International Association of Oil & Gas Producers

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Brussels, 3rd May 2016

Dear Ms Firkaviciute,

In the context of the consultation of stakeholders on Action 9 of the renewed SET Plan, we would like to share with you the views of the International Association of Oil & Gas Producers (IOGP). IOGP represents companies producing a third of the world's oil and gas. The role of CCS in the context of power plants supplied with gas is therefore a key issue for us.

IOGP members have many years of experience working in the UK and Norwegian Continental Shelves and other places around the world, building up geological, engineering, scientific, commercial and legal expertise. This work has contributed to the development of technological expertise in the three main components of CCS: capture, transport and storage. Naturally, our members' knowledge and experience on CO_2 storage and utilisation for EOR are specific to the oil and gas sector.

This gives us particular insights into the debate on CCS and in particular on how CCS could optimise the input of natural gas in the process. In this aspect and among other initiatives, IOGP has developed a factsheet and inphographic on CCS which are available at the following link: http://www.iogp.org/Papers/Type/1003/id/127.

Given our industry's demonstrable experience in CCS, we are disappointed that the oil and gas sector has not been included by the Commission among the stakeholders asked to be part of the process of developing the SET plan action n. 9 on CCS and CCU.

Regarding Issues Paper n.9 *Renewing efforts to demonstrate carbon capture and storage (CCS) in the EU and developing sustainable solutions for carbon capture and use (CCU)*, we would like to share the following comments on specific sections of the document:

Introduction

We broadly agree with the arguments included in this section. We believe it is important to set an adequate timeframe. Time has value: the contribution of CCS to climate change mitigation will depend on the rhythm at which it develops. In order to accelerate its development, the right conditions must be put in place.

Why taking action now on CCS

We agree commercial scale CCS demonstration projects are necessary in order to confirm CCS's technical and economic viability as a cost effective measure to mitigate greenhouse gases (GHG) in the power and industrial sectors. CCS is a well-known process for the oil and gas industry, but demonstration in other sectors will help to optimise the operations as well as generating costs reductions. CCS is not currently projected to significantly contribute to the 2030 climate energy targets and objectives but may be an essential element of the EU 2050 Energy Roadmap.

However, the development of the gas industry associated to CCS could be a first step. It can significantly contribute to short- to medium-term CO_2 emissions reductions via a progressive switch from coal to natural gas for power generation. While using existing infrastructure, this is one of the fastest and most substantial ways of reducing CO_2 emissions. Natural gas is reliable, immediately available, can be indigenous and emits lower levels of SOx, NOx and particulates than coal. Since there are no technical challenges in switching from coal to gas, the conversion can take place quickly.

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Gas power plants with CCS have several positive characteristics compared to coal power plants with CCS. There is only half the volume of CO_2 to capture, transport and store. This will give a significant advantage to gas over coal for power generation in areas where CO_2 storage capacities are limited or far away from big emitters.

Overall objectives and targets

In order to ensure the development of promising, cost-effective, CCS technologies we agree that **R&D** needs to be supported, particularly for step-out technologies that would substantially reduce the cost of carbon capture. Implementation of successful R&D would drive costs further down for gas power with CCS.

In addition, as stated in the proposal, a detailed appraisal of **storage capacity is needed**. IOGP believes that, at EU level, this work would decrease the technical uncertainties regarding storage capacities. Developing a sound methodology to quantify effective storage capacity is a key requirement before any study should be conducted in this field. Oil and gas companies have unequalled knowledge of methodologies which are essential for designing a CCS project.

We agree that infrastructure for CO_2 transport and storage should be further developed. We believe that PCIs can be an adequate tool to deal with transboundary aspects of infrastructure. We believe building an integrated network of hubs and cluster will be crucial in order to further reduce costs in developing CCS. However the location of power plants close to CO_2 storage capacity must be encouraged.

Some basic Key Performance Indicators

We do not agree that the cost per unit of electricity of CCS on gas would be higher than CCS on coal, as stated out in the SET Plan Issues Paper. Targets for costs should not show differences between gas and coal based power generation costs.

Additionally, because of the different CO_2 emissions per kWh, costs related to transport and storage will be much higher for coal-fired power plants than for gas power plants.

Regarding **plant efficiency indicators**, we believe that criteria to measure CCS performance on its own are needed. Criteria could include the difference of energy consumption between the power plant with and without CCS, indicating how efficiently the CCS operation is conducted

We note that proposed indicators such as costs, or efficiencies, are all linked to power generation. Although power generation is the main application for CCS, there should also be indicators for industrial activities such as the manufacture of cement or steel. CCS development will also be beneficial for these kind of industries

Some recommendations on financing CCS demonstration and deployment

Commenting in particular on the **Innovation Fund**, IOGP believes that lessons should be learnt from the NER300 experience. This has been complex to administer and had a market impact due to early release of allowances. Moreover, NER300 has not delivered a single large scale CCS demonstration project. A critical component to achieving real CO_2 reductions in the EU for power generation will be to change the criteria. Such change should take into account the lower carbon content of gas compared to coal (and therefore the lower volumes of CO_2 generated). This would address the current perverse advantage under NER300 for coal (on the basis of the volume or amount of CO_2 that can be captured per kilowatt-hour while producing electricity). The criteria should not include the extra cost per tonne of stored CO_2, but rather the extra cost per kWh of electricity generated. This would be more fuel-neutral.

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IOGP believes that the Innovation Fund should deal not only with CAPEX (capital costs), but also with operating costs (OPEX).

IOGP supports targets on public awareness and on CO_2 transport infrastructure.

Annex: relevant actions of the 'Towards an Integrated Roadmap' document of the SET Plan

CO_2 capture is an essential element to develop an efficient climate policy and reducing its cost is important. Moreover demonstration projects are needed to improve knowledge and experience on how to operate CCS as a viable option for deployment in 2030s.

As already mentioned, we support development of a European Atlas on potential storage capacities, provided a sound methodology is applied.

We hope that these comments will be useful for your discussions. My team and I remain at your disposal, should you have any question or wish to discuss the contents of this letter in detail.

Yours sincerely,

Roland Festor
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