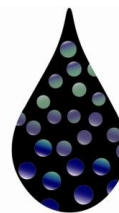


Overview

1. Background on NEORI and federal campaign for carbon capture incentives
2. Background and status of 45Q legislation
3. Status of other federal policy proposals
4. Looking ahead to a new Administration and Congress

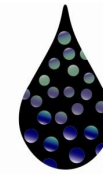
Background on NEORI



National Enhanced Oil Recovery Initiative

- National Enhanced Oil Recovery Initiative launched in 2011.
- Unprecedented coalition that includes nation's largest coal, oil, ethanol, industrial and technology companies, key industrial labor unions, and national environmental and energy policy organizations in support of incentives for industrial and power plant carbon capture deployment.
- Convened by Great Plains Institute and Center for Climate & Energy Solutions.
- Currently part of even broader national campaign to enact legislation to extend, reform and strengthen the federal Section 45Q tax credit.

NEORI's Industry, Labor, and Environmental Membership Reflects Unprecedented, Broad-Based Support for CO₂-EOR



**National Enhanced
Oil Recovery Initiative**

Coal

- Arch Coal
- Cloud Peak
- Peabody Energy

Electric Power

- Great River Energy
- NRG Energy
- Summit Power Group
- Tenaska Energy

Oil and Gas

- Occidental Petroleum Corporation

Ethanol

- Archer Daniels Midland
- Conestoga Energy Partners, LLC

Industrial Suppliers of CO₂/Technology Vendors

- Air Products
- Alstom
- GE Oil & Gas
- Jupiter Oxygen
- LI-COR Biosciences
- Linde
- Praxair

- EBR Development, LLC
- Lake Charles Methanol

Environmental and Energy NGOs

- Clean Air Task Force
- Coal Blue
- Energy Innovation & Reform Project
- Global Carbon Capture & Storage Institute
- Jackson Hole Center for Global Affairs
- Natural Resources Defense Council
- Wyoming Outdoor Council

Labor

- AFL-CIO
- International Brotherhood of Boilermakers
- SMART Transportation Division
- United Mine Workers of America
- Utility Workers Union of America

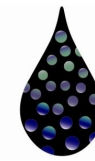
Academic/Research Institutions

- Enhanced Oil Recovery Institute (University of WY)

Observers

- Chaparral Energy
- Core Energy
- Mitsubishi Heavy Industries of America, Inc.
- Tellus Operating Group
- Interstate Oil and Gas Compact Commission

NEORI's Endorsed Package of Federal Incentives to Drive Commercial Capture of CO₂ for Use in EOR



National Enhanced
Oil Recovery Initiative



Key Goal:

- Reduce economic barriers to commercial deployment of industrial and power plant carbon capture projects.

Package Provisions:

- Various incentives and policies can address different economic needs of a capture project:

Expand and reform existing
Sec 45 federal tax credit

Authorize private activity
bonds (PABs) for CO₂
capture projects

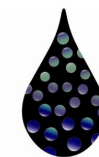
Authorize master limited
partnerships for CO₂ capture
projects

NEORI and Partners Have Assembled Broader Coalition to Advance Federal Incentives



- NEORI participants plus other partners, including Coal Utilization Research Council, Southern Company, Third Way and others.
- Legislative and communications work groups meet weekly to develop, coordinate and implement campaign strategy.
- Coalition has:
 - Helped Rep. Mike Conaway (R-TX) and Sen. Heidi Heitkamp (D-ND) craft bipartisan legislation;
 - Undertaken intensive recruitment of co-sponsors;
 - Submitted joint letters to Senate Finance and House Ways & Means requesting passage of 45Q; and
 - Orchestrated ongoing advocacy and communications efforts on Capitol Hill.

Current Coalition Priority: Extend, Reform and Expand Existing Section 45Q Tax Credit for CO₂ Storage



National Enhanced
Oil Recovery Initiative

Key reform elements:

- **Increase financial certainty** for carbon capture project investors by eliminating the existing cap on credits (current credit about to run out).
- **Increase the credit value** to close the gap between the cost of carbon capture and revenue from the sale of CO₂ for EOR.
- **Expand industrial sector participation** by lowering tonnage threshold for eligibility of carbon capture projects.
- **Enhance flexibility** in utilization of the tax credit to allow for multiple business models, including participation of tax-exempt electric cooperatives, municipal utilities and other project developers.

45Q Legislation Introduced in 2016



HR 4622 Carbon Capture Act	The
<ul style="list-style-type: none"> • Introduced by Rep. Mike Conaway (R-TX) in February. • 47 co-sponsors, 32 Republicans and 15 Democrats, from 26 states • Specifications <ul style="list-style-type: none"> • Removes existing 75,000,000-ton cap on pool of available credits • Ramps up credit to \$30 over 10 years and eliminates two credit system for EOR and saline storage • Reduces 500,000-ton eligibility threshold to 150,000 tons • Includes transferability of credit from capturer of CO₂ to the EOR operator • Makes 45Q permanent • \$2.9 billion cost over 10 years 	

Senate Amendment to the Reauthorization	FAA
<ul style="list-style-type: none"> • Introduced this spring by bipartisan group of Senators led by Sens. Heidi Heitkamp (D-ND) and Shelley Moore Capito (R-WV) • 5 R and 3 D co-sponsors • Specifications <ul style="list-style-type: none"> • Keeps existing 45Q threshold in place for current projects • Credit increases to \$30 and eliminates two credit system • Reduces eligibility threshold to 100,000 for industrial facilities, while retaining 500,000 threshold for power sector capture projects • Includes more robust and flexible transferability to help cooperatives, municipal utilities and other project developers utilize credit • Authorizes programs for projects that commence construction within 5 years • Credit can be claimed for 10 years once placed in service • \$1.4 billion cost over 10 years 	

S. 3179 Carbon Capture and Storage Act	The
<ul style="list-style-type: none"> • Introduced by Sens. Heidi Heitkamp (D-ND), Sheldon Whitehouse (D-RI) and Shelley Moore Capito (R-WV) • 8 GOP and 12 Democratic co-sponsors • Specifications <ul style="list-style-type: none"> • Keeps existing 45Q threshold in place for current projects • Credit for EOR storage increases to \$35 and \$50 for saline storage • Reduces 500,000-ton eligibility threshold to 100,000 for industrial facilities; retains 500,000-ton threshold for electric generating units • Includes enhanced transferability that was incorporated in FAA amendment • Authorizes program for projects that commence construction within 7 years (2 years more than FAA) • Credit can be claimed for 12 yrs once placed in service (2 yrs more than FAA) • Provides eligibility for forms of CO₂ utilization beyond EOR (algae biomass, alternative fuels and products) 	

Going into Year-End Congressional Negotiations, Bipartisan Support for 45Q Unparalleled for Energy Legislation of Its Kind



- One-fifth of Senate supports S. 3179 introduced by Sen. Heidi Heitkamp (D-ND), including GOP Senate Majority Leader Mitch McConnell, Energy Committee Chair Lisa Murkowski, and Assistant Democratic Leader Dick Durbin:
 - GOP co-sponsors: Capito (WV), Blunt (MO), McConnell (KY), Barrasso (WY), Murkowski (AK), Portman (OH), Kirk (IL), and Graham (SC)
 - Democratic co-sponsors: Whitehouse (RI), Tester (MT), Schatz (HI), Booker (NJ), Kaine (VA), Casey (PA), Klobuchar (MN), Durbin (IL), Franken (MN), Brown (OH), and Warner (VA)
- Over 10 percent of House has co-sponsored Rep. Mike Conaway's (R-TX) H.R. 4622: 47 co-sponsors spanning political spectrum from the Freedom Caucus to Congressional Black Caucus (32 Rs and 15 Ds, from 26 states).
- **Status:** 45Q remains in play in year-end congressional negotiations, but it is unclear whether it will be included in the final legislative package.

Other Incentives and Their Status:

Private Activity Bond Legislation

- In late 2015, Senators Rob Portman (R-OH) and Michael Bennet (D-CO) introduced legislation to amend the IRS Code to make carbon capture facilities eligible for tax-exempt private activity bonds (PABs).
- PABs would lower project financing costs and complement a strengthened and extended 45Q tax credit.
- The bill's low fiscal score of \$126 million over ten years makes it attractive supplement to 45Q.
- **Status:** Legislation is not expected to pass Congress this year.

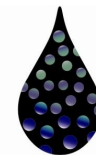
Master Limited Partnerships Parity Act

- In 2015 Senators Chris Coons (D-DE) Jerry Moran (R-KS) re-introduced the bipartisan S. 1656 to make renewable energy and carbon capture projects eligible for MLP status.
- The legislation would provide carbon capture projects the tax advantage of a partnership combined with a corporation's ability to raise capital on private equity markets.
- **Status:** The MLP bill is not expected move in the final week of this Congress.

Congressional Efforts to Authorize DOE Price Stabilization Authority

- Sec. 3404 of the Senate energy bill (S. 2012) directs DOE to study and report on costs and benefits of federal contracting authority for price stabilization.
- Introduced by Sens. Heitkamp (D-ND) and Capito (R-WV) and cosponsored by Sens Manchin (D-WV), Booker (D-NJ), Whitehouse (D-RI), Tester (D-MT), Blunt (R-MO), Franken (D-MN), Donnelly (D-IN), Barrasso (R-WY), Coats (R-IN), and Enzi (R-WY).
- A price stabilization program would contractually establish a target price for oil based on federal government price projections in order to eliminate investment risk in carbon capture projects due to oil price volatility. If the oil price falls below the target, a capture project would receive federal support to make up the difference; conversely, if oil prices exceed the target, the project would pay into the federal treasury. Such a program could be designed to be revenue neutral.
- **Status:** At latest report, House Republicans have stripped carbon capture-related provisions from the energy bill, which originated in the Senate.

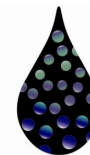
Looking Ahead to a New Administration and New Congress



National Enhanced
Oil Recovery Initiative

- If 45Q passes, shift focus to state and regional deployment of carbon capture and pipeline projects to take advantage of the federal credit while it is available.
- If 45Q does not pass, explore how to proceed in a new Congress and in the context of broader tax reform.
- Regardless of 45Q outcome, devote more attention to other complementary incentive measures such as tax-exempt private-activity bonds and a federal price stabilization program.

Looking Ahead: Incorporating CO₂ Pipelines into a National Infrastructure Agenda



National Enhanced
Oil Recovery Initiative

- **Elevate development of regional hub-and-spoke CO₂ pipeline networks as a federal policy priority** to de-risk carbon capture projects, reduce development and financing costs (especially smaller industrial carbon capture projects), and provide operational benefits offered by an integrated pipeline system linking multiple CO₂ sources and EOR operations. Current efforts underway:
 - Working to persuade incoming Trump Administration to incorporate CO₂ pipelines as key component of its broader national infrastructure agenda.
 - Developing proposal for “supersizing” CO₂ pipelines when building pipelines into regions not adequately served by existing infrastructure.
 - Federal role for financing extra pipeline capacity up front (beyond what is privately contracted by initial customers) to accommodate future growth in capture projects and EOR operations without building new pipelines.
 - Would capitalize on the fact that doubling the diameter of a CO₂ pipeline can increase future capacity four to five-fold at only 10-20 percent increase in total installed costs.

Personal Concluding Thoughts

- Market forces and cultural changes are rapidly narrowing the window of opportunity to realize the full energy, economic and climate potential of CO₂-EOR.
- Oil industry more broadly needs to step up and engage on the need for federal incentives before it is too late to accomplish significant deployment.
- First priority must be to persuade the new Administration and the majority in Congress that financial incentives and a level playing field for carbon capture is urgent—even in an era of tax fundamental tax reform.

Thank You

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