Carbon Sequestration

An Informative Guide for a New Industry

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Please note the above image comes from the National Carbon Capture Center and is a picture of the National Carbon Capture Center test facility located in Wilsonville, AL.
"National Carbon Capture Center Supports Commercialization of Carbon Built Low-Carbon Concrete Technology." *National Carbon Capture Center*, 2 May 2022, nationalcarboncapturecenter.com/2022/05/02/national-carbon-capture-center-supports-successful-commercialization-of-carbonbuilt-low-carbon-concrete-technology/. Accessed 27 June 2024.

Introduction

Carbon sequestration is the process of capturing carbon dioxide (CO_2), liquifying it, and then injecting it into underground strata for storage.[1] Carbon sequestration is what several states and the Federal Government have promoted as an effective method for reducing atmospheric CO_2. Moreover, the Interstate Oil & Gas Compact Commission (hereinafter, "IOGCC") stated, "CO_2 [sequestration] is among the most immediate and viable strategies for mitigating the release of CO_2 into the atmosphere."[2] The IOGCC (2007) released a publication called "CO_2 STORAGE: A Legal and Regulatory Guide for States."[3] In this publication, a regulatory model was presented as well as policy recommendations for carbon sequestration implementation.[4] Class VI primacy allows the state to become the governing agency over carbon sequestration instead of the United States Environmental Protection Agency[5] (hereinafter, "EPA"). Obtaining Class VI Primacy is of paramount importance for state agencies. States must apply then wait for a decision from the EPA as to whether they have obtained Class VI Primacy.[6] Until a state has obtained primacy, the state's administrative rules and the EPA's regulations will be used in a form of bi-lateral governance over carbon sequestration.[7] Once granted, the state will take over as the regulatory agency for carbon sequestration.[8] For other topics in carbon sequestration, the state will have to decide whether to use an administrative rule, a court ruling, or legislation to

[1] Department of Energy. "Doe Explains...Carbon Sequestration | Department of Energy." *Office of Science*, www.energy.gov/science/doe-explainscarbon-sequestration. Accessed 18 June 2024.
[2] *Id*.
[3] IOGCC. *Road to a Greener Energy Future: CO_2 Storage: A Legal and Regulatory Guide for States*, Interstate Oil and Gas Commission, 2007.
[4] *Id*.
[5] "Primary Enforcement Authority for the Underground Injection Control Program." *EPA*, Environmental Protection Agency, www.EPA.gov/uic/primary-enforcement-authority-underground-injection-control-program-0#what_prim. Accessed 13 Aug. 2024.
[6] *Id*.
[7] *Id*.
[8] *Id*.

clarify them. Some of those topics include who owns the pore space, whether to use amalgamation, what the process for using amalgamation should be, and how to both regulate and monitor carbon sequestration so that it can be done safely and effectively.

The purpose of this article is both to provide an update on the status of carbon sequestration across the country and to serve as a guide for states that are considering implementing carbon sequestration or that are in the early stages of implementing what rules/regulations will be used in their state. This article is also intended to inform those in the private sector who may be waiting for a state to implement carbon sequestration on how they can help facilitate implementation.

Where & How Much CO_2 Can Be Stored in the United States?

Currently, the most common places in the United States in which CO_2 may be stored are former natural gas or oil reservoirs, coal beds that cannot be mined, and saline aquifers.[9] The storage capacity of CO_2 in the United States is vast.[10] According to the United States Geological Survey, the United States has geological formations that can store approximately 3,000 metric gigatons of CO_2.[11] Humans worldwide currently produce 34 gigatons of CO_2 per year.[12]

Framework of Carbon Sequestration Statutes

North Dakota was the first state to implement a carbon sequestration statute and other states subsequently have used North Dakota's statute as a template, adding their own modifications to

[9] Drax Global. "How Do You Store CO2 and What Happens to It When You Do?" *Drax Global*, 14 May 2021, www.drax.com/carbon-capture/how-do-you-store-co2-and-what-happens-to-it-when-you-do/#:~:text=The%20most%20well%2Ddeveloped%20approach,be%20mined%2C%20or%20saline%20aquifers.
[10] *Id.*
[11] Jackson, P. Ryan. "USGS Fact Sheet 2013–3020: National Assessment of Geologic Carbon Dioxide Storage Resources-Summary." *USGS Publications Warehouse*, 2013, pubs.usgs.gov/fs/2013/3020/.
[12] *Id.*

address items specific to their states. The basic framework of the carbon sequestration statute developed by North Dakota has five (5) parts.[13] The first is "Liability and Financial Responsibility," which in most states has meant that the state bears the burden of post-closure responsibility, and the operator assumes liability for everything prior to post-closure.[14] Some states require a specific number of years the facility must operate in order to demonstrate that the CO_2 has been safely injected before the state will bear responsibility.[15] Other states have a minimum number of years requirement that the facility must be in operation before they will take on responsibility.[16] California has the highest minimum number of years, 100, before it accepts responsibility,[17] while North Dakota and Louisiana have the lowest number at 10 years.[18]

The second part is "CO_2 Ownership," which deals with how long the operator owns the CO_2 injected. Usually, "[a] transfer in liability is often concurrent with a transfer to the state of ownership rights in CO_2 injected into the subsurface."[19] (*see* Mont. Code Ann. § 82-11-182, N.D. Cent. Code § 38-22-16, Wyo. Stat. Ann. § 35-11-318, and Miss. Code Ann. § 53-11-9).

The third part is "Pore Space Ownership," which has two different approaches: the American Rule and the English Rule. The American Rule for pore space ownership is that the surface owner owns the pore space.[20] As of June 2024, the following states have statutes or case law

[13] Donaho, Thomas A. "CCUS Regulatory Handbook." *Bakerlaw.Com*, Baker Hostetler, 6 May 2023, www.bakerlaw.com/webfiles/Carbon Capture Regulatory handbook -CCUS.pdf.
[14] *Id*.
[15] *Id*.
[16] *Id*.
[17] *Id*. (*referencing*) Ca. Pub. Res. Code §71464
[18] *Id*. (*referencing*) N.D. Cent. Code §38-22-17(4); Louisiana Revised Statutes Tit. 30 § 1109 Cessation of Storage Operations; Liability Release.
[19] *Id*.
[20] Moore, Ruth Ivory. "Pore Space Rights – U.S. Overview." *Global CCS Institute*, May 2022, www.globalccsinstitute.com/wp-content/uploads/2022/05/Brief-Pore-Space-Rights-5.24-12.pdf.

stating they will follow the American Rule: Alabama,[21] Colorado (under proposed legislation),[22] Illinois (under proposed legislation),[23] Indiana (proposed legislation to extend),[24] Kentucky,[25] Louisiana,[26] Montana,[27] North Dakota,[28] Oklahoma,[29] South Dakota,[30] Utah,[31] West Virginia,[32] and Wyoming.[33] The English Rule for pore space ownership is that the mineral interest owner owns the pore space.[34] As of June 2024, only Alaska follows the English Rule.[35] There is conflicting case law in Texas. *Mapco, Inc. v. Carter* held that the mineral owner owns the pore space, whereas *Myers-Woodward, LLC v. Underground Servs. Markham, LLC* held that the surface owner owns the pore space, although this case has been appealed to the Supreme Court of Texas.[36]

The fourth part is "Storage Funds," which is how states ensure that private industry bears the burden of the project until the liability and financial responsibility requirements are satisfied by the operator.[37] An analogy for the storage fund is a bond for oil and gas drilling, except there are more moving pieces with the storage fund. A storage fund generally consists of application fees,

[21] HB 327, Act #2024-325.
[22] HB 24-1346.
[23] 2023 Illinois House Bill No. 2202, Illinois One Hundred Third General Assembly - First Regular Session, 2023 Illinois House Bill No. 2202, Illinois One Hundred Third General Assembly - First Regular Session.
[24] Ind. Code Ann. § 14-39-2-3 (West).
[25] Ky. Rev. Stat. Ann. § 353.800 (West).
[26] *S. Nat. Gas Co. v. Sutton*, 406 So. 2d 669, 671 (La. Ct. App. 1981), writ denied, 412 So. 2d 86 (La. 1982).
[27] Mont. Code Ann. § 70-16-101 (West).
[28] N.D. Cent. Code Ann. § 47-31-03 (West).
[29] Okla. Stat. Ann. tit. 60, § 6 (West).
[30] SB 63 (2020).
[31] Utah Code Ann. § 40-6-20.5 (West).
[32] W. Va. Code Ann. § 22-11B-18 (West).
[33] Wyo. Stat. Ann. § 34-1-152 (West).
[34] Moore, Ruth Ivory. "Pore Space Rights – U.S. Overview." *Global CCS Institute*, May 2022, www.globalccsinstitute.com/wp-content/uploads/2022/05/Brief-Pore-Space-Rights-5.24-12.pdf.
[35] *City of Kenai v. Cook Inlet Nat. Gas Storage Alaska, LLC*, 373 P.3d 473, 483 (Alaska 2016).
[36] *Mapco, Inc. v. Carter*, 817 S.W.2d 686 (Tex. 1991); *Myers-Woodward, LLC v. Underground Servs. Markham, LLC*, No. 13-20-00172-CV, 2022 WL 2163857 (Tex. App. June 16, 2022), reh'g denied (Sept. 6, 2022).
[37] Donaho, Thomas A. "CCUS Regulatory Handbook." *Bakerlaw.Com*, Baker Hostetler, 6 May 2023, www.bakerlaw.com/webfiles/Carbon Capture Regulatory handbook -CCUS.pdf.

permitting or operating fees, well closure fees, and per ton injection fees.[38] The monies from the storage fund can be applied to plugging abandoned CO_2 injection wells, paying staff expenditures at the state level to monitor CO_2 injection wells, repairing leaks, training, and ensuring compliance with the relevant statutes and regulations.[39]

The fifth part is "Class VI Primacy," which entails obtaining EPA approval to pass regulatory governance to the state. Class VI wells in states that do not have Class VI Primacy are governed by both the EPA's regulations and any existing state regulations.[40] At a minimum, the state's regulation must be as strict as the EPA's regulations.[41] The most recent states to pass new regulations are Pennsylvania, which were signed into law by the Governor on July 17th, 2024, and Alabama, which had their administrative rules approved by the State Oil & Gas Board on August 15th, 2024.[42]

Obtaining Class VI Primacy

There are four (4) phases to obtaining Class VI Primacy from the EPA.[43] The first phase is "pre-application activities," which entails the state obtaining "the governor's letter, attorney general's letter, program description, memorandum of agreement, and public participation documentation of a primacy application or program revision. EPA may also meet with the state to outline the process, address preliminary questions a state, . . . might have, and determine the

[38] *Id*.
[39] *Id*.
[40] *Id*.
[41] *Id*.
[42] Hunt, Kara. "Pennsylvania Passes Carbon Capture Bill in an Important Step for Industrial Decarbonization ." *Clean Air Task Force*, 17 July 2024, www.catf.us/2024/07/pennsylvania-passes-carbon-capture-bill-important-step-industrial-decarbonization/.
[43] "Primary Enforcement Authority for the Underground Injection Control Program." *EPA*, Environmental Protection Agency, 6 June 2024, www.EPA.gov/uic/primary-enforcement-authority-underground-injection-control-program-0.

scope of a state's actions."[44] These documents, along with a copy of the state's Underground Injection Control (hereinafter "UIC") statutes and regulations, make up the core elements of a primacy application.[45] "This [the Governor's letter] core element is a signed letter from the governor of the state requesting approval for UIC program primacy. The governor's letter must specify that approval is sought under sections 1422 or 1425 of the SDWA."[46] "The attorney general's statement is a certification by a qualified representative of the state, asserting that the state's statutes, regulations and judicial decisions demonstrate adequate authority to administer the UIC program."[47] The memorandum of agreement is the document that sets out what was agreed to between the state and the EPA that outlines how the administration, implementation, and enforcement of said UIC will be handled by the state.[48] The public participation document is a document that proves the state gave notice that it was applying for primacy.[49]

The second phase is "completeness review and determination" that occurs when the EPA receives all the documents from Phase I and begins their review. During this phase, "[t]he EPA and a state may engage in a continued dialogue to ensure that questions are clarified prior to the end of this phase. It is also possible that a state. . .may identify regulatory or statutory changes that must be implemented prior to completion of this phase."[50] This phase exists to verify that all elements of a primacy application are satisfied.

During the third phase, "application evaluation," the EPA investigates each of the elements to ensure they have clarity on the state's plan and ensure that the plan is as stringent and effective

[44] *Id.*
[45] *Id.*
[46] *Id.*
[47] *Id.*
[48] *Id.*
[49] *Id.*
[50] *Id.*

as the EPA required minimum.[51] A proposed rule is published by the EPA during this phase in which the EPA demonstrates their intent to either approve or disapprove the primacy application.[52] A 30-day comment period is also opened during which the public may comment on the state's proposed UIC primacy application and request a hearing.[53] The EPA may schedule a hearing should one be requested.[54] After the public comment period closes, the EPA reviews all the public comments and, depending on the comments, may re-review the state's UIC primacy application.[55]

The fourth phase is "rulemaking and codification." During this phase, the "EPA drafts the final rule approving, or disapproving, the state's primacy application or program revision. The final rule package includes a summary of the public comments and EPA's responses; documentation of any changes from the state's original application and EPA's rationale for finalizing the rule with such changes; and the regulatory text that will be codified in 40 CFR part 147 after the program is approved. The final rule is signed by the EPA Administrator and published in the *Federal Register* with the date of publication as the rule's effective date."[56]

As of June 2024, there are only three states that have obtained Class VI Primacy from the EPA: North Dakota, Wyoming, and Louisiana.[57] However, Alaska and Texas are in Phase I of

[51] *Id*.
[52] *Id*.
[53] *Id*.
[54] *Id*.
[55] *Id*.
[56] *Id*.
[57] Congressional Research Service. "Class VI Carbon Sequestration Wells: Permitting and State ..." *Congressional Research Service Reports*, 16 Apr. 2024, crsreports.congress.gov/product/pdf/R/R48033.

the application process,[58] and both Arizona and West Virginia are in Phase II of the application process.[59]

Alabama has not yet entered into the primacy process with EPA, but the State Oil & Gas Board of Alabama approved administrative rules for carbon sequestration on August 15th, 2024. Discussed in the rules are technical, liability, and financial responsibility rules for both the state and the operator, ownership of the CO_2 once it is injected, the trust fund, the administrative fund, and other fees. Topics such as who is the owner of the pore space and whether or not to use amalgamation have been left for the legislature to decide. The legislature passed a bill, which the Governor signed, that identified surface owners as the owners of pore space.[60] For topics that are unclear from a legal perspective, Alabama chose to allow its legislature to resolve those issues, as the legislators are representatives of the people. This strategy could serve as a guide for other state to use as well.

The Case that Paved the Way for Carbon Sequestration

The seminal case for Carbon Sequestration to become the main method for reducing CO_2 was *West Virginia v. Environmental Protection Agency* (2022).[61] The issue in *West Virginia v. Environmental Protection Agency* was whether or not the EPA could restructure the American Energy market based on an ancillary provision of the Clean Air Act.

[58] "Primary Enforcement Authority for the Underground Injection Control Program." *EPA*, Environmental Protection Agency, 6 June 2024, www.EPA.gov/uic/primary-enforcement-authority-underground-injection-control-program-0.
[59] *Id*.
[60] Act #2024-325; HB 327.
[61] Storrow, Benjamin. "Supreme Court Ruling Opens Door to Carbon Capture." *E&E News by POLITICO*, 5 July 2022, www.eenews.net/articles/supreme-court-ruling-opens-door-to-carbon-capture/.

In regards to air pollution, 42 U.S.C.A. § 741 "directs [the] EPA to (1) determine taking into account various factors, the 'best system of emission reduction which ... has been adequately demonstrated,' (2) ascertain the 'degree of emission limitation achievable through the application' of that system, and (3) impose an emissions limit on new stationary sources that 'reflects' that amount."[62]

However, in 2015, the EPA attempted to extend its reach via the Clean Power Plan Rule "when EPA promulgated two rules addressing carbon dioxide pollution from power plants—one for new plants under Section 111(b) [of the Clean Air Act], the other for existing plants under Section 111(d) [of the Clean Air Act]. Both were premised on the Agency's earlier finding that carbon dioxide is an 'air pollutant' that 'may reasonably be anticipated to endanger public health or welfare' by causing climate change.[63] Carbon dioxide is not subject to National Ambient Air Quality Standards or "NAAQS" and has not been listed as a hazardous pollutant."[64] There were three building blocks to the "Clean Power Plan Rule," the first being "'heat rate improvements' at coal-fired plants—essentially practices such plants could undertake to burn coal more efficiently."[65] But such improvements, the EPA stated, would "lead to only small emission reductions," because coal-fired power plants were already operating near optimum efficiency. In the Agency's view, "much larger emission reductions [were] needed from [coal-fired plants] to address climate change.'"[66]

[62] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 697, 709 (2022).
[63] 80 Fed. Reg. 64530.
[64] *Id*. at 711.
[65] Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, 80 FR 64510-01.
[66] *Id*. at 712.

West Virginia's issue was not so much to do with the first building block as it was with the "generation shifting" changes to the grid that were being attempted through building blocks two and three.[67] The second building block aimed to "shift. . .electricity production from existing coal-fired power plants to natural-gas-fired plants."[68] The EPA's rationale was that "[b]ecause natural gas plants produce 'typically less than half as much' carbon dioxide per unit of electricity created as coal-fired plants, the Agency explained, 'this generation shift [would] reduce CO_2 emissions.'"[69] Building block three aimed to shift the grid from both coal-and gas-fired plants to "new low-or zero-carbon generating capacity," mainly wind and solar powered plants.[70] Eventually, in 2019, the EPA repealed the Clean Power Plan Rule stating that it "had been in excess of its statutory authority" under section 111(d) of the Clean Air Act.[71]

The Supreme Court provided states the opportunity to challenge the EPA's Clean Power Plan Rule even though EPA on its own doing repealed the rule. The Court rationalized that "'voluntary cessation does not moot a case' unless it is 'absolutely clear that the allegedly wrongful behavior could not reasonably be expected to recur.'"[72] Moreover, the Court stated, "the Government 'nowhere suggests that if this litigation is resolved in its favor, it will not' reimpose emissions limits predicated on generation shifting; indeed, it 'vigorously defends' the

[67] *Id*. (*referencing*) Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, 80 FR 64727.
[68] *Id*. (*referencing*) Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, 80 FR 64728.
[69] *Ibid*.
[70] *Id*. (*referencing*) Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, 80 FR 64748.
[71] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 715 (*referencing*) 84 Fed. Reg. 32523 (2019).
[72] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 720 (*referencing*) *Parents Involved in Community Schools v. Seattle School Dist. No. 1*, 551 U.S. 701, 719 (2007).

legality of such an approach."[73] Thus, West Virginia's challenge to the EPA's Clean Power Plan Rule was still active.

When interpretating a statute the Supreme Court states, "'[i]t is a fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme.'"[74] The Supreme Court further explains, "where the statute at issue is one that confers authority upon an administrative agency, that inquiry must be 'shaped, at least in some measure, by the nature of the question presented'—whether Congress in fact meant to confer the power the agency has asserted."[75] In that determination the Court states, "our precedent teaches that there are 'extraordinary cases' that call for a different approach—cases in which the 'history and the breadth of the authority that [the agency] has asserted,' and the 'economic and political significance' of that assertion, provide a 'reason to hesitate before concluding that Congress' meant to confer such authority."[76] Thus, the Supreme Court seems to be hesitant to assume that Congress meant to provide an agency broad authority when it did not explicitly do so. Moreover, "[e]xtraordinary grants of regulatory authority are rarely accomplished through 'modest words,' 'vague terms,' or 'subtle device[s].'[77] Nor does Congress typically use oblique or elliptical language to empower an agency to make a 'radical or fundamental change' to a statutory scheme."[78] In order for an agency to convince the Supreme Court that it has the authority to promulgate new regulations, the agency needs to be able to point

[73] *Idid*.
[74] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 721 (*referencing*) *Davis v. Michigan Dept. of Treasury*, 489 U.S. 803, 809 (1989).
[75] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 721 (*referencing*) *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 159 (2000).
[76] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 721 (*referencing*) *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 159-160 (2000).
[77] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 723 (*referencing*) *Whitman v. American Trucking Associations*, 531 U.S. 457, 468 (2001).
[78] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 723 (*referencing*) *MCI Telecommunications Corp. v. American Telephone & Telegraph Co.*, 512 U.S. 218, 229 (1994).

to something more than "ambiguous statutory text" and instead needs to point to "clear congressional approval" for the power it claims.[79] Thus, "there is every reason to 'hesitate before concluding that Congress' meant to confer on EPA the authority it claims under Section 111(d)."[80]

Looking at the historical approach the EPA took prior to 2015, "the EPA always set emissions limits under Section 111 based on measures that would reduce pollution by causing the regulated source to operate more cleanly."[81] The cap-and-trade approach is how the EPA attempted to expand its power because it required "looking to a 'system' that would reduce pollution by 'shifting polluting activity from dirtier to cleaner sources.'"[82] The cap-and-trade approach was never used prior to 2015. Rather, the previous approach "allowed regulated entities to produce as much of a particular good as they desire provided that they do so through an appropriately clean (or low-emitting process)."[83]

Instead of using the cap-and-trade approach, the Court writes that the EPA should have been using a "technology-based approach" as Congress intended and as the EPA stated it would in its inaugural Section 111 (d) rule making.[84] Specifically, the "'degree of control to be reflected in EPA's emission guidelines' will be based on 'application of best adequately demonstrated control technology.'[85] The technology-based standard is defined as "focus[ing] on improving the emissions performance of individual sources."[86] The EPA, in 73 Fed. Reg. 34073, "'commonly

[79] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 723 (*referencing*) *Utility Air v. E.P.A.*, 573 U.S. 302, 324 (2014).
[80] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 723 (*referencing*) *Brown & Williamson*, 529 U.S. at 159–160 (2000).
[81] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 725 (*referencing*) 41 Fed. Reg. 48706
[82] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 725 (*referencing*) 80 Fed. Reg. 64726
[83] *Id*.
[84] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 726 (*referencing*) 40 Fed. Reg. 53343 (1975)
[85] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 726 (*referencing*) 42 U.S.C. § 7411
[86] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 727.

referred to' the 'level of control' required as a 'best demonstrated technology (BDT)' standard, and consistently applied it as such."[87]

After 2015, and with the introduction of the Clean Power Plan Rule, the EPA attempted to drastically increase its authority to regulate pollution sources. Thus, EPA's view on its authority "was not only unprecedented; it also effected a 'fundamental revision of the statute, changing it from [one sort of] scheme of ... regulation' into an entirely different kind."[88] This new found authority allowed "EPA [to] demand much greater reductions in emissions based on a very different kind of policy judgment: that it would be 'best' if coal made up a much smaller share of national electricity generation. And on this view of EPA's authority, it could go further, perhaps forcing coal plants to 'shift' away virtually all of their generation—*i.e.*, to cease making power altogether."[89]

The Court rejected the EPA's expansion of authority for three reasons. The first is that "[t]here is little reason to think Congress assigned such decisions to the Agency."[90] More specifically, "[w]hen [an] agency has no comparative expertise in making certain policy judgments, we have said, 'Congress presumably would not' task it with doing so" and here the EPA has no expertise in regulating the grid or electricity production."[91] The second is that the Court "find[s] it 'highly unlikely that Congress would leave' to 'agency discretion' the decision of how much coal- based generation there should be over the coming decades."[92] Moreover, the Court finds "Congress certainly has not conferred a like authority upon EPA anywhere else in

[87] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 727 (*referencing*) 73 Fed. Reg. 34073.
[88] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 728 (*referencing*) *MCI Telecommunications Corporation v. American Telephone and Telegraph Company*, 512 U.S. 218, 23 (1994).
[89] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 728.
[90] *Id*. at 729.
[91] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 729 (*referencing*) *Kisor* v. *Wilkie*, 588 U. S. 558, 578 (2019).
[92] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 729 (*referencing*) *MCI Telecommunications Corporation v. American Telephone and Telegraph Company*, 512 U.S. 231.

the Clean Air Act. The last place one would expect to find it is in the previously little-used backwater of Section 111(d)."[93] The third reason is that the Court "cannot ignore that the regulatory writ EPA newly uncovered conveniently enabled it to enact a program that, long after the dangers posed by greenhouse gas emissions 'had become well known, Congress considered and rejected' multiple times."[94] Still, "[a]t bottom, the Clean Power Plan essentially adopted a cap-and-trade scheme, or set of state cap-and-trade schemes, for carbon."[95] Yet, "Congress. . . has consistently rejected proposals to amend the Clean Air Act to create such a program."[96] Thus, the EPA did not have authority to introduce a cap-and-trade system for the reasons aforementioned.

Because the EPA was not authorized by Congress to adopt a cap-and-trade system, the EPA's reliance on § 111 as a basis for doing so is invalid. The EPA does not have the expertise to regulate the grid and electricity production. The EPA even admits it does not have the expertise to do so when it introduced § 111 into law. As a result, the EPA must continue to rely on the old "technology-based system" until Congress grants it authority to use the cap-and-trade system which does not seem likely to happen.

Why *West Virginia v. EPA* Is The Seminal Case for Carbon Sequestration

The holding in *West Virginia v. EPA* forced the EPA to rely on its traditional approach to lower carbon emissions which is regulating pollution at the source. In 2022, when the case was released, one of the few viable options the EPA had for regulating carbon emissions at the source

[93] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 730
[94] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 731 (*referencing*) *FDA v. Brown & Williamson Tobacco Co.*, 529 U.S. 120, 144 (2000).
[95] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 731 (*referencing*) 80 Fed. Reg. 64734.
[96] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 731 (*referencing*) American Clean Energy and Security Act of 2009, H. R. 2454, 111th Cong., 1st Sess.; Clean Energy Jobs and American Power Act, S. 1733, 111th Cong., 1st Sess. (2009).

was carbon sequestration. Thus, the Biden Administration via the Inflation Reduction Act (hereinafter, "IRA") is incentivizing companies to use carbon sequestration through the 45(Q)-tax credit.[97] The IRA provides up to $60 per tonne for injecting CO_2 from Enhanced Oil Recovery operations, up to $85 per tonne for permanently storing CO_2, up to $180 per tonne for permanently injecting CO_2 from direct air capture projects, and up to $130 per tonne for direct air capture projects.[98]

How Those in the Private Sector Can Help

Before a state can obtain primacy, the state must come up with a set of administrative rules or a statute to govern carbon sequestration. The process for administrative rules in Alabama, entails a draft set of rules being created and then posted for public comment by the state governing agency responsible for carbon sequestration operations. This is the time for those in the private sector to schedule meetings with these regulatory agencies and provide suggestions. After the comment period closes, comments are considered, and the new draft is subject to passage by the responsible state regulatory agency. If they are adopted, the process for codifying the rules can begin. The process of codifying the administrative rules entails oversight by the legislature. Before the final approval of the legislature, there will be another comment period when the public can voice their opinion on issues they have or things they think should be changed. After the comment period closes, the legislature approves, rejects, or amends the rules. Often, the legislative approval of the rules is a mere formality; the state legislature rarely makes changes to rules after the regulatory agency has adopted the rules. A state must have administrative rules at a minimum to start the primacy process; codifying the rules is not necessary but may be done

[97] Clean Air Task Force. "Carbon Capture Provisions in the Inflation Reduction Act of 2022." *Clean Air Task Force*, 19 Aug. 2022, www.catf.us/resource/carbon-capture-provisions-in-the-inflation-reduction-act-of-2022/.
[98] *Id.*

before beginning the primacy process. While the state is going through the primacy process, those in the private sector will be governed by both the state's and the EPA's carbon sequestration regulations. That means double fees, double fines, double paperwork, double everything. States want this process to go quickly and do not want to penalize those in the private sector by having this bi-lateral regulatory governance continue for any longer than it has to, which is why it is important that the private sector work with the state as best they can.

Policy Implications

Carbon sequestration is a new industry that is here to stay. Carbon sequestration is important because it provides the fossil fuel industry a way to reduce emissions. No prior emissions reduction technology has provided this opportunity. Moreover, it is the "best demonstrated technology" of reducing CO_2 emissions.[99] Furthermore, carbon sequestration will help extend the life of wells through Enhanced Oil Recovery efforts, and the CO_2 remaining can be injected for $60 per tonne according to the Inflation Reduction Act. ExxonMobil (hereinafter, "Exxon") purchased Denbury, Inc., one of the largest carbon storage companies in 2023.[100] By purchasing Denbury, Exxon acquired a CO_2 pipeline network in Louisiana, Texas, and Mississippi extending for 925 miles.[101] The pipelines are close to large CO_2 emitters, which reduces Exxon's cost significantly.[102] The purchase also included 15 onshore CO_2 storage sites that Exxon can immediately start using.[103] Furthermore, this purchase demonstrates a commitment to carbon

[99] *W. Virginia v. Env't Prot. Agency*, 597 U.S. 727 (*referencing*) 73 Fed. Reg. 34073.
[100] ExxonMobil. "ExxonMobil Completes Acquisition of Denbury." *ExxonMobil*, 2 Nov. 2023, corporate.exxonmobil.com/news/news-releases/2023/1102_exxonmobil-completes-acquisition-of-denbury.
[101] *Id*.
[102] Ellacott, Tom. "Can ExxonMobil Make Attractive Returns from Its US CCUS Portfolio?" *Wood Mackenzie*, WoodMac.Site.Features.Shared.ViewModels.Metadata.Publisher, 21 June 2024, www.woodmac.com/news/opinion/can-exxonmobil-make-attractive-returns-from-its-us-ccus-portfolio/?utm_source=nurture-email&utm_medium=email&utm_content=exxon-mobil-ccus-portfolio&utm_campaign=ucm-carbon.
[103] *Id*.

sequestration from the private sector. Carbon sequestration has the potential to be profitable for both states and the private sector, while also reducing CO_2 emissions. Exxon is not the only group that plans to capitalize from carbon sequestration projects: Wood Mackenzie's lead analysts estimate, "(Carbon Capture and storage also known as) CCUS will represent a US$196 billion investment opportunity globally over the next decade. Our analysis indicates a risked investment pipeline of US$143 billion, with additional investments of US$53 billion expected to make up the rest of the total."[104] Another policy aspect of carbon sequestration is that it will help provide both states and private entities with more data on unitization. With new wells drilled due to carbon sequestration projects, more seismic studies will provide more detailed information on subsurface geology, which will be beneficial for future endeavors. However, none of this would be possible without the *West Virginia v. EPA* case and the 45 (Q)-tax credit, which have pushed carbon sequestration to the forefront of CO_2 reduction technologies.

Conclusion

Today is similar to the early days of oil and gas drilling when "Colonel" Edwin Drake drilled the first wildcat wells in Pennsylvania and kicked off what was to become the booming oil and gas industry.[105] Now, states and those in private industry are faced with a decision as to whether to jump on board the quickly moving train becoming a hub for carbon sequestration or hope that it might circle back around to them further down the line. States like Alabama, North Dakota, Pennsylvania, and Wyoming have been proactive and chose to jump on board the train to take

[104] Gandhi, Hetal. "CCUS: The US$196 Billion Investment Opportunity." *Wood Mackenzie*, WoodMac.Site.Features.Shared.ViewModels.Metadata.Publisher, 26 June 2024, www.woodmac.com/news/opinion/ccus-196-billion-investment-opportunity/?utm_source=nurture-email&utm_medium=email&utm_content=ccus-the-196-billion-dollar-opportunity&utm_campaign=ucm-carbon.
[105] Lowe, John S., pg. 2 *Cases and Materials on Oil and Gas Law*. West Academic Publishing, 2022.

advantage of a burgeoning industry. Whether the boom hits next year or even a decade from now, one thing is certain: the Exxon purchase of Denbury, the 45(Q)-tax credit from the Inflation Reduction Act, the drafting of regulations and passing of statutes on carbon sequestration by states, and the ruling in *West Virginia v. EPA* all fundamentally encourage the EPA to use carbon sequestration to reduce CO_2 emissions.

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