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To: Günther Oettinger, Commissioner
European Commission, Directorate General Energy
Unit C1 – Renewables and CCS
Rue De Mot 24, B-1049 Bruxelles (Belgium)

Response to the EU EC Consultative Communication on "The Future of Carbon Capture and Storage in Europe"

Dear Mr. Oettinger,

the CCS Observatory in Italy is the main stakeholder table composed by all the relevant governmental, scientific and industrial partners involved in Carbon Capture and Sequestration. We have had a Plenary Assembly at the Economic Development Ministry in Rome to approve the following final text of the Observatory consultative response. We all welcome the opportunity to respond to this consultation from DG Energy. Whilst answers to the questions are reported below, please consider some preliminary consideration about the key issues of the consultation:

1. *Decarbonization in Europe will be possible with CCS as one of the enabling conditions.* The role of the power sector in the decarbonization process is essential as emissions from this sector alone represented about 38,5% of the total EU emissions in the year 2010. Analyses from the European power sector showed that decarbonization in the EU (e.g. reduction of 80-95% of GHG emissions by 2050 vs 1990 level) is possible under certain conditions only. One of the most important is the wide-scale availability of CCS after 2030.
2. *Progress was made but there still remain barriers to be overcome.* Europe is highly supportive of CCS. Despite the progress made, however, the EC policy objective of having up to 12 commercial-scale demonstration plants operating in Europe by 2015 is no longer achievable. The main barriers that our operators see at the moment are:
   i) *no business case for the power industry*, CCS is not presently a commercially economic activity;
   ii) *lack of market signal,* cost-competitiveness of CCS laid down on a carbon price well above the current expectations;
   iii) *lack of supporting framework,* both the NER300 and EEPR programs have proven to be insufficient to support the CCS deployment in the Union;
   iv) *lack of public acceptance* CCS is still surrounded by a suspicious climate in the EU public opinion especially due to limited knowledge.

3. *The EU ETS is the best policy option to support all the low carbon options.* We are very in favor of market approach and still believe the EU ETS should remain the cornerstone of the EU climate and energy policies. We advocate for EU ETS be revised as soon as possible and proposed measures to be implemented for both a short-term fix and a long-term structural reform. In our opinion the most efficient way to achieve a low-carbon economy by 2050 is to adopt a technology-neutral policy approach based on unambiguous and firm CO_2 price signals.
4. *A proper regulation is required to accelerate the CCS market readiness.* CCS is a proven technology but at the early stages of being scaled up to large projects. Costs still remain prohibitively high and the carbon price alone is not sufficient to drive the levels of investment that are required. If the EU attaches a strategic value to CCS, financial support is necessary waiting for the technology being commercially viable. We propose to establish a *first-of-a-kind fund* targeted to cover the financial risk of the early movers investors in CCS.
5. *A few large-scale project realized by means of industrial partnerships.* An open paradigm should be implemented to further develop CCS technologies, driven by open, cost-effective access to the technology. To this aim conveying operator efforts toward a few large-scale projects (instead of multiple projects) by fostering industrial partnerships, consortia etc., is to be considered the most suitable option.

ITALIAN CCS OBSERVATORY

Answer to the consultative communication of the European Commission COM (2013) 180 final of 27 3 2013 on:

"The Future of Carbon Capture and Storage in Europe"

Questions and answers:

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.**

R1. At present Italy has no medium or long term roadmap put in place, neither for the energy sector nor for the electric production. However, Italy has recently produced a National Energy Strategy which provides a better explanation of the long term strategies (up until 2050), in coherence with the Roadmap of decarbonisation in Europe[1].

A series of factors have contributed to generating tension within the electric sector, amongst these, the reduction of demand due to the economic crisis, the promotion of efficiency measures, and the increase in the production of renewable sources, which up until now has contributed almost 100 TWh, that is a third of national electricity production. Italy presents a distinct overcapacity that hits operators of the thermoelectric sectors hard who, also due to the confusion in the strategic directions, in the last few years have invested a substantial amount in new plants, and in particular in combined gas cycles with high efficiency. The framework was completed according to a bass quote of carbon production (about 13-14%), having renounced the nuclear, and with prices of energy that in many cases are higher than the European average. All of the above enforces the necessity of a medium term energy strategy in line with the decarbonisation objectives indicated by Europe for 2050, based on a Roadmap up until 2030, and that allows leniency with respect to the targets of 2020, that is now too close. Until 2030 Italy has the option to carry on reducing emissions in line with the European roadmap, that emphasises the increase of renewable sources to 50%, as well as energy efficiency. This would mean keeping the demand at levels only slightly higher than those currently in place, despite any phase of growth of electrical energy diffusion. At the same time, the progressive closure of the most obsolete and inefficient power stations, in line with the hypothesis of a progressive reduction in the import of electricity, amongst the highest in Europe, could generate resources for their substitution and give back oxygen to the existing or to even more efficient and competitive gas plants. Gas plants, even if the predictions are still unclear, could also benefit from price dynamics in the world market giving back favourably to unconventional fuels, besides the possibility of exporting balancing services to other European countries. It is expected that the diffusion of CCS in Europe, predicted after 2030, should rely largely on the research and development of retrofitting systems in existing power plants in Italy. This should happen by substituting

[1] http://www.sviluppoeconomico.gov.it/?option=com_content&view=article&idmenu=806&sectionid=4&partebassaType=4&showMenu=1&showCat=1&idarea1=0&id=2027041&viewType=0

old coal boilers with oxy-combustion systems, but mainly by retrofitting of electric gas and industrial plants, typically in the cement sector, iron and steel sector, and petrochemical sector. In conclusion:

- Italy will still have a significant quota of electricity production originating from fossil sources and, in particular, from natural gas until 2030 and also until 2050;

- Irrespective of trend in demand, which is difficult to predict in this kind of ongoing crisis, electrical diffusion is predicted to increase, also due to wider use of electric and plug-in hybrid cars and of other types of innovation;

- Italy, a prevalent manufacturing country, that sooner or later will recover from the crisis, makes use of many carbon-intensive industries that should reduce their greenhouse emissions by 2050;

- R&S have suddenly been relaunched with public-private partnership, beyond the successful effort already put in place by ENEL, ENEA and others. The achievement of an abundance of pre-competitive prototypes for the capture, distribution and storage of CO_2, should be the idea to follow from now until 2030

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?**

R2. The organisation of an international carbon market is still an unsolved problem, which should be resolved in the new climate pact of 2015. The regional initiatives, in particular those of the USA, EU and CINA, should be able to find a common functioning system. The European system EU-ETS, has been victim to its own rigidity and it has come into conflict with the macroeconomic parameters, which due to the crisis have slipped out of control. It is not impossible, using world and regional data, to establish a reasonable, uniform price for a tonne of CO2, and much less to stabilize a reasonable range, and therefore regulate the parameters of the cap & trade system before letting the market fluctuate. The current price of the European certificate is low enough to paralise the market. On this new basis the advantages of CCS will be re-calculated and, taking into proper account the learning curve of CCS, already outlined in the Mc Kinsey report, will shape the possible incentives on a global, regional, and national scale, as well as the most promising technological solutions.

On our opinion, the EU-ETS system should therefore remain the corner stone of the EU climate policies, but it should be revised as soon as possible, either by supporting a short-term fix and a long-term structural reform. The intergration of the climate policies by means of carbon-tax, for non-ETS sectors, is left to single governments, with Norway as an extra-EU example. It is important to understand, with regards to the current state of the cost of CCS, that the technology will be supported by complementary measures. We particularly support the institution of ad-hoc finance programmes, a first-of-a-kind fund focused on covering the financial risk of first-movers. To obtain prompt results we suggest approaching the efforts of industrial operators towards one-two large-scale projects through private and public technological partnerships and consortia, and to favour the pilot reasearch projects of small scale to diffuse access to technology.

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

R3. The support measures for this kind of innovation are essential, up until at least the commerical phase. The possibility of deriving resources from the ETS system is linked to its efficiency, as well as to the stabilisation of the international carbon market. The method of enforcement of standards (EPS) should also be seen in the framework of international climate agreements, in order to stop misrepresentations of the market or overly rigid enforcements on the choice of technologies in various countries. Furthermore, the standards for new power plants, as well as for already active plants, could have the paradoxical effect of prolonging the life of older power plants. A CCS certificate system does not appear to be adapted for application in Europe, as by 2030 there will not be a sufficient number of CCS plants able to offer certificates to cover the demand.

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?**

R4. The predisposition of *CCS-ready* power plants could be problematic due to an elevated cost of land. It does not seem reasonable to ask businesses to undertake an acquisition destined to potentially maintain land under the industrial set-aside system. It is more convenient for new power pants and industrial plants in the authorisation stage, to have a negotiated route for the introduction of capture and storage plants, based on the framework defined in the National Energy Strategy. However, according to R1, the CCS problem for Italy is above all retrofitting of existent power plants, which could be necessary to respect the roadmap of emissions mitigation, and that would therefore be approached on the basis of the strategic profile adopted.

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

R5. The entire value chain produces carbonic externalities and should contribute equally to the necessary investments for the application of the principle "polluter pays principle" and to the extended producer responsibility. The agreement should be authorised on a level of trade associations along with negotion with the central government.

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

R6. Uncertainty is becoming the main problem in this particular period of crisis. This verdict is all too familiar but it should not be explained and debated further. It is a positive that finance sources of strategic innovation are removed from the risk of market fluctuation, however, it is difficult to evaluate how much time is being lost and how many opportunities of entering into international markets are going up in smoke due to the lack of financial distribution of the NER 300 device and of other stimulus packages. A device that reduces investments as the crisis increases, is far from keynesian and highly inefficient.

Barriers that still need to be overcome are:

1. There are not CCS advantages for the electrical industry for the reasons laid out in the introduction;

2. the correct market signals are lacking
3. The problem of public acceptance is unresolved.

In the current situation, if there is not a substantial change in the next few months to restore faith in developers, it is highly probable that no CCS project will be selected. It is also important to note that the lateness in the adoption of the CCS Directive at the level of member states has contributed to a climate of distrust for CCS projects.

7) How can public acceptance for CCS be increased?

R7. It is an established fact that circumstances of strong opposition have taken Germany out of the commercial CCS field, which is not a small defection. If it is true that Germany is constructing new carbon power plants, it will be interesting to see how the country will answer to point 1 of this consultation. There is also opposition elsewhere with regards to the solution of on-shore storage, and Italy might not have problems with the Porto Tolle ENEL power plant.

Firstly, it is important to develop a Strategic Environmental Assessment of the storage of CO_2 on national territory and that this be effectively carried out in collaboration with scientific operators, stakeholders, and citizens. The Strategic Environmental Assessment is also an essential instrument for good public communication.

It is therefore possible to suppose a solution that carries out DM communication of Ministry of Economic Development and that sets out a participatory system based on the french model "Debat publique" and on the Tuscan Regional Law, in which public representatives become involved in the initial phase of discussion on proposed activities, at a stage when their participation can still influence the decisions made and where there is still diversity amongst the proposed options.

For an effective comparison on land, the preliminary information should be guaranteed (in the pre-project phase) by the government, but also from third parties, according to the French scheme. The instructive project report should be published, and contain all the technical and scientific information with the relevant data, even if they are not completely identical. Aside from the direct comparison managed by third parties, amongst the clients, local administrations and stakeholders, it is important to provide advisory referendum, with precise rules of geopolitical boundries and to study forms of innovative consultation of the population through e-democracy tools.