Energy & Environmental Research Center
15 North 23rd Street, Stop 9018 • Grand Forks, ND 58202-9018 • P. 701.777.5000 • F. 701.777.5181
www.undeerc.org

April 30, 2021

Ms. Karlene Fine
Executive Director
North Dakota Industrial Commission
600 East Boulevard Avenue, Department 405
State Capitol, 14th Floor
Bismarck, ND 58505-0840

Dear Ms. Fine:

Subject: Quarterly Progress Report for the Period of January 1 – March 31, 2021, "PCOR Initiative to Accelerate CCUS Deployment"; Contract Nos. FY20-XCI-226 and G-050-096

Attached please find the Energy & Environmental Research Center (EERC) Quarterly Progress Report for the subject project. If you have any questions, please contact me by phone at (701) 777-5236 or by e-mail at kconnors@undeerc.org.

Sincerely,

DocuSigned by:
Kevin Connors
1D14EF7CF3CD456...

Kevin C. Connors
Principal Policy & Regulatory Strategist

KCC/kal

Attachment

c/att: Michael Holmes, Lignite Energy Council
Brent Brannan, North Dakota Industrial Commission (NDIC) Department of Mineral Resources, Oil and Gas Division

c: Corey Irion, EERC

PCOR PARTNERSHIP INITIATIVE TO ACCELERATE CCUS DEPLOYMENT

Quarterly Technical Progress Report

(for the period January 1 – March 31, 2021)

Prepared for:

Karlene Fine

North Dakota Industrial Commission
600 East Boulevard Avenue, Department 405
State Capitol, 14th Floor
Bismarck, ND 58505-0840

Contract Nos. FY20-XCI-226 and G-050-96

Prepared by:

Kevin C. Connors
Nicholas W. Bosshart
Nicholas A. Azzolina
Wesley D. Peck
Scott C. Ayash
Loreal V. Heebink

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

April 2021

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) National Energy Technology Laboratory (NETL) and the North Dakota Industrial Commission (NDIC). 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 NETL under Award Number DE-FE0031838.

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:

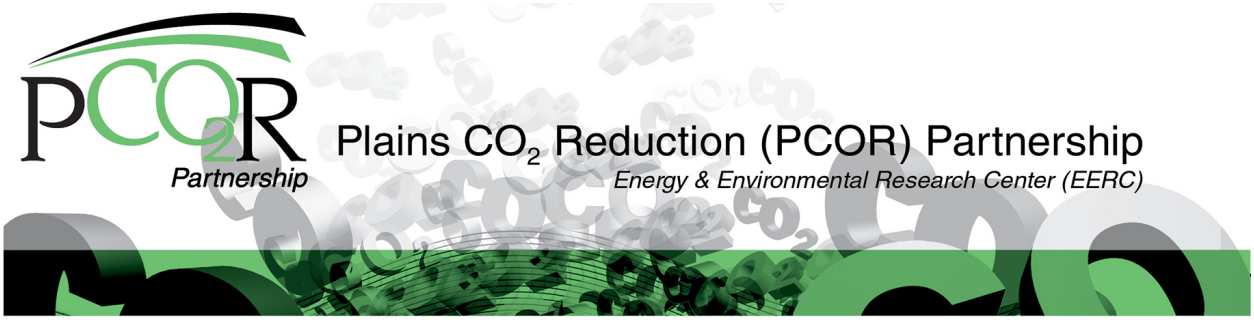
(A) Makes any warranty or representation, express or implied, with respect to the accuracy, completeness, or usefulness of the information contained in this report, or that the use of any information, apparatus, method, or process disclosed in this report may not infringe privately owned rights; or

(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

LIST OF TABLES



PCOR PARTNERSHIP INITIATIVE TO ACCELERATE CCUS DEPLOYMENT
Quarterly Progress Report
January 1 – March 31, 2021

EXECUTIVE SUMMARY

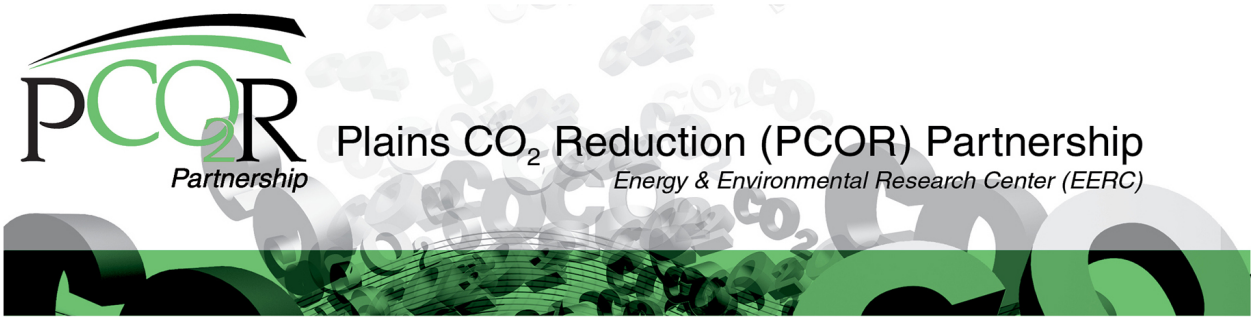
The Plains CO_2 Reduction (PCOR) Partnership Initiative is one of four projects competitively awarded by the U.S. Department of Energy (DOE) National Energy Technology Laboratory (NETL) under the Regional Initiative to Accelerate CCUS (carbon capture, utilization, and storage). The PCOR Partnership Initiative is led by the Energy & Environmental Research Center (EERC) with support from the University of Wyoming (UW) and the University of Alaska Fairbanks (UAF) and includes stakeholders from the public and private sectors. The PCOR Partnership Initiative region includes all or part of ten U.S. states and four Canadian provinces. Two new members were welcomed to the PCOR Partnership Initiative: RockAll Energy and Summit Agricultural Group, LLC.

In lieu of an in-person annual membership meeting in 2020, a series of virtual presentations continued. Webinars entitled "Surveying the Evolving Landscape of CCUS" and "Advancing Technologies for Clean Energy Development" were presented by Chuck McConnell, Energy Center Officer of the Center for Carbon Management and Energy Sustainability at the University of Houston, and Dr. Brian Anderson, Director of DOE NETL, respectively. The 2021 PCOR Partnership Initiative annual membership meeting is scheduled for September 13–15, 2021, in Jackson, Wyoming.

Writing continued on the storage optimization and stacked storage reports. Collaborative efforts with the Petroleum Technology Research Centre continued on geologic modeling, and numerical simulation focused on the region surrounding the Aquistore site. Deliverable 14, formatted as a manuscript entitled "Risk-Based Area of Review (AOR) Estimation to Support Injection Well Storage Facility Permit Requirements for CO_2 Storage Projects" was submitted to the DOE Program Manager. The manuscript was also submitted to the peer-reviewed journal *Greenhouse Gases: Science and Technology*. The set of testing runs for the National Risk Assessment Partnership Open-Source Integrated Assessment Model testing was finalized.

An in-person Regulatory Roundup meeting is scheduled for August 17–18, 2021, in Deadwood, South Dakota. Testimony was provided to the Minnesota and Nebraska legislatures on proposed legislation on the topic of CCUS. Presentations were made at the 15th International Conference on Greenhouse Gas Control Technologies conference and as part of the Society of Exploration Geophysicists Women's Network webinar series. Development of the PCOR Partnership Initiative atlas is ongoing in collaboration with subrecipients UW and UAF. The new PCOR Partnership Initiative public website was released on March 31, 2021. Numerous value-added activities were discussed and initiated to meet the goals of the project and members.

The EERC holds an unwavering commitment to the health and well-being of its employees, partners and clients, and the global community. As such, precautionary measures have been implemented in response to COVID-19. Staff continue to carry out project-related activities remotely, and personnel supporting essential on-site laboratory and testing activities are proceeding under firm safety guidelines. Travel has been minimized, and protective measures are being undertaken for those who are required to travel. At this time, work conducted by EERC employees is progressing with minimal disruption. Challenges posed by economic variability will be met with open discussion between the EERC and project partners to identify solutions. The EERC is monitoring developments across the nation and abroad to minimize risks, achieve project goals, and ensure the success of our partners and clients. In the event that any potential impacts to reporting, scope of work, schedule or cost are identified, they will be discussed and addressed in cooperation with the project partners.



PCOR PARTNERSHIP INITIATIVE TO ACCELERATE CCUS DEPLOYMENT
Quarterly Progress Report
January 1 – March 31, 2021

INTRODUCTION

The Plains CO_2 Reduction (PCOR) Partnership Initiative is one of four projects operating under the U.S. Department of Energy (DOE) National Energy Technology Laboratory (NETL) Regional Initiative to Accelerate CCUS (carbon capture, utilization, and storage). The PCOR Partnership Initiative is led by the Energy & Environmental Research Center (EERC) with support from the University of Wyoming (UW) and the University of Alaska Fairbanks (UAF) and includes stakeholders from the public and private sectors. The membership, as of March 31, 2021, is at 196 members. The PCOR Partnership Initiative region includes all or part of ten states (Alaska, Iowa, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming) and four Canadian provinces (Alberta, British Columbia, Manitoba, and Saskatchewan).

The goal of the PCOR Partnership Initiative is to identify and address regional capture, transport, and storage challenges facing commercial deployment of CCUS in an expanded region, compared to past initiatives. To achieve this goal, the PCOR Partnership Initiative will meet the following objectives:

1. Address key technical challenges by advancing critical knowledge and capabilities
2. Facilitate data collection, sharing, analysis, and collaboration
3. Evaluate regional infrastructure challenges and needs
4. Promote regional technology transfer

The project goal and objectives will be accomplished through five tasks over two budget periods (BPs), corresponding to a 5-year period of performance. The EERC and project partners will collaborate to identify and address technical challenges facing deployment of CCUS in multiple categories, including stacked storage opportunities, CO_2 storage performance and monitoring, and risk assessment. Existing data sets and technologies will be analyzed and evaluated to highlight current challenges limiting commercial adoption of CCUS, as well as to identify potential solutions. The project team will support the DOE National Risk Assessment Partnership (NRAP) and machine-learning (ML) initiatives by drawing on data sets and experience available through the team. Assessments of infrastructure, site readiness, techno-economics, and socioeconomics will provide an overview of the CCUS landscape within the defined PCOR Partnership Initiative region. Potential business case scenarios will be evaluated, taking into account current economic incentives to identify opportunities in CCUS project development. Technology transfer activities will inform and educate CCUS stakeholders of

project learnings through annual membership meetings, regulatory roundup meetings, Technical Advisory Board (TAB) meetings, webinars, reports, and conference presentations/papers. These activities will facilitate knowledge sharing and support DOE program goals.

ACCOMPLISHMENTS

Task 1.0 – Project Management and Planning

The objective of Task 1.0 is to manage and direct the project in accordance with a project management plan (PMP) to meet all technical, schedule, and budget objectives and requirements. Activities will be coordinated in order to effectively accomplish the work. The project manager will ensure that project plans, results, and decisions are appropriately documented and project reporting and briefing requirements are satisfied.

Significant accomplishments for Task 1.0 during the reporting period include the following:

- Submitted a letter proposal on February 12, 2021, outlining proposed statement of project objectives (SOPO) changes and budget for FY21 add-on funding.

- Finalized subawards with UAF and UW for previous add-on funding.

- Continued the PCOR Partnership Initiative webinar series held between September 2020 and April 2021 on a variety of topics in lieu of an in-person annual membership meeting in 2020. Activities included the following:
  - Held a webinar on January 27, 2021, entitled "Surveying the Evolving Landscape of CCUS," which was presented by Chuck McConnell, Energy Center Officer of the Center for Carbon Management and Energy Sustainability at the University of Houston.
  - Held a webinar on March 10, 2021, entitled "Advancing Technologies for Clean Energy Development," which was presented by Dr. Brian Anderson, Director of DOE NETL.
  - Worked on planning the final webinar in the series to be held in April.

- Scheduled the PCOR Partnership Initiative annual membership meeting for September 13–15, 2021, in Jackson, Wyoming. This satisfies Milestone (M) 3 – Annual Meeting Scheduled. Worked on planning efforts.

- Attended the MRCI (Midwest Regional Carbon Initiative) Virtual Meeting on February 18, 2021.

- Engaged in conversations with current and prospective partners regarding their continued involvement in the PCOR Partnership Initiative:
  - Welcomed new members RockAll Energy and Summit Agricultural Group, LLC.

- Met individually with Carbon America, KAAPA Ethanol Holdings, LLC, Catahoula Management Services, Summit Agricultural Group, LLC, and RockAll Energy to discuss opportunities to collaborate, identify knowledge gaps, and challenges.

Next steps to accomplish the goals under Task 1.0 include the following:

- Continue webinar series planning and hold April webinar.
- Continue PCOR Partnership Initiative annual membership meeting planning.
- Track progress on project deliverables (D) and milestones (M) (see Tables 1 and 2).

Task 2.0 – Technical Challenges

In Task 2.0, the project team will support regional deployment of CCUS programs by focusing on key technical challenges in the PCOR Partnership Initiative region related to stacked storage opportunities; storage performance; monitoring, verification, and accounting (MVA) technology; and subsurface integrity. The EERC will collaborate with PCOR Partnership Initiative members to identify knowledge gaps and address regional challenges through targeted webinars, workshops, reports, and papers.

Progress on Task 2.0 is as follows:

- Continued writing to create a quality storage optimization report (D2).
- Conducted a literature search, created a report outline, and initiated writing of text for the stacked storage report (D3). Continued design of geomechanical investigations in stacked storage scenarios.
- Began work on collaborative efforts in geologic modeling and numerical simulation focused on the region surrounding the Aquistore site with Petroleum Technology Research Centre (PTRC). Met with team members from PTRC regularly to discuss progress. The structural framework for the model was created, and geologic properties were calculated. The simulation model is currently being built.
- Subrecipient UAF submitted a review article entitled “Enhanced Oil Recovery Using CO_2 in Alaska” to the journal *Geosciences*. The peer-reviewed open access article was published February 19, 2021, and is available at https://doi.org/10.3390/geosciences11020098.
- Worked on developing ideas for value-added activities.

Table 1. Project Deliverables

Deliverable (D) No. and Title	Planned Completion Date	Actual Completion Date	Verification Method	Comments
D1 – Project Management Plan	30 days after contract definitization	2/21/2020	PMP file submitted to DOE Project Manager (PM)	
D2 – Report – Storage Optimization	4/30/2021		Topical report submitted to DOE PM	Moved from 12/31/2020
D3 – Report – Stacked Storage Opportunity Assessment	6/30/2021		Topical report submitted to DOE PM	
D4 – Report – Regional Business Case Assessment	12/31/2021		Topical report submitted to DOE PM	Moved from 3/31/2021
D5 – Report – Subsurface and Legacy Well Integrity	12/31/2021		Topical report submitted to DOE PM	
D6 – Report – MVA Strategies	6/30/2022		Topical report submitted to DOE PM	
D7 – Report – Evaluation of Risk Management	9/30/2022		Topical report submitted to DOE PM	
D8 – Report – Regional Permitting Guidance	9/30/2022		Topical report submitted to DOE PM	
D9 – Report – Infrastructure, Scale-Up, and Techno-Economic Assessments	12/31/2022		Topical report submitted to DOE PM	
D10 – Report – NRAP Testing and Validation	3/31/2023		Topical report submitted to DOE PM	
D11 – Report – Basement Faulting and Stress State, Induced Seismicity	9/30/2023		Topical report submitted to DOE PM	
D12 – Report – Regional Socioeconomic Assessments	9/30/2023		Topical report submitted to DOE PM	
D13 – Report – Updated Regional Business Case Assessment	12/31/2023		Topical report submitted to DOE PM	
D14 – Report – Risk-Based Area of Review	1/31/2021	1/29/2021	Topical report submitted to DOE PM	Moved from 12/31/2020
D15 – PCOR Partnership Atlas	6/30/2021 and 3/31/2023		Atlas submitted to DOE PM	Moved from 3/31/2021

Table 2. Milestone Status Report

Milestone (M) No. and Title	Planned Completion Date	Actual Completion Date	Verification Method	Comments
M1 – Regulatory Roundup Scheduled	2/29/2020	3/31/2020	Reported in subsequent quarterly report	
M2 – Initial Techno-Economic Framework Established	4/30/2020	4/28/2020	Reported in subsequent quarterly report	
M3 –Annual Meeting Scheduled	3/31/2021	3/29/2021	Reported in subsequent quarterly report	
M4 – Regulatory Roundup Scheduled	3/31/2021	3/29/2021	Reported in subsequent quarterly report	
M5 – Data Share with National Lab for NRAP Assessment	6/30/2021		Reported in subsequent quarterly report	
M6 – GHGT-16[1] Abstract Submitted	1/31/2022		Reported in subsequent quarterly report	
M7 – BP1 EDX[2] Submitted	3/31/2022		Reported in subsequent quarterly report	
M8 – Draft Journal Article Completed	11/30/2022		Reported in subsequent quarterly report	
M9 – Regulatory Roundup Scheduled	3/31/2023		Reported in subsequent quarterly report	
M10 – GHGT-17 Abstract Submitted	1/31/2024		Reported in subsequent quarterly report	
M11 – Annual Meeting Scheduled	3/31/2024		Reported in subsequent quarterly report	
M12 – BP2 EDX Submitted	6/30/2024		Reported in subsequent quarterly report	

[1] 16th International Conference on Greenhouse Gas Control Technologies.
[2] Energy Data eXchange.

Next steps to accomplish the goals under Task 2.0 in the coming quarter include the following:

- Submit the storage optimization report (D2) by April 30, 2021.
- Continue work on stacked storage report (D3).
- Continue collaboration with PTRC.
- Continue work on value-added activities.
- Initiate work on methods and approaches for evaluating subsurface and legacy well integrity report (D5).
- Initiate work identifying challenges in current approaches to risk assessment (Subtask 2.4 – Risk Management).

Task 3.0 – Data Collection, Sharing, and Analysis

In Task 3.0, the project team will collaborate with other DOE Fossil Energy (FE)-funded researchers to improve understanding of CO_2 injection and storage impacts. The project team will work with national laboratories to facilitate data sharing, support the development and validation of NRAP tools with site-specific data, and participate in development of ML-based tools/methods in a commercial setting.

Progress on Task 3.0 is as follows:

- Subtask 3.1 – Data Sharing:
  - Geomodelers and reservoir engineers from the project team began conducting quality assurance/quality control (QA/QC) of available geologic models and reservoir simulations for data sharing under M7 – BP1 EDX Submitted (due March 31, 2022).

- Subtask 3.2 – NRAP Validation:
  - Submitted D14 to the DOE PM on January 29, 2021. The deliverable was formatted as a journal article that would eventually be submitted to a peer-reviewed journal. The manuscript was entitled "Risk-Based Area of Review (AOR) Estimation to Support Injection Well Storage Facility Permit Requirements for CO_2 Storage Projects."
    - Sent a revision of D14 to the DOE PM on February 4, 2021, with an adjustment to the author list.
    - Submitted the manuscript to the peer-reviewed journal *Greenhouse Gases: Science and Technology* on February 4, 2021, for consideration.
    - Received comments back from the journal on March 8, 2021. The comments were generally favorable from all three reviewers; however, several reviewers asked for edits to the original manuscript (i.e., "accept with revisions"), which is common for peer-reviewed publications.
    - Responded to reviewer comments and made edits to the February 4, 2021, version of the manuscript to address reviewer comments. The project team intends to submit the responses to reviewer comments and revised manuscript to the journal over the next quarter.
    - If accepted to the journal, the final peer-reviewed version will be submitted to OSTI.
  - The project team attended the following NRAP webinar:
    - NRAP Webinar Series, Webinar #23 – Modeling of Offshore CO_2 Blowouts for Risk Assessment
  - NRAP tools testing is ongoing with the following activities:
    - Finalized the set of testing runs for the NRAP Open-Source Integrated Assessment Model (Open-IAM) testing, which included:
      - Python script for extracting Computer Modeling Group (CMG) reservoir simulation outputs of pressure and gas saturation into a lookup table format that can be imported into NRAP-Open-IAM.
      - Running of Open-IAM components: Stratigraphy, Lookup Table Reservoir, Multisegmented Wellbore, FutureGen2 Aquifer, and FutureGen2 AZMI.

        - The Open-IAM outputs will provide inputs to DREAM (Designs for Risk Evaluation and Management Tool, Version 2020.01-2.0) for optimizing monitoring configurations that minimize time to first detection.
        - Testing of the Reservoir Reduced-Order Model – Generator (RROM-Gen) tool (complete), Open-IAM, and DREAM will be reported in D10 (Topical Report – NRAP Testing and Validation).
    - Provided user interface review and feedback to Illinois Rocstar LLC, which is designing a proof-of-concept interface for DOE for the NRAP Open-IAM tool.

- Subtask 3.3 – Machine Learning:
    - The EERC continues to support the SMART (Science-Informed Machine Learning for Accelerating Real Time Decisions in Subsurface Applications) Initiative through the PCOR Partnership Initiative. The EERC is directly involved in Tasks 1, 2, 4, 5, and 6 of the SMART Initiative and is participating in the crosscutting groups for algorithms and data.

Next steps to accomplish the goals under Task 3.0 in the coming quarter include the following:

- Subtask 3.1: Continue to QA/QC available geomodels and reservoir simulations that could be shared to accelerate CCUS technology development.

- Subtask 3.2: Continue to participate in the NRAP webinar series to learn about existing and forthcoming NRAP tools. Continue to troubleshoot and test the suite of NRAP tools described above. Summarize the RROM-Gen, NRAP-Open-IAM, and DREAM testing results into D10 (Report – NRAP Testing and Validation).

- Subtask 3.3: Continue to track SMART Initiative activities to identify opportunities to leverage CO_2 storage project data sets for the validation and testing of ML-based approaches to modeling CO_2 and/or pressure in the subsurface.

Task 4.0 – Regional Infrastructure

The objective of Task 4.0 is to evaluate the regional needs, challenges, and potential economic impacts related to the development of safe and environmentally sound CO_2 transportation infrastructure to accelerate commercial CCUS project deployment. This evaluation will be accomplished by assessing existing infrastructure, scale-up challenges and needs, and techno-economic and socioeconomic impacts in the PCOR Partnership Initiative region and will be communicated through outreach activities.

Progress on Task 4.0 is as follows:

- Continued working on development of the PCOR Partnership atlas (D15). A request to extend the due date from March 31, 2021, to June 30, 2021, was submitted to and approved by the DOE PM on March 26, 2021. This extension will grant the atlas team time to provide the best quality product and ensure improved cooperation with subrecipients UAF and UW.

- Worked on pipeline design activities.

- Met with Resolute Engineering to review its pipeline routing tool and discuss integration of output into PCOR Partnership Initiative products and website content.

Next steps to accomplish the goals under Task 4.0 in the coming quarter include the following:

- Submit the PCOR Partnership atlas (D15).

Task 5.0 – Technology Transfer

Task 5.0 will inform and educate stakeholders about CCUS technologies. Nontechnical challenges to CCUS deployment in the PCOR Partnership Initiative region will be identified and assessed, with an emphasis on regulatory issues and solutions. Business case scenarios for CCUS projects will be identified, reviewed, and developed. Outcomes of this task will be transferred to stakeholders through meetings, presentations, and webinars. Developed materials will be shared with DOE to support its broader FE program goals.

Progress on Task 5.0 is as follows:

- The EERC CEO, Charles Gorecki, provided testimony to the Minnesota and Nebraska legislatures on February 10 and 11, 2021, respectively, on proposed legislation on the topic of CCUS.

- Recorded a presentation entitled "The PCOR Partnership Initiative: The State of the Region" for the GHGT-15 conference held virtually March 15–18, 2021. Submitted a paper for the conference proceedings.

- Presented "The Role of Geophysics in Carbon Capture Utilization and Storage (CCUS): Examples from the Plains CO_2 Reduction Partnership" as part of the Society of Exploration Geophysicists (SEG) Women's Network webinar series on March 22, 2021.

- Scheduled an in-person Regulatory Roundup meeting for August 17–18, 2021, in Deadwood, South Dakota. This satisfies M4 – Regulatory Roundup Scheduled. The meeting will be by invitation; attendee contact was initiated.

- Researched development of policy and legislation in PCOR Partnership Initiative states.

- Released the new PCOR Partnership Initiative public website on March 31, 2021. The website can be found at https://undeerc.org/PCOR/.

- Continued investigating potential business cases in the region using a regional trunkline with multiple stationary sources.

- Continued development of the regional business model assessment (D4). Topics of research included how business models are developed for CCUS projects in the primary focus area of the project, tax policies, incentive programs, infrastructure development, and potential for future business opportunities.

- Continued to work with EERC personnel to understand the CCS permitting process in North Dakota. There is coordination with the North Dakota CarbonSAFE project, a separate DOE-funded effort, working on permitting a CCS project in the PCOR Partnership Initiative region.

- Worked on development of a value-added white paper on pore space in the PCOR Partnership Initiative region. Reviewed background literature.

Next steps to accomplish the goals under Task 5.0 in the coming quarter include the following:

- Continue to engage regulators in the PCOR Partnership Initiative region and continue to plan the Regulatory Roundup meeting.

- Continue tracking and assessing Internal Revenue Service (IRS) Section 45Q tax credit guidance, rulemaking, and congressionally proposed enhancements.

- Continue the evaluation and development of permitting guidance for Class VI applications.

- Initiate the development of permit application summaries, templates, and/or guidance on AOR determination strategies, low carbon fuel standards (LCFS) permeance certification, risk assessments, and MRV (monitoring, reporting, and verification) plans.

- Complete the draft of a value-added white paper on pore space leasing considerations.

CHANGES/PROBLEMS

The EERC is operational and open for business. Personnel who are not essential for on-site operations have transitioned to working from home. Essential project, laboratory, and field-based activities are proceeding with the incorporation of the Centers for Disease Control and Prevention (CDC), the state of North Dakota, and the University of North Dakota (UND) guidelines associated with COVID-19, and mitigation measures have been implemented.

In collaboration with project partners, the EERC is continually assessing potential impacts to project activities resulting from COVID-19 and/or the U.S. economic situation. At the time of reporting, there has been no substantial impact to the project. In the event that any potential impacts to reporting, scope of work, schedule, or cost are identified, they will be discussed and addressed in cooperation with NDIC.