Bord Gáis Energy Index
Understanding energy

NOVEMBER 2014

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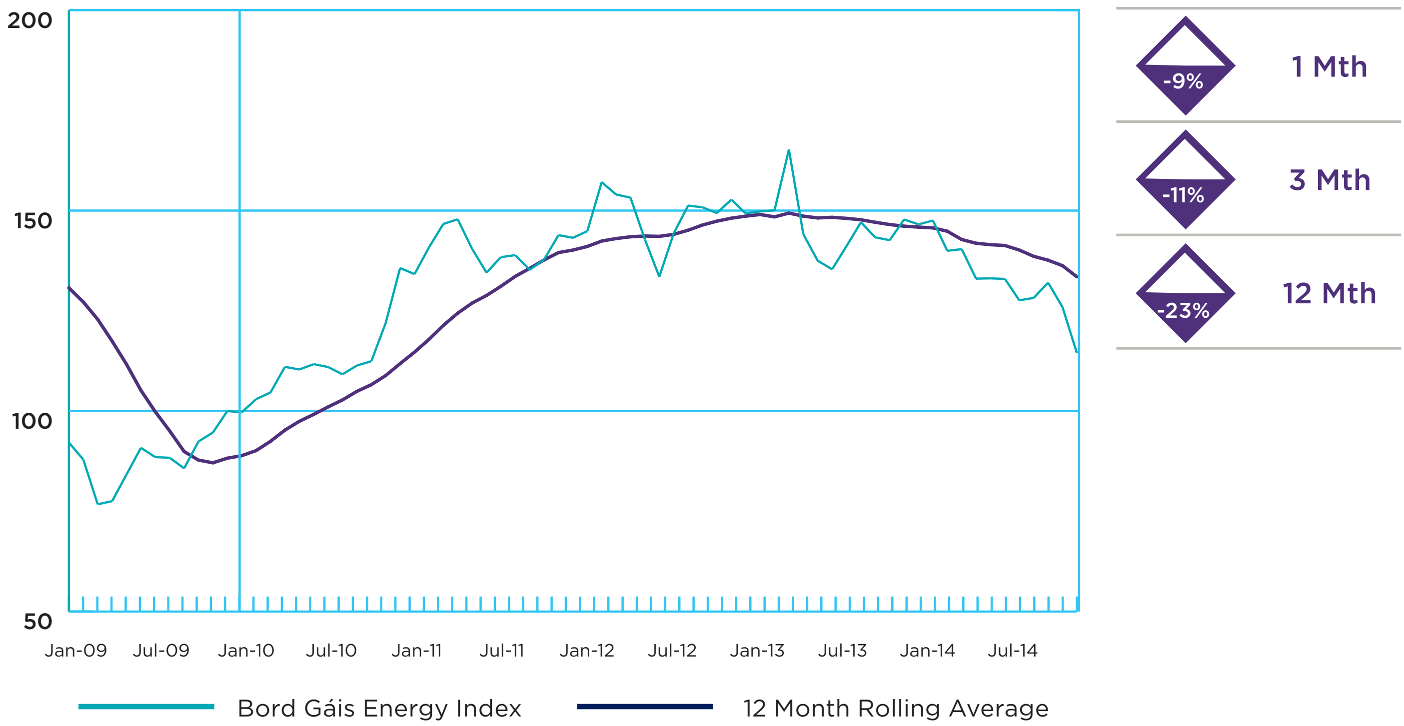
Bord Gáis Energy

Bord Gáis Energy Index plummets to four year low as global oil prices continue to freefall.

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



Summary

The November Bord Gáis Energy Index fell 9% month-on-month due to plunging global oil prices. In November 2014 the Index stood at 114, a level not seen in over four years.

Over the last four years global oil prices have been propped up by the Arab Spring, tensions with Iran over its disputed nuclear programme, war in Syria, the possibility of the Middle East being torn apart by ethnic differences and the threatening rise of Islamic State. Despite none of these issues being fully resolved, the new wave of North American oil has finally broken through and the reality that the world is awash with oil and has insufficient demand to consume it has caused prices to plunge. On November 27 OPEC had the opportunity to manipulate prices. They failed to act. Their decision has been interpreted in many ways. Perhaps they are attempting to halt the flow of light, tight oil or are protecting market share. Or is Saudi Arabia using oil as a weapon against its bitter regional rival, Iran? Whatever the reason the markets provided one definitive reaction and that was to collapse the price of Brent.

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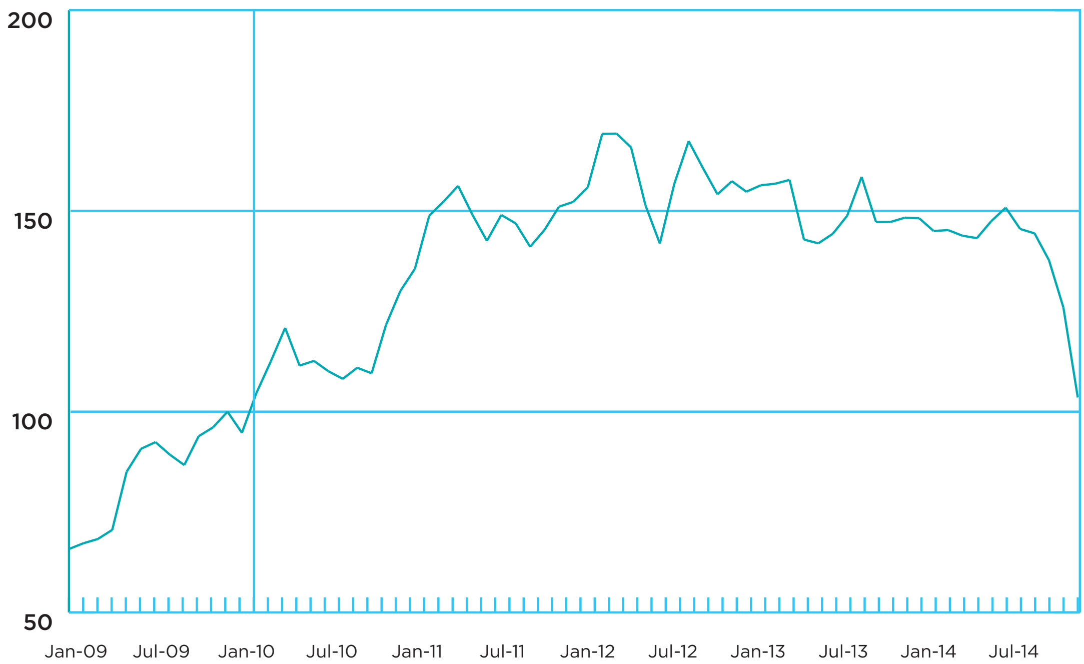
Bord Gáis Energy Index plummets to four year low as global oil prices continue to freefall.

Bord Gáis Energy Index (continued)

Despite being seen by some as a 19th Century phenomenon, geopolitics - the struggle to secure control of natural resources - continues to fuel wars. History isn't a story that comes to any kind of conclusion. Human conflict changes its shape along with new technologies and shifts in power, but it doesn't go away. This is what so many people find unthinkable - the fact that intractable conflict will continue to shape our lives in the future as it has done in the past. This month IHS, a consultancy company specialising in areas such as energy markets, attempted to describe the energy landscape throughout the years to 2040. IHS forecast that over the next 25 years there will be a period of intense rivalry between new world powers, particularly China and India, and the traditional economic power of the West. Over this period new energy relationships will form, with Russia supplying increasing volumes of gas to China. Saudi Arabia will push into solar power helping to maintain a crude oil production buffer for the oil market. A number of countries will adopt policies to encourage the development of unconventional oil and gas. These policies will be motivated by a lack of competitiveness relative to the USA and the desire to produce more fuel domestically for the sake of supply security. By the 2030s, for the first time in modern history, no source of energy will have more than 30% of the global market and by 2040 consumers will have more options than ever before when deciding how to propel a vehicle or illuminate the night. The US government's 2014 estimates of future oil, gas and coal reserves will prove correct. It estimated that the world has 100 years of oil, 200 years of gas and 112 years of coal left at 2014 consumption levels. A key feature will be the use of gas in the transportation market given high oil and low gas prices. 2018 will be the point in history when diesel demand in the heavy trucking industry in North America and China weaken because of the increased use of natural gas as a heavy truck fuel. From this point on oil will continue to lose its dominance in the transportation industry. The "pollution paradox" will have a significant impact in this 25 year period. With higher energy consumption fuelling higher living standards in developing countries, the means and resolve to address pollution will take hold. Despite the abundance of cheap coal, gas will be preferred in power generation, despite its higher cost in countries such as China, because of lower carbon emissions. China's move to address emissions will have been encouraged by a number of high-profile cyclones that will overwhelm swathes of coastal China in the 2020s. In North America increased occurrences of severe weather and related events – droughts, hurricanes, tornadoes, wildfires, dust storms, and water rationing – will increase the level of public and political concern over the climate and its impact on the economy. The reality of climate change will strike the USA when the price of a salad hits US$50 due to a lettuce shortage as a result of high temperatures which will devastate the world's supply. Sceptics will quibble that the environmentalists should have made them aware of this possibility rather than "thinning ice thousands of kilometres away". Declining costs and rising energy production efficiencies will make it less expensive to "go green" but efforts to address climate change will be slow with just 15% of global electricity production from wind, solar and other renewables being meet by 2039. Although sales of electric-only vehicles will never match promoters' aspirations, increased use of electricity in vehicles will help to achieve impressive gains in fuel economy around the world. Between 2015 and 2040 total global primary energy demand will increase by 44%. Gas will be the big winner among all sources of energy in terms of demand growth and it will break oil's de facto monopoly in the transportation sector and come to dominate the power sector. Rising global demand for gas will be supplied by the transformation of the global gas reserve base that began with shale gas in North American in the early part of this century. Coal will be vilified as a "dirty fuel" but it will remain one of the world's top three sources of energy because it will remain cheap. Coal will find a home in Asia but with growing living standards throughout the region by 2035 it will begin to lose market share.

Bord Gáis Energy Index plummets to four year low as global oil prices continue to freefall.

Oil Index



-18% 1 Mth

-28% 3 Mth

-30% 12 Mth

*Index adjusted for currency movements.

Data Source: ICE

Oil

Brent crude prices closed the month at US$70.15 a barrel. From the 2014 high of US$115.06, the front month Brent crude price has fallen nearly 40%. The price of a barrel of oil had been weak throughout November but news that OPEC had decided not to cut its daily production target on November 27 resulted in prices plunging to post their steepest one day fall since 2011. What had been billed as one of the most important OPEC meetings in history did not fail to deliver and the reaction in the markets was extraordinary.

It was reported that Saudi Arabia had blocked calls from poorer members of OPEC for production cuts to arrest a slide in oil prices during the producer group's meeting on November 27 in Vienna. In a shift away from its old policy of defending prices, OPEC said in a statement that its members had agreed to roll over the existing production ceiling of 30 million barrels a day. These 30 million barrels a day plus rising non-OPEC output means that the world is producing more barrels that can be consumed. Based on current trends, it is estimated that world liquids supply growth will exceed demand by 1.3 million barrels a day in 2015. So why did OPEC fail to respond to an oversupplied oil market and falling prices? There are a number of possible reasons. Firstly, by cutting back on supply OPEC members would effectively be giving up market share to higher-cost non-OPEC oil. OPEC's crude oil share of global liquids demand has already fallen to around 32%, from 37% in 2008. Secondly, crashing global prices could stem the new wave of oil from North America. A significant slowdown in tight oil growth is not imminent because of price hedging by producers, ongoing drilling and previously approved and funded projects. While oil futures markets can turn on the proverbial dime, the production and transportation of oil works to a much slower timetable. So a significant negative impact on tight oil production may not conceivably be evident until the second half of 2015. US production has risen by 4 million barrels a day since 2008. Thirdly, members are loath to negotiate production quotas for fear of market share loss to each other. Fourthly, after years of wars and sanctions, Iraq and Iran may have not been willing to accept production cuts and may wish to make up for years of lost production. Other Gulf producers may have balked at the prospect of reducing their output to shore up prices only to see Iraq and others take over its customers and markets. Finally, Saudi Arabia may be using low oil prices as a weapon against Iran, its bitter regional rival, and Russia who are supporters of the al-Assad regime in Syria. By not cutting production OPEC is allowing the market to set the clearing price for oil for the time being.

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Oil Index (continued)

The outcome sets the stage for a battle for market share between OPEC and non-OPEC countries. The wealthy Gulf states, led by Saudi Arabia, made it clear that they are ready to ride out weaker oil prices and are able to thanks to their large foreign-currency reserves. Others such as Venezuela, Iran and non-OPEC producer Russia will find it much more difficult.

The question now is whether OPEC members have the resolve for an extended fight. What is clear from OPEC's failure to act is that for now Saudi Arabia appears unwilling to accept the role as OPEC's central banker and cut its production alone to support prices for others. OPEC was similarly challenged in the early 1980s with the advent of production in the North Sea, Alaska and Mexico. Global prices plunged with OPEC abandoning its system of administered prices. Even in nominal terms prices did not recover in the next decade and a half.

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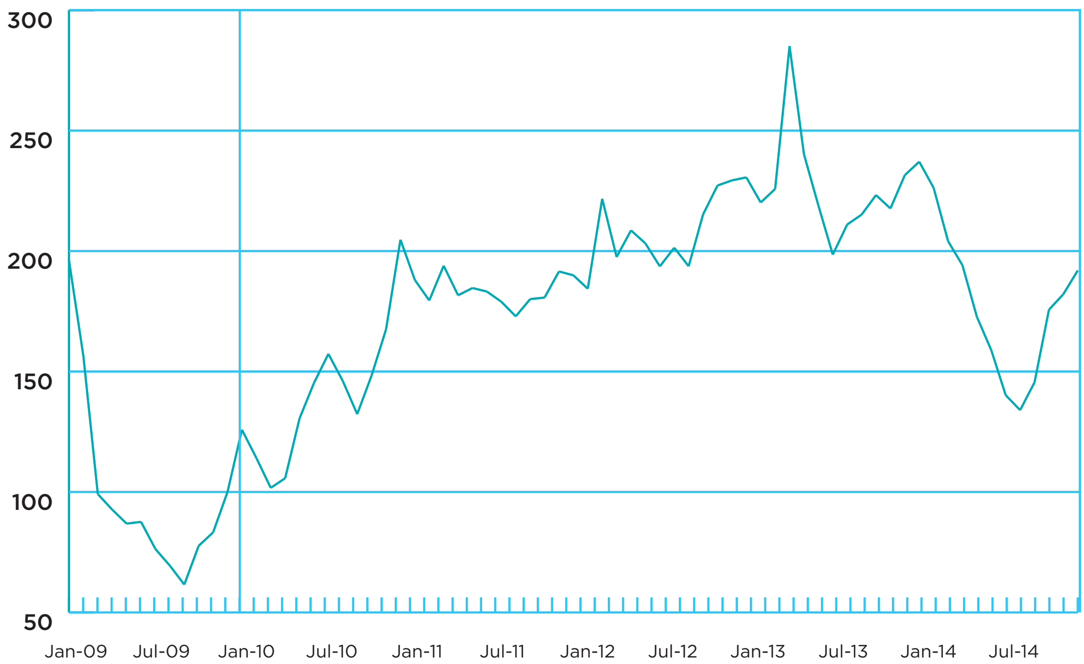
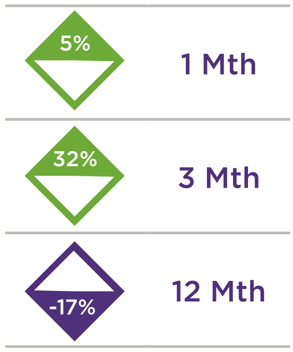
Natural Gas Index





*Index adjusted for currency movements.

Data Source: Spectron Group

Natural Gas

The average Day-ahead gas price outturned at 53.75p per therm (p/th) for the month of November which, in euro terms, translated into a 5% increase in prices month-on-month. A 3.7°C drop in the UK average monthly temperature in November compared to October saw demand increase by over 20% month-on-month.

Despite the month-on-month increase, the November price of 53.75p/th was the lowest outturn November price since 2010. The comparative outturns for years 2011-2013 were 57.7p/th, 65.4p/th and 67.6p/th respectively. In the absence of other factors, prompt prices determined forward price behaviour during the month. In Sterling terms, the front quarter contract increased by 5% and Summer 15 rose by 4% but the Winter 15 contract only managed to gain 2%. Falling oil prices appear to be weighing on contracts from Winter 15 onward and the symmetry between oil prices and contracts 12 months forward are still relevant.

It would appear that gas markets have completely discounted the risk that Russian gas supplies to Europe are in danger this winter following the successful conclusion of talks between Russia and Ukraine in October. Although the market is discounting the risk of a broader crisis in Russian-Ukrainian relations, the possibility that simmering tensions could escalate in an unpredictable direction still exists. In recent weeks there have been reports that fighting in the eastern region of Ukraine has intensified despite the supposed ceasefire which has been in place since September. Reports estimate that the conflict has resulted in over 1,000 deaths in the last three months. As we approach year end the market will also be conscious that Ukraine is due to pay a second instalment of US$1.65bn to clear US$3.1bn of an estimated debt to Gazprom of over US$5bn (on November 5 Gazprom confirmed that it had received a payment of US$1.45bn to partially clear the undisputed portion of the gas debt of US$3.1bn). However, the market will take comfort that this payment will be made given the news in early December 2014 that Ukraine was about to make an upfront payment to Gazprom to buy gas. This means that renewed deliveries of Russian gas to Ukraine are about to resume having been suspended since June 16.

Of particular note in November are falling Asian spot LNG prices. For example, the prompt Japan Korea Marker (JKM) has fallen from 87.35p/th on October 1 to 70.26p/th in early November due to lower oil, which LNG prices are indexed against. High stocks and mild winter temperatures in Asia are also factors. The governor of Japan's Kagoshima prefecture gave his approval for the restart of two nuclear reactors at the Sendai nuclear power plant. The narrowing

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Natural Gas Index (continued)

spread between the JKM and NBP prices has resulted in increased spot LNG flows into Continental Europe and the UK average. LNG flows of 30mcm into the UK system in November were over twice the level seen in the previous month. UK LNG supply for the first 11 months of this year was 8.8bcm, up 15% from the previous year.

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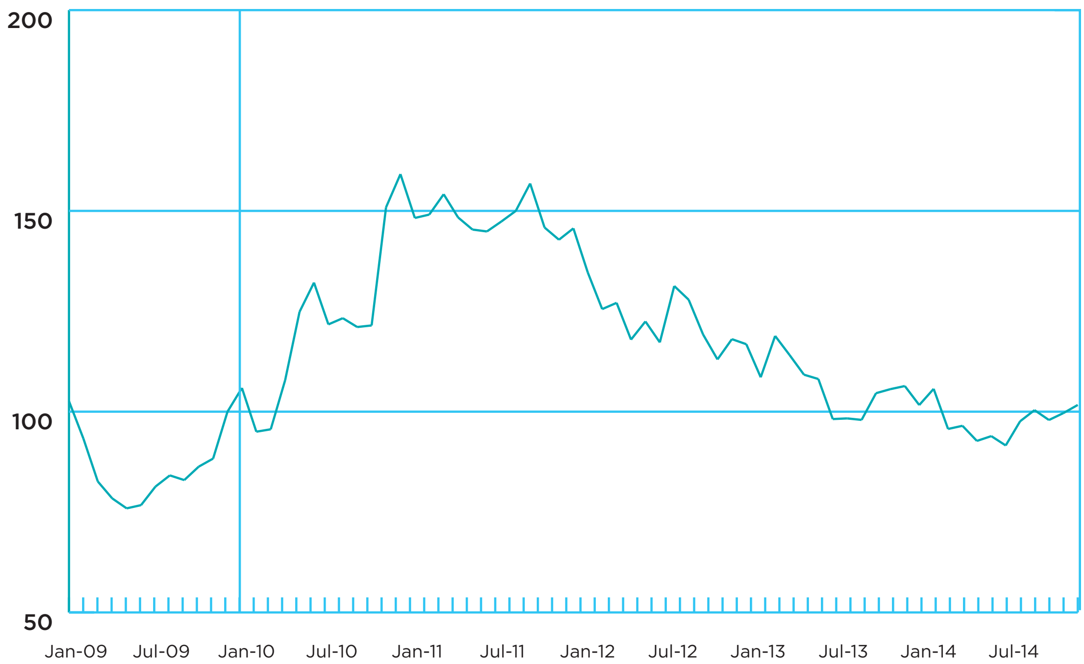
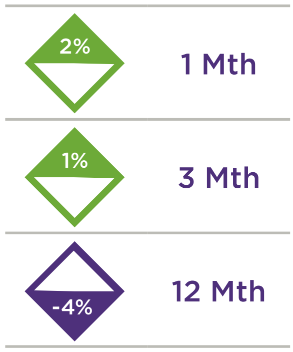
Coal Index





*Index adjusted for currency movements.

Data Source: ICE

Coal

At US$71.25/mt, the ICE Rotterdam Monthly Coal Futures contract recorded a four year low on November 6. On the same day, at US$69.75/mt, the European year-ahead closed at a new record low. Despite recording record lows, the ICE Rotterdam Monthly Coal Futures contract rose month-on-month due, in the main, to a weaker euro versus the US Dollar.

Despite the modest gain month-on-month, European coal prices remain weak in a historic context. On November 6 market participants cited macroeconomic factors for the cause of record low coal prices, as the euro recorded heavy losses against the US Dollar. The euro reached a 26-month low against the Dollar on the day after the ECB said it would keep its interest rate unchanged and underlined its determination to continue purchasing financial assets until it raises its holdings to €3 trillion from the current €2 trillion. It also reiterated that its stands ready to adopt full-blown Quantitative Easing if economic conditions deteriorate. European coal prices are also weak on a fundamental basis given the fragile state of the eurozone, mild weather, falling oil prices and the “bleak outlook” for Chinese imports of thermal coal. According to Platts, regulation and protection is closing the Chinese market to exporters, forcing them to increasingly sell into a saturated European market. At the start of December domestic Chinese coal prices traded at a $6.34/mt premium to imported coal but this is before the 6% tariff on imported coal from Australia and a $2/mt port unloading charge. A weakening Russian Rouble against the US Dollar is also making it more profitable for Russian producers to ship coal into Europe, which is increasing the competition with Colombian coals and applying further downward pressure on prices. The saturated state of the European coal market is evident by the level of stocks at three delivery terminals in the Amsterdam-Rotterdam-Antwerp trading hub which are 36.6% higher year-on-year. Despite a modest “bounce” in the price from US$71.25/mt at the start of the month to a close of US$73.90, prices are unlikely to recover unless winter demand is sparked by a bout of cold weather across Europe.

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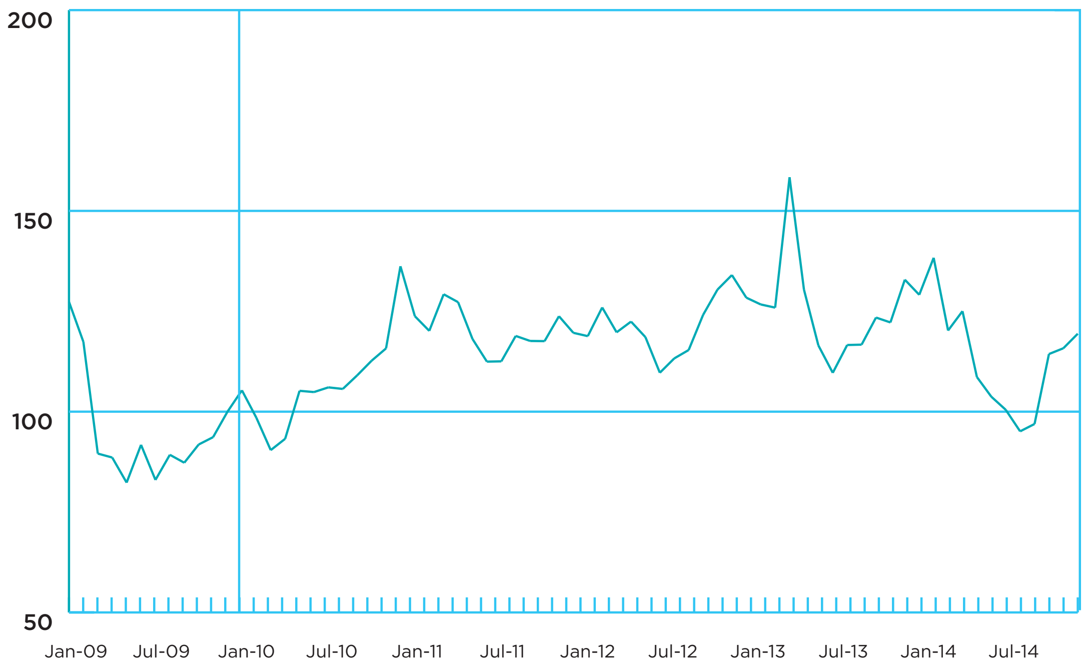
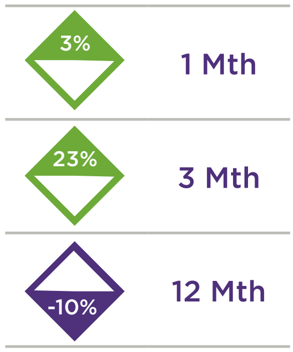
Electricity Index





Data Source: SEMO

Electricity

Month-on-month the Irish wholesale electricity price was 3% higher due to rising UK gas prompt prices and in part due to an increase in the cost of abating carbon emitted in the process of producing electricity when burning gas, coal or peat. In November the cost of a carbon allowance rose nearly 11% from €6.35 per tonne to €7.04.

In contrast to rising gas and carbon allowance prices, the average clean spark in November was nearly €1/MWh lower month-on-month. Wholesale electricity prices can be assessed by observing changes in the UK wholesale gas price, carbon and the 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. During the month there was a rise in the availability of coal plants and this applied downward pressure on the clean spark. As we descend further into Winter 14/15 and with day-light hours being reduced, the market is starting to observe the typical spike in wholesale prices around the 17:30 time period as demand escalates and more expensive power plants are called upon to balance the system. Despite these spikes in clean spark, they were insufficient to push the average clean spark for the month higher.

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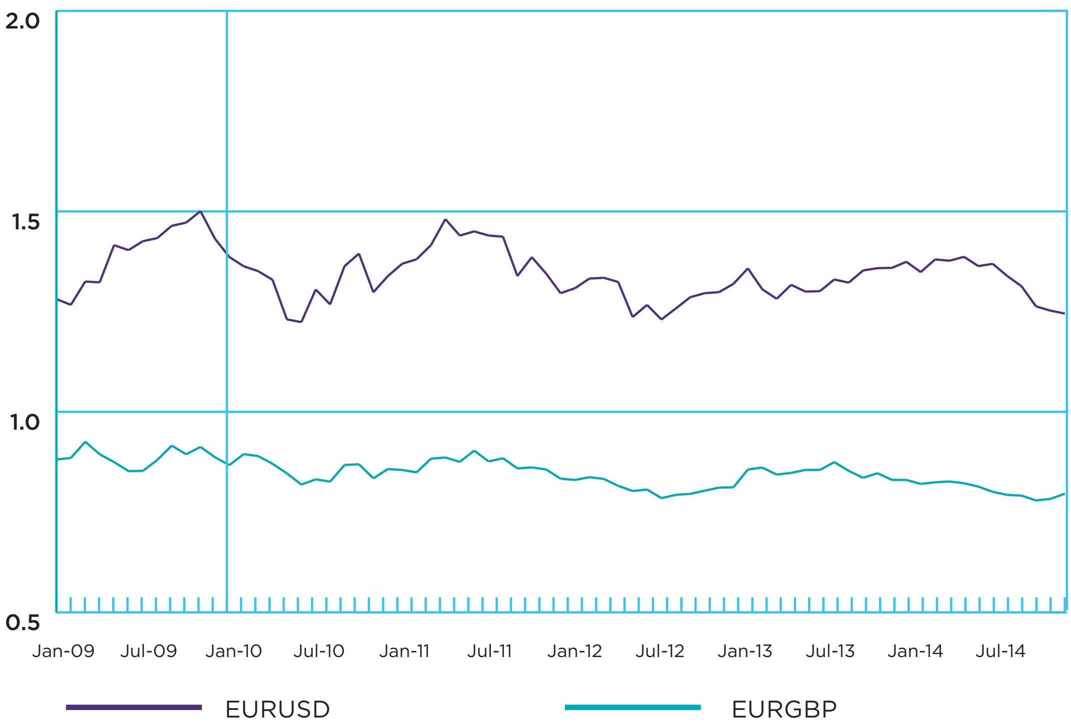
FX Rates



EURUSD

-1%	1 Mth
-5%	3 Mth
-8%	12 Mth

EURGBP

2%	1 Mth
1%	3 Mth
-4%	12 Mth

FX Rates

Month-on-month the euro continued to weaken versus the US Dollar. Since May the euro has now weakened 11% against the Dollar. Over the month the US Dollar also strengthened against other major currencies and falling oil prices have in part been linked to the Dollar's strength.

The Dollar's strength can be associated with a possible rate hike. According to RBS, the Fed's mind is clearly focused on the day when rates will "lift-off" and it is actively debating the language it will use to signal changes in policy and what it will say in advance about the likely pace of rate rises. According to RBS "the very fact that the minutes describe these debates is part of the process of preparing… (the world)… for the first rise". The prospect of higher interest rates add to the Dollar's strength in two ways. Firstly, it reflects the economy's journey back to growth which is in contrast to the stagnation faced by other advanced economies. Secondly, higher rates make the US a more attractive place to invest money. Further evidence that the US economy is normalising came in the latest GDP figures which showed that the economy grew faster in Q3 than first thought. At a growth rate of 3.9% year-on-year, it places the US first among the G7 growth league table. It was reported that non-housing investment was particularly strong during the quarter which suggests that US firms are confident enough about their prospects to commit to projects. Despite the Fed tentatively starting to prepare the world for the return of normal rates, US inflation remains low at 1.2%. So, in the short-term, the Fed is not under pressure to raise rates. The fall in oil is contributing to subdued consumer price growth and Americans are now paying US$2.78 for a gallon of petrol, almost US$1 less than in the summer. Of course policy makers in the eurozone and Japan would prefer higher not lower inflation as the prospect of deflation looms even larger.

Sterling failed to strengthen versus the euro month-on-month as Britain exhibits "growth without the cigar" with the market reportedly pushing out the first rate hike into the future. The market is forming the presumption that the Bank of England is increasingly concerned with weak wage growth, falling commodity prices and concerns about growth in the eurozone and Asia. The Bank of England estimates that growth will reach 3.5% this year but this is in large part driven by consumption which makes it vulnerable and the much heralded employment growth achieved has been in poorly paid jobs. Worryingly, news that business investment fell along with exports added to a growing sense of wariness about the UK economy. The UK economy is also recording modest inflation due to cheaper energy prices and food costs. Lowflation is an additional factor holding back market expectations of UK rate hikes.

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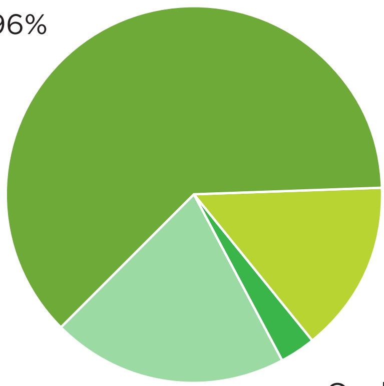
Market Outlook

The outlook for oil prices is overwhelmingly bearish following OPEC's decision not to cut its daily production target of 30 million barrels a day. The move has been interpreted as a play by OPEC, led by Saudi Arabia, to lower global oil prices in an attempt to tackle the threat posed by US tight oil production. According to some, a "production war is on" and it will be a case of the survival of the fittest. Can light, tight oil survive? According to the IEA it can on the basis that only about 4% of US shale output needs US$80 a barrel or more to be profitable. The IEA also estimates that most of the production in the Bakken formation, one of the main drivers of shale oil output, remains commercially viable at or below US$42. If OPEC's decision will not significantly squeeze US producers in the short-term, the pain is being felt by its own members where a price of US$80 or more is required to balance the national budgets of Iran, Iraq and Venezuela. Data from the US Energy Information Administration showed that US production expanded to 9.08 million barrels a day through November 21, the most in weekly records that started in January 1983. The decision by OPEC not to cut production means that the market will be setting the clearing price for oil for the time being. This may mean that prices will be more volatile as it searches for a new price band. OPEC will next meet on June 5 in Vienna.

With falling global oil prices, the tight oil and shale gas revolution in the US has gained mainstream attention. According to John Gapper of the Financial Times, cheap energy is the new cheap labour and economic powers in the West and East will be slugging it out over the cost of oil and gas. In the past two decades emerging economies, particularly China, became attractive places to manufacture because of the gap in the price of labour. However, between 2006 and 2011 Asian wages rose by 5.7% per year, compared to 0.4% in developed economies. Now this labour cost gap is tightening while US energy prices have been falling. Amid an oasis of cheap gas, energy intensive industries such as chemicals, petrochemicals, aluminium and steel are being lured back to the States. According to Gapper, "Europe has made the wrong bet" by subsidising renewables and charging for emissions which is "nullifying the benefits of lower energy prices" in Europe. As a result there are now no energy-intensive investments taking place in Europe, which is struggling amid high energy and labour costs. In response European countries are trying to shield energy-intensive industries from the costs of switching to renewables with Germany capping renewables charges to heavy industry. According to Gapper, there are real risks for countries that impose high costs on themselves while their competitors enjoy low ones.

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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