

Memorandum of Understanding

between the

United States Geological Survey

and the

United States Department of Energy

Office of Fossil Energy and Carbon

Management

**I. Background and Purpose**

The purpose of this Memorandum of Understanding (MOU) between the United States Department of Energy Office of Fossil Energy and Carbon Management (DOE-FECM) and the United States Geological Survey (USGS) is to establish an arrangement for cooperation regarding basin-scale geologic carbon dioxide (CO<sub>2</sub>) storage resource management. Carbon capture, utilization, and storage (CCUS) is one of the key approaches for decarbonizing the energy and industrial sectors. Deployment and scale-up of CCUS and related carbon management technologies is expected to result in rapid development and simultaneous operations of multiple geologic CO<sub>2</sub> storage sites within single basins and to overlap with other subsurface activities. The information gathered through this collaborative effort may be used by governments, investors, academia, and the research and development community to better understand deployment-related challenges for basin-scale CO<sub>2</sub> storage technologies.

DOE-FECM and USGS may be referred to individually as “Participant” and jointly as “Participants.”

**II. Legal Authority**

DOE is acting pursuant to the Department of Energy Organization Act (Pub. L. 95-91), codified as amended at 42 U.S.C. §§ 7101 et seq. Section 646, codified at 42 U.S.C. § 7256, provides that the DOE has authority to enter into and perform such contracts, leases, cooperative agreements, or other similar transactions with public agencies and private organizations and persons.

USGS is acting pursuant to the USGS Organic Act of March 3, 1879, codified as amended at 43 U.S.C. §§ 31 et seq. Section 36c provides that the USGS has authority to prosecute projects in cooperation with other agencies, Federal, State, or private.

### **III. Funding**

The Participants intend to coordinate their activities under this MOU with each Participant providing funding for its own activities. There will be no exchange of funds by the Participants for this effort.

### **IV. Specific Projects**

The work performed under this MOU may include the following:

- The USGS and DOE-FECM may collect and share relevant non-proprietary data, publications related to geologic carbon dioxide storage. This effort may include discussions and interactions with multiple government agencies, including Federal agencies, State geological surveys, state regulatory agencies, universities, industry and other organizations.
- DOE-FECM may work with USGS to develop research strategies to better understand basin-scale CO<sub>2</sub> storage technology deployment-related challenges. Such plans could include:
  - Development of basin-scale geologic data collection strategies aimed at addressing existing data gaps;
  - Development and sharing of basin and sub-basin scale models;
  - Leveraging various subsurface energy activities, such as geothermal, critical minerals extraction, and oil and gas production to enhance data collection;
  - Deployment of fluid pressure modeling and monitoring as a key aspect of basin-wide carbon storage resource utilization management;
  - Creation of informational resources and tools to guide CCUS project development and permit decision making;
  - Expanding the collection and sharing of data that are needed to better characterize basins particularly in federally managed areas, and make datasets available to the public;
  - Investigating a diverse range of pathways toward permanent CO<sub>2</sub> storage resources, including through carbon mineralization approaches in basalt formations and other unconventional CO<sub>2</sub> storage resources;
  - Leveraging existing infrastructure for monitoring that considers multi-use subsurface applications (i.e. seismicity, geochemical sampling);
  - Working with stakeholders to facilitate the digitization of legacy data from paper (i.e. analog copies) and hold geologic storage workshops, trainings, and data and knowledge sharing avenues for federal and state land management agencies.

Relevant findings within the scope of this MOU may lead to efforts by the Participants and other parties working collaboratively on this effort to jointly publish results of the

investigations described above in technical journals or other appropriate scientific publications.

## **V. Intellectual Property**

The Participants do not expect or intend this undertaking to result in the creation of any intellectual property (including copyright, trademark, or patent) other than data, which is to be handled in accordance with Section VII below. If either Participant believes or has reason to believe that intellectual property might be created through the activities under this MOU, they will immediately notify the other Participant to establish a formal intellectual property agreement. The Participants intend that any intellectual property that is owned or controlled by a Participant prior to the commencement of cooperation under this MOU, or which is acquired or developed by either Participant during this MOU, is to remain at all times owned or controlled by said Participant.

## **VI. Third Party Claims**

It is the Participants' intention that each Participant will be responsible for claims, losses, damages, and expenses that are proximately caused by the acts or omissions of that Participant or its employees, agents, or representatives acting within the scope of their employment.

## **VII. Information Sharing**

- A. Any data produced as a result of this MOU shall be managed and controlled by the Participant who generated the data. Control shall include making decisions related to the sharing, publishing, third party uses of and third-party claims against the produced data. In the case of the joint production of data, the Participants can select a Participant to exercise control over the jointly produced data.
- B. The Participants intend that all data and information produced as a result of this MOU will be available for use by the USGS, DOE/FECM, and the United States Government in connection with their ongoing programs. This includes publication of results, where appropriate, except in cases prohibited by patenting, proprietary, or security considerations. If any such considerations are present, the Participant seeking to publish shall inform the other Participant of the desire to publish with sufficient time for the Participants to determine a mutually agreeable path forward, including filing a patent application.
- C. The Participant transmitting the data and information under paragraph A of this section is responsible for informing the receiving Participant of any restrictions or caveats that

apply to or protect that data and is also responsible for marking the data when transmitted with any proper restrictive marking.

- D. Each Participant agrees to comply with the markings, confidentiality requirements, restrictions on transfer, and information handling and protection requirements applicable to any information shared with such Participant.
- E. All information provided to the Participants will be handled in accordance with all applicable Federal laws, rules or regulations, including but not limited to, the Trade Secrets Act (18 U.S.C. § 1905), the Federal Records Act (44 U.S.C. § 3101 et seq.), the Freedom of Information Act (5 U.S.C. § 552) ("FOIA").

### **VIII. Communications**

The Participants have designated the points of contact listed below:

DOE-FECM Technical Contacts:

Sarah Leung  
Carbon Storage Program Manager  
U.S. Department of Energy  
Office of Fossil Energy and Carbon  
Management  
Washington, DC 20585  
Phone: (240) 255-8163  
Email: [Sarah.Leung@hq.doe.gov](mailto:Sarah.Leung@hq.doe.gov)

Rajesh Pawar, PhD  
Senior Technical Advisor  
U.S. Department of Energy  
Office of Fossil Energy and Carbon  
Management  
Washington, DC 20585  
Phone: 505-795-2885  
Email: [Rajesh.Pawar@hq.doe.gov](mailto:Rajesh.Pawar@hq.doe.gov)

USGS Technical Contacts:

Peter Warwick, PhD  
Supervisory Research Geologist  
U.S. Geological Survey  
12201 Sunrise Valley Dr., MS-954  
Reston, VA 20192  
Phone: 703-648-6469

Email: [pwarwick@usgs.gov](mailto:pwarwick@usgs.gov)

Sean Brennan, PhD  
Research Geologist  
U.S. Geological Survey  
12201 Sunrise Valley Dr., MS-954  
Reston, VA 20192  
Phone: 703-648-6434  
Email: [sbrennan@usgs.gov](mailto:sbrennan@usgs.gov)

DOE-FECM Administrative Contact:

Joseph Giove III  
Director of Business Operations  
U.S. Department of Energy  
Office of Fossil Energy and Carbon  
Management  
Germantown, MD 20874  
Phone: (301) 902-4130  
Email: [Joseph.Giove@hq.doe.gov](mailto:Joseph.Giove@hq.doe.gov)

USGS Administrative Contact:

Donna Read, Program Analyst  
U.S. Geological Survey  
12201 Sunrise Valley Dr., MS-913  
Reston, VA 20192  
Phone: 703-648-6471  
Email: [dread@usgs.gov](mailto:dread@usgs.gov)

The administrative contacts are to serve as the communication link between the Participants. The technical contacts are to coordinate activities conducted under this MOU to ensure their effective implementation. The Participants are encouraged to keep each other apprised of any changes in the Point of Contact or contact information.

**IX. Administrative Provisions**

- A. This Agreement is strictly for internal management purposes for each of the Parties. It is not legally binding or enforceable and is not intended and shall not be construed to create any legal obligation, express or implied, on the part of either Party. This Agreement is not intended to provide and shall not be construed to provide a private right or cause of action for or by any person or entity, whether in law or in equity.

- B. This Agreement is neither a fiscal nor a funds obligation document. Nothing in this Agreement authorizes or is intended to obligate the Parties to expend, exchange, or reimburse funds, services, or supplies, or transfer or receive anything of value.
- C. To the extent the Participants wish to transfer personnel to work under another Participant, such can be done only by a separate agreement. Any endeavor involving reimbursement or contribution of funds between the Participants to the MOU will be handled in accordance with applicable laws, regulations, and procedures. Such endeavors will be outlined in separate interagency agreements and proper fiscal documents that shall be made in writing by representatives of both Participants and shall be independently authorized by appropriate statutory authority.

This MOU does not create an actual or implied intention, or requirement for, the USGS or DOE/FECM to enter into a contract or an assistance agreement (e.g., grant or cooperative agreement).

- D. The Participants intend to cooperate, as feasible, to release jointly to the public the data or interpretations resulting from these activities. To the extent there are any inquiries as to this MOU or efforts thereunder—through the Freedom of Information Act, a media inquiry, a subpoena or warrant, or any other mechanism—the Participants agree to use best efforts to coordinate with the other Participant before responding.
- E. The Participants intend to acknowledge their cooperation in publications resulting from collaborative activities under this MOU, and in presentation of material in advance of publication. In the event a Participant intends to separately publish such information, that Participant should seek prepublication review from the non-publishing Party at least thirty (30) days in advance of publication. The non-publishing Participant shall provide within thirty (30) days any written objections to be considered by the publishing Participant and provide a courtesy copy of any such publication to the other Participant within thirty (30) days of its release.
- F. The data produced under this MOU may be subject to the requirements of the Office of Science and Technology Policy (OSTP) February 22, 2013, Memorandum entitled “Increasing Access to the Results of Federally Funded Scientific Research” and the Office of Management and Budget (OMB) May 9, 2013, Memorandum M-13-13 entitled “Open Data Policy-Managing Information as an Asset” and the U.S. Geological Survey developed Instructional Memorandum (IM) OSQI 2015-03 – Fundamental Science Practices: Review and Approval of Scientific Data for Release.
- G. This Agreement in no way restricts either of the Parties from participating in any activity with other public or private agencies, organizations, or individuals.


- H. All agreements herein are subject to, and will be carried out in compliance with, all applicable laws, regulations, and other legal requirements. This Agreement is not intended and shall not be construed to alter any existing laws, regulations, or other legal requirements.

**X. Commencement, Modification, and Discontinuation**

- A. Cooperative activities under this MOU may commence upon last signature of the Participants and continue for a five (5) year period, unless renewed in writing at least thirty (30) days before the expiration of the MOU or terminated in accordance with paragraph C of this section. The signatories to this MOU may sign separate signature pages, which has the same effect as if they had signed on the same page. Electronic signatures have equal validity with ink signatures.
- B. This MOU may be modified in writing by the Participants' mutual consent.
- C. Each Participant may discontinue its cooperation under this MOU at any time. A Participant that wishes to discontinue its cooperation under this MOU should endeavor to provide thirty (30) calendar days written notice to the other Participant. Termination of this MOU does not require either Participant to return information that the other Participant has already transferred to it.

**ACCEPTANCE:**


FOR United States Geological Survey:

BY:  Digitally signed by SARAH RYKER  
Date: 2025.01.06 13:20:50 -05'00'

Sarah J. Ryker, Ph.D.  
Associate Director for Energy and Minerals Resources

DATE: \_\_\_\_\_

FOR United States Department of Energy,  
Office of Fossil Energy and Carbon  
Management:

BY:  Digitally signed by BRADFORD CRABTREE  
Date: 2025.01.06 06:16:17 -05'00'

Brad Crabtree  
Assistant Secretary for Fossil Energy and Carbon Management

DATE: \_\_\_\_\_