

Bord Gáis Energy Index

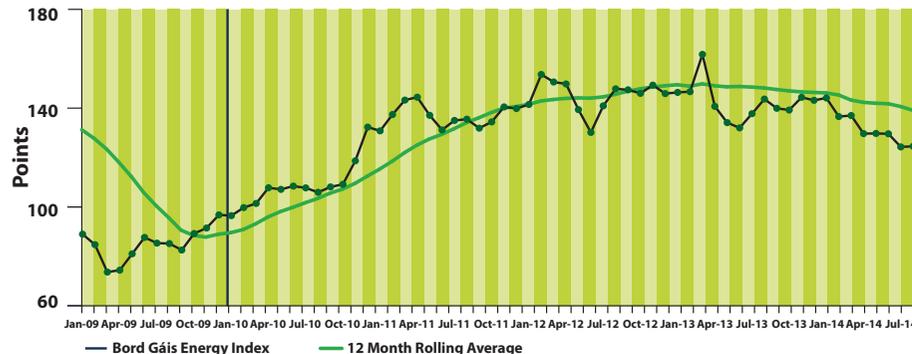
UNDERSTANDING ENERGY

August 2014



Stronger Wholesale Gas, Coal and Electricity prices offset lower Brent Crude prices as Bord Gáis Energy Index remains unchanged

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



1 Mth **0%** 3 Mth **-4%** 12 Mth **-13%**

Summary

The Bord Gáis Energy Index was unchanged in August with stronger wholesale gas, coal and electricity prices offsetting lower Brent crude prices.

The crisis in Ukraine and the potential slide toward all-out war between Ukraine and Russia dominated the energy debate in August. This contributed to significant price volatility in wholesale gas prices. Supply restrictions and rising demand provided further impetus that pushed UK wholesale gas prices higher. As winter approaches there is a growing concern that European gas supplies are at risk given that no interim solution to the current Gas War between Ukraine and Russia has been agreed. With a glut of crude oil in the Atlantic basin and positive supply developments, the market chose to ignore the threat posed by Islamic State to vital Middle Eastern oil production and prices fell.

Again there were significant exchange rate movements in August with the euro continuing to weaken. A weaker euro does make the cost of importing oil, gas and coal more expensive but the ECB will welcome some

inflationary forces. There is a growing expectation that the ECB will introduce unconventional policies that will weaken the euro and will combat the possibility of deflation taking hold in the eurozone.

In August 2014 the Index stood at 128.

Despite mounting geopolitical risks and the serious threat posed by Islamic State to global oil supplies, prices softened in August and at one point the front month Brent crude oil contract hit a 14 month low. At first glance this may seem surprising given the media coverage in August that reported on an "invasion" of Ukraine by Russia, accusations of a "great war" beginning and acts of violence by Islamic State that "shocked the conscience of the entire world". Despite very real threats to Middle Eastern production, the impact of the "tight oil revolution" in the US is a key factor keeping global oil prices low. Robust supplies, including US tight oil, coupled with anaemic demand calmed the market in August amid escalating geopolitical tensions. In an usual twist this supply/demand dynamic has pushed the Brent crude market into contango, meaning that the price of buying oil tomorrow is higher than purchasing it today. This price response suggests that Europe is currently oversupplied with oil or, viewed alternatively, has insufficient demand. Given that Europe is oversupplied, it is being reported that large crude carriers are moving oil from the North Sea to Asia. With crude output surpassing 3 million barrels per day in Texas and 1 million barrels per day in North Dakota, it is expected that US crude output will rise by over 1 million barrels a day this year and reach 9.5 million barrels in 2015. At these levels production will return to heights not seen since 1972. This output growth is currently helping to stabilise global oil prices as OPEC oil is being diverted away from the US which has been described as "swimming in oil". With oil also moving away from an oversupplied European market, Asian markets are adequately satisfied. This current glut of oil has weighed on prices globally despite the potential for key production states such as Libya and Iraq to fail.

Oil Index



1 Mth **-1%** 3 Mth **-2%** 12 Mth **-9%**

*Index adjusted for currency movements. Data Source: ICE

Oil

Month-on-month the front month Brent crude price fell 1% in euro terms as increased African supply weighed on near-term crude markets. At one point the front month Brent crude price hit a 14 month low of US\$101.07 a barrel. In early September prices headed toward US\$100 a barrel on slower manufacturing data in China and Europe. Despite mounting geopolitical risks spanning a large swathe of the oil-producing world, oil prices have remained "eerily calm" according to the International Energy Agency (IEA).

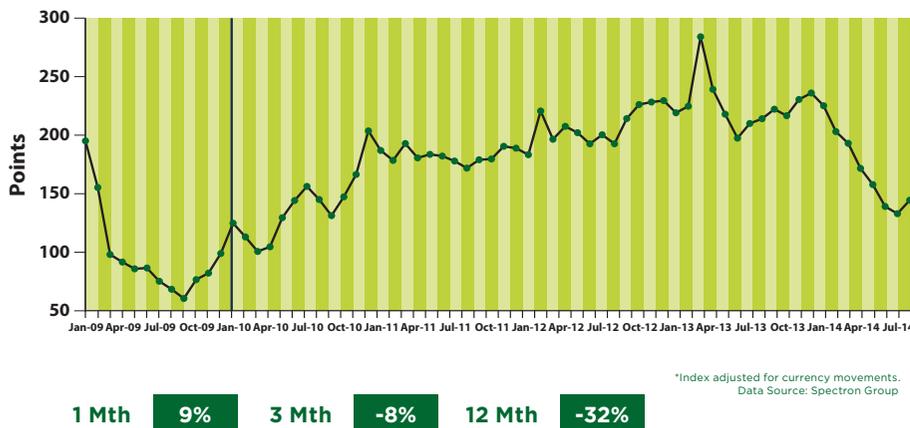
In August Libyan production climbed to over 665,000 barrels per day and is expected to increase to 800,000 at the end of August (with the expected reopening of the Waha oil field), according to the state-run National Oil Corp. This production increase weighed on the front month Brent crude oil price in August. Between April and June oil production had averaged at about 200,000 barrels a day which was substantially lower than the 1.4m barrels per day of production that was being recorded as recently as the first quarter of 2013. Following Qaddafi's

fall from power various regional, religious, ethnic and tribal factions have targeted Libya's oil infrastructure as a means of advancing their claims. Libyan production started a rejuvenation process in July as protesters ended their blockade of the El Sharara field and armed factions ceded control of the Es Sider and Ras Lanuf ports to the government. A restart of production at EL Sharara and higher production at the El Feel field helped push production in August up to over 665,000 barrels per day. However, there are doubts regarding the sustainability of the nascent production recovery as there is little prospect in the near term for emergence of a strong central government capable of protecting the country's oil infrastructure. These doubts were hardened on the news that Islamist militias had seized Tripoli's international airport toward the end of the month which demonstrated the central government's inability to control even the most basic functions of the state. Conflict in Iraq (the second-biggest OPEC producer) has so far spared the south, home to about three-quarters of its crude output. The nation has pumped 3 million barrels a day and production has been unaffected, despite heightened sectarian tensions, by the seizure of a large swathe of the country by Islamic State (IS) militants and allied Sunni rebels. The deployment of US military muscle since August 8 in supporting Iraqi and Kurdish troops tackling IS and its allies with air strikes has eased concerns that Iraqi oil production in the south would be reduced. US crude production continued to grow in July reaching its highest in 28 years at 8.5 million barrels a day while crude oil imports hit a 19-year low. The possibility of increased Iranian oil being delivered to the market in the future received a boost in August on the news that the International Atomic Energy Agency said in its monthly report that Iran has started taking action to comply with the terms of an extended agreement with six world powers over its disputed atomic activities.

Coupled with steady oil supplies, global demand has been soft and according to Morgan Stanley, sellers have struggled to find buyers willing to take physical delivery of oil. This assertion was supported by the IEA which claimed that the Atlantic market was so well supplied that incremental Libyan barrels were having a hard time finding buyers. Furthermore, Morgan Stanley are also reporting that Asian demand is at risk amid speculation of refinery run cuts on poor margins by product producers and that product demand, especially in developed nations, has been softer than expected. Soft demand has played an equally important, if not bigger part in sliding crude prices. The prospect of softening Asian demand was reinforced on the news that growth in activity in China's vast factory sector slowed to a three-month low as output and new orders lost steam. The HSBC/Markit Flash China Manufacturing Purchasing Managers' Index fell to 50.3 from July's 18-month high of 51.7. According to reports, China's economic growth appears to be softening again after a hopeful bounce in June, with indicators ranging from lending to output and investment all pointing to more sluggish activity.

Rising production and soft demand has encouraged hedge funds and other financial speculators to cut their bets on rising Brent prices to the lowest level in 2 years in August.

Natural Gas Index



demand, Norwegian gas production and exports to the UK were reduced due to maintenance. Summer maintenance restricted production at the Vega and Gjoa gas fields in the North Sea and flows into the UK's Flaga pipeline fell month-on-month. Maintenance at the St. Fergus Shell entry point and at Statoil's Troll C platform further disrupted North Sea flows to the UK. UK gas production did however rise toward the end of the month to reach levels not seen since the end of May. Despite dropping toward the end of the month, Qatari LNG supplies were strong as weak Asian demand has pushed cargoes toward the UK. UK LNG receipts benefited from a total of nine tankers arriving in the UK by month end. By comparison, in August last year only six tankers of LNG arrived. Traditionally these cargoes are attracted to markets in the Far East that require energy amid rising temperatures and in support of on-going economic growth. Echoes of rising geopolitical tensions in Ukraine would have indirectly contributed to the upward momentum seen in prompt prices. This would have been particularly evident around August 18 when tensions hit their monthly peak as it was reported that rockets and mortars had hit vehicles moving refugees from the Luhansk area of eastern Ukraine.

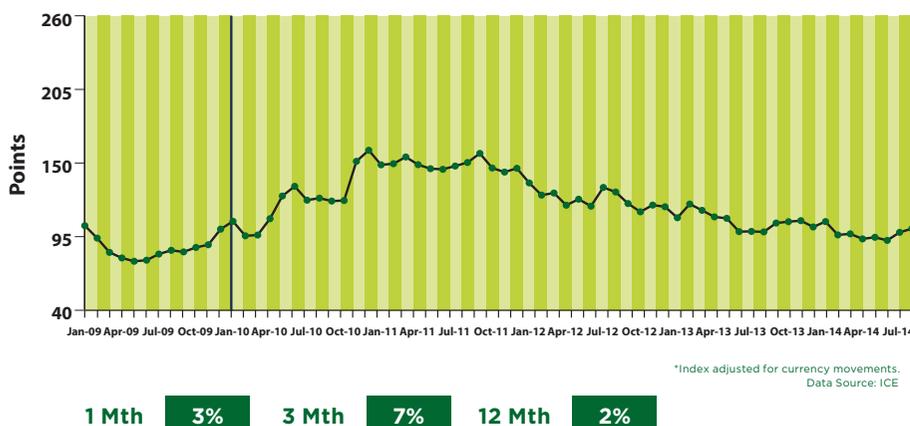
Over the month, forward gas prices traded higher and significant price volatility was present again in the market. Ukraine continued to push the risk on-off button. In periods where there were no significant events and in the absence of Ukraine led headlines, prices tended to drop. Any reports that raised the possibility that Ukraine and Russia could engage militarily spooked the market and prices rose rapidly. So far, Russian gas transiting Ukraine and destined for Western Europe has remained uninterrupted. When Ukraine wasn't unnerving the market it was comforted by the healthy state of gas stocks throughout Europe in advance of winter which, in the gas world, commences on 1 October.

Natural Gas

In euro terms the average Day-ahead gas price for August was 9% higher month-on-month as supply restrictions and rising demand nudged wholesale prompt prices higher.

Continuing the softness seen in wholesale prompt prices during July, the Day-ahead price of gas traded consistently below 40p per therm in the first half of August. However, prices started to trade above this level to hit a monthly high of 45p per therm as UK gas demand rose in tandem with supply restrictions. At certain points during the month, UK gas demand remained above seasonal norms due to strong exports to the continent, cooler weather and on-going rising consumption from the power sector. During the month four nuclear reactors at two large power plants in the north of England were shut down due to faults. With a third of Britain's nuclear capacity taken offline, gas powered plants were called on to fill the gap to ensure continuity of electricity supply throughout the country. At the same time as rising

Coal Index



result of energy exports (oil, gas, and coal) and a bloated state sector, wages may remain stable for a while, even as the economy contracts. Given Europe's energy dependency and Russia's reliance on energy exports revenue, European coal prices were stable, despite escalating tensions in Ukraine, as the market did not perceive any risks to European coal supplies. Healthy coal stocks and limited demand provided further comfort to the market during the month. Coal stocks at power plants in Britain, Denmark and Finland have reportedly reached their highest combined level since August 2010 at the end of June, equivalent to nearly eight months of consumption.

Coal

The front month European wholesale coal futures contract rose 3% month-on-month to close at US\$76.95. Despite being relatively stable month-on-month, European coal prices remain elevated due to the crisis in Ukraine.

In US Dollar terms the European wholesale coal futures contract did very little in August as it began the month at US\$76.30 per tonne and closed the month at US\$76.95 per tonne. Intra-month the contract did hit a high of US\$78.25, having rallied over 6 trading periods early in the month following the announcement of punitive sanctions against Russia by the European Union and America on July 29. Despite the avoidance of sanctions on Russia's energy exports, prices were a little tense post the announcement in anticipation of the reaction from Russia. After this brief and modest rally, prices remained steady for the rest of the month. According to some analysts, Mr Putin's grip on power depends less on economic growth than on wages and as a

Electricity Index



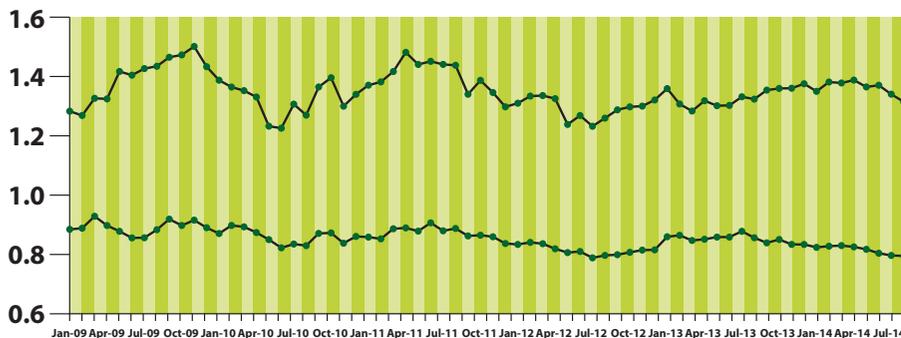
the theoretical gross margin of a gas-fired power plant from selling a unit of electricity, having bought the fuel required to produce this unit of electricity and the cost of abating the carbon emitted). Lower clean sparks are associated with good plant availability, a stable running schedule and rising wholesale gas prices, which resulted in negative clean spark spread overnight. Looking ahead, there are a number of plant outages scheduled in September and should wholesale gas prices continue to rise, the immediate outlook is for higher wholesale electricity prices.

Electricity

In August the monthly average Irish wholesale electricity price rose by 1% month-on-month. This was the first month-on-month rise since March 14. The increase is associated with rising wholesale gas prices in the UK (as gas powered generation dominates the generation mix on the island of Ireland, the price of imported gas from the UK has a significant influence on Irish wholesale electricity prices). Despite rising month-on-month, at close to a monthly average of €48/MWh the average monthly electricity price remains close to levels not seen in over four years. The rising cost to abate carbon emitted when producing electricity by burning coal and gas applied some additional upward wholesale price pressure.

The average 'clean spark' in Ireland fell month-on-month by approximately €2/MWh to a monthly average of over €12.40/MWh (the 'clean spark' is

FX Rates



| | | | | | | |
|-------|-----|-------|-----|--------|-----|--------|
| 1 Mth | -2% | 3 Mth | -4% | 12 Mth | -1% | EURUSD |
| 1 Mth | 0% | 3 Mth | -3% | 12 Mth | -7% | EURGBP |

FX Rates

Month-on-month the euro dropped significantly against the US Dollar but held steady versus the British Pound.

As discussed previously, advanced economies are embarking on contrasting growth paths and these shifts are creating volatility in the foreign exchange markets. While the US and UK have taken the economic lead, eurozone economic growth is failing to ignite. As a result, the policy choices now faced by the ECB as it looks to tackle very “lowflation” are to those faced by and enacted by the Federal Reserve (the Fed) and the Bank of England some years ago. Alone among its peers, the ECB has resisted Quantitative Easing (QE). While the ECB is expected to provide additional stimulus in the form of credit and monetary policy loosening, the Fed and Bank of England are starting to come under some pressure to ease their stimulus and raise interest rates. The contrasting economic challenges faced by the ECB and the Fed are being reflected in growing interest rate differentials. With the gap between US 10-year government bonds and those on their German peers

widening, some analysts are expecting “pronounced currency moves, including a continued strengthening of the dollar versus the euro”. Despite the well-behaved and gradual weakness of the euro in recent times, we are cautioned against presuming that this will continue as extremely low volatility is harder to maintain in the light of increasing economic and policy divergences. The impact of the ECB’s efforts to tackle deflation could be higher commodity prices as eurozone imports of Dollar denominated oil and coal could become more expensive. However, higher prices due to a weaker euro will help to tackle “lowflation”. So why has the ECB been slow to adopt QE? Firstly, in the euro area, banks rather than the markets dominate the provision of credit. In America, companies raise much of their funding in the bond markets and QE is most effective in lowering corporate borrowing costs. Secondly, there is a fear that QE would relieve the pressure on less credit-worthy countries to overhaul their economies. Thirdly, QE will expose the ECB to holding dodgy sovereign debt. The benefits are that it has the power to stimulate demand, allowing economic space for structural reform to work.

In August it was reported that the US and UK economies grew. This growth looks even more positive when compared to a shrinking German economy (down 0.2% in Quarter 2), stagnation in France and a recession in Italy. None of the three eurozone economic powers grew in the second quarter of 2014. Despite falling unemployment in the UK, wage growth has never been lower and thus there is little sign of inflationary pressure which in turn makes it difficult to predict the first Bank of England rate hike.

Market Outlook

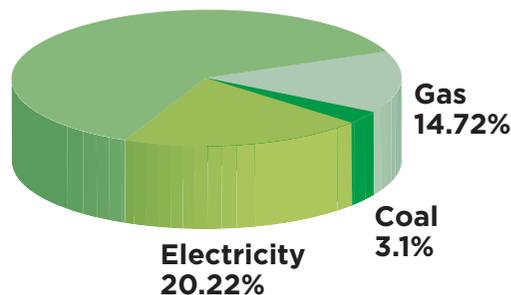
Talks between the European Commission, Russia and Ukraine over the long-running gas dispute were set to resume on September 6 but hopes of a solution ahead of the winter look remote at the time of writing. In early September it was announced that these talks are to be delayed as Ukraine pushed to secure an interim gas price and to prise Gazprom out of the Ukrainian transit business. The latest delay to the trilateral talks throws into doubt Europe’s ability to broker a deal before the heating season starts. If talks begin, it is predicted that the EU may pressure Ukraine to pay off its outstanding gas debts (reported to be over US\$5billion) and that it will consider granting Gazprom the right to use the full capacity of Germany’s Opal pipeline to avoid a Ukrainian gas transit crisis this winter. As it stands, Ukraine is not receiving gas from Russia’s Gazprom with both parties locked in a dispute over the unit price of gas and outstanding debts. As we approach winter, the gas markets throughout Europe will become increasingly concerned that in the absence of an interim solution, European gas supplies will look increasingly vulnerable as Ukrainian gas demand rises and European stocks are eroded. The markets fear that Ukraine may be forced to siphon off Russian gas bound for Western Europe, leaving it more exposed in the peak demand period. To stop Ukraine from siphoning off westbound gas, Ukraine needs to inject up to 10bcm into storage by October 15 and at present it is not receiving any gas from Russia. Both Naftogaz (Ukraine’s national oil and gas company) and Gazprom have filed arbitration suits in Stockholm over the dispute but that process could take up to 12-15 months. Ultimately the two sides need to agree on an interim solution so that gas supply security can be protected this winter. However, as reported previously, both parties appear to be in separate universes on the outstanding gas debt and what a fair unit price of gas is going forward. Negotiations between both countries are made more difficult with separatist rebels, reportedly backed by Russia and aided by Russian soldiers, clashing with Ukrainian troops in both the Luhansk and Donetsk regions of eastern Ukraine and further south around the port of Mariupol. With the Ukraine crisis appearing to deepen in August, European gas markets will remain very vulnerable to price shocks if both countries slide toward all-out war. Hopes were raised that an all-out war would be avoided following reports that Ukraine and Russia had agreed on a “ceasefire process” for eastern Ukraine. This process could prove positive for an interim solution to the gas dispute.

Russian gas flows to Europe through Ukraine averaged at 207mcm last winter and according to the UK’s National Grid, the effect of a full interruption of Russian gas flows to Europe via Ukraine would be 117mcm, as 90mcm can be rerouted via Yamal and the Nord Stream pipelines. In the event of a disruption, the UK could see a reduction in imports from Norway and the Netherlands but LNG imports may increase to cover most of the shortfall. Increased withdrawals from storage sites could also be possible depending on the level of UK demand. EU gas storage levels (excluding strategic stocks) are over 86% full (over 63bcm) at the beginning of September, compared to 62% full 12 months ago.

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.

Oil 61.96%



For more information please contact:

Bord Gáis Energy – John Heffernan (Gas & Power Trader) 023 8895123/087 2407566

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