

**CCS Liability and Accounting Working Group
Conference Call Summary
6 Sept 2006**

Participants: Mark DeFigueiredo, Kipp Coddington, Judith Bradbury, Sarah Wade, Neal Grasso, Sarah Forbes, Kate Larsen, Jeff Logan, Elizabeth Wilson

The call addressed three topics: (1) an update on the state assessments, (2) a broader discussion of what to do with the information in the assessments, and (3) a discussion of the upcoming liability workshop on Sept 29. What follows is a brief summary of the call.

1) Survey of working group investigations into state liability issues:

- Status of project
- What still needs to be done
- Strengths and weaknesses of what has been done

Texas: (Kip Coddington) The Texas draft has been circulated. The existing Texas regulations, statutes and case law give a good framework for thinking about how CCS, particularly EOR, would be regulated in Texas. The following issues remain to be investigated: ownership of pore space, the issue of permanence and its definition. While Texas may serve as an example for other states, it is important to note that there is a rich body of regulatory control in Texas and a broad scope of environmental regulations. In addition, there are some state specific issues rooted in state-specific law. It may be that some circuit law has analogs at the federal level.

In Texas, two bills have passed in the recent past, mostly due to the state's need to compete in the FutureGen bid. The initial bill determines regulatory authority, charging TCEQ with authority over deep saline injection, and TRRC with authority over EOR. The second bill gave the TRRC title to injected CO₂, and its liability, from the FutureGen power plant.

The Governor of Illinois, partially in response to competition from Texas, has released a plan to encourage development of "clean" energy alternatives, which includes CCS and construction of a CO₂ pipeline for EOR in the Illinois basin.

Kipp stressed that CO₂-EOR is the real commercial driver for CCS and care is needed in developing regulatory measures to ensure that its value is not diminished.

Illinois: (Liz Martin was not on the call.)

California: (Kate Larsen) There is quite a bit of information available for CA. What is missing is some of the actual experience/case law. Next steps include talking to agency folks to see how regulations are carried out in practice. The legal precedent also requires more investigation. Mark mentioned California's re-abandonment responsibility for future

plugging of wells and questions were posed regarding how long this re-abandonment responsibility lasts.

Wyoming: (Karen Utt and Kate Larsen) There is less accessible information for WY. They have extensive EOR experience, but mostly in the past, and there has been trouble finding much current info. KU will look for legal precedent in the state.

Louisiana: (Neal Grasso) Research is coming along but assistance with case law will be necessary to complete the investigation. Kipp volunteered to run Lexus-Nexus searches for Neal and others who need it. He was unable to find information on natural gas storage. He did talk to a Louisiana O&G official who said they have no active EOR now, but there is lots of potential.

Michigan: (Sarah Wade) Almost done (draft shared after conference call) – found one challenge was in determining relevance of some of the provisions. The original rough draft of the assessment was 15 pages because it included some references to regulatory language that may prove to be irrelevant. For example, provisions for disposing of brines from injection wells may not be relevant to CO2 injection for EOR or injection of CO2 into saline formations. It would be useful for someone with stronger background in oil/gas legal issues to do a quick review to determine relevance of some of the provisions described in the assessment. An interesting context for the MI rules comes from its call to prevent waste and conserve natural gas and oil. This suggests treatment of the petroleum fields as a common resource. In MI this leads to authority for compulsory unitization, as well as DEQ directed siting, spacing and pumping volumes for wells. Does this have implications for storage capacity as a common resource? In terms of liability, it was interesting to note that the rules prevent drilling wells and injecting fluids under or near the perimeter of the Great Lake and within certain distances of homes and residential areas. Again, Lexus-Nexus help will be necessary.

Indiana: (Sarah Forbes had “phone issues” and had to drop off the call early). From earlier talks, progress on Indiana is moving along and a draft should be complete soon.

Kentucky: (Judith Bradbury) JB professes that she’s been delinquent. She’s had difficulties finding background material. There is new statute in KY concerning bonding, but the state does not have much experience with these issues.

Once we try to use this information, sharing it with the Siting & MMV group, and thinking through some of the issues that arise, we will be able to see what we are missing and what other types of information will be helpful.

- 2) Stepping back, the group reflected on how best to use this information in the context of the WRI project.**

Originally the states were picked for assessment in order to obtain a broad representation of the types of existing regulatory frameworks relevant for CCS as well as representative of various levels of perceived progressiveness/ conservativeness in environmental regulation. These would then be used as perspective to assess the liability related to the scenarios being developed by the siting group. One immediate challenge is that the regulatory landscape is often heavily influenced by specific state law and history. So the group did not see an easy way to create generic scenarios. Following the presentation of the scenarios on Sept 29 the liability group will reconvene to determine how best to apply the information gleaned during this stage to the scenarios. This information will also inform the discussion on the 29th.

In the meantime, the group considered the information from a few different perspectives.

A. What do states need to think about for sequestration project deployment that is currently missing from the existing regulatory frameworks reviewed so far?" Although not a definitive response, some of the issues raised in response include:

- Mitigation of local risk? Global risk?
 - a. Long term monitoring – permanence requirements, especially if near term emphasis is on EOR
- Siting considerations?
 - a. Resource conservation & optimization - In Michigan, statute calls for the prevention of waste, which is deemed to include preventing wasteful use of the resource. There has been a concerted effort to conserve oil and gas. If we think about CO₂ storage capacity as a resource, how does this affect the goals of preventing wasted capacity/resources (or conversely optimizing their use)?
 - b. Long-term liability
 - c. What should go into the EIS?
 - d. It will be interesting to watch California now that it has set caps carbon. New rules will determine if CO₂ sequestration will qualify as a viable offset, and this may change how EOR and CCS are regulated.

B. Transition / Infrastructure - How does CCS evolve and what are the implications for regulatory oversight?

- Institutional expertise?
 - a. Much of subsurface expertise resides within the state oil and gas and geology departments, not necessary with state EPA or environmental agencies.
 - b. Will a state EPA have the capability to ask the right questions? Understanding of geologic, environmental degradation, and mineral resource protection will be necessary. Much of the geologic knowledge is found in state oil and gas commissions.
 - c. Insurance and bonding requirements – Currently firms take on insurance not required by regulations but to manage their own exposure to risk (e.g. The case of natural gas leakage in Hutchinson, KS). Companies had insurance that covered much more than the state's required bonds. The overall insurance payout + jury award was roughly \$33 million. Question: How do companies determine how

much insurance to carry, especially compared to what the state regulation may require?

- d. Natural gas storage has also been determined a public good or public property in many states and in federal statute. Could CO₂ storage follow the same course?
- e. How do we create large and legal storage reservoirs? Will state natural gas storage rules cover CO₂? The case could be made in a handful of states.
- f. Some states may reach a point where size of CO₂-EOR projects require a different regulatory approach, > X million tons/yr
- g. Certain states will use existing regulatory regimes, however interstate issues will be more tricky (e.g. aquifers spanning the TX/OK border, or in the Midwest).
- h. How will EPA permit CO₂ injection wells?

3) September 29th Liability workshop presentation. Points to be covered:

- Comparison and contrast of 9 states we have looked at
- Options for moving forward:
 - a. Attempt to evaluate scenarios in context of one or more of the existing frameworks – what challenges would arise, what concerns might not be addressed?
 - b. Attempt to create a set of general recommendations for enhancements to existing regulatory frameworks to address some of the concerns / challenges associated with demonstrating safe and secure long-term storage? (EOR only?)
 - c. Continue analysis of each state under review (to what end?)
- Attempt to develop state-based recommendations for the states being assessed (EOR only?) (overlap with IOGCC?)
- How do we best use expertise at the liability workshop?– Present findings from these 9 states, and tap the wisdom of those in the room for what else we need to do.

Announcements / Next Steps

- Jeff Logan - On Oct 20 the Siting & MMV workgroup will conduct a roleplay of one of the 3 scenarios it has developed. It will take the form of a mock hearing, with a project development team introducing their plan for a saline aquifer injection, with state regulators, local community representatives, environmental NGOs, and other stakeholders asking questions. As this is the first experiment of the scenario role-plays, attendance will be limited to only those participating.
- Elizabeth will circulate draft slides prior to the liability workshop on the 29th and will poll via email to determine if there is a need for a call before the meeting.
- Follow-up to the meeting with a call to review discussion of how best to use the information gleaned so far and moving forward.