

Update on MI Carbon Dioxide Removal (CDR) Mission

Carbon Sequestration Leadership Forum Technical Group
Meeting

December 8, 2021



About the Mission

Goal “100 in 10” – Enable CDR technologies to achieve a net reduction of 100 million metric tons of CO₂ per year globally by 2030.

Scope Technological CDR approaches, including:

- Direct Air Capture (DAC),
- Biomass with carbon removal and storage (BiCRS), and
- Enhanced mineralization.

Emphasis on secure CO₂ storage and conversion into long-lived products.

About the Mission (cont'd)

Coalition

Co-leads:

United States of America, Department of Energy
Kingdom of Saudi Arabia, Ministry of Energy
Canada, Natural Resources Canada

Core Mission Members:

Norway, Gassnova

Mission Support Group:

Australia, national Commonwealth Scientific and Industrial Research
Organization (CSIRO)
European Commission, Directorate-General for Research & Innovation
Japan, Ministry of Economy, Trade and Industry
India, Ministry of Science and Technology (DBT and DST)

About the Mission: Activities

- Activities
1. Methodologies for life cycle analyses (LCAs) and technoeconomic analyses (TEAs)
 2. RD&D for lower TRL CDR technologies
 3. Lessons learned from first-generation CDR projects and business models

Focused on the three technical approaches initially – DAC, BiCRS, Mineralization – can broaden in the future based on progress and interest from MI CDR members

About the Mission: Commitment

Co-Leads and Core Members

Co-leads and core members of the Mission commit to:

- 1) Demonstrating domestic leadership and investment in one or more of the CDR approaches prioritized for this Mission (i.e. DAC, BiCRS, enhanced mineralization, or LCAs/TEAs), either by:
 - a. Funding RD&D projects and activities over the next five years, with a suggested minimum investment of \$5 million/year, OR
 - b. Demonstrating prior investments in CDR RD&D (e.g., continued operation of dedicated test facilities) that can be leveraged to support Mission objectives; AND
- 2) Actively participating in the Mission by:
 - a. Dedicating at least one staff member to facilitate Mission coordination within their respective country;
 - b. Leading or co-leading at least one workstream or function within the Mission;
 - c. Inviting their research community, private industry, academia, and other relevant stakeholders
 - d. Developing collaborative projects with other Mission members; AND
 - e. Developing a roadmap that identifies innovation gaps and an action plan for the Mission

Supporting Members

Supporting members of the Mission commit to:

- 1) Contributing time and/or resources to the development of reports, workshops, and/or collaborative RD&D projects; AND
- 2) Inviting stakeholders to participate in Mission activities.

MI CDR Mission Launch at COP26



U.S. Secretary of Energy Jennifer Granholm



Fatih Birol
Executive Director, IEA



Saudi Arabia Chief Negotiator for UNFCCC Khalid Abuleif



Canadian Minister of Environment Jonathan Wilkinson

Next Steps for the CDR Mission

Next Steps:

- Develop a roadmap and action plan
- Co-design projects with members and partners

We are looking for partners to:

- Jointly fund R&D for next-generation CDR technologies
- Jointly fund demonstration projects
- Share lessons learned from first-generation CDR projects and business models
- Advance LCAs and TEAs for CDR technologies

Looking Ahead: Mission Innovation 7



U.S. SELECTS
PITTSBURGH

to host

**The Clean Energy and
Mission Innovation Ministerials**
SEPTEMBER 2022



CEM13/MI.7
USA 2022

U.S. DEPARTMENT OF
ENERGY

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Carbon Dioxide Removal Mission:

<http://mission-innovation.net/missions/carbon-dioxide-removal/>