



CO₂ Freight Transport Workshop:

October 12, 2022

Ronald Reagan Building and International Trade Center
1300 Pennsylvania Ave NW
Washington, DC 20004
and via Zoom

CO₂ Freight Transport Workshop:

The purpose of this workshop is to (1) introduce new initiatives that are focused on expanding carbon capture, utilization, and storage (CCUS) deployment, (2) provide stakeholders the opportunity to discuss current activities regarding the transportation of CO₂ and (3) to discuss issues and opportunities that might impact the capacity of the various modes of freight transportation to provide cost effective service as the demand to transport anthropogenic CO₂ increases due to recent legislation. Shared information will be used to inform the development of a report to Congress that has been requested on the subject. The legislative text for this request can be found in House Report 117-98 and Senate Report 117-36:

As industrial deployment of CCUS technology expands, the demand for the transportation of captured carbon oxides is anticipated to increase significantly. In preparation to meet this demand, the Department, in collaboration with the Department of Transportation, is directed to review existing freight transportation infrastructure and the capacity of the various modes of freight transportation to provide cost-effective service. The Department is directed to provide to the Committee not later than 180 days after enactment of this Act a report of the findings of the review. This report should ensure that anticipated short- and long-term freight transportation demand associated with the expanded industrial deployment of CCUS technology is met. Additionally, the report should include analysis of locations where CCUS projects are likely to be located and where carbon sequestration or utilization is likely to occur and the unique aspects of those areas for freight transportation infrastructure. Finally, in conducting this review, the Department shall consult with stakeholders, including representatives from the various modes of freight transportation.

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| 7:00 – 8:00 am | Registration Open |
| 8:00 – 8:05 am | Welcome and Workshop Overview |
| 8:05 – 8:15 am | Introductory Remarks – US Department of Energy
Brad Crabtree, Assistant Secretary of Fossil Energy and Carbon Management, DOE |
| 8:15 – 8:25 am | Introductory Remarks – US Department of Transportation
Robert Starin, Chief of Data, Risk and Analytics,
DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) |

Session 1	Alex Krowka, USEA
8:25 – 8:40 am	<p>DOE FECM Program Specifics & Setting the Stage <i>Overview on projected increase in CO2 transport demand across transportation modes in near and longer term</i></p> <p>Speaker: Sarah Leung, Carbon Transport Program Manager, US DOE</p> <ul style="list-style-type: none"> • Legislative funding incentives (BIL, IRA) • Other incentives (45Q, 45V, etc.)
8:40 – 9:10 am	<p>DOT overview: Relevant programs and new initiatives <i>Summarize statistics for CO2 transported today and activities related to CCUS/CDR across DOT Operating Administrations.</i></p> <p>Speaker: Mark Maday, Staff Director, Office of Railroad Systems and Technology, DOT Federal Railroad Administration (15 minutes)</p> <p>Speaker: Michael Carter, Associate Administrator for Environment and Compliance, DOT MARAD (15 minutes)</p>
9:10 – 9:40 am	Discussion
9:40 – 9:45 am	Break
Session 2	Moderator: Robert Starin, US DOT
9:45 – 10:30 am	<p>Status of CO2 freight transport and discussion of industry needs and initiatives <i>Industry Trade Groups and Standards, Certification and Verification organizations (20 minutes each)</i></p> <ul style="list-style-type: none"> • Rail – American Association of Railroads Theresa Romanosky, Assistant General Counsel, AAR • Ships / Barges – American Bureau of Shipping Rich Delpizzo, Director, ABS Global Government
10:30 – 10:45 am	<p>CIFIA Overview — US DOE Loan Programs Office (LPO) Ramsey Fahs, Senior Consultant, DOE LPO</p>
10:45 – 11:30 am	General Discussion from Morning Session
11:30 – 1:00 pm	Lunch (On your own)
Session 3	Erin Billeri, Global CCS Institute
	A Look Forward – Demand Growth and Advances in Technology relevant to CO2 Freight Transportation
1:00 – 2:00 pm	<p>Industry Trends based on Current Projections for Growth in Demand</p> <ul style="list-style-type: none"> • CCUS and CDR modeling studies impacting projected growth in gaseous/liquid CO2 movement (20 minutes)

Jose Benitez, Director - Systems, Economic and Environmental Analysis, US DOE FECM

- CCUS and CDR modeling studies identifying technology and infrastructure opportunities (20 minutes)

Matt Fry, Senior Policy Manager – Carbon Management, Great Plains Institute

- Discussion (20 minutes)

2:00 – 3:00 pm

Industry Perspective and Concerns – Roundtable (3-5 industry attendees will be asked to initiate the discussion with brief comments on their choice of issues or gaps. The Moderator will then open the discussion to all attendees to respond or suggest important topics for consideration.)

Examples:

- Technology gaps
- Design requirements
- Multimodal opportunities to reduce costs or rapidly increase capacity
- Monitoring of CO₂ across the value chain
- Cost-effective service
- Infrastructure needs
- Access and equity considerations
- Resiliency considerations

3:00 – 3:15 pm

Afternoon Break

Session 4

Sarah Leung, US DOE

3:15 – 4:00 pm

Regional Opportunities and Challenges in Early Scale Up of Carbon Dioxide Transport (20 minutes each)

- Multi-modal Freight Planning – DOT Overview
Ryan Endorf, Economist, DOT OST
- Overview of Probable Market Regions – State Perspective
Eugene Holubnyak, Director of Hydrogen Energy Research, School of Energy Resources, University of Wyoming

4:00 – 5:00 pm

All: Key Observations and Future Actions

Opportunity to open the dialogue in-person and virtually to comment on collective key observations and future actions required.

5:00 – 5:15 pm

DOE: Final Thoughts or Questions