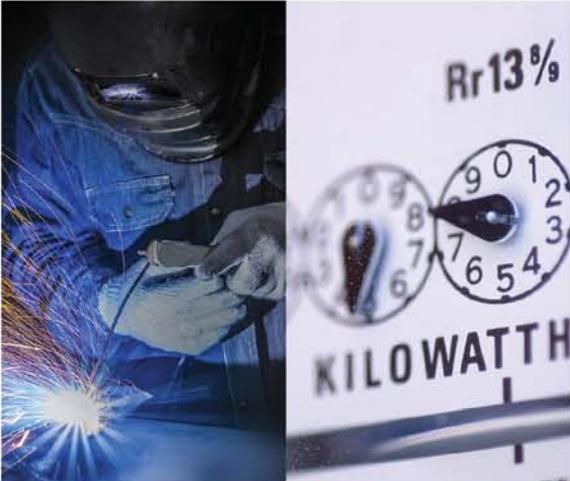




WEST VIRGINIA CHAMBER



AN OVERVIEW OF 2013 CCS UPDATE

A STATE-BY-STATE SURVEY
OF EXISTING STATUTES
AND RULES RELATED TO
THE TRANSPORTATION
AND GEOLOGIC STORAGE
OF CARBON DIOXIDE



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**Prepared by the
Environmental Committee
Armando Benincasa, Chair**

March 20, 2014

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INTRODUCTION

This document will provide an overview of the survey of state CCS programs conducted during the time period October 28, 2013 through November 8, 2013, to determine if any of the following questions had been addressed in the statutes or rules:

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?
2. Does the state specify what property rights must be secured for the geologic storage of CO₂?
3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?
4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?
5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

The federal Underground Injection Control program has established a Class VI injection well classification that applies to the injection of CO₂ into geologic formations. This survey does not seek to review the requirements of the Class VI UIC program, but rather to determine which states, if any, have received delegation of that program and to determine whether the states themselves have addressed any of the specific questions set forth above. This “State-By-State Survey Of Existing Statutes And Rules Related To The Transportation And Geologic Storage Of Carbon Dioxide” is attached as Attachment A.

1. Which States have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

The Safe Drinking Water Act (SDWA) protects public health through regulations designed to protect the nation's water supply. It mandates that each state have an Underground Injection Control (UIC) program. The UIC program regulates different types of underground injection by grouping underground injection into six different classes. These classes include:

- Class I—injection of hazardous and nonhazardous fluids (industrial and municipal wastes);
- Class II—injection of oil and gas associated brines and produced water;
- Class III—injection of fluid associated with solution mining of minerals;
- Class IV—injection of hazardous or radioactive wastes into or above an underground source of drinking water, which is banned unless authorized under other statutes; and
- Class V—the injection of everything not included in classes I – IV or VI.
- Class VI - injection of captured CO₂ into subsurface geologic reservoirs for geologic sequestration (GS).

The United States Environmental Protection Agency (EPA) published the final rules for Class VI injection wells in December 2010, a new UIC rule classification required for injection of captured CO₂ into subsurface geologic reservoirs for GS. The SDWA authorizes the development of the Class VI rules. The Class VI rules should protect U.S. drinking waters (USDWs) and assure that the sequestered CO₂ does not present an endangerment to USDWs.

The final rule established a new UIC well class -- Class VI -- for CO₂ injection wells into the subsurface for the purpose of long-term storage; the final rule also specified that GS could occur in UIC Class II, if certain circumstances are met. Carbon dioxide injected for Enhanced Oil Recovery (EOR) uses UIC Class II wells. The final rule sets minimum technical criteria for the permitting, geologic site characterization, area of review and corrective action, financial responsibility, well construction, operation, mechanical integrity testing, monitoring, well plugging, post-injection site care, and site closure of Class VI wells for the purposes of protecting underground sources of drinking water USDWs. The SDWA does not grant authority to the EPA to regulate other potential legal impediments to CCS,¹ such as pore space rights and long-term liability.

The SDWA mandates that each state have an UIC program.² EPA implements the state's UIC program for those states without primacy. As of this date, none of the states has primacy for Class VI wells that involve the injection of captured CO₂ into subsurface geologic reservoirs for GS. EPA regulates Class VI wells throughout the country at this time. Some states identified below have taken steps to gain primacy.

Alabama does not have primacy for Class VI UIC wells. However, the Alabama Department of Environmental Management ("ADEM"), Water Division adopted revised rules ("Rules") on March 26, 2013, which address Class VI injection wells in the context

¹ See U.S. EPA publication, *Understanding the Safe Drinking Water Act*, at http://www.epa.gov/safewater/sddwwa/pdfs/fs_30ann_sdwa

² See *Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO₂) Geologic Sequestration (GS) Wells, Final Rule*, available at, <http://www.gpo.gov/fdsys/pkg/FR-2010-1210/pdf/2010-29954.pdf> (Dec. 10, 2010).

of enhanced oil or mineral recovery and experimental injection wells.³ The new Rules expressly contemplate joint management of Class VI wells with the EPA.⁴

Montana does not have primacy for Class VI UIC wells. Montana and EPA jointly administer the UIC program. However, the Montana Legislature adopted SB 498 in 2009, which provides a framework for the regulation of geologic sequestration upon the granting of primacy by the federal government.⁵

North Dakota submitted its primacy application for Class VI enforcement responsibility on June 14, 2013.⁶ The official comment period for application ended on September 9, 2013.⁷ In order to gain primacy for Class VI injection wells, the North Dakota legislature drafted and amended certain statutory law.⁸ In addition, the North Dakota Industrial Commission, Department of Mineral Resources, Oil and Gas Division (“Commission”) drafted and amended relevant sections of the administrative code.⁹ Under the North Dakota program, the Commission through a Carbon Capture and Storage Supervisor will administer Class VI injection wells.¹⁰ The program requires all owners or operators applying to inject CO₂ for the purpose of geologic storage to obtain a storage facility permit, a permit to drill, and a permit to operate prior to

³ ALA. ADMIN. CODE R. 335-6-8-.13 (2013).

⁴ ALA. ADMIN. CODE R. 335-6-8-.29.

⁵ Allan Ingelson et al., *Long-Term Liability for Carbon Capture and Storage in Depleted North American Oil and Gas Reservoirs – A Comparative Analysis*, 31 ENERGY L.J. 431, 445 (2010).

⁶ North Dakota Underground Injection Control Program Revision Application, 78 Fed. Reg. 48639 (Aug. 9, 2013); North Dakota’s Class VI Primacy Application, *Region 8*, EPA, <http://www2.epa.gov/region8/north-dakotas-class-vi-primacy-application> (last visited Nov. 6, 2013).

⁷ 78 Fed. Reg. 48639.

⁸ See e.g., S.B. 2139, 61st Leg., Reg. Sess. (2009); S.B.2095, 61st Leg., Reg. Sess. (2009).

⁹ Geologic Storage of Carbon Dioxide, N.D. ADMIN CODE 43-05-01 (2013).

¹⁰ N.D. INDUS. COMM’N, DEP’T OF MINERAL RES., OIL AND GAS DIV., UNDERGROUND INJECTION CONTROL PROGRAM DESCRIPTION, 5 (2013), available at http://www2.epa.gov/sites/production/files/2013-07/documents/classvi_1422uic_programdescription20june2013.pdf.

commencement of injection activities.¹¹ Permit requirements are addressed via statutory law and further clarified by administrative regulation.¹² A petition for a storage facility permit in North Dakota must include, among other things, (1) a site map showing the boundaries of the storage reservoir and location of all proposed wells, (2) a geologic and hydrogeologic evaluation of the facility area, (3) description of the extent of the pore space that will be occupied by carbon dioxide, (4) an emergency and remedial response plan, (5) a detailed worker safety plan, (6) a corrosion monitoring and prevention plan, (7) a leak detection and monitoring plan, (8) the proposed casing and cementing program, (9) a testing and monitoring plan, (10) a plugging plan, and (10) post injection site care and facility closure plan.¹³ The Commission reviews all Class VI permit applications in consultation with the North Dakota Department of Health.¹⁴

Wyoming does not currently have primacy for Class VI wells. However, the Wyoming Department of Environmental Quality (“DEQ”) finalized Class VI UIC rules on November 5, 2010.¹⁵

EPA also published guidance in December 2010 regarding financial responsibility for Class VI wells. It provides recommended types of financial mechanisms needed to meet the new Class VI well requirements. See, Financial Responsibility Document, available at <http://water.epa.gov/type/groundwater/uic/class6/upload/uicclass6financialresponsibilityguidancedec2010.pdf>

¹¹ *Id.*

¹² See N.D. CENT CODE § 38-22-08 (2013); N.D. ADMIN CODE 43-05-01-05 (2013).

¹³ See N.D. ADMIN CODE 43-05-01-05(a) to -(o) (2013).

¹⁴ *Id.*

¹⁵ See WYO. STAT. ANN. § 35-11-313(f) (2013) (authorizing the administrator of the water quality division of DEQ to establish rules and regulations for permitting of geologic sequestration of carbon dioxide).

To complement the UIC Class VI program, EPA issued the Final Mandatory Reporting of Greenhouse Gases from Carbon Dioxide Injection and Geologic Sequestration Rule in November 2010. Subpart RR of this rule requires CCS facilities to report GHG data annually. This rule requires CCS facilities to develop and implement a site-specific monitoring, reporting and verification (MRV) plan, and to report the amount of carbon dioxide sequestered using a mass balance approach. Mandatory Reporting of Greenhouse Gases from Carbon Dioxide Injection and Geologic Sequestration Rule, 75 Fed. Reg. 75060 (Dec. 1, 2010). Compliance with this rule will allow GS operators to provide proof of sequestration, eliminating yet another a barrier to CCS.

2. What property rights must be secured for the geologic storage of CO₂?

Much of the discussion of ownership of the subsurface pore space centers on whether pore space ownership should be related to ownership of the surface interest or the mineral interest.¹⁶ Even in states where pore space ownership vests with the surface owner or mineral rights owner, those owners may not have a “protectable interest” in the subsurface pore space.¹⁷ When states expressly provide in statutory language that a surface owner or mineral owner has a property right in the pore space, such a state-created property interest may be limited by the judicial application of *United States v. Causby* 328 U.S. 256, 66 S. Ct. 1062, 90 L. Ed. 1206 (1946), to subsurface rights that places “objective” limits on rights to the subsurface.¹⁸ Klaus and Wilson have

¹⁶ See National Energy Technology Laboratory, *Storage of Captured Carbon Dioxide Beneath Federal Lands* (May 8, 2009), available at http://www.netl.doe.gov/energy-analyses/pubs/Fed%20Land_403.01.02_050809.pdf.

¹⁷ See Alexandra B. Klass and Elizabeth J. Wilson, *Climate Change, Carbon Sequestration and Property Rights Express* (2009), available at http://works.bepress.com/alexandra_klass/6.

¹⁸ *Id.*

proposed that private property rights to land should not extend more than 1,000 feet below the surface of the Earth and that ownership rights below this level should lie with the federal government.¹⁹

a. Subsurface Trespass

In the operation of a CO₂ sequestration facility, landowners who successfully demonstrate a physical subsurface infringement of CO₂ onto the subsurface of their property that results in damage may be entitled to bring a trespass action against injectors.²⁰ With regard to CO₂ injector liability in relation to pore space owners, there are essentially two competing theories that ultimately define liability.²¹

A majority of states have adopted the theory that an injector is liable to the surface owner for any provable subsurface trespass the injector may commit. Because these states hold that the subsurface pore space belongs to the surface property owner, an injector of CO₂ must acquire the right to access and sequester CO₂ from the appropriate surface owner(s) or face liability for a trespass claim.²²

A minority of states have adopted the “reverse” or “negative rule of capture” theory. This theory holds that just as an owner may capture oil or gas that migrates from adjoining property to a well on his or her own land, the owner may also inject into a formation substances that may migrate to the property of others. Under the reverse rule, policies encouraging enhanced hydrocarbon recovery and the mitigation of climate

¹⁹ *Id.*

²⁰ See, Mark E. Fesmire et al., *A Blueprint for the Regulation of Geologic Sequestration of Carbon Dioxide in New Mexico* (2007), available at <http://www.gwpc.org/e-library/documents/co2/Mark%20Fesmire.pdf>.

²¹ *Id.*

²² *Id.*

change through sequestration of CO₂ receive a higher level of importance than policies protecting landowners through liability for the trespass of sequestered carbon dioxide.²³

As far as damages are concerned, the methodology for calculating damage to subsurface property from trespass depends on whether the damage is permanent or temporary. For permanent subsurface injuries, the measure of damages is the diminution in the fair market value of the entire property. For temporary injuries, the measure of damages is the cost of repair or remediation, capped at fair market value of the property. When the mineral estate owner's actions have rendered the surface completely unusable for a period of time, the damages can be determined by the land's rental value for that period.²⁴

b. Saline Aquifers

CO₂ may be sequestered into saline aquifers. Saline formations may be widely used for CCS projects due to their widespread availability and potential for storage.²⁵ Saline aquifer storage reservoirs provide enormous potential for sequestering captured CO₂ beneath federal and non-federal land. In the majority of states, the owner of the surface interest maintains property rights to the subsurface saline formation. As in the case of mineral formation, where ownership of non-depleted minerals must be accounted for, there must be an accounting for ownership of the water contained in the saline formation.²⁶ It is important to note there are many property regimes that states

²³ *Id.*

²⁴ *Id.*

²⁵ See National Energy Technology Laboratory, *Storage of Captured Carbon Dioxide Beneath Federal Lands* (2009).

²⁶ *Id.*

use to determine property rights over the water.²⁷ These differing rules vary in terms of their reasonableness restrictions and temporal precedence.²⁸

Some of the problems associated with the use of saline aquifers for carbon sequestration include their significantly greater costs, technological problems and geological unknowns particularly in comparison with sequestration in other subsurface reservoirs.²⁹ For these reasons, over time sequestration into deep saline aquifers may eventually evolve into a viable option for carbon sequestration on a large scale after sequestration into other depleted hydrocarbon reservoirs has been perfected. Any development of statutory and regulatory regimes must carefully address the complexities of storage in saline aquifers.³⁰

c. Depleted Coal, Oil, and Gas Formations

CO₂ may be sequestered into depleted coal, oil, and gas formations. Under most circumstances, the surface owner retains possession of the pore space and the sole right to store non-native gas in the evacuated space, but most likely that right vests only after the removal or depletion of the minerals.³¹

In general, case law supports the holder of the mineral interests retaining the right to access subsurface minerals by reasonable means while there are recoverable minerals remaining to be extracted and while there has been no abandonment, but that the right to the pore space reverts to the surface owner when the minerals have been

²⁷ See Elizabeth J. Wilson & David Gerard, *Carbon Capture and Sequestration Integrating Technology, Monitoring and Regulation* (Blackwell Publishing 2007).

²⁸ *Id.*

²⁹ See, Fesmire, *supra* note 29, at 12.

³⁰ *Id.*

³¹ *Id.*

depleted. For example, in *Westerman v. Pennsylvania Salt Mfg. Co.*,³² the Supreme Court of Pennsylvania held coal-mining interest had “no perpetual right of way” through the land and “its right will cease when the coal therein is exhausted or abandoned.”³³ Years later, in *Tate v. United Fuel Gas Co.*,³⁴ the West Virginia Supreme Court of Appeals ruled in accordance on this issue, holding that the evacuated space following mineral extraction remains the property of the surface owner.³⁵

d. Natural Gas Storage Formations

CO₂ may also be sequestered into natural gas storage formations. As with other pore space ownership determinations, mineral rights and surface interest are significant when determining ownership of the natural gas storage formations.³⁶ A majority of states follow the American rule whereby the owner of the surface interest owns the natural gas storage formation. Although the surface interest owner generally owns the natural gas storage formation, the mineral interest owner still has a property interest in exploring and removing minerals from the land.³⁷ Some states have legislation giving primacy of the pore space for the extraction of minerals over the use of pore space for GS. This gives the mineral owner the right to block GS before the formation has been depleted of minerals. States supporting the primacy of the use of pore space for the extraction of minerals include Montana, North Dakota, Oklahoma, Texas, West Virginia and Wyoming.

³² 26 Pa. 140, 103 A. 539 (1918).

³³ *Id.*

³⁴ 137 W. Va. 272, 71 S.E.2d 65 (1952).

³⁵ *Tate*, 282, 71 S.E.2d at 72

³⁶ See Wilson; *supra* note 36, at 13.

³⁷ *Id.*

e. States

Some states have addressed the issue of the ownership of pore space or the property rights that should be obtained within the context of CCS. Many states have not yet addressed this issue.

In Kentucky, KY ST § 353.806 requires “the storage operator to negotiate with the pore space owners and acquire rights needed to access the pore space.” Kentucky courts follow “the English Rule,” thus the mineral owner continues to own the pore space after all minerals have been extracted. Elizabeth J. Wilson, Mark A. de Figueiredo, *Geologic Carbon Dioxide Sequestration: An Analysis of Subsurface Property Law*, 36 ELR 10114, 10117 (Feb. 2006).

In Louisiana, permitted storage operators may acquire surface and subsurface rights and property interests necessary or useful for the purpose of constructing, operating, or modifying a storage facility and the necessary infrastructure including laying, maintaining, and operating pipelines for transportation. The commissioner is required to issue a certificate of public convenience and necessity to each person applying for it, if after a public hearing he determines it is required by the present or future public convenience and necessity, and the proposed storage facility meets the requirements of R.S. 30:1104(C) and (2) any rules adopted. La. Stat. Ann. § 30:1107(A).

Mississippi Code § 53-11-9 requires that at least a majority interest of the property rights must consent in writing to the geologic sequestration in oil and gas reservoirs. This majority interest is defined to mean a majority interest of the surface interest and,

if separately owned, a majority interest in the rights of the subsurface reservoir. Mississippi Code § 53-11-11.

An applicant in Montana must have at least the consent of the owner of pore space to utilize the pore space for geologic storage.³⁸ Montana H.B. 498 presumes that ownership of storage reservoirs attach to surface ownership. Montana S.B. 0498 § 1(3)(2009). Additionally, in order to transfer liability for the storage reservoir and stored carbon dioxide, the storage operator must transfer title of the reservoir and carbon to the state.³⁹

In New York, it is undetermined what property rights must be secured for the geologic storage of CO₂. A review of case law, however, indicates that New York would likely consider the surface owner to be the owner of the pore space. *See Miles v. Home Gas Co.*, 35 A.D.2d 1042 (N.Y. App. Div. 1970).

Before obtaining a permit in North Dakota, a storage operator⁴⁰ must make a good-faith effort to obtain the consent of all persons who own the storage reservoir's pore space.⁴¹ In addition, the storage operator must obtain the consent of at least sixty percent (60%) of the ownership of the storage reservoir's pore space.⁴² The presumption in North Dakota is that the surface owner owns the pore space.⁴³

³⁸ MONT. CODE ANN. § 82-11-180(a) (2013) (stating that the issuance of a permit for a carbon dioxide injection well shall not prejudice the rights of property owners within a geologic storage reservoir to exercise rights that have not been committed to a storage reservoir).

³⁹ MONT. CODE ANN. § 82-11-183 (8).

⁴⁰ N.D. CENT CODE § 38-22-02(8) (2013) (defined as the person holding or applying for a permit for carbon dioxide underground storage from the North Dakota Industrial Commission).

⁴¹ N.D. CENT CODE § 38-22-08(4).

⁴² N.D. CENT CODE § 38-22-08(5).

⁴³ N.D. CENT CODE § 47-31-05

In Oklahoma, there are no statutes or regulations detailing which property rights must be secured, but case law related to underground gas storage indicates that the surface rights owner can grant a lease for underground storage. See *Ellis v. Arkansas Louisiana Gas Company*, 450 F.Supp. 412 (N.D. Okla. 1978); *aff'd* 609 F.2d 436 (10th Cir. 1979); *cert. denied* 445 U.S. 964, 100 S.Ct. 1653, 64 L.Ed.2d 239 (1980); *Sunray Oil Co. v. Cortez Oil Company*, 112 P.2d 792 (Okla. 1941).

Texas statutory law does not address which estate possesses ownership of the pore space for storage purposes unless the contract severing the surface and mineral estates expressly specifies. Texas case law on storage ownership seems to indicate that surface owners have a stronger argument for the right to authorize the pore space for storage. See *Emeny v. United States*, 412 F.2d 1319 (Ct. Cl. 1969); *Humble Oil & Refining Co. v. West*, 508 S.W.2d 812 (Tex. 1974). *But see Mapco, Inc. v. Carter*, 808 S.W.2d 262 (Tex. App. – Beaumont 1991), *rev'd in part*, 817 S.W.2d 686 (Tex. 1991).

West Virginia Code § 22-11A-5(a)(6) requires the carbon dioxide sequestration permit application to include: “A site and facilities description, including a description of the proposed carbon dioxide sequestration facilities and documentation sufficient to demonstrate that the applicant has, or will have prior to the commencement of the operation, all legal rights, including without limitation the right to surface or pore space use, necessary to sequester carbon dioxide and associated constituents into the proposed carbon dioxide sequestration sites.” W. Va. Code § 22-11A-5(a)(6) (emphasis added).

In Wyoming, a Class VI permit application must include sufficient documentation to demonstrate that the applicant possess all legal rights, including but not limited to the right to surface use, necessary to sequester carbon dioxide and associated constituents.⁴⁴ The Wyoming Department of Environmental Quality (DEQ) may issue a permit that is contingent on obtaining a unitization order (described further below).⁴⁵ The surface owner owns the pore space in Wyoming.⁴⁶

3. What streamlined procedures exist for the taking, unitization or use of the property rights related to the geologic storage of CO₂?

Ownership rights related to CO₂ pore space may be acquired through eminent domain, unitization, voluntary methods or public use. Ownership rights over CO₂ pore space may be taken in some states through the power of eminent domain often referred to as condemnation or through unitization.⁴⁷ Voluntary acquisition involves negotiations with the interest owner to obtain storage rights to the reservoir under a lease or a deed. It has also been proposed that it is not necessary to acquire the specific right to use the pore space for the storage of CO₂, relying instead on the authority of the permit, which authorizes the injection of the CO₂.

a. Eminent domain

Condemnation in the context of pore space acquisition is the process of taking an owner's surface and subsurface property for carbon sequestration use through the power of eminent domain. There are many elements necessary for a large-scale

⁴⁴ WYO. STAT. ANN. § 35-11-313(f)(ii)(F).

⁴⁵ WYO. STAT. ANN. § 35-11-313(f)(ii)(F).

⁴⁶ WYO. STAT. ANN. § 34-1-152.

⁴⁷ *Id.*

sequestration program such as subsurface sequestration space and surface easements for pipelines and injection facilities.⁴⁸ There must be authority to condemn subterranean storage space for CO₂ sequestration operators to acquire the storage rights from individual or multiple property owners who have not yet reached an agreement with operators. Compensable parties may be broader than just pore space owners, however, as mineral interest owners may assert that since oil and gas reservoirs may never be fully depleted, CO₂ sequestration constitutes unauthorized interference with their estate and requires compensation if interference or harm is likely.⁴⁹ Several states have legislatively declared GS to be in the public interest including Louisiana, Mississippi, North Dakota, West Virginia, and Oklahoma. This is the often first step in the eminent domain process. Some of these states have established specific eminent domain and unitization authorizations for GS projects.

Louisiana law authorizes CCS projects to get a certificate of public convenience and necessity. HB 661 (2009). Eminent domain is authorized for the development of carbon capture and storage. Permitted storage operators may acquire surface and subsurface rights and property interests necessary or useful for the purpose of constructing, operating, or modifying a storage facility and the necessary infrastructure including lying, maintaining, and operating pipelines for transportation.⁵⁰ In order for the Commissioner to grant the exercise of eminent domain in the form of a certificate of public convenience and necessity, the following determinations must be made: the

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ See LA. REV. STAT. ANN. § 30:1108.

reservoir is suitable and feasible (*i.e.*, not producing or capable of producing oil, gas, condensate, or other commercial mineral in paying quantities—unless all owners agree to the reservoir); volumes of original reservoir, oil, gas, condensate, salt, or other commercial mineral capable of being produced in paying quantities have all been produced; the reservoir has greater value or utility as a reservoir for CO₂ storage than for producing minerals; the reservoir will not contaminate other formations; and the proposed storage will not endanger human lives or cause a hazardous condition to property. The Commissioner is required to determine the amount of commercially recoverable natural gas, condensate, or other commercial mineral therein. The Commissioner may issue any necessary order providing that all CO₂ injected must at all times be deemed the property of the party that owns such CO₂ and such shall never be subject to the right of the owner of surface or mineral interest.⁵¹

In 2009, Oklahoma passed the Geologic Storage of Carbon Dioxide Act (S.B. 610). The Corporation Commission has the authority to grant certificates of public convenience and necessity and to authorize storage facilities, which allows the storage operator to initiate the condemnation action necessary to site the facility.

West Virginia legislation passed in 2009 provides an initial framework for CCS projects and in doing so relies upon its state Water Pollution Control Act. While that 2009 legislation does not explicitly address eminent domain, the legislation declares CCS may be integral to the operation of plants, thus providing a basis for invoking the eminent domain provisions that exist elsewhere in statutory law (see W.Va. Code,

⁵¹ See LA. REV. STAT. ANN. § 30:1104.

Chapter 54, Article 2). Even though the legislation requires that “necessary” legal rights to sequester CO₂ be demonstrated as part of the permitting process, the legislation does not define what rights are “necessary.”

b. Unitization

Unitization in the context of pore space acquisition is the process of consolidating or transforming multiple properties into a single property for the purpose of carbon sequestration. A unitization approach for CO₂ pore space acquisition may be the most efficient method.⁵² Pore spaces into which CO₂ might be injected, are usually continuous bodies of porous rock that extend beneath large geographic areas under multiple properties deep underground. In addition to the issue of landowners’ willingness to negotiate and lease sequestration rights, developers must also be concerned with physical configuration of the pore space they must acquire and its capacity to effectively receive and maintain sequestered carbon.⁵³

The process of unitization in a carbon sequestration context is similar to the process in an oil production context.⁵⁴ From both an economic and environmental standpoint, the most effective way to produce oil from a large natural deposit is through a single operator treating that deposit as a single geophysical whole, rather than as artificially multiple independent fragments delineated by property boundaries. When an oil deposit extends below multiple parcels of private land, an energy company usually seeks to acquire the rights to each parcel for forming a contiguous production “unit.”

⁵² See Paul W. Parfomak, *Community Acceptance of Carbon Capture and Sequestration Infrastructure: Siting Challenges* (2008), available at <http://www.nationalaglawcenter.org/assets/crs/RL34601.pdf>.

⁵³ *Id.*

⁵⁴ *Id.*

This method of acquisition and development is called “unitization,” and has been a standard oil industry practice since the 1940s.⁵⁵ The concept of unitization can be applied to the acquisition of subsurface pore space for the purpose of carbon sequestration.

Kentucky law authorizes pooling for purposes of GS. KY ST § 353.806 requires “the storage operator to negotiate with the pore space owners and acquire rights needed to access the pore space.” In the event, the storage operator obtains at least 51% of the interest in the proposed pore space, the division shall order pooling to obtain all needed rights to the pore space. KY ST § 353.806.

Mississippi law provides for unitization of the property rights related to the geologic storage of CO₂. Mississippi Code § 53-11-11(2). The majority interest in the property rights must consent in writing to the geologic sequestration in oil and gas reservoirs before a unitization order can be issued. Mississippi Code § 53-11-9. This majority interest is defined to mean a majority interest of the surface interest and, if separately owned, a majority interest in the rights of the subsurface reservoir. Mississippi Code § 53-11-11. The Oil and Gas Board can issue orders approving the unitization of the property rights related to the geological sequester of carbon dioxide after holding a public hearing and making certain findings.

The Montana carbon sequestration framework authorizes unitization of storage areas. Upon application to the Board of Oil and Gas, persons owning leasehold interests

⁵⁵ *Id.*

underlying sixty percent (60%) of the surface within a delineated area may request operation as a unit of one or more pools or parts of pools in a field.⁵⁶

In North Dakota before obtaining a permit, a storage operator⁵⁷ must make a good-faith effort to obtain the consent of all persons who own the storage reservoir's pore space.⁵⁸ In addition, the storage operator must obtain the consent of at least sixty percent (60%) of the ownership of the storage reservoir's pore space.⁵⁹ The presumption in North Dakota is that the surface owner owns the pore space.⁶⁰ North Dakota statutory law prohibits severance of pore space by the surface property owner, which excludes unitization as a method of transferring pore space rights.⁶¹ However, North Dakota statutory law allows for the amalgamation of property interests, if the requisite amount of consent is not obtained from persons who own the storage reservoir's pore space and non-consenting property owners are equitably compensated.⁶²

In 2009, Wyoming passed three bills to address ownership and liability issues related to geological storage of carbon dioxide. H.B. 57 clarifies that mining and drilling rights will be prioritized over geologic sequestration activities. See H.B. 57, 60th Leg., Gen. Sess. (Wyo. 2009). H.B. 58 provides that the injector holds the title and liability for sequestered carbon dioxide and all other materials injected during the sequestration

⁵⁶ MONT. CODE ANN. § 82-11-204. (effective on occurrence of contingency).

⁵⁷ N.D. CENT CODE § 38-22-02(8) (2013) (defined as the person holding or applying for a permit for carbon dioxide underground storage from the North Dakota Industrial Commission).

⁵⁸ N.D. CENT CODE § 38-22-08(4).

⁵⁹ N.D. CENT CODE § 38-22-08(5).

⁶⁰ N.D. CENT CODE § 47-31-05

⁶¹ N.D. CENT CODE § 47-31-05.

⁶² N.D. CENT CODE § 38-22-10.

process. See H.B. 58, 60th Leg., Gen. Sess. (Wyo. 2009). H.B. 80 establishes a procedure for unitizing geologic sequestration sites, whereby pore space rights from multiple parties would be aggregated for the purposes of a carbon storage project as long as 80 percent of the parties approve the project.⁶³ See H.B. 80, 60th Leg., Gen. Sess. (Wyo. 2009). This suite of bills complements that which was passed in 2008. H.B. 89 specified ownership of pore space. H.B. 89, 59th, Leg., Gen. Sess. (Wyo. 2008). The 2008 legislation declared that the ownership of all pore space in all strata below the surface lands and waters of the state is declared to be vested in the owners of the surface above the strata. H.B. 90 established an operational regulatory program. H.B. 90, 59th Leg., Gen. Sess. (Wyo. 2008).

c. Voluntary Acquisition

A voluntary conveyance of the surface estate and mineral estate will in many cases serve as a conveyance of the pore space of all strata below the surface of such real property unless the ownership interest in such pore space has previously been severed from the surface and/or mineral ownership or has been explicitly excluded in the conveyance.⁶⁴ The ownership of pore space in strata may be conveyed in any manner provided by law for the transfer of real property. Conveyance agreements should explicitly convey ownership interests of the pore space in the agreement.⁶⁵

⁶³ WYO. STAT. ANN. §35-11-314-317.

⁶⁴ See Victor B. Flatt, *Paving the Legal Path for Carbon Sequestration From Coal*, 19 Duke Envtl. L. & Policy Forum 211 (2009), available at <http://www.law.duke.edu/journals/delpf/>.

⁶⁵ *Id.*

There are many considerations an operator must weigh when considering the appropriate method of acquiring pore space for the purpose of carbon sequestration.⁶⁶ An operator may choose to enter a lease that would secure the right to conduct operations in the geological formation for a negotiated term. Along with the right to use the pore space for carbon sequestration, there would need to be a right to use surface land in a reasonable and necessary manner for exercising acquired storage rights. Generally, under a lease, payments are made on a periodic basis, with the costs accounted for as a business expense.⁶⁷

Efforts to secure leases from multiple landowners who often have differing opinions and expectations regarding CO₂ storage operations and the value of their property may be challenging.⁶⁸ An ideal lease negotiation would focus on a single landowner who owns a sizable tract of land that can support future carbon sequestration operations and early large-scale CCS technology demonstration projects.⁶⁹

In Illinois, there is a streamlined process for dealing with geologic storage of CO₂, but the process presently applies only to FutureGen and the statutorily defined “clean coal facility,” “clean coal SNG facility,” and “clean coal SNG brownfield facility.” See 20 ILCS 3855 *et seq.*

Kansas’s law does not define who owns pore space. Kan. Stat. Ann. §§55-1637 through 1640.

⁶⁶ See Wilson, *supra* note 36, at 13

⁶⁷ *Id.*

⁶⁸ See National Energy Technology Laboratory, *supra* note 20, at 11.

⁶⁹ *Id.*

d. Public Use

While there is no precedent for determining what constitutes a “taking” of pore space, the United States Supreme Court has considered whether a taking has occurred in other circumstances.

Causby v. United States, 328 U.S. at 258 (1946), involved the question of whether the federal government’s frequent and regular flights of aircraft over a property owner’s land at low altitudes constituted a taking. 328 U.S. at 258. While the Supreme Court of the United States held that there was a taking under these circumstances, its holding was premised on the fact that the flights were —so low and so frequent as to be a direct and immediate interference with the enjoyment and use of the land. *Id.* at 266. Otherwise, the Court recognized, flights over private land are not a taking. *Id.* Specifically, the Court observed:

[i]t is ancient doctrine that at common law ownership of land extended to the periphery of the universe – *Cujus est solum ejus est usque ad coelum*. But that doctrine has no place in the modern world. The air is a public highway, as Congress has declared. Were that not true, every transcontinental flight would subject the operator to countless trespass suits. Common sense revolts at the idea. To recognize such private claims to airspace would clog these highways, seriously interfere with their control and development in the public interest, and transfer into private ownership that to which only the public has a just claim.

Id. at 260. Thus, the Court recognized that “[t]he airplane is part of the modern environment of life, and the inconveniences which it causes are normally not compensable under the Fifth Amendment. The airspace, apart from the immediate reaches above the land, is part of the public domain.” *Id.* at 266.

In *Penn Central Transportation Company v. City of New York*, the Supreme Court of the United States was faced with the question of whether the designation of a privately owned property as a “landmark” by a city landmark preservation committee, thereby preventing further construction on the property, amounted to a “taking” of the property without just compensation. 438 U.S. 104 (1978). The New York Court of Appeals concluded that there was no taking of the property since the landmark law did not transfer control of the property to the City, but rather, only restricted Penn Central’s exploitation of it. *Id.* Further, the New York Court of Appeals found that Penn Central was not denied due process. The U.S. Supreme Court affirmed the decision of the New York Court of Appeals and identified several factors that have particular significance in resolving such claims. *Id.* These factors included the economic impact of the regulation on the property owner, the extent to which the regulation interfered with “distinct investment backed expectations,” and the character of the government action, i.e., was the interference a physical invasion of the property by government or was the interference a public program adjustment to benefits and burdens of economic life in order to promote the common good. *Id.* In finding that landmark law did not interfere with Penn Central’s present use of the Terminal, that Penn Central was still permitted to profit from its use of the Terminal and to obtain a reasonable return in its investment, and that Penn Central was not denied all use of the pre-existing air rights as they were transferable to other parcels in the vicinity, the Court concluded that the interference with Penn Central’s property by the landmark law was not of such a magnitude that required the exercise of eminent domain and payment of compensation. *Id.* at 136.

In *Loretto v. Teleprompter Manhattan CATV Corp.*, the Supreme Court of the United States addressed the question of whether “a minor but permanent physical occupation of an owner’s property authorized by government constitutes a ‘taking’ of property for which just compensation is due under the Fifth and Fourteenth Amendments of the Constitution.” 458 U.S. 419, 421 (1982). At issue was a New York statute that required a landlord to permit cable television companies to install cable television facilities, or equipment, on the landlord’s property for which the landlord was permitted to demand payment from the company of no more than an amount determined by a State Commission to be reasonable. The State Commission, acting in accordance with the statute, determined that a one-time payment of \$1 was a reasonable fee. The Supreme Court of the United States held that the statute constituted a taking of property for which the property owner was entitled to just compensation under the Fifth and Fourteenth Amendments. *Syl., Loretto*, 458 U.S. 419. In arriving at this conclusion, the Supreme Court recognized that “[w]hen the ‘character of the governmental action,’ *Penn Central Transportation Co. v. New York City*, 438 U.S. 104, 124, 98 S.Ct. 2646, 2659, 57 L.Ed.2d 631, is a permanent physical occupation of real property, there is a taking to the extent of the occupation without regard to whether the action achieves an important public benefit or has only minimal economic impact on the owner.” *Syl., Loretto*, 458 U.S. 419. There are, however, some distinguishable facts between those presented in *Loretto* and those involved with carbon sequestration. For instance, *Loretto* involved the installation, or “direct physical attachment,” of cable facilities, which included plates, boxes, wires, bolts, and screws, to a building such that

the facilities were “completely occupying” space immediately above and on the building’s roof and along the building’s exterior walls. These areas of the building are readily accessible and usable by its owners and may easily be put to other uses if so desired. Conversely, with respect to carbon sequestration in formations at least 2,500 feet beneath the surface, a property owner, unless already having an existing or reasonably foreseeable use of such a formation, cannot access this portion of his or her property without the expenditure of very significant financial resources and the use of sophisticated and expensive machinery and equipment. Thus, such formations are not even remotely readily accessible or easily put to other uses by the property owner. Further, in *Loretto*, the property to which the cable facilities were directly physically attached was of substantial economic value to its owners (i.e., residential rental property) and was in existing use by its owners (i.e., the property currently was being rented as residential living space by the owners).

The *Loretto* case was applied in *FPL Farming, Ltd. v. Texas Natural Resource Conservation Commission* in which a neighboring landowner’s challenge to a state environmental commission’s order allowing an industrial waste injection operator to increase a maximum injection rate of the industrial waste to a saltwater formation beneath the surface. No. 03-02-00477, 2003 WL 247183 (Tex.App.-Austin, Feb. 6, 2003). FPL contended that the permits amounted to an unconstitutional taking by allowing the waste plume to migrate under its property. *Id.* at 5. FPL asserted that it lost its right to possess the subsurface by being denied its ability to exclude the waste plume therefrom. *Id.* FPL also asserted that it lost its right to use the subsurface because the

migrating waste plume would prevent FPL from mining the subsurface for brine or constructing its own injection well. *Id.* While the Court acknowledged that a permanent physical occupation occurs with government action that destroys a property owner's right to possess, use, and dispose of its property, the Court cast aside FPL's assertions as speculative. *Id.*, citing *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 435 (1982). The Court also found that FPL failed to meet the *Loretto* test for establishing a permanent physical invasion and a public taking in that FPL failed to demonstrate that it was denied an opportunity to apply for a brine mining permit or an injection well permit (i.e., that it was denied its right to possess, use, and enjoy the subsurface of its property) and that it was impaired in its right to sell its land as a result of the amended permits. *Id.* So, the Court concluded that there was no public taking of FPL's property as a result of the Commission's orders.

In *Lucas v. South Carolina Coastal Council*, the Supreme Court of the United States was asked to determine whether a land-use regulation's substantial impact on the economic value of private property constituted a taking under the Fifth and Fourteenth Amendments requiring the payment of just compensation. 505 U.S. 1003, 1007 (1992). Specifically, the State of South Carolina's Beachfront Management Act barred the petitioner, Lucas, from erecting any permanent habitable structures on his beachfront property, which he had purchased for that very purpose prior to the enactment of the Act. The Supreme Court of the United States found that the Act amounted to a taking of Lucas's property, entitling him to just compensation. In finding that the Act constituted a regulatory taking of Lucas's property, the Court held that

regulations that deny a property owner of all “economically viable use of his land” amounts to a taking for which payment of just compensation is required. *Syl.*, *Id.* at 1004. It is doubtful that the *Lucas* analysis would be problematic or used to attempt to invalidate a regulation permitting carbon sequestration in formations at least 2,500 feet beneath the surface since the property owner would still be entitled to all other uses of the property, whether economically viable or not.

Based on the foregoing case law, it is apparent that there have been uses of other people’s property, which have not amounted in a “taking.” The use of pore space for geologic sequestration could be managed in the same way as the use of airspace. The wholesale need for the reduction of greenhouse gases mirrors the public interest found in the development of the airspace for flight. Ownership of pore space or in the alternative a mechanism for obtaining pore space in the absence of ownership will need to be clarified if CCS is to be widely implemented.

The Midwestern Governors Association (“MGA”) has proposed that a state should consider the option of declaring the subsurface below 2,500 feet not associated with hydrocarbon development, accessible for public use. Under the MGA proposal, a fixed fee per acre will be provided to the surface property owner for the use of the pore space and eminent domain would be authorized.⁷⁰

The Carnegie Mellon CCSReg Project has offered its own variation of this approach based upon the balancing of the interests of private property owners with the

⁷⁰ Midwestern Governors Association, *Preliminary MGA Geologic Carbon Storage Utility Design Recommendations*, at <http://www.midwesterngovernors.org/Energy/storageutilitydesign.pdf> (Sept. 2009).

public benefit of geologic sequestration, and reducing the possibility of interference with other uses of the subsurface that are also in the public interest. This framework would enable UIC regulators to permit CCS projects and to allocate the use of subsurface pore space. Regulators would consider the trade-offs between private interests and the public benefit of a proposed project, determining the safest, most efficient and equitable use of the pore space. This approach could increase the potential for avoiding most subsurface property disputes outright, or resolving them at the outset in a stable and predictable environment that is fair and equitable to all affected parties.⁷¹ The CCSReg approach is premised on the conclusion that the courts have consistently ruled that, due to the overarching public benefit of disposing fluid waste underground, technical trespass claims against waste injection operators properly licensed through the UIC permitting process are compensable only if a material impairment with use of the subsurface or the surface can be demonstrated. CCSReg concludes that this same rationale has been applied to state-authorized enhanced oil and natural gas recovery operations and field unitization - that is, claims for subsurface trespass must yield to the public interest of efficiently producing natural resources.⁷²

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

The long-term care for the geologic storage of CO₂ requires the consideration of both stewardship and liability. The federal government has not yet provided a

⁷¹ See Sean Gresham, CCSReg Project Policy Brief: Governing Access to and Use of Pore Space for Deep Geologic Sequestration, Carnegie Mellon University, at http://www.ccsreg.org/pdf/PoreSpace_07132009.pdf (July 13, 2009).

⁷² *Id.*

mechanism for the post-closure transfer of liability of the GS site. EPA Class VI rules require Comprehensive monitoring of all aspects of well integrity, CO₂ injection and storage, and groundwater quality during the injection operation and the post-injection site care period. EPA Class VI rules include financial responsibility requirements to assure the availability of funds for the life (including post-injection site care and emergency response) of the GS project. Since GS is for the public benefit, some states have created legislation that would transfer the stewardship and liability for completed GS projects. However, other states have failed to address long-term stewardship and liability transfer.

In Illinois, no provisions exist for projects other than FutureGen and the statutorily defined “clean coal facility,” a “clean coal SNG facility,” and a “clean coal SNG brownfield facility.” See 20 ILCS 3855 *et seq.* For those projects, the statute vests both title to and liability for the sequestered CO₂ in Future Gen initially and then passes both to the State of Illinois ten years after Future Gen ceases operation. See 220 ILCS 1108/20. Further, the statute requires the Operator (FutureGen) to provide liability insurance of initially \$25,000,000 and the establishment of a CO₂ Storage Trust Fund that the Operator will fund with as much as \$250,000,000 per 100,000,000 metric tons.

Kentucky law addresses the long-term care for the geologic storage of carbon dioxide. Ky. Rev. Stat. Ann. § 353.810. The storage operator shall monitor the storage facility for leakage and migration for the time-period and by the methods required by the permit for the carbon injection wells after completion of active injection and plugging of the carbon injection wells. The ownership of and liability for the stored

carbon dioxide shall remain with the storage operator until the transfer is completed.

The ownership and liability for a storage facility may transfer to either:

(a) The federal government if a federal program exists; or

(b) The Finance and Administration Cabinet pursuant to subsections (4), (5), and (6)

of this section if a federal program does not exist. Ky. Rev. Stat. Ann. § 353.810.

Louisiana contains provisions for long-term site management from state long-term geologic storage funds for state monitoring and state remediation of mechanical leaks. The operator is released from regulatory duties and liability associated with or related to that storage facility which arises after the issuance of the certificate of completion. HB 661 (2009). The liability transfers to the state after 10 years under HB 661. 1109. *See*, Cessation of storage operations; liability release La. Stat. Ann. § 30:1109. The Commissioner issues a certificate of completion of injection operations when appropriate. The statute clarifies that in no case shall it cause any storage operator or CO₂ transporter for storage to become a common carrier or a public utility. The statute should not result in an increase in liability of any storage operator or CO₂ for storage transporter for any taxes otherwise due to the state of Louisiana in the absence of amendment to existing law.⁷³ After 10 years has passed after cessation of injection, or any other time frame established by rule, a certificate of completion of injection operations must be issued on a showing that the reservoir is reasonably expected to retain mechanical integrity and the CO₂ will reasonably remain emplaced, at which time the ownership to the remaining project including the stored CO₂ transfers to the state.

⁷³ *See* LA. REV. STAT. ANN. § 30:1107.C(1)–(3).

The storage operator, generators of the carbon dioxide, the owners of the carbon dioxide, and all other owners otherwise having an interest must be released from any and all regulatory duties or obligations and any other liability associated with or related to the storage facility.⁷⁴ The Louisiana Carbon Dioxide Geologic Storage Trust Fund was created for the following purposes: (1) operational and long-term inspecting, testing, and monitoring; (2) remediation of mechanical problems; (3) repairing mechanical leaks; (4) plugging and abandoning remaining wells; and (5) contracting for private legal services. The Act provides for the ability to create site-specific trust accounts for each transferred site to provide a source of funds for long-term maintenance, monitoring, and site closure assessment.⁷⁵

In Montana, the storage operator is primarily liable for all stored carbon dioxide and the geologic storage reservoir. After injections cease, the storage operator must wait a period of twenty-five (25) years before applying to the Board of Oil and Gas for a certificate of completion.⁷⁶ After issuing a certificate of completion, the Board of Oil and Gas shall ensure adequate monitoring by the storage operator for another period of twenty-five (25) years.⁷⁷ After the second monitoring period, the storage operator may convey title of the geologic storage reservoir and stored carbon dioxide to the state.⁷⁸ Once title is transferred, the state assumes responsibility for monitoring and managing the storage reservoir and the stored carbon dioxide until such time as the federal

⁷⁴ See LA. REV. STAT. ANN. § 30:1109.A(1).

⁷⁵ See LA. REV. STAT. ANN. § 30:1111.

⁷⁶ MONT. CODE ANN. §§ 82-11-183(3) to -(4) (effective on occurrence of contingency).

⁷⁷ MONT. CODE ANN. § 82-11-183(6) (effective on occurrence of contingency).

⁷⁸ MONT. CODE ANN. § 82-11-183(7) (effective on occurrence of contingency). If title is not conveyed to the state, the storage operator accepts indefinite liability for the storage reservoir and the stored carbon dioxide. *Id.*

government assumes responsibility for the long-term monitoring and management.⁷⁹ Montana Law authorized the Board to adopt rules reducing the time for transfer of liability to less than 50 years, if certain requirements are met after 30 years. *Id.*

In North Dakota, while a storage operator holds title, the operator is liable for any damage the stored carbon dioxide may cause.⁸⁰ Multiple funds are established to defray the expenses incurred by regulatory agencies throughout the carbon sequestration process. The actual fee amount is to be based upon the anticipated expenses that will be incurred in regulating storage facilities during their construction, operation, and pre-closure phases. The storage operator has title to the carbon dioxide injected into and stored in a storage reservoir and holds title until a certificate of project completion has been issued. While the storage operator holds title, the operator is liable for any damage the carbon dioxide may cause, including damage caused by carbon dioxide that escapes from the storage facility. The Commission until at least ten (10) years after carbon dioxide injections end may not issue a certificate of completion.⁸¹ Once a certificate is issued, title to the storage facility and the stored carbon dioxide is transferred to the state.⁸² Thereafter, monitoring and managing the storage facility and stored carbon is the primary responsibility of the State and Industrial Commission until such time as the federal government assumes responsibility for the long-term monitoring and management of storage facilities.⁸³

⁷⁹ MONT. CODE ANN. § 82-11-183(8)(e).

⁸⁰ *Id.*

⁸¹ N.D. CENT CODE § 38-22-17(4). *See also* N.D. CENT CODE § 38-22-17(5) (describing conditions that must be met in order to issue a certificate of completion).

⁸² N.D. CENT CODE § 38-22-17(6).

⁸³ N.D. CENT CODE § 38-22-17(6)(e).

In Texas, The Anthropogenic Carbon Dioxide Trust Fund, Texas Natural Resources Code § 120.003, collected by the RRC under Subchapter C-1, Chapter 27, Water Code, and penalties imposed for violations of that subchapter or rules drafted under that subchapter, can be used for a variety of reasons relating to long term care for the geologic storage of CO₂. Section 120.002 of the Natural Resources Code provides that, unless otherwise expressly provided by a contract or other legally binding document or by other law, anthropogenic CO₂ stored in a geologic storage facility is considered to be the property of the storage operator or the storage operator's heirs, successors, or assigns. Therefore, the responsibility for the CO₂ in a geologic storage facility permitted by the RRC is that of the operator.

5. What provisions exist to facilitate pipeline siting (i.e., eminent domain, CO₂ corridors)?

The federal Department of Transportation's Pipeline and Hazardous Materials Safety Administration safety rules are applicable; however, states maintain much of the regulatory control over CO₂ pipelines.

The Illinois Carbon Dioxide Transportation and Sequestration Act establishes conditions for pipeline siting. 220 ILCS 75. Construction of a pipeline requires a certificate of authority from the Illinois Commerce Commission. After receiving a certificate of authority, the Operator may use the power of eminent domain to secure rights of way. See 220 ILCS 75/20(e). In addition, the Illinois Power Agency may use eminent domain powers to acquire property. See 220 ILCS 3855/20(b)(6).

In 2013, Indiana adopted legislation establishing a process by which an entity can apply for and receive a "certificate of authority" for routing, construction, maintenance,

and operation of a "carbon dioxide transmission pipeline." IC 14-39-1 *et seq.* In addition, Indiana law does generally provide utilities with eminent domain powers. See IC 8-1-8-1(a).

Kentucky laws provide for condemnation under the Eminent Domain Act for the construction of carbon dioxide transmission pipeline if a carbon dioxide transmission pipeline company has received a construction certificate from the Kentucky State Board on Electric Generation and Siting. Ky. Rev. Stat. Ann. § 154.27 -100.

The Louisiana statute provides authority to the Commissioner of Conservation to regulate the development and operation of storage facilities and pipelines transmitting CO₂ to storage facilities. See LA. REV. STAT. ANN. § 30:1104. Louisiana law authorizes eminent domain for the development of carbon capture and storage. Permitted storage operators may acquire surface and subsurface rights and property interests necessary or useful for the purpose of constructing, operating, or modifying a storage facility and the necessary infrastructure including laying, maintaining, and operating pipelines for transportation. La. Stat. Ann. § 30:1108.

Mississippi Code § 53-11-7(b) gives the Oil and Gas Board the power to “regulate the development and operation of geologic sequestration pipelines within geologic sequestration facilities, provided those pipelines serving such facilities approved hereunder are not otherwise covered under applicable law.” Mississippi Code § 11-17-47 grants a power of eminent domain that is limited to the construction of CO₂ pipelines “for use in connection with secondary or tertiary recovery projects located within the state of Mississippi for the enhanced recovery of liquid or gaseous hydrocarbons.”

Therefore, a pipeline developer cannot exercise eminent domain for pipelines solely used for purposes of reducing CO₂ emissions via geologic storage.

Montana H.B. 338, effective April 2009, grants common carrier status to pipelines transporting CO₂. Montana statute authorizes eminent domain in siting carbon dioxide pipelines.⁸⁴ “Clean and Green” property tax incentives should encourage energy projects with less environmental impact than conventional facilities, such as carbon dioxide pipelines.⁸⁵

In New Mexico, authority currently exists to condemn surface land for pipeline construction, but applies only to trunk lines, or primary transportation lines, and not to gathering lines. NMSA § 70-3-5. Authority also exists to establish the means to acquire easements for smaller disposal lines and gathering lines across private property.

The North Dakota Pipeline Authority can participate in pipeline facility projects through financial support, plan, development, acquisition, leasing, rental, joint ownership, or other arrangements.⁸⁶ Under the North Dakota eminent domain statute, state construction of a carbon dioxide pipeline is a public use for which the right of eminent domain may be exercised.⁸⁷ Additionally, a common pipeline carrier may lay, maintain, and operate pipelines along, across, or under any public stream or highway.⁸⁸

In South Dakota, any pipeline companies owning a pipeline which is a common carrier as defined by § 49-7-11 may exercise the right of eminent domain in acquiring

⁸⁴ MONT. CODE ANN. § 69-13-104.

⁸⁵ MONT. CODE ANN. § 15-6-158. *See also* MONT. ADMIN. R. 17.80.204 (2013).

⁸⁶ N.D. CENT CODE § 54-17.7-04(1) to -(18)(describing the powers of the North Dakota Pipeline Authority, which include “[d]o any and all things necessary or expedient for the purposes of the authority provided in this chapter).

⁸⁷ N.D. CENT CODE § 32-15-02; § 49-19-12.

⁸⁸ N.D. CENT CODE § 49-19-09.

right-of-way as prescribed by statute. S.D. Codified Laws § 49-7-13. The transport of carbon dioxide is included within the definition of a transmission facility. S.D. Codified Laws § 49-41B-2.1

The Texas Railroad Commission regulates carbon dioxide pipelines under Tex. Nat. Res. Code Ann. § 111.019. The statute gives the carbon dioxide pipeline operator a choice of operating as either a private carrier or a common carrier, but grants the ability to exercise the power of eminent domain to those who choose to proceed as a common carrier. In Texas, eminent domain is available to pipeline operators who choose to operate as a common carrier under Tex. Nat. Res. Code Ann. § 111.019(a).

In West Virginia, the Legislature has found that the transportation by pipeline of CO₂ by a public utility may be integral to the operation of its plants, thus providing a basis for invoking the general power of eminent domain provided elsewhere in state law. W.Va. Code § 22-11A-1(a)(13).

The Wyoming Pipeline Authority can issue grants or loans and has bonding authority to facilitate CO₂ pipeline projects.⁸⁹ The Wyoming Pipeline Authority has the vested right of eminent domain to facilitate the construction or siting of pipeline projects.⁹⁰

⁸⁹ WYO. STAT. ANN. § 37-5-102.

⁹⁰ WYO. STAT. ANN. § 1-26-814.

ATTACHMENT A

**2013 CCS UPDATE -
A STATE-BY-STATE SURVEY OF EXISTING STATUTES AND RULES
RELATED TO THE TRANSPORTATION AND
GEOLOGIC STORAGE OF CARBON DIOXIDE**

**Prepared by the
Environmental Committee
West Virginia Chamber of Commerce**

February 26, 2014 DRAFT

During the period October 28, 2013 through November 8, 2013), a survey of the then existing statutes or rules, if any, of the 50 states was conducted to determine whether any of the following questions were addressed:

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?
2. Does the state specify what property rights must be secured for the geologic storage of CO₂?
3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?
4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?
5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

A basic premise of this survey is that the federal Underground Injection Control program has established a Class VI injection well classification that applies to the injection of CO₂ into geologic formations. This survey does not seek to review the requirements of the Class VI UIC program, but rather to determine which states, if any, have received delegation of that program and to determine whether the states themselves have addressed any of the specific questions set forth above.

Highlights of the survey results include:

- None of the states has yet received delegation of the Class VI UIC program although North Dakota may be the first to do so.
- There are 37 states that have not specifically addressed any of the remaining 4 questions that are the focus of this survey.
- Of the remaining 13 states, some states address only the pipeline questions while others address all of the 4 remaining questions.

Specific survey results for each state are set forth in the remainder of this document.

ALABAMA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

No, Alabama does not yet have primacy for Class VI UIC wells. However, the Alabama Department of Environmental Management (“ADEM”), Water Division adopted revised rules (“Rules”) on March 26, 2013, which address Class VI injection wells in the context of enhanced oil or mineral recovery and experimental injection wells.⁹¹ The new rules expressly contemplate joint management of Class VI wells with the EPA.⁹²

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Beyond its application of post-closure care under the UIC program, Alabama does not address the transfer of liability or ownership in the post closure phase. ALA. ADMIN. CODE R. 335-6-8-.25(2) to -(4).

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

⁹¹ ALA. ADMIN. CODE R. 335-6-8-.13 (2013).

⁹² ALA. ADMIN. CODE R. 335-6-8-.29.

ALASKA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

ARIZONA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

ARKANSAS

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

CALIFORNIA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

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4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Narrative:

In 2006, the Legislature passed and the Governor signed Assembly Bill 32, the Global Warming Solutions Act of 2006, which set the 2020 greenhouse gas emissions reduction goal into law. Cal. Health & Safety Code § 38561 (2007) required the State Air Resources Board to prepare and approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from sources or categories of sources of greenhouse gases by 2020.⁹³ The scoping plan was approved by the California Air Resources Board on December 12, 2008 and indicates how the emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.

Working with the Department of Conservation, Air Resource Board, the California Department of Water Resources, and other state and federal agencies, the

⁹³ Cal. Health & Safety Code § 38561(a)(2007).

Energy Commission, formerly the State Energy Resources Conservation and Development Commission, prepared Geologic Carbon Sequestration Strategies for California: Assembly Bill 1925 Report to the California Legislature to recommend how the state could store the carbon emissions from fossil fuel sources underground. Among the principal findings in the report is that gaps in statutory frameworks, particularly uncertainty regarding long-term liability for underground storage basins, are significant barriers.

In February 2010, the California Energy Commission, the California Public Utilities Commission and the California Air Resources Board formed the California Carbon Capture and Storage Review Panel. The Panel was asked to:

1. Identify, discuss, and frame specific policies addressing the role of CCS technology in meeting the State's energy needs and greenhouse gas emission reduction strategies for 2020 and 2050.
2. Support development of a comprehensive legal/regulatory framework for permitting proposed CCS projects consistent with the State's energy and environmental policy objectives.⁹⁴

In its Final Report, the Panel concluded that there is a need for clear rules under Assembly Bill 32 and a need for clear and consistent regulatory requirements.⁹⁵

⁹⁴ January 10, 2011 Transmittal Letter attached to Findings and Recommendations by the California Carbon Capture and Storage Review Panel, Dec. 10, 2010.

⁹⁵ See, Findings and Recommendations by the California Carbon Capture and Storage Review Panel, Dec. 10, 2010, pp. 9-10.

COLORADO

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Narrative:

The Governor of Colorado authorized the Colorado Department of Natural Resources to convene a CCS Task Force. The Task Force was formed to develop omnibus CCS legislation to be introduced in the Colorado General Assembly in 2011 and was composed of legislators, agency officials and stakeholders. The issues that were to be addressed by the Task Force and the subject of the proposed legislation were:

1. Ownership of pore space
 - o Who should own the pore space in which CO₂ would be injected and stored: surface owners, mineral owners, the State of Colorado, or the federal government?
 - o Who should own the CO₂ after it's been injected in the geologic formation?
 - o Should state law allow unitization of CO₂ reservoirs?
2. Environmental Regulation

- What environmental/health regulations are appropriate for geologic CO₂ sequestration?
 - What state agency should set standards for the injection of CO₂ in geologic formations, and what state agency should regulate and permit the injection?
 - Will EPA delegate authority over CCS Underground Injection Control (UIC) to Colorado?
3. Liability
- Who should be responsible for long term management of geologic sequestration sites?
 - How is risk allocated among multiple owners of injected gas?
4. Infrastructure
- How should CO₂ infrastructure be handled?
 - Should there be eminent domain power for CO₂ pipelines?

The Task Force adjourned in November of 2010 and did not propose legislation for the 2011 General Assembly session. In the Task Force's Report, it cited the economic climate in Colorado and nationwide as diminishing the desire to pass CCS legislation. It also cited the inability to place an economic value on carbon as precluding any economic incentive for the industry to engage in CCS. The Task Force concluded that "there was no immediate need for legal and regulatory certainty," and indefinitely suspended its efforts.

CONNECTICUT

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Narrative:

[CGS § 22a-200a](#) requires the state to reduce the level of GHG emissions to a level at least (1) 10% below the level emitted in 1990 by January 1, 2020 and (2) 80% below the level emitted in 2001 by January 1, 2050. By January 1, 2010 and biannually thereafter, the state agencies on the governor's Steering Committee on Climate Change must report to the Office of Policy and Management (OPM) secretary and the Department of Energy and Environmental Protection (DEEP) commissioner. The report must identify (1) existing and proposed activities and improvements to agency facilities that are designed to meet state agency energy savings goals established by the governor and (2) policies and regulations that could be adopted in the near future by the agencies to reduce GHG emissions in accordance with the targets.

By January 1, 2012 and every three years thereafter, the DEEP commissioner must, in consultation with the OPM secretary and the steering committee, report to the Environment, Energy and Technology, and Transportation committees on the

quantifiable emissions reductions achieved. The report must include a schedule of proposed regulations, policies, and strategies designed to achieve the limits of GHG emissions, an assessment of the latest scientific information and relevant data regarding global climate change, and the status of GHG emission reduction efforts in other states and countries.

Neither of the reports required by [CGS § 22a-200a](#) have been issued to date.

DELAWARE

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

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3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

FLORIDA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

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2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

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5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

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GEORGIA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

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2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

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5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

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HAWAII

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

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2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

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5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

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IDAHO

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

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Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

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5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

ILLINOIS

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

There is a streamlined process in Illinois for dealing with geologic storage of CO₂, but the process presently applies only to FutureGen and the statutorily defined “clean coal facility,” “clean coal SNG facility,” and “clean coal SNG brownfield facility.” (see 20 ILCS 3855 *et seq.*)

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

No provisions exist for projects other than FutureGen and the statutorily defined “clean coal facility,” a “clean coal SNG facility,” and a “clean coal SNG brownfield facility.” See 20 ILCS 3855 *et seq.* For those projects, the statute vests both title to and liability for the sequestered CO₂ in Future Gen initially and then passes both to the State of Illinois ten years after Future Gen ceases operation. 220 ILCS 1108/20. Further, the statute requires the Operator (FutureGen) to provide liability insurance of initially \$25,000,000 and the establishment of a CO₂ Storage Trust Fund that is to be funded by the Operator up to \$250,000,000 per 100,000,000 metric tons of CO₂ stored, with an initial payment of \$50,000,000 into the fund. 220 ILCS 1108/25.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

The Illinois Carbon Dioxide Transportation and Sequestration Act (220 ILCS 75) establishes conditions for pipeline siting. A certificate of authority must be obtained from the Illinois Commerce Commission in order to construct a pipeline. Once a certificate of authority is obtained, the Operator may use the power of eminent domain to secure rights of way. See 220 ILCS 75/20(e). In addition, the Illinois Power Agency may use eminent domain powers to acquire property. See 220 ILCS 3855/20(b)(6).

Narrative:

The Illinois legislature declared: “[p]ipeline transportation of carbon dioxide for sequestration, enhanced oil recovery, and other purposes is declared to be a public use and service, in the public interest, and a benefit to the welfare of Illinois and the people of Illinois because pipeline transportation is necessary for sequestration, enhanced oil recovery, or other carbon management purposes and thus is an essential component to compliance with required or voluntary plans to reduce carbon dioxide emissions from “clean coal” facilities and other sources.” 220 ILCS 75/5. Eminent domain authority under Illinois law “applies to the application process for the issuance of a certificate of authority by an owner or operator of a pipeline designed, constructed, and operated to transport and to sequester carbon dioxide produced by a clean coal facility, by a clean coal SNG facility, or by any other source that will result in the reduction of carbon dioxide emissions from that source.” 220 ILCS 75/15. Upon application for a certificate of authority in Illinois, the applicant:

...shall request either that the Commission review and approve a specific route for a carbon dioxide pipeline, or that the Commission review and approve a project route width that identifies the areas in which the pipeline would be located, with such width ranging from the minimum width required for a pipeline right-of-way up to 200 feet in width. A map of the route or route width shall be included in the application. The purpose for allowing the option of review and approval of a project route width is to provide increased flexibility during the construction process to accommodate specific landowner requests, avoid environmentally sensitive areas, or address special environmental permitting requirements.

220 ILCS 75/20 (emphasis added). In addition, the Code requires a permit from Illinois EPA for all sites in which sequestered CO₂ is to be injected underground for storage. (See 415 ILCS 5/13.7). Accordingly, all property rights necessary for geologic storage of CO₂ would need to be acquired.

The Illinois Code provides for cost recovery for FutureGen and the statutorily defined “clean coal facility,” “clean coal SNG facility,” and “clean coal SNG brownfield facility.” 20 ILCS 3855 *et seq.* The Code at 20 ILCS 3855/1-10 specifically defines FutureGen, “Clean coal facility,” “clean coal SNG facility,” and “clean coal SNG brownfield facility and appears to exclude any other carbon sequestration or storage project .

The Illinois Code also includes a finding with respect to the Future Gen project that “carbon capture and storage is a low-carbon technology that involves capturing the

captured CO₂ from fossil fuel energy electric generating units and other industrial facilities and injecting it into secure geologic strata for permanent storage;" 20 ILCS 1108/10.

With respect to title of sequestered CO₂, the Code states "If the FutureGen Alliance selects as its location for CO₂ storage a designated site or sites in the State of Illinois suitable for injection of captured CO₂ into the Mount Simon Formation, then the Operator shall retain all rights, title, and interest in and to and any liabilities associated with the pre-injection CO₂. The Operator shall retain all rights, title, and interest, including any environmental benefits or credits, in and to and any liabilities associated with the sequestered CO₂ during the operations phase of the FutureGen Project, plus an additional 10-year period. Following the operations phase of the FutureGen Project, plus an additional 10-year period, and upon compliance with all applicable permits, the Operator shall transfer and convey and the State of Illinois shall accept and receive, with no payment due from the State of Illinois, all rights, title, and interest, including any future environmental benefits or credits, in and to and any liabilities associated with the sequestered CO₂. (Source: P.A. 97-618, eff. 10-26-11.)" It is uncertain whether the statute can be expanded to include projects other than Future Gen.

INDIANA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

In 2013, Indiana adopted legislation establishing a process by which an entity can apply for and receive a "certificate of authority" for routing, construction, maintenance, and operation of a "carbon dioxide transmission pipeline." See IC 14-39-1 *et seq.* In addition, Indiana law does generally provide utilities with eminent domain powers. See IC 8-1-8-1(a).

IOWA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

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5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

KANSAS

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

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4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Narrative:

The Kansas Carbon Dioxide Reduction Act (Kansas Act) established the authority of the Kansas Corporation Commission (KCC) to develop rules for the safe and secure injection of CO₂ and maintenance of underground storage of CO₂. Carbon dioxide reduction act, KS ST §§ 55-1636 *et seq.* Final administrative regulations were published on February 11, 2010.⁹⁶ This rule addresses operational requirements for an environmental permitting program. Among those requirements is that the applicant must hold necessary property and mineral rights and own financial instruments that demonstrate financial responsibility. Kansas law does not define who owns pore space nor does it define the level of financial responsibility required.

The law establishes fees for CO₂ storage facilities and wells. Some of which can be used for long-term remedial activities. Kan. Stat. Ann. § 55-1638(b), provides:

⁹⁶ Kansas Register, Vol. 29, No. 6. February 11, 2010.

(b) The commission is authorized to use moneys from the carbon dioxide injection well and underground storage fund to pay the cost of:

- All activities related to permitting activities, including but not limited to, development and issuance of permits, compliance monitoring, inspections, well closures, underground storage closure, long-term monitoring and enforcement actions;
- review and witnessing of test procedures;
- review and witnessing of routine workover or repair procedures;
- investigation of violations, complaints, pollution and events affecting public health;
- design and review of remedial action plans;
- contracting for services needed to supplement the commission's staff expertise in facility investigations;
- consultation needed concerning remedial action at a permitted facility;
- mitigation of adverse environmental impacts;
- emergency or long-term remedial activities;
- legal costs, including expert witnesses, incurred in administration of the provisions of K.S.A. 2008 Supp. 55-1637 through 55-1640, and amendments thereto; and,
- costs of program administration.

KENTUCKY

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Kentucky offers the following provisions associated with pooling.

KRS § 353.806

353.806 Negotiations between storage operators and pore space owners; hearings and findings preceding pooling of pore space; carbon dioxide wells exempt

(1) The storage operator shall negotiate with the pore space owners and acquire rights needed to access the pore space.

(2) If, after good-faith negotiation, the storage operator cannot locate or cannot reach an agreement with all necessary pore space owners, but has secured written consent or agreement from the owners of at least fifty-one percent (51%) of the interest in the pore space for the storage facility, the division shall order the pooling of all pore space included within the proposed storage facility if the division:

(a) Holds a hearing after notice pursuant to KRS Chapter 13B; and

(b) Finds that the requirements of this section and KRS 353.808 have been met.

For the purposes of this section, any unknown or nonlocatable owners shall be deemed to have consented or agreed to the pooling, provided that the storage

operator has complied with the publication requirements of KRS 353.808.

(3) A carbon injection well shall be exempt from the provisions of KRS 353.651 and 353.652 and 805 KAR 1:100, regardless of the depth of the well.

Ky. Rev. Stat. Ann. § 353.806 (West)

KRS § 353.808

353.808 Pooling orders; requirements for contents of order and notice; fees; recording of pooling orders with county clerks

(1) The storage operator shall provide a list to the division of all persons reasonably known to own an interest in pore space proposed to be pooled in an application to the division for a pooling order. A pooling order shall be made only after the division provides notice to all pore space owners proposed to be pooled and after a hearing has been held.

(2) The division shall set and collect a fee adequate to pay expenses associated with the conduct of administrative hearings for pooling of pore space.

(3) If the proposed pooling order concerns pore space with unknown or nonlocatable owners, the storage operator shall publish one (1) notice in the newspaper of the largest circulation in each county in which the pore space is located. The notice shall appear at least twenty (20) days prior to the hearing on the application for the pooling order. The notice shall:

(a) State that an application for a pooling order has been filed with the Division of Oil and Gas in the Department for Natural Resources;

(b) Describe the pore space proposed to be pooled;

(c) In the case of an unknown pore space owner, indicate the name of the last known owner;

(d) In the case of a nonlocatable pore space owner, identify the owner and the owner's last known address;

(e) State that any person claiming an interest in the pore space proposed to be pooled should notify the director of the division and the storage operator at the published address within twenty (20) days of the publication date; and

(f) Give the date, time, and location of the hearing.

(4) A pooling order shall authorize the long-term storage of carbon dioxide beneath the tract or portion. The order shall also authorize, where necessary, the location of carbon injection wells, outbuildings, roads, monitoring equipment, and access to them. The pooling order shall identify the compensation to be paid to unknown, nonlocatable, and nonconsenting pore space owners and the basis for valuation of the pooled interest.

(5) A certified copy of any pooling order shall be entitled to be recorded in the office of the county clerk of the county or counties in which all or any portion of the pooled tract is located. Recordation of the order shall be notice of the order to all persons.

Ky. Rev. Stat. Ann. § 353.808 (West).

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Kentucky law offers the following provisions to address post closure liabilities for the geologic storage of carbon dioxide.

KRS § 353.810

353.810 Carbon injection wells to be closed and plugged after completion of active injection; monitoring for leaking and migration; transfer of ownership and liability of storage facilities; Finance and Administration Cabinet to effect transfer

(1) Upon completion of active injection, the storage operator shall notify the division of the completion and close and plug the carbon injection wells as required by the permit issued by USEPA for the demonstration carbon injection wells.

(2) The storage operator shall monitor the storage facility for leakage and migration for the time period and by the methods required by the permit for the carbon injection wells after completion of active injection and plugging of the carbon injection wells.

(3) The ownership and liability for a storage facility may be transferred to:

(a) The federal government if a federal program exists; or

(b) The Finance and Administration Cabinet pursuant to subsections (4), (5), and (6) of this section if a federal program does not exist.

(4) If no federal program exists, and the storage operator seeks to transfer the ownership and liability of a storage facility to the Finance and Administration Cabinet, after completion of the required period of monitoring following completion and plugging, the storage operator shall notify the division of its intent to transfer ownership of the stored carbon dioxide and associated liability to the Finance and Administration Cabinet. The storage operator shall provide evidence to the division of the satisfactory completion of all permit conditions pertaining to the demonstration carbon injection well. Upon receipt and evaluation of satisfactory evidence, the division shall forward the evidence to the Finance and Administration Cabinet with a recommendation for the transfer of ownership of the stored carbon dioxide and liability. The storage operator may then apply to the Finance and Administration Cabinet for the transfer of ownership and liability for the stored carbon dioxide.

(5) Ownership of and liability for the stored carbon dioxide shall remain with the storage operator until the transfer is completed.

(6) Upon receipt of the evidence and recommendation of the division and the application for transfer by the storage operator, the Finance and Administration Cabinet shall take appropriate action to effect a transfer.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Kentucky laws provide for condemnation under the Eminent Domain Act for the construction of carbon dioxide transmission pipeline if a carbon dioxide transmission pipeline company has received a construction certificate from the Kentucky State Board on Electric Generation and Siting. Ky. Rev. Stat. Ann. § 154.27 -100.

Narrative:

The Kentucky General Assembly passed the Geologic Storage of Carbon Dioxide Act, which went into effect June 8, 2011. This Act gives the Kentucky Division of Oil and Gas within the Department of Natural Resources the authority to seek primary jurisdiction over matters relating to the geologic storage of carbon dioxide, once these programs have been developed at the federal level. It requires the Cabinet to seek one to five demonstration projects, get necessary USEPA approvals, and provide annual testimony on the development of the program.

The Act requires the storage operator to negotiate with the pore space owners and acquire rights needed to access the pore space. In the event, the storage operator obtains at least 51% of the interest in the proposed pore space, the division shall order pooling to obtain all needed rights to the pore space. KY ST § 353.806. Kentucky laws also provide for condemnation under the Eminent Domain Act for the construction of carbon dioxide transmission pipeline if a carbon dioxide transmission pipeline company has received a construction certificate from the Kentucky State Board on Electric Generation and Siting. Ky. Rev. Stat. Ann. § 154.27 -100.

The Act transfers liability of the closed carbon injection well to the federal government if a federal program exists; or to the state if a federal program does not exist. KY ST § 353.810. The Act authorizes the Cabinet to develop a unified approach to subsurface migration of carbon dioxide. KY ST § 353.8.

LOUISIANA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Permitted storage operators may acquire surface and subsurface rights and property interests necessary or useful for the purpose of constructing, operating, or modifying a storage facility and the necessary infrastructure including laying, maintaining, and operating pipelines for transportation.

The commissioner is required to issue a certificate of public convenience and necessity to each person applying for it if, after a public hearing he determines it is required by the present or future public convenience and necessity, and the proposed storage facility meets the requirements of R.S. 30:1104(C) and (2) any rules adopted. La. Stat. Ann. § 30:1107(A).

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Louisiana law authorizes CCS projects to get a certificate of public convenience and necessity. HB 661 (2009). Eminent domain is authorized for the development of carbon capture and storage. Permitted storage operators may acquire surface and subsurface rights and property interests necessary or useful for the purpose of constructing, operating, or modifying a storage facility and the necessary infrastructure including laying, maintaining, and operating pipelines for transportation.⁹⁷ Louisiana law specifically provides:

A. (1) Any storage operator is hereby authorized, after obtaining any permit and any certificate of public convenience and necessity from the commissioner required by this Chapter, to exercise the power of eminent domain and expropriate needed property to acquire surface and subsurface rights and property interests necessary or useful for the purpose of constructing, operating, or modifying a storage facility and the necessary infrastructure including the laying, maintaining, and operating pipelines for the transportation of carbon

⁹⁷ See LA. REV. STAT. ANN. § 30:1108.

dioxide to a storage facility, together with telegraph and telephone lines necessary and incidental to the operation of these storage facilities and pipelines, over private property thus expropriated; and have the further right to construct and develop storage facilities and the necessary infrastructure, including the laying, maintaining, and operating of pipelines along, across, over, and under any navigable stream or public highway, street, bridge, or other public place; and also have the authority, under the right of expropriation herein conferred, to cross railroads, street railways, and other pipelines, by expropriating property necessary for the crossing under the general expropriation laws of this state. The right to run along, across, over, or under any public road, bridge, or highway, as before provided for, may be exercised only upon condition that the traffic thereon is not interfered with, and that such road or highway is promptly restored to its former condition of usefulness, at the expense of the storage facility and the pipeline owner if different from the storage operator, the restoration to be subject also to the supervision and approval of the proper local authorities.

(2) In the exercise of the privilege herein conferred, owners or operators of such storage facilities and pipelines shall compensate the parish, municipality, or road district, respectively, for any damage done to a public road, in the construction of storage facilities, and the laying of pipelines, telegraph or telephone lines, along, under, over, or across the road. Nothing in this Chapter shall be construed to grant any transporter the right to use any public street or alley of any parish, incorporated city, town, or village, except by express permission from the parish, city, or other governing authority.

B. The exercise of the right of eminent domain granted in this Chapter shall not prevent persons having the right to do so from drilling through the storage facility in such manner as shall comply with the rules of the commissioner issued for the purpose of protecting the storage facility against pollution or invasion and against the escape or migration of carbon dioxide. Furthermore, the right of eminent domain set out in this Section shall not prejudice the rights of the owners of the lands, minerals, or other

rights or interests therein as to all other uses not acquired for the storage facility.

C. The eminent domain authority authorized under this Chapter shall be exercised pursuant to the procedures found in R.S. 19:2, and shall be in addition to any other power of eminent domain authorized by law.

D. The commissioner is neither a necessary nor indispensable party to an eminent domain proceeding, and if named as a party or third party has an absolute right to be dismissed from said action at the expense of the party who names the commissioner. The commissioner shall recover all costs reasonably incurred to be dismissed from the action, including attorney fees.

La. Stat. Ann. § 30:1108.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Louisiana contains provisions for long-term site management from state long-term geologic storage funds for state monitoring and state remediation of mechanical leaks. The operator is released from regulatory duties and liability associated with or related to that storage facility which arises after the issuance of the certificate of completion. HB 661 (2009). The liability is transferred to the state after 10 years under HB 661. 1109. *See*, Cessation of storage operations; liability release La. Stat. Ann. § 30:1109.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

The statute provides authority to the Commissioner of Conservation to regulate the development and operation of storage facilities and pipelines transmitting CO₂ to storage facilities. *See* LA. REV. STAT. ANN. § 30:1104. Eminent domain is authorized. *See* response to Question 3 above.

Narrative:

The Louisiana Geologic Sequestration of Carbon Dioxide Act was passed by the Louisiana Legislature in June 2009.⁹⁸ This bill revises existing Louisiana law by adding a provision for the expropriation by the state or certain corporations and limited liability companies approved by the Commissioner of Conservation that are engaged in the

⁹⁸ *See* LA. REV. STAT. ANN. §§ 30:1101–30.1111.

injection and underground storage of CO₂. Providing for the exercise of eminent domain for the development of carbon capture and storage makes the Louisiana program one of the more thorough in the country. Permitted storage operators may acquire surface and subsurface rights and property interests necessary or useful for the purpose of constructing, operating, or modifying a storage facility and the necessary infrastructure including laying, maintaining, and operating pipelines for transportation.⁹⁹ The statute provides authority to the Commissioner of Conservation to regulate the development and operation of storage facilities and pipelines transmitting CO₂ to storage facilities.¹⁰⁰ The fact that the Louisiana program includes pipeline regulation is a factor that makes its program broader than others that are limited to injection and storage of CO₂.

The Commissioner is empowered to make rules, regulations, and orders to do the following:

- require drilling, casing, and plugging of wells to prevent the escape of CO₂;
- prevent the intrusion of CO₂ into oil, gas, salt formation, or other commercial mineral strata;
- prevent the pollution of fresh water supplies;
- require plugging and site clean-up;
- determine whether waste exists or is imminent;
- require reports on well locations for CO₂ storage;
- prevent injury to neighboring leases or property;
- prevent blowouts, caving, and seepage;
- identify ownership of all wells used in connection with CO₂ storage facility and ownership of related equipment and facilities;
- require monitoring of injection and storage of CO₂;
- regulate related wells and their operation and plugging; and
- promulgate rules setting fees and penalties.¹⁰¹

In order for the Commissioner to grant the exercise of eminent domain in the form of a certificate of public convenience and necessity, the following determinations must be made: the reservoir is suitable and feasible (*i.e.*, not producing or capable of producing oil, gas, condensate, or other commercial mineral in paying quantities—unless all owners agree to the reservoir); volumes of original reservoir, oil gas, condensate, salt, or other commercial mineral capable of being produced in paying quantities have all been produced; the reservoir has greater value or utility as a reservoir for CO₂ storage than for producing minerals; the reservoir will not contaminate other

⁹⁹ See LA. REV. STAT. ANN. § 30:1108.

¹⁰⁰ See LA. REV. STAT. ANN. § 30:1104.

¹⁰¹ See LA. REV. STAT. ANN. § 30:1104.A.

formations; and the proposed storage will not endanger human lives or cause a hazardous condition to property. The Commissioner is required to determine the amount of commercially recoverable natural gas, condensate, or other commercial mineral therein. The Commissioner may issue any necessary order providing that all CO₂ injected must at all times be deemed the property of the party that owns such CO₂ and such shall never be subject to the right of the owner of surface or mineral interest.¹⁰²

The statute acknowledges the duty of the Commissioner to carry out the purposes and requirements of the federal Safe Drinking Water Act relating to the state's participation in the underground injection control program with respect to storage and sequestration of CO₂.¹⁰³

The Commissioner is also tasked with issuing a certificate of completion of injection operations when appropriate. The statute clarifies that in no case shall it cause any storage operator or CO₂ transporter for storage to become a common carrier or a public utility. The statute also states that it is not intended to result in an increase in liability of any storage operator or CO₂ for storage transporter for any taxes otherwise due to the state of Louisiana in the absence of amendment to existing law.¹⁰⁴ It goes on to state that after 10 years has passed after cessation of injection, or any other time frame established by rule, a certificate of completion of injection operations must be issued on a showing that the reservoir is reasonably expected to retain mechanical integrity and the CO₂ will reasonably remain emplaced, at which time the ownership to the remaining project including the stored CO₂ transfers to the state. The storage operator, generators of the carbon dioxide, the owners of the carbon dioxide, and all other owners otherwise having an interest must be released from any and all regulatory duties or obligations and any other liability associated with or related to the storage facility.¹⁰⁵

The Carbon Dioxide Geologic Storage Trust Fund created by the Act is comprised of monies from fees, penalties, bond forfeitures, interest earned, grants, and the like. The commissioner is authorized to levy on storage operators fees or costs for the purpose of funding the fund.

The Act states that the Fund is to be used solely for the following purposes: (1) operational and long-term inspecting, testing, and monitoring; (2) remediation of mechanical problems; (3) repairing mechanical leaks; (4) plugging and abandoning remaining wells; and (5) contracting for private legal services. The Act provides for the ability to create site specific trust accounts for each transferred site for the purpose of

¹⁰² See LA. REV. STAT. ANN. § 30:1104.

¹⁰³ See LA. REV. STAT. ANN. § 30:1106.

¹⁰⁴ See LA. REV. STAT. ANN. § 30:1107.C(1)–(3).

¹⁰⁵ See LA. REV. STAT. ANN. § 30:1109.A(1).

providing a source of funds for long-term maintenance, monitoring, and site closure assessment.¹⁰⁶

¹⁰⁶ See LA. REV. STAT. ANN. § 30:1111.

MAINE

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

MARYLAND

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

MASSACHUSETTS

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

MICHIGAN

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Narrative:

A test CO₂ injection well was permitted in the Michigan Upper Basin in 2007. The permit was issued by USEPA Region V as a Class V test well. (See US DOE report "MICHIGAN BASIN PHASE II GEOLOGIC CO₂ SEQUESTRATION FIELD TEST, DOE-NETL Cooperative Agreement DE-FC26-05NT42589" at DOE web site:

http://www.netl.doe.gov/technologies/carbon_seq/infrastructure/rcsp/mrcsp/mrcspmi_basinvalidationrpt_final.pdf). The test well is still active.

MINNESOTA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Narrative:

Minnesota's Greenhouse Gas Emissions Control Act (216H.01, et seq.) set the following goals:

- 1) Reduce emissions of GHGs by 15% by 2015;
- 2) Reduce emissions of GHGs by 30% by 2025; and
- 3) Reduce emissions of GHGs by 80% by 2050.

The Next Generation Energy Act of 2007 requires Minnesota utilities to produce 25% of their energy using renewable resources by 2025. It also established the Next Generation Energy Board and tasked the Board with the duty to develop bioenergy policies and recommendations to the Minnesota Legislature. The Board's term has been extended to June 30, 2015. The Board is required to report to the legislature before February 1 of each year with its recommendations as to appropriations and the results of past actions and projects. The Minnesota Climate Change Advisory Group is charged with developing a comprehensive greenhouse gas emission reduction plan to meet those goals.

In January 2008, the University of Minnesota issued a Report on the Potential Capacity for Geologic Carbon Sequestration in the Midcontinent Rift System in Minnesota that was prepared in fulfillment of the requirements of Minnesota Legislative Session 85 Bill S.F. 2096. The Report noted that the only rocks in Minnesota that potentially have the required reservoir properties at the depth required for efficient carbon dioxide storage are sequences of sedimentary rocks associated with the Midcontinent Rift, a southwestward extension of the Lake Superior basin that extends to Kansas. Given the lack of available information addressing porosity or permeability of these formations, the Report concludes that the Midcontinent Rift System is far less suitable for sequestration than other sites currently being considered across the country. Because of this, Minnesota has not passed any regulations affecting the geological storage of carbon dioxide.

The Public Utilities Commission is responsible for issuing permits for oil or gas pipelines. The legislature has not addressed the issue of pipelines carrying carbon dioxide or other GHGs.

MISSISSIPPI

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Mississippi Code 53-11-9 requires that at least a majority interest in the property rights must consent in writing to the geologic sequestration in oil and gas reservoirs. This majority interest is defined to mean a majority interest of the surface interest and, if separately owned, a majority interest in the rights of the subsurface reservoir. Mississippi Code 53-11-11.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Mississippi law provides for unitization of the property rights related to the geologic storage of CO₂. Mississippi Code 53-11-11(2). The majority interest in the property rights must consent in writing to the geologic sequestration in oil and gas reservoirs before a unitization order can be issued. Mississippi Code 53-11-9. The Oil and Gas Board can issue orders approving the unitization of the property rights related to the geological sequester of carbon dioxide after holding a public hearing and making certain findings.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Mississippi Code 53-11-25 and 26 set forth the conditions under which a storage operator may apply for and be granted a certificate of completion of injection operations and release of performance bond. Receipt of the certificate of completion and release of the performance bond shall not release the owner of the carbon dioxide or the owner or operator of the sequestration facility from liability.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Mississippi Code 53-11-7(b) gives the Oil and Gas Board the power to “regulate the development and operation of geologic sequestration pipelines within geologic sequestration facilities, provided those pipelines serving such facilities approved hereunder are not otherwise covered under applicable law.” The regulation makes no other mention of pipelines.

Mississippi Code 11-17-47 grants a power of eminent domain that is limited to the construction of CO₂ pipelines “for use in connection with secondary or tertiary recovery projects located within the state of Mississippi for the enhanced recovery of liquid or gaseous hydrocarbons.” Therefore, a pipeline developer is unable to exercise eminent domain if the pipeline is used solely for purposes of reducing CO₂ emissions via geologic storage.

Narrative:

On March 23, 2011, the Mississippi Governor signed SB 2723 (2011) into law codified as Mississippi Code 53-11-1, et seq., entitled the Mississippi Geologic Sequestration of Carbon Dioxide Act. The Act designates that state’s Oil and Gas Board authority over the geologic sequestration of carbon dioxide within the state. Under the Act, the Oil and Gas Board may:

1. Approve geologic sequestration of carbon dioxide and the operation of a geologic sequestration facility within a reservoir;
2. Regulate the development and operation of geologic sequestration facilities and pipelines within geologic sequestration facilities, provided those pipelines are not otherwise covered under applicable law;
3. Approve conversion of an existing enhanced oil or gas recovery operation into a geologic sequestration facility;
4. Approve use of carbon dioxide for enhanced oil or gas recovery and for simultaneous geologic sequestration within a reservoir;
5. Establish requirements for reasonable performance bonds, deposits, or other assurances of performance consistent with federal statutes, rules and regulations connected with Class VI underground injection control wells to be posted as a condition to or requirement for approving an application by the storage operator, and requirements for the sufficiency and character of the surety and guarantors of performance bonds, deposits, or other assurances of performance and reasonable conditions under which the bonds or deposits shall be released.
6. Make any reasonable rules, regulations and orders that are necessary from time to time in the proper administration and enforcement of this chapter.

Mississippi Code 53-11-9 allows the Board to issue orders approving geological sequester of carbon dioxide once it finds the following:

- (a) That the reservoir is suitable and feasible for such use and in the public interest;

- (b) That a majority interest have consented to such use;
- (c) That there is no reasonable risk to other formations containing fresh water, oil, gas or other commercial mineral deposits;
- (d) That there is no reasonable risk that the proposed storage will endanger human lives or cause a hazardous condition to property; and
- (e) In the case of a reservoir that may contain oil, gas or other commercial minerals, that either:
 - (i) The reservoir has been substantially depleted of all volumes of reservoir oil, gas or other commercial minerals; or
 - (ii) The reservoir has a greater value or utility as a reservoir for carbon dioxide storage than for the production of the remaining volumes of reservoir oil, gas, condensate or other commercial minerals.

53-11-3(b) designates carbon dioxide as a “valuable commodity to the citizens of the state.” 53-11-9(2) states that the ownership of the carbon dioxide shall not be affected by its injection into the reservoir or any order of the Board. The Act also contemplates and sets forth requirements for Board orders to address many issues including surface access rights, payment for damages to the surface, allocation of fair, equitable and reasonable shares of the unit production among interested parties, and the costs and expenses of unit operations.

MISSOURI

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

MONTANA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

No, Montana does not have primacy for Class VI UIC wells. Montana's UIC program is jointly administered with the EPA. However, the Montana Legislature adopted SB 498 in 2009, which provides a framework for the regulation of geologic sequestration upon the granting of primacy by the federal government.¹⁰⁷

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

An applicant must have at least consent of the owner of pore space to utilize the pore space for geologic storage.¹⁰⁸ Montana H.B. 498 presumes that ownership of storage reservoirs attach to surface ownership. Montana S.B. 0498 § 1(3)(2009).

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

The Montana carbon sequestration framework authorizes unitization of storage areas. Upon application to the Board of Oil and Gas, persons owning leasehold interests underlying sixty percent (60%) of the surface within a delineated area may request operation as a unit of one or more pools or parts of pools in a field.¹⁰⁹

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

The storage operator is primarily liable for all stored carbon dioxide and the geologic storage reservoir. After injections cease, the storage operator must wait a period of twenty-five (25) years before applying to the Board of Oil and Gas for a certificate of completion.¹¹⁰ After issuing a certificate of completion, the Board of Oil and Gas shall ensure adequate monitoring by the storage

¹⁰⁷ Allan Ingelson et al., *Long-Term Liability for Carbon Capture and Storage in Depleted North American Oil and Gas Reservoirs – A Comparative Analysis*, 31 ENERGY L.J. 431, 445 (2010).

¹⁰⁸ MONT. CODE ANN. § 82-11-180(a) (2013) (stating that the issuance of a permit for a carbon dioxide injection well shall not prejudice the rights of property owners within a geologic storage reservoir to exercise rights that have not been committed to a storage reservoir).

¹⁰⁹ MONT. CODE ANN. § 82-11-204. (effective on occurrence of contingency).

¹¹⁰ MONT. CODE ANN. §§ 82-11-183(3) to -(4) (effective on occurrence of contingency).

operator for another period of twenty-five (25) years.¹¹¹ After the second monitoring period, the storage operator may convey title of the geologic storage reservoir and stored carbon dioxide to the state.¹¹² Once title is transferred, the state assumes responsibility for monitoring and managing the storage reservoir and the stored carbon dioxide until such time as the federal government assumes responsibility for the long-term monitoring and management.¹¹³

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Montana H.B. 338, effective April 2009, grants common carrier status to pipelines transporting CO₂. Montana statute authorizes eminent domain in siting carbon dioxide pipelines.¹¹⁴ “Clean and Green” property tax incentives are also intended to encourage energy projects with less environmental impact than conventional facilities, such as carbon dioxide pipelines.¹¹⁵

Narrative:

Currently, the Montana UIC program is jointly administered with the USEPA. Montana maintains primacy over Class II wells but does not have primacy over Class VI wells.

In 2009 the Montana legislature passed S.B. 498, which adopted framework provisions for the regulation of geologic sequestration of carbon dioxide.¹¹⁶ The legislation directed the Montana Department of Natural Resources, Board of Oil and Gas (“MBOG”) to do all that is necessary to obtain Class VI primacy.¹¹⁷ Implementation of the geologic sequestration regulatory framework is expressly contingent on Montana obtaining primacy for the regulation of Class VI UIC wells.¹¹⁸ The statutory law components of S.B. 498 are codified in the Montana Code Annotated but remain “effective on occurrence of contingency.”¹¹⁹ MBOG has not yet promulgated final rules to implement and enforce the carbon sequestration framework contemplated by S.B. 498.¹²⁰

¹¹¹ MONT. CODE ANN. § 82-11-183(6) (effective on occurrence of contingency).

¹¹² MONT. CODE ANN. § 82-11-183(7) (effective on occurrence of contingency). If title is not conveyed to the state, the storage operator accepts indefinite liability for the storage reservoir and the stored carbon dioxide. *Id.*

¹¹³ MONT. CODE ANN. § 82-11-183(8)(e).

¹¹⁴ MONT. CODE ANN. § 69-13-104.

¹¹⁵ MONT. CODE ANN. § 15-6-158. *See also* MONT. ADMIN. R. 17.80.204 (2013).

¹¹⁶ S.B. 498, 61st Leg., Reg. Sess. (Mont. 2009). Statutory provisions that remain “effective on occurrence of contingency” will be noted with a parenthetical in the footnotes below.

¹¹⁷ S.B. 498, at §§ 30-31.

¹¹⁸ S.B. 498, at §§ 30-31.

¹¹⁹ *See, e.g.*, MONT. CODE ANN. § 82-11-183(9) (2013) (effective on occurrence of contingency).

¹²⁰ MONT. ADMIN. R. 36.22.1402 (2013) (the current rules only regulate Class UU injection wells).

Based on the statutory language, a Class VI permit applicant must have at least consent to enter the pore space.¹²¹ The statute states that “the issuance of a permit for a carbon dioxide injection well shall not prejudice the rights of property owners within a geologic storage reservoir to exercise rights that have not been committed to a storage reservoir.”¹²² There is a presumption that the surface estate owns geologic storage reservoirs.¹²³ However, a mineral estate is a dominant estate under the framework.¹²⁴ It is advisable for a storage operator obtain title to the pore space because, at the end of an injection project, if the storage operator is not able to transfer title to the state, the storage operator indefinitely accepts liability for the stored carbon dioxide and the geologic storage reservoir.¹²⁵

Under the not yet effective carbon sequestration framework, upon application to the MBOG, persons owning leasehold interests underlying sixty percent (60%) of the surface within a delineated area may request operation as a unit of one or more pools or parts of pools in a field.¹²⁶ An application for unitization, or pooling, may be granted if MBOG finds that the unitization is (i) necessary for the long-term storage of carbon dioxide; (ii) the value of the economies affected exceeds the costs incident to the operations; and (iii) that the full extent of the geologic storage reservoir has been reasonably defined by information acceptable to the MBOG.¹²⁷ At least sixty (60) days prior to submitting an application for unitization, the applicant must notify all persons with an ownership interest in the surface, subsurface storage rights, and the subsurface minerals within the proposed unit area.¹²⁸

Under the carbon sequestration framework, a storage operator is primarily liable for the operation and management of the carbon dioxide injection well, the stored carbon dioxide, and the geologic storage reservoir.¹²⁹ After a period of at least twenty-five (25) years after carbon dioxide injections end, the geologic storage operator may receive a certificate of completion, if certain conditions are met.¹³⁰ Upon issuance of a certificate of completion, the MBOG must ensure adequate monitoring by the storage operator for a period of twenty-five (25) years.¹³¹ After the MBOG monitoring period, the storage operator may convey title of the geologic storage reservoir and stored

¹²¹ MONT. CODE ANN. § 82-11-180(a); MONT. CODE ANN. § 82-11-240(1)(a)(effective on occurrence of contingency).

¹²² MONT. CODE ANN. § 82-11-180(a).

¹²³ MONT. CODE ANN. § 82-11-180(e)(3).

¹²⁴ *Id.*

¹²⁵ MONT. CODE ANN. § 82-11-183(9) (effective on occurrence of contingency).

¹²⁶ MONT. CODE ANN. § 82-11-204 (effective on occurrence of contingency).

¹²⁷ MONT. CODE ANN. § 82-11-205 (effective on occurrence of contingency).

¹²⁸ MONT. CODE ANN. § 82-11-204(2)(b) (effective on occurrence of contingency).

¹²⁹ MONT. CODE ANN. § 82-11-182 (effective on occurrence of contingency).

¹³⁰ MONT. CODE ANN. §§ 82-11-183(3) to -(4) (effective on occurrence of contingency).

¹³¹ MONT. CODE ANN. §§ 82-11-183 (6) (effective on occurrence of contingency).

carbon dioxide to the state.¹³² Once title is transferred, the state assumes responsibility for monitoring and managing the storage reservoir and the stored carbon dioxide until such time as the federal government assumes responsibility for the long-term monitoring and management.¹³³

With regard to infrastructure, Montana statute provides for the right to exercise eminent domain in siting carbon dioxide pipelines so long as the pipeline operator is registered with the Montana Public Utility Commission. Common carriers who have filed with the Montana Public Utility Commission may utilize the power of eminent domain.¹³⁴ The definition of “common carrier pipeline” one who engages in owning, operating, or managing any pipeline or any part of any pipeline within the state for transportation of carbon dioxide from a plant or facility that produces or captures carbon dioxide.¹³⁵ The power eminent domain must be exercised pursuant to statutory law.¹³⁶ The Montana legislature also adopted “Clean and Green” property tax incentives, which are intended to encourage energy projects with less environmental impact than conventional facilities, such as carbon dioxide pipelines.¹³⁷

¹³² MONT. CODE ANN. §§ 82-11-183 (7) (effective on occurrence of contingency). If title is not conveyed to the state, the storage operator accepts indefinite liability for the storage reservoir and the stored carbon dioxide. *Id.*

¹³³ MONT. CODE ANN. §§ 82-11-183 (8)(e).

¹³⁴ *Id.*

¹³⁵ MONT. CODE ANN. § 69-13-101.

¹³⁶ MONT. CODE ANN. § 69-13-104.

¹³⁷ MONT. CODE ANN. § 15-6-158. *See also* MONT. ADMIN. R. 17.80.204 (2013).

NEBRASKA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

NEVADA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

NEW HAMPSHIRE

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

NEW JERSEY

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

NEW MEXICO

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Authority currently exists to condemn surface land for pipeline construction (including CO₂ pipelines), but applies only to trunk lines, or primary transportation lines, and not to gathering lines. NMSA 70-3-5. Authority also exists to establish the means by which easements for smaller disposal lines and gathering lines may be acquired across private property.

Narrative:

The Governor's Executive Order 2006--69 requires New Mexico's Energy, Mineral, and Natural Resources Department (EMNRD) to "explore requirements needed to ... geologically sequester significant amounts of anthropogenic carbon dioxide in the state, including but not limited to geologic surveys, infrastructure, and ownership of liabilities. ... In addition, EMNRD shall coordinate with the stakeholder group to develop and propose rules regarding carbon dioxide ... storage." On December 1, 2007, EMNRD issued its report entitled "A Blueprint for the Regulation of Geologic Sequestration of Carbon Dioxide in New Mexico" (the Report)

The Report states that New Mexico's Oil Conservation District currently:

1. regulates the injection of carbon dioxide into oil and gas reservoirs to enhance hydrocarbon recovery, to prevent carbon dioxide waste, and for disposal;
2. can require that carbon dioxide be injected, after the possibility of enhanced production has passed, to prevent waste of carbon dioxide that would otherwise be vented;
3. regulates naturally occurring carbon dioxide and may require injection, not limited to oil and gas reservoirs, if the carbon dioxide is a product of or used in oil and gas operations.

The Report notes, however, that the Oil Conservation District does not have:

1. clear authority to regulate anthropogenic carbon dioxide injection for sequestration purposes alone; or
2. general authority to regulate injection/sequestration of carbon dioxide not produced in oil and gas operations into reservoirs other than those that produce oil and gas.

With regard to the issue of ownership of storage areas/pore space, neither case law nor legislation addresses whether the pore space is held by the surface estate or the mineral estate. The Report claims that pore space likely belongs to the surface owner unless the conveyance or severance of the mineral estate explicitly states otherwise. The question, however, remains whether the surface owner can only take control of the pore space after the mineral estate has been removed or depleted.

No authority exists under current law to provide for the acquisition by eminent domain of subsurface pore space for the purposes of carbon dioxide sequestration. For use of reservoirs that still contain oil and gas pools, those pools can be unitized by agreement among the pool operators or through an Oil Conservation Division order compelling unitization when three-quarters of the interests consent (Statutory Unitization Act, NMSA 70-7-1, et seq.). This process, however, may only be employed when unitization will "substantially increase the ultimate recovery of oil and gas from the pool or unitized portion thereof" (NMSA 70-7-5). Therefore, this process cannot be used for the unitization of reservoirs that will be used for storage only.

Authority currently exists to condemn surface land for pipeline construction, including carbon dioxide pipelines (NMSA 70-3-5). This provision applies only to trunk lines, or primary transportation lines, and not to gathering lines. NMSA 70-3A-1 et seq. establishes the means by which easements for smaller disposal lines and gathering lines may be acquired across private property.

New Mexico legislation has not addressed any aspect of long-term liability for the storage of carbon dioxide. The Report strongly recommends the introduction of legislation or regulations to address all of the above issues.

NEW YORK

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

NORTH CAROLINA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

NORTH DAKOTA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

No, North Dakota does not have primacy for Class VI UIC wells. However, North Dakota submitted its primacy application for Class VI enforcement responsibility on June 14, 2013.¹³⁸

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Before obtaining a permit, a storage operator¹³⁹ must make a good-faith effort to obtain the consent of all persons who own the storage reservoir's pore space.¹⁴⁰ In addition, the storage operator must obtain the consent of at least sixty percent (60%) of the ownership of the storage reservoir's pore space.¹⁴¹ The presumption in North Dakota is that the pore space is owned by the surface owner.¹⁴²

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

North Dakota statutory law prohibits severance of pore space by the surface property owner, which excludes unitization as a method of transferring pore space rights.¹⁴³ However, North Dakota statutory law allows for the amalgamation of property interests, if the requisite amount of consent is not obtained from persons who own the storage reservoir's pore space and non-consenting property owners are equitably compensated.¹⁴⁴

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

While a storage operator holds title, the operator is liable for any damage the stored carbon dioxide may cause.¹⁴⁵ A certificate of completion may not be

¹³⁸ North Dakota Underground Injection Control Program Revision Application, 78 Fed. Reg. 48639 (Aug. 9, 2013). See also North Dakota's Class VI Primacy Application, *Region 8*, EPA, <http://www2.epa.gov/region8/north-dakotas-class-vi-primacy-application> (last visited Nov. 6, 2013).

¹³⁹ N.D. CENT CODE § 38-22-02(8) (2013) (defined as the person holding or applying for a permit for carbon dioxide underground storage from the North Dakota Industrial Commission).

¹⁴⁰ N.D. CENT CODE § 38-22-08(4).

¹⁴¹ N.D. CENT CODE § 38-22-08(5).

¹⁴² N.D. CENT CODE § 47-31-05

¹⁴³ N.D. CENT CODE § 47-31-05.

¹⁴⁴ N.D. CENT CODE § 38-22-10.

¹⁴⁵ *Id.*

issued by the Commission until at least ten (10) years after carbon dioxide injections end.¹⁴⁶ Once a certificate is issued, title to the storage facility and the stored carbon dioxide is transferred to the state.¹⁴⁷ Thereafter, Monitoring and managing the storage facility and stored carbon is the primary responsibility of the State and Industrial Commission until such time as the federal government assumes responsibility for the long-term monitoring and management of storage facilities.¹⁴⁸

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

The North Dakota Pipeline Authority is authorized to participate in pipeline facility projects through financial support, plan, development, acquisition, leasing, rental, joint ownership, or other arrangements.¹⁴⁹ Under the North Dakota eminent domain statute state construction of a carbon dioxide pipeline is a public uses for which the right of eminent domain may be exercised.¹⁵⁰ Additionally, a common pipeline carrier may lay, maintain, and operate pipelines along, across, or under any public stream or highway.¹⁵¹

Narrative:

North Dakota submitted its primacy application for Class VI enforcement responsibility on June 14, 2013.¹⁵² The official comment period for application ended on September 9, 2013.¹⁵³ In order to gain primacy for Class VI injection wells, the North Dakota legislature drafted and amended certain statutory law.¹⁵⁴ In addition, the North Dakota Industrial Commission, Department of Mineral Resources, Oil and Gas Division (“Commission”) drafted and amended relevant sections of the administrative code.¹⁵⁵

¹⁴⁶ N.D. CENT CODE § 38-22-17(4). *See also* N.D. CENT CODE § 38-22-17(5) (describing conditions that must be met in order to issue a certificate of completion).

¹⁴⁷ N.D. CENT CODE § 38-22-17(6).

¹⁴⁸ N.D. CENT CODE § 38-22-17(6)(e).

¹⁴⁹ N.D. CENT CODE § 54-17.7-04(1) to -(18)(describing the powers of the North Dakota Pipeline Authority, which include “[d]o any and all things necessary or expedient for the purposes of the authority provided in this chapter).

¹⁵⁰ N.D. CENT CODE § 32-15-02; § 49-19-12.

¹⁵¹ N.D. CENT CODE § 49-19-09.

¹⁵² North Dakota Underground Injection Control Program Revision Application, 78 Fed. Reg. 48639 (Aug. 9, 2013); North Dakota’s Class VI Primacy Application, *Region 8*, EPA, <http://www2.epa.gov/region8/north-dakotas-class-vi-primacy-application> (last visited Nov. 6, 2013).

¹⁵³ 78 Fed. Reg. 48639.

¹⁵⁴ *See e.g.*, S.B. 2139, 61st Leg., Reg. Sess. (2009); S.B.2095, 61st Leg., Reg. Sess. (2009).

¹⁵⁵ Geologic Storage of Carbon Dioxide, N.D. ADMIN CODE 43-05-01 (2013).

Under the North Dakota program, Class VI injection wells will be administered by the Commission through a Carbon Capture and Storage Supervisor (“CCS”).¹⁵⁶ The program requires all owners or operators applying to inject CO₂ for the purpose of geologic storage to obtain a storage facility permit, a permit to drill, and a permit to operate prior to commencement of injection activities.¹⁵⁷ Permit requirements are addressed via statutory law and further clarified by administrative regulation.¹⁵⁸ A petition for a storage facility permit must include, among other things, (1) a site map showing the boundaries of the storage reservoir and location of all proposed wells, (2) a geologic and hydrogeologic evaluation of the facility area, (3) description of the extent of the pore space that will be occupied by carbon dioxide, (4) an emergency and remedial response plan, (5) a detailed worker safety plan, (6) a corrosion monitoring and prevention plan, (7) a leak detection and monitoring plan, (8) the proposed casing and cementing program, (9) a testing and monitoring plan, (10) a plugging plan, and (10) post injection site care and facility closure plan.¹⁵⁹ The Commission reviews all Class VI permit applications in consult with the North Dakota Department of Health.¹⁶⁰

Before issuing a permit, the storage operator, which is defined as the person holding or applying for a permit for carbon dioxide underground storage from the North Dakota Industrial Commission,¹⁶¹ must make a good-faith effort to obtain the consent of all persons who own the storage reservoir’s pore space.¹⁶² In addition, the storage operator must obtain the consent of at least sixty percent (60%) of the ownership of the storage reservoir’s pore space.¹⁶³ North Dakota statutory law vests pore space ownership in the owner of the overlying surface estate and conveyance of title to the surface of real property conveys the pore space in all strata underlying the surface of the real property.¹⁶⁴ Severance of pore space by the surface property owner is prohibited.¹⁶⁵ Thus, North Dakota statutory law excludes unitization as a method of transferring pore space rights.¹⁶⁶ However, leasing of pore space is not considered to be severance of pore space under the statute.¹⁶⁷ North Dakota statutory law allows for the amalgamation, or pooling, of property interests if the requisite amount of consent is not

¹⁵⁶ N.D. INDUS. COMM’N, DEP’T OF MINERAL RES., OIL AND GAS DIV., UNDERGROUND INJECTION CONTROL PROGRAM DESCRIPTION, 5 (2013), available at http://www2.epa.gov/sites/production/files/2013-07/documents/classvi_1422uic_programdescription20june2013.pdf.

¹⁵⁷ *Id.*

¹⁵⁸ See N.D. CENT CODE § 38-22-08 (2013); N.D. ADMIN CODE 43-05-01-05 (2013).

¹⁵⁹ See N.D. ADMIN CODE 43-05-01-05(a) to -(o) (2013).

¹⁶⁰ *Id.*

¹⁶¹ N.D. CENT CODE § 38-22-02(8) (2013).

¹⁶² N.D. CENT CODE § 38-22-08(4).

¹⁶³ N.D. CENT CODE § 38-22-08(5).

¹⁶⁴ N.D. CENT CODE §§ 47-31-03 to -04.

¹⁶⁵ N.D. CENT CODE § 47-31-05.

¹⁶⁶ See *Id.*

¹⁶⁷ N.D. CENT CODE § 47-31-06.

obtained from persons who own the storage reservoir's pore space and non-consenting property owners are equitably compensated.¹⁶⁸

North Dakota statutory law vests title to the carbon dioxide in the storage operator (defined above) until the Commission issues a certificate of project completion.¹⁶⁹ While the storage operator holds title, the operator is liable for any damage the carbon dioxide may cause.¹⁷⁰ A certificate of completion may not be issued by the Commission until at least ten years after carbon dioxide injections end.¹⁷¹ Once a certificate is issued, title to the storage facility and to the stored carbon dioxide is transferred, without payment of compensation, to the state.¹⁷² Thereafter, Monitoring and managing the storage facility is the primary responsibility of the State and Industrial Commission until such time as the federal government assumes responsibility for the long-term monitoring and management of storage facilities.¹⁷³ The State is also responsible for plugging and abandonment of all monitoring wells.¹⁷⁴

With regard to carbon sequestration infrastructure, the North Dakota Pipeline Authority ("Authority") is responsible for facilitating development of transmission pipelines to support the production, transportation, and utilization of North Dakota energy-related commodities, including carbon dioxide.¹⁷⁵ The Authority may assist development of a pipeline facility through financing, planning, acquisition, leasing, rental, joint ownership, or other arrangements.¹⁷⁶ Eminent domain is authorized for pipeline siting in North Dakota. The eminent domain statute states that siting of carbon dioxide pipelines is a public use for which the right of eminent domain may be exercised.¹⁷⁷ Additionally, a common pipeline carrier may lay, maintain, and operate a pipeline facility along, across, or under any public stream or highway.¹⁷⁸

¹⁶⁸ N.D. CENT CODE § 38-22-10.

¹⁶⁹ N.D. CENT CODE § 38-22-16.

¹⁷⁰ *Id.*

¹⁷¹ N.D. CENT CODE § 38-22-17(4). *See also* N.D. CENT CODE § 38-22-17(5) (describing conditions that must be met in order to issue a certificate of completion).

¹⁷² N.D. CENT CODE § 38-22-17(6).

¹⁷³ *Id.*

¹⁷⁴ N.D. INDUS. COMM'N, DEP'T OF MINERAL RES., OIL AND GAS DIV., UNDERGROUND INJECTION CONTROL PROGRAM DESCRIPTION, 13 (2013), available at http://www2.epa.gov/sites/production/files/2013-07/documents/classvi_1422uic_programdescription20june2013.pdf.

¹⁷⁵ N.D. CENT CODE § 54-17.7-03; § 54-17.7-02(3).

¹⁷⁶ N.D. CENT CODE § 54-17.7-04(1) to -(18)(describing the powers of the North Dakota Pipeline Authority, which include "[d]o any and all things necessary or expedient for the purposes of the authority provided in this chapter).

¹⁷⁷ N.D. CENT CODE § 32-15-02.

¹⁷⁸ N.D. CENT CODE § 49-19-09.

OHIO

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

OKLAHOMA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Narrative:

The Oklahoma Carbon Sequestration Act (Section 3-4-101 of Title 27A), signed into law in 2001, created an Advisory Committee to work in conjunction with the Oklahoma Conservation and Department of Environmental Quality rules, to create uniform standards and criteria for the certification of the state's existing or potential carbon sinks.

In 2009, Oklahoma passed into law the Oklahoma Carbon Capture and Geologic Sequestration Act, known as "Geologic Storage of Carbon Dioxide Act" (Section 3-5-102 of Title 27A). The Act provides the legal framework to encourage the long-term geologic storage of carbon dioxide in Oklahoma. As such, the legislature declared that the transportation and geologic storage of carbon dioxide will benefit the citizens of the state and that carbon dioxide is a valuable commodity to the citizens of the state. By declaring carbon dioxide to be a valuable commodity as opposed to a waste, the Oklahoma legislation was intended to prevent RCRA implications.

The Geological Storage of Carbon Dioxide Act gives the Department of Environmental Quality jurisdiction and authority over the permitting and regulation of storage and withdraw of carbon dioxide into deep saline formations, unmineable coal seams, basalt reservoirs, salt domes, and non-mineral bearing shales (Section 3-5-103 of Title 27A). The Geologic Storage of Carbon Dioxide Act provides for the Department of Environmental Quality to issue and enforce such orders, and adopt, modify, repeal, and enforce such rules, including establishment of appropriate and sufficient financial sureties or bonds “for the purpose of regulating the drilling of wells related to a storage facilities, the injection and withdrawal of carbon dioxide, the operation of the storage facility, well plugging and abandonment, and removal of surface buildings and equipment of the storage facility and as necessary to protect the storage facility against pollution, invasion, and the escape or migration of carbon dioxide” (Section 3-5-106 of Title 27A). Although the facility owner is deemed to own the injected CO₂, the Act fails to address how the facility is to be maintained post-closure, or who is to assume responsibility for the facility once it is closed.

The Corporation Commission is required to regulate CO₂ sequestration into oil reservoirs, gas reservoirs, coal-bed methane reservoirs, mineral reservoirs, and brine reservoirs. In the event a CO₂ unitization process is established, the Act states that the Corporation Commission will regulate the process. Neither entity has issued regulations addressing the myriad of issues relating to the sequestration of carbon dioxide.

Storage and pipeline operators are also regulated by the Corporation Commission to the extent storage and pipeline operators are deemed to be public utilities providing public services and are therefore subject to the general power of the Corporation Commission to regulate public utilities (Section 3-5-103 of Title 27A). The Act holds open that the Corporation Commission will have the authority to regulate all aspects of a unitization process to support the establishment of CO₂ sequestration facilities in the event the State of Oklahoma establishes a unitization process (Section 3-5-101 of Title 27A).

A CO₂ sequestration facility operator will be required to obtain an operating permit unless a UIC permit is obtained from the appropriate agency. Permit applicants must notify affected surface and mineral owners. The statute does not create a presumption of pore space ownership to either the surface or mineral owner (Section 3-5-104 of Title 27A).

OREGON

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

PENNSYLVANIA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Narrative:

The Pennsylvania Alternative Energy Portfolio Standards Act (AEPS), signed into law in 2004, requires electric distribution companies and electric generation suppliers in Pennsylvania to supply 18 percent of their electricity using alternative energy resources by 2020.

In 2008, Pennsylvania passed the Pennsylvania Climate Change Act, 71 P.S. §§ 1361.1 - 1361.8. The Act requires the Department of Environmental Protection to prepare and publish a report, updated every three years, on climate change that identifies, among other information, economic opportunities for the commonwealth “created by the potential need for alternative sources of energy, climate-related technologies, services and strategies, carbon sequestration technologies; capture and utilization of fugitive greenhouse gas emissions from any source; and other mitigation strategies.”

The Act also established the Climate Change Advisory Committee. The Committee is to work with the DEP to publish, and update every three years, a climate change action plan. In a 2009 Climate Impact Assessment Report to the Department of Environmental Protection, Penn State's Environment and Natural Resources Institute, the preparer of the Report, recognized Pennsylvania's "significant potential for long-term geologic storage of carbon dioxide emissions in formations such as depleted oil and gas reservoirs, unmineable coal seams, salt caverns, some shales and saline formations. The Report, however, recognized that a lack of regulations governing property rights and liability issues serves as a significant barrier to any large-scale sequestration plans.

RHODE ISLAND

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

SOUTH CAROLINA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

SOUTH DAKOTA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Any pipeline companies owning a pipeline which is a common carrier as defined by § 49-7-11 may exercise the right of eminent domain in acquiring right-of-way as prescribed by statute. S.D. Codified Laws § 49-7-13. The transport of carbon dioxide is included within the definition of a transmission facility. S.D. Codified Laws § 49-41B-2.1

TENNESSEE

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

TEXAS

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Texas law does not provide for the transfer of liability or ownership during the post closure phase. The Anthropogenic Carbon Dioxide Trust Fund, Texas Natural Resources Code § 120.003, collected by the RRC under Subchapter C-1, Chapter 27, Water Code, and penalties imposed for violations of that subchapter or rules drafted under that subchapter, can be used for a variety of reasons relating to long term care for the geologic storage of CO₂.

Section 120.002 of the Natural Resources Code provides that, unless otherwise expressly provided by a contract or other legally binding document or by other law, anthropogenic CO₂ stored in a geologic storage facility is considered to be the property of the storage operator or the storage operator's heirs, successors, or assigns. Therefore, the responsibility for the CO₂ in a geologic storage facility permitted by the RRC is that of the operator.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Eminent domain is available to pipeline operators who choose to operate as a common carrier under Tex. Nat. Res. Code Ann. § 111.019(a).

Narrative:

Texas Water Code, Chapters 26 and 27 provide that the Railroad Commission (RRC) and Texas Commission on Environmental Quality (TCEQ) collaborate on matters

related to, among other things, underground injection control and geologic storage of carbon dioxide. In 2009 the Texas Legislature passed, and the governor signed into law, four bills¹⁷⁹ with bearing on carbon sequestration and its implications. These included SB 1387, which among other things required the RRC to implement rules to regulate the injection of CO2 into non-productive formations above or below oil and gas producing formations for the purpose of geologic storage. HB 1796 established a framework for offshore geologic storage repository for carbon dioxide and requires TCEQ to adopt standards for the location, construction, maintenance, monitoring, and operation of an offshore CO2 repository.

SB 1387 contemplates that the RRC will seek primacy for the Class VI UIC program upon adoption of the RRC rules and the EPA rules. In March 2010, the RRC published proposed rules, at 16 Texas Admin. Code Chapter 5, intended to meet the EPA's Class VI requirements and the requirements of SB 1387.

Section 120.002 of the Natural Resources Code provides that anthropogenic carbon dioxide stored in a geologic storage facility is owned by the storage operator or his heirs, successors, or assigns unless expressly provided otherwise in a legally binding document or by other law. It is unclear whether the Anthropogenic Carbon Dioxide Storage Trust Fund could be used by the RRC to perform comprehensive remedial activity during the post-closure phase if the operator cannot be found.

The Texas Railroad Commission regulates carbon dioxide pipelines under Tex. Nat. Res. Code Ann. § 111.019. The statute gives the carbon dioxide pipeline operator a choice of operating as either a private carrier or a common carrier, but grants the ability to exercise the power of eminent domain to those who choose to proceed as a common carrier.

¹⁷⁹ The two bills that are not discussed are SB 184 requiring the Comptroller of Public Account to prepare a report outlining strategies for reducing GHGs, and HB 469 providing incentives for the implementation of carbon capture and sequestration projects.

UTAH

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Narrative:

Utah has yet to implement carbon sequestration legislation. Utah enacted The Energy Resource and Carbon Emission Reduction Initiative (S.B. 202) in March 2008. This law can be described as a renewable portfolio goal, requiring utilities to pursue renewable energy only to the extent that it is cost-effective to do so. The law also charged the Department of Environmental Quality (DEQ) with developing recommended rules for carbon capture and geologic sequestration.

On November 15, 2010, the Carbon Capture and Geologic Sequestration (CCGS) Working Group of the DEQ reported recommended rules to the Legislature's Administrative Rules Review Committee. As a follow-up task, DEQ submitted a letter to the Legislative Rules Committee on December 1, 2010, identifying two outstanding legal issues: (1) pore space ownership, and (2) post-closure long-term liability.

The Division of Water Quality is currently evaluating options for implementing the Class VI Final Rule issued by the EPA.

VERMONT

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

VIRGINIA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

Narrative:

The Southeast Regional Carbon Sequestration Partnership (SECARB), led by the Southern States Energy Board (SSEB), represents the 11 southeastern states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia, plus counties in Kentucky and West Virginia. In 2009, SECARB managed a sequestration validation phase project located in Virginia. The project evaluated the injection of more than 900 metric tons of CO₂ into multiple coal seams of the Pocahontas Formation and Lee Formation at depths ranging between 1,400 and 2,200 feet. The project also included coalbed methane (CBM) recovery operations, adding economic value to the project. The primary project objective was to demonstrate geologic storage in unmineable Appalachian coals as a safe and permanent method to mitigate GHG emissions. (See report at: <http://www.netl.doe.gov/publications/factsheets/project/NT42590-P2.pdf>).

Project accomplishments included completing a detailed regional assessment of the potential Central Appalachian Basin carbon storage resources, performing and finalizing a comprehensive suite of production maps for the active CBM wells in the

Central Appalachian Basin, completing site selection of a donated CNX Gas CBM well, along with the initial reservoir modeling, site permitting, and well design for the field test site, and post-injection monitoring activities have verified the CO₂ has remained in the coal seams, but gas analysis showing that the injected tracer is present in the off-set producing CBM wells. Long term monitoring of the flowback was also completed.

There are no references to the terms “carbon sequestration,” “geological storage,” “carbon transmission,” or any permutation of those terms in either the Code of Virginia or the Virginia Administrative Code.

WASHINGTON

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

WEST VIRGINIA

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

West Virginia has declared CO₂ injection into geologic formation as being in the public interest, thus creating a basis for a utility to utilize its power of eminent domain.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

West Virginia law does not address transfer of ownership or liability.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

West Virginia has declared CO₂ injection into geologic formation as being in integral to utility plant operations (W.Va. Code 22-11A-1(a)(13)), thus creating a basis for a utility to utilize its power of eminent domain.

Narrative:

In 2009, West Virginia enacted legislation which established a carbon capture and storage operational regulatory program and established a working group to assess issues not addressed in the legislation, including property issues and long-term liability. CCS facilities are authorized by the legislation to the extent that they hold an underground injection control permit authorized by state law.¹⁸⁰

The stated purpose of the statute is to establish a legal and regulatory framework for the permitting of CO₂ sequestration operations; designate a state agency responsible for establishing standards and rules for the permitting of CO₂ sequestration

¹⁸⁰ See W. VA CODE § 22-11A-3(b).

operations including, but not limited to, rules pertaining to environmental surveillance, monitoring of geologic migration, and excursions; construction standards, bonding, or other financial assurances; and closure and post-closure monitoring.¹⁸¹

The West Virginia Carbon Dioxide Sequestration Working Group (“Working Group”) completed its Report to the Legislature dated July 1, 2011. The Working Group was charged by the Legislature with studying all issues related to the sequestration of carbon dioxide in order to help encourage the widespread use of carbon dioxide sequestration (“CCS”) in West Virginia. W. Va. Code §22-11A-6.

In its report, the Working Group makes several recommendations to facilitate CCS development including the legislative proposal of the West Virginia Carbon Dioxide Sequestration Act.

The legislation proposed by the Working Group would require the applicant to have all necessary property rights, which shall be addressed during the permitting process. A necessary property right shall not include the right to use a reservoir below 2,500 feet, which does not have a current or reasonably foreseeable use. If no impairment of an existing use is found, the WVDEP permit will give the operator the right to inject carbon dioxide below 2,500 feet. If use impairment occurs after permit issuance, a mutually agreeable plan may be approved to undertake such use in a manner that would not interfere with the CCS facility.

In the event a necessary property right must be obtained, the proposal allows for the amalgamation of property rights, while preserving other eminent domain authority. If a CCS project impairs the use of a “necessary” property right there are three options for proceeding: (a) alter the CCS project; (b) negotiate acquisition of rights, or (c) condemn or pool. To streamline the process the Working Group proposes the use of tax records to initiate condemnation or pooling. However, condemnation and pooling will not be allowed to obtain rights to mineral formations or formations above 2500 feet, obtain rights of other CCS facilities or to be used for pipelines used to withdraw carbon dioxide. In any event compensation may not consider value of the reservoir for purposes of CCS.

Other property issues were addressed and recommendations were made including: the preservation of inverse condemnation for per se physical taking of necessary property rights and the CCS operator is relieved of tort liability for any taking.

The Working Group recommended certain limitations on liability as appropriate during the operational phase of a project. In addition, it suggested a multistep process for liability transfer, which will only occur 10 years post-closure once WVDEP has determined that the facility does not leak in addition to meeting other regulatory

¹⁸¹ See W. VA CODE § 22-11A-1(b).

requirements. This liability transfer should be authorized during the post-closure period to promote CCS activities. To assure that the operator bears responsibility for post closure liabilities, the operator will be required to fund a trust fund in an amount that is actuarially determined to be adequate to respond to the risks the facility may create. Ownership of the sequestration facility shall transfer to a quasi-public entity or the federal government upon the issuance of a certificate of completion by the secretary of the WVDEP.

Fees are also addressed. The Working Group recommended that there will be three separate mechanisms for obtaining fees: (1) an application fee; (2) an operational phase fee managed in an administrative fund for operation costs that may not exceed the lesser of \$150,000 per year or \$0.01 per tonne of injected carbon dioxide, which may also be used to defray the expenses of regulatory agencies other than the WVDEP; and (3) a post closure fee managed in a trust fund for post operation costs. This post closure trust fund should be established by collecting a fee of \$0.07 per tonne of injected carbon dioxide (with a \$50,000,000 cap) during the operational phase of the project to provide funds to maintain the facility in the post closure phase, to purchase insurance, and if necessary to respond to claims. Provision should be made for the handling of subsequent sequestration facilities.

WISCONSIN

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

Applicable state statutes and rules do not specifically address this question.

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Applicable state statutes and rules do not specifically address this question.

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Applicable state statutes and rules do not specifically address this question.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

Applicable state statutes and rules do not specifically address this question.

WYOMING

1. Does the state have primacy to implement the Class VI UIC program related to the underground injection of CO₂?

No, Wyoming does not currently have primacy for Class VI wells. The Wyoming Department of Environmental Quality (“DEQ”) finalized Class VI UIC rules on November 5, 2010.¹⁸²

2. Does the state specify what property rights must be secured for the geologic storage of CO₂?

A Class VI permit application must include sufficient documentation to demonstrate that the applicant possess all legal rights, including but not limited to the right to surface use, necessary to sequester carbon dioxide and associated constituents.¹⁸³ DEQ may issue a permit that is contingent on obtaining a unitization order (described further below).¹⁸⁴ The surface owner owns the pore space in Wyoming.¹⁸⁵

3. Does the state have any streamlined procedures for the taking, unitization or use of property rights related to the geologic storage of CO₂?

Unitization is authorized for the pooling of interests in pore space in a unit area so long as eighty percent (80%) of the ownership interest of the unit area approve of the unitization plan.¹⁸⁶

4. Does the state provide for the mitigation of the long term post closure liabilities that are associated with facilities that store CO₂ in geologic formations?

Beyond its application of post-closure care under the UIC program, Wyoming does not address the transfer of liability or ownership in the post closure phase.

5. Does the state have any streamlined procedures for the siting or construction of pipelines used to transport CO₂?

¹⁸² See WYO. STAT. ANN. § 35-11-313(f) (2013) (authorizing the administrator of the water quality division of DEQ to establish rules and regulations for permitting of geologic sequestration of carbon dioxide).

¹⁸³ WYO. STAT. ANN. § 35-11-313(f)(ii)(F).

¹⁸⁴ WYO. STAT. ANN. § 35-11-313(f)(ii)(F).

¹⁸⁵ WYO. STAT. ANN. § 34-1-152.

¹⁸⁶ WYO. STAT. ANN. §35-11-314-317.

The Wyoming Pipeline Authority (“Authority”) is authorized to provide grants, loans, and bonding authority for CO2 pipeline projects.¹⁸⁷ Authority is vested with the power of eminent domain.¹⁸⁸

Narrative:

The state of Wyoming does not currently have primacy for Class VI UIC wells. Under statutory law, geologic sequestration of carbon dioxide is prohibited, unless otherwise authorized by a permit issued by the Wyoming Department of Environmental Quality (“DEQ”).¹⁸⁹ Expressly excluded from this prohibition is the injection of carbon dioxide for purposes of a project for enhanced recovery of oil or other minerals approved by the Wyoming Oil and Gas Conservation Commission.¹⁹⁰ The DEQ finalized Class VI rules on November 5, 2010.¹⁹¹

The Class VI rules require applicants to obtain a permit for: (i) the geologic sequestration of carbon dioxide and (2) construction, installation, operation, monitoring, testing, plugging, and post-injection site care.¹⁹² Permits may be issued for individual Class VI wells or on an area basis for multiple points of discharge operated by the same person.¹⁹³ Permits are issued for the operating life of the facility and are reviewed by DEQ at least once every five (5) years for duration of the project.¹⁹⁴

A Class VI permit application must include sufficient documentation to demonstrate that the applicant has all legal rights, including but not limited to the right to surface use, necessary to sequester carbon dioxide and associated constituents.¹⁹⁵ DEQ may issue a permit that is contingent on obtaining a unitization order (described further below).¹⁹⁶ Wyoming statutory law establishes that the pore space underlying the surface is owned by the surface estate owner.¹⁹⁷ Pore space may be conveyed in a manner similar to a transfer of mineral interests in real property.¹⁹⁸ It is important to note that the owner of pore space does not have an inherent right to use the surface estate beyond that set out in a properly recorded instrument, such as a deed or

¹⁸⁷ WYO. STAT. ANN. § 37-5-102.

¹⁸⁸ WYO. STAT. ANN. § 1-26-814.

¹⁸⁹ WYO. STAT. ANN. § 35-11-313(a).

¹⁹⁰ WYO. STAT. ANN. § 35-11-313(b). *See also* WYO. STAT. ANN. § 35-11-313(c) (noting that, if an oil and gas operation converts to geologic sequestration, regulation will convert to DEQ).

¹⁹¹ *See* WYO. STAT. ANN. § 35-11-313(f) (2013)(authorizing the administrator of the water quality division of DEQ to establish rules and regulations for permitting of geologic sequestration of carbon dioxide).

¹⁹² 020-080-024 WYO. CODE R. § 4(a) (LexisNexis 2013).

¹⁹³ *Id.* at (vi).

¹⁹⁴ *Id.* at (v), (vii).

¹⁹⁵ WYO. STAT. ANN. § 35-11-313(f)(ii)(F).

¹⁹⁶ WYO. STAT. ANN. § 35-11-313(f)(ii)(F).

¹⁹⁷ WYO. STAT. ANN. § 34-1-152(a).

¹⁹⁸ WYO. STAT. ANN. § 34-1-152(b).

memorandum of lease.¹⁹⁹ Also, a severed mineral estate has priority over severed pore space regardless of whether ownership of the pore space is vested in the several owners of the surface or is owned separately from the surface.²⁰⁰

With regard to unitization, an interested person may file an application with the Wyoming Oil and Gas Conservation Commission requesting an order providing for the operation and organization of a unit of one (1) or more parts as a geologic sequestration site and for the pooling of interests in pore space so long as eighty percent (80%) of the ownership interest of the unit approve of the unitization plan.²⁰¹ A unitization order must contain a finding that, among other things, (i) the purposes of the unitization statute have been served by the granting of the application; (ii) the application will facilitate the use and production of Wyoming energy resources; (iii) the method by which the allocation of economic benefits generated from use of pore space within the unit area between pore space owners and the unit operator or others is fair and reasonable, taking in consideration the costs required to capture, transport and sequester the carbon dioxide.²⁰²

Liability for the geologic sequestration site and carbon dioxide remains with the owner or operator through the lifetime of the project and the owner or operator must demonstrate the ability to be financial responsible for any liability.²⁰³ The owner or operator of a Class VI well must prepare, maintain, update and comply with a plan for post-injection site care and site closure.²⁰⁴ Upon cessation of injection, an owner or operator of Class VI well must either submit an amended post-injection site care and site closure plan or demonstrate that no amendment is warranted.²⁰⁵ The DEQ may authorize site closure, if the owner can meet certain site performance requirements and closure standards.²⁰⁶ However, site closure does not diminish or reduce the owner's liability for the sequestration site and carbon dioxide.²⁰⁷

The Wyoming Pipeline Authority is authorized to make grants or loans and is vested with bonding authority to facilitate CO₂ pipeline projects.²⁰⁸ The Wyoming Pipeline Authority is also vested with the right of eminent domain to facilitate the construction or siting of pipeline projects.²⁰⁹

¹⁹⁹ WYO. STAT. ANN. § 34-1-152(f).

²⁰⁰ WYO. STAT. ANN. § 34-1-152(b).

²⁰¹ WYO. STAT. ANN. §35-11-316(c).

²⁰² WYO. STAT. ANN. §35-11-16(b).

²⁰³ WYO. STAT. ANN. §35-11-314-318(d) (stating that the stat of Wyoming does not assume any liability for geologic sequestration); 020-080-024 WYO. CODE R. § 18(a).

²⁰⁴ 020-080-024 WYO. CODE R. § 16(a).

²⁰⁵ *Id.* at (a)(iii).

²⁰⁶ 020-080-024 WYO. CODE R. § 16(b).

²⁰⁷ WYO. STAT. ANN. §35-11-314-318(d).

²⁰⁸ WYO. STAT. ANN. § 37-5-102.

²⁰⁹ WYO. STAT. ANN. § 1-26-814.



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