

ENERGY

IN BUILDINGS & INDUSTRY



Hiding behind the façade

New systems can save energy and space



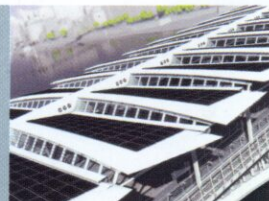
The false economy trap

Make sure you have the correct boiler controls



Photovoltaics power ahead

Massive solar array takes shape over the Thames



Shale gas lifts the energy gloom

Ben Dhesi looks at recent developments in the energy sector and discusses what this could mean for UK energy prices in the future.

Common perception is that over time energy prices will increase. This is in no small part the result of increased exposure that the UK gas and electricity market has gained to European and global markets. For instance, we now have gas pipelines supplying the UK with natural gas from Norway and Russia. We have undersea interconnector cables supplying electricity to the UK from mainland Europe, including the France-UK interconnector and the BritNed interconnector which launched in April. Further interconnectors from Iceland are planned which could result in the longest subsea power cable in the world. And then we have the cargo energy imports, largely in the form of LNG from the Middle East.

Dwindling reserves

Access to global gas and power markets certainly benefits the UK market as reserves of the UK's North Sea gas dwindles. However, it also means that UK gas and power prices are now at the mercy of the global market. This has really hit home this summer as we saw the tensions in the Arab states, coupled with the Japanese tsunami, lead to massive rises in UK gas and power prices. Other less well known news such as Norwegian gas pipeline closures for maintenance and the France-UK interconnector operating at half capacity throughout April (again for maintenance) also exposed the UK to upwards price trends this summer.

In theory the Japanese tsunami and the meltdown of its nuclear reactors should not affect UK power prices, as we don't have access to their power. However, the meltdown led to fears that Japan's appetite for Middle East LNG would increase. It also led to Germany mothballing its older nuclear reactors. The latter was significant for UK power prices. Whereas the UK gas market largely dictates European gas prices, the German power market sets the trend for Europe's power prices. With the UK's interconnections with France and the Netherlands we were



Major energy users are at the mercy of the global market, but prices may begin to stabilise

exposed to the power price surge with little protection.

Renewable energy is also now coming on-stream in the UK but its contribution is still quite low in comparison to our total energy requirements. Significant technological development and changes in government legislation are still required to meet the previously published 2020 targets as most of the benefits gained from renewables are being offset by the overall increases in demand for energy.

Perhaps, so far one might think that I am leading the charge to form a band of Euro energy sceptics. It's true that in the short-term we will be exposed but looking into the medium-term there is cause to be optimistic. Such optimism is

primarily caused by two words that we will likely endure over course of the 21st century: shale gas.

Shale gas drilling

Shale gas is natural gas that is present in tight shale rock formations that are found globally, and in abundance in the US. Previously shale gas was presumed to be commercially inextractable. However, new drilling techniques – in the form of horizontal drilling through the shale – and subsequent high pressure punctures using sand and water cause the shale to fracture, known as 'fracking'. This releases the natural gas in significant quantities.

To put this into perspective, US natural gas reserves have increased from 800 trillion cubic feet (TCF) to a US Cambridge Energy Research

Associates estimate of 2,800 TCF. Recent figures predict that the US now has over 200 years of natural gas resources at its disposal. The economic climate of the US is crying out for a boom industry to aid its recovery, to provide jobs and a resource that puts wealth into the depleted Federal Reserves. Despite environmental concerns around shale gas exploration, the likely election of a highly pro-exploration Republican government next time round means that the shale gas industry will be embraced by the US with open arms. With around six mega LNG export terminals planned along the east coast, the US has the resources to out-muscle the Middle East as the dominant force in global LNG exports and will flood the market with its LNG, probably within five years.

There are numerous upsides for the UK. Firstly, the US won't currently import LNG unless it's at rock bottom prices, which eliminates the US as competition to the UK for LNG imports. Logistically we are best placed to receive US LNG and our relationship will favour us sitting at the US LNG buffet with an all-you-can-eat ticket. In the short-term LNG is no longer a scarce resource like oil and the major LNG exporters like Qatar and Saudi Arabia can no longer operate in a sellers' market. The impact on LNG prices could be felt long before the US is operational as a major LNG exporter. To put it in perspective, since the shale gas discoveries the US gas prices have fallen to an all time low and nothing thus far has been able to lift them, as the long-term supply is so abundant.

With 40 per cent of our electricity generation currently produced from natural gas, both the medium and long-term prices of gas and power should stabilise. All this means we can afford to take a more positive outlook on the future – and the autumn of discontent thus far may not be the status quo as the result of the UK's involvement in the global energy market. ●