity Index





Data Source: SEMO

Electricity

Month-on-month there was a marginal increase in the wholesale cost of electricity due to the seasonal rise in capacity payments. However, if these capacity payments are excluded, the average Irish wholesale electricity price for the month of October fell month-on-month despite rising wholesale prompt gas prices.

A key factor applying downward pressure on wholesale prices was a falling monthly average “clean spark”. The “clean spark” is the theoretical gross margin of a gas-fired power plant from selling a unit of electricity, having bought the fuel required to produce this unit of electricity and the cost of abating the carbon emitted. The average monthly “clean spark” figure was down by over €3/MWh. There were even days when a typically gas powered plant would have earned a negative “clean spark”.

There were a number of factors weighing on the “clean spark” and in turn the wholesale cost of electricity. A significant increase month-on-month in the volume of electricity being produced by wind turbines was a major factor. In September wind met just over 6% of the Island’s power demand. In October wind turbines met over 20% of the Island’s electricity needs and on one day in October wind met over 50% of the Island’s demand. Higher wind produced electricity forced more expensive terminal plants off the system leaving cheap coal and the most economical gas powered plants to set the wholesale price of power. Volumes of coal based electricity, which is relatively cheap to buy and produces cheap electricity, also increased month-on-month and this applied additional downward pressure on the “clean spark”. The testing of Ireland’s newest gas powered plant also forced older plant off the system and this too weighed on prices during daily peak trading periods.

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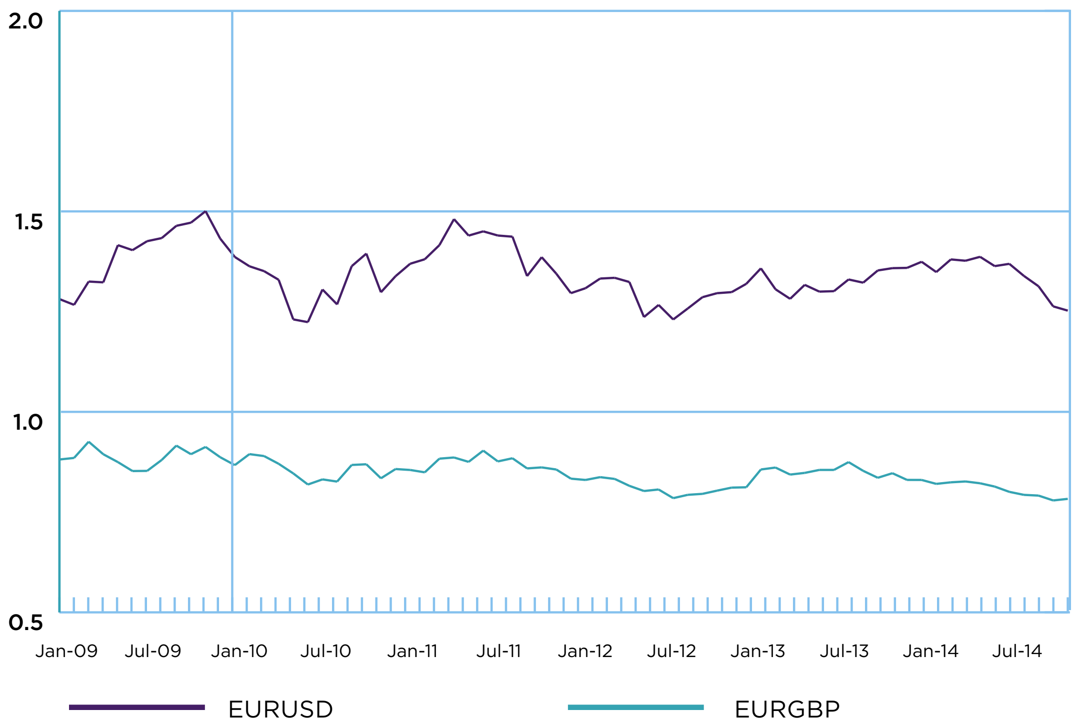
FX Rates



EURUSD

-1%	1 Mth
-6%	3 Mth
-8%	12 Mth

EURGBP

1%	1 Mth
-1%	3 Mth
-8%	12 Mth

FX Rates

The poor performance of the euro zone economy, as evidenced by data releases throughout October, weighed again on the euro and the region's currency continued to weaken versus the US Dollar.

The sequence of poor results out of the euro zone began in early October with an IMF assessment of the economic region that forecast very slow growth for some time to come. It estimates that there is a one-in-three chance that there will be outright deflation in the region next year and an even higher probability of a return to recession. The storyline shifted in the month from forecasts of future poor growth to actual poor growth based on reports that euro zone GDP growth ground to a halt in Q2. Euro zone Industrial Production also pointed in the wrong direction with a particularly disappointing performance from Germany (-4.3% year-on-year for August). The euro zone continues to flirt with deflation with prices falling in Spain and Italy. With unemployment remaining at an elevated 11.5% and with inflation so far from the ECB's target of "below, but close to 2%", pressure remains for further action from the central bank. Amid the gloom, the euro zone's manufacturing and service sectors showed some resilience with a modest expansion in October.

In contrast to the euro zone's stellar underperformance, the UK economy continued to provide positive data releases and this attracted positive sentiment. Among the major economies, only the US is expected to grow faster than the UK in 2015 according to the IMF. On the data front, the UK produced strong manufacturing data, the economy continued to produce jobs (736,000 more people are employed than one year ago) and the economy continued to expand (UK economic growth in Q3 rose by 0.7% quarter-on-quarter). The UK economy is now estimated to be 3% larger than it was in September 2013. Given the healthy state of the UK economy the debate about when to raise interest rates continues. However, despite falling unemployment and reduced slack in the economy, the failure of pay to outpace inflation and weak inflation has pushed the start of rate hikes into the future. In addition, recent global developments do raise the risk that UK growth is vulnerable. So, despite a positive economy, external economic threats and other factors are delaying rate hikes. With the market reassessing its position on hikes, Sterling weakened versus the euro.

The Fed expects moderate growth to continue in the US but it also fears the euro zone's apparent slide toward recession. Such a development would also delay the introduction of rate hikes in the US. Despite these concerns, the US Dollar did receive a boost during the month as the Fed finally brought down the curtain on its Quantitative Easing programme. A large fall in unemployment resulted in the end of this historic programme but it does not follow that rate hikes are next on the Fed's to-do-list. Worrying international economic clouds looming, the absence of wage pressure and weak inflation all point to abnormally low interest rates in the short-term.

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Market Outlook

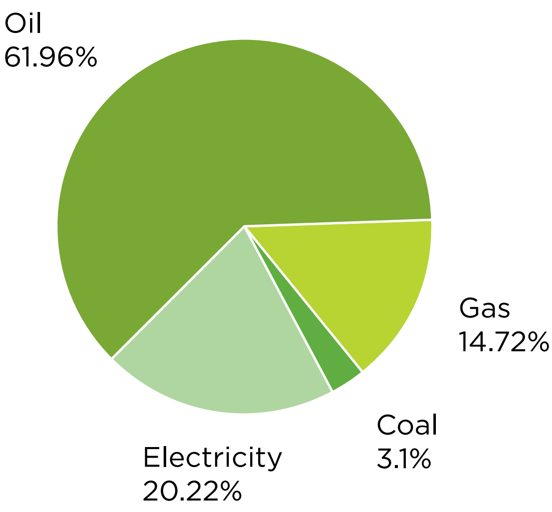
For years the simultaneously unfolding trends of turmoil in the Middle East and the light, tight oil "revolution" in the US have largely offset each other and global oil prices have been stable. However, despite serious ongoing geopolitical concerns, the stalemate has been broken by a flood of non-OPEC supply gains. Given the current bout of weakness in Brent crude oil prices, the big question is whether OPEC responds or not. The organisation's next ministerial meeting is set for November 27. The choice it faces is whether to implement production cuts to support prices or maintain volumes and accept lower prices in an attempt to curtail non-OPEC production (including US tight-oil) and retain market share. In the recent past OPEC has responded to falling prices by cutting production. However, in a weaker demand scenario, a production cut by Saudi Arabia could result in a loss of market share. Saudi Arabia will be conscious that Libya, Iran and Iraq could add to production in the coming years and these producers may resist production limitations. Some in OPEC will also see the advantages of lower prices as Middle East producers have low production costs, high prices support light, tight oil competitors and low prices stimulate demand. However, OPEC producers already below fiscal breakeven will not view weak prices and over supply as favourable. According to Platt's, the balance of Iran and Iraq's interests will be to maximise short-term revenues, but if the Middle Eastern producers explicitly decide that light, tight oil and weak demand are the enemy, then a lower oil price strategy is possible. If correct, Platts estimate that prices would have would have to fall towards US$60 per barrel.

As the world awaits OPEC's decision, the benefits of falling oil prices have been demonstrated by the IMF. According to the IMF, a US$20 drop in oil prices would increase world gross domestic production by 0.5% and, if economic confidence improved as a result, that figure could rise to 1.2%. The drop would transfer US$640bn from oil producers to consumers and increase consumer spending in consumption countries by as much as US$320bn. However, although appearing counterintuitive, falling oil prices are a threat to the euro zone. Falling commodity prices could tip the euro zone into outright deflation, potentially delaying consumer purchases on the expectation of even lower future prices.

The November 24 deadline for the conclusion of the Iran and P5+1 negotiations over Iran's nuclear programme is also looming. Reports suggest that Iran and the US remain far apart on a few key issues but that a partial lifting of EU and UN sanctions is likely, allowing Iran to continue exporting crude at reduced levels. Evidence that internationally coordinated actions to limit Iranian oil exports is slipping is starting to appear with Italy having imported 20,000 b/d of Iranian oil in July, its first Iranian imports for two years. South Africa has also signalled that it will soon begin importing Iranian crude again.

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.



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