



**Western Interstate
Energy Board**

Financial Incentives and Investment Efforts

NARUC-WIEB Carbon Capture,
Utilization, and Storage Workshop

FRIDAY, SEPT. 25, 2020 | 1 – 2 PM ET

SPEAKERS

- **Shannon Angielski**, Executive Director, Carbon Utilization Research Council
- **Michael Nasi**, Partner, Jackson Walker LLP



Western Interstate
Energy Board

FEDERAL UPDATE, 45Q AND CCUS PROJECT FINANCING

NARUC-WIEB CCUS Workshop - #3 in a 6-Part Webinar Series

Financial Incentives and Investment Efforts

September 25, 2020

Shannon Angielski, Executive Director, CURC

Carbon Utilization Research Council (CURC) Members

Equipment Suppliers

General Electric

Mitsubishi Heavy Industries America,
Inc. (MHIA)

Labor Unions

International Brotherhood of Boilermakers
International Brotherhood of Electrical
Workers

Producers

Consol Energy
Lignite Energy Council
Peabody Energy

Technology Developers

Bloom Energy
Bright Energy
ION Engineering
Jupiter Oxygen Corporation
NET Power

Research Organizations

Battelle
Electric Power Research Institute
(EPRI)
Gas Technology Institute
University of North Dakota Energy &
Environmental Research Center

State Organizations

Kansas State Geological Survey
Southern States Energy Board
Wyoming Infrastructure Authority

Trade Associations

American Coal Council
American Coalition for Clean Coal
Electricity (ACCCE)
Edison Electric Institute (EEI)
National Rural Electric Cooperative
Association (NRECA)

NGOs

ClearPath Action
EnergyBlue Project

Universities

Lehigh University
Ohio State University
Pennsylvania State University
Southern Illinois University
University of Illinois/PRI
University of Kentucky/CAER
University of Texas – Austin
University of Wyoming
West Virginia University

Utilities

Basin Electric Power Cooperative
Duke Energy Services
Great River Energy
Nebraska Public Power District
Southern Company
Tri-State Generation &
Transmission Association

Orange = Steering Committee
Members

UNIQUE MISSION

With a global focus on reducing emissions from fossil fuel utilization, CURC's nonpartisan, technology-driven mission ensures the long-term value of fossil energy resources in an increasingly carbon-constrained world.



CONSENSUS DRIVEN & TECHNICALLY INFORMED

CURC brings technology developers and end users together. Our recommendations represent the consensus of our membership, including cutting-edge technical experts from a diverse set of interests in power generation.



SKILLED FACILITATORS

CURC is an established facilitator and trusted authority on advanced fossil energy technologies. We maintain productive working relationships with Members of Congress and the Department of Energy, and these entities turn to CURC for the most recent, fact-driven expertise and recommendations on federal policies affecting technology.



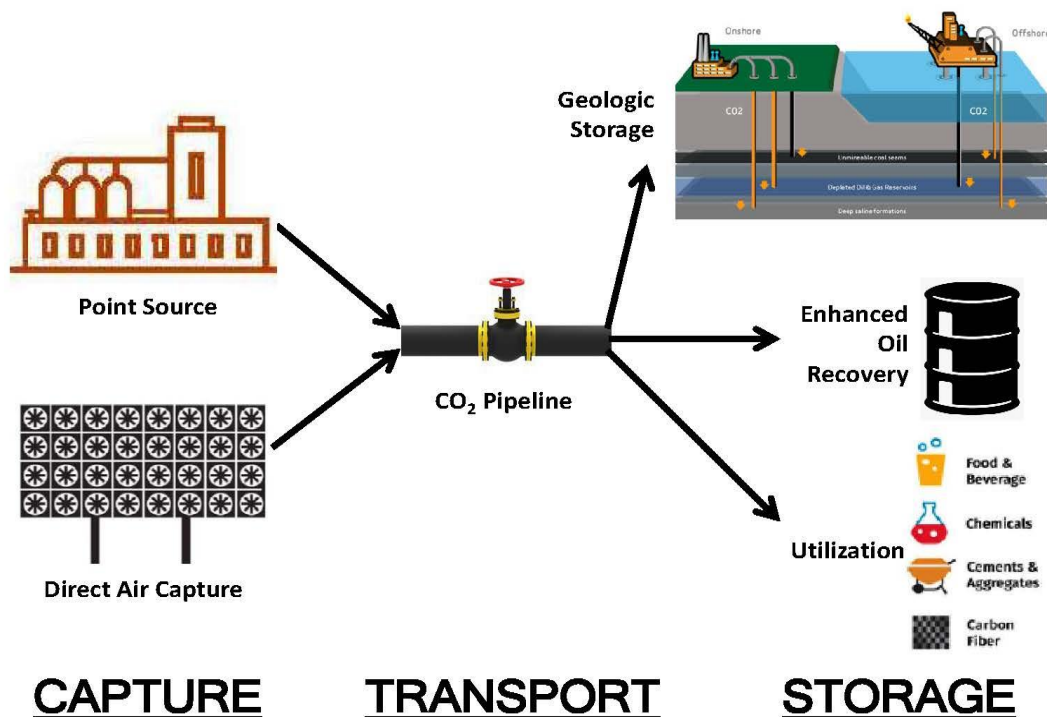
PIONEERING RESEARCH & GLOBAL COLLABORATION

CURC collaborates with world-class U.S. and international research organizations, and has been a driving force behind the crafting and passage of federal legislation, creating financial incentives for fossil fuel technology development and Funding for research programs at the U.S. Department of Energy.



FEDERAL INITIATIVES IN SUPPORT OF CCUS:

- Authorizations for Federal RD&D Programs and DOE funding
- Infrastructure support for each component of CCUS ecosystem
- Tax incentives for CCUS deployment (entire ecosystem investment)

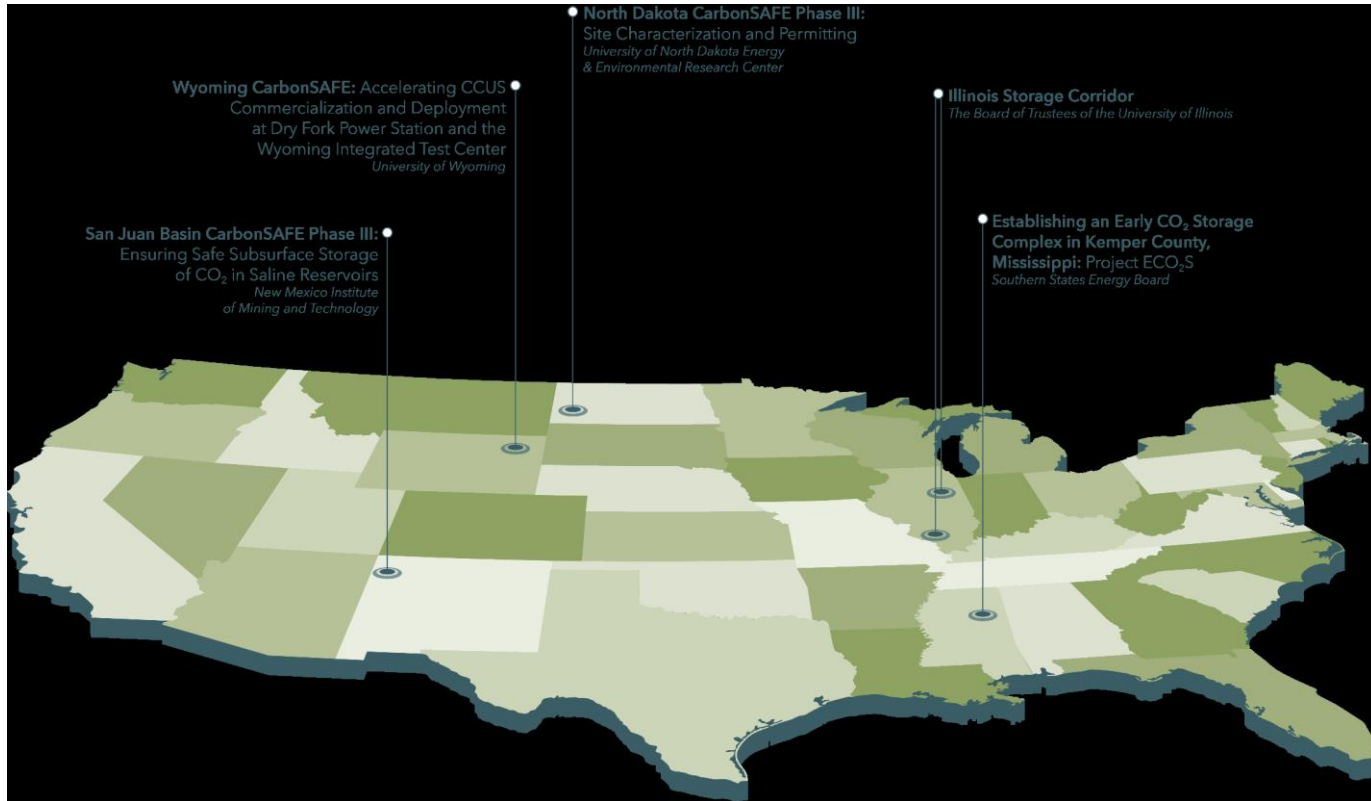


FY 2021 Appropriations for DOE Programs

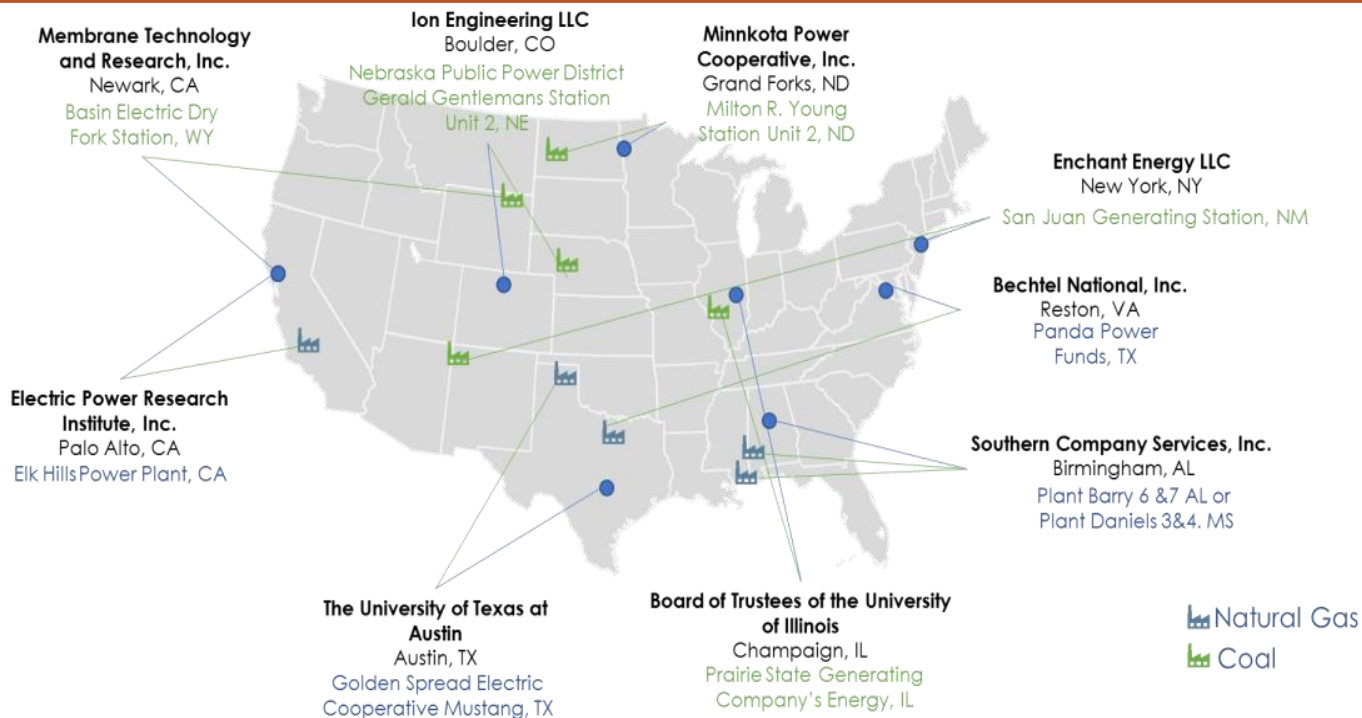
- \$1.25 billion in emergency infrastructure spending for Fossil Energy, including \$750 million for CCUS-related efforts
- Senate is yet to process FY 2021 Appropriations bills in Committee

Coal CCS & Power Systems (All Figures in \$ Thousands)	FY 19 Enacted	FY 20 enacted	FY 21 House Passed
Carbon Capture	100,671	117,800	135,500
Carbon Storage: CarbonSAFE, RCSPs	98,096	100,000	125,000
Advanced Energy Systems	129,683	120,000	80,000
Crosscutting Research	56,350	56,000	60,500
Supercritical CO2 Technology (STEP) Program	22,430	16,000	20,000
Transformation Pilot Plan Solicitation	25,000	20,000	10,000
FEED Study Solicitations	30,000	0	15,000
COAL CCS & Power Systems Subtotal	486,230	490,800	446,000

CarbonSAFE Phase III Projects



DOE-Funded FEED Studies



Fossil Energy RD&D Legislation

- ***Enhancing Fossil Fuel Energy Carbon Technology (EFFECT) Act (S. 1201)***
 - Senators Manchin (D-WV) & Murkowski (R-AK) → 8 bipartisan cosponsors
 - Included in comprehensive Senate Energy bill (S. 2302), the - American Energy Innovation Act
- ***Fossil Energy Research and Development Act (H.R. 3607)***
 - Reps. Marc Veasey (D-TX) & David Schweikert (R-AZ) → 7 bipartisan cosponsors
- ***Both bills would authorize new RD&D programs for CCUS:***
 - Large-scale pilots and commercial demos
 - Support for Front-End Engineering and Design (FEED) studies
 - Robust RD&D programs for Carbon Storage, Carbon Utilization, and Carbon Removal
- ***Clean Industrial Technology Act (S. 2300 / H.R. 3978)***
 - Sen. Sheldon Whitehouse (D-RI) & Rep. Sean Casten (D-IL)
 - Creates industrial decarbonization RD&D program, which includes carbon capture to address industrial emissions

House Energy & Climate Legislation

- ***Moving FORWARD Act (H.R. 2)***
 - Passed by House Democrats in July and considered to be their comprehensive climate policy and includes a clean energy standard for the electricity sector
 - In addition to 45Q modifications, the bill authorizes \$15 billion in federal funding for CCUS and DAC commercial demonstration projects, FEED studies, large-scale carbon storage projects
- ***Clean Economy Jobs and Innovation Act (H.R. 4447)***
 - Includes H.R. 3607, the FE R&D bill provisions
 - Adds provisions from H.R. 2, including \$11 billion for in federal funding for CCUS and DAC commercial demonstration projects, large-scale carbon storage projects
 - No tax provisions included

CO₂ Infrastructure Legislation

- ***Utilizing Significant Emissions with Innovative Technologies (“USE IT”) Act (S. 383 / H.R. 1166)***
 - S. 383, Sens. John Barrasso (R-WY) and Sheldon Whitehouse (D-RI) → 16 bipartisan cosponsors
 - H.R. 1166, Reps. Scott Peters (D-CA) and David McKinley (R-WV) → 57 bipartisan cosponsors
 - Authorizes EPA to support carbon utilization and direct air capture research
 - Clarifies eligibility for CCUS projects and CO₂ pipelines for FAST Act permitting review
 - Included in 2020 Senate Defense Reauthorization bill
- ***Investing in Energy Systems for the Transport of CO₂ Act of 2019 (H.R. 4905)***
 - Introduced by Rep. Cheri Bustos (D-IL)
 - Establishes a minimum of a 10-year waiver of ad valorem and property taxes
 - Provides low-interest loans to finance up to 80% of project costs, with total program authorization of \$500 million

Federal Tax Legislation

- ***Carbon Capture Modernization Act*** (S. 407 /H.R. 1796)
 - Sen. John Hoeven (R-ND), Sen. Tina Smith (D-MN)
 - Rep. David McKinley (R-WV), Rep. Colin Peterson (D-MN)
 - Modifies existing investment tax credits for carbon capture on coal plants
- ***Financing Our Future Energy Act*** (S. 1841 / H.R. 3249)
 - Sen. Chris Coons (D-DE) & Rep. Mike Thompson (D-CA)
 - Expands definition of Master Limited Partnerships to include income and gains from certain energy projects including CCUS
- ***Carbon Capture Improvement Act*** (S. 1763 / H.R. 3861)
 - Sen. Michael Bennet (D-CO) & Rep. Tim Burchett (R-TN)
 - Authorizes issuance of tax-exempt facility bonds for financing of CCUS facilities

Section 48A Tax Credit Legislation

- The Section 48A investment tax credit or “Credit for Investment in Clean Coal facilities” established in the Energy Tax Incentives Act (ETIA) of 2005.
- In 2008, Congress expanded the credit through the Energy Improvement and Extension Act (EIEA)
- Disconnect between original 2005 credit and 2008 revision
 - CCS projects on a new or existing plant cannot technically improve their efficiency; adding CO₂ capture reduces the efficiency of a new or existing plant
 - The Section 48A tax credit has not incentivized CCS on new non-IGCC or any existing coal plants.

FUTURE ACT of 2018:

45Q Carbon Sequestration Tax Credits

- Functions like a production tax credit, with a \$/ton value for CO₂ or CO_x captured and stored - *creates certainty for financial investment*
- Makes credit available through January 1, 2024 (commence construction) - *creates certainty for financial investment*
- Credit claiming period is 12 years
- Increases credit values over a 10 year escalation period to:
 - \$35/ton for Enhanced Oil Recovery (EOR)
 - \$50/ton for Geologic Storage
 - \$35/ton for CO₂ or CO_x Captured and Utilized (CO₂ conversion and not emitted)
- Direct air capture an eligible technology - **New**
- Can assign tax credit to other entities involved in the project - *helps to fully monetize the tax credits within the project*
- Modifies eligibility criteria:
 - Shifts from industrial emitter to CO₂ capture equipment owner - *helps to fully monetize the tax credits within the project*
 - CO₂ Thresholds
 - Maintains 500,000 tons of CO₂ for EGUs
 - 100,000 tons for industrial emitters
 - 25,000 tons for pilot projects in which the CO₂ is stored in a utilization project

Helps to
Reduce the
Cost of
Carbon
Capture
projects

Pending 45Q Legislation

- ***Carbon Capture and Sequestration Extension Act of 2019 (H.R. 5156)***
 - Rep. Terri Sewell (D-AL)
 - Extends commence construction date of Section 45Q tax credit by one year
- ***Redeeming Effectiveness to Carbon Oxide Utilization Plus Sequestration of Act of 2020 (H.R. 7986)***
 - Jack Bergman (R-MI) and Lizzie Fletcher (D-TX)
 - Allows taxpayers to claim tax credit in the form of a cash payment, but would be discounted by 10%
- ***Moving FORWARD Act of 2020 (H.R. 2)***
 - House Democratic climate bill that:
 - Extends the commence construction date by two years (12/31/2025); and
 - Allows taxpayers to claim tax credit in the form of a cash payment, but would be discounted by 15%

Tax Equity, Direct Pay, and 45Q

- Many owners of energy development projects do not have tax liability to monetize the tax credits and need to enter into tax equity partnerships to create a revenue stream to the owner of the credit in return for tax equity investment in the partnership.
- Tax equity investors typically take on a significant portion of the tax credit value in return for equity investment.
- Implementing a direct pay mechanism would enhance monetization of the 45Q tax credits for CCUS project developers by allowing project owners to receive a cash payment from the Treasury instead of a tax credit.

COVID-19 Impacts

- COVID-19 pandemic may reduce tax liability of project developers as well as investors over the next several years
- Investor concerns over supply chain disruptions and delays
- There is precedent for providing a mechanism similar to direct pay for energy projects from the Recovery Act in 2009, which provided a grant in lieu of a tax credit, but these grants were provided only for renewable energy projects.

2020 Federal Legislative Outlook

- Action on CCUS legislation possible with House and Senate energy bills
- Infrastructure or energy-related legislation unlikely following the election, but not impossible:
 - Direct Pay for Section 45Q Tax Credit
 - Extension of commence construction date for 45Q
 - Funding for CCUS commercial demonstration and large-scale carbon storage projects (included in House energy innovation bill)

Thank You

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Overview of State CCUS Incentives

NARUC CCUS Workshop

September 25, 2020

Mike Nasi, Partner, Jackson Walker LLP,
General Counsel,



Clean Carbon Technology
FOUNDATION OF TEXAS



Overview of State CCUS Incentives

A. FINANCIAL

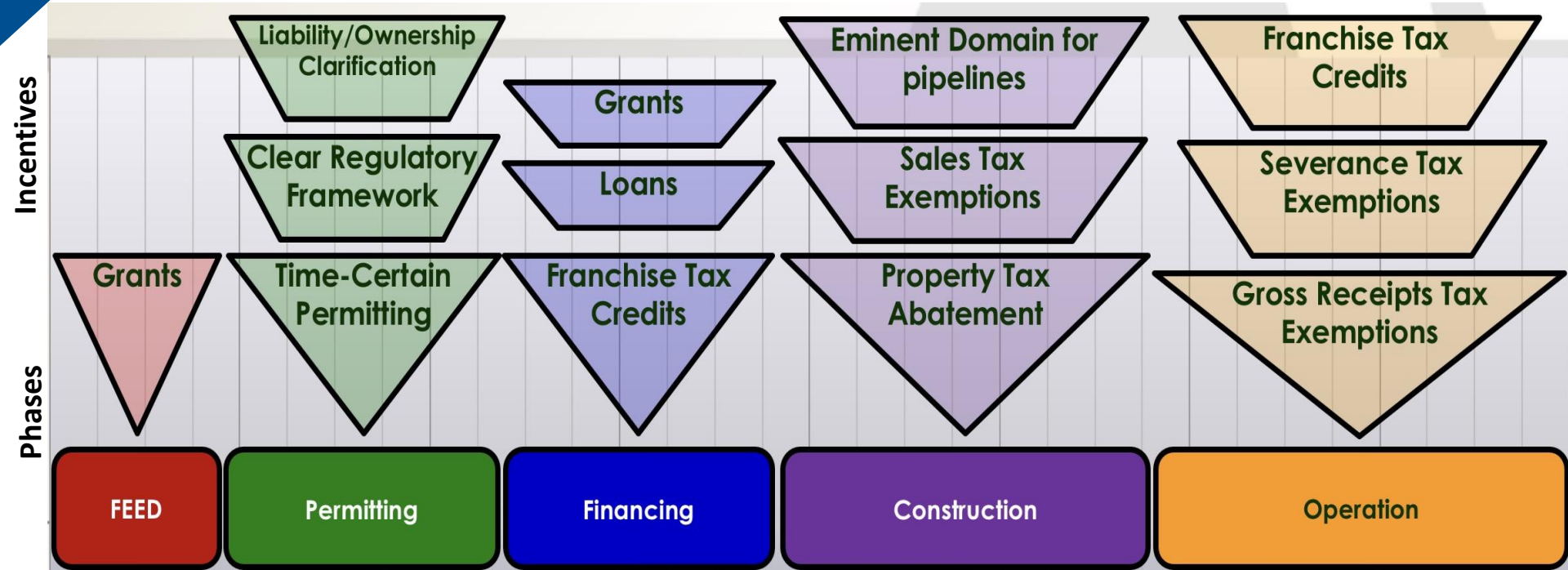
1. Local Property Taxes (*Exemptions/Abatements/Increments*)
2. State Tax Exemptions & Credits (*Sales/Income/Severance*)

B. REGULATORY

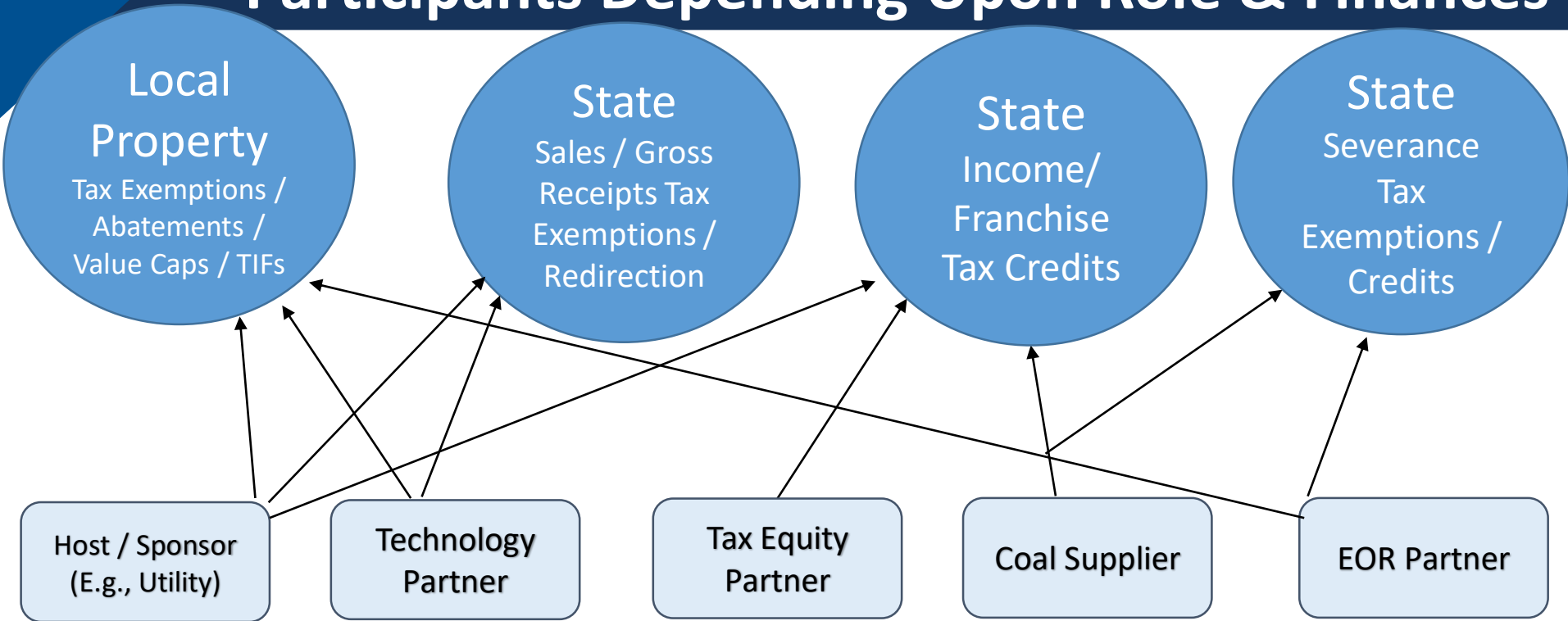
1. Environmental Regulatory Certainty (*Air/UIC/Waste*)
2. Oil & Gas Regulatory Certainty (*UIC/Unitization*)
3. Utility Regulatory Certainty (*Regulated/Deregulated*)



Incentives Play a Key Role at Various Points Along a Project Development Timeline to Make Project Viable



Value Proposition of Incentives Varies Across Participants Depending Upon Role & Finances



Local Property Tax Exemptions / Abatements / Value Caps / Increment Financing

- Significant economic value here (\$80-200MM+ per plant)
- Clarify that CCUS-EOR network qualifies as tax-exempt under existing programs (“pollution control property”)
- If non-exempt, facilitate abatements of, value caps on, and/or increment financing of local property taxes
- Locally-controlled and relatively state budget-proof



State Sales & Gross Receipts Tax Exemptions

Sales Tax Exemption

- Clarify sales tax-exempt status of carbon capture, transportation & injection equipment relating to anthropogenic “emission” source

Gross Receipts Tax Exemption/Redirection

- Permanent exemption from (*or redirection of*) gross receipts & similar taxes



State Sales & Gross Receipts Tax Exemptions

Corporate Income / Franchise Tax Credit Programs

- New & retrofit projects meeting defined “gatekeeper” emission criteria (% CO2, PM, SO2, Nox, etc...)
- Ensure it can be monetized (*multi-year & assignable*)
- Fuel & technology neutral so natural gas and pre and post-combustion carbon capture projects are covered

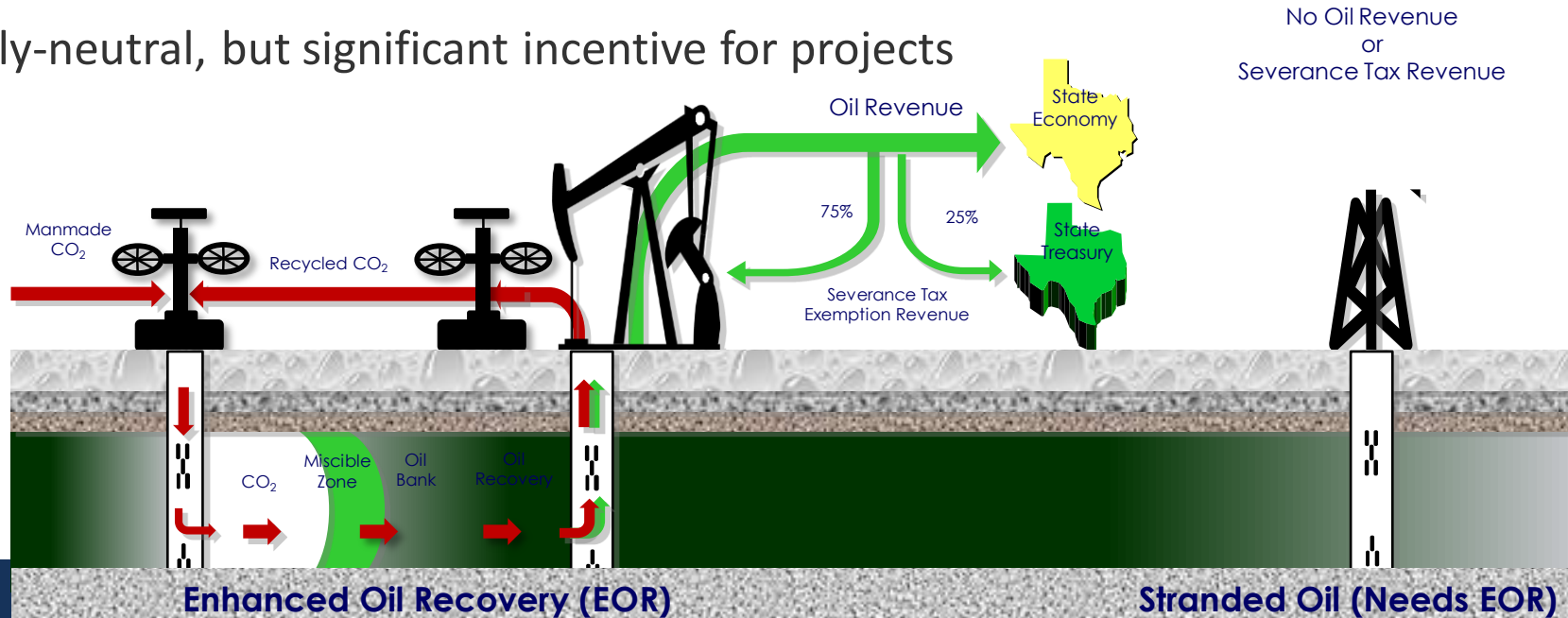
Severance Tax Exemptions (*or redirection/credits*)

- Coal
- Oil & Gas



CASE STUDY RE: Severance Tax for oil recovered using CO2 captured from a manmade source

- 75% tax exemption for oil recovered using EOR through the use of captured man-made CO₂
- Ensure that duration meets project needs (TX – 30 yrs)
- Fiscally-neutral, but significant incentive for projects



Regulatory Incentives -Environmental

Time-Certain Air Permitting

- Cap time & refine public participation process for Air & UIC permitting

Underground Injection and Control (UIC) - Multi-state effort to allow, but not mandate, Documented sequestration as part of Class 2 permit

- Class VI issues can also be accommodated, but Class 2 preference

Regulatory treatment of CO₂ in the EOR Context-

- NOT a “waste” or “pollutant” (sold and used as a product)
- Relevance to air, water, & waste programs



Utility Regulatory Incentives – Regulated Market Examples

WY HF 159 (Stick)

- “Good faith offer for sale” as prerequisite to retirement

WY HF 200 (Carrots and Sticks)

- Mandatory CCUS evaluation in IRPs
- CCUS Portfolio Standard - compliance as prerequisite to accelerated depreciation for coal plant retirement and/or cost recovery for replacement power
- Innovative Ratemaking to (1) enable IOUs to “earn” outside of rate-base and (2) allow large loads to aggregate behind the meter



Utility Regulatory Incentives – Deregulated Market Ideas

- Capacity payments
- Dispatch priority
- CCUS as part of “clean energy” portfolio standards
- Require renewables to secure firming/balancing power to cover intermittence (CCUS or batteries)
- Given that most rural cooperatives are not “regulated,” how to develop carrots for them without full regulation?





QUESTIONS?

Overview of State Incentives for CCUS

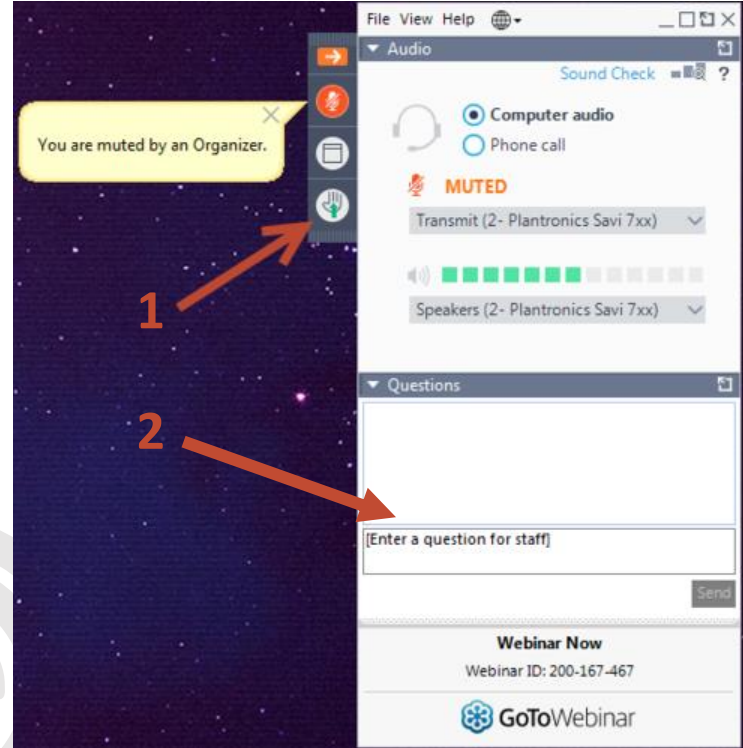
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QUESTIONS

Submit questions two ways:

1. Raise your hand and the moderator will call on you to unmute your line
2. Type a question into the question box



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NARUC-WIEB CCUS WORKSHOP SCHEDULE

1. Sept. 11: The Case for Carbon Capture, Utilization, and Storage
2. Sept. 18: Breaking It Down: CCUS Technologies
- 3. Sept. 25: Financial Incentives and Investment Efforts**
4. Oct. 2: Project Update Part I: Domestic CCUS Development Efforts
5. Oct. 9: Project Update Part II: International CCUS Development Efforts
6. Oct. 16: Regulatory Considerations and Policy Recommendations

[Full Agenda](#) | [Registration](#)

All webinars are held from 1:00 – 2:00 pm ET



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UPCOMING NARUC EVENTS

Innovation Webinars

- Oct 22, 3-4PM (ET): [Emerging Possibilities for Bulk Energy Storage](#)
- Nov 19, 3-4PM (ET): [Where the Wind Blows: Offshore Wind Outlook for State Regulators](#)

NARUC Annual Meeting – Nov 5-6 and 9-11

- Registration open
- <https://www.naruc.org/meetings-and-events/naruc-annual-meetings/2020-annual-meeting/>



UPCOMING WIEB EVENTS

Save-the-Dates

Fall 2020 JOINT CREPC-WIRAB MEETING Webinar Series

Fridays: October 23, October 30, November 6, and November 13, 2020

11:00 – 12:30 PM (MT) / 10:00 – 11:30 AM (PT)

You are invited to join us on Fridays this October and November for the Fall 2020 Joint CREPC-WIRAB Meeting Webinar Series, where western electric utility policymakers and regulators, industry experts, consumer advocates, and other stakeholders will explore and discuss current and emerging electricity trends, challenges, and opportunities for the Western Interconnection.

<https://westernenergyboard.org/>

Joint CREPC-WIRAB Meetings are conducted by the Committee on Regional Electric Power Cooperation (CREPC)—a joint committee of the Western Interstate Energy Board and the Western Conference of Public Service Commissioners—and the Western Interconnection Regional Advisory Body (WIRAB).



THANK YOU

Join us for the next webinar in the
NARUC-WIEB CCUS Workshop

Friday, Oct 2 | 1:00 – 2:00 pm ET

[Project Update Part I: Domestic CCUS
Development Efforts](#)

- William Swetra, Senior Policy Analyst,
Oxy Low Carbon Ventures
- Lee Beck, CCUS Policy Innovation
Director, Clean Air Task Force



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