

## Outreach, Training, Policy, and Regulation: International Efforts

### Project Description

GCCC sponsorship has enabled the Bureau of Economic Geology research staff to become influential members of the International Energy Agency Greenhouse Gas (IEAGHG) CCS Monitoring and Environmental Research Networks, Carbon Sequestration Leadership Forum (CSLF), and Global Carbon and Capture and Storage Institute (GCCSI) Institute. GCCC members continue to serve on steering committees and receive invitations to present to the global research community. This association has led to funding opportunities, expanded collaboration, and increased citations of GCCC work in international publications.



Katherine Romanak participates in IEAGHG-OPEC Workshop on CCs in the UNFCCC Clean Development Mechanism.

### GCCC Influence on International Policy and Capacity Building

In 2011, GCCC participated in a workshop in Abu Dhabi, UAE, to inform United Nations Framework Convention on Climate Change (UNFCCC) stakeholders about protection of groundwater at CCS sites. The purpose of the workshop was to educate international policy-makers before a final vote on whether CCS should be recognized under the Clean Development Mechanism (CDM).

The CDM can enable funding of low-carbon technologies in developing countries. The GCCC also gave presentations on monitoring and environmental protection at the UNFCCC COP17 in Durban, South Africa. At this meeting, CCS was accepted into the CDM after many years of debate. This decision set a precedent for including CCS in other financing and technology-support mechanisms now that formal modalities and procedures are established.

At COP18 (Doha, Qatar, in 2012), GCCC held a side event with IEAGHG and the Carbon Capture and Storage Association called "CCS Capacity Building and Global Status: Educational Opportunities and Lessons Learned." Knowledge transfer, training, and educational programs serving Qatar, Asia, and North America, and available to other countries, were presented by policy, educational, and technical experts within the framework of the role CCS plays in emission reductions.

In 2013, IEAGHG and their international policy collaborators developed a workshop to aid the understanding of CCS project development under the CDM; it was first held for the Organization of Petroleum Exporting Countries (OPEC) in Vienna, Austria. GCCC provided expertise on environmental research and monitoring at CCS sites. GCCC also facilitated a group activity for the participants on how to plan a CCS project under the CDM. A result was World Bank funding to host a workshop to educate officials from Botswana on how to develop a CCS project, to be held at the GCCC in July 2014.

GCCC also participated in the 6th IEA International CCS Regulatory Network Meeting in May 2013 in Paris called "Taking Stock of Progress and Identifying Next Steps." The objectives were to understand international progress to date, define next steps for countries developing CCS regulations, and provide an international forum. GCCC presented "Soil Gas Monitoring Techniques and Implications for MMV Plans."

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### Capacity Development for the Americas

- ◆ For three consecutive years (2012–14), Vanessa Nuñez traveled to Porto Alegre, Brazil, to participate as a lecturer in a series of workshops sponsored by the Center of Excellence in Research and Innovation in Petroleum, Mineral Resources and Carbon Storage (CEPAC) and the CSLF. The workshops covered a variety of basic and advanced CCS topics and were attended by undergraduate and graduate university students, Petrobras employees, and the public. Vanessa presented technical aspects of CO<sub>2</sub>-enhanced oil recovery (EOR), monitoring for CO<sub>2</sub> permanence, and CCS risk assessment.
- ◆ Vanessa Nuñez also delivered a webinar series as part of the Global CCS Institute's development program with Mexico during the fourth quarter of 2013. The series consisted of webinars titled "Selection of Storage Sites in Saline Aquifers," "Fundamentals of Modeling CO<sub>2</sub> Movement Underground," and "Fundamentals of Monitoring CO<sub>2</sub> Injected Underground." The program was designed in collaboration with the Comisión Federal de Electricidad (Federal Electricity Commission), the Academic Council of Earth Science Schools, and La Secretaría de Energía (Ministry of Energy).



Petronio Nuñez, Hilary Olson, Norway's Consul General Jostein Mykletun, and Vanessa Nuñez at the Norwegian Consul General's residence in Houston following a workshop on carbon capture, utilization, and storage.

### Leading an Initiative to Advance Offshore Storage

GCCC catalyzed a CSLF task force to address current barriers to subseabed CO<sub>2</sub> storage. The goal is to develop an international collaborative offshore demonstration project. The task force was established after GCCC attended the CSLF meeting in Washington, D.C., in November 2013, leading a side event and addressing the conference. These activities piqued international interest, which was solidified at the CSLF Technical Group at the meeting in Seoul, Korea, March 2014. A task force report is due to be completed by May 2015.

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