

Reactive Carbon Capture Project Review Meeting

National Renewable Energy Laboratory
Golden, CO

January 17-18th, 2024

IBRF Building: Room 246B Aspen Conference Room

Wednesday, January 17th

- 8:00 – 8:45 AM** **Check-in and registration**
- 8:45 – 9:00 AM** **Meeting Objectives and Deliverables**
Dan Hancu (DOE-Fossil Energy and Carbon Management [FECM])
- 9:00 – 9:30 AM** **State of the Knowledge: Reactive Capture Overview, Challenges, Opportunities**
Joshua Schaidle (National Renewable Energy Laboratory [NREL])
- 9:30 – 10:45 AM** **Overview Reactive Capture Activities across DOE**
Moderator: Ron Munson (National Energy Technology Laboratory [NETL])
- 9:30 – 9:45 AM FECM Activities
Dan Hancu (DOE-FECM)
- 9:45 – 10:00 AM Advanced Research Projects Agency-Energy Activities
Jack Lewnard
- 10:00 – 10:15 AM Industrial Efficiency & Decarbonization Office Activities
Paul Majsztrik
- 10:15 – 10:35 AM Q & A
- 10:35 – 11:00 AM** **Refreshment Break**
- 11:00 – 12:15 PM** **Current DOE Projects on Reactive Capture Part 1**
Moderator: Andrew Jones (NETL)
1. Integrated Capture and Conversion of CO₂ into Materials: Pathways for Producing CO-Negative Building Composites (FWP-78606) and Expanding IC₃M for C₁ and C₂ Production (FWP-80562).
David Heldebrant (Pacific Northwest National Laboratory)
 2. A Pressure-Swing Process for Reactive CO₂ Capture and Conversion to Methanol through Precise Control of Co-Located Active Sites in Dual Functional Materials (FWP-FY21-RCC-LAB-CALL).
Anh To (NREL)

3. Porous Catalytic Polymers for Simultaneous CO₂ Capture and Conversion to Value-added Chemicals (FWP-FEAA421-FY22).
Michelle K. Kidder (Oak Ridge National Laboratory)
4. A Novel Molten Salt System for CO Based Oxidative Dehydrogenation with Integrated Carbon Capture (FE0031918).
Fanxing Li (North Carolina State University)
5. Circularizing Industries by Raising Carbon Efficiency (ARPA-E ECOSynBio program).
Marika Ziesack (Circe Bioscience)

12:15 – 1:15 PM Lunch

1:15 - 1:45 PM Industry Talk Reactive Capture Technology - Reactive capture of CO₂ for renewable methane production
Raghubir Gupta (Susteon)

1:45 – 2:45 PM Panel 1: Commercialization of Reactive Capture Technology - Small Business Innovation Research (SBIR) program updates
Moderator: Dylan Leary (NETL)
Sravanth Gadikota (Carbon to Stone), Anna Douglas (SkyNano), Wei Lu (MoleculeWorks), Rouzbeh Savary (C-crete)

2:45 – 3:00 PM Refreshment Break

3:00 – 3:30 PM Industry Talk Reactive Capture Technology, Title TBD
David Hazlebeck (Global Algae)

3:30 – 4:30 PM Panel 2: Enabling Technology - Laboratory Scale Activities to Advance Reactive Capture
Moderator: Sara Hamilton (DOE)
Curtis Berlinguette (University of British Columbia), Surya Prakash (University Southern California), Greeshma Gadikota (Cornell University), Douglas Kauffmann (NETL)

Thursday, January 18th

8:00 – 8:30 AM **Check-in and registration**

8:30 – 9:30 AM **Current DOE Projects on Reactive Capture Part 2**

Moderator: Joseph Stoffa (NETL)

1. Center for Closing the Carbon Cycle (4C) Energy Frontier Research Center.
Chris Hahn (Lawrence Livermore National Laboratory), Jenny Yang (UC Irvine)
2. Direct Air Reactive Capture and Conversion for Utility-Scale Energy Storage (FWP-FEW0277).
Matthew Yung (NREL)
3. Integrating CO₂-Selective Polymer Layers and Electrocatalytic Conversion (FWP-1022482).
Douglas Kauffman (NETL)
4. Bioenergy Production Based on an Engineered Mixotrophic Consortium for Enhanced CO₂ Fixation (ARPA-E ECOSynBio program),
Hyeongmin Seo (University of Delaware)

9:30 – 10:20 AM **Panel 3: Reactive Capture in Industry - Opportunities for Reactive Capture Integration with Direct Air Capture and Point Source Capture**

Moderator: Lynn Brickett (KeyLogic)

Todd Wilke (Carbon Engineering), Josh Wicks (Twelve), and Gaurav Sant (CarbonBuilt)

10:20 – 10:30 AM **Breakout Room Introduction and Ground Rules**

Ron Munson (National Energy Technology Laboratory)

10:30 – 10:45 AM **Refreshment Break and Organize into Breakout Rooms**

10:45 – 12:45 PM **Breakout Rooms Discussion**

12:45 – 1:00 PM **Concluding Remarks**

1:00 PM **Lunch and Adjourn**

2:00 – 3:30 PM **Tour of NREL Facilities (Optional, 30 slots)**