EURELECTRIC submission to SBSTA on the inclusion of "Carbon dioxide capture & storage in geological formations as clean development mechanism project activities"

GENERAL REMARKS

The Union of the Electricity Industry – EURELECTRIC is the sector association representing the common interests of the electricity industry at pan-European level, officially registered as non-governmental organisation to the UNFCCC.

In line with its mission, EURELECTRIC seeks to contribute to the competitiveness of the electricity industry, to provide effective representation for the industry in public affairs, and to promote the role of electricity both in the advancement of society and in helping provide solutions to the challenges of sustainable development.

EURELECTRIC has been a strong advocate in favour of the inclusion of Carbon Capture & Storage (CCS hereinafter) in the Clean Development Mechanism (CDM) projects. We see CCS as a vital part of a broader portfolio of mitigation options which also includes renewable energy sources, energy efficiency measures as well as the electrification of transport and heating sector, and nuclear power. CCS has the potential to reduce overall mitigation costs and increase flexibility in achieving emissions reductions worldwide. Furthermore, it probably represents an asserted mitigation tool to reduce carbon emissions for some developing countries.

EURELECTRIC's member companies are actively engaged in the development of CCS installations not only throughout Europe but also in the developing countries where CDM projects already take place. EURELECTRIC attaches the greatest importance to the technology transfer to these countries as we firmly believe that to fight effectively against dangerous climate change we need to have all countries – both developed and developing – on board.

The present paper represents EURELECTRIC's view pursuant to paragraph 4 of the draft Decision -/CMP.6, adopted at the Cancun Conference in December 2010.

SELECTION OF STORAGE SITES

EURELECTRIC agrees that the selection of storage site is key to the development of the project activity and therefore should be carried in accordance with "stringent and robust criteria" in a way that ensures the integrity of the storage site and the long-term containment of the stored CO_2. Different approaches to site characterization exist nowadays as storage sites differ with regards to their trapping mechanisms and geological characteristics. Because every storage site is unique, site selection should not follow a straightjacket approach; instead, site characterisation and selection should be based on predetermined steps or milestones to be followed by project developers, using the best available technology and solutions.

Furthermore, evidence on subsurface industrial experience is abundant. Natural gas has been safely stored for almost one hundred years. Enhanced Hydrocarbon Recovery (EHR) has also contributed to a better understanding of the behaviour of storage sites. Last but not least, carbon dioxide storage itself has also been operational thanks to projects located in the European's North Sea, Canada and North Africa, and it has provided further knowledge on e.g. behaviour of carbon dioxide stream, behaviour of injection wells, etc.

In line with the requirements laid down by the EU Directive 2009/31/EC (hereinafter EU CCS Directive) - particularly Annex I -, selection of a storage site should stem from collection of existing data and exploration activities that developers should be allowed to undertake through issuance of exploration permits. A geological formation is to be selected for the purpose of storage of carbon dioxide if there is no significant risk of leakage. The US EPA legislation (Federal Requirements under the Underground Injection Control Program for Carbon Dioxide Geologic Sequestration Wells); the 2006 IPCC Guidelines for National Greenhouse Gas Inventories; and CO2QUALSTORE - Guideline for Selection and Qualification of Sites and Projects for Geological Storage of CO_2 (from DNV), also provide a sound framework for the characterization of the storage complex.

MONITORING PLANS, INCLUDING RISK OF LEAKAGE, AND PROPOSAL MITIGATION ACTIONS

Monitoring the integrity of the storage site and the behaviour of the injected carbon dioxide are both important features of any CCS project activities. A risk-assessment including e.g. potential leakage pathways or secondary effects of storing the CO_2 is to be undertaken by project developers. This will form the backbone of the monitoring plan that the project operator should submit to the relevant authorities.

Annex II of the EU CCS Directive describes the types of information that the monitoring plan should contain – i.e. parameters monitored (e.g. CO_2 pressure and temperature at injection wellheads, etc.), technology employed, etc., and it could represent a basis for the development of such plans in the UNFCCC framework. EURELECTRIC believes that the best available techniques should be used in monitoring the storage sites, both during the injection and post-injection phases. A

remediation plan based on the previously mentioned risk analysis should be prepared, so as to build and maintain public confidence towards the project activity.

To achieve political and public opinion support, it should be stressed that risk of leakage is not equal for each and every storage site. Although risks originating from the failure of a storage sire are potentially significant, the probability that failure happens is actually very low – as already ascertained by the IPCC. Hence monitoring plans should not be over-prescriptive and should allow for case-by-case flexibility.

With regard to non-permanence and long-term permanence, EURELECTRIC does not see particular issues surrounding the long-term permanence of CO_2 in the context of CDM project activities (see below).

LIABILITY

During the crediting period of a CCS project under the CDM, the liability for CO_2 seepage should reside within the operator. In case of seepage, the storage operator should surrender an amount of CERs equal to the quantity of seepage of CO_2. This is the same principle as in the European Emission Trading Directive (EU ETS Directive), where the storage operator has to surrender emission allowances equivalent to the seepage amount.

The potential for long-term seepage of CO_2 from geological CO_2 storage will outlast the CDM project crediting period, and even the closure of the storage site. The risk of seepage, even if extremely small for appropriately selected and managed storage sites, will have to be addressed. Nevertheless, the necessary regulatory framework for stored CO_2 should exist, to secure environmental integrity in host countries.

After the CDM Project crediting period, there must be a means of ensuring that the environmental integrity is maintained. In the event of seepage, an amount of CERs (or equivalent at the time) equal to the quantity CO_2 seepage must be surrendered, and the seepage source remediated. During the operation phase, the storage operator must make financial contributions available to the ultimate responsible of the storage site (normally, the host country) to cover (among others) the cost of CO_2 emissions in case of seepage after the transfer of responsibility has taken place. This is a similar mechanism to the one followed by the EU CCS Directive.

This financial contribution may be used to cover the costs of monitoring and remediation in case of seepage, to ensure that the CO_2 is completely and permanently contained in geological storage sites after the transfer of responsibility. This approach is similar to one followed by the EU CCS Directive.

PROJECT ACTIVITY BOUNDARIES

The CDM project boundary of a CCS project should accommodate all components across the full CCS chain, i.e. all aspects from capture, transport and storage, and the project activity boundaries shall be described and referenced in the Project Design Document (PDD).

In particular, the project boundaries should include the whole storage complex, which comprises a larger volume than just the storage reservoir, and ensures the inclusion of all surrounding geological domains which can have an effect on overall storage integrity and security.

If a storage complex is comprised of several injection wells which can receive CO_2 from different sources and at different times, the project boundaries shall include all CO_2 capture sources and transport infrastructure to the storage site. In order to properly define the project activity boundaries, a good site characterization shall be undertaken (see above).

The project boundaries shall be reviewed periodically (as required by the US EPA legislation) and in the event that CO_2 moves out of the spatial boundaries, these shall be reviewed and the PDD revised and reassessed, to ensure all potential seepage locations are included within the project boundary.

TRANSBOUNDARY CCS PROJECT ACTIVITIES

Important steps forward have been taken in recent years to regulate international activities in CCS projects so as to favour the development of CCS. Both the London Protocol (under the London Convention) and the Convention for the protection of the marine environment of the North-East Atlantic (OSPAR Convention) have regulated issues around offshore storage. Further, a recently adopted amendment to the London Protocol allows for transboundary transfer of carbon dioxide for the purpose of geological storage.

EURELECTRIC has expressed its support to such amendments and deems necessary that SBSTA takes in due consideration existing international conventions. The creation of cooperation mechanisms between countries to solve potential disputes in the framework of the UNFCCC and/or other international jurisdiction should be thoroughly explored.