

Club of Three webinar – 24 November

"Backing tomorrow's winners? How to make a success of the energy transition"

Meeting summary

In November, the Club of Three held a webinar on the energy transition with Worcester Bosch CEO Carl Arntzen, National Grid Director for COP26 Duncan Burt and Edmond Alphandéry, Chairman of the Task Force on Carbon Pricing in Europe, as main speakers. This was the third in a series of webinars held in Autumn 2020.

Despite the very difficult economic climate, there had been strong signals in Europe that now was the time to accelerate the energy transition and invest in areas of future growth. EU Climate Commissioner Frans Timmermans had stressed that the Covid-19 crisis would not delay European action on carbon reduction, and that it had in fact strengthened the EU's resolve to decarbonise.

If Europe is heading towards carbon neutrality by 2050, how will this be achieved and what will be the key enabling technologies? Will carbon pricing be a crucial element in the energy transition? What more can be done to incentivise green investment?

In France, the government had announced a big push for hydrogen production as part of its economic recovery plan while Germany planned to increase the share of renewables to 65% by 2030 in a new law under consideration. As far as post-Brexit Britain was concerned, Prime Minister Johnson had spoken of the UK as the Saudi Arabia of wind. Are the three of us on the same page?

The discussion started with a call from Edmond Alphandéry for the establishment of a proper carbon price both in Europe and globally. The "gilets jaunes" protests in France had shown how explosive an issue a higher CO₂ tax was for large parts of society, and further progress via this route was therefore limited. The best approach was to target industry and other major emitters through emissions trading. But in order to be efficient, this system had to provide a clear signal. In the EU, the Emissions Trading Scheme had so far not managed to overcome sometimes huge price volatility, especially in the aftermath of severe economic shocks. The price of EU ETS allowances had recovered since the 2008 crash to reach around EUR 30 per tonne of CO₂ today but this was still far below what was needed to reach net zero carbon objectives. The solution was to put the emphasis on the price of carbon rather than on emission volumes. For carbon, the elasticity of demand varied according to industrial sectors. Coal had been successfully phased out from UK electricity production at a price of about EUR 25 per tonne of CO₂. But getting rid of carbon in sectors like cement or steel would require a much higher price. In order to be effective, carbon pricing needed to be set at EUR 100 per tonne by 2030. Only then would key technologies such as carbon capture and storage (CCS) be viable. It was pointed out

that French energy company Total was now working on the assumption of a EUR 100 per tonne price from 2030.

The North Sea's potential to become a major green energy hub and significant contributor to European climate objectives was vast. Duncan Burt noted that, in the UK alone, renewables growth well above 40 gigawatts was expected in the 2030s. And its existing gas reservoirs could be used in future for both the production of blue hydrogen and carbon storage. The UK power grid could turn negative in terms of emissions by the next decade as a result of such developments which could be replicated throughout the North Sea basin near the coast of Belgium, the Netherlands, Germany, Denmark and Norway. The UK has particular expertise on how to manage all the very different aspects of such a large build-out. A recent report by the think tank Policy Exchange had shown that spatial planning was likely to be a key success factor. The establishment of a seas authority to manage this process, and creation of different development zones, was recommended. Coordination between neighbouring countries and compatible commercial and regulatory arrangements was also key, especially after Brexit. But Europe was not on uncharted territory, having successfully developed oil and gas networks in the North Sea in a coordinated manner in the past.

Hydrogen also had the potential to become a major enabling technology in areas where electrification was not an option. In the domestic heating sector, electric heat pumps would become the default for new homes. But in countries like the UK that have a very old housing stock that is difficult to properly insulate together with highly variable temperatures, hydrogen represented a very good alternative to natural gas. The first step was to start blending it into the existing gas network, which could cope with hydrogen levels of up to 20-30% before appliances needed to be upgraded. Blue hydrogen from fossil fuels will have an important and necessary role to play in the following phase as greater quantities are fed into the heating network. Carl Arntzen expected that reasonable quantities of green hydrogen would become available in the 2030s, and by the 2040s there would be a global market for green hydrogen that is potentially liquefied, shipped around the world and imported at scale. Hydrogen boilers had the additional benefit of emitting no carbon monoxide, one of the main causes of deaths related to gas-fired appliances. The former were considerably safer than the former.

Regarding CCS, it was likely that the large investments in the carbon capture and storage technology would now come through in the UK and potentially Germany and the US too, even without a global carbon price which would undoubtedly be the ideal scenario for its deployment. There was demand for a global price of carbon from companies like National Grid – and anyone with a net zero target – as it would provide its supply chains, particularly in sectors such as steel and aluminium, with a reference point. But its establishment was inevitably political and reaching such an agreement would be a major diplomatic accomplishment.