

## Public consultation on the Future of Carbon Capture and Storage in Europe<sup>1</sup>

EUROFER Submission

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### ***Preliminary statement***

The answers provided by EUROFER pertain to the promotion of CCS in industrial applications and to concerns stemming from the use of this technology in the power sector.

The CCS issue is particularly relevant for the steel industry because of the large amounts of process CO<sub>2</sub> emissions released during primary steelmaking (integrated route).

Primary steelmaking processes give rise to waste gases which because of their residual calorific value are mostly recovered to produce heat and power. CCS could therefore be used to reduce CO<sub>2</sub> emissions in integrated plants at large CO<sub>2</sub> emission points, most notably at the stack of the waste gases-fired power plant.

Another option likely to lead to substantial CO<sub>2</sub> emission reductions currently under investigation is Top Gas recycling (TGR). The retrofit of the existing blast furnace fleet with TGR could lead to levels of abatement of about 50 to 60% compared to only 15% without CCS. Alternative steelmaking technologies like Direct Reduction and Smelting Reduction in combination with CCS have also the potential to lead to similar CO<sub>2</sub> emission reduction in the industry<sup>2</sup>. Yet these two options are far less feasible because they imply abandoning existing capacities and investing in greenfield plants. In any case CCS is key to achieve CO<sub>2</sub> emission reductions in primary steelmaking along the lines of the EU's 2050 aspirational climate objectives.

However, in a world of unequal climate policies, having recourse to costly technologies like CCS will raise competition issues.

As regards the mitigation of CO<sub>2</sub> emissions coming from electricity generation, CCS should be seen as one important tool in the EU emission reduction arsenal. It should be applied where it is the most cost-efficient mitigation measure. As CCS costs are likely to be passed on electricity prices, electro-intensive sectors (like EAF steelmaking<sup>3</sup>) will face higher costs and therefore risk lose out to competition from countries with lenient climate policies.

Against this background, the EU CCS policy must, in order to be successful, take into account the following aspects:

- **Global competition:** Climate change is a global issue and must be addressed globally. Not only would unilateral action by the EU have no or little environmental benefit, but it would lead to increased direct and indirect CO<sub>2</sub> costs for industries exposed to global competition. Any policy aimed at promoting CCS has to be accompanied by mechanisms offsetting the costs for industries prone to carbon leakage.
- **Financing:** At this point in time, CCS for industrial applications requires massive funding. Only through multiple demonstration projects can CCS overcome the concerns raised by the public. Given the high uncertainty in terms of regulatory framework, environmental and health safety as well as liability surrounding such investments, significant supportive financing must come from public authorities. The supply-side of CCS needs planning certainty. The EU ETS carbon pricing alone is unlikely to meet this fundamental requirement. As a global leader in the fight against climate change, the EU must provide resources which are consistent with its objectives.

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<sup>1</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the regions on the Future of Carbon Capture and Storage in Europe, COM(2013) 180 Final.

<sup>2</sup> The Boston Consulting Group, Steel Institute VDEh (2013), Steel's Contribution to a Low-Carbon Europe 2050. Technical and economic analysis of the EU27 steel sector's CO<sub>2</sub> abatement potentials.

<sup>3</sup> EAF : Electric Arc Furnace. In the EAF route, scrap is recycled into new steel.

- Competitive access to CCS within the single market: CCS must be affordable and accessible to all, regardless of the storage locations. This is only possible via the creation of a fully integrated CCS infrastructure with enough capacity to make it competitive.
- Public acceptance and a stable and predictable legal framework will be key to enable the development of CCS infrastructure.

It is also worth stressing that CCS is an electro-intensive process which would substantially increase the steelmaking processes specific energy consumption, hence being at odds with energy efficiency considerations.

In order to avoid the same problems experienced in the power market, CCS must be part of a fully competitive integrated market at the EU level in order to minimize the costs and ensure security of access to storage locations.

## ***Consultation questionnaire and EUROFER responses***

**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,**

Linked to a clear roadmap and consistent funding, established and coordinated at the EU level, Member States should put into place strategies that deliver the most cost-effective balance of nuclear, renewables and fossil fuel (with or without CCS) power generation. In this way costs for the consumers will be minimized. Such strategies should also seek to gain public acceptance.

CCS should be used where it is the most cost-effective mitigation technique in order to decrease the overall CO<sub>2</sub> abatement costs. Offset mechanisms should be put in place to avoid distortions of competition within the single market and vis-à-vis competitors in third countries who don't have to face such additional costs.

- b. develop a national strategy to prepare for the deployment of CCS technology.**

In order to meet the aspirational targets suggested in the Commission's roadmap for a competitive low carbon economy in 2050, the steel industry will have to rely on the rapid deployment of CCS. In order to remain competitive and avoid distortions of competition within the internal market and towards third countries, access to affordable CCS must be widespread in the whole EU.

Thus Member States should develop and execute strategies for the use of CCS for industrial applications in a cost-effective manner, e.g. through the development of CO<sub>2</sub> transportation networks that can be utilized by both the power sector and other industries.

**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 carbon price signal is unlikely to incentivize CCS deployment given the huge costs in infrastructure involved. CCS should therefore be promoted and developed in parallel until it gains a level of maturity that makes it competitive on the market.

The EU has to provide funding consistent with the investment needs in research, development and demonstration of CCS. Deployment throughout the EU has to be done in a cost-effective way. As the corresponding costs are likely to be passed on electricity users regardless of the type of support mechanism used, industry sectors exposed to carbon leakage should be protected from undue burdens and have their corresponding costs fully offset.

Where the money comes from is not as important as having it timely and in sufficient amounts, through schemes limiting the risk borne by the operators.

**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**

The use of market-based instruments should be preferred in that they are likely to bring the CCS costs down. However the deployment of CCS might prove unaffordable for industrial applications producing products competing on global markets. This is the case for steel. Mechanisms to offset costs stemming from the use of CCS should therefore be foreseen for such sectors in order to avoid competition distortions towards other regions.

**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?**

n.a.

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

n.a.

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

As far as CCS demonstration projects in the industry are concerned, the main obstacle is financing. Such demonstration projects need to receive sufficient public funding so as to keep the risk taken by the operator at an acceptable level. The NER 300 rules should be changed in this respect.

Lack of public acceptance is also a major issue in some Member States.

**7) How can public acceptance for CCS be increased?**

Multiple demonstration projects should be executed, but targeted at regions where the local economy will clearly benefit from the utilization of CCS, i.e. where it will allow both the power and other industrial sectors to continue to operate and or expand, in the long term. In addition, research results investigating and addressing the safety of CCS installations should be gathered and communicated as well as explained adequately to the public.