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THE THIRTEENTH ANNUAL CARBON CAPTURE UTILIZATION & STORAGE* CONFERENCE

Accelerating Deployment to Meet New CO_2 Emission Reduction Mandates

April 28 - May 1, 2014
David L. Lawrence Convention Center
Pittsburgh, Pennsylvania

CALL FOR PAPERS

The 2014 Conference convenes at an auspicious time…

In direct response to President Obama's call to "put an end to the limitless dumping of carbon pollution from … power plants, and complete new pollution standards for both new and existing power plants," the Environmental Protection Agency:

- Has issued proposed regulations that would could result in prohibiting the construction of new coal-fired power plants, given the current costs of deploying the CCUS/CCS, systems necessary to meet those standards; and
- Is considering CO_2 emission regulations for existing power plants that could allow states to put in place frameworks that would 'cap emissions' but provide for the exchange of carbon credits.

Notably, in giving such directives, Obama emphasized that "this does not mean that [the U.S. is] going to suddenly stop producing fossil fuels" because "our economy wouldn't run very well if it did," begging, therefore, for the deployment of technologies like CCUS/CCS to meet CO_2 reduction mandates. Furthermore, the IEA and other organizations have concluded that **meeting anthropogenic carbon emission reduction goals within the next three decades will require the deployment of carbon capture and storage technologies** at fossil-fueled power plants because there are no alternatives to provide necessary power generation to support emerging economies or to industrial processes that rely on fossil resources.

Given this environment, the 13th Annual CCUS Conference again invites key decisionmakers and technical experts from around the globe to share their knowledge and experience in order to accelerate the development and deployment of CCUS/CCS technologies that have been deemed as necessary to allow the utilization of fossil resources in a decarbonized world. **Though the emphasis is on systems and technologies that are being or could be deployed in North America, work undertaken outside North America that would contribute to progress here is of equal importance.**

An Invitation to Present a Paper or Poster

To present an oral paper in the concurrent sessions or a poster, **a 2,000 character abstract** *(spaces included, approx. 300-350 words)* must be submitted for peer review. Below is a list of general topic & subtopic areas. Acceptance depends on the decision of reviewers.

RETROFITTING COAL-FIRED POWER PLANTS WITH CO_2 CAPTURE TECHNOLOGIES

- Comparison of Suitable Technologies
- Economics
- Status of Current Projects

TECHNOLOGIES AND SYSTEMS TO CAPTURE CO_2 EMISSIONS FROM EXISTING COAL-FIRED POWER PLANTS

- Technical and Economic Assessments of Current Commercial -Scale Available Capture Systems
- Comparative Analyses of the Commercial Viability of Emerging Capture Technologies;
- Status/Results of Demonstration Projects at Coal-fired Power Plants;
- Environmental Issues Affecting Public Acceptability;
- Economics Versus Other Options for Meeting Power Generation Needs and Carbon Emission Reduction Goals

NEW 'CLEAN COAL' PLANTS AND CARBON CAPTURE

- Comparison of "Clean Coal" Plants (IGCC, others) on the basis of Efficiency of Carbon Capture; Economics; Parasitic Load, etc.
- IGCC Electric Generating Plant Projects Incorporating Carbon Capture

CO_2 CAPTURE TECHNOLOGY TEST CENTERS' STATUS REPORTS

CO_2 CAPTURE TECHNOLOGIES FOR NATURAL GAS-FIRED ELECTRIC GENERATING PLANTS

- Comparison of Technical/Economic Requirements vs. Coal-Fired Plants
- Cost Comparison Against Coal-Fired CCS/CCUS Systems

TECHNOLOGIES TO CAPTURE CO_2 EMISSIONS FROM NATURAL GAS PRODUCTION

TECHNOLOGIES AND SYSTEMS TO CAPTURE CO_2 EMISSIONS FROM CEMENT, STEEL, CHEMICAL PLANTS AND REFINERIES

TECHNOLOGIES AND SYSTEMS TO CAPTURE CO_2 EMISSIONS FROM LARGE SCALE NON-POINT SOURCES

OXYCOMBUSTION/OXYGEN PRODUCTION SYSTEMS TO REDUCE CO_2 EMISSIONS FROM FOSSIL-FUELED FACILITIES

- Utilization in Existing Coal-Fired Boilers
- New Advanced Concepts

CHEMICAL LOOPING SYSTEMS FOR FOSSIL-FUELED POWER PLANTS

- New Advances
- Economics
- Time line for Potential Deployment

CO_2 TRANSPORTATION

- Development of New Compression Technologies/Systems
- Pipeline Needs to Support CCS/CCUS
- Storage within Commercial Pipeline Systems
- Risk and Health Concerns
- Related Policies/Regulations

UTILIZING CAPTURED CO_2 FOR EOR/EGR AND COMPLYING WITH CO_2 EMISSION REDUCTION FRAMEWORKS

- Technical Requirements for Utilizing Anthropogenic CO_2 for EOR/EGR
- Infrastructure Necessary to Deliver CO_2 to EOR/EGR Sites from Power Plants
- Consequences If Necessary to Comply With USEPA ClassVI GS Regulations
- Characteristics Required for Captured CO_2 to be Transported & Utilized for EOR/EGR
- Market Price Necessary for Captured CO_2 to Compete with Current EOR/EGR Vehicles
- Deployment of Captured CO_2-EOR/EGR Systems in a Regulated Utility Environment
  - Structuring a Framework to Allow the Utility a Share of EOR/EGR-Generated Revenues
  - Model Contractual Agreements
  - Addressing Potential Liability to Utility Generator
- Deployment of Captured CO_2-EOR/EGR Systems in an Open Market
- Regulatory Options Allowing CO_2 -EOR/EGR to Count as Meeting Mandated CO_2 Reduction Levels for Respective Electric Generating Facilities
- Monitoring/Verification Requirements that Could Ensure EOR/EGR Achieves Storage
- Potential of Off-Shore EOR in N. America
- Effects of Impurities in Captured CO_2 Streams on Utilization for EOR/EGR
- Enhanced Coal Bed Methane Systems

UTILIZING ANTHROPOGENIC CO_2 FOR EOR OUTSIDE THE U.S.

- New Projects in China
- Offshore Possibilities

UTILIZATION OF ANTHROPOGENIC CO_2 IN GEOTHERMAL SYSTEMS

CAPTURED CO_2: COMMODITY OR POLLUTANT/WASTE

- Viable Opportunities Beyond Utilization In EOR/EGR
- Economic Arguments for Treating Anthropogenic CO_2 as a Commodity
- Effects of Impurities in Captured CO_2 Streams on Utilization for Beneficial Purposes

METHANE CONVERSION TECHNOLOGIES

PROGRESS ON STORAGE OF CAPTURED CO_2 IN GEOLOGIC RESERVOIRS

- Status/Progress of Current Sequestration Efforts Within the U.S. Regional Partnerships
- Knowledge Transfer from Storage/Sequestration Projects Outside the U.S. in Support of Possible U.S. Options
- Reservoir Performance Analyses
- Utilization of Depleted Oil/Gas Fields
- Saline Reservoirs
  - Consequences If Necessary to Comply With Class VI Well Regulation
- Environmental Assessments
- Site Selection and Characterization Protocols
- Un-mineable Coal Seams

CO_2 STORAGE REGULATION

- USEPA ClassVI GS Regulations
- State/Local Regulations
- State/Province/Federal Actions Governing Mineral Rights
- Application of Modeling/Risk Assessment to Area of Review/Post-injection Site Care

ADDRESSING PROPOSED OR POSSIBLE EPA CO2 EMISSION REDUCTION REGS

- Economics of Currently Available CCUS Technologies for New Plants
- Possible Frameworks for a Regional/State Carbon Reduction Credit Scheme to Address CO2 Emissions from Existing Power Plants

ASSESSMENTS OF STORAGE CAPACITY FOR CO_2 IN THE U.S. & GLOBALLY

- Potential New Storage/Sequestration Capacity As A Result of "Fracking" to Release Newly Found Natural Gas Reserves
- Off Shore Sites in North America

CCS/CCUS IN CANADA

- The U.S.-Canadian Collaboration
- Federal/Provincial Policy/Law Impact On CCS/CCUS
- Progress Reports on Major CCS/CCUS Projects
- Gov't Analyses Supporting Investment in Developing CO_2 Capture Technologies & CCS/CCUS for Deployment at Coal-fired Generation Facilities

MEASUREMENT, MONITORING & VERIFICATION OF SEQUESTRATION/ STORAGE SITES

- Optimizing MMV Systems to Assure Public Acceptance and Meeting Compliance Requirements
  - Permanent Disposition in Geologic Reservoirs
  - Sequestration As a Result of Utilization In EOR/EGR Systems
- Assessment of Operability of Current Systems and Technologies

- Developing Necessary Systems Based on the Level of Perceived/Estimated Risk (ie focusing on the interplay between risk assessment and monitoring)

APPLICATION OF RISK ASSESSMENT METHODS TO FIELD SITES

- Modeling/Risk Assessment to Area of Review/Post-injection Site Care
- Geologic Modeling Efforts
- Case Studies
- Results from Field Tests
- Modeling Development
- Opportunities for Accelerating CCS Deployment
- Potential of Induced Seismicity

CCS/CCUS IMPACT ON WATER AND OTHER NATURAL RESOURCES

- Potential Groundwater Impacts from Storage
- Water Resource Demands for Capture Systems
- Management of Extracted Water
- Access to Other Useable Resources

GEOMECHANICAL IMPACTS OF CO_2 STORAGE

- Microsiesmicity
- Fault Reactivation
- Fracturing
- Ground Heaving

PUBLIC ACCEPTANCE OF CO_2 SEQUESTRATION/STORAGE SITES

- MMV System Design as a factor in Assuring Public Acceptance
- Analysis of Public Attitudes at Active Storage Sites
- Risk Communication
- Lessons Learned
- Benefit/Revenue Sharing Between Storage Service Provider and Host Community
- Assessment of Public Attitudes

GOVERNMENT ACTIONS TO LEGISLATE AND INCENTIVIZE DEPLOYMENT OF CO_2 EMISSION REDUCTION SYSTEMS/ TECHNOLOGIES

- Regulations to Reduce CO_2 Emissions from Power Plants
- Compliance with US EPA GHG Reporting Regulations
- Cap & Trade Laws
- Financial Support to Facilitate CCUS/CCS Deployment for Fossil-Fuel Powered Facilities
- US IRS Tax Credits for CO_2 Reduction
- Incentivising CCS/CCUS for Industrial Processes

OPPORTUNITIES TO PARTNER WITH DEVELOPED NATIONS OUTSIDE N. AMERICA TO DEVELOP MUTUALLY BENEFICIAL SYSTEMS

(China; Australia; Brazil; EU)

OPPORTUNITIES TO WORK WITH EMERGING NATIONS TO DEVELOP/DEMONSTRATE CCUS/CCS TECHNOLOGIES

ABSTRACT DUE: Jan. 20, 2014; Acceptance Notification: February 21, 2014; Submit via: *www.carbonsq.com* Please indicate topic/sub-topic area. Full Papers or PP Due: April 4. Oral presentation limited to 20 minutes, including 5 min. for Q&A. Poster Sessions 5:30-7:00pm April 29 and 30 **PDF files of PP presentations will be accepted in lieu of a technical pape**r.

12th ANNUAL CCUS CONFERENCE ATTRACTS NEARLY 500

The 12th Annual Conference on Carbon Capture, Utilization and Sequestration was a resounding success, attracting nearly 500 of the world's leading researchers, policymakers, industry decisionmakers and government leaders to Pittsburgh for a discussion of the full spectrum of issues facing CCUS. This year's conference, which featured more than 300 technical papers and posters, was marked by a special focus on the wide array of projects in Canada as well as progress on U.S. projects and policies and international initiatives. During his keynote address, Saskatchewan Premier Brad Wall said that what was once a "very difficult decision" for policymakers to invest in CCS technology has become a prime component of the western Canadian province's climate change mitigation strategy. "It's clear that fossil fuels will be with us for the foreseeable future, and I think policymakers are responding to that basic truth," Wall said. From the U.S. perspective, Department of Energy Fossil Energy chief Chris Smith called carbon capture and sequestration "an important part of the President's oil strategy and certainly the most important part of our efforts in terms of the dollars that we're spending within the Office of Fossil Energy,"making it clear that the Obama Administration will be emphasizing the economic—as well as environmental—benefits of CCS in allowing U.S. coal resources to be utilized in a carbon-constrained economy.

The Conference is now using Storage instead of Sequestration which is the term being used globally.

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Become a **CCUS Conference Partner and/or Exhibitor in 2014** and have the opportunity to meet with representatives from 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**, an **ad in the conference resource book** & in the ***GHG Reduction Technologies Monitor*** prior to and following the conference;
- ➢ **Complimentary or reduced** exhibit fee;
- ➢ **Free and/or discounted** registrations; and
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If being a partner is not within your budget then consider putting up an exhibit 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 catered functions to provide ample opportunities for one-on-one discussions. **Fee includes one full registration and one exhibit-only registration**. Reserve space by registering to exhibit at *www.carbonsq.com*. The exhibit fees are:

Small Companies	Large Companies
(Up to 100 Employees)	*(Over 100 Employees)*
$2,750	$3,495

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— REGISTRATION AND HOTEL INFORMATION —

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 DLLCC and The Omni William Penn Pittsburgh, our conference headquarters, are located in downtown Pittsburgh, which is approximately 20 minutes from the Pittsburgh International Airport. Taxi service and Super Shuttle service are available from the airport. Super Shuttle provides attendees a discount if advance reservations are made. Call 800-258-3826 to reserve a space.

ACCOMMODATIONS

Hotel rooms have been reserved at the **Omni William Penn Hotel**. **The conference rate of $209.00** for both single and double occupancy is **available prior to April 5, 2014** and will apply three days prior to and three 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%).

Omni William Penn Hotel is located at 530 William Penn Place. To make a reservation, call 800-843-6664 (identify yourself as a ***CCUS Conference participant***) or visit *www.carbonsq.com* to book your room online.

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Registration opens at 3:00 p.m. Monday, April 28, followed by a Reception/Dinner beginning at 6:00 p.m. The opening Plenary is at 8:00 a.m., Tuesday, April 29. The Forum ends at 1:00pm Thursday, May 1.

Registration Fees:

Federal, State and Local Government Employees (non-speakers)	$595.00
Academic Organizations	$595.00
Electric Utility Employees	$695.00
General Registration [*Includes Federal Contractors*]	$1,295.00
Add a subscription for GHG Reduction Technologies Monitor (at a savings of up to $200)	**+$195**

Add $200.00 to all fees after March 28, 2014

Special Discounted Fees for Multiple Registrations (4 or more) available. Call the Forums office at 877-303-7367 ext. 109

(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 11** 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*