

Developing and applying carbon capture and storage technology in Europe. Implementation report 2013

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This Commission Communication on the **Future of Carbon Capture and Storage in Europe (CCS)** outlines the state of play in the area, taking into account the global context, and examines the available options to encourage the demonstration and deployment of CCS. It details the long-term arguments in favour of the integration of this technology in the EU's strategy for the transition to a low carbon economy.

Perspectives and role of CCS: the [Energy Roadmap 2050](#), as well as global developments and reports make it evident that fossil fuels will stay in the global and European energy mix and will continue to be used in many industrial processes. According to the World Energy Outlook 2012 report by the International Energy Agency (IEA), **fossil fuels represent 80% of global energy use today, while it will represent 75% in 2035**. These trends are not consistent with the necessary mitigation of climate change.

In the transition to a fully low-carbon economy, the Carbon Capture and Storage (CCS) technology, insofar as it has been commercialised, is one of the key ways to reconcile the rising demand for fossil fuels, with the need to reduce greenhouse gas emissions. Globally CCS is likely to be a necessity in order to keep the average global temperature rise below 2 degrees Celsius.

CCS is at present one of the key available technologies that can help to reduce CO₂ emissions in the power generation sector. In order to realise its potential, CCS needs to become a cost-competitive technology, so that it could start to be commercially deployed and thus contribute to the low-carbon transition of the European economy.

EU action and weaknesses: the EU is determined to support CCS both financially and from a regulatory perspective:

- following the European Council's decision back in 2007 to support up to **12 large-scale demonstration projects by 2015**, the Commission took a number of steps to establish a common regulatory and demonstration support framework;
- the [CCS Directive](#) was adopted to provide a legal framework for CO₂ capture, transport and storage, with transposition deadline set at June 2011;
- the **CO₂ transport network** was included in Europe's **Energy Infrastructure Priorities (EIP)** tabled in November 2010 and in the Commission's proposal for a regulation on "Guidelines for Trans European Infrastructure";
- **the European Industrial Initiative (EII)** on CCS has been established as part of the Strategic Energy Technology (SET) Plan ;
- two funding instruments have been set up: the **European Energy Programme for Recovery (EEPR)** and the **NER300 programme** funded by ETS allowances to channel substantial EU funding to large scale demonstration projects.

Despite these efforts, CCS has not yet taken off in Europe. The CCS commercial scale demonstration projects in the EU are delayed and available funding is not sufficient. Further delays may ultimately result in the need of the European industry to purchase CCS technology from non EU countries in the future.

Need for action: the Commission considers that an urgent policy response to the **prime challenge of stimulating investment in CCS demonstration** is required to test whether the subsequent deployment and construction of CO₂ infrastructure is feasible. The first step on this path is therefore to **ensure a successful commercial-scale demonstration of CCS in Europe**. In the longer term, CCS is also necessary to be able to reduce emissions in industries with process emissions that cannot be avoided.

In the light of the work started on the 2030 energy and climate framework and the need for an informed debate, including the issue of the determining factors for successful CCS deployment, the **Commission invites contributions on the role of CCS in Europe**, particularly:

- the need to require Member States to draw up a national strategy on the deployment of CCS or to draw up a roadmap detailing how they plan to restructure their electricity generation sector towards non-carbon emitting fuels (nuclear or renewables) by 2050;
- how the ETS could be restructured so that it could also provide meaningful incentives for CCS deployment;
- how the Commission might propose other measures paving the road towards a rapid deployment by: (i) support through auctioning recycling or other funding approaches; (ii) an Emission Performance Standard; and (iii) a CCS certificate system;
- a requirement to install CCS-ready equipment for all new investments (coal and potentially also gas) in order to facilitate the necessary CCS retrofit;
- how to ensure the involvement of fuel providers in the demonstration and deployment of CCS, how to remedy the main obstacles to ensuring sufficient demonstration of CCS and how can public acceptance for CCS be increased.

Based on the responses to this consultation and the full analysis of the CCS Directive's transposition and implementation in the Member States, the Commission will consider the need to prepare proposals.