



Western Tribal Carbon Management Strategies Forum

May 2024



U.S. DEPARTMENT OF
ENERGY

Fossil Energy and
Carbon Management

Suggested Topics for Conversation...

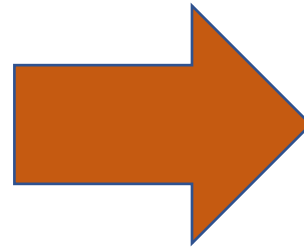
- Tribal Energy Sovereignty
- Bipartisan Infrastructure Law Funding and 45Q Tax Credit Enhancements
- CO₂ Geologic Storage Opportunities
- CarbonSAFE Phased Approach and Technical Assistance Available
- EPA Primacy Update
- Class VI Primacy Grants
- Funding/Financing Opportunities for Repurposing Energy Assets Set to Retire
- Critical Minerals



BIL Funding is Critical for Shaping the Carbon Management Industry

>\$12B Over Five Years

Grants
Loans
Credits

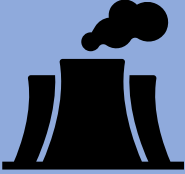
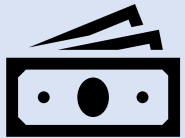



Expected Development

- 6+ carbon capture demonstration projects and several new small-scale pilots
- 4+ direct air capture hubs
- 100+ new dedicated CO₂ storage wells
- New CO₂ pipelines and transportation networks (~10,000 miles moving 10Ms tons CO₂/yr)



45Q Will Be A Key Business Driver Moving Forward

	Significant Price Incentives	<ul style="list-style-type: none">• Saline Storage Credits<ul style="list-style-type: none">○ \$85/metric ton (industry and power)○ \$180/metric ton (direct air capture)• EOR/Conversion Credits<ul style="list-style-type: none">○ \$60/metric ton (industry and power)○ \$130/metric ton (direct air capture)
	Easier to Finance on Credit Value	<ul style="list-style-type: none">• Reduced facility size thresholds – enables more industrial and small emitters to participate• Direct + transferability of credits should make more investible
	More Time	<ul style="list-style-type: none">• 10 year commence construction window• 12 year of credit window• Uptake might be slow, but once first of a kind projects de-risked, industry uptake could be on the order of 10Ms-100Ms tons/year



Potential 45Q Opportunities

The figure on the right highlights...

- The facilities by industry across Tribal nations that could potentially qualify for the 45Q tax credit,
- The geologic formations available across Tribal nations for safe and permanent storage of CO₂ emissions captured from industry, and
- The potential capturable CO₂ emissions of industrial facilities and power plants in western Tribal nations that could potentially qualify for the 45Q tax credit.

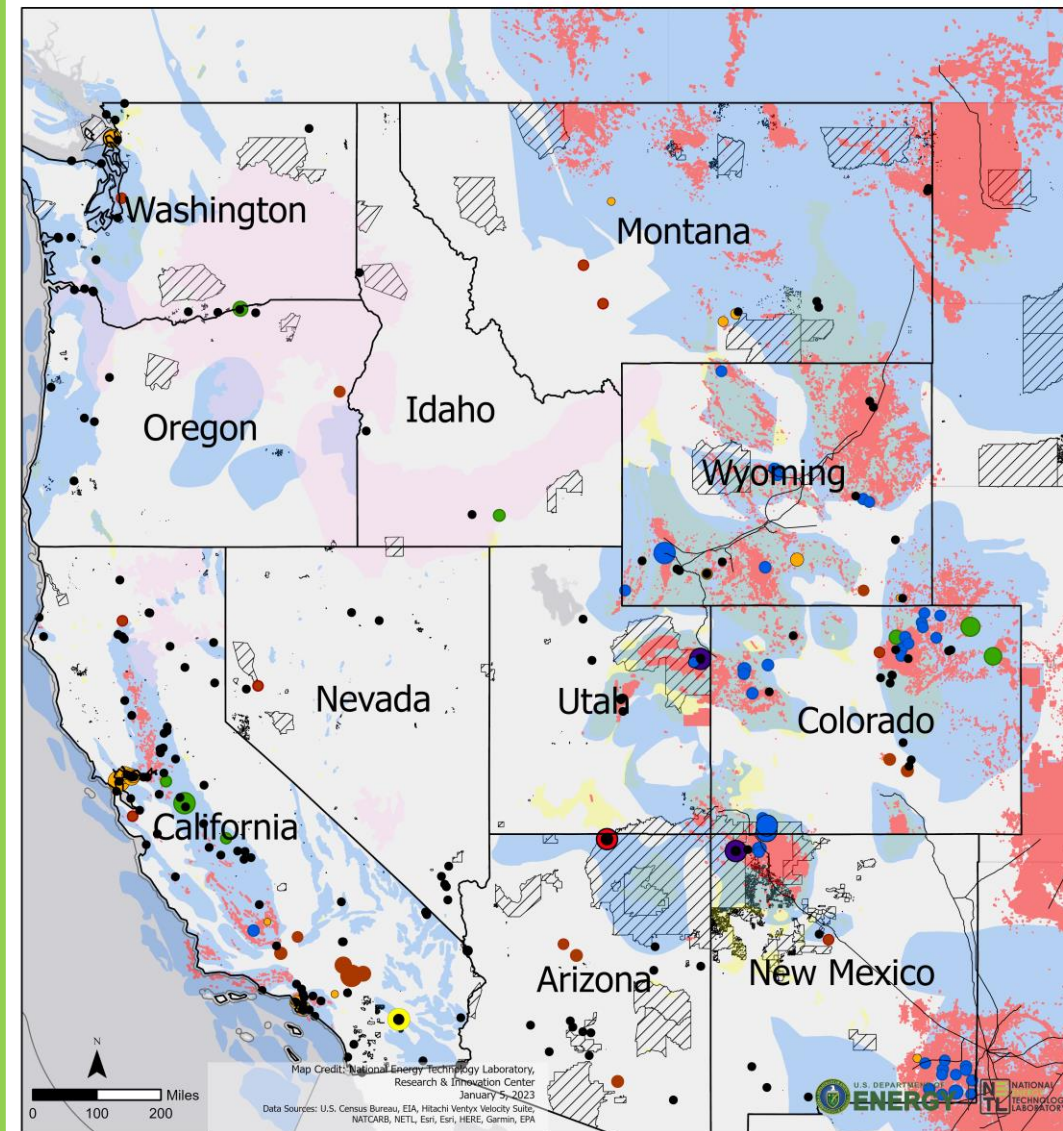
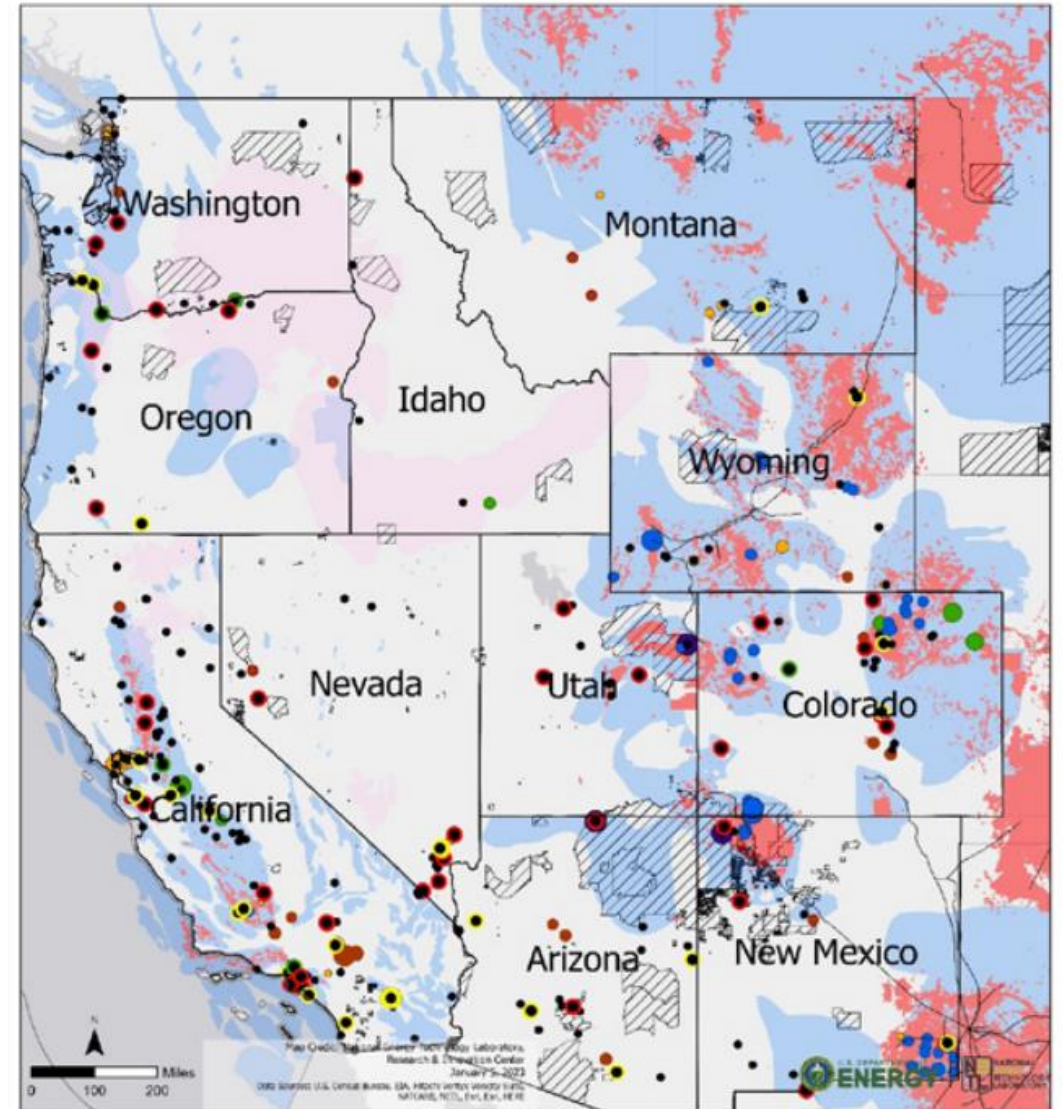
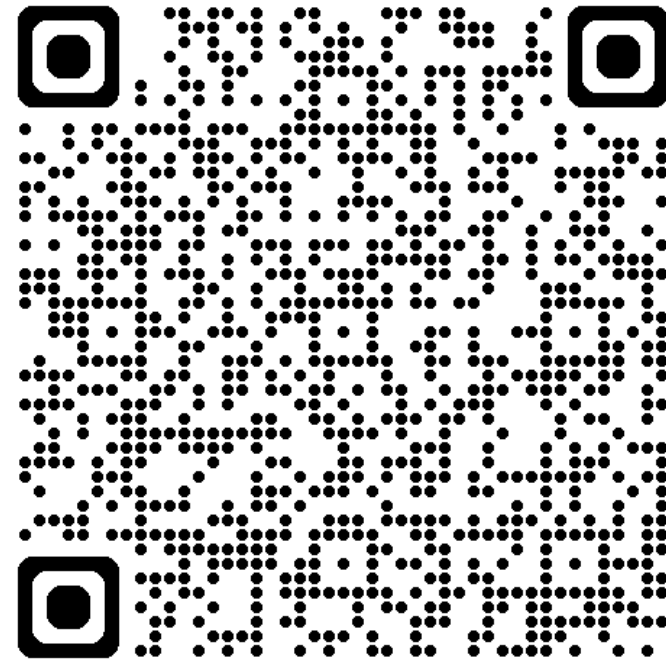


Figure 1: The sites outlined here could potentially qualify for the section 45Q tax credit



**Access the “IRA and Carbon Management Opportunities Fact Sheet” via this QR code →*



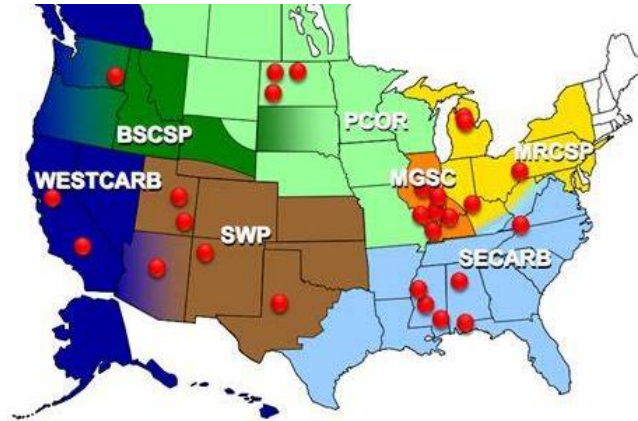


Building on 20 years of CO₂ Storage Experience

Characterization



Small-scale Projects



Large-scale Projects



Carbon Storage Assurance Facility Enterprise (SAFE)

2003

2008

2013

2018

2023

CarbonSAFE 2017-Present

Large-scale Projects 2008-2021

Small-scale Projects 2005-2013

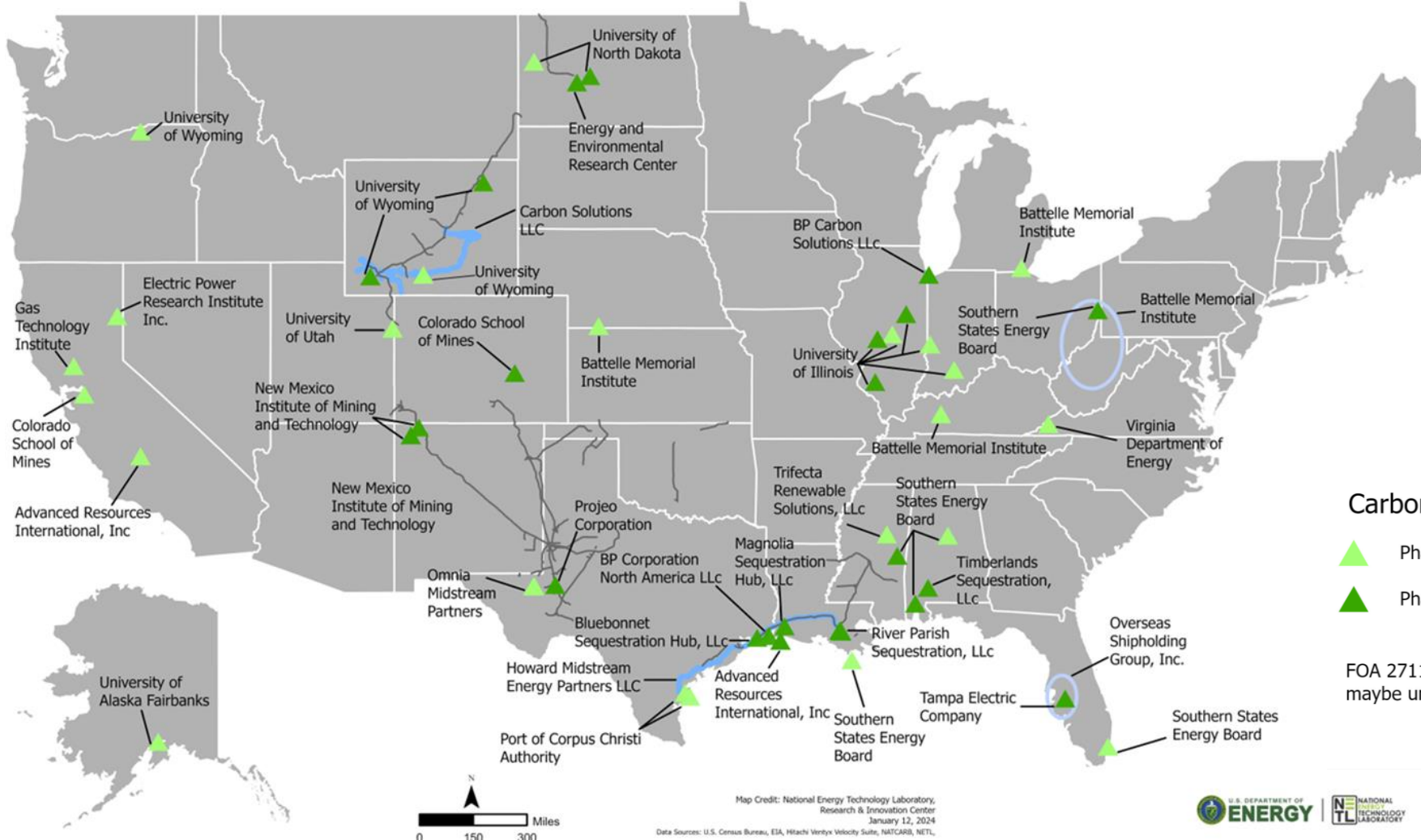
Characterization



Fossil Energy and Carbon Management



CarbonSAFE Projects Throughout the U.S.



**BIL 40305—Storage
Validation and Testing**

**\$2.25 billion over 5 years
for 50 MMT Hubs and
Large-Scale Storage**

**To date, \$686 million in
BIL selections announced**

Legend

CarbonSAFE

- Phase II
- Phase III

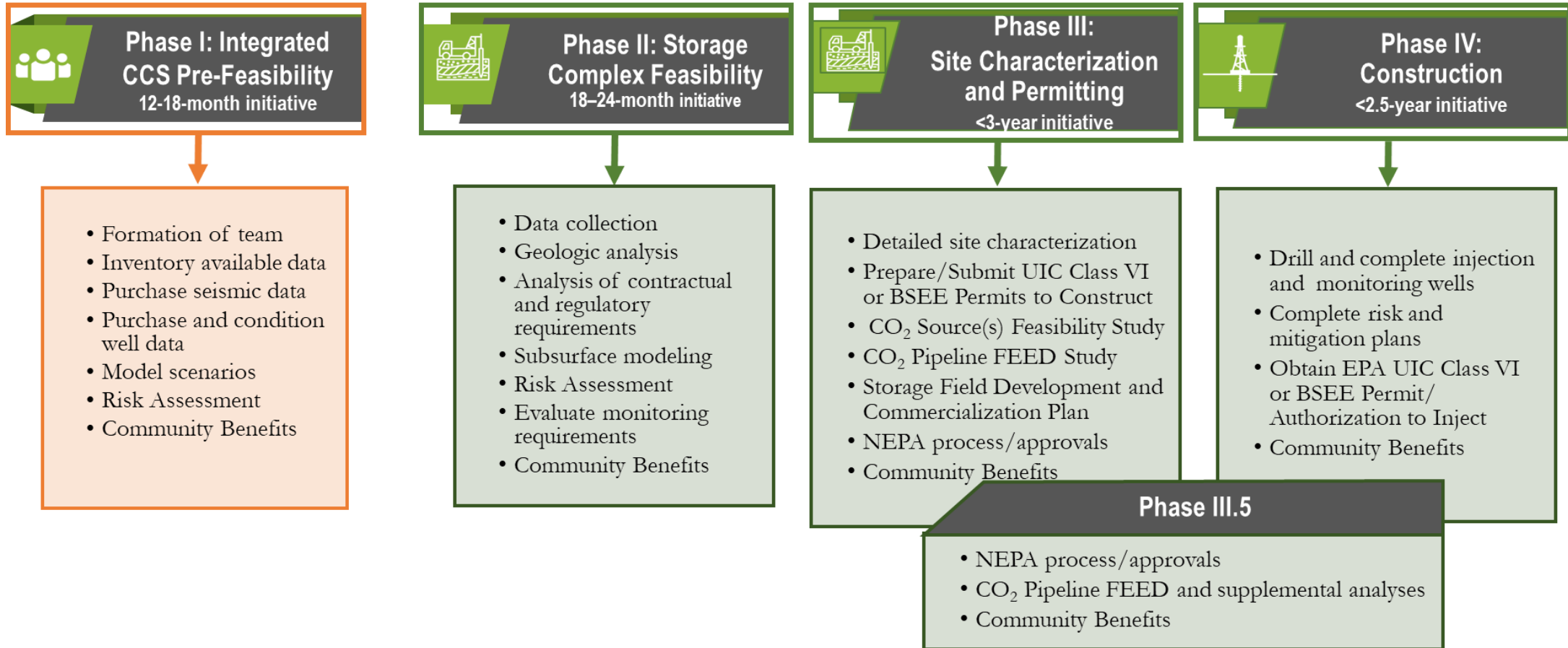
Transport

- Existing CO2 Pipeline
- 2730 FEED Pipeline
- 2614 Pre-FEED Intermodal Hub

FOA 2711 projects that have been selected and maybe under negotiations

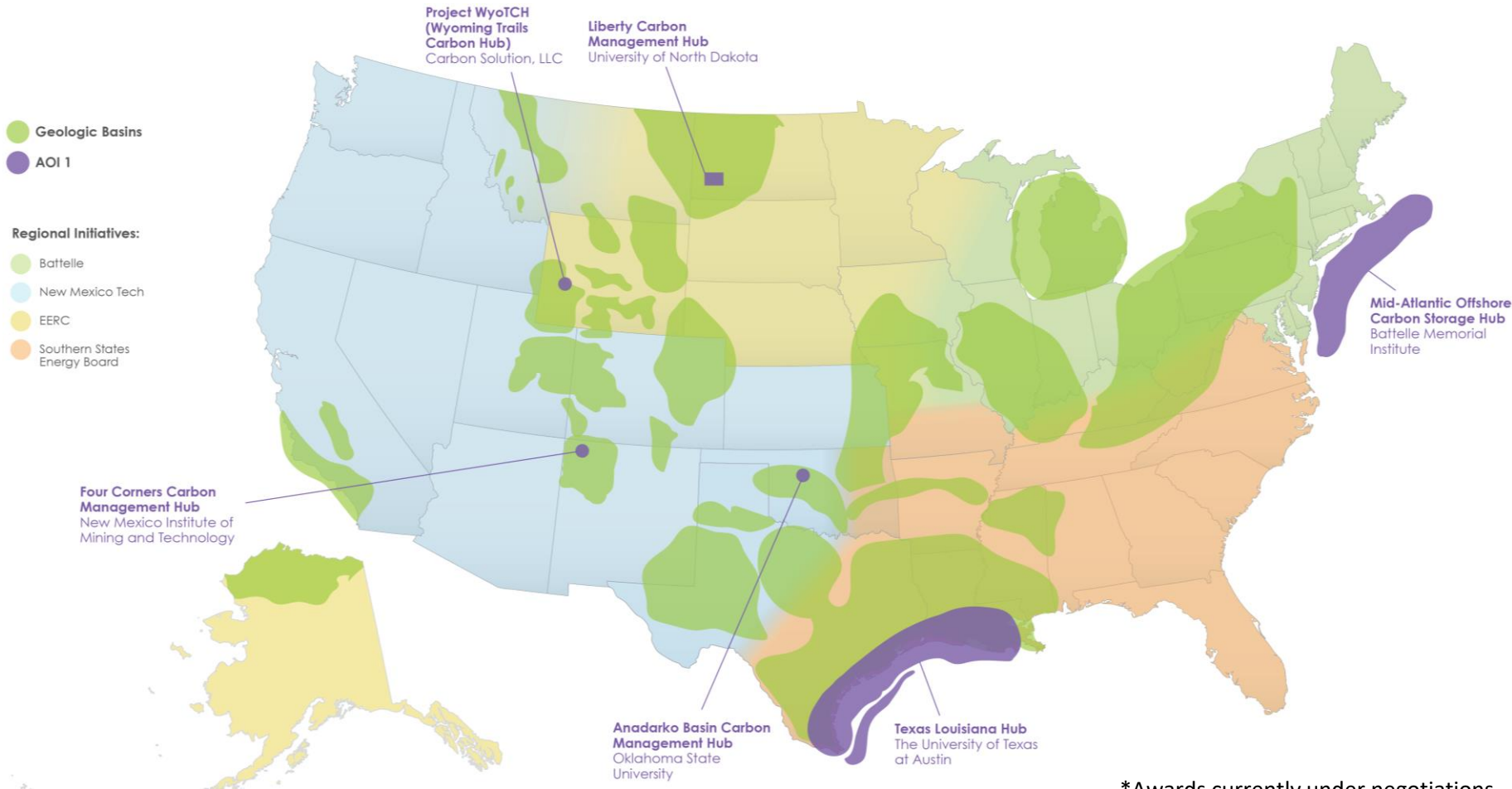


Methodical Approach to Developing Storage Infrastructure—CarbonSAFE



Six New Regional Initiative Projects – selected July 2023*

Place-based Technical Assistance & **Public Engagement** for Permanent Storage of CO₂ at Large-Scale Storage Facilities and Regional Carbon Management Hubs










For Technical Assistance Please Contact...

- Four Corners – Robert (Bob) Balch at robert.balch@nmt.edu
- Project WyoTCH – Erin Middleton at erin.middleton@carbonsolutionsllc.com
- EERC – Kevin Connors at kconnors@undeerc.org

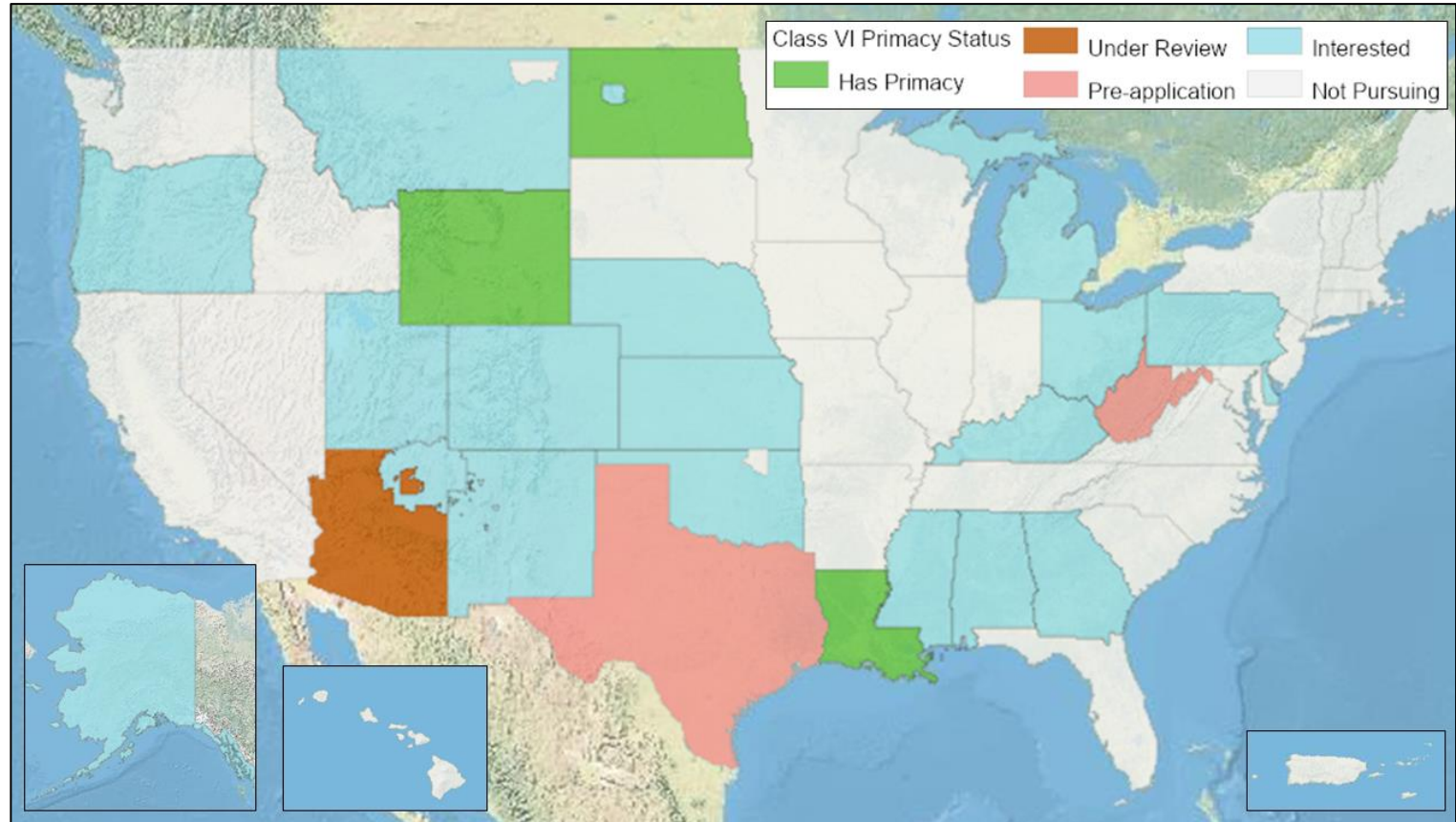
*Awards currently under negotiations

UIC Class VI Primacy Process

-  SDWA section 1422 establishes requirements for states and Tribes seeking the EPA's approval of their UIC programs. We refer to this as primary enforcement responsibility or "primacy."
-  An applicant seeking primacy under SDWA section 1422 for a Class VI program must demonstrate to the EPA that the applicant's Class VI program meets federal requirements to protect USDWs, including jurisdiction over underground injection and provisions for the necessary civil and criminal enforcement remedies under SDWA.
-  EPA's UIC Program developed operating procedures to streamline the review and approval process and to facilitate transparency and consistency in primacy and program revision evaluations and approvals. These procedures divide EPA's responsibilities and interactions with states, territories, and tribes into four general phases:
 -  Phase I: pre-application activities
 -  Phase II: completeness review and determination
 -  Phase III: application evaluation
 -  Phase IV: rulemaking and codification

UIC Class VI Primacy

- North Dakota, Wyoming, and Louisiana have Class VI primacy
- Application for Arizona is under review
- EPA expects to receive two additional Class VI primacy applications this year



Class VI Primacy Grant

The EPA has announced \$48,250,000 in Bipartisan Infrastructure Law funding for States and Tribes to develop and implement Class VI Programs.

- Grant program [announced](#) November 2, 2023.
- 25 states and Tribes submitted Letters of Intent to the EPA to participate in the grant program (AK, AL, AZ, CO, DE, GA, KS, KY, LA, MHA Nation, MI, MS, MT, Navajo Nation, ND, NE, NM, OH, OK, OR, PA, TX, UT, WV, WY).
- The funds have been allocated evenly among these states and Tribes, with each receiving an allotment of \$1,930,000.
- This is a one-time release of funding, with no match requirements. States and Tribes are encouraged to apply with work plans of up to five years.
- EPA is requiring states and Tribes to integrate environmental justice planning and controls, such as those described in an August 17, 2023 document titled [Environmental Justice Guidance for UIC Class VI Permitting and Primacy](#), into their processes as a threshold requirement to receive funding under this grant program.
- More information can be found in the [Class VI Grant Implementation Document](#) and [Class VI Grant Fact Sheet](#).
- For additional guidance, contact EPA POC Colin Dyroff at dyroff.colin@epa.gov.

Capacity Building for Repurposing Energy Assets Initiative

Capacity Building for Repurposing Energy Assets Initiative

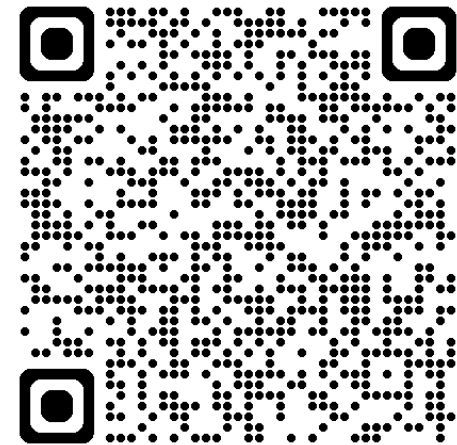
Provides funding for local government, **Tribal colleges and universities**, and non-profit organizations representing communities to create a roadmap toward repurposing energy assets slated for retirement.

Includes workforce development support for repurposing energy assets.

Project Spotlight From Jan. 2024 Selections

The City of Beulah, Department of Economic Development will partner with North Dakota's Building Trades Unions, the **Nueta Hidatsa Sahnish College**, and Talon Metals to implement a program to recruit, train, and place Native Americans in union jobs in the construction industry and operations such as the Talon Metals processing facility.

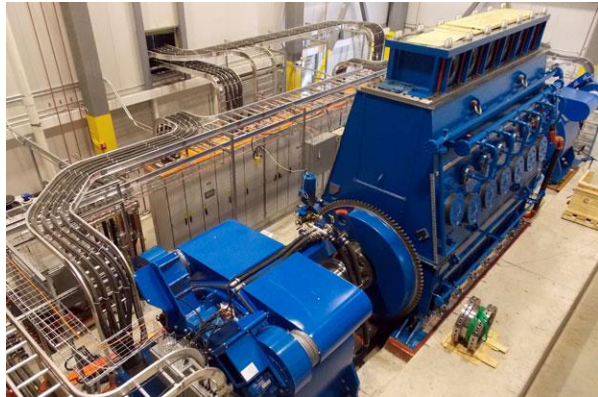
**Next funding solicitation expected in late 2024; visit the program's webpage via the QR code below to keep track of funding updates.*





Examples of Possible Repurposing...

Pumped hydro or CAES energy storage in inactive coal mines



Repurposing out-of-use coal mines into pumped hydro or compressed air energy storage (CAES) facilities to store electricity.

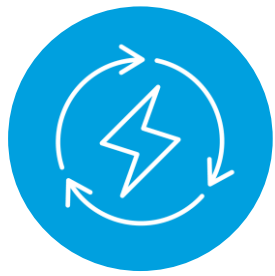
Hydrogen storage or CAES in inactive O&G wells



Repurposing one of the 2.7 million inactive oil and gas wells in the U.S. for compressed air energy storage (CAES) or hydrogen storage allows for cheaper storage than above ground tanks.

For questions about repurposing energy assets and the Capacity Building for Repurposing Energy Assets Initiative, please contact Bhima Sastri at bhima.sastri@hq.doe.gov.

(5-10 years)



Energy Infrastructure Reinvestment

1706

Financing to leverage existing U.S. energy infrastructure for the clean energy future

Project Eligibility

In addition to meeting the common Title 17 eligibility requirements, EIR projects must:

1. Retool, repower, repurpose, or replace energy infrastructure that has ceased operations, **OR**
2. Enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases.

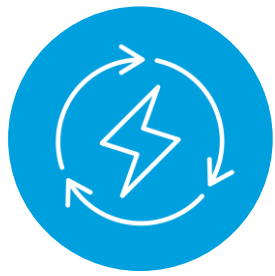
What is “Energy Infrastructure”?

A facility, and associated equipment, used for:

- The generation or transmission of electric energy;
- OR**
- The production, processing, and delivery of fossil fuels, fuels derived from petroleum, or petrochemical feedstocks.

Notes

- EIR projects **DO NOT** have an innovation requirement.
- Conditional commitments must be issued by **September 30, 2026**.
- **Environmental remediation costs and refinancing outstanding indebtedness directly relevant to the energy infrastructure** can be eligible for EIR financing as part of a larger reinvestment plan.



Financing to leverage existing U.S. energy infrastructure for the clean energy future

Example Projects

Power plant (or associated infrastructure) retooled, repowered, repurposed or replaced with:

- Renewable energy (and storage)
- Distributed energy (e.g., VPPs)
- Transmission interconnection to off-site clean energy
- New manufacturing facilities for clean energy products or services
- Nuclear generation



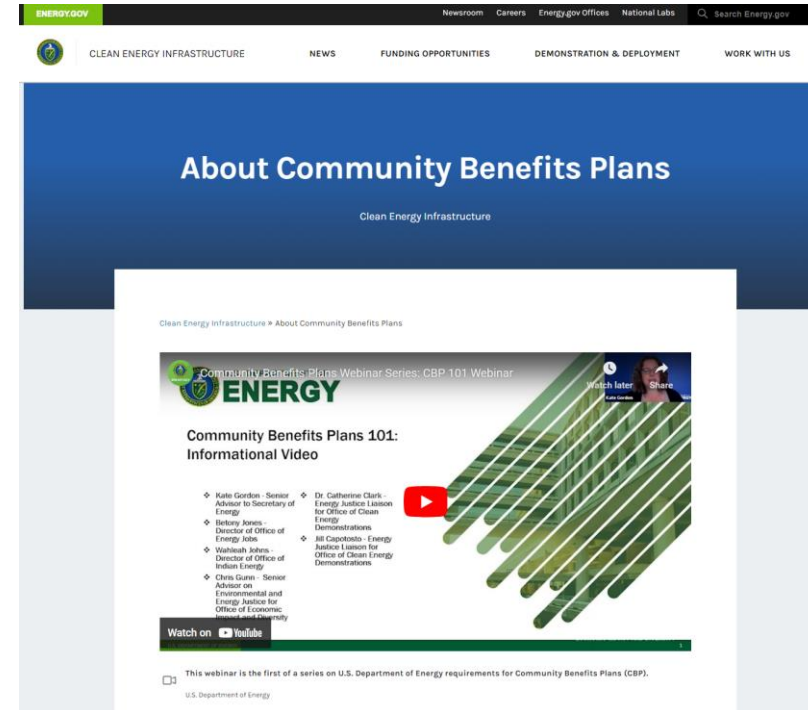
- Reconductoring transmission lines and upgrading voltage
- Installing emissions control technologies, including carbon capture and sequestration (CCS)
- Repurposing oil and gas pipelines (e.g., for H₂, CO₂)
- Upgrading refineries for biofuels or hydrogen
- Upgrading or uprating existing generation facilities (with emissions control technologies for projects involving fossil generation)





Community Benefit Plans are required for all phases and project types

- Included in technical review process
- Typically, up to 20% of overall score
- Reviewed by experts and practitioners



Learn more:
**Community
Benefit Plans**





Community Benefit Plans address four priorities

1. Community and Labor Engagement
2. Quality Jobs and Workforce Development
3. Diversity, Equity, Inclusion, and accessibility
4. Justice 40 Initiative

In Feasibility and Assessment projects, CBPs emphasize:

- Research and analysis to develop detailed plans
- Early engagement and partnerships to identify mutual goals
- Two-way engagement mechanisms
- Plans for project-specific agreements

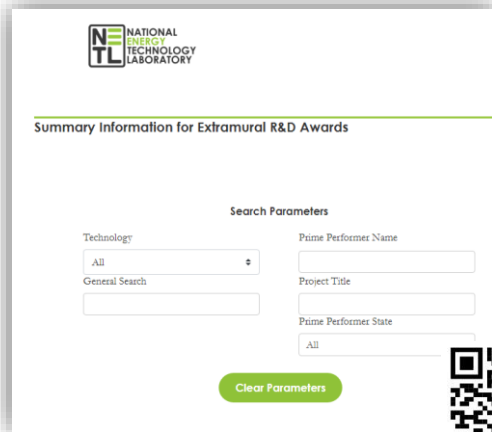
Learn more:
**Guidance for
Developing
Community Benefit Plans**





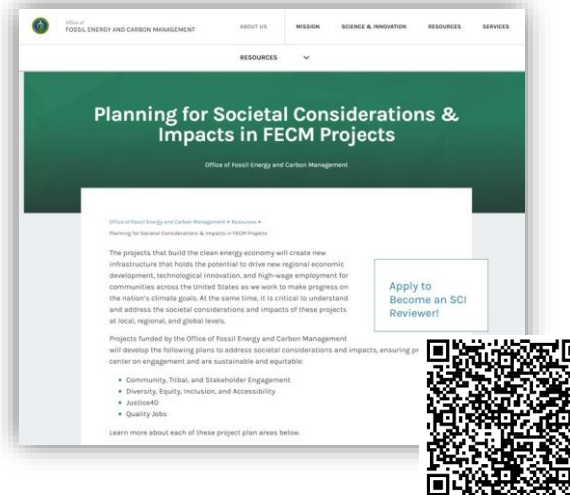
Find out more and get involved:

Specific projects:



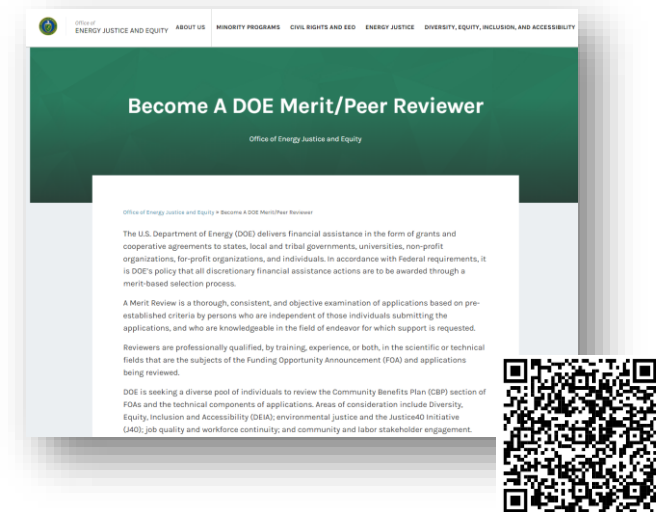
National Energy Technology Lab

Guidance for developing
Community Benefit Plans:



Fossil Energy &
Carbon Management

Merit Review Process:



U.S. Department of Energy