



PORTLAND MARKET REPORT

MAY
IN VIEW

WHY CARBON CAPTURE, UTILISATION AND STORAGE MUST BECOME A 'THING'.

Over the last 2 months we have been on a renewables journey, firstly looking at solar and then wind power. We established that both forms of energy were viable from a commercial and environmental perspective, but also that the industrial processes involved in production were carbon intensive. This means that if we are to build these facilities at speed, then CO2 emissions will continue to rise – bad news considering the increasingly tangible effects of climate change. The requirement then, for effective Carbon Capture, Utilisation and Storage (CCUS) is now pressing to a point where, arguably, it is the most important part of the environmental equation.

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Unlike the development of renewable energy, the capture and storage of CO2 can never be a profitable enterprise, because the process simply involves the removal of CO2 from the atmosphere (at great cost), followed by CO2 storage ad infinitum. This means that CCUS can only ever work as a mandated obligation or via taxation. An obligation would mean that governments force CO2 emitters to build carbon sequestration facilities, as part of their 'license to operate'. This is unlikely to work, as emitters (industrial complexes, factories, power-stations, refineries) will simply 'up-sticks' to countries where there are no CCUS requirements. A more realistic approach would be to fund CCUS via carbon taxation, whereby producers and sellers of products generating CO2 would be taxed, before (almost certainly) passing on that cost to end-consumers.

Introducing new tax revenue streams is nothing new, and considerably more straightforward than the actual building and operation of CCUS facilities. In fact, it is probably appropriate at this point to ask whether carbon capture is really a feasible and real 'thing'. As a subject, it is much talked about, but even the most developed projects are far

from operational, and cynics will point out that effective carbon capture has long been promised, but never delivered. That being said, just because things have not yet worked, does not mean they never will, and it is something of a paradox that the technology involved in CCUS is not only well established, but regularly used in the oil industry!

'Enhanced oil recovery' involves the pumping of CO2 into depleted oil reservoirs to increase the crude yield of mature oil fields. This has led some 'innovative' oil companies to start talking about the prospect of 'net-zero' oil, whereby the amount of CO2 produced in production is matched by the same amount pumped into a depleted reservoir. Understandably, this is difficult to swallow for many, but surely it is a good thing that taking CO2 and pumping it into underground reservoirs isn't actually a new development? And, by the way, there is no shortage of reservoirs to pump the CO2 into – over 1m oil wells in the USA alone!

This knowledge and confidence in the technology available has stimulated significant development, with new CCUS projects springing up across the world. In the UK, the 6 million tonne Clean Gas Project on Teesside has BP, ENI, Equinor, Occidental, Shell and Total amongst its investors and the project aims to gather industrial CO2, compress it and then either sell it (to those industries that use CO2) or store it in reservoirs under the North Sea. The Humber Industrial Cluster Plan (HICP) involves the likes of P66, British Steel, Drax and Centrica and aims to do pretty much the same thing, this time using the depleted Viking Gas Field off the Yorkshire Coast. Other similar sized projects are also now under construction across Europe (DMX in Dunkirk), North America (Quest in Edmonton) and Australia (Gorgon in Western Australia). Such activity has to be encouraging because it is inconceivable that the multinationals involved would invest hundreds of millions of pounds in something they don't believe will work. Whatever their motivations (and of course they vary), there is intent, and this means that CCUS will become a 'thing'.

A more problematic issue is that most facilities will not be removing and storing

CO2 until late into this decade, which speaks directly to the slow work of decarbonisation versus the potentially quicker work of climate change. The International Energy Agency has also predicted that over 2,000 CCUS facilities are required globally by 2040 to meet COP21 climate targets, but at present there are still only 19 industrial sized plants in development across the world. Also, as an operational model, CCUS is arguably unsustainable in the longer-term. Each year the world generates CO2 which has to be removed and stored, but once a CO2 reservoir is full, then another has to be found in exactly the same way as oil exploration constantly has to find new oil wells, to maintain the status quo.

**“A KEY COMPONENT IN
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ECONOMY.”**

We shouldn't lose sight of the fact that only the reduction of CO2 emissions will provide a long-term solution to the problems of climate change. There is no single 'silver bullet' in the decarbonisation conundrum, but certainly CCUS can act as a brake in the cycle and will inevitably become a key component in greening the global economy. This is because the modern world requires steel, concrete and other heavy industries and, as long as this is the case, copious amounts of CO2 will be generated. Emissionless energy, carbon-free concrete, green steel and renewable plastics are all possible, but they are all further down the track than CCUS and so if you want a low-carbon economy, heavy investment in carbon capture is going to be required.

For more pricing
information,
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