ICIS Power Index Q3 2014 analysis – supply concerns make for volatile year

**Highlights**

- The ICIS Power Index has been boosted by less UK power generation than expected for the winter ahead, with more nuclear capacity remaining offline going into the colder months.

- For the year to date, tensions between Russia and Ukraine have supported UK wholesale power prices, particularly in Q3, with concerns over gas supply availability.

- Geopolitical tension has also made prices more volatile – the top three day-on-day price changes during Q3 coincided with developments between Russia and Ukraine.

Going into this winter, concerns over nuclear availability and gas supplies have boosted UK energy prices, although the ICIS Power Index has trended downwards over the year as a whole.

“Energy companies are actively buying and selling electricity in the market right now for delivery over the next year, so any price rises on the wholesale market could affect what consumers pay later on,” said Zoe Double, Head of Power at ICIS.

**Price moves in 2014**

Going into this winter, concerns over nuclear availability and gas supplies have boosted UK energy prices, although the ICIS Power Index has trended downwards over the year as a whole.

The IPI’s highest point for 2014 to date was £52.866/MWh on 2 January, the first date of calculation for the year, but the index declined to hit a low of £46.373/MWh on 10 July.

However, 2014 has seen greater volatility than the year before.

Concerns over interruptions in gas supply from Russia because of tensions with Ukraine drove some of the largest day-on-day price moves, making prices volatile as traders reacted to events.

Seven of the top 10 day-on-day moves for the year were related to the Russia-Ukraine situation – both upwards, when tensions escalated with military interventions and sanctions activity, and also downwards, with statements on security of supply.

Early in the year, the market was expecting possible extra demand after a cold spell, but with changing weather forecasts and more liquefied natural gas (LNG) imported into the UK by sea than expected, prices trended lower.

However, Russia backing Putin in the potential use of force in Ukraine led to one of the highest day on day gains of 2014.

Prices had declined by the start of the third quarter, with traders expecting a resolution to the crisis, and there was increased LNG supply into the UK. The ICIS Power Index reached its lowest point of the year.

However, sanctions activity against Russia caused prices to rise again in late July, with the EU’s first proposal, and then their consideration of expanding them to include the gas industry.

Most recently in September, prices rose again because of doubts about how much UK generation will be available over the winter, with National Grid acting to shore up supply margins to make sure the UK has enough electricity in the event of cold weather and high demand.

**Russia and Ukraine tensions**

Russia does not export gas to the UK directly, but any interruptions of Russian gas supplies to continental Europe would have a knock-on effect on the UK market. Russia provided about half of Ukraine’s gas consumption last year and if supplies do not resume, Ukraine could not replace Russian volumes from domestic production and European imports. In that event, transit volumes of Russian gas to Europe via Ukraine could be affected.

More than 50% of total Russian supplies to Europe were transited via Ukraine last year.
LARGEST DAY-ON-DAY PRICE CHANGES IN 2014 UP TO 30 SEPTEMBER

<table>
<thead>
<tr>
<th>Date</th>
<th>ICIS Power Index value (£/MWh)</th>
<th>Day on day IPI % change</th>
<th>Drivers for price change</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/03/2014</td>
<td>51.602</td>
<td>+4.7%</td>
<td>Russian Parliament backs Putin in potential use of force in Ukraine (1 March)</td>
</tr>
<tr>
<td>04/03/2014</td>
<td>50.598</td>
<td>-1.9%</td>
<td>Market concerns ease as Russian gas continues to flow</td>
</tr>
<tr>
<td>27/03/2014</td>
<td>50.813</td>
<td>+5.7%</td>
<td>Seasonal changeover; Summer ‘15 carbon price support level higher than Summer ‘14</td>
</tr>
<tr>
<td>07/04/2014</td>
<td>50.189</td>
<td>+2.6%</td>
<td>Ukraine rejects Russian gas price increase</td>
</tr>
<tr>
<td>07/05/2014</td>
<td>49.628</td>
<td>-2.2%</td>
<td>European companies support flows to Ukraine from EU</td>
</tr>
<tr>
<td>17/06/2014</td>
<td>49.297</td>
<td>-2.1%</td>
<td>Central and Eastern European governments reassure the market that EU gas supply is secure despite Ukraine</td>
</tr>
<tr>
<td>30/07/2014</td>
<td>48.609</td>
<td>-2.2%</td>
<td>EU sanctions on Russia avoid the gas industry</td>
</tr>
<tr>
<td>28/08/2014</td>
<td>49.773</td>
<td>+2.1%</td>
<td>Rumours of Russian troops entering Ukraine</td>
</tr>
<tr>
<td>04/09/2014</td>
<td>50.815</td>
<td>+2.5%</td>
<td>Four UK nuclear reactors offline for longer than expected</td>
</tr>
<tr>
<td>29/09/2014</td>
<td>52.007</td>
<td>+3.8%</td>
<td>Seasonal changeover; Winter ‘15 carbon price support level higher than Winter ‘14</td>
</tr>
</tbody>
</table>
The market watched the situation carefully throughout September, as “reverse flows” from Europe into Ukraine are important for filling Ukrainian storage, which is crucial for smooth transit of Russian gas to Europe in the winter. Ukraine began to import gas from Europe via Slovakia from 1 September, adding to imports from Hungary and Poland.

The EU is also keeping a close eye on the situation, asking all member states to make sure they can meet a day of demand during 20-year temperature lows by early December, and to ensure they can flow gas in the opposite direction to usual if necessary.

Power prices are closely linked to UK gas prices because natural gas fuels around 30% of Britain’s electricity generation. Gas-fired generation is also a “flexible” and price-sensitive form of electricity generation. So when electricity prices are high enough to justify burning fuel, gas-fired generation will start to generate, providing more electricity supply with the effect of bringing prices lower.

UK supply shocks

At the same time as possible demands on gas, the UK has less nuclear capacity than expected going into the winter.

Two nuclear reactors totalling 1.2GW were taken off line unexpectedly in August, which accounts for some 10% of the UK’s supply surplus during some weeks in the winter. Originally, the units were expected back by the end of October, before the colder weather and high electricity demand, but operator EDF Energy announced on 4 September that the plants were expected to return between November and December.

The announcement triggered the ICIS Power Index’ fourth largest day-on-day price move.

In total, the UK is going into the winter with 2.9GW of nuclear capacity offline – last year, only two units totalling 1.1GW were off line in December.

Coal-fired capacity has also been reduced as older plants come off line under the terms of the EU’s Large Combustion Plant Directive. National Grid data shows there will be almost 19GW of coal capacity available by the last week in November, compared with the maximum capacity of almost 21GW that was available in winter last year.

National Grid has responded by bringing in new measures early to make more generation available to the market, launching its supplemental balancing reserve mechanism this year instead of next to encourage power plants that have been closed to generate to meet extra demand during peak times on weekdays. In addition, a 460MW nuclear unit originally scheduled to close at the end of September has been cleared by the Office for Nuclear Regulation to extend operations until the end of next year.

Nuclear generation is one of the cheapest types of electricity to produce, and provides electricity over long periods of time, rather than turning on and off according to demand.

Other policies affecting UK prices

The largest day-on-day price change was seen on the days that the ICIS Power Index changed from including trades for seasons beginning delivery from 1 April 2014, to delivery from 1 April 2015.

The jump in price from this year’s summer to next related to the UK government’s policy of topping up the price of carbon dioxide emissions in its EU Emissions Trading System with an extra levy on fuels that create emissions called the carbon price support.

Wholesale power delivered from 1 April 2014 had an extra £9.55 to pay per tonne of carbon dioxide emitted (tCO2e) – but from 1 April 2015, this levy increased to £18.08/tCO2e.

The policy aimed to give low-carbon generation an advantage, and ceases to apply when the EU emissions price reaches a certain level. However, at current emissions prices, the price support means that UK generators pay 60% more for the carbon dioxide they generate than generators paying the EU emissions price alone. In the most recent budget announcement in March,
the UK government declared the carbon price support level to be frozen from 1 April 2016 at £18.00/tCO2e.

Long-term trends

The long-term price trend for wholesale power remains downwards – the IPI's highest level for 2014 to date was £52.866/MWh on 2 January, and prices have struggled to regain these levels since.

Part of this is greater energy efficiency, which has led to less demand and therefore softer prices, with households using 9% less energy last year than they did in 2000.

Renewable generation has also increased over the last year – which pushes wholesale power prices downwards, because renewable electricity generators receive subsidies to generate as much green energy as possible.

The extra generation is meeting more of the UK’s total demand, so the market price for conventional generation is falling.

For 2014 to date, wind generation accounted for 7.1% of UK generation, according to data from UK market operator Elexon – up from 5.4% for the same period last year. These figures do not include “embedded” generation such as smaller wind turbines that do not connect directly to the transmission grid.

Traded volumes in 2014

Wholesale electricity trading volumes reflected in the ICIS Power Index have been higher year on year for almost the whole of 2014 to date, boosted by the risk of gas shortages from tension between Russia and Ukraine.

In particular, volumes for the front two seasons that make up the ICIS Power Index have been 46% higher for Q3 than the same period the year before.
Q2 trading volumes saw the largest year on year difference, up by 90%. Traded volumes during April, when pro-Russian protesters first occupied official buildings in eastern Ukraine, were more than twice those from the year before (150%).

Market participants have put the additional liquidity down to greater volatility – the more extreme price rises and falls, the more participants need to safeguard themselves against changing risk. More volatile markets also allow more trading opportunities.

**Liquidity concerns**

Long-term, UK power market volumes have trended downwards, which Ofgem is concerned about, and is one of the issues that the regulator asked the Competition and Markets Authority to examine when it referred the UK electricity market.

The concern is that without electricity being made available to buy or sell, new participants cannot get involved in trading, and price signals are weaker.

An additional concern that the investigation highlighted is that the largest participants, the “Big Six”, do not have to trade, selling the electricity they generate to their own customer base – although the companies themselves dispute this.

Since April, British regulator Ofgem also brought in a mandatory market-making obligation on the largest market participants from April, requiring them to make power available to both buy and sell within two trading windows during the day.

However, some investment banks have either ceased or downsized trading activities in UK power and other commodities over the last year, deterred by low demand and the increased regulatory burden. Bank of America Merrill Lynch exited European power and gas markets early this year, joining Deutsche Bank, while JP Morgan and Morgan Stanley have re-examined their positions. With fewer companies actively trading, there has been less activity in the UK and other European energy markets as well.

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