

GIE contribution to European Commission's Communication on "The Future of Carbon Capture and Storage in Europe"

Introduction

Several years ago Carbon Capture and Storage was proposed to drastically reduce CO₂ emissions of fossil fuels in electricity production and in energy-intensive industrial uses. This technology is not fully mature yet: R&D and large-scale demonstration projects would allow improving processes and reducing costs of the capture, transport and storage of CO₂. In the absence of adequate price signals from the Emissions Trading System (ETS) and adequate support schemes, it is nearly impossible to invest now in a CCS project. Still CCS is a vital part of many energy mix scenarios for 2050, including the EU's own 2050 roadmap to a low-carbon economy and the Energy Roadmap 2050.

The Commission's Communication on "The Future of Carbon Capture and Storage in Europe" is timely now that the 2030 climate and energy framework is currently under discussion. This should result in improvements to the European Trading Scheme, the key instrument to reach the European decarbonisation target. Conditions for support schemes in non-mature technologies, like CCS, should also be clarified. In general, CO₂ reduction targets and support should be technology neutral, especially given the long-term perspectives.

GIE welcomes the opportunity to contribute to the discussion about the future role of CCS in Europe. In particular GIE would like to highlight the benefits of the combination of CCS with gas over CCS with coal due to the higher efficiency of gas power plants in terms of CO₂ emissions.

Who is GIE?

Gas Infrastructure Europe (GIE) is an association representing the sole interest of the infrastructure industry in the natural gas business such as Transmission System Operators, Storage System Operators and LNG Terminal Operators. GIE has currently 69 members in 25 European countries.

One of the objectives of GIE is to voice the views of its members vis-à-vis the European Commission, the regulators and other stakeholders. Its mission is to actively contribute to the construction of a single, sustainable and competitive gas market in Europe underpinned by a stable and predictable regulatory framework as well as by a sound investment climate.

Answers to consultation's questions

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.**

A coordinated European approach is preferable to fragmented national policies.

A revised Emissions Trading Directive providing price signals for investments towards CO₂ emissions reduction should form the long-term regulatory framework for the deployment of CCS, together with the full implementation of the CCS Directive by the Member States. National roadmaps and strategies should be coherent with the European approach and should take into account cross-border interactions.

Given the low level of industrialisation of the CCS technology and the current absence of market signals such as from the ETS, temporary and targeted measures could be necessary to promote investments in CCS on a level playing field with other low-carbon alternatives. As the CCS technology is deployed and costs go down, such measures should be phased out as for other low-carbon technologies.

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?**

The ETS should be adapted in the short term and revised further for the medium and long term so that it can play its intended role in driving investments aiming at reducing CO₂ emissions cost-efficiently in a technology-neutral manner. An appropriate CO₂ price signal provided by a well-functioning ETS should contribute to the attractiveness of CO₂ reduction technologies, such as CCS projects. However the ETS does not provide this investment signal currently.

Possible earmarking of revenues from the auctioning of allowances should be fully compatible with State aid rules and with the principles of a technology-neutral approach and competition on a level-playing field. Support schemes should take account of the level of maturity of the technology. They should be well targeted and clearly limited in time and expenditure.

Extension of the NER300 programme should be considered once the Commission has had the opportunity to review the lessons from the current fund – which delivered no CCS projects in the first round. The criteria should take account that gas emits only half as much CO₂ as coal for each kWh of electricity produced. Therefore there is only half as much CO₂ to capture, transport and store with gas as with coal, which is of importance given the limitation in storage capacity in Europe.

Programmes supporting R&D, e.g. Horizon 2020, should include the optimisation of electricity generating technologies for variable load, such as, CCS in flexible gas-fired power plants as backup for variable renewables.

3. Should the Commission propose other means of support or consider other policy measures to pave the road towards early deployment, by:

- a. **support through auctioning recycling or other funding approaches**
- b. **an Emission Performance Standard**
- c. **a CCS certificate system**
- d. **another type of policy measure**

Funding has been addressed in question 2. If not well designed, additional measures such as Emission Performance Standard or a CCS certificate risk introducing further distortions in the ETS, leading to more costly solutions for decarbonisation. Before introducing such policy measures, proper reflection on their compatibility with the ETS should be carried out. An effective ETS and temporary technology neutral support schemes (e.g. from the NER300 programme) should be sufficient to drive investments in demonstration projects.

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 technology of CCS has not been proven at industrial scale yet. It is questionable now whether CCS is the best technology to achieve cost-effective reductions of CO₂ emissions for coal- and gas-fired power plants in the long term. A clear CO₂ target and a responsive ETS should drive market-based investments when CCS has become more mature. To force deployment of CCS on all new fossil-fuelled power plants would not be in line with the technology neutrality pursued by the Commission.

GIE would like to underline that CCS is a technology for CO₂ abatement among many others. Other technologies explore the re-usage of CO₂ – Carbon Capture and Usage (CCU) – or the storage of excess electricity from variable renewable energy sources using the gas infrastructure, such as power-to-gas, which have a high potential. Policy making should be also open and supportive for R&D and other new technologies for 2030 and beyond.

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

Some fossil fuel providers have already invested considerably in CCS-related research, development and demonstration both in Europe and globally. Further investments from this industry can be guaranteed through an appropriate energy and climate framework.

Both fossil fuel providers and CO₂ emitters should play certainly a role in the contribution to CCS demonstration and deployment, but probably it would be mainly the interest of CO₂ emitters to ensure that this deployment is carried out, rather than of the fossil fuel providers.

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

Strong public resistance to CO₂ storage is making it difficult for some Member States develop CCS projects.

Moreover, the high costs of undertaking demonstration projects for CCS hinder the financing of such projects. But CCS costs will only go down as more demonstration projects take place, and upfront capital support, as a reformed NER300, will support this. A further obstacle is the uncertainty inherent to the economic conditions.

Current electricity market conditions are such that many fossil fuel power stations do not run at base load, whilst this is currently a pre-condition for CCS technology to be fully efficient and effective.

7. How can public acceptance for CCS be increased?

The public opposition is largely based on uncertainties regarding the risks and benefits of CCS. Therefore, efforts at European level complemented with efforts at national and local levels are necessary. Real demonstration plants in Europe are likely to improve public perceptions of CCS. Seeing real projects delivered safely will demonstrate that the technology is beyond proof of concept. These efforts will also bring down the cost of the technology to the benefit of consumers and business and investors.