

Midwestern Governors Association

KEY COMPONENTS OF A STATE-LEVEL STATUTORY & REGULATORY FRAMEWORK TO SUPPORT DEPLOYMENT OF CARBON CAPTURE AND STORAGE (CCS) IN THE MIDWEST

The Midwestern Governors Association (MGA) [has identified carbon capture and storage \(CCS\)](#) as one of the key technologies to strategically position the Midwest in the new energy economy. The Midwest has abundant coal and biomass to generate power and produce domestic fuels. The Midwest also has the potential to increase domestic oil production using captured carbon dioxide (CO₂) to enhance the recovery of oil that will provide energy security, economic, carbon reduction and other environmental benefits.

The CO₂ can be captured from a variety of Midwestern sources, including ethanol, natural gas processing, advanced coal, fertilizer and other industrial facilities, and then transported by pipeline for enhanced oil recovery (EOR) and geologic storage. In the EOR process, CO₂ is used to recover the oil that remains in older, depleted oil fields after conventional methods are no longer effective.

EOR is a decades-old, commercial activity widely practiced in Texas' Permian Basin, the Gulf Coast, the Great Plains and the Midwest. Over 50 million tons of CO₂ annually yield 250,000 barrels of oil per day.

According to [analysis prepared for the MGA](#) by Advanced Resources International, the capture of an estimated 1-1.9 billion tons of CO₂ for use in EOR could recover an additional 6-7 billion barrels of oil from Midwestern fields alone between 2012-2030. Moreover, this secure domestic source of oil produced through EOR could be obtained at a substantial net carbon reduction over imported oil.

Policy makers have an opportunity to support and accelerate the development of critical infrastructure and production of American energy that will generate revenue and grow Midwestern jobs by putting a supportive statutory and regulatory policy in place to promote the CCS and EOR industry in the region. The Midwest can provide regional leadership and attract capital investment in CCS and EOR by developing comprehensive policy that facilitates project development within and across Midwestern states. States will develop their statutory and regulatory framework according to their unique context, including varying levels of regulatory experience and geologic storage/EOR potential.

Below are summaries of key components in developing the state-level framework for the transportation and geologic storage of CO₂. Each component is followed by examples of states that have addressed the issue to date and a link to the legislation or report that may provide useful reference for other states.

Key components of a statutory and regulatory framework at the state level include:

A. STATE ASSESSMENT OR STUDY OF STATUTORY & REGULATORY FRAMEWORK

- **State review or study on development of a CCS Framework.** Each state will develop rules and regulations within a unique context, and some states choose first to review current statutes and regulations to determine how they may apply or be adapted and identify needed steps to facilitate CCS development. See [California](#), [Colorado](#), [Kentucky](#),

[Montana](#), [New Mexico](#), West Virginia ([statute/report](#)), [Pennsylvania](#) and [Wyoming](#) for examples.

B. GEOLOGIC STORAGE

- **Designate authority/jurisdiction for project permitting & develop permitting rules.** States should clarify the authority/jurisdiction responsible for permitting rules & development of applicable technical standards. See Kansas ([statute/rules](#)), [Louisiana](#), [Montana](#), North Dakota ([statute/rules](#)), [Oklahoma](#), [Texas](#) (rules in development can be found [here](#)), [Utah](#) and [Washington](#).
- **Determine geologic storage to be in the public interest.** Determining geologic storage to be in the public interest can provide tools and authorities—up to and including eminent domain—that are otherwise available to public utilities, which can enable and facilitate project development. See [North Dakota](#), [Louisiana](#), [Oklahoma](#) and [West Virginia](#) for examples.
- **Direct state authority to apply for UIC Class VI Program primacy.** The U.S. Environmental Protection Agency (EPA) released the *Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO₂) Geologic Sequestration (GS) Wells* in December of 2010. This rule established requirements for geologic sequestration under the EPA’s authority through the Safe Drinking Water Act and creates a Class VI for geologic sequestration wells within the EPA’s UIC Program. These requirements include the option of primacy for states that allows states to administer the program. States must meet minimum requirements and apply for approval to administer the Class VI Program.¹ See [Montana](#) and [Texas](#) for examples.
- **Clarify pore space ownership:** Given the uncertainty and potential for conflict and litigation related to property rights to prevent geologic storage projects from moving forward, it is important that states clearly delineate the owner of pore space, which is the available open space within porous geologic formations in which CO₂ can be permanently stored. Existing common law in each state will provide guidance regarding ownership of pore space. States that have addressed pore space ownership to date have generally designated the surface owner as the owner of the pore space. See [Montana](#), [North Dakota](#) and [Wyoming](#) for examples. States that have a history of oil and gas may choose to provide language to protect the mineral estate from conflicting interests or impacts resulting from storage activities (see [Texas](#) as an example).

¹ From the [EPA UIC Final Rule Fact Sheet](#): “EPA will allow independent primacy for Class VI wells and will accept applications from states for independent primacy under section 1422 of the SDWA for managing UIC GS projects under Class VI. States will have 270 days following final promulgation of the GS rule to submit a complete primacy application that meets the requirements of the *Code of Federal Regulations* under 40 CFR 145.22 or 145.32. If a state chooses not to submit a complete application during the 270-day period, or EPA has not approved a Class VI program, then EPA will establish a Federal UIC Class VI program in that state after the 270-day application period closes. If a state submits a primacy application after the 270-day deadline and the application is approved, EPA will publish a subsequent notice of the approval. States may not issue Class VI permits until their Class VI UIC Programs are approved. During the first 270-days and prior to EPA approval of a Class VI primacy application, states with existing SDWA Section 1422 primacy programs may issue permits. States without existing Section 1422 primacy programs must direct all Class VI GS permit applications to the appropriate EPA Region. EPA Regions will issue permits using existing authorities and well classifications (e.g., Class I or Class V), as appropriate.”

- **Determine owner of CO₂.** Similar to pore space, it is important to designate the owner of the CO₂ that is stored. States have generally determined that the CO₂ is the property of the storage operator during operation and that title may be transferred (e.g., to the state) when the project is deemed closed or complete. See [Illinois](#) (applies only to FutureGen), [Montana](#), [North Dakota](#), [Texas](#) and [Oklahoma](#) for examples.
- **Mechanisms to acquire/aggregate pore space:** Project developers will need to acquire pore space sufficient to store and manage the amount of CO₂ intended. Options for acquiring pore space rights or leasing rights include compensation to the owners, eminent domain (see [Louisiana](#)) and unitization/or aggregation of rights in an area (as is used in oil and gas projects). In some states, compensation has been provided to pore space owners to obtain the right to store CO₂. In some cases, compensation may only be provided in cases where actual harm or trespass to property is proven. Unitization/aggregation may be a voluntary or compulsory mechanism where statute requires unitization once a certain percentage of owners have voluntarily agreed to join (existing statutes require 60 to 80 percent of owners' consent to form a unit). See [Montana](#), [North Dakota](#) and [Wyoming](#) for examples.
- **Address financial responsibility, site stewardship and long-term liability.** States should address financial responsibility requirements, site stewardship and long-term liability.
 - **Financial responsibility.** States have a number of options for requirements on project operators and methods by which they can demonstrate their ability to meet financial obligations (e.g., bonding requirements, public liability insurance, etc.). See [Wyoming](#) for an example. Financial responsibility requirements are detailed in the EPA Class VI rules and shall govern the minimum requirements for financial responsibility for geologic storage. The EPA's [Draft Financial Responsibility Guidance Document](#) includes the following under "financial responsibility activities" and "required GS activities": "corrective action, plugging, post injection site care and site closure, and emergency and remedial response." The EPA provides a detailed list of possible financial instruments to meet requirements.
 - **Site stewardship and long-term liability.** Operators will generally be held liable, at minimum, during project development and operations. Many have assumed that states or the federal government will likely take liability for long-term CO₂ storage once the storage project reaches a determined point beyond the injection phase (e.g., closure, post-closure, completion, etc.). States may take on a limited role in liability, such as providing long-term monitoring and verification or other stewardship over the site while others may take full liability. Some states have chosen to take long-term liability for projects – and some only until the federal government takes liability – while others have opted to leave this issue unaddressed (or may be legally prevented from taking liability). See [Montana](#), [North Dakota](#) and [Illinois](#) [only for FutureGen] for examples of states that are taking liability in general. See [Kansas](#), [Louisiana](#), [Texas](#) and [Wyoming](#) for examples of states that have taken limited liability and may provide some level of site stewardship after projects meet requirements for site closure.
 - **Establish state-level funding mechanisms or financial instruments, such as a storage fund or trust fund.** States may choose to develop a funding mechanism such as a trust built through fees charged per ton of storage or other mechanism. The use of such a funding mechanism may be used to comply with financial requirements under the [Class VI rule](#). Funds raised may also cover activities from project permitting to long-term site stewardship, including monitoring, remediation and enforcement. See [Montana](#), [Texas](#), [Louisiana](#), [North Dakota](#), [Kansas](#) and [Wyoming](#) for examples.

- **Treatment of EOR projects under state statute and regulation:** States with the opportunity to recover additional oil through CO₂-EOR may provide a statutory pathway for EOR projects to transition (or convert) to qualify under CO₂ storage regulations – subject to EPA Class VI requirements – and incentives. See [North Dakota](#), [Louisiana](#), [Texas](#) and [Wyoming](#) for examples. Some have specifically exempted rules for geologic storage to apply to projects that are primarily for EOR (See [Montana](#), [North Dakota](#), [Utah](#), [Texas](#) and [Wyoming](#) for examples). EOR projects making the transition from EPA UIC Class II wells to Class VI wells must meet requirements set by the EPA UIC program. The [Class VI rule](#) states that, “State oil and gas agencies that oversee the Class II program in many States may assume regulatory authority for Class VI by either a memorandum of understanding with the Class VI primacy agency, or by obtaining primacy for the entire Class VI program as long as it is identified in the State's program description under § 145.23.”

C. TRANSPORTATION

Development of a regulatory framework for CO₂ pipelines at the state level will facilitate the build-out of a pipeline network that will provide critical infrastructure for the CCS/EOR industry in the Midwest. The primary use for CO₂ pipelines has been for CO₂-EOR operations. Rates are generally set on a contractual basis and some states have classified CO₂ pipelines as common carriers (see [North Dakota](#) and [Texas](#)). The siting of CO₂ pipelines is regulated at the state level unless the route crosses federal land. Safety requirements for CO₂ pipelines are established by the U.S. Department of Transportation (DOT) Pipeline and Hazardous Material Safety Administration's (PHMSA) Office of Pipeline Safety (OPS). The [DOT sent proposed legislation](#) to Congress in 2010 that would amend pipeline safety rules, including for CO₂ pipelines (see <http://www.dot.gov/affairs/2010/dot17210.html>). Similar [legislation](#) introduced during 2011 is pending in Congress. States with CO₂ pipelines may take on various levels of responsibility and authority through partnership with OPS for interstate and intrastate pipelines (see [PHMSA OPS Federal/State Programs](#)).

- **Designate authority for siting CO₂ pipelines and/or designate authority over administration of pipeline safety/extend existing pipeline safety program** to CO₂ pipelines. Some states may find it helpful or necessary to clarify authorities for CO₂ pipeline siting and safety. States may designate authority for siting pipelines to an agency/commission or as part of an infrastructure authority. See [Indiana](#), [Louisiana](#), [North Dakota](#) and [South Dakota](#) for examples.
- **Provide mechanisms to acquire pipeline rights-of-way.** States may develop new or adapt existing statutes (e.g., extend common carrier status to CO₂ pipelines) that allow acquisition of rights-of-way through eminent domain that otherwise cannot be acquired. See [Indiana](#), [Kentucky](#), [Louisiana](#), [Mississippi](#) (§11-27-47), [New Mexico](#) (§70-3-5A), [North Dakota](#), and [Texas](#) for examples.

MIDWESTERN GOVERNORS ASSOCIATION

KEY PUBLICATIONS AND RESOURCES THAT EVALUATE CCS STATUTORY & REGULATORY FRAMEWORKS

STATE & REGIONAL RESOURCES

California

[Meetings & Publications of the California Carbon Capture and Storage Review Panel](#)

Indiana

[Indiana CCS Summit: Conference Proceedings and Recommendations for Next Steps](#)

Interstate Oil and Gas Compact Commission

[Interstate Oil and Gas Compact Commission Publications & Resources](#)

Kentucky

[Legal Issues of Carbon Sequestration](#)

Midwestern Governors Association:

[Legal and Regulatory Inventory for Carbon Capture and Storage & Analogues](#)

Montana

[Carbon Sequestration Study Staff Reports and Materials](#)

New Mexico

[A Blueprint for the Regulation of Geologic Sequestration in New Mexico](#)

West Virginia

[CCS Working Group: Reports and Resources](#)

Wyoming

[Carbon Sequestration Working Group Publications & Meeting Materials](#)

FEDERAL-LEVEL RESOURCES

Congressional Research Service Report for Congress:

[Regulation of Carbon Dioxide \(CO₂\) Sequestration Pipelines: Jurisdictional Issues](#)

EPA Geologic Sequestration Rule & Background Documents:

http://water.epa.gov/type/groundwater/uic/wells_sequestration.cfm

Federal Interagency Task Force on Carbon Capture and Sequestration

[Federal Interagency Task Force on Carbon Capture and Sequestration](#)

INTERNATIONAL RESOURCES

Global CCS Institute

[Resources & Projects: Latest Publications](#)

International Energy Agency

[CCS Legal and Regulatory Issues](#)