

SEVENTH ANNUAL CONFERENCE ON CARBON CAPTURE & SEQUESTRATION

Addressing the Knowledge, Policy, Regulatory and Technology Gaps to Expedite CCS Deployment

May 5 - 8, 2008

Sheraton at Station Square
Pittsburgh, Pennsylvania

CALL FOR PAPERS

The 2008 Conference follows in the footsteps of the past six events, maintaining the objectives to:

- Focus on carbon capture, separation and sequestration technologies that are being or could be deployed in the U.S. and North America;
- Provide a forum for the exchange of experience among U.S. and international scientific and engineering communities working on such technologies and systems;
- Facilitate the necessary dialogue between technology developers/purveyors, industry and the public on the development and deployment of viable technologies; and
- Share experience on developing the necessary capacity within the public and private sector to move the technology base forward.

Conference Advisors...

Stefan Bachu
Alberta Energy & Utilities
Board, Canada

Sally Benson
Stanford University

Joel Brown
U.S. Dept. of Agriculture

Linda Curran
BP America Inc.

Roger Dahlman
U.S. DOE Office of Science

Heleen de Coninck
Energy Research Centre
of the Netherlands

Ian Duncan
Bureau of Economic
Geology, Univ. of Texas

John Gale
IEA GHG R&D Programme

George Guthrie
Los Alamos Natl Lab.

Pete Hagist
Whiting Oil and Gas Co.

David Hawkins
Natural Resource Defense
Council

Eric Holdsworth
Edison Electric Institute

Susan Hovorka
Bureau of Economic
Geology, Univ. of Texas

Anhar Karimjee
U.S. EPA

Scott Klara
U.S. DOE-NETL

Bruce Kobelski
U.S. EPA

Tony R. Kozscek
Stanford University

John Litynski
U.S. DOE-NETL

Ernie Majer
Law, Berkeley Natl. Lab.

Steve Melzer
Melzer Consulting

F. Blaine Metting
Pacific Northwest Lab.

Tom Mikus
Shell Oil

Nancy Mohn
ALSTOM Power

Michael Moore
Falcon Environmental Svcs.

Mike Mudd
FutureGen Alliance

Ken Nemeth
Southern State Energy
Board

Naomi Pena
Pew Center on Global
Climate Change

Eric Peterson
Natl Science Foundation

Sean I. Plasynski
U.S. DOE-NETL

Richard Rhudy
EPRI

Edward Rubin
Carnegie Mellon Univ.

Robert Socolow,
Princeton University

Justin R. (Judd) Swift
U.S. DOE Fossil Energy

John Tombari
Schlumberger Carbon Svcs.

Robert F. Van Voorhees
Bryan Cave, LLP

Maria Vargas
U.S. DOE-NETL

John Veil
Argonne Natl Lab.

Richard P. Walters
DOE-NETL

Elizabeth Wilson
Hubert H. Humphrey Institute
of Public Affairs

An Invitation to Present a Paper

Individuals who are interested in giving an oral presentation at the Workshop are encouraged to submit an abstract for review. Please feel free to submit sub-topics not specifically listed but which are related to the main topics in bold type.

Focus for 2008...

- **Evaluation of CCS for Various Carbon Emitting Fuels**
 - Coal by Rank
 - Petcoke
 - Biomass
- **Field Experience of the Major CCS Projects That Would Be Relevant to CCS in the U.S. and Canada**
- **Gaps in the Current Knowledge Base That Need to Be Addressed in Order to Facilitate Deployment of Systems**
 - Gaps in Information Needed by the Insurance Industry
 - Gaps in the Permitting System
 - Expedited Ways to Address Gaps
- **Addressing Liability for Long-Term Sequestration/Storage**
 - Potential Gov't Role
 - Emissions Generators' Liability
 - Liability for Sequestration in EOR-Based CCS Systems
 - Self Insurance
- **Determination & Accountability for CO₂ for Emission Reduction Credits for CCS Systems Within Potential CCS Regulatory Regimes**
- **CCS Systems for Synthetic Fuel Production Facilities**
- **The Extent to Which EOR Can Provide an Option for CCS for Power Plant Emissions**
 - Long-Term Geological Liability for Sequestered CO₂ Achieved by EOR Processes
 - Current and Potential Regulatory Framework
 - Long-Term Containment of CO₂ Utilized in EOR Processes
 - Determining recipient oil field CO₂ Capacity
 - Transport from Generator to Recipient Oil Field
- **Progress and the Expected Knowledge Gain from the FutureGen Project**
- **Electric Utility Plans to Consider/Use Large Scale CCS**
- **Retrofitting CCS Systems into Currently Operating Fossil Fuel-Based Electric Generating Facilities or CO₂/CH₄ Emitting Industrial Facilities**
- **Economic Analyses of Large-Scale CCS Systems at Coal-Fired Electric Generating Plants**
 - Potential Approaches to Mitigate Cost Impact on Rate Payers
- **Progress on Separation Technologies for Carbon-Bearing Flue Gases**
- **Public Knowledge/Acceptance of Massive Underground Carbon Storage**
- **Regulatory Oversight of the Various CCS Options**
- **Assessments of CCS Systems and Component Technologies**
- **Feasibility/Viability of Capturing/ Sequestering Flue Gases Without Separating Out Non-CO₂ gases**
- **Monitoring, Measuring and Verification of CO₂ Geosequestration Monitoring Methods**
 - Monitoring Efficiency and Effectiveness
 - Measuring Criteria and Standards
 - Verification Processes
- **Infrastructure Requirements for CO₂ Pipelines**
- **Liability Associated with Geological Sequestration**
 - Contractual Terms between Generator and Acceptor/Purchaser
 - Private Insurance

(SEE FOLLOWING PAGE FOR ADDITIONAL TOPICS)

Guidelines for Abstracts...

Please submit a 250-word abstract via: www.signup4.com/CCS-Abstracts

Abstracts Due: February 12, 2008

Acceptance Notification: March 7, 2008

NOTE: *Full papers are required. Oral presentation time will be limited to 20 minutes. The full paper must be submitted as an Acrobat PDF file and will be included in the electronic proceedings. Acrobat PDF files of PowerPoint presentations will be accepted in lieu of a technical paper. Inclusion of photographs not pertinent to technical discussion highly discouraged. Please indicate topics/sub-topic area from list above. Presenters need only submit a PowerPoint presentation (DVD, CD or Memory stick) on the first day of registration (May 5, 2008).*

General Topics...

- **Capture and Separation**
 - Industrial Efforts
 - Absorption Studies
 - Power Systems Concepts
 - Environmental Aspects
 - Membranes
 - Advanced Concepts
 - Potential Large Volume/Low Cost Sources of CO₂ for Storage Testing
- **Sequestration of Carbon Emissions in Geologic Formations**
 - Depleted Oil/Gas Fields
 - Enhanced Coal Bed Methane
 - Saline Reservoirs
 - Modeling Studies
 - Environmental Assessments
 - Co-Benefits
 - MMV Technologies
 - Site Selection Protocols
 - Impacts of Mixed Gas/Emission Streams
 - Unmineable Coal Seams
- **Methods for Reporting CO₂ Emissions**
 - Reporting Tools and Databases
 - DOE and other GHG Registry
 - Methane Conversion
- **Standards and Protocols for Sequestration**
 - Federal and State Regulatory Efforts
 - International Regulatory Efforts
 - Permitting Experience and Case Studies
- **Overall Assessments/Evaluations of Terrestrial Sequestration**
 - Overall Capabilities of Naturally-Occurring CO₂ Reservoirs
 - Potential Contribution of Terrestrial Sequestration Approaches to Mitigation of Atmospheric Emission of CO₂/CH₄
 - Enhancing Natural Sinks/Terrestrial Sequestration
- **Risk Assessment and Management**
 - Methodologies and Approaches
 - Experience from Ongoing Large Scale Projects/Demos
 - Strategies Developed for Large Scale Projects/Demonstrations
- **Technology/Systems for the Measurement, Monitoring and Verification of Carbon Emissions**
 - Design of Data Bases
 - Available Data Bases
 - Updating DOE GHG Registry
 - Other Registries
 - Links to Commercial Mechanisms
 - Standards and Protocols
- **Advanced Conversion/Capture Concepts**
 - Carbonates
 - Biological/Chemical Processes
 - Methane Conversion
 - Environmental Aspects
 - Co-Benefits
 - Commercial Products
- **Modeling, Assessments, Analytic tools**
 - Case Studies
 - Economics
 - Environmental Aspects
 - Benefits Analysis
- **Potential Commercial Approaches to Support Reduction of Carbon Intensity**
 - International Experience
 - Domestic Experience
 - Analysis and Tool Development
- **Emissions Trading and Offsets**
 - Domestic & International Experience
 - Intra-Company
 - GHG Markets
 - Investment Potential into CCS Technologies Stimulated by a 'Carbon' Market
 - Reporting and Verification
- **Criteria to Be Used by Decisionmakers in Selecting Viable Capture/Storage/Sequestrations Options**
- **Commercialization Barriers/Incentives**
- **Investment by Carbon Emitting Industries**
 - Power Industry
 - Non-Power Industry
 - Transport of CO₂ Emissions
- **Policy Issues**
 - Effect of Potential State/federal Legislation
 - Certification (1605b)
- **Regional Partnerships to Develop/Deploy Carbon Capture & Sequestration Opportunities**
- **Scientific and Socioeconomic Criteria that Could Be Used to Evaluate the Sensitivity of the Carbon Cycle and the Vulnerability and Sustainability of Carbon Mgmt. Approaches**
- **Capacity Building**
 - Developing state and local infrastructure to Facilitate Deployment of CSS
 - Necessary Private Sector Capabilities

AN OPPORTUNITY TO EXHIBIT...

Showcase Your Company's Services, Products, and Technologies by joining the

2008 CARBON CAPTURE & SEQUESTRATION TECHNOLOGY EXHIBIT

The past six Carbon Capture & Sequestration Conferences each attracted 400-500 participants representing key federal agencies (DOE, NOAA, DOC, Dept. of State, DOI, EPA, USDA), industry, academia, national laboratories, state and local governments and public interest groups. The 2007 Conference ended up having more than 700 participants.

• IT'S FIRST COME, FIRST SERVED—EXHIBIT SPACE LIMITED •

Participation:	Conference exhibitors will be limited.		
Dates and Times:	The Exhibit schedule will revolve around many of the catered functions and will provide ample opportunities for one-on-one discussions with conference participants.		
What to Do:	Reserve space now for the Exhibit by registering at www.signup4.com/08CarbonCapture		
Costs:	<i>ALL FEES INCLUDE ONE COMPLIMENTARY REGISTRATION FOR CONFERENCE</i>		
Exhibit:	VERY SMALL COMPANIES (30 or Fewer Employees) \$1,295	SMALL COMPANIES (31-100 Employees) \$1,595	LARGE COMPANIES (Over 100 Employees) \$1,995

2008 Carbon Capture & Sequestration Conference

Not getting enough attention for your company's work on greenhouse gas reduction technologies?

Want to broaden your recognition in the marketplace?

Become a co-host of the *Carbon Capture and Sequestration Conference* and publicize your company to the global community directly involved in addressing the reduction of GHG emissions and carbon capture and sequestration. For the past six years this 2½ day event has attracted participants from a broad spectrum of companies and organizations from around the world (*see Participating Organizations on the following pages*). The benefits include:

- Membership on the conference advisory committee, which includes participation in the get-together Feb 19-20 in Pittsburgh, the host city for the conference, to develop the conference agenda;
 - Co-host recognition on the conference agenda and resource book;
 - Inclusion of a two-page 'marketing' flyer in the conference resource book;
 - Moderating or speaking during the plenary sessions or moderating a technical session*;
 - Complimentary or reduced fee for exhibiting*;
 - Free or discounted registrations*; and
 - Recognition during the conference via signage publicizing the company logo/trademark, etc.
- (*Depends on level of sponsorship)

Available co-sponsorship/co-hosting opportunities:

- **Registration Materials:** Logo imprinted: on Conference portfolio given to each participant containing agenda, list of participants, etc.; Lanyard and/or back of the badge given to each participant; Conference pen/pencil; and Conference tote bags;
- **Social Event Co-hosting:**
 - Opening cocktail reception (May 5);
 - Opening dinner (May 5);
 - Continental breakfasts (May 6, 7 and 8)
 - Lunches (May 6 and 7)
 - Coffee breaks (May 6 (2), 7 (2) and 8 (1));
 - Cocktail receptions (May 6 and 7); and
 - Conference evening dinner (May 7).

For details contact the Forums office at 1-800-877-303-7367 ext. 109 or email: forums@exchangemonitor.com.

Companies/Organizations At 6th Annual Carbon Capture & Sequestration Conference

ADA-ES, Inc.	Conoco Phillips	Louisiana State Univ.	Suncor Energy, Inc.
Advanced Resources Int'l	Cranfield University	MAST Center, Univ. of Colorado	Technology & Mgmt. Svs, Inc.
Aerodyne Research, Inc.	Creative Energy Systems	Matric	Terresense, Inc.
AGCERT International	CSIRO	McGill University	Texas A&M University
AILR	Dublin Institute of Tech.	McGill University/Civil Eng.	The Babcock & Wilcox Co.
Air Prod. & Chem., Inc.	Ducks Unlimited	Microseeps, Inc.	The Cadmus Group, Inc.
AIST	Duke Energy	Mass. Inst. of Technology	The University of Texas, Austin
Alberta Energy Research Inst.	Dunlap, Coddling & Rogers PC	Montana State Univ.	ThermoEnergy
Alberta Research Council	DuPont Edison Mission Energy	National Science Found.	TMS/U.S. DOE - NETL
Alstom Power Inc.	Elsevier Ltd.	Natural Resources Canada	TOTAL
Alston & Bird, LLP	ENEL-Gen Research Dept.	Natural Resources Def. Council	TRI/Princeton
American Air Liquide	Enerfex, Inc.	NEDO	Trimeric Corporation
American Petroleum Institute	Energetics, Inc.	Netherlands Energy Res. Cntr.	Tsinghua University
American Public Power Assn.	Energy & Env. Research Cntr.	N.M. Inst. of Mining & Tech.	TVA
ArborGen	Environmental Defense Fund	N.M. Tech. PRRC-CO2	U.S. DOE
AREVA	Electric Power Res. Inst.	Nexant, Inc.	U.S. DOE-Hydrogen Prog.
Argonne National Lab	Ergo Exergy Technologies Inc.	Nicholas Inst., Duke Univ.	U.S. DOE-NETL
Arizona State University	Exelon	North Wind Inc.	U.S. DOE-Fossil Energy
ARMINES	Exploration Technologies, Inc.	Oak Ridge Nat'l Lab	U.S. DOE-Office of S & T
Atmocean, Inc.	FuelCell Energy, Inc.	Occidental Petroleum Corp.	U.S. EPA
Augusta Systems Inc.	FutureGen Alliance	Ohio Geological Survey	U.S. EPA Region 6
Battelle	Gas Technology Institute	Pacific Northwest Nat'l Lab	U.S. Fish & Wildlife Service
Berkeley Lab	GE Energy	Penn State University	U.S. Dept. of State
Bevilacqua-Knight, Inc.	Geological Survey of Alabama	Petroleum Tech. Research Cntr.	U.S. Senate E&W Approps.
Bloomberg TV	Geotechnologien Office	PNM Resources, Inc.	U.S. Senate Public Works
Bluewave Resources, LLC	Golder Associates, Inc.	Potomac Investment Capital	UC Davis University of California
BP	Great Point Energy	Praxair, Inc.	UCLA Chem. & Biochem. Dept.
BP Aternative Energy	GTI	Princeton Environ. Institute	UK Dept. of Trade & Industry
BP Alt. Energy-Hydrogen	GWPC	Princeton University	Univ. of Idaho
BP America Inc.	Halliburton	Ramgen Power Systems, Inc.	Univ. of Ill. at Urbana Champaign
BP Exploration	Hampton University	RDS/Parsons Corp.	Univ. of Texas at Austin
BP Faithful Gould	Harvard University	RDS/SAIC	University of Alberta
BP Int'l (CCP & In Salah)	Helsinki Univ. of Technology	RTI International	University of Delaware
BRGM	House E&A Approps. Comm.	Sandia Nat'l Lab	University of Illinois, NCSA
Brigham Young University	ICF Consulting	Sask Power	University of Kentucky
Brookhaven Nat'l Lab	Idaho National Lab.	Schlumberger	University of Minnesota
Bryan Cave LLP	IEA GHG R&D Prog.	Schlumberger Carbon Services	University of Notre Dame
Bureau of Econ. Geology, U.T.	IEA GHG Weyburn-Midale	Schlumberger Ltd.	Univ. of Utah
Bureau of Economic Geology	IFP	Schlumberger-Doll Research	University of Wyoming
California Energy Commision	IL Emerg. Mgmt. Agency	Schlumberger-SRPC	USRG
Calif. Institute of Technology	Illinois State Geo. Survey	Science & Tech. Policy Inst.	Utah Geological Survey
Cansolv Technologies Inc.	Imperial College London	Science Appli. Int'l Corp. (SAIC)	VA Cntr. for Coal & Energy Res.
CANSYD Australia Pty Ltd.	Industrial Tech. Research Inst.	Shell	VA Dept. Mines, Min., & Energy
Carbon Solutions, Inc.	Idaho National Lab.	Siemens	Veridium Ind. Design Corp.
Carbonzyme, Inc.	Inst. For Clean Energy Tech./MSU	Simon Fraser University	Virginia Tech.
Carnegie Mellon University	Kansas Geological Survey	Southern Company	Visage Energy Corp.
CEA/ANR (France)	Kentucky Geological Survey	Southern Illinois Univ.	VITO NV
Center for Biofilm Engineering	Kinder Morgan CO2 Co., L.P.	Southern States Energy Board	Washington Safety Mgmt. Solutions
Central Midwest Compact	Lamont-Doherty Earth Observ.	Specialty Filaments, Inc.	West Virginia University
Chevron	Lawrence Livermore Nat'l Lab.	Spencer Management Assoc.	WESTCARB
City Utilities of Springfield, MO	Lawrence Berkeley Nat'l Lab	SRI International	Western Governors' Assoc.
Clark University	LeNeveu Simulations Inc.	Stanford University	Winrock International
Clean Energy Systems, Inc.	Leonardo Technologies, Inc.	Stony Brook University	World Resources Inst.
CO2-Global	LI-COR Biosciences	Stratus Consulting Inc.	WVHTC Foundation
Columbia University	Los Alamos Nat'l Lab	Structured Resources, Inc.	WVU/NRCCE

Accommodations

The rate for Conference attendees at the Sheraton Station Square is \$154.00 for single occupancy and \$164 for double plus applicable city and state taxes. A number of rooms are available for government employees at the \$100.00 government per-diem rate. To qualify for this special rate, you must be on the payroll of a government entity and have a government identification card.

To guarantee a reservation, call the Sheraton Station Square at 412-261-2000 by April 12. Identify yourself as a Carbon Conference Participant. If space is available, the above rates will apply for attendees two days prior and two days after our program dates. We recommend making your reservations prior to April 5 to assure a place.

SEVENTH ANNUAL CCS CONFERENCE

(WEBSITE: www.carbonsq.com)

GROUND TRANSPORTATION

One-way or Round Trip Transportation from the airport is available through Express Shuttle USA for \$19.00 each way and is located near baggage claim. Please schedule by calling 412-444-4444 or accessing <http://www.pghtrans.com/airportshuttle.html>. **DRIVING From Pittsburgh International Airport:** Take 60 South (Pittsburgh) to Interstate 279 North to Exit 5-C. Bear right and continue for approximately one mile. At the second light, turn right onto Carson Street (837). The hotel is approximately 1.5 miles on the left. A private taxi is also a reasonable choice. **Directions from East, West and South are provided at Sheraton's website: www.sheraton.com/stationsquare**

SHERATON STATION SQUARE

The Conference site is the Sheraton Station Square, 300 W. Station Square Drive, Pittsburgh, PA 15219, USA; Phone 412-261-2000. Pittsburgh's only River Front Hotel, just steps away from downtown corporate and retail centers and adjacent to over 30 shops, restaurants, and nightclubs.

The Hotel offers a Business Center complimentary for hotel guests that is accessible 24 hours a day with your guestroom key card. Although basic, it does offer a printer, computer, and fax. In addition, all guestrooms and public space on the property have complimentary high-speed wireless internet access

Registration opens at 3:00 p.m. Monday, May 5, followed by a Reception/Dinner beginning at 6:00 p.m. The opening Plenary is at 8:00 a.m., Tuesday, May 6. The Forum ends at noon, Thursday, May 8.

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May 5-8, 2008

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Registration Fees:

General admission: \$895.00
Federal government & academic organizations \$595.00

Limited reduced registrations are available for NGO's*, public interest groups, state and local officials
(Add \$100.00 to all fees after April 4)

*Does not include industry-based not-for-profits

**DOE Contractors ARE NOT government employees

(Registration includes: three continental breakfasts, two lunches, three receptions, two dinners, a copy of the Participant Resource Book and a CD copy of the Proceedings.)

Payment/Cancellation Policy: Anyone who registers and cancels after April 14 is subject to a \$200.00 service fee. Fees paid will be forfeited for non-attendance or cancellation after April 21. Substitutions welcome.

REGISTER ONLINE AT: www.signup4.com/08CarbonCapture