

# CARBON CAPTURE

## Status and Outlook

DECEMBER 3 - 5, 2007



Almas Temple Club, Washington DC

### Final Agenda

Monday, December 3

8:30am-5:30pm

*Pre-Conference Symposium:*

**CARBON CAPTURE TECHNOLOGY SHOWCASE**

Tuesday, December 4

Main Conference

- 8:00-8:15      **Chairman's Welcome**  
**Chair: Pamela Tomski**, *Managing Partner*, EnTech Strategies, LLC
- 8:15-8:45      **Keynote Address**  
**Operational Requirements and Due Diligence for Carbon Storage**  
**S. Julio Friedmann**, *Energy & Environmental Directorate*, *Carbon Management Program Leader*, Lawrence Livermore National Laboratory
- 8:45-10:00    *Panel Discussion:*  
**Connecting the Links: The Carbon Management Process, from Emissions Footprinting to Underground Injection**  
*Moderator:*

**Dr. Susan Capalbo**, *Executive Director, Office of the Vice President for Research; Professor, Agricultural Economics and Economics, Montana State University*

*Panelists:*

**S. Julio Friedmann**, *Energy & Environmental Directorate , Carbon Management Program Leader, Lawrence Livermore National Laboratory*

**Lawrence Goldenhersh**, *President and CEO, Enviance (tentative)*

**Martin Smith**, *Manager, Environmental Policies, Xcel Energy*

**Dan Wilson**, *Manager, Generation Engineering, E.ON US*

10:00–10:30 Morning Break

10:30-11:45 *Panel Discussion:*

**Unregulated Generation Companies and Independent Power Project and Coal-to-Liquids Developers’ Views of Carbon Capture**

- Views on the cost debate of IGCC vs/ PC w/CCS: cost-to-install, parasitic load, scale-up risks
- New plants: what is “capture ready”?
- The challenge of financing new coal plants and experimental technologies against the background of the credit crunch
- Role of polygen markets and carbon for EOR in boosting project revenues

*Moderator:*

**Eric Redman**, *Shareholder, Heller Ehrman LLP*

*Panelists:*

**William J. Martin**, *President & CEO, Atlantic EnergyVentures, LLC*

**Paul Spurgeon**, *Vice President, Power Development, Coal Conversion and Coal Projects, Consol Energy Inc.*

**Dwight Lockwood**, *Group Vice President, Global Energy Inc.*

**Mark Langford**, *Vice President, Kiewit Industrial Co.*

**Jim McVaney**, *Vice President, Government Affairs, Rentech, Inc.*

11:45-1:15 *Group Luncheon*

*Hosted by*



**Enhanced Oil Recovery and Carbon Capture and Storage**

**Russell Martin**, *Vice President, Blue Source LLC*

1:15-3:00 **Independent Engineering Assessments of Capture Systems**

*IGCC Capture*

- Feasibility
- Integration
- Cost

*PC post-combustion capture*

- Feasibility
- Integration
- Cost

*Oxyfuel capture*

- Feasibility
- Integration
- Cost

**Oliver Carter**, *Senior Process Engineer*, The Shaw Group, Inc.

**Hope Chase**, *Executive Consultant*, The Shaw Group, Inc.

**Christopher Wedig**, *Senior Technology Specialist*, The Shaw Group, Inc.

3-3:30 Break

3:30-4:30 *Panel Discussion:*

**Economics and Risks of Scaling Up Carbon Capture for IGCC/Gasification**

- What technologies are currently available for CO<sub>2</sub> capture and what is promising for the near-term applications?
- How has the recent escalation in costs impacted the projected cost spread between each technology once capture is included?
- What is meant by “capture ready” and “clean coal”? How do these fit in?
- Tradeoffs of percentage of capture vs. parasitic burden, dictates what type of technology

*Moderator:*

**Scott Olson**, Nexant (tentative)

*Panelists:*

**Calvin Hartman**, *Senior Project Manager*, WorleyParsons Group, Inc.

**Tom Lynch**, *Principal Project Director*, ConocoPhillips

**Edward Martin**, *Vice President*, RW Beck, Inc.

**Kevin O’Brien**, *Director, Business Development and Innovation*

*Programs*, SRI International

**Dan Wilson**, *Manager, Generation Engineering*, E.ON US (tentative)

4:30-5:30 *Panel Discussion:*

**Economics and Risks of Scaling Up Carbon Capture and Oxyfuel Approaches for PC/SCPC Coal Plants and Oxyfuels Applications**

- What technologies are currently available for CO<sub>2</sub> capture and what is promising for the near-term applications?
- How has the recent escalation in costs impacted the projected cost spread between each technology once capture is included?
- What is meant by “capture ready” and “clean coal”? How do these fit in?
- Tradeoffs of percentage of capture vs. parasitic burden, dictates what type of technology

*Moderator:*

**Anthony J. Cirillo**, *Projects-General Manager*,  
Washington Group International

*Panelists:*

**Gene Hernandez, P.E.**, *Vice President / Marketing / Sales*,  
Doosan Babcock Energy America LLC

**Chuck D. McConnell**, *Global Vice President Gasification & OxyCoal*,  
Praxair, Inc.

**Jerry Golden**, *Senior Marketing Manager, Environmental Systems  
Division*, Mitsubishi Heavy Industries America, Inc.

5:45-6:45 **Networking Reception Hosted by:**

**FLUOR**<sup>®</sup>

Day Two

Wednesday, December 5

8-9:30

*Panel Discussion*

**Financing Carbon Capture and Storage: Wall Street Views on Risks, Creditworthiness, Capital Availability, and Insurability**

- What is the balance of subsidies and loan guarantees necessary that will make capture systems financially justifiable?
- Finance views on the running debate as to which technology path is cheaper under a carbon regime – IGCC vs. PC w/capture, and now oxy fuel
- How will the credit crunch affect new projects and capture retrofits, with costs already ballooning out of control due to resource and labor constraints?
- How much additional government regulation surrounding sequestration is necessary to limit project liability?

*Moderator:*

**Eric Redman**, *Shareholder*, Heller Ehrman LLP (tentative)

*Panelists:*

**David Reisinger**, *Assistant Vice President*, AIG Global Marine & Energy

**Swaminathan Venkataram**, *Director*, U.S. Utilities, Power & Project  
Finance, Standard & Poor's

**Milo Sjardin**, *Senior Associate*, New Energy Finance, Ltd.

9:30-10:00 Morning Break

10:00-12:00 *Panel Discussion:*

**Regulators' Perspectives on Balancing Electricity Costs with Carbon Compliance Regimes, and State Incentives**

- The RGGI process as standard-bearer for carbon concerns on East and West coasts: how do non-RGGI states view progress?

- Under the pressure of climate change, it appears regulators are shifting away from traditional least-cost power mandate—protecting the consumer—to more of a policy-setting role. What does that augur for the future?
- Views on utility requests for guaranteed rate recovery on clean coal projects, even *in advance* of project completion
- Initiatives towards rate de-coupling
- State incentives for clean coal/carbon capture projects
- Facing a future of upwards-trending power prices, how long before consumers revolt?

*Moderator:*

**Sarah Forbes**, *Carbon Program Lead*, Potomac-Hudson Engineering Inc.

*Panelists:*

**Jason Marks**, *Vice Chairman*, New Mexico Public Regulation Committee

**Dr. Talina Matthews**, *Advisor*, Governor of Kentucky

**Jim Sims**, *Executive Director*, NextGen Energy Council

**Paul Hudson**, *Chairman*, Texas Public Utility Commission

Noon

Conference adjourns