

DRAFT Policy Approaches & Best Practices: State-Level Action to Support Economywide Deployment of Carbon Capture

Introduction

While a robust suite of federal policies will have the biggest overall impact on economywide deployment of commercial carbon capture projects by 2030, state policies can play an important role in complementing federal policy to help carbon capture projects cover cost gaps and achieve financial feasibility.

The policy approaches outlined below describe state policy options and best practices that can positively affect the economics of the entire value chain that stretches from the capture of CO₂ from industrial and power plant sources through to utilization and associated geologic storage of CO₂ through EOR or storage in saline geologic formations.

To date, there are three broad categories of policies that states have implemented to provide financial support for carbon capture:

- Changes in state taxes that provide incentives for the capture of CO₂ from power plant and industrial sources, and/or for the use of captured CO₂ to produce oil through EOR;
- State portfolio requirements and mandatory power purchase or offtake agreements for power plants and facilities that have carbon capture; and
- State regulatory and other policies and strategies to facilitate CO₂ storage, project development and pipeline transportation infrastructure.

Below is a compilation of policies and incentives employed by or under consideration in states with carbon capture potential. The compilation is meant to provide a menu of best practices for states to consider:

State Regulatory Policies

- **Regulatory authorities** – States with existing CO₂-EOR operations have an established regime to regulate these projects, which can include associated geologic storage. For geologic storage-only projects (i.e. without oil production through EOR), the regulatory regime may need to be outlined. A state's oil and gas agency typically permits and oversees CO₂-EOR projects and could do the same for geologic storage-only projects. State environmental agencies may also be involved, given that CO₂ is being injected with environmental benefits in mind.

- **CO₂ storage is declared to be in the public interest** – A state can declare CO₂ storage to be in the public interest. This designation can provide clarity in other state-level rulemakings, such as granting eminent domain authority for the construction of CO₂ pipelines.
- **Pollution control device qualification** – Qualify all anthropogenic CO₂ transport infrastructure as pollution control devices under the laws and regulations of the state.
- **Siting** – Carbon capture projects include a source facility, transportation infrastructure and a point of utilization and/or storage. While state utility commissions do not generally have authority over geologic storage, commissions will play an important role with respect to source facilities and transportation infrastructure and can take steps to reduce delays in the permitting process.

With respect to source facilities, utility commissions can:

- Consider pre-approving project siting and environmental criteria;
- Grant a certificate of public convenience and necessity;
- Include environmental considerations in the certification process; and
- Recommend legislative action to allow utilities to apply for an advance determination of prudence.

Commissions may also be able to play a role in facilitating the development of transportation infrastructure by initiating local stakeholder engagement and hiring specialized staff.

- **Planning** – The majority of regulated utilities are required to file integrated resource plans (IRPs) to outline a utility’s future plans to regulatory commissions and the public. Individual utility commissions could require regulated utilities to consider carbon capture technology in their integrated resource plans.

Rules for Long Term CO₂ Storage

- **CO₂ storage trust funds** – Several states have established a public trust fund to pay for a state’s long-term oversight of CO₂ injection and storage. In some cases, these funds are also intended for mitigation of any environmental damage arising from CO₂ injection. Typically, CO₂ project operators are assessed a fee for each ton of CO₂ injected, which is deposited into the trust fund.
- **Rules for CO₂ ownership** – In most cases, the party that captures CO₂ is responsible for its safe disposal. Some states have clarified in law who will be considered the legal owner of captured CO₂ and how parties can transfer ownership of CO₂.
- **Requirements for CO₂ responsibility** – Federal [Underground Injection Control](#) (UIC) rules provide flexibility to states in establishing specific requirements for CO₂ injection and storage at the state level. States therefore may designate specific pathways for projects to meet federal requirements.

Rules for CO₂ Transport and Storage Space

- **Pore space** – A state must establish in law that the subsurface area, or pore space, where CO₂ is injected and stored can be owned and designate an owner, usually the owner of surface land. Given that CO₂ migrates beyond an injection well, states also need to specify rules for transferring the title of pore space to the party performing CO₂ injection. Several states have laws for the unitization of pore space, which is a process whereby a state will recognize the ownership of a given unit of pore space once a certain percentage of ownership interests (typically ranging from 50 percent to 80 percent) in that defined area agree to aggregate their ownership interests or manage that area as one unit.
- **CO₂ pipelines and/or eminent domain** - Eminent domain refers to the legal authority to acquire privately-held land for public use without the landowner's consent; the state government or a third party must compensate the landowner. A state's decision to grant eminent domain for CO₂ pipelines can be tied to whether the pipeline will serve as a "common carrier," meaning it would be open for parties other than the pipeline's owner to access and use.

Rules for Clarifying the Purpose of CO₂ Injection

- **Clarified rules on CO₂ injection for EOR and geologic storage** – Some states have declared that CO₂-EOR projects do not have to meet the same federal UIC requirements as projects that inject CO₂ solely for geologic storage, which often include more stringent regulatory requirements. A state also may recognize CO₂ injected through EOR as geologically stored, though this recognition may not apply in other states or at the federal level, depending on compliance with federal requirements.

Financial Incentives for Carbon Capture

- **Financial assistance for carbon capture projects and CO₂ pipelines**, often as grants or loans.
- **Off-take agreements**, which provide a guaranteed buyer for the electricity or other output from a carbon capture project.
- **Utility cost recovery mechanisms**, which offer timely reimbursement of costs incurred during construction and operation or favorable rates of return for regulated utilities' investments. Some states have explicitly included carbon capture as an eligible technology for cost recovery mechanisms.
- **Eligibility of carbon capture in electricity generation portfolio or clean energy standards or voluntary goals**. When carbon capture is included in these standards, utilities can earn saleable compliance credits by generating electricity using capture. Additionally, inclusion of carbon capture in portfolio standards, clean energy standards or goals could facilitate utility cost recovery approval of carbon capture power projects, which is critical for financing.

- **State assumption of long-term liability for stored CO₂** reduces the long-term costs of CO₂ injection for private project developers.
- **Advocate for federal authorization for and state use of private activity bonds for carbon capture.** With permission from the federal government, states can allocate up to \$33 billion of tax-exempt private activity bonds (PABs) annually. Making carbon capture projects eligible to participate in the PAB market would offer less expensive, long-term, fixed-rate debt for such projects.
- **Low-carbon credit programs** could be established to include carbon capture and storage where utilities would be required to purchase capacity and/or energy from fossil units incorporating carbon capture.
- **Procurement programs** that require state governments to purchase all or a percentage of electricity, fuels or products (steel, cement, concrete, etc.) produced from carbon capture for the operation of state buildings, facilities and fleets and for construction of public buildings and infrastructure projects.

Tax Incentives/Optimization

States may opt to make changes in state taxes that provide incentives for the capture of CO₂ from power plant and industrial sources, and/or for the use and storage of captured CO₂ through EOR or for storage in saline formations.

States can provide incentives or optimize their tax codes through:

- Tax credits for CO₂-EOR and geologic storage;
- Corporate income tax reductions;
- Exemptions from property and sales taxes on CO₂-EOR and geologic storage machinery and equipment;
- Severance tax reductions on oil produced through CO₂-EOR using anthropogenic CO₂; and
- Establishment of a minimum of a 10-year waiver of ad valorem and property taxes for carbon capture transport infrastructure.