

# Energy UK Response to the European Commission Communication on the Future of Carbon Capture and Storage

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## About Energy UK

Energy UK is the Trade Association for the energy industry. Energy UK has over 70 companies as members that together cover the broad range of energy providers and suppliers and include companies of all sizes working in all forms of gas and electricity supply and energy networks. Energy UK members generate more than 90% of UK electricity, provide light and heat to some 26 million homes and in 2011 invested over £10 billion in the British economy. Energy UK is listed in the EU Transparency Register under ID no. 13457582538-68.

## Main Points

- Carbon capture and storage (CCS) could play a major role in helping to decarbonise the European and world economies;
- Structural reform of the EU Emissions Trading System (EU ETS) and a strong carbon price are required if CCS is to succeed in Europe;
- The key priority at this stage to ensure the early demonstration of the full CCS chain;
- Demonstration of CCS will require additional public support, e.g. through the use of ETS auction revenues or specific incentives such as long-term contracts or feed-in tariffs;
- Regulatory measures such as emissions performance standards do not provide an incentive to develop CCS and are irrelevant until the technology is commercially available;
- The current capture readiness requirements on developers of fossil plant are sensible and do not need to be extended;
- Active public engagement programmes are required to spell out the potential benefits of CCS and ensure public confidence in the safety of CCS installations.

## General Comments

Carbon capture and storage (CCS) could play a major role in helping to meet the EU's ambitious decarbonisation targets, both in the power and energy-intensive sectors. The technology could potentially allow Europe to retain the cost and flexibility advantages of fossil fuels, while also placing energy provision on a more sustainable footing.

In a global context, CCS could be even more important, given that the major emerging economies in Asia are dramatically increasing their use of fossil fuels for power generation and transportation. If carbon emissions are to be reduced, CCS will be needed and if the EU is a successful early mover in the technology, there could be considerable export potential for European firms.

The capture, transportation and storage of CO<sub>2</sub> have all been successfully demonstrated, but not as an integrated process at industrial scale. The key priority now is therefore to ensure the prompt demonstration of the full CCS chain so that, if successful, deployment could start during the 2020s. Fossil fuels are likely to play a major role in power generation for some time to come and it is important that CCS is demonstrated for gas as well as coal if longer-term decarbonisation objectives are to be met.

Energy UK welcomes the generally supportive tone of the Commission's Communication on the future of CCS and the constructive role played by the Commission in establishing a regulatory framework for CCS in Europe. The Communication focuses mainly on capture and in our view should place more emphasis on transportation and storage, as public support for these two parts of the chain will be particularly important.

A strong carbon price is required if CCS is to succeed. The only purpose of CCS is to facilitate decarbonisation and, initially at least, the technology will be considerably more expensive and less efficient than unabated fossil fuel use. These disadvantages can only be overcome if a high value is placed on carbon abatement, and if ETS prices cover the additional costs. Consequently, it is essential that the EU ETS should be strengthened if CCS is to be deployed at scale.

## Specific Comments

### QUESTION 1

- 1) Should Member States that currently have a high share of coal and gas in their energy mix as well as in industrial processes, and that have not yet done so, be required to:
  - a. Develop a clear roadmap on how to restructure their electricity generation sector towards non-carbon emitting fuels (nuclear or renewables) by 2050,
  - b. Develop a national strategy to prepare for the deployment of CCS technology.

Energy UK agrees that EU Member States should establish roadmaps for the transition to a low-carbon energy mix and should take account of the potential for CCS. Roadmaps can play an important part in ensuring policy consistency and providing certainty for investors in the energy sector.

An example of such a national roadmap supporting the transition to a low carbon economy is the UK's use of legislated "Carbon Budgets". These are important milestones on the path to meeting a statutory requirement to reduce emissions by at least 80% on 1990 levels by 2050. The UK's Electricity Market Reform (EMR) package is a key component in achieving the targets set out in the carbon budgets, as it provides greater long-term certainty for investors in low-carbon capacity. Member States should outline the policies and incentive mechanisms, which

they will use to deliver against their roadmaps, bearing in mind that the main long-term driver should be the EU ETS.

Energy UK is concerned to note the general trend for individual Member States to rule out energy options, e.g. CCS, shale gas and nuclear energy. If Europe is to remain industrially competitive, it will need to ensure cost-effective energy supply and a diversified mix of energy sources. Low-carbon options such as CCS should be treated on a level playing field with other technologies.

It should be emphasised that the EU's longer-term decarbonisation goals (80%+ reduction by 2050) cannot be met through the power generation sector alone (as appears to be implied by Q.1a). The heating and transport sectors will also need to make a significant contribution, and the potential role of CCS in the energy-intensive sector should therefore be taken into account.

## QUESTION 2

- 2) How should the ETS be re-structured, so that it could also provide meaningful incentives for CCS deployment? Should this be complemented by using instruments based on auctioning revenues, similar to NER300?

Energy UK believes that the EU ETS should be the central instrument of Europe's climate policy. The ETS has a pan-European reach and preserves technology neutrality thereby ensuring competition between rival low-carbon solutions and thus cost-effectiveness. Energy UK believes that ETS needs to be strengthened and that the priority should be to establish an ambitious, firm, economy-wide greenhouse gas reduction target for 2030 up to 2050. The annual linear reduction factor of 1.74% should then be revised accordingly. This should provide greater incentives for carbon reduction, including in the longer term CCS.

However, the ETS is not geared towards piloting technologies along the innovation value chain from basic R&D through to demonstration and deployment. The carbon price required to support immature technologies would be prohibitively high and damage other sectors of the economy, in particular those that fall under the ETS. In any case, structural reform of EU ETS will take some time to be effective, and so an interim funding scheme for CCS and other new technologies will be necessary.

Energy UK supports the use of auction revenues to support CCS demonstration, but emphasises that EU ETS should not be redesigned in order to help specific technologies, whether CCS or others. The focus should be on reducing the costs of CCS through demonstration, so that it becomes competitive with other technologies.

## QUESTION 3

- 3) Should the Commission propose other means of support or consider other policy measures to pave the road towards early deployment, by:
- Support through auctioning recycling or other funding approaches
  - An Emission Performance Standard
  - A CCS certificate system

#### d. Another type of policy measure

The priority at this stage should be to demonstrate a variety of CCS technologies at industrial scale. It is premature to consider arrangements for deployment at a time when the demonstration phase has still to be undertaken. As mentioned above, the EU ETS cap will have to be tightened and carbon prices will have to rise if CCS is to succeed, since otherwise the additional costs of the technology cannot be covered. Early structural measures to reform EU ETS are therefore an essential starting point.

Energy UK supports the use of auction revenues for CCS demonstration and would welcome further funding initiatives at EU level on the lines of the NER 300 programme. Lessons should be learned from the unsatisfactory results of the first phase of NER300. In particular, EU and national funding schemes should be properly coordinated and greater funding should be focussed on a smaller number of CCS projects.

Efforts should also be made to minimise the risks associated with immature, capital-intensive technologies such as CCS. Loan guarantees, risk-sharing instruments and tax breaks or rebates are options which could help to reduce investment risks. Given the many uncertainties, e.g. over fossil fuel and carbon prices, some form of long-term contract or feed-in tariff is likely to be needed to provide assurance that investors can recover their costs. The UK's Electricity Market Reform package introduces a contract for difference for CCS projects which should reduce the risks for investors and thus the cost of low-carbon investment and is thus worthy of consideration by other Member States. Care should be taken to ensure that such measures distort the energy market as little as possible.

An emissions performance standard (EPS) would not in our view provide any incentive to develop CCS. Until CCS is shown to be commercially viable, it is not an option for developers of generation, whatever the level of any EPS. An EPS would also run counter to the EU ETS, which seeks to reduce CO<sub>2</sub> emissions through market forces rather than through regulation.

A CCS certificate scheme could be an option for CCS, in the same way as certificate schemes have been used to promote renewables. However, such a solution has the disadvantage of creating yet another certificate scheme within what is meant to be a technology-neutral trading system. In particular, the interplay with the main EU ETS would need to be clarified. A certificate scheme may not provide sufficient certainty for investors and is likely to be complex to set up. On balance we believe that a contractual mechanism or feed-in tariff is likely to be more effective.

## QUESTION 4

- 4) Should energy utilities henceforth be required to install CCS-ready equipment for all new investments (coal and potentially also gas) in order to facilitate the necessary CCS retrofit?

The existing CCS Directive contains a requirement for new fossil plant to be capture-ready. Under this provision, developers must examine potential pipeline routes and storage options and ensure that sufficient land is available for a capture installation. This is a sensible approach which ensures that, once CCS becomes commercially available, the technology can be retrofitted.

Energy UK does not see the need for additional capture readiness requirements, e.g. any obligation to modify the design of power stations on the basis that CCS may be fitted in the future. This is likely to add costs unnecessarily and reduce efficiency, and is premature until CCS is commercially viable.

## QUESTION 5

5) Should fossil fuel providers contribute to CCS demonstration and deployment through specific measures that ensure additional financing?

This proposal could contribute to the financing of CCS demonstration and warrants further consideration and discussion with the interests concerned. We note that the Australian Coal Association has put in place a funding mechanism for CCS development. Some practical issues would clearly have to be resolved, e.g. how non-EU fuel suppliers could be required to make an equitable contribution to funding CCS.

## QUESTION 6

6) What are the main obstacles to ensuring sufficient demonstration of CCS in the EU?

The main obstacles to CCS demonstration in the EU can be summarised as follows:

- The weak carbon price, which has dramatically reduced the funding available through the NER 300 scheme, while also providing insufficient incentive to develop CCS;
- The lack of coordination between EU and national funding schemes
- The economic recession, which has weakened the business case for any new power generation whatever the technology;
- The impact of the financial crisis on the major European utilities, most of whom have been shrinking their balance sheets and reducing investment
- Lack of public acceptance of CCS transportation and storage
- A legal and regulatory framework which in several Member States effectively prevents the development of CCS projects
- Lack of business incentives to develop storage sites and pipeline infrastructure

## QUESTION 7

7) How can public acceptance for CCS be increased?

Active public engagement programmes are needed to ensure that the dangers of climate change and the benefits of CCS are widely understood. Both the public authorities and the industry should raise awareness that CO<sub>2</sub> is a naturally occurring gas which has been safely used as a feedstock in the food industry for decades. CO<sub>2</sub> is neither toxic, carcinogenic, explosive nor inflammable.

All three parts of the CCS chain have been shown to operate safely in an industrial setting. An extensive CO<sub>2</sub> pipeline network has existed in North America for many years, and there is also considerable experience with the safe operation of capture and storage installations notably in the oil industry. As experience is gained with pilot and demonstration CCS units, public fears about the risks of the technology should be allayed.

The potential economic benefits of CCS in terms of fuel diversity, competitive energy costs and local employment should be spelt out to host communities but also to society at large.

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