

From Parliament



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Europe's plans on CCS provide exciting opportunities for Scotland

Shortly after the European Commission published its climate change and energy package at the beginning of this year, I highlighted in Insight Europe the potential benefits to Scotland of the drive to increase renewable energy output to reach an EU target of 20% by 2020. The challenges for Scotland in harnessing the potential of hydro and wind power are solid public and private investment and an effective national planning process to facilitate the establishment of wind turbines and wave farms.

Within the minds of European politicians at least, the place of renewable energy in Europe's future energy mix seems to be relatively secure. Coupled with energy efficiency measures, renewable energy will bring real emissions reductions and put Europe on the right track to become a low carbon economy.

While the future may be green, the reality is that Europe is still heavily reliant on fossil fuels. Given that coal accounts for up to one quarter of Europe's carbon emissions, politicians have increasingly focussed their attention on making coal cleaner. Out of the possible options for developing 'clean coal' output, the one that has generated the most interest is Carbon Capture and Storage (CCS).

CCS is indeed a relatively new and untested technology but its environmental

promises – to reduce carbon emissions by up to 80% - make it a technology worth investigating further. Just last month Swedish energy company Vattenfall opened Europe's first pilot CCS enabled power station in Brandenburg, Germany. The small scale nature of this project – the generator can only produce 30 MW – mean that its main purpose is to provide statistics and costings on CCS which will contribute to a future economic assessment of the technology.

There are in essence two stages to the CCS process. First the carbon is extracted from power station emissions using chemicals solvents. After extraction, it is converted into liquid form. The second stage is to transport the liquid carbon through oil or gas pipes to safe underground storage facilities such as saline aquifers or depleted oil and gas reservoirs.

In the pilot CCS project in Brandenburg, liquid carbon is transported 150 miles from the site of the power station to storage facilities. Scotland's numerous depleted North Sea oil and gas reservoirs mean that Scotland would, in contrast to Brandenburg, enjoy the natural advantage of having easily accessible storage facilities.

Scotland's largest coal fired power station – Longannet in Fife – is in fact a potential candidate for CCS. Its owners Scottish

Power have submitted proposals to the UK government to make Longannet the world's first commercially viable CCS power plant - with an estimated output of 300 MW - by 2014. If Scottish Power is successful, the UK government will fund the £100 million conversion.

Recent emissions statistics demonstrate the need to invest in clean coal technology. Between 2005 and 2006, Scotland saw a 5% rise in carbon emissions with power stations responsible for 32% of the total emissions (Longannet itself produced 8.5 tonnes of CO₂).

Supporting CCS as Europe slowly reduces its dependence on fossil fuels seems a pragmatic approach not least if we remember that China opens a new coal fired power station every week. Reaching political agreement on making CCS commercially attractive is the most immediate challenge for the European Parliament and Member States.

The energy company Vattenfall has articulated the difficulties the private sector faces in embracing CCS. Investing in CCS conflicts with a company's duty to its shareholders to maximise profit through calculated risk. Vattenfall is not alone in asking for public subsidies over the short term (10 years) until CCS becomes commercially viable.

European leaders have, in theory at least, accepted this idea. Last March an agreement was reached to fund 12 CCS demonstration projects across Europe. No concrete details of funding have emerged since then but next week (7 October) the European Parliament looks set to step up the pressure through adopting a report which demands the allocation of €100 billion for the demo projects.

If granting public subsidies is the 'carrot'

approach to making CCS commercially attractive, then regulating Emissions Performance Standards would constitute a medium term 'stick' approach. The European Parliament aims to set maximum emissions levels of 350-500g/kWh but to allow some flexibility in how these targets are achieved. Energy companies would in this way have a negative incentive to implement CCS technology.

Critics of CCS highlight the long lead time for the retrofitting of existing power stations. At Longannet for example some CCS experts estimate that it will be 2025 before retrofitting is complete. For the SNP administration, such delay would endanger its 2015 target date to make CCS commercially viable as well as its target to reduce emissions by 20% by 2050.

For proponents of CCS, the publication last month of an economic analysis on CCS by management consultancy McKinsey was welcome. The report concluded that CCS could become commercially viable by 2030 meaning that the cost of capturing and storing a tonne of carbon would cost no more than an allowance under the EU's Emissions Trading Scheme i.e. at a carbon price of €30-45 per tonne. In this full commercialisation stage, the report argues, energy companies will have the necessary market incentives to use CCS technology rather than buying ETS allowances.

The European Parliament hopes to have legislation agreed by the end of the year to implement CCS on a Europe wide scale. If Member States take on board Parliament's recommendations to make substantial financial commitments toward the successful future of CCS, it could open up the way for Scotland's North Sea to become Europe's primary carbon storage facility.