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TENTH ANNUAL CARBON CAPTURE & SEQUESTRATION CONFERENCE

Building on a Decade of Progress to Assure Commercial Deployment

May 2-5, 2011

David L. Lawrence Convention Center
Pittsburgh, Pennsylvania

Opening Keynote Presentations...

Anthony Cugini, *Director, National Energy Technology
Laboratory, U.S. Dept. of Energy*

Michael G. Morris, *Chairman & CEO
American Electric Power*

Featured Speakers...

David Victor, *Director, Laboratory on Intl. Law & Regulation
University of California San Diego*

Peter Watson, *Deputy Minister, Alberta Energy; Chair
Alberta CCS Regulatory Framework Assessment*

Adam Dawson, *Head, Office of Carbon Capture and Storage,
Dept. of Energy & Climate Change, United Kingdom*

David Hawkins, *Director, Climate Center, NRDC*

Barry Hooper, *Chief Technologist, Cooperative Research Centre
for Greenhouse Gas Technologies*

Juho Lipponen, *Head, Carbon Capture & Storage Unit, IEA*

Tim Dixon, *Manager, CCS Regulatory Affairs, IEAGHG
R&D Programme*

Barry Jones, *General Manager, Policy and Membership
The Global CCS Institute*

Jerald J. Fletcher, *Director, U.S. CERC-ACTC and U.S.-China
Energy Center, Univ. of West Virginia*

With Special Workshops on...

- **Public Outreach and Education**
- **Estimating Costs for CCS**

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For Information Call 1-877-303-7367 or email: carbonsq@exchangemonitor.com

— TENTH ANNUAL CCS CONFERENCE —

AGENDA (ADVANCE)

Monday, May 2, 2011

*Today Recognizing Partners...
URS Global CCS Institute*

1:30 REGISTRATION OPENS
EXHIBIT HALL OPENS

6:00 WELCOME RECEPTION

7:00 WELCOME DINNER

Tuesday, May 3, 2011

*Today Recognizing Partners...
Shell Alstom
AusTrade
Battelle*

7:00 CONTINENTAL BREAKFAST

8:00 WELCOME/INTRODUCTORY
REMARKS

Edward L. Helminski, President
ExchangeMonitor Publications &
Forums; Conference Chair

8:05 OPENING KEYNOTE PLENARY

A Decade of Progress...

MODERATOR:

Anthony Cugini, Director
National Energy Technology
Laboratory, U.S. Dept. of Energy

8:30 **A Perspective for a Utility**

Michael G. Morris, Chairman &
CEO, American Electric Power

OPEN DISCUSSION

9:00 **CCS Deployment ... Another Look a
Decade Later**

David Hawkins, Director
Climate Center
Natural Resources Defense Council

OPEN DISCUSSION

9:30 **Beyond 'Cap & Trade' ... A Market
Price for Carbon is Developing**

David Victor, Director
Laboratory on Intl. Law & Regulation
University of California San Diego

OPEN DISCUSSION

9:55 **CCS and Gas; Promising Options for
the Future**

Mac Cessna, Manager
Global Regulations
ExxonMobil

OPEN DISCUSSION

10:20 COFFEE BREAK

10:35 **A Global Perspective on Deployment
of CCS as a Carbon Emission
Reduction Technology Option
(Session I)**

MODERATOR:

**Role of CCS in Global CO₂ Emission
Reductions**

Juho Lipponen, Head
Carbon Capture & Storage Unit
International Energy Agency

**CCS Progress, Challenges — the
Critical Path Ahead**

Tim Dixon, Manager
CCS Regulatory Affairs
IEAGHG R&D Programme

The Global Status of CCS

Barry Jones, General Manager
Policy and Membership
The Global CCS Institute

OPEN DISCUSSION

11:40 **Putting in Place the Necessary
Government Commitment to
Advance the Deployment of CCS**

MODERATOR:

Adam Dawson, Head
Office of Carbon Capture and
Storage, Department of Energy and
Climate Change, United Kingdom

OPEN DISCUSSION

Peter Watson, Deputy Minister
Alberta Energy; Chair, Alberta CCS
Regulatory Framework Assessment

OPEN DISCUSSION

(Speaker from China TBD)

OPEN DISCUSSION

12:40 **Highlights of a Global Survey of
Legal CCS Regulatory Framework
Put in Place Over the Past Decade**

Tom Russial
U.S. Carbon Sequestration Council

OPEN DISCUSSION

1:00 LUNCH

2:00 **CONCURRENT SESSIONS**
*(For list of oral presentations by topic click
here: <http://www.carbonsq.com/papers.pdf>)*

4:00 *(Poster Presentations in Place; Authors
Not Present)*

4:00 COFFEE BREAK

4:15 **CONCURRENT SESSIONS**

6:15 **CONCURRENT SESSIONS END**

6:30 **COCKTAIL RECEPTION/
POSTER SESSION BEGINS;
AUTHORS PRESENT**
*(For list of posters by topic click here:
<http://www.carbonsq.com/posters.pdf>)*

7:30 **POSTER SESSION ENDS
DEPART FOR BBQ COOKOUT AT
PITTSBURGH SCIENCE MUSEUM**

Recognizing...Conference Resource Partners:

URS

Pinnacle

GE

EPRI

In Salah Gas

CO₂ Capture Project

ExxonMobil

IPAC-CO₂

— Building on a Decade of Progress... —

Wednesday, May 4, 2011

OPEN DISCUSSION

MODERATOR:

*Today Recognizing Partners...
Schlumberger Carbon Services
Pinnacle*

7:00 CONTINENTAL BREAKFAST

8:00 Lesson Learned from a Decade of Progress — The Foundation of the Path Forward for CCS

MODERATOR:

The Weyburn Project...

Steve Whittaker, Senior Project Manager, Petroleum Technology Research Center Board

Otway...

Barry Hooper, Chief Technologist Cooperative Research Centre for Greenhouse Gas Technologies

(Additional Speaker TBD)

OPEN DISCUSSION

9:00 The U.S. Regional Partnerships ... Taking Giant Steps Forward Based on a Decade of Progress

MODERATOR:

Traci D. Rodosta, Leader Regional Partnerships, Sequestration Division, NETL, U.S. DOE

(Additional Speakers from Regional Partnerships)

10:00 Knowledge Gained with the Large Scale Demonstration at Boundary Dam Power Station

MODERATOR:

Max Ball, Manager Clean Coal Technologies Saskatchewan Power Corporation

OPEN DISCUSSION

10:25 COFFEE BREAK

10:40 Lacking a U.S. and International Framework to Require the Reduction of GHG Emissions, Industry Reflects on a Path Forward for Future Investment ...

MODERATOR: Carl Bauer
C.O. Bauer Consulting

John Tombari, President Schlumberger Carbon Services

Keith White, Gasification Director Utility IIGCCI Business, GE

Brian Williams, Special Advisor Alternative Energy, BP

(Additional Speakers from Technology Provider Companies)

OPEN DISCUSSION

11:50 The Cost of CCS ... Setting Criteria, Guidelines to Provide Defendable and Realistic Estimates for Decisionmakers *(The Results of a Recent IEA Workshop)*

Edward Rubin, Professor Engineering and Public Policy and Mechanical Engineering, Carnegie Mellon University

Howard Herzog, Chair, Organizing & Program Committees, 9th Int'l GGCTC; Principal Research Engineer, The MIT Energy Initiative

Respondents:

Barry Jones, General Manager Policy and Membership The Global CCS Institute

(Speakers from a State PUC & a Utility)

OPEN DISCUSSION

1:00 LUNCH

2:00 CONCURRENT TECHNICAL SESSIONS

4:00 *(Poster Presentations in Place; Authors Not Present)*

4:00 COFFEE BREAK

4:15 CONCURRENT TECHNICAL SESSIONS

6:15 CONCURRENT SESSIONS END

6:30 COCKTAIL RECEPTION/ POSTER SESSION BEGINS; AUTHORS PRESENT

7:30 POSTER SESSION ENDS

Conference Advisors...

Stefan Bachu
Alberta Innovates

Max Ball
SaskPower

Melissa Batum
U.S. Dept. of the Interior

Carl Bauer
C.O. Bauer Consulting

Sally Benson
Stanford University

Jackie Bird
WorleyParsons Group

Thomas Brouns
PNNL Battelle

Ivy Butts
NARUC

Mark Crombie
BP Alternative Energy

Douglas W. Duncan
U.S. Geological Survey

Emily Sanford Fisher
EEI

Sarah M. Forbes
World Resources Inst.

John Gale
IEA GHG R&D Prog.

George Guthrie
U.S. DOE-NETL

Alexandra Hakala
U.S. DOE-NETL

Gerald Hill
S. States Energy Bd.

Susan Hovorka
Univ. of Texas

Chris Knepler
Australian Trade Comm.

Bruce Kobelski
U.S. EPA

Dennis Leppin
Gas Technology Institute

Juho Lipponen
IEA

John Litynski
U.S. DOE-NETL

Brian McPherson
SW Regional Partnership

Tom Mikus
CO₂ Capture.US

Nancy Mohn
ALSTOM Power

Granger Morgan
Carnegie Mellon Univ.

Michael E. Parker
ExxonMobil Prod. Co.

Rajesh Pawar
Los Alamos National Lab

Dwight Peters
Schlumberger

Eric Peterson
Idaho National Lab

Richard Rhudy
EPRI

Edward Rubin
Carnegie Mellon Univ.

Jim Sears
Algal Biomass Org.

George Sherk
IPAC-CO₂ Research

John Tombari
Schlumberger Carbon Services

Robert Van Voorhees
Bryan Cave, LLP

John Veil
Veil Environmental, LLC

Jud Virden
Pacific Northwest National Lab

Nick Welsh
The Global CCS Institute

Iain Wright
BP Alternative Energy

David E. Ziegner
IN Utility Reg. Comm.

— TENTH ANNUAL CCS CONFERENCE —

Thursday, May 5, 2011

7:00 CONTINENTAL BREAKFAST

8:00 **An Appraisal of EOR as a 'First' Step Toward CCS Deployment**

MODERATOR:

Kipp Coddington, Partner
Mowrey Meezan Coddington
Cloud LLP

Respondent: (TBD)

OPEN DISCUSSION

8:30 **Capture — An Assessment of the Technology as Applied to Power and Non-Power Generation Facilities/Systems**

MODERATOR:

Barry Hooper, Chief Technologist
Cooperative Research Centre for
Greenhouse Gas Technologies

John Wheeldon, Team Leader
Science and Technology
National Carbon Capture Center

OPEN DISCUSSION

9:15 **A New Partnership to Support CCS RDD&D —The U.S.-China Clean Energy Research Center**

MODERATOR:

Jerald J. Fletcher, Director
U.S. CERC-ACTC and U.S.-China
Energy Center, Univ. of West
Virginia.

Dr. Li Zheng, Department Chair
Director of BP Low Carbon Energy
Center, Tsinghua University

(Additional Speaker TBD)

OPEN DISCUSSION

10:15 COFFEE BREAK

10:30 **CCS and Carbon Reduction Technologies for the Non-Power Industry**

MODERATOR:

Reducing CO₂ Emissions for Cement Manufacturing

Adolfo Garza, Director
CO₂ Projects-Climate Change
CEMEX

OPEN DISCUSSION

CCS for CO₂ Emissions Reduction from Fossil Fuel Production from Oil Sands

Sandra Locke, Executive Director
CCS Development, Alberta Energy

OPEN DISCUSSION

11:20 **Combining Capture Technology for CO₂ with Beneficial Utilization to Reduce CO₂ in the Atmosphere**

Klaus S. Lackner, Chair
Department of Earth and
Environmental Engineering
Columbia University

OPEN DISCUSSION

11:45 **A Commercial Approach to Overcome the Challenges Facing Sequestration Storage Site Selection**

Kurt Z. House, Co-Founder &
President, C12 Energy Inc.

OPEN DISCUSSION

12:30 **CLOSING PLENARY ADDRESS**

Commissioner Jon McKinney
Public Service Commission
The State of West Virginia
Chair, Clean Coal and Carbon
Sequestration Commission; National
Assoc. Regulatory Commissioners

OPEN DISCUSSION

1:00 **CONFERENCE ADJOURNS**

To Get the Inside Track on Actions Being Taken to Reduce GHG Emissions by Federal, State and Local Authorities and Industry...

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Become a **CCS Conference Partner and/or Exhibitor in 2011.**

Given the past growth, the 2011 Conference will attract over 900+ participants representing key government agencies, engineering companies, utilities, academic institutions, research laboratories, consulting firms, investment companies and legal firms. Partner benefits include:

- Speaking or moderating during the plenary sessions or moderating a technical concurrent session;
- Inclusion of a 'marketing' flyer and a full page ad in the conference resource book;
- Complimentary or reduced exhibit fee;
- Free and/or discounted registrations; and
- Prominent signage publicizing your organization's partnership.

If Being a Partner Is Not Within Your Budget Then Consider Exhibiting to Showcase Your Organization's Capabilities, Products and Technologies.

Exhibit space is limited—reservations filled on a first come, first served basis. The exhibit schedule revolves around the social functions to provide ample opportunities for one-on-one discussions. **Fee includes one complementary registration.** Reserve space by registering to exhibit at www.carbonsq.com. The exhibit fees are:

Small Companies
(Up to 100 Employees)
\$2,250

Large Companies
(Over 100 Employees)
\$2,995

TENTH ANNUAL CCS CONFERENCE

(WEBSITE: www.carbonsq.com)

SITE LOCATION

The conference will be held at the **David L. Lawrence Convention Center (DLLCC)** 1000 Ft. Duquesne Boulevard, Pittsburgh, PA 15222. Phone: 412-565-6000. The Center and our conference hotels are located downtown Pittsburgh, which is approximately 20 minutes from the Pittsburgh International Airport.

Taxi service and Super Shuttle are available from the airport. Super Shuttle will give attendees who make advance reservations by calling 800-258-3826 a discount.

ACCOMMODATIONS

Hotel rooms at a conference rate have been reserved at three nearby hotels. **The Conference rate is available prior to April 11, 2011** and will apply two days prior and two days following the conference dates. The rates do not include a daily hotel services fee, along with applicable city and state taxes (which are currently 14%). When making a reservation, identify yourself as a **CCS Conference participant**.

The rate for Conference attendees at the **Westin is \$209.00** for single and double occupancy. The Westin (A Starwood Hotel) is located at 1000 Penn Avenue and is attached to the David L. Lawrence Convention Center by a covered walkway. To make a reservation, visit www.starwoodhotels.com/Westin or call 412-281-3700.

The rate for Conference attendees at the **Omni William Penn Hotel is \$199.00** for single and double occupancy. The Omni William Penn Hotel is located at 530 William Penn Place. The hotel is located 4 blocks from the convention center. To make a reservation, visit www.omnihotels.com or call 412-281-7100.

The rate for Conference attendees at the **Pittsburgh Marriott City Center is \$175**. The Pittsburgh Marriott City Center is located at 112 Washington Place. The Hotel is located 7 blocks from the convention center. To make a reservation, visit www.marriott.com or call 412-471-4000.

Shuttle service will be provided from these hotels to and from the convention center.

Registration opens at 3:00 p.m. Monday, May 2, followed by a Reception/Dinner beginning at 6:00 p.m. The opening Plenary is at 8:00 a.m., Tuesday, May 3. The Forum ends at 1:00pm Thursday, May 5.

Registration Fees:

Federal, State and Local Government Employees (non-speakers)	\$595.00
Academic Organizations	\$795.00
Electric Utility Employees	\$795.00
Subscribers to <i>GHG Transactions & Technologies</i>	\$1,095.00
General Admissions	\$1,295.00
[Includes Federal Contractors]	

Add \$200.00 to all fees after April 4, 2011

Special Discounted Fees for Multiple Registrations available. Call the Forums office at 877-303-7367

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

Payment/Cancellation Policy: Anyone who registers and cancels after **April 4** is subject to a \$200.00 service fee. Fees paid will be forfeited for non-attendance or cancellation after **April 18**. Substitutions welcome.

REGISTER ONLINE AT: www.carbonsq.com