

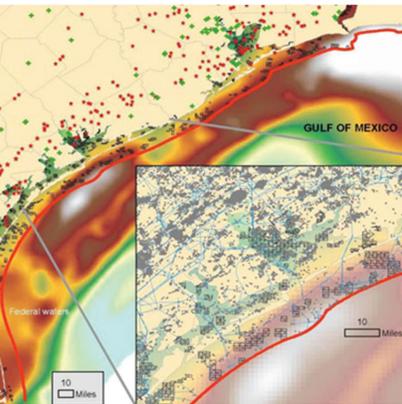
Carbon Storage R&D Project Review Meeting

Developing the Technologies and Infrastructure for CCS



August 12–14, 2014

Sheraton Pittsburgh at Station Square Hotel
Pittsburgh, PA



U.S. DEPARTMENT OF
ENERGY



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Carbon Storage R&D Project Review Meeting

Developing the Technologies and Infrastructure for CCS

**U.S. Department of Energy
Fossil Energy and National Energy Technology Laboratory**

**August 12–14, 2014
Sheraton Station Square Hotel, Pittsburgh, Pennsylvania**

TUESDAY, AUGUST 12, 2014 – GRAND STATION BALLROOM

7:00 a.m. **Meeting Registration/Continental Breakfast**

8:00 a.m. **Welcome and Introduction**
Traci Rodosta, Carbon Storage Technology Manager, DOE NETL

KEYNOTE PRESENTATION

8:05 a.m. **FUTURE OF CARBON STORAGE RESEARCH**
Julio Friedmann, Deputy Assistant Secretary for Clean Coal, DOE

PLENARY SESSION – CARBON STORAGE UPDATE

Moderator:

8:45 a.m. **Carbon Storage Program Overview**
Traci Rodosta, Carbon Storage Technology Manager, DOE NETL

9:00 a.m. **International Monitoring Updates from IEAGHG Network**
Tim Dixon, Manager Technical Programme, and CCS and Regulatory Affairs,
IEA Greenhouse Gas R&D Programme, Panel TBD

9:45 a.m. **BREAK**

PLENARY SESSION – REGIONAL CARBON SEQUESTRATION PARTNERSHIPS LARGE-SCALE PROJECTS

Moderator:

10:00 a.m. **Bell Creek Field Project
Plains CO₂ Reduction (PCOR) Partnership**
Charles Gorecki, Energy and Environmental Research Center, Panel TBD

10:45 a.m. **Illinois Basin - Decatur Project
Midwest Geological Sequestration Consortium (MGSC)**
Rob Finley and Sallie Greenberg – Illinois State Geological Survey, Panel TBD

11:30 a.m. **LUNCH – REFLECTIONS AND WATERFRONT**

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PARALLEL SESSIONS

Room			
Session Moderator	MVA 1	Unconventional Reservoirs 1	Reservoir Modeling 1
12:30	Greenhouse Gas Laser Imaging Tomography Experiment (Green Lite) - <i>ITT Space Systems, LLC</i>	Enhanced Coal Bed Methane Production and Sequestration of CO ₂ in Unmineable Coal Seams – <i>CONSOL, Inc. Research and Development</i>	Reducing Uncertainties in Model Predictions Via History Matching of CO ₂ Migration and Reactive Transport Modeling of CO ₂ Fate at the Sleipner Project, Norwegian North Sea - <i>Trustees of Indiana University</i>
12:55	Surface and Airborne Monitoring Technology for Detecting Geologic Leakage in a CO ₂ -Enhanced Oil Recovery Pilot, Anadarko Basin, Texas - <i>Oklahoma State University</i>	Central Appalachian Basin Unconventional (Coal/Organic Shale) Reservoir Small Scale CO ₂ Injection Test - <i>Virginia Polytechnic Institute and State University</i>	Enhanced Simulation Tools to Improve Predictions and Performance of Geologic Storage Coupled Modeling - <i>Massachusetts Institute of Technology</i>
1:20	Zero Emissions Research and Technology (ZERT) II - Investigating Fundamental Scientific Issues Affecting the Long-Term Geologic Storage of Carbon Dioxide - <i>Montana State University</i>	The Coal-Seq III Consortium: Advancing the Science of CO ₂ Sequestration in Coal Seam and Gas Shale Reservoirs - <i>Advanced Resources International, Inc.</i>	Simulation of Coupled Processes of Flow, Transport and Storage of CO ₂ in Saline Aquifers - <i>Colorado School of Mines</i>
1:45	Recovery Act: Measurements of ²²² Rn, ²²⁰ Rn, and CO ₂ Emissions in Natural CO ₂ Fields in Wyoming - <i>University of Wyoming</i>	Exploring the Behavior of Shales as Seals and Storage Reservoirs for CO ₂ – <i>National Energy Technology Laboratory</i>	Enhanced Porosity and Permeability within Carbonate CO ₂ Storage Reservoirs: An Experimental and Modeling Study – <i>Lawrence Livermore National Laboratory</i>
2:10	Project Synergy Discussion	Project Synergy Discussion	Validation of Models Simulating Capillary and Dissolution Trapping - <i>Trustees of Colorado School of Mines</i>
2:35	--	--	Project Synergy Discussion
2:45	BREAK		

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Room			
Session Moderator	MVA 2	Site Characterization	Reservoir Modeling 2
3:00	In Situ MVA of CO ₂ Sequestration Using Smart Field Technology - <i>West Virginia University Research Corporation</i>	Recovery Act: Geological Characterization of the South Georgia Rift Basin for Source Proximal CO ₂ Storage - <i>South Carolina Research Institute</i>	Experimental Design Applications for Modeling and Assessing Carbon Dioxide Sequestration in Saline - <i>Fusion Petroleum Technologies</i>
3:25	Pressure-Based Inversion and Data Assimilation System (PIDAS) for CO ₂ Leakage Detection - <i>University of Texas at Austin</i>	Recovery Act: Characterization of the Triassic Newark Basin of New York & New Jersey for Geologic Storage of Carbon Dioxide - <i>Sandia Technologies LLC</i>	Studies for Modeling CO ₂ Processes, Comparison, and Joint Inversion with Characterization and Monitoring Data – <i>Lawrence Berkeley National Laboratory</i>
3:50	An Advanced Joint Inversion System for Carbon Dioxide Storage Modeling with Large Date Sets for Characterization and Real-Time Monitoring-Enhancing Storage Performance and Reducing Failure Risks under Uncertainties - <i>Leland Stanford Junior University</i>	Recovery Act: An Evaluation of the Carbon Sequestration Potential of the Cambro-Ordovician Strata of the Illinois and Michigan Basins - <i>University of Illinois</i>	Reactive Transport Models with Geomechanics to Mitigate Risks of Carbon Dioxide Utilization and Storage - <i>University of Utah</i>
4:15	Real-Time In-Situ Carbon Dioxide Monitoring Network for Sensitive Subsurface Areas in Carbon Capture and Storage - <i>Intelligent Optical Systems Inc.</i>	Recovery Act: Gulf of Mexico Miocene CO ₂ Site Characterization Mega Transect - <i>University of Texas at Austin</i>	Induced Seismicity - <i>Lawrence Livermore National Laboratory</i>
4:40	Project Synergy Discussion	Recovery Act: Characterization of Pliocene and Miocene Formations in the Wilmington Graben, Offshore Los Angeles, for Large Scale Geologic Storage of CO ₂ - <i>Geomechanics Technologies, Inc.</i>	Integrated Experimental and Modeling Studies of Mineral Carbonation for Permanent CS in Mafic/Ultramafic Rocks
5:05	--	Recovery Act: Modeling CO ₂ Sequestration in the Ozark Plateau Aquifer System - <i>University of Kansas Center for Research</i>	Project Synergy Discussion

5:30 – 7:00 p.m. **POSTER SESSION – GRAND STATION III–V**

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WEDNESDAY, AUGUST 13, 2014 – GRAND STATION BALLROOM

7:00 a.m. **Meeting Registration/Continental Breakfast**

8:00 a.m. **Welcome and Announcements**

PLENARY SESSION – CARBON STORAGE UPDATE

Moderator:

8:05 a.m. **International Modeling Updates from IEAGHG Network**
James Craig, Manager Technical Programme, and CCS and Regulatory Affairs,
IEA Greenhouse Gas R&D Programme, Panel TBD

8:35 a.m. **U.S. Department of Interior – Bureau of Ocean Energy Management**
TBD, U.S. DOI, BOEM

PLENARY SESSION – REGIONAL CARBON SEQUESTRATION PARTNERSHIPS LARGE-SCALE PROJECTS (CONTINUED)

Moderator:

9:00 a.m. **Michigan Basin Field Project**
Midwest Regional Carbon Sequestration Partnership (MRCSP)
Neeraj Gupta and Darrell Paul – Battelle, Panel TBD

9:45 a.m. **BREAK**

10:00 a.m. **Cranfield Field Project**
Southeast Regional Carbon Sequestration Partnership (SECARB)
Jerry Hill – Southern States Energy and Board and Sue Hovorka – University of Texas,
BEG, Panel TBD

10:45 a.m. **Plant Berry Citronelle Field Project**
Southeast Regional Carbon Sequestration Partnership (SECARB)
Steve Carpenter – Advanced Resources International, Inc. and Rob Trautz – Electric
Power Research Institute, Panel TBD

11:30 a.m. **LUNCH – REFLECTIONS AND WATERFRONT**

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PARALLEL SESSIONS

Room			
Session Moderator	MVA 3	Wellbore Integrity	Reservoir Modeling 3
12:30	Monitoring CO ₂ and Pressure Plume - <i>National Energy Technology Laboratory</i>	Systematic Assessment of Wellbore Integrity for Geologic Carbon Storage Projects Using Regulatory and Industry Information - <i>Battelle Memorial Institute</i>	Optimizing Accuracy of Determinations of Carbon Dioxide Storage Capacity and Permanence, and Designing More Efficient Carbon Dioxide Storage - <i>University of Wyoming</i>
12:55	Scalable Automated, Semipermanent Seismic Method for Detecting CO ₂ Plume Extent During Geological CO ₂ Injection - <i>University of North Dakota</i>	Statistical Analysis of CO ₂ Exposed Wells to Predict Long Term Leakage Through the Development of an Integrated Neural-Genetic-Algorithm - <i>University of Louisiana at Lafayette</i>	Model Complexity and Choice of Model Approaches for Practical Simulations of CO ₂ Injection, Migration, Leakage, and Long-term Fate - <i>Trustees of Princeton University</i>
1:20	Distributed Fiber Optic Arrays: Integrated Temperature and Seismic Sensing for Detection of CO ₂ Flow, Leakage and Subsurface Distribution - <i>Electric Power Research Institute Inc.</i>	Wellbore and Seal Integrity – <i>Los Alamos National Laboratory</i>	Area 2: Inexpensive Monitoring and Uncertainty Assessment of CO ₂ Plume Migration - <i>University of Texas at Austin</i>
1:45	Deep Controlled Source Electro-Magnetic Sensing: A Cost Effective, Long-Term Tool for Sequestration Monitoring - <i>Multi Phase Technologies LLC</i>	Proof of Feasibility of Using Well Bore Deformation as a Diagnostic Tool to Improve CO ₂ Sequestration– <i>Clemson University</i>	Enhanced Analytical Simulation Tool for CO ₂ Storage Capacity Estimation and Uncertainty Quantification - <i>University of Texas at Austin</i>
2:10	Project Synergy Discussion	Project Synergy Discussion	Project Synergy Discussion
2:20	BREAK		

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Room			
Session Moderator	MVA 4	Mitigation	Reservoir Modeling 3 (Continued)
2:35	Fundamental Studies - <i>Lawrence Berkeley National Laboratory</i>	Wellbore Seal Repair Using Nanocomposite Materials - <i>University of New Mexico</i>	Simplified Predictive Models for CO ₂ Sequestration Performance Assessment - <i>Battelle Memorial Institute</i>
3:00	Prototype and Testing a New Volumetric Curvature Tool for Modeling Reservoir Compartments and Leakage Pathways in the Arbuckle Saline Aquifer: Reducing Uncertainty in CO ₂ Storage and Permanence - <i>University of Kansas Center for Research</i>	Novel Materials for Robust Repair of Leaky Wellbores in CO ₂ Storage Formations - <i>University of Texas at Austin</i>	Optimal Model Complexity in Geological Carbon Sequestration: A Response Surface Uncertainty Analysis - <i>University of Wyoming</i>
3:25	GEO-SEQ - Support - <i>Lawrence Berkeley National Laboratory</i>	Field Test and Evaluation of Engineered Biomineralization Technology for Sealing Existing Wells - <i>Montana State University</i>	Project Synergy Discussion
3:50	Development and Test of a 1,000 Level 3C Fiber Optic Borehole Seismic Receiver Array Applied to Carbon Sequestration - <i>Paulsson Inc</i>	Project Synergy Discussion	Risk Assessment
			Development of Improved Caprock Integrity and Risk Assessment Techniques - <i>Geomechanics Technologies, Inc.</i>
4:15	Combining Space Geodesy, Seismology, and Geochemistry for Monitoring, Verification and Accounting of CO ₂ in Sequestration Sites – <i>University of Miami</i>	Carbon Use/Reuse	Nature and Dynamics of the Reservoir/Caprock Contact and Implications for Carbon Storage Performance - <i>New Mexico Institute of Mining and Technology</i>
		Catalytic Transformation of CO ₂ to C1 Products - <i>National Energy Technology Laboratory</i>	
4:40	Project Synergy Discussion	Utilization of CO ₂ in High Performance Building and Infrastructure Products – <i>Solidia</i>	Developing a Comprehensive Risk Assessment Framework for Geological Storage of CO ₂ – <i>University of Texas at Austin - BEG</i>
5:05	Unconventional Reservoirs 2	Water Management	Systems Models and Science of CO ₂ Sequestration - CO ₂ PENS - <i>Los Alamos National Laboratory</i>
	Utilization in Unconventional Reservoirs - <i>Pacific Northwest National Laboratory</i>	Management of Water from CCS-Argonne National Laboratory	
5:30	Sequestration of CO ₂ in Basalt Formations - <i>Pacific Northwest National Laboratory</i>	Reservoir Pressure Management - <i>Lawrence Livermore National Laboratory</i>	--

6:00 – 7:30 p.m. **POSTER SESSION – GRAND STATION III–V**

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THURSDAY, AUGUST 14, 2014 – GRAND STATION BALLROOM

7:00 a.m. Meeting Registration/Continental Breakfast

8:00 a.m. Welcome and Announcements

PLENARY SESSION – REGIONAL CARBON SEQUESTRATION PARTNERSHIPS LARGE-SCALE PROJECTS (CONTINUED)

Moderator:

**8:05 a.m. Farnsworth Unit - Ochitree Field Project
Southwest Regional Partnership on Carbon Sequestration (SWP)**
Reid Grigg – New Mexico Institute of Mining and Technology and Brian McPherson
University of Utah, Panel TBD

**8:50 a.m. Kevin Dome Field Project
Big Sky Regional Carbon Sequestration Partnership (BSCSP)**
Lee Spangler – Montana State University, Panel TBD

9:35 a.m. BREAK

PARALLEL SESSIONS

Room			
Session Moderator	MVA 5	Small-Scale Field Projects	Capacity/Storage Efficiency
10:00	Natural Geochemical Signals for Monitoring Groundwater Impacts - <i>National Energy Technology Laboratory</i>	South Louisiana Enhanced Oil Recovery/Sequestration Demonstration Project - <i>Blackhorse Energy LLC</i>	Optimizing and Quantifying CO ₂ Storage Resource in Saline Formations and Hydrocarbon Reservoirs - <i>University of North Dakota</i>
10:25	D&D of MVA Tools - Gas detection from EOR and coal beds - <i>Los Alamos National Laboratory</i>	Small Scale Field Test Demonstrating CO ₂ Sequestration in Arbuckle Saline Aquifer and by CO ₂ -EOR at Wellington Field, Sumner County, Kansas - <i>University of Kansas Center for Research</i>	Assessing Reservoir Depositional Environments to Develop & Quantify Improvements in CO ₂ Storage Efficiency - <i>University of Illinois</i>

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10:50	Monitoring of Geological CO ₂ Sequestration Using Isotopes and PF Tracers – <i>Oak Ridge National Laboratory</i>	International Energy Agency Greenhouse Gas Weyburn-Midale CO ₂ Monitoring and Storage Program - <i>Petroleum Technology Research Centre</i>	Resource Assessment Methods for CO ₂ Storage in Geologic Formations - <i>National Energy Technology Laboratory</i>
11:15	Radiocarbon as a Reactive Tracer for Tracking Permanent CO ₂ Storage in Basaltic Rocks - <i>Trustees of Columbia University</i>	Snohvit - <i>Lawrence Livermore National Laboratory</i>	Commercial Scale CO ₂ Injection and Optimization of Storage Capacity in the Southeastern United States - <i>Advanced Resources International, Inc.</i>
11:40	Project Synergy Discussion	Project Synergy Discussion	Project Synergy Discussion

12:00 p.m. **LUNCH – REFLECTIONS AND WATERFRONT**

1:15 p.m. **Concluding Remarks and Future R&D Activities – GRAND STATION BALLROOM**
Traci Rodosta, Carbon Storage Technology Manager, DOE NETL

2:00 p.m. **Meeting Concludes**

NATIONAL RISK ASSESSMENT PROGRAM (NRAP) PUBLIC MEETING – GRAND STATION BALLROOM