

Reinhold Environmental Ltd.



2008 NOx-Combustion Round
Table & Expo Presentation

February 4-5, 2008 in Richmond, VA

CO₂ Emissions Panel Reinhold NOx Roundtable 2008

4 February 2008

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CO₂ Capture - What is the future?

- There is a groundswell of apparent support from the public to limit GHG emissions.
- There is large data base of CO₂ emissions data for the utility industry.
- Legislation and initiatives have already been proposed for limiting CO₂ emissions from Power plants and other sectors of economy including transportation.
- The future will probably include “Limitations on Carbon Emissions”.

CO₂ Capture – What is understood

- There are techniques for capturing CO₂ from flue gas in large quantities.
- Some are proven and commercially applied
- There are techniques under development that may be better than those already here.
- They use energy (steam and/or heat) and power (electrical).
- Reagents (ammonia, amine) are not common to power plants.
- You **MUST** have a place to put the captured CO₂.
- The amount of CO₂ to be captured is staggering.

What Remains Unanswered about CO₂ Capture

- Performance Capabilities for large scale systems?
- Regulatory requirements for CO₂ reduction?
 - 90% or greater
 - <90%
- Final resting place for captured CO₂? Who will be liable?
- Is CO₂ to be considered a pollutant or a commodity? Effects sequestration because of groundwater contamination issues.
- Future of coal use in the US, especially by electric utilities, with or without CO₂ capture?
- Capital Cost for large size systems?
- Is there a parasitic power / energy use level that will be “acceptable”?

What Remains Unanswered about CO₂ Capture

- Are there CO₂ removal technologies or techniques that are considered “ready for prime time”?
- What type of demonstration will it take to make a technology or technique “ready for prime time”?
- How many demonstrations will it take to prove the technology?
- What are the requirements placed on the other pollution control equipment by the needs of the CO₂ removal system? Are they achievable?
- Will regulators, lobbyists, and environmentalists wait for demonstrations to be finished before drafting regulations?
- Will any utility invest in CO₂ capture without regulatory requirement?

One Possible Scheme for CO₂ Capture on a Large Power Plant



Today's Panel

- John Novak - EPRI
- Chris Wedig – Shaw Group
- Sharon Sjostrum - ADAES
- Each will provide perspective on where we are and what we are/should be doing.

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