

**Carbon Sequestration leadership forum**

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**POLICY GROUP  
TECHNICAL GROUP**

**Report from the  
CCS in the Academic Community Task Force**

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## REPORT FROM THE CCS IN THE ACADEMIC COMMUNITY TASK FORCE

*Note by the Secretariat*

### Background

The CCS in the Academic Community Task Force was formed at the 2009 CSLF Policy Group meeting in San Francisco, and is a joint Policy and Technical Group Task Force. This paper presents a summary of the Task Force's activities and status.

### Action Requested

Policy and Technical Group delegates are requested to review and consider the report of the CCS in the Academic Community Task Force.

## **Report from the CCS in the Academic Community Task Force**

The mission of the CCS in the Academic Community Task Force is to identify and engage academic programs on CCS throughout the world, and help determine path forward for CSLF in this area. The Task Force is currently in Stage 1 (reviewing CCS in academic courses) and is engaged in two main activities: review of postgraduate degree programs for CCS and development of a students' website for CCS.

The review of postgraduate degree programs is being done in four regional reports covering the United Kingdom, the remainder of Europe, North & South America, and Australia. The IEA Greenhouse Gas R&D Programme (IEA GHG) has completed the United Kingdom review and it has been published as an IEA GHG report, while the Brazilian Carbon Storage Research Center (CEPAC) has finished the reports on North & South America and Europe. The research methodology used for these reports was a combination of internet searches, email inquiries, and actual visits to discuss courses with universities.

The results of the United Kingdom report are that there are only a relatively few graduate programs in CCS at the present time. Perhaps the most significant one is at the University of Edinburgh, which offers a MS degree in CCS. There is also a consortium of Birmingham, Nottingham, and Luftberry universities which has a seven year government-funded program with engineering PhD opportunities, and it is estimated that about 50 students will participate in this program over the seven year period of its existence. In addition, several other institutions offer short professional courses on CCS, including the IEA GHG itself which annually hosts a one-week summer school for postgraduate students. One other outcome from the United Kingdom review was that the postgraduate programs in CCS that are presently available have a lack of emphasis on both risk assessment and regulation, which are obviously very key areas.

The results of the North & South America report are that the number of courses containing topics on CCS and climate change in postgraduate programs is limited, and the major existent courses on CCS are related to Engineering or Earth Sciences graduate programs and not compulsory in those programs. Compulsory courses in the surveyed universities are mostly related to environmental subjects, such as climate change, and are inside Environmental programs. Canada, the United States and Brazil have the most postgraduate programs that have courses related to CCS and climate changes, with 9, 5 and 2 postgraduate programs respectively. Among the surveyed universities, the graduate program of Pontifical Catholic University of Chile is the only one that has topics on transport of CO<sub>2</sub> (with hydrogen). The Electrical Engineering graduate program at the University of Calgary in Canada is the only one that includes economical and political aspects related to CCS.

The preliminary results of the Europe report are based only on two countries (Portugal and the Netherlands) that have so far been surveyed. For those two countries, the topics of CCS and climate change are present in a considerable number of postgraduate programs. Unlike North & South America, in Portugal and the Netherlands most of the courses of the academic institutions considered in this report are compulsory. In Portugal, the University of Lisbon's Masters program in Environmental Sciences and Technologies stands out with a broader curriculum which includes legal, socio-economical and technical issues related to environment and climate change. In the Netherlands there are Master of Laws and Master of Economics programs available in which legal and economical issues are offered among the elective courses.

The students' website is intended to facilitate information exchange, interaction and networking, discussion, and collaboration between students and/or professionals on CSLF-related topics. Development of the website has been delayed due to the recent redesign of the IEA GHG website (which will be the host), but progress is expected soon.

At the March 2010 Technical Group meeting in France, there was discussion on how to create academia programs on CCS in places where they do not currently exist, such as South Africa. The Task Force was asked to consider chronicling how a country can build up academic programs in CCS from essentially zero. The Task Force is also very interested in finding ways to promote and encourage CCS academic programs, and that the current worldwide review, once concluded, will be the starting point on moving forward to bring these kinds of programs to places where they do not yet exist.