IEAGHG Information Paper: 2015-IP32; COP21 IEAGHG Side Event – Carbon Capture and Storage (CCS): Achievements and Opportunities for Developing Country Involvement.

Presented by: The IEA Greenhouse Gas R & D Programme (IEAGHG), The University of Texas at Austin, The Carbon Capture and Storage Association (CCSA) and CO2GeoNet

Moderator **Tim Dixon**, IEAGHG, opened the session discussing experiences in CCS projects. He underscored the importance of a portfolio of technologies to reduce emissions, highlighting that costs of stabilizing CO_2 concentrations at 450 ppm by 2100 will increase by 138% without CCS.

Philip Ringrose, Statoil, presented offshore CCS operations in the North Sea region, underscoring that projects in place over the last 19 years have enabled the safe underground storage of 20 Mt CO_2. He encouraged sharing experiences internationally to build confidence in CCS.

Ton Wildenborg, CO2GeoNet, presented on CO_2 storage projects in Europe, including: the 2007-2013 Ketzin project in Germany that has stored 67 kt CO_2 through injection into a saline aquifer reservoir; and the K12-B offshore project that has, since 2004, injected 102 kt CO_2 into a gas field storage site at 4000m depth. He emphasized CO2GeoNet's successful track record for collaborative research and highlighted opportunities for collaboration with developing countries.

Brad Wall, Premier of Saskatchewan, Canada, spoke on the political context of CCS projects from a public policy perspective, underscoring the importance of regulation for project implementation. He suggested Canada could play a leading role in technological solutions for "cleaning up coal."

Mike Marsh, CEO, SaskPower, presented an overview of the Boundary Dam project, the first in the world to fully integrate a CCS facility to a coal-fired power plant. He explained the project has engineered solutions to technical issues identified in its first year of service, and hopes to capture 800 kt CO_2 in 2016.

Katherine Romanak, University of Texas at Austin, highlighted the great potential of offshore basins to increase geological storage of CO_2. She described the Task Force on Offshore Storage of the Carbon Sequestration Leadership Forum, explaining its purpose to assess opportunities and technology needs and share technology strengths to accelerate the deployment of offshore storage.

Jukka Uosukainen, Director, Climate Technology Centre and Network (CTCN), presented CTCN's technical assistance work, underscoring the country-driven nature of the network that matches country needs with technology expertise, and is able to facilitate the development of bankable, concrete funding proposals.

In discussions, participants considered, *inter alia*: whether carbon policies are a prerequisite for CCS; policy mechanisms such as a carbon tax, the EU ETS, grant schemes, and emissions performance standards; and implications for Europe of the UK's recent CCS policy change.

Philip Ringrose, Statoil, said mature CCS technologies have a strong track record and are ready for use worldwide.

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Katherine Romanak, University of Texas at Austin, suggested that significant opportunities exist worldwide to increase deployment of offshore CCS projects, calling for further workshops and collaborative projects.

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Tim Dixon, IEAGHG, noted that CCS is one of six priority areas identified by the UNFCCC's recent 'Climate Action Now' publication that builds on the work of the 2014-2015 Technical Expert Meetings.

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Panel (L-R): **Tim Dixon**, IEAGHG; **Ton Wildenborg**, CO2GeoNet; **Philip Ringrose**, Statoil; **Mike Marsh**, SaskPower; **Katherine Romanak**, University of Texas at Austin; and **Jukka Uosukainen**, CTCN.

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