

Eurogas response to the Communication on

“The Future of Carbon Capture and Storage in Europe”

2 July 2013

Eurogas is the association representing the European gas wholesale, retail and distribution sector. Founded in 1990, its members are some 50 companies and associations from 26 countries.

Eurogas represents the sector towards the EU institutions and, as such, participates in the Madrid Gas Regulatory Forum, the Gas Coordination Group, the Citizens Energy Forum and other stakeholder groups.

Its members work together, analysing the impact of EU political and legislative initiatives on their business and communicating their findings and suggestions to the EU stakeholders.

The association also provides statistics and forecasts on gas consumption, as well as information on energy taxation in Europe. For this, the association can draw on national data supplied by its member companies and associations.

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The Future of Carbon Capture and Storage in Europe

CCS will remain an important option to reduce carbon dioxide emissions, particularly in the medium and long term. As energy efficiency gains are offset by further electrification, particularly in the heating and transport sectors, more electricity may be needed on balance in the future.

It appears useful to add here the replies to the questions asked in the Communication on the future of carbon capture and storage in Europe, which the Commission issued together with the Green Paper 'A 2030 framework for climate and energy policies'.

General remarks

The cost of electricity produced with the application of CCS can be as competitive in gas-fired power stations as it will be in coal, lignite or biomass power stations, as long as dispatching is on a comparable basis. This is because there is less carbon dioxide to capture, move and store per kWh generated.

The economic choice will, of course, depend on relative fuel and carbon dioxide prices as well as on capital and operational costs. This approach to decarbonisation is also considered to be competitive with renewable electricity cost; it is likely that CCS is cost competitive with onshore wind and cheaper than offshore wind and photovoltaic. For such a comparison, the full costs of renewable electricity must be taken into account, including indirect costs for grid extensions or reinforcements and for backup generation capacity.

In order to allow the roll-out of CCS for base-load power stations on a wide commercial and economically efficient scale, the development of full-scale demonstration becomes ever more urgent.

There is also still further R&D work to be done in adapting and optimising generating technologies for variable load with CCS for flexible gas-powered plants as backup for variable renewables. This is in the interest of finding the lowest cost routes to reducing the carbon impact of the EU's economic activities.

From a private investor's point of view, it is important to assess what the CCS business model beyond 2020 could look like. As electricity generation with CCS needs to complement generation from renewable energy sources after 2030, long-term certainty beyond 2020 is key. Once the right framework is in place, including a level playing field, the market will and should decide what portfolio of technologies is needed.

However, learning by doing is still imperative, in parallel with R&D projects that test CCS on gas. In that respect, development of a sufficient number of demonstration projects will only take place if the necessary drivers for such development are in place.

The two main challenges here: providing suitable incentive mechanisms for CCS investment; and increasing public acceptance for carbon dioxide transport and storage. More attention should be paid to the legal framework regarding cross-border transport and storage and the need to prove storage at scale.

In terms of climate policy, current ambitious EU climate goals necessitate CCS for gas as part of the fuel mix, as a reliable base load low-carbon fuel next to variable renewable energy sources and higher carbon fuels. Unless CCS for gas technology is sufficiently tried and tested now, EU climate goals will prove elusive.

Public Acceptance

Industry can help to overcome the public acceptance issue by providing full information on envisaged and ongoing CCS activities and on the monitoring of the carbon dioxide stored. Member States that have not yet transposed the EU CCS Directive into national law should be encouraged to do so in such a way that CCS is allowed to take place, local or regional bans are lifted, and legal security is created.

Governments should communicate to the public the importance of CCS in its role as part of a decarbonisation strategy and in achieving greenhouse gas emissions reduction targets.

Economic incentives

If CCS is to be developed successfully, measures need to be aimed at decarbonising power generation at the lowest cost per megawatt hour produced, and not, as is currently the case under the NER300 facility, the largest possible amount of carbon dioxide that can be captured.

In the short and medium term, CCS is likely to need temporary and targeted measures, such as feed-in or other premium tariffs, or contracts for differences (CFDs), assuring an agreed price, to ensure a level playing field with low-carbon alternatives. They are likely to be needed until technology and practice has demonstrated the viability of CCS alongside other low-carbon options and the price of carbon dioxide emissions has risen to a level that incentivises industry to deploy CCS.

While the Emissions Trading System in principle provides a technology-neutral market signal for low-carbon investment, any measures that are taken to make the ETS fully effective in reducing greenhouse emissions via the price of emissions allowances will not be sufficient to trigger and support investment in CCS in the timeframe that is required for the first generation of demonstration projects to become operational by 2020. An effective ETS should nevertheless be the goal, and, in the longer term, reform of the ETS should be able to provide clearer, market-based incentives.

Alternative measures, such as compulsory CCS or universal carbon dioxide emissions performance standards, required at some pre-determined time in the future, may work against the lowest cost routes to a low carbon economy.

Specifically, such measures may lead to life-extensions for inefficient power stations instead of their replacement with efficient gas-fired power stations, which can significantly reduce emissions even where they are not yet equipped with CCS. Such measures may also endanger the role of gas-fired power plants as backup for renewable energy and may therefore diminish security of supply in the electricity sector.

Such alternative measures are therefore unacceptable.

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 EU approach is preferable to fragmented national policies. The EU should adopt an economy-wide greenhouse gas emissions reduction target of at least 40%, compared with 1990, to be in line with the agreed target of 80-95% by 2050.

Member States should fully implement the CCS Directive, allowing CCS to take place. This, in connection with an adaptation of the Emissions Trading Directive to make it fully effective in reducing emissions through the price of emissions allowances, should form the long-term regulatory framework for the deployment of CCS. National roadmaps and strategies deviating from this approach are not recommended.

In the short and medium term, given the low level of maturity and the absence of the framework described above, temporary and targeted measures, such as feed-in or other premium tariffs, or contracts for differences (CFDs), assuring a competitive price, are required to ensure a level playing field with low-carbon alternatives. This would be clearly for demonstration and early deployment only, in a non-commercial phase.

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 full role in reducing greenhouse gas emissions cost-efficiently in a technology-neutral manner.

To this end, the ETS should continue to regulate greenhouse gas emissions allowances, thus providing an incentive but not an obligation to apply CCS. The choice of how obligations under the ETS Directive are met should be left to the ETS participants.

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. Financial instruments should take account of the level of maturity of the technology supported in line with verifiable criteria. They should be well targeted and clearly limited in time and expenditure. Progress should be measured regularly on the basis of key performance indicators.

Extension of the NER 300 programme should be considered. The criteria should be adapted in such a way that they take account of the lower carbon content of gas and do not result in an advantage for coal on the basis of the cost of the tonnes of carbon dioxide abated.

Programmes supporting R&D, e.g. Horizon 2020, should include the adaptation and optimisation of electricity generating technologies for variable load with CCS in flexible gas-fired powered 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 Emissions Performance Standard**
- c. a CCS certificate system**
- d. another type of policy measure?**

Funding has been addressed above. Measures b. and c. risk working against the lowest cost routes to a low carbon economy.

More specifically, such measures may lead to life-extensions for inefficient power stations instead of their replacement with efficient gas-fired power stations. Such replacement would significantly reduce emissions even where plants are not yet equipped with CCS. Measures b. and c. may also endanger the role of gas-fired power plants as backup for renewable energy and may therefore have a negative impact on security of supply in the electricity sector.

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?

Such measures should not be necessary under the described 2030 framework for climate and energy policies and other proposals made above to encourage the deployment of CCS in demonstration projects.

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

In light of the above, there should be no need for an obligation for fossil fuel providers to contribute. It should also be noted that some of them have already invested considerably in CCS related research, development and demonstration both in Europe and globally.

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

Strong public resistance to carbon dioxide storage onshore is making it difficult for some Member States to implement the Directive on the geological storage of carbon dioxide in such a way that CCS is actually enabled to take place.

Moreover, despite the funding made available through various EU instruments, the high costs of undertaking demonstration projects for the capture and storage of carbon dioxide hinder the realisation of such projects. A further obstacle is the uncertainty about whether CCS will be allowed and whether it will become cost-efficient.

Current electricity market conditions are such that many fossil fuel power stations do not run at base load, whilst this is a condition for current CCS technology to be fully efficient and effective. As further penetration of variable renewable energy sources is expected across Europe, most conventional power plants will continue to have a reduced load factor. This currently limits the economic potential for CCS.

7) How can public acceptance for CCS be increased?

As public opposition is largely based on lack of correct information regarding risks and benefits, an EU effort to inform EU citizens would be beneficial. This would be in addition to the efforts that are already made at the local level.