



Plains CO₂ Reduction (PCOR) Partnership
Energy & Environmental Research Center (EERC)

TECHNICAL ADVISORY BOARD MEETING SCHEDULED

Plains CO₂ Reduction (PCOR) Partnership Phase III Task 13 – Milestone M36

Prepared for:

Andrea M. Dunn

National Energy Technology Laboratory
U.S. Department of Energy
626 Cochrans Mill Road
PO Box 10940
Pittsburgh, PA 15236-0940

DOE Cooperative Agreement No. DE-FC26-05NT42592

Prepared by:

Scott C. Ayash
Charles D. Gorecki
James A. Sorensen
Edward N. Steadman
John A. Harju

Energy & Environmental Research Center
University of North Dakota
15 North 23rd Street, Stop 9018
Grand Forks, ND 58202-9018

EERC DISCLAIMER

LEGAL NOTICE This research report was prepared by the Energy & Environmental Research Center (EERC), an agency of the University of North Dakota, as an account of work sponsored by the U.S. Department of Energy (DOE). Because of the research nature of the work performed, neither the EERC nor any of its employees makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement or recommendation by the EERC.

ACKNOWLEDGMENT

This material is based upon work supported by DOE National Energy Technology Laboratory under Award No. DE-FC26-05NT42592.

DOE DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

NDIC DISCLAIMER

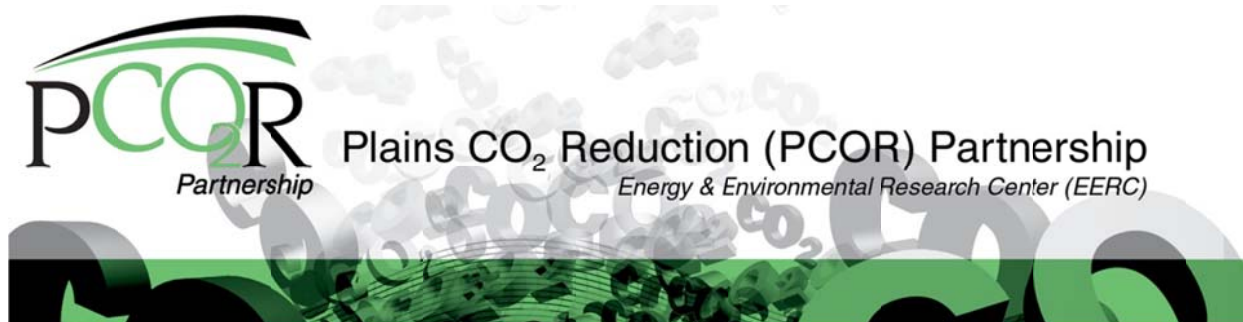
This report was prepared by the EERC pursuant to an agreement partially funded by the Industrial Commission of North Dakota, and neither the EERC nor any of its subcontractors nor the North Dakota Industrial Commission nor any person acting on behalf of either:

- (A) Makes any warranty or representation, express or implied, with respect to the accuracy, completeness, or usefulness of the information contained in this report or that the use of any information, apparatus, method, or process disclosed in this report may not infringe privately owned rights; or
- (B) Assumes any liabilities with respect to the use of, or for damages resulting from the use of, any information, apparatus, method, or process disclosed in this report.

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the North Dakota Industrial Commission. The views and opinions of authors expressed herein do not necessarily state or reflect those of the North Dakota Industrial Commission.

TABLE OF CONTENTS

BACKGROUND	1
Creation of the PCOR Partnership Technical Advisory Board.....	2
TAB Meeting Scheduled	3
Additional TAB Activity.....	3
Future TAB Meetings.....	3
 PCOR PARTNERSHIP TECHNICAL ADVISORY BOARD	
MEETING AGENDA.....	Appendix A



TECHNICAL ADVISORY BOARD MEETING SCHEDULED

BACKGROUND

The Plains CO₂ Reduction (PCOR) Partnership is one of seven Regional Carbon Sequestration Partnerships (RCSPs) competitively awarded by the U.S. Department of Energy (DOE) National Energy Technology Laboratory (NETL) in 2003 as part of a national plan to mitigate greenhouse gas emissions. The PCOR Partnership is led by the Energy & Environmental Research Center (EERC) at the University of North Dakota and includes stakeholders from the public and private sector. The PCOR Partnership region includes all or part of nine U.S. states and four Canadian provinces.

Phase III, the development phase, a 10-year effort (2007–2017), is an extension of the characterization (Phase I) and validation (Phase II) phases. The Phase III efforts of the PCOR Partnership include two large-volume demonstration tests—one in Canada and one in the United States—that focus on injecting carbon dioxide (CO₂) into deep geologic formations for CO₂ storage.

DOE required that an independent technical review be undertaken at the outset of the RCSP Phase III Program. DOE approached the IEA Greenhouse Gas R&D Programme (IEAGHG) to undertake this review because of its extensive experience with CO₂ injection projects worldwide. To review the RCSP Program and its Phase III activities, IEAGHG appointed an independent international panel of experts. The experts were drawn from onshore CO₂ injection projects under way in Canada, Europe, and Australia. This initial review was conducted in March 2008.

DOE, through NETL, which manages the RCSP initiative, required that a second independent review of the program be undertaken in 2011. IEAGHG again organized this review, held March 14–17, 2011, at the Hilton Hotel in Arlington, Virginia. The ten-member panel comprised experts from Canada, the United Kingdom, Germany, Australia, Japan, and the United States. The PCOR Partnership gave an hour-long presentation, followed by 90 minutes of questions and answers, on March 15, 2011.

Following the presentation and question-and-answer session, the expert panel discussed its assessment of the PCOR Partnership's two demonstration-level projects and compiled comments and recommendations for each project. Based on these discussions and the written comments provided, IEAGHG prepared an evaluation for each project reviewed. The expert panel's evaluation of the PCOR Partnership's projects was received in June 2011. A fundamental

component of the NETL expert review process is that the recommendations identified by the expert panel are required to be addressed.

The panel's recommendations for the PCOR Partnership included for consideration the "appointment of scientific and/or operational advisory boards or committees." When formal responses to the recommendations were submitted in August 2011, the EERC decided to establish a single-panel advisory board to provide scientific guidance on the entire PCOR Partnership Program, including its demonstration sites.

In September 2011, DOE issued a contract modification, No. 21, authorizing the creation of an advisory board under the Statement of Project Objectives (SOPO) Task 13 – Project Management. DOE also agreed to fund meetings and associated expenses through September 30, 2015. The SOPO was amended to include the following provisions:

Subtask 13.2 – Advisory Board Meetings

Subtask 13.2.1 – Select Advisory Board Members. An advisory board, consisting of no fewer than five non-EERC advisors, will be selected from among knowledgeable persons in the fields of carbon capture and storage (CCS) and enhanced oil recovery (EOR). The advisors will have no term requirements or limits, but their service will be dependent upon availability.

Subtask 13.2.2 – Hold Advisory Board Meetings. Advisory board meetings will be scheduled to occur prior to the annual project meeting and will take into consideration the availability of selected advisors and, when feasible, be held in conjunction with another carbon management event or conference. The recommendations of the advisory board shall be reported at the successive annual project meeting.

In addition, a new milestone, M36, was created, and due dates were scheduled on March 31 for Program Years 5–8 (2012–2015).

Creation of the PCOR Partnership Technical Advisory Board (TAB)

The PCOR Partnership TAB was created in 2012 with various CCS and EOR experts. The following individuals comprised the first TAB:

- Bill Jackson, BillyJack Consulting, Inc. (Chair)
- Stefan Bachu, Alberta Innovates – Technology Futures
- Ray Hattenbach, Blue Strategies
- Lynn Helms, North Dakota Industrial Commission
- Mike Jones, Lignite Energy Council
- Steve Melzer, Melzer Consulting
- Tom Olle, Lonestar Resources, Inc.
- Steve Whittaker, CSIRO
- Neil Wildgust, Petroleum Technology Research Centre

At the time of this reporting, the nine listed continue as members of the TAB.

TAB Meeting Scheduled

The third annual TAB meeting was scheduled and held March 4–5, 2014, in Austin, Texas (see Appendix A for the meeting agenda). Six of the nine appointed TAB members were able to attend. The following members were present and participated in the meeting:

- Bill Jackson, BillyJack Consulting, Inc. (Chair)
- Ray Hattenbach, Blue Strategies
- Mike Jones, Lignite Energy Council
- Steve Melzer, Melzer Consulting
- Steve Whittaker, CSIRO
- Neil Wildgust, Petroleum Technology Research Centre

TAB members Stefan Bachu, Lynn Helms, and Tom Olle were unable to attend the meeting.

Several presentations were given to update the TAB on the most recent status of the PCOR Partnership's projects. Topics covered included manuscript publication; outreach activities; regulatory developments in CCS; monitoring, verification, and accounting; and the Bell Creek project. The TAB provided feedback in each of these areas and encouraged the PCOR Partnership to continue to disseminate the results of its work. Additionally, the TAB reminded the PCOR Partnership to continue to implement novel monitoring techniques to ensure a research component is maintained in its work.

Additional TAB Activity

Several additional TAB activities took place between March 2013 and March 2014, including two WebEx meetings and a 2-hour face-to-face meeting held in conjunction with the PCOR Partnership Annual Meeting (those members who were able to attend the Annual Meeting participated in this TAB meeting).

Future TAB Meetings

The next annual TAB meeting is tentatively scheduled for March 2015. In addition, technical WebEx meetings will continue to be held in the next 12 months. No dates have been set for the next WebEx.

APPENDIX A

PCOR PARTNERSHIP TECHNICAL ADVISORY BOARD MEETING AGENDA



AGENDA

Tuesday, March 4 – Wednesday, March 5, 2014

The Driskill, Crystal Room

Purpose:

2014 Technical Advisory Board Meeting

TAB Members

Tuesday, March 4, 2014

TIME	ACTIVITY (Crystal Room)	DISCUSSION LEADER(S)
8:30 a.m.	Welcome and Introductions/Breakfast (<i>Chisholm Trail Room</i>)	All
9:30 a.m.	Peer Review Debrief and Discussion	Charlie Gorecki
10:00 a.m.	Manuscript/Literature Update	Charlie Gorecki
10:15 a.m.	Break	All
10:45 a.m.	PCOR Partnership Risk Assessment Methodology and Applications	Dave Nakles
11:45 a.m.	Working Lunch (<i>Chisholm Trail Room</i>)	All
1:00 p.m.	PCOR Partnership Updates: Outreach, Regulatory, Basal Cambrian, Aquistore, and Bell Creek	Charlie Gorecki
2:45 p.m.	Break	All
3:15 p.m.	Monitoring in Compliance with Regulators: Fort Nelson MVA as a Case Study	Jim Sorensen
5:00 p.m.	Adjourn	All
6:30 p.m.	Business Dinner (<i>The Driskill Grill</i>)	All and Guests

Wednesday, March 5, 2014

TIME	ACTIVITY (Crystal Room)	DISCUSSION LEADER(S)
8:30 a.m.	Working Breakfast (<i>Chisholm Trail Room</i>)	All
9:00 a.m.	Member Time	Dave Nakles
10:30 a.m.	Break	All
11:00 a.m.	TAB Meeting Outcome and Action Items	Bill Jackson
11:45 a.m.	Working Lunch (<i>Chisholm Trail Room</i>)	All
1:30 p.m.	Wrap-up	Bill Jackson, Dave Nakles, John Harju, Ed Steadman, Charlie Gorecki, Jim Sorensen, Scott Ayash

PCOR Partnership TAB Members:

Bill Jackson, BillyJack Consulting, Chair
Stefan Bachu, Alberta Innovates – Technology Futures
Ray Hattenbach, Blue Strategies
Lynn Helms, North Dakota Industrial Commission
Mike Jones, Lignite Energy Council
Steve Melzer, Melzer Consulting
Tom Olle, Lonestar Resources
Steve Whittaker, CSIRO
Neil Wildgust, Petroleum Technology Research Centre

Meeting Facilitator:

Dave Nakles, The CETER Group, Inc.

Ex Officio Members:

John Harju, EERC
Ed Steadman, EERC
Charlie Gorecki, EERC
Jim Sorensen, EERC

Additional Participants:

Scott Ayash, EERC