



## CMTC 2015 Program

### Tuesday, November 17, 2015

7:30 AM	10:30 AM	Hastings Oil Field site visit (buses provided)
10:30 AM	1:00 PM	Registration (Foyer)
12:30 PM	1:00 PM	Overview of Petra Nova Site Visit (Sugar Land VI)
1:00 PM	3:00 PM	Petra Nova site visit (buses provided)
4:00 PM	5:45 PM	NRG Plenary (Sugar Land VI)
4:00 PM	4:15 PM	Greetings from Conference Chairs
4:15 PM	5:00 PM	NRG and DOE Plenary Panel
		Mauricio Gutierrez, Executive Vice President and Chief Operating Officer, NRG Energy
		Julio Friedmann, Principal Deputy Assistant Secretary, U.S. Department of Energy Office of Fossil Energy
5:00 PM	5:45 PM	Panel Discussion: Petra Nova CCUS Demonstration Project
		David Greeson, VP Commercial, NRG Carbon 360
		Anthony Armpriester, Director Engineering and Construction, NRG Energy
		Etsuro Arima, Vice President of Asset Management, JX Nippon Oil & Gas Exploration
		Dale Wilterdink, Project Manager, Mitsubishi Heavy Industries America
5:45 PM	6:45 PM	Panel Discussion: CCUS Demonstrations 1
		Chair: Andrew Purvis, General Manager, EMEA (Global CCS Institute)
		Chair: Michael Schuetz, Policy Officer, New Energy Technologies, Innovation and Clean Coal, European Commission DG Energy
		Andy Read, Capture Director, ROAD CCS Project (E.ON)
		Dewi ab Iorwerth, Managing Director, Don Valley CCS Project (Sargas Power)
6:45 PM	7:45 PM	Welcoming Reception (Foyer)

### Wednesday, November 18, 2015

7:30 AM	8:00 AM	Coffee & Registration (Foyer)
8:00 AM	11:20 AM	Opening Plenary (Sugar Land VI)
		Chair: George Koperna, Advanced Resources International, Inc.
8:00 AM	8:20 AM	Greetings from Conference Chairs
		José D. Figueroa, Carbon Capture Coordinator and Senior Project Manager, U.S. DOE National Energy Technology Laboratory
		George Koperna, Vice President and Reservoir Engineering Manager, Advanced Resources International
8:20 AM	9:00 AM	Charles McConnell, Executive Director, Energy and Environment Initiative, Rice University
9:00 AM	9:40 AM	Janet Gellici, Executive Vice President and COO, National Coal Council
9:40 AM	10:00 AM	Break (Foyer)
10:00 AM	10:40 AM	Julio Friedmann, Principal Deputy Assistant Secretary, US DOE Office of Fossil Energy
10:40 AM	11:20 AM	Rocky Adkins, House Majority Floor Leader, Kentucky House of Representatives
11:20 AM	12:45 PM	Wednesday Keynote Lunch (Sugar Land VII-X)
		Gail Reitenbach, Editor, POWER Magazine



Fossil  
Energy





12:45 PM 2:25 PM Sessions 1-4

Sugar Land VI		Magnolia I		Magnolia II		Magnolia III	
Session 1 - CO2 Capture for Fossil Energy Power Plants 1		Session 2 - CO2 Utilization, CO2 EOR		Session 3 - Analysis/Modeling for CCUS Technologies 1		Session 4 - Panel Discussion: International Test Center Network	
Chairs: Denis King, IEEE-USA & José Figueroa, US DOE NETL		Chairs: Vida Gholami, Advanced Resources International, Inc. & Gary Teletzke, ExxonMobil		Chair: George Koperna, Advanced Resources International, Inc.		Chair: Frank Morton, Southern Company Services	
12:45 PM	1:10 PM	U.S. DOE Carbon Capture Program: Advancing Multiple Generations of Carbon Capture Solutions  José D. Figueroa, U.S. DOE National Energy Technology Laboratory	Methodology for Identification of Oil Reservoirs Suitable for CO2-EOR in Alberta, Canada, and Estimation of Their Storage Capacity Using Reserves Databases  Stefan Bachu, Alberta Innovates	Coal with CCS to Electricity: Baseline Performance, Cost and Sensitivities  Timothy Fout, U.S. DOE National Energy Technology Laboratory	Panelists  Roxann Laird, Southern Company Services National Carbon Capture Center Max Ball, SaskPower Carbon Capture Test Center Roy Vardheim, Technology Centre Mongstad Bruce Adderley, UK CCS Research Centre		
	1:10 PM	1:35 PM	Project Update of the World's Largest Post Combustion CO2 Capture Plant  Dale Wilterdink, Mitsubishi Heavy Industries America, Inc.	A Systematic Assessment of Enhanced Oil Recovery and Co-Sequestration Potential for CO2 in Ohio's Depleted Oilfields  Caitlin McNeil, Batelle Memorial Institute			
1:35 PM	2:00 PM	Progress on the Developments of an Advanced Aqueous Amine-Based Post-Combustion CO2 Capture Utilizing BASF's OASE® Blue Technology  Krish Krishnamurthy, Linde LLC	Compositional Simulation of CO2 Storage Capacity in Depleted Oil Reservoirs  William Ampomah, New Mexico Institute of Mining and Technology	Oil Price: Effect on Carbon Emission  Enobong Bassey, Coventry University			
2:00 PM	2:25 PM	Application of a Two Stage Heat Integrated Cooling Tower to Reduce Energy Costs in CO2 Capture Systems  Bethany Clontz, University of Kentucky	Potential Issues and Costs Associated with the Conversion from UIC Class II EOR to Class VI CO2 Storage Wells  Michael Godec, Advanced Resources International, Inc.	Predictive Dynamic Model of a Carbon Capture System: Pilot Scale Validation at National Carbon Capture Center  Debangsu Bhattacharyya, West Virginia University			

2:25 PM 2:45 PM Break (Foyer)

2:45 PM 4:00 PM Sessions 5-8

		Sugar Land VI		Magnolia I		Magnolia II		Magnolia III		
		Session 5 - CCUS Policy		Session 6 - Panel Discussion: EOR and Storage		Session 7 - International/Domestic Initiatives		Session 8 - Panel Discussion: Small Test Centers		
		Chair: Pamela Tomski, Global CCS Institute		Chairs: David Riestenberg, Advanced Resources International, Inc. & Neil Wildgust, Global CCS Institute		Chair: Naoko Ellis, University of British Columbia & Dale Keairns, Booz Allen Hamilton		Chair: Kunlei Liu, University of Kentucky		
2:45 PM	3:10 PM	Validating CO2-EOR As a Ccus Technology		Panelists	Global Opportunities for Offshore CCS on Continental Shelves		Panelists			
		Vanessa Nunez-Lopez, Bureau of Economic Geology			Tip Meckel, University of Texas at Austin		Kunlei Liu, University of Kentucky Center for Applied Energy Research			
3:10 PM	3:35 PM	Further Advances of CO2-EOR By Promoting a Triple-E Approach: Energy Security, Environmental Quality, and Economic Viability			Neil Wildgust, Global CCS Institute Steve Melzer, Melzer Consulting Michael Godec, Advanced Resources International, Inc.		Effc-Dfi Geotechnical Carbon Calculator Project		Andrew Fry, University of Utah Industrial Combustion and Gasification Research Facility	
		Farshid Vahedifard, Mississippi State University			Luca Bruni, EFFC & Servizi Costruzioni		Michael Holmes, University of North Dakota Energy and Environmental Research Center			
3:35 PM	4:00 PM	Regulatory, Technical, Economic, and Political Challenges Facing Large Scale Adoption of Carbon Capture Utilization and Storage		Accelerating Ccus Deployment for Non-Coal Energy Sources and Offshore Storage		Institutes - Contaminant and Monitoring Institute and Carbon Capture & Conversion Institute				
		Tiraz Birdie, TBirdie Consulting, Inc.		Tip Meckel, University of Texas at Austin						

4:00 PM 4:20 PM Break (Foyer)



4:20 PM 6:00 PM

Sessions 9-12

		Sugar Land VI	Magnolia I	Magnolia II	Magnolia III
		<b>Session 9 - CO2 Capture for the Industrial Sector</b>	<b>Session 10 - CO2 Utilization and Storage, Modeling</b>	<b>Session 11 - CO2 Utilization and Geological Storage</b>	<b>Session 12 - Panel Discussion: International Standards Organization (ISO) Technical Committee (TC) 265</b>
		<b>Chairs: Richard Adamson, CMC Research Institutes &amp; Zoe Kapetaki, Global CCS Institute</b>	<b>Chair: Seyyed Hosseini, University of Texas at Austin</b>	<b>Chair: Hunter Jonsson, Advanced Resources International, Inc.</b>	<b>Chair: Steve Carpenter, Advanced Resources International, Inc.</b>
4:20 PM	4:45 PM	Aminosilicone Solvent Technology for CO2 / H2 Separation <b>Dan Hancu, GE Global Research</b>	Impact of Thermal Pressurization on Fluid Pressure Build up in Carbon Capture and Storage Projects <b>Farshid Vahedifard, Mississippi State University</b>	Unconventional Hydrocarbon Extraction from Geologic Formations with Carbon Storage Potential <b>Alissa Park, Columbia University</b>	International Standards Organization (ISO) Technical Committee (TC) 265 Carbon Dioxide Capture, Transportation, and Geological Storage to Also Include CO2-EOR: International Panel Discussion - the What, the Why, and the How
4:45 PM	5:10 PM	Industrial CO2 Capture with Polaris Membranes <b>Tim Merkel, Membrane Technology and Research, Inc.</b>	Post-Injection Tracer Test to Constrain CO2 Residual Trapping and Plume Evolution <b>Mehdi Zeidouni, Louisiana State University</b>	Carbon Dioxide Sequestration and Hydrocarbons Recovery in the Gas Rich Shales: An Insight from the Molecular Dynamics Simulations <b>Manas Pathak, University of Utah</b>	
5:10 PM	5:35 PM	CO2 - an Important and Valuable Chemical for the Manufacturing Industry <b>Sudhir Brahmabhatt, Technology Services Incorporated</b>	Field-Scale Modeling of Local Capillary Trapping during CO2 Injection into a Saline Aquifer <b>Bo Ren, The University of Texas at Austin</b>	Simulation and Optimization of Enhanced Geothermal System Using CO2 As a Working Fluid <b>Ramesh Agarwal, Washington University in St. Louis</b>	<b>Panelists</b> <b>Mike Surface, Dominion Power (invited)</b> <b>Greg Schnake, Denbury Resources (invited)</b> <b>Stefan Bachu, Alberta Innovates (invited)</b>
5:35 PM	6:00 PM	CCUS State of Readiness: Global Examples of Three Technology Developments and Demonstration Projects <b>David Edwards, Air Liquide</b>	Investigating the Geochemical Alterations in an Aquifer Due to Long-Term Sequestration of CO2 Using Time-Lapse Seismic Information <b>Sang H. Han, The University of Texas at Austin</b>	CO2 EOR Mechanisms in Bakken Shale Oil Reservoirs <b>Yinghui Li, InPetro Technologies Inc.</b>	<b>Peter Anderson, SGS</b> <b>Sarah Forbes, U.S. DOE-HQ (invited)</b> <b>Niels Peter Christensen, Gassnova (invited)</b> <b>David Ryan, Natural Resources Canada (invited)</b>
6:00 PM	7:00 PM	Poster Session and Light Reception (Foyer)			

## Thursday, November 19, 2015

7:30 AM	8:00 AM	Coffee & Registration (Foyer)
8:00 AM	9:30 AM	<b>Thursday Plenary Session(Sugar Land VI)</b> <b>Chair: José D. Figueroa, U.S. DOE National Energy Technology Laboratory</b>
8:00 AM	8:20 AM	Greetings from Conference Chairs <b>José D. Figueroa, Carbon Capture Coordinator and Senior Project Manager, U.S. DOE National Energy Technology Laboratory</b> <b>George Koperna, Vice President and Reservoir Engineering Manager, Advanced Resources International</b>
8:20 AM	9:00 AM	<b>Richard Adamson, President, CMC Research Institutes</b>
9:00 AM	9:40 AM	<b>Yuanyuan Zhang, Senior Engineer, Sinopec Petroleum Engineering Corp.</b>
9:40 AM	10:00 AM	Break (Foyer)
10:00 AM	11:20 AM	<b>Plenary Session 3 (Sugar Land VI)</b>
10:00 AM	10:40 AM	<b>Paul Webley, Capture Manager, CO2CRC</b>
10:40 AM	11:20 AM	<b>Bruce Adderley, Strategy &amp; Communications Manager, UK CCS Research Centre</b>
11:20 AM	12:45 PM	<b>Thursday Keynote Lunch (Sugar Land VII-X)</b> <b>Greg Schnacke, Executive Director, Governmental Relations, Denbury Resources, Inc.</b>



12:45 PM 2:25 PM Sessions 13-16

Sugar Land VI		Magnolia I		Magnolia II		Magnolia III	
		Session 13 - CO2 Capture for Fossil Energy Power Plants 2	Session 14 - Panel Discussion: Biological Capture and Utilization	Session 15 - Analysis/Modeling for CCUS Technologies 2	Session 16 - CO2 Utilization and Storage, Monitoring 1		
		Chairs: Denis King, IEEE-USA & Richard Adamson, CMC Research Institutes	Chair: Matt Carr, Algae Biomass Organization	Chair: George Koperna, Advanced Resources International, Inc.	Chairs: Mehdi Zeidouni, Louisiana State University & Gary Teletzke, ExxonMobil		
12:45 PM	1:10 PM	Carbon Capture Pilot Projects in the Asia Pacific Region  Tony Zhang, Global CCS Institute	Using Nature's CO2 Sink to Convert Carbon from Challenge to Economic Opportunity: Are Biological Capture and Utilization Technologies Ready to Deliver?	National Risk Assessment Partnership  Grant Bromhal, U.S. DOE National Energy Technology Laboratory	Integrated Reservoir Modeling and General Workflow for Determining Minimum Data Set Requirements for CO2 Leakage Detection and Migration Monitoring during Post CO2-EOR Storage  Shuang Gao, The University of Texas at Austin		
1:10 PM	1:35 PM	Progress in Development of Electrochemical Membrane Technology for Post-Combustion Carbon Capture  Hossein Ghezeli-Ayagh, FuelCell Energy, Inc.	Panelists  Noah Deich, UC Berkeley Tom Jensen, Joule Laurel Harmon, LanzaTech Mark Allen, Accelergy Jack Groppo, University of Kentucky (invited)	Techno-Economic Analysis of Coal Direct Chemical Looping Combustion Using Aspen Plus  Ramesh Agarwal, Washington University in St. Louis	Pressure Transient Response Analysis at the Southeast Regional Carbon Sequestration (SECARB) Anthropogenic Test Site near Citronelle, Alabama  JohnRyan MacGregor, Advanced Resources International, Inc.		
1:35 PM	2:00 PM	CO2 Capture from Power Plant Flue Gas By Polaris™ Membranes: Update on Field Demonstration Tests  Jay Kniep, MTR		A Proposed Alternative Measure for Climate Change Potential  Forrest DeGroff, CCSF	Effectiveness of 4D Seismic Data to Monitor CO2 Plume in Cranfield CO2-EOR Project  Masoud Alfi, Texas A&M University		
2:00 PM	2:25 PM	Large Scale ASU Developments for Oxy-Combustion and Pre-Combustion CO2 Capture Applications  Alexander Alekseev, Linde AG		GHG Mitigation Strategies (Kyoto Protocol)  Nnamdi Nwaka, University of Ibadan	Monitoring on CO2 Migration in a Tight Oil Reservoir during CO2-EOR Process  Bo Ren, The University of Texas at Austin		
2:25 PM	2:45 PM	Break (Foyer)					
2:45 PM	4:00 PM	Sessions 17-20					

Session 17 - Panel Discussion: CCUS Demonstrations 1		Session 18 - CO2 Storage, Large Scale Storage		Session 19 - Energy/Water Nexus		Session 20 - Atmospheric CO2 Capture	
<b>Chair: John Litynski, US DOE Office of Fossil Energy</b>		<b>Chairs: Anne Oudinot, Advanced Resources International, Inc. &amp; Seyyed Hosseini, University of Texas at Austin</b>		<b>Chair: Steve Carpenter, Advanced Resources International, Inc.</b>		<b>Chair: Klaus Lackner, Arizona State University</b>	
2:45 PM 3:10 PM  <b>Panelists</b>		Demonstration of CO2 Containment and Non-Endangerment at the Southeast Regional Carbon Sequestration (SECARB) Anthropogenic Test Site near Citronelle, Alabama  <b>David Riestenberg, Advanced Resources International, Inc.</b>		The Impact of CO2 Capture on Water Requirements of Power Plants  <b>Ron Munson, Global CCS Institute</b>		The State of Direct Air Capture Technology  <b>Klaus Lackner, Arizona State University</b>	
3:10 PM 3:35 PM  <b>Scott McDonald, Archer Daniels Midland Company (ADM) CO2 Capture from BioFuels Production and Sequestration into Mt. Simon Sandstone Reservoir</b> <b>Max Ball, SaskPower's Boundary Dam Carbon Capture Project</b> <b>Yuan Yuan Zhang, Sinopec Petroleum Engineering Corp. Shengli Dongying Power Station</b>		Advanced Formation Characterization Techniques for CO2 Geologic Sequestration  <b>Tiraz Birdie, TBirdie Consulting, Inc.</b>		Improving the Physical and Economic Performance of CO2 Capture, Utilization, and Storage in Saline Reservoirs by Producing Brine  <b>Thomas A. Buscheck, Lawrence Livermore National Laboratory</b>		Electrogeochemical Conversion of Air CO2 to Dissolved Mineral Bicarbonate and the Production of C-Negative H2  <b>Greg H. Rau, Univ. California, Santa Cruz</b>	
3:35 PM 4:00 PM		A Modified Method for Evaluating Capacity of CO2 Storage in Coalbed Reservoirs in China  <b>Kai Jiang, China University of Geosciences</b>		Water for Energy: Reducing the Carbon Water Footprint  <b>Russell Lefevre, Metropolitan Water District of Southern California &amp; IEEE-USA &amp; AIChE &amp; University of North Dakota</b>		CO2 and Air Capture Using Physical Adsorbents at Moderate Temperatures. Are Metal-Organic Frameworks Becoming the New Benchmark Materials?  <b>Youssef Belmabkhout, King Abdullah University of Science and Technology</b>	



4:00 PM 4:20 PM Break (Foyer)  
4:20 PM 6:00 PM Sessions 21-23

4:20 PM 4:45 PM

4:45 PM 5:10 PM

5:10 PM 5:35 PM

5:35 PM 6:00 PM

Magnolia I	Magnolia II	Magnolia III
Session 21 - Large Scale Demonstration and Pilot Projects	Session 22 - Transformational Technology Advancements within the CCUS Value Chain	Session 23 - CO2 Utilization and Storage, Monitoring 2
<b>Chair: Ron Munson</b> , Global CCS Institute & <b>José Figueroa</b> , US DOE NETL	<b>Chairs: JohnRyan MacGregor</b> , Advanced Resources International, Inc. & <b>Kevin O'Brien</b> , Illinois Sustainable Technology Center	<b>Chair: George Koperna</b> , Advanced Resources International, Inc.
Demonstration of Enzyme Accelerated CO2 Capture <b>Jonathan Carley</b> , CO2 Solutions Inc.	The U. S. DOE Carbon Storage Program: Status and Future Directions <b>Bruce Brown</b> , U.S. DOE National Energy Technology Laboratory	Improving the Ease and Accuracy of Environmental Monitoring at CCS Sites <b>Katherine Romanak</b> , University of Texas at Austin
Secondary Air Stripper Performance in a Post-Combustion Carbon Capture Pilot Plant Integrated with a Coal-Fired Power Plant <b>Jonathan V. Pelgen</b> , University of Kentucky	A Holistic Approach to Sustainability for Power Plants <b>Kevin O'Brien</b> , Illinois Sustainable Technology Center	Developing a Data Management System for the Aquistore CO2 Storage Monitoring Program <b>Peter Anderson</b> , SGS
Compression Solutions for Large Scale Carbon Capture Deployment <b>Mark Kuzdzal</b> , Dresser-Rand	Process and Reactor Level Simulations of Calcium Looping Combustion <b>Ramesh Agarwal</b> , Washington University in St. Louis	Laser-Based Sensors and Algorithms for GCS MVA <b>Michael B. Frish</b> , Physical Sciences Inc.
Pilot Test of a Nanoporous, Super-hydrophobic Membrane Contactor Process for Post-combustion CO2 Capture <b>S. James Zhou</b> , Gas Technology Institute	Techno-Economic Merit Analysis of Conversion of Captured CO2 to Value-Added Products <b>Chandrakant B. Panchal</b> , E3Tec Service, LLC	A Chemical CO2 Sensor Monitoring CO2 Movement Under Reservoir Conditions <b>Sai Wang</b> , New Mexico Tech