

The Fundación Ciudad de la Energía (CIUDEN)'s response to the Consultative Communication on the Future of Carbon Capture and Storage (CCS) in Europe

Introduction

Considering the increasing role of fossil fuels as leading source of energy in the decades to come and the European Union (EU)'s greenhouse gas reduction targets (Roadmap 2050), CCS is a key technology to significantly manage to reduce CO₂ Emissions in the power and the industrial sectors.

As part of the toolkit for combating climate change, CCS is expected to play an increasing role in the energy market from 2020 and onwards allowing providing and preserving jobs and improving economic growth through developing a European competitive advantage in low-carbon technologies.

In addition, the effects of CCS can be increased when combined with sustainably sourced biomass, as CCS can move beyond zero emissions to deliver net *negative* emissions.

Concerning the cost competitiveness, different studies (such as the EU Roadmap 2050 and IEA studies) have shown that including CCS in the technology reduces the overall costs of decarbonisation.

Prior to responding to the questions, CIUDEN would like to underline that, if demonstration projects are needed for the deployment of CCS as a long term objective, large scale pilot projects with full chain CCS should also be supported in order to continue the development, optimization and technological risk reduction of such technology on short and medium-term until the mechanisms for the "business model" of the demo plants are in place, hence minimizing the financial risk of the demo plants. Furthermore such large scale pilots have a key role to play regarding public perception and regulatory issues. In addition, the costs are far less than for a demonstration-scale capture and storage site, allowing many more potential horizons to be thoroughly studied and tested before making the much more substantial investments of time, effort and funds.

Response to the consultation

- 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.**

On one hand, requesting Member States (MSs) to develop a clear roadmap towards a transition of their energy and climate policy by 2050 would certainly enable them to have a clearer understanding of the way to decarbonise their electricity generation sector and the industrial sector and the subsequent relevance of CCS to their national circumstances. It appears that relatively few MSs have undertaken such detailed analysis to date and this has hindered the debate on the role that CCS will play in decarbonising both the electricity and industrial sectors.

However, such analysis shall be handled in such a way not to prevent the development of CCS which has, as indicated above, a key role to play considering the increasing importance of fossil fuels sources of energy and the necessity to mitigate climate change. In that sense, the roadmap should aim to take into account a range of technology options without limiting MSs choices. In practice, to comply with low-carbon objectives, MSs will have to use complementary low-carbon technologies, including CCS.

The successful delivery of the EU CO₂ emissions reduction target requires as well a harmonised strategy for developing CCS in the MSs including the impulse of a common regulation to solve remaining issues in European MSs such as CO₂ Transport within the CCS full chain.

- 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?**

EU ETS should remain the long-term driver main option for the EU climate and energy policies to foster all the low-carbon technologies including CCS. However, for the time being, the EU ETS is not driving the necessary investment in low-carbon technology due to the low price of EUAs and needs to be

restructured if it is to provide longer-term support for low-carbon technologies. Thus, to deliver CCS in Europe within the timeframes requires the adoption of robust complementary policies that can support the technology.

However, ETS is not designed to support R&D. Therefore, technologies in previous stages should be helped by funds dedicated to R&D and technological optimization.

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 approaches¹**
- b. an Emission Performance Standard**
- c. a CCS certificate system**
- d. another type of policy measure**

CIUDEN strongly believes that other means of support as well as new policy instruments are necessary. CCS is at the beginning of the learning curve, and has huge possibilities to drive costs down. However, the ones taking the risk to start investing in CCS will incur significant upfront costs, with an uncertain environment for long-term investment with the need of clear measures for the early deployment of the technology. This is also the reason why CCS should be fully integrated into the 2030 climate and energy package on an equivalent basis to other low-carbon technologies at an equivalent stage of development.

Measures could include:

- o **Feed-in tariffs** because they provide financial support to power plants in a form that best ensures access to the electricity grid, reducing both revenue and price risk.
- o **Where feed-in tariffs are not applicable, CCS certificates (CCSCs) may be an option.** Nevertheless, any system of certificates should be designed in such a way as to avoid any negative interaction with the existing ETS. The design of any system of CCSCs should also seek to learn lessons from the ETS experience.

¹ Taking into account complementarity with the European Structural and Investment Funds (ESI), as set out in the Common Strategic Framework annexed to the Commission proposal for a Common provisions regulation of the ESI Funds

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?

CIUDEN supports the application of sensible provisions in terms of carbon capture readiness as laid down in the current CCS Directive. However, if utilities do become required to fit CCS in the future, it should only be once the technology has been demonstrated and is readily available and it should apply equally to all large emitters of CO₂ without undermining competitiveness.

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

If, in practice, it would be possible to implement specific measures at different levels within the fossil fuel supply chain, e.g. fossil fuel providers or at the point of use in the power and industrial sectors, any decision in that regard should be subject to an appropriate impact assessment that should be undertaken to understand better the benefits of such option.

Furthermore, the development of CCS has wide reaching and deep societal benefits which suggests that support should come from a broader base than only fossil fuel suppliers. For instance, all low-carbon technologies require substantial inputs of energy intensive products such as steel, cement and chemicals which are sectors that will also require CCS if they are to be substantially decarbonised. Finally a broad support base is consistent with the funding mechanisms that are currently used to deploy Renewables.

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

The deployment of CCS is facing barriers which include:

- A financial situation not encouraging investments in CCS from the electrical and industrial sectors
- Very limited incentives for MS to implement CCS support policies
- Need of further support to large pilots as a transition measure until mechanisms for demonstration projects are in place
- Lack of a long-term investment signal from the EU ETS
- Lack of policies and regulations that can drive investment in CCS, in particular CO₂ Transport.

7) How can public acceptance for CCS be increased?

The public recognising is a key element for the success of CCS. While some onshore CO₂ storage projects have had difficulties in convincing the public of the unique benefits of CCS, others, such as the Spanish large CO₂ storage pilot in Hontomín (Burgos) have experienced a positive response. In order to increase the public acceptance of the technology, further initiatives can be carried out such as:

- A clear legal framework that would allow explaining people the steps to be followed.
- CO₂ storage shall be presented with the industrial benefits associated to local storage.
- Highlight CCS as a technology with a clear national advantage that preserves and generates new jobs, skills and investment as well as maintaining existing jobs in CO₂ emitting sectors.
- Use of large scale pilots linked not only to industry but also to research centres, preferably belonging to governmental entities, to enable civil society to get familiar with the technology and as an example for other communities in Europe.
- Support at Government level is essential, with CCS clearly integrated into national or regional plans for 'green growth' – backed up by comprehensive educational programmes.