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The generation game—an investment conundrum

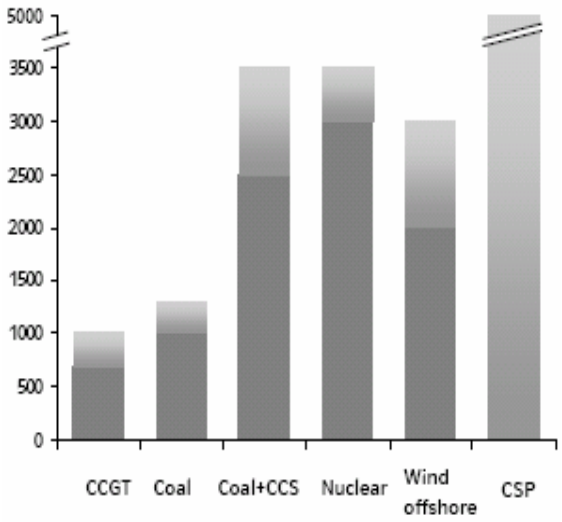
In last week's *Energy perspective* we reviewed the links between wholesale and retail prices and suggested it may only be a matter of time before the politicians want to take another look at the sector. This week we assess another aspect of energy markets that is often on the politicians' radar, and is sometimes put there by the Big Six as they defend their retail market positions. This is the outlook for investment, a subject that was again in the headlines last week not least on Friday when, as we went to press, Ofgem published its initial findings from *Project Discovery* (*see p13*). The regulator highlighted the supply security from rising gas imports and renewables and the need to invest as many power stations near the end of their operating lives. It suggested up to £200bn in investment could be necessary to secure supplies and meet climate change targets and warned consumers were likely to face higher bills to fund the investment.

E.ON's decision to defer building its cleaner coal station at Kingsnorth for two to three years had already made the headlines last Wednesday (*see p16*), and illustrates another investment challenge, namely confidence in enduring demand. We will consider *Project Discovery* in more detail next time. But in advance of that in this *Energy perspective* we catch up with industry thinking on the investment outlook, drawing from last week's E.ON Group investor seminar[1] on its generation business and the recent SBGI conference on energy prices and investment. These two events allow us the opportunity to assess wider views firstly from a UK perspective and secondly from one major player with an interest across several key markets.

Countdown

E.ON UK also recently launched a campaign *Talking energy*[2] to highlight the "huge energy challenge" the UK is facing. The challenge has three parts: security, affordability, and low carbon. The same "trilemma" was highlighted in the investor day with emphasis on governments to "ensure security of energy supplies and diversified fuel mix", on markets to "deliver best value to consumers" and, with the decarbonisation of the electricity sector, a "clear mega-trend" was emerging concerning the "necessity for a global compromise", which was "more and more imminent."

Cost comparison new build (€/kW)



Source: E.ON capital markets day October 2009

The company suggested more than half of Europe's generation must be replaced by 2030, including 50GW as a result of the Large Combustion Plant Directive alone. New renewables would also need 90%+ fossil back-up due to intermittency and reliability issues. So, while power demand growth was important, "replacement plant requirements have much greater impact on market equilibrium." To achieve this EU power plant investment would need to run at up to €60bn a year.

As indicated by the Kingsnorth decision, the downturn has dramatically increased short-term capacity margins, although in the medium- to long-term, E.ON highlighted tighter capacity margins in

[1] http://www.eon.com/en/downloads/E.ON_Capital_Market_Day_09.pdf

[2] Including via http://www.youtube.com/talkingenergy

its core markets after 2015. At the SBGI seminar, expectations of investment required over the next 15-20 years for the UK alone were put at £150bn-£200bn most linked to generation and networks (Tony Ward of Ernst & Young suggested £145bn and £30bn respectively) ,but also significant requirements for suppliers (£15bn) and for metering and systems (£10bn).

Dating in the dark

A point also made at the E.ON seminar was that a range of technologies could deliver decarbonisation, security of supply and affordability. They were generally hi-tech—nuclear, coal with CCS, wind, and solar—with higher capital but lower fuel costs than today's default technologies of CCGT gas and unabated coal *(see chart above)*. Unsurprisingly, E.ON argued that only large well-capitalized entities could manage investments in new nuclear and coal with CCS, a technology it described as "look[ing] very promising but still need[ing] to be proven on a large scale."

To deliver these technologies a reliable investment framework was needed for the period after 2012 but one which included sustainable long-term carbon values delivered through the EU ETS. Presently this provided only partial support as it does not run beyond 2020 and carbon values, which could not be relied upon, were muted. One speaker at the SBGI event suggested a floor of €35/t to make CCS viable (compared to prices currently in the €10-15/t range).

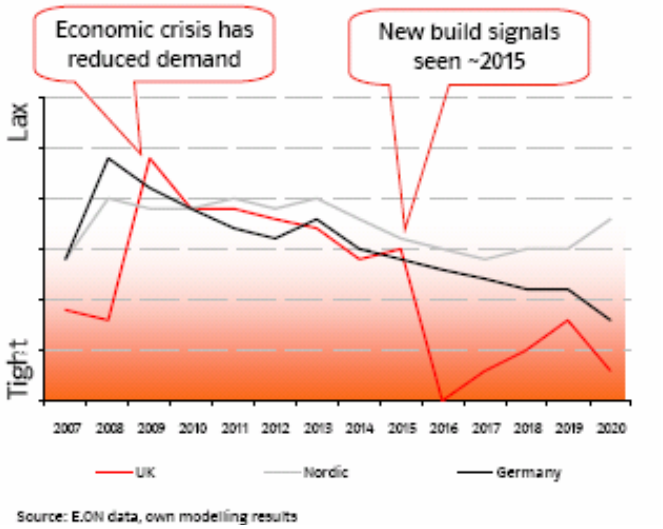
Several other speakers at the SBGI event were sceptical about the role of carbon pricing. The EU ETS has a problem in that each phase so far has only lasted for a handful of years leading to investor uncertainty over the longer-term requirement for investment. In the UK, there were specific subsidies supporting particular technologies, such as Rocs and support for CCS is likely; the risk is that over time such subsidies may distort the market.

Once a new global emissions reduction agreement was established following Copenhagen, a "strong long-term carbon framework [needs to be] put in place [so the] EU moves forth with progressive targets [and] installs [a] strong carbon regime", E.ON said. But there were two big "ifs" here—will a long-term regime be established and will the allocation policy underpinning it support significantly higher values?

E.ON also made two further points:

- "a system with a high share of renewables leads to high mark-up needs for other generation capacity; and
- if governments do not favour the least cost option somebody has to pay."

Generation margins against peak load



Source: E.ON data, own modelling results

At the SBGI seminar Paul Spence of EDF thought that the current framework was not 'decarbonising' the industry fast enough; action was needed to 'kick-start' new technologies and then reconsidered once targets had been reached or have time limits. The fundamental issue, he said, was to establish a long-term carbon price signal which was not subject to five-year 'bites'. This may be a carbon price floor, operating alongside the ETS but UK-specific but funded from those who produce carbon, it would not be a subsidy. This would, said Spence, create a level playing-field for low carbon technologies.

Andrew Wright at Ofgem was not keen, expressing concern that some incentives may weaken the incentives for other technologies.

Take the money or open the box?

None of this is, new but it explicitly states the scale of the investment challenge, and both events were targeted on audiences of those who could provide or influence the direction of funds.

The nervousness that the UK might not attract enough finance to underwrite our share of investment was very real at the SBGI seminar. The fear of a gap between policy aspiration and what was achievable was widely expressed. Further, this was compounded by the reality that the UK was competing with many other areas for finite funding. This theme was developed by Stephen Vaughan from Rothschilds at the SBGI event, who claimed the prospects of meeting the investment targets were poor. He felt it was looking likely there would be a "chronic' shortfall". Current progress with investment was "simply not encouraging" and, if continued, would mean at £75bn we would fall half way short of the target required for 2020.

Rothschilds thought the most likely source of investment funding was from current utility players as they were the ones with the capability, mission and capacity. But there had to be doubts as to their ability to raise the capital necessary; the utilities investment "tap" was "full on" already. The outlook for project financing by debt was pessimistic as companies could not presently take on too much debt. Only the week before last, EDF confirmed it was considering selling off its UK distribution businesses, with press reports of a price tag of €4bn, in an attempt to reduce its debt. The climate for raising new equity for organic investment for very long lead-time projects was not favourable.

Richard Jemmett of RWE Npower said that the industry could respond and must be allowed to do so through the market, but not everyone agrees. In this context Ofgem's Andrew Wright acknowledged that since establishing a market system the environment had changed with the move towards a low carbon industry, and the role of energy markets was being reassessed across the political spectrum. He said Ofgem's view remained that there was no 'fundamental' reason why properly designed markets could not deliver security of supply, but there was more than an implication that there may be a need to redesign elements of the present arrangements. Project Discovery, which at the time he spoke was on-going within Ofgem, was the mechanism for testing these assumptions and whether any additional steps might be necessary.

Supermarket sweep

Certainly there was evidence at the SBGI seminar to back up E.ON's views delivered through the presentation on the need for big balance sheets (and the implication that investor interest will be dominated by the Big Six). This means for nuclear new build and offshore wind that much the lion's share of investment is likely to come from the Big Six (Vaughan suggested over 90%), but for CCS perhaps slightly less so (about 80%). There was also a risk that the most attractive technologies would attract the most investment, 'cannibalising' other technologies, particularly CCS and nuclear, or leading to more investment in shorter-term solutions such as gas.

But it seems we should be careful of taking too bleak a view of meeting this major investment challenge. For with much being made of the risks of major European players not investing in the UK, several points were made by E.ON that emphasised the location's relative attractions. The company told its investor seminar that it was "well-positioned for the upturn" with a pan-EU presence meaning it:

- could "tap [into] the markets with the quickest recoveries and highest growth rates (Spain, Italy, Central and Eastern Europe and the UK)"
- would be active "in markets such as [the] UK which have replacement cycles (LCPD) driving [the] need for new capacity"; and
- could "target markets with scope for future technologies such as nuclear (France, UK, Nordic, Italy)."

Furthermore markets where the company held shares of 10-20% were seen by E.ON as "ideal platforms for further growth", and these included the UK, Nordic markets and the Benelux.

... and contestant number 3 enjoys bushwalking, ballroom dancing and contestants number 1 and 2; welcome to ..."

X factor

As for Kingsnorth and the E.ON announcement that came after both these events, while there has been speculation about a lack of clarity over

CCS funding, the stated reason for deferring the investment was the downturn in demand. Latest DECC figures show it 5% lower year-on-year, while E.ON told its capital markets day audience that a global recession had "stolen" three to four years of power demand. But, in comments that echoed Ernst and Young's recent analysis of the investment window created by the downturn, it had chosen to use this "down time" to reassess all its investment plans and "focus our attention on improving the quality of our existing portfolio." In this context it mentioned another UK project, the environmental upgrade at the 2GW Ratcliffe coal station due from 2013.

Britain's got talent

There is undeniably a very significant investment challenge to deliver affordable, low carbon and secure energy supplies. It is also clear that the Big Six will be instrumental in delivering that investment. But for all the difficulties the sector sees, in the eyes of at least one major player the country remains an attractive market for funds.