

MEMORANDUM OF AGREEMENT
BETWEEN THE
OFFICE OF FOSSIL ENERGY CARBON MANAGEMENT,
THE OFFICE OF SCIENCE, AND
THE WATER POWER TECHNOLOGIES OFFICE
U.S. DEPARTMENT OF ENERGY
AND
THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

I. PARTIES

This document constitutes a memorandum of agreement (Agreement or MOA) between the Office of Fossil Energy and Carbon Management (FECM), the Office of Science (SC), and the Water Power Technologies Office (WPTO) in the Office of Energy Efficiency and Renewable Energy (EERE) at the U.S. Department of Energy (DOE), and the National Oceanic and Atmospheric Administration (NOAA) at the U.S. Department of Commerce (Commerce) (individually, “Party” and collectively, “Parties”).

II. AUTHORITIES

(1) 33 U.S.C. § 883e, which authorizes NOAA to enter into agreements with Federal agencies, State, public or private organizations, and individuals for authorized surveys, investigations, and research in the geophysical sciences.

(2) 15 U.S.C. § 2901, et seq. and 15 U.S.C. § 2931, et seq., which requires NOAA to research, analyze and report on both natural and human-induced changes in the climate, and 10 U.S.C. § 8931, et seq., which authorizes NOAA’s participation in the National Oceanographic Partnership Program, whose purpose is to promote the national goals of assuring national security, advancing economic development, protecting quality of life, ensuring environmental stewardship, and strengthening science education and communication through improved knowledge of the ocean.

(3) Section 646 of the Department of Energy Organization Act, codified as amended at 42 U.S.C. § 7256, which provides that 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.

III. PURPOSE

Pursuant to this Agreement, the Parties will undertake a joint effort to enhance coordination, research, and technology development to advance the state of marine carbon dioxide removal (mCDR) science. The Parties seek to avoid duplication and optimally use the skills and expertise that have been developed at each agency, focusing on ocean system science from NOAA and carbon dioxide removal, energy, chemical, biological, and environmental science, and energy expertise from DOE's FECM, SC, and WPTO offices.

The project will include coordinating mCDR research efforts, including expanding our understanding of potential marine ecosystem impacts, understanding of potential impacts on NOAA's stewardship of trust resources, supporting development of NOAA's regulatory process related to mCDR activities, identifying development areas for new mCDR technologies, strategic planning for new mCDR initiatives, undertaking interviews of key DOE and NOAA mCDR stakeholders, and ultimately identifying key clusters and upcoming hotspots of activity in mCDR development including synergies with offshore wind, marine energy, and aquaculture development. Taken together, these activities will ultimately inform future investment and policymaking related to this industry.

This project is necessary and essential to further the missions of DOE and Commerce, in that mCDR may become a major form of operational carbon removal with the potential for other environmental and societal co-benefits. Therefore, the field holds opportunities for innovation and trade not only in carbon removal technologies, but also in basic science advancement, ocean sensing, modeling, and infrastructure development.

IV. MUTUAL INTEREST OF THE PARTIES

Ongoing research and development efforts on mCDR supported by the Parties are already well aligned to effectively characterize mCDR efficacy and the tradeoffs of mCDR approaches, and will provide crucial research, data, and unbiased assessments to effectively build the regulatory structures to ensure responsible deployment of mCDR technologies. The research and development programs funded by DOE in water-power, chemical, biological, and environmental sciences, carbon dioxide removal, energy generation, and carbon storage technologies complement the research agenda implemented by NOAA, including a robust and thorough NOAA CDR strategy that includes mCDR, to guide responsible research on the topic. Moreover, the DOE's Carbon Negative Shot provides a comprehensive coordination mechanism to advance research and development for CDR technologies, including mCDR, to \$100 per net tonne of CO₂e removed by 2032 and beyond.

As leading agencies in ocean, biological, chemical, environmental, and carbon removal sciences, the Parties have an opportunity to collaborate effectively by further strengthening the following mechanisms of coordination for advancing the rapidly developing field of ocean carbon removal and achieving their respective agency missions. The Parties have aligned and coordinated interests in several efforts spanning the White House's Ocean Climate Action Plan (OCAP)¹, ongoing collaboration under the National Oceanographic Partnership Program (NOPP)², and cooperative participation within the Marine Carbon Dioxide Removal Fast Track Action Committee (FTAC)⁴.

V. RESPONSIBILITIES OF THE PARTIES

This memorandum defines four (4) primary mutual responsibilities:

1. The Parties will coordinate and collaborate on efforts relevant to multiple mission areas such as research efforts, technical plans, funding opportunities, technical viability projects, etc.
2. The Parties will accelerate the development of research and development infrastructure to enable mCDR testing (e.g., increase coordination between laboratory scientists on key priorities for testing, enhancing, and facilitating open data management, and coordination of synthesis products to inform international and national policy producing studies that equitably outline national and international feasibility, capacity, and targets for mCDR).
3. The Parties will engage in the development of standard operating procedures for accountable (e.g., utilizing monitoring, measurement, reporting, and verification) and science-based mCDR to inform permitting and regulation, private investment, and carbon credit markets (e.g., convene working groups on priority areas, publish guidance on monitoring reporting and verification, develop spatial tools and permitting resources, and enable research and monitoring on potential impacts and approaches to mitigate the impacts of various mCDR approaches on marine life, protected and endangered species and food security).
4. The Parties may enter into additional agreements to implement the purposes of this MOA. Such implementing agreements (IAs) may include terms and conditions addressing specific cooperation, consistent with the purpose and subject to the general terms of this MOA.

VI. FUNDING AND OTHER RESOURCES

The Parties intend to coordinate their activities under this Agreement with each Party providing funding and other resources for its own activities. There will be no exchange of funds by the Parties for activities carried out under this Agreement. However, subsequent IAs entered into by the Parties, pursuant Article V4., to address specific cooperation under this MOA may provide for the exchange of funds when mutually agreed to by the Parties and authorized by statute and regulation.

VII. INTELLECTUAL PROPERTY

The Parties do not expect the activities carried out under this Agreement to result in the creation of intellectual property. However, in the unusual case where intellectual property is created, the Parties agree to negotiate an appropriate agreement addressing their respective use of, and rights to, such intellectual property.

VIII. THIRD PARTY CLAIMS

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

IX. INFORMATION SHARING

Any data produced as a result of this Agreement shall be managed and controlled by the Party that 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 Parties can select a Party to exercise control over the jointly produced data.

The Parties intend that all data and information produced as a result of this Agreement will be available for use by the Commerce Department, DOE, 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 Party seeking to publish shall inform the other Party of the desire to publish with sufficient time for the Parties to determine a mutually agreeable path forward, including filing a patent application.

X. CONTACTS

The contacts of each Party to this Agreement are:

Roger Aines
Senior Advisor for Carbon Removal
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The Parties agree that if there is a change regarding the information in this section, the Party making the change will notify the other Party in writing of such change.

XI. PERIOD OF AGREEMENT AND MODIFICATION/TERMINATION

This Agreement will become effective when signed by both Parties. The Agreement will terminate five years after the date of last signature but may be amended at any time by mutual consent of the Parties.

Any Party may terminate this Agreement by providing **30** days written notice to the other Party. This Agreement is subject to the availability of funds.

XII. OTHER PROVISIONS

This Agreement does not impose any legally binding obligations upon either Party; it is a tool between the Parties to document a common understanding made in good faith. Nothing in this Agreement prevents either Party from taking steps that it feels are necessary to comply with its legal obligations. This Agreement neither expands nor contracts the legal authorities of either Party or restricts in any way the authority of the Parties to pursue independent efforts under their own authorities (including in the same subject matter). It has no legal effect and is not binding on either of the Parties. Neither the Parties nor any other third person has any private right or cause of action to enforce any of its terms. This Agreement cannot be enforced by anyone in any court of law.

Should disagreement arise on the interpretation of the provisions of this Agreement, or amendments and/or revisions thereto, that cannot be resolved at the operating level, the area(s) of disagreement shall be stated in writing by each Party and presented to the other Party for consideration. If agreement on interpretation is not reached within 30 days, the Parties shall forward the written presentation of the disagreement to respective higher officials for appropriate resolution.

Nothing in this Agreement may be construed to obligate the Parties to any current or future expenditure of resources either in advance of the availability of appropriations from Congress or when funds are available. Each Party is responsible for its own costs in pursuance of the goals of this Agreement, including but not limited to travel and personnel costs. This Agreement does not authorize the transfer of any personnel to work for the other Party.

To the extent one Party wishes to detail or assign their personnel to the other Party in support of this Agreement, such can be done only by a separate agreement. Any endeavor involving reimbursement or contribution of funds between the Parties to the Agreement 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 Parties and shall be independently authorized by appropriate statutory authority.

This Agreement does not create an actual or implied intention, or requirement for either Party to enter into a contract or an assistance agreement (e.g., grant or cooperative agreement).

Under the Inspector General Act of 1978, as amended, 5 U.S.C. Part 1, Chapter 4, a review of this Agreement may be conducted at any time. The Inspector General of the Department of Commerce, or any of his or her duly authorized representatives, and the Inspector General of the

Department of Energy, or any of his or her duly authorized representatives, shall have access to any pertinent books, documents, papers and records of the Parties to this Agreement, whether written, printed, recorded, produced, or reproduced by any mechanical, magnetic or other process or medium, in order to make audits, inspections, excerpts, transcripts, or other examinations as authorized by law.

Nothing herein is intended to conflict with current Commerce or DOE directives. If the terms of this Agreement are inconsistent with existing Commerce or DOE directives, then those portions of this Agreement that are determined to be inconsistent shall be invalid; but the remaining terms and conditions not affected by the inconsistency shall remain in full force and effect. At the first opportunity for review of the Agreement, all necessary changes will be accomplished by either an amendment to this Agreement or by entering into a new Agreement, whichever is deemed expedient to the interest of both Parties.

Any materials or statements offered to inform the public of the nature of the efforts performed under this Agreement, or to promote the existence of these efforts and the Parties, shall only be released to the public upon the mutual agreement of the Parties. To the extent there are any inquiries as to this Agreement or efforts thereunder—through the Freedom of Information Act, a media inquiry, a subpoena or warrant, or any other mechanism—the Parties agree to use best efforts to coordinate with the other Party before responding.

The Parties intend to acknowledge their cooperation in publications resulting from collaborative activities under this Agreement, and in presentation of material in advance of publication. In the event a Party intends to separately publish such information, that Party should (i) seek prepublication review wherein the non-publishing Party shall provide within 30 days any written objections to be considered by the publishing Party; and (ii) provide a courtesy copy of any such publication to the other Party within 30 days of its release.

The data produced under this Agreement 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,” the OSTP August 25, 2022, Memorandum entitled, “Ensuring Free, Immediate, and Equitable Access to Federally Funded 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.”



Dr. Richard Spinrad
Under Secretary of Commerce for Oceans and Atmosphere
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Date: June 5, 2024



Dr. Geraldine Richmond
Under Secretary for Science and Innovation
U.S. Department of Energy
1000 Independence Ave SW, Washington, DC 20585

Date:

June 5, 2024

[¹] Office of Science, Technology, and Policy. (2023). Ocean Climate Action Plan. The White House. Washington, DC. <https://www.whitehouse.gov/ostp/news-updates/2023/03/21/ocean-climate-action-plan/>

[²] Ocean Acidification Program. (2023). Announcing \$24.3m Investment Advancing Marine Carbon Dioxide Removal Research. National Oceanic and Atmospheric Administration. Washington, DC. <https://oceanacidification.noaa.gov/fy23-nopp-mcdr-awards/>

[³] Advanced Research Projects Agency - Energy (2023). Sensing Exports of Anthropogenic Carbon through Ocean Observation. Washington, DC. <https://arpa-e.energy.gov/technologies/programs/sea-co2>

[⁴] The Subcommittee on Ocean Science and Technology National Science and Technology Council. (2023). Charter of the Marine Carbon Dioxide Removal Fast Track Action Committee. Executive Office of the President. Washington, DC. https://www.noaa.gov/sites/default/files/2023-10/mCDR_FTAC_charter_2023_09_19_approved.pdf