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## PREVENTING POOR PORE POLICY: A CALL FOR INTERSTATE COOPERATION

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### *I. Introduction*

#### *A. Overview*

Carbon capture and sequestration (CCS) is a rapidly growing industry with extensive economic and environmental opportunities for states and businesses alike. One form of CCS, geologic sequestration (GS), collects carbon dioxide (CO<sub>2</sub>) from the atmosphere or another source and injects it into the ground permanently.<sup>1</sup> As demand for pore space for underground CO<sub>2</sub> storage grows, states should prepare to get ahead of the industry by developing regulatory schemes for potential issues, including nuisance or trespass claims.<sup>2</sup> When substances are injected into the subsurface pore space, they might migrate from their authorized injection site to someone

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1. *What's the Difference Between Geological and Biological Carbon Sequestration?* UNITED STATES GEOLOGICAL SURVEY, <https://www.usgs.gov/faqs/whats-difference-between-geologic-and-biologic-carbon-sequestration> (last accessed Jun. 23, 2024).

2. See Joseph A. Schremmer, *Subsurface Trespass: Private Remedies and Public Regulation*, 101 NEB. L. REV. 1005 (2022) (addressing the need for scholarship on subsurface property rights and remedies).

else's property.<sup>3</sup> Some states have addressed similar issues in oil and gas through forced pooling or unitization statutes,<sup>4</sup> and some have proposed pooling legislation specifically for carbon sequestration.<sup>5</sup> However, many states have not addressed intrastate trespass or nuisance claims related to migrating plumes of CO<sub>2</sub>, let alone lobbied for a federal scheme.<sup>6</sup> Just as a formation of pore space might not conform to the property rights and boundaries of private property owners, pore space formations might not conform to state lines and boundaries. As such, CO<sub>2</sub> injected into pore space under one state might migrate into another state's pore space.<sup>7</sup>

Dilemmas could arise if GS operators inject CO<sub>2</sub> in one state, in full compliance with that state's regulations and federal regulations, but the plume migrates across state lines into an entirely different property regime. When the plumes migrate, two or more states' laws could apply. If the states have contradictory or irreconcilable policies in pore space regulations, it could be impossible for operators to comply with both or all regimes at the same time.<sup>8</sup> Interstate cooperation and agreements in anticipation of these issues would help create uniform regimes and help

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3. See R. Lee Gresham, Sean T. McCoy, Jay Apt, & M. Granger Morgan, *Implications of Compensating Property Owners for Geologic Sequestration of CO<sub>2</sub>*, 44 ENV'T SCI. AND TECH. 2897 (2010).

4. OKLA. STAT. ANN. tit. 52, § 87.1(e) (West) (providing, that, when voluntary pooling is not possible, the Commission may "require . . . owners to pool and develop their lands in the spacing unit as a unit.").

5. *Carbon Capture and Sequestration Act*, S.B. 831 § 5(a), 270th Gen. Assemb. (Penn. 2023–24) (as amended Jun. 28, 2024) (proposing that, should an operator "not obtain the consent of all persons that own the storage facility's pore space to the construction and operation of a storage facility, the Environmental Hearing Board may require that the pore space owned by nonconsenting owners be included in a storage facility and subject to geologic storage.")

6. See *Brief: Pore Space Rights*, GLOBAL CCS INSTITUTE (May 2022), <https://www.globalccsinstitute.com/wp-content/uploads/2022/05/Brief-Pore-Space-Rights-5.24-12.pdf>; see also Madeline J. Lewis and Selena Gerace, *Regulatory Considerations for Carbon Dioxide Storage and Plume Migration on Interstate and Federal Lands*, UNIV. OF. WYO. SCH. OF ENERGY RESOURCES, 7 (Nov. 2023), [https://www.uwyo.edu/ser/research/centers-of-excellence/energy-regulation-policy/\\_files/pore-space-interstate-fed-lands.pdf](https://www.uwyo.edu/ser/research/centers-of-excellence/energy-regulation-policy/_files/pore-space-interstate-fed-lands.pdf) (noting that "Colorado, South Dakota, Idaho, and Utah have yet to establish key policy frameworks to govern CCS within their jurisdictions" and that, in Wyoming's case, there is no established framework to resolve "interstate issues that may arise in the course of expansion of its CCS industry.").

7. See Lewis, *supra* note 6 (noting that several potential Wyoming storage sites "traverse or are situated near state borders[.]").

8. Cf. Lewis, *supra* note 6.

private and public actors manage expectations, both for injection policies and any potential remedies should the need arise.

### *B. Roadmap*

This comment will analyze issues in pore space ownership and carbon sequestration efforts and will analyze interstate cooperation targeted at resolving the issue set forth above. Though interstate cooperation would serve multiple purposes for carbon sequestration and pore space issues not just limited to subsurface carbon intrusions, this comment will mainly address the intrusion issue.

Part II will define pore space and carbon sequestration, then provide a brief overview of the science and engineering behind geologic sequestration. It will survey developing international and domestic attitudes towards carbon sequestration and the urgent need for GS technology as a key part of climate mitigation strategy. It will also briefly provide context of relevant oil and gas law and pore space property law. Additionally, it will detail the implications of potential interference with oil and gas rights.

Part III will survey the development of interstate agreements, their benefits, and pertinent case law. It will analyze options for interstate cooperation, focusing mainly on memoranda of understanding and formal interstate compacts. In addition, it will analyze different examples of memoranda and compacts, discuss their distinctive factors, and analyze the advantages and disadvantages of each.

Part IV will detail the various options discussed in Part III and explain why informal agreements are not appropriate or effective for carbon sequestration issues such as subsurface intrusions. It will argue that the best approach for states is a formal interstate compact. It will propose a compact built to address all issues surrounding interstate carbon sequestration and pore space use, but the analysis will specifically focus on resolving plume migration issues. It will consider the extent and benefits of federal involvement, federal and state statutory backing, and a governing commission. It will argue that states can either improve existing interstate compacts or create a new compact entirely dedicated to geologic carbon sequestration efforts. In the alternative, it will analyze the potential for less formal memoranda of understanding regarding pore space property and carbon sequestration efforts.

Though recent state statutory and regulatory developments have codified some GS procedures,<sup>9</sup> and states have successfully cooperated on other

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9. See *Part II: Background*, § (A)(1), discussed *infra*.

energy matters,<sup>10</sup> much room for improvement remains. States must partner up and explicitly address undecided and ambiguous issues in GS, both for intrastate and interstate predictability. This predictability is key for interstate partnerships on carbon sequestration efforts and will help incentivize operators to conduct business in party states.

## *II. Background*

### *A. Overview of Oil, Gas, and Pore Space Law*

#### *1. What is pore space?*

Pore space is empty subsurface space.<sup>11</sup> State statutory definitions of pore space can be indicative of that state's treatment of pore space property rights; some state statutes simply describe the physical empty space, while others explicitly mention pore space's propensity for carbon dioxide storage.<sup>12</sup> Oklahoma's definition of pore space includes "any interstitial space not occupied by soil or rock, within the solid material of the earth, and any cavity, hole, hollow or void space within the solid material of the earth[.]"<sup>13</sup> while Wyoming defines it as "subsurface space which can be used as storage space for carbon dioxide and other substances."<sup>14</sup>

Pore space is most often owned by the surface owner under the American Rule.<sup>15</sup> States that follow this rule include Montana, Oklahoma, Louisiana, Michigan, New York, West Virginia, California, and New Mexico.<sup>16</sup> Some states include additional qualifications in their statutes. Oklahoma statutes, for example, include pore space in their definition of "land" and count pore space as real property.<sup>17</sup> The English (or Canadian) Rule vests the empty pore space in the mineral estate owner,<sup>18</sup> but is uncommon among states.<sup>19</sup> At one point, Kentucky case law might have

10. *See Part III: Interstate Agreements*, § (B)(7)(a), discussed *infra*.

11. *See Explainer: What is Pore Space?* CHEVRON (May 1, 2023), <https://www.chevron.com/newsroom/2023/q2/explainer-what-is-pore-space>.

12. Patrick R. Baker & Henry Webb, *Pore Spaces Defined*, 6601 OIL, GAS, & ENERGY QUARTERLY 1.1 (2024).

13. Baker, *supra* note 12; OKLA. STAT. ANN. tit. 60, § 6 (West).

14. Baker, *supra* note 12; WYO. STAT. ANN. § 34-1-152 (West).

15. *See City of Kenai v. Cook Inlet Natural Gas Storage Alaska, LLC*, 373 P.3d 473, 483 (Ala. 2016).

16. Stefanie L. Burt, *Who Owns the Right to Store Gas: A Survey of Pore Space Ownership in U.S. Jurisdictions*, 4 JOULE DUQ. ENERGY & ENV'T. L.J. 1, 2-4 (2016).

17. OKLA. STAT. ANN. tit. 60, § 6 (West).

18. *City of Kenai*, 373 P.3d at 483.

19. Burt, *supra* note 16.

indicated that mineral estate owners also own the pore space, but the state's current interpretation of the rule is not clear.<sup>20</sup>

Ideal reservoirs of pore space have high porosity and permeability and have a solid caprock to keep the CO<sub>2</sub> from escaping.<sup>21</sup> Porosity refers to the actual void and spaces themselves and permeability measures the extent to which fluids can move through the spaces.<sup>22</sup> The federal government defines a proper sequestration formation as “a deep saline formation, unmineable coal seam, or oil and gas reservoir that is capable of accommodating a volume of industrial carbon dioxide.”<sup>23</sup>

These proper formations are ideal for sequestration purposes, but oil and gas producers have used CO<sub>2</sub> injection for “enhanced oil recovery” (EOR) since 1972.<sup>24</sup> Producers use this technique to recover otherwise unobtainable oil when wells stop being productive.<sup>25</sup> Injecting CO<sub>2</sub> into the pore space dissolves trapped oil and allows a drill to recover the remaining product.<sup>26</sup> This process requires a Class II Underground Injection Control (UIC) permit.<sup>27</sup> Class II wells usually contain saltwater brine but can

20. Owen L. Anderson, *Geologic CO<sub>2</sub> Sequestration: Who Owns the Pore Space*, 9 WYO. L. REV. 97, 129 (2009); see also Burt, *supra* note 16 at 5 (explaining that Kentucky, via its Supreme Court, might adopt the American Rule).

21. Grant Cummings, *Pore Space 101: Carbon Capture Can't Rock and Roll Without Storage*, CLEARPATH, Jul. 28, 2022, <https://clearpath.org/tech-101/pore-space-101-carbon-capture-cant-rock-and-roll-without-storage/> (last accessed Aug. 15, 2024).

22. Patrick H. Martin and Bruce M. Kramer, Chapter 1 A Brief Introduction to the Scientific and Engineering Background of Oil and Gas Law WILLIAMS & MYERS, OIL AND GAS LAW ABRIDGED NINTH EDITION, 1 § 102, n.1 (LexisNexis Matthew Bender 2022).

23. 42 U.S.C. § 17271(a)(6).

24. See *Enhanced Oil Recovery*, U.S. DEP'T ENERGY, OFFICE OF FOSSIL ENERGY & CARBON MGMT., <https://www.energy.gov/fecm/enhanced-oil-recovery> (last accessed Aug. 15, 2024). Operators also use CO<sub>2</sub> injections for enhanced coalbed methane recovery. See Dr. L. L. Sloss, *Potential for Enhanced Coalbed Methane Recovery*, May 2015, IEA CLEAN COAL CENTER, <https://usea.org/sites/default/files/media/Potential%20for%20Enhanced%20coalbed%20methane%20recovery%20ccc252.pdf> (last accessed Aug. 15, 2024).

25. 9.2. *Commercial Carbon Dioxide Uses: Carbon Dioxide Enhanced Oil Recovery*, NAT'L ENERGY TECH. LAB'Y, <https://netl.doe.gov/research/coal/energy-systems/gasification/gasifipedia/eor> (last accessed Jun. 23, 2024).

26. *Id.*

27. *Class II Oil and Gas Related Injection Wells*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/uic/class-ii-oil-and-gas-related-injection-wells>; see also Joseph A. Schremmer, *Pore Space Law and its Application to CCUS*, Council for Oil & Gas Attorneys, INTERSTATE OIL & GAS COMPACT COMM'N (IOGCC), Jan. 20, 2023, [https://oklahoma.gov/content/dam/ok/en/ioGCC/documents/webinars/2023/pore\\_space\\_law\\_and\\_its\\_application\\_to\\_ccus.pdf](https://oklahoma.gov/content/dam/ok/en/ioGCC/documents/webinars/2023/pore_space_law_and_its_application_to_ccus.pdf) (last accessed Jun. 23, 2024).

contain CO<sub>2</sub> injections.<sup>28</sup> There are around 180,000 operating Class II wells in the United States,<sup>29</sup> and currently, EOR is the primary reason for injecting CO<sub>2</sub> into the subsurface in the country.<sup>30</sup>

## 2. What is carbon sequestration?

Carbon sequestration is the subsurface storage of anthropogenic CO<sub>2</sub>.<sup>31</sup> “Anthropogenic” carbon dioxide means man-made CO<sub>2</sub> manufactured through a chemical process or formed from the separation of natural gas.<sup>32</sup> In addition to subsurface sequestration, plants can capture and store CO<sub>2</sub> through biologic carbon sequestration.<sup>33</sup> Though certainly an important tool for overall CCS efforts, this comment focuses exclusively on the geologic method.

Both energy companies and companies created exclusively for CCS and similar technologies use the GS method to either reduce their own emissions or assist others in their CCS goals.<sup>34</sup> To sequester CO<sub>2</sub>, a company first harvests it at the source and then transports it to the future subsurface injection site.<sup>35</sup> In order to effectively inject the CO<sub>2</sub>, it is first pressurized until it becomes liquid.<sup>36</sup> The CO<sub>2</sub> is injected into the ground’s empty pore space, which in some cases recently held oil and/or natural

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28. U.S. ENV’T PROT. AGENCY, *supra* note 27.

29. *Id.*

30. Michael Phillis, *What is Carbon Capture and How Much of a Solution is it After COP28?* ASSOCIATED PRESS (Dec. 13, 2023), <https://apnews.com/article/carbon-capture-removal-cop28-fossil-fuels-oil-gas-2bc53c6a8df6d337c1afcabad56377e8>.

31. OKLA. STAT. ANN. tit. 27A, § 3-5-102(5) (West).

32. *Id.* § 3-5-102(2).

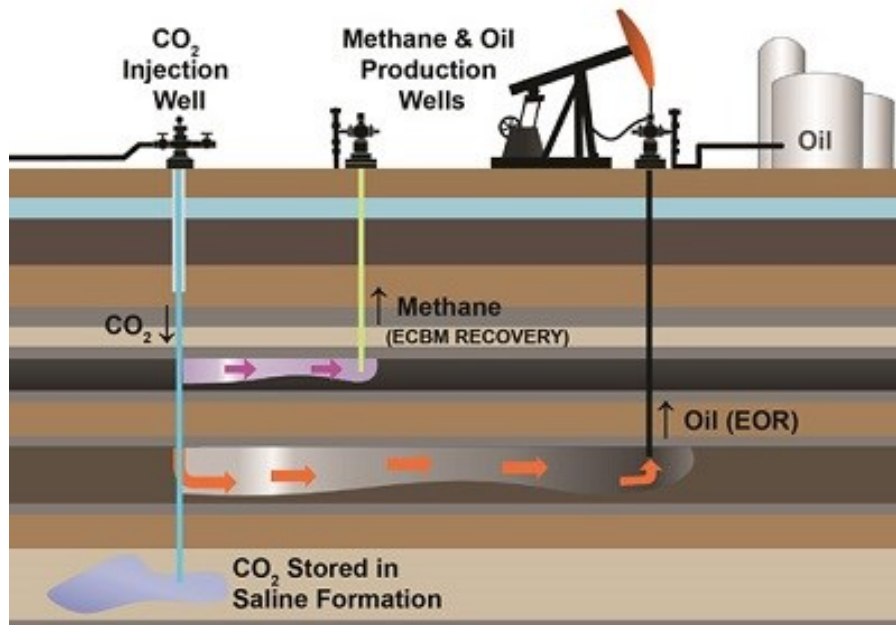
33. UNITED STATES GEOLOGICAL SURVEY, *supra* note 1.

34. See *Capturing and Storing Carbon Emissions*, CHEVRON, <https://www.chevron.com/operations/capturing-and-storing-carbon-emissions> (last accessed Jun. 23, 2024); *Carbon Capture and Storage*, EXXON MOBILE, <https://corporate.exxonmobil.com/what-we-do/delivering-industrial-solutions/carbon-capture-and-storage> (last accessed Jun. 23, 2024); *Mobile Carbon Capture*, ARAMCO, <https://www.aramco.com/en/creating-value/technology-development/transport-technologies/mobile-carbon-capture> (last accessed Jun. 23, 2024); *Accelerating Carbon Neutrality with Carbon Capture*, HONEYWELL, <https://pmt.honeywell.com/us/en/initiative/webinar-accelerating-carbon-neutrality-with-carbon-capture> (last accessed Jun. 23, 2024); *Mission*, CARBON AMERICA, <https://www.carbonamerica.com/company/mission> (last accessed Jun. 23, 2024); *About*, NEXGEN CARBON SOLUTIONS, <https://www.nexgencarbon.com/> (last accessed Jun. 23, 2024).

35. Vincent Gonzales, Alan Krupnick, and Lauren Dunlap, *Carbon Capture and Storage 101*, RESOURCES FOR THE FUTURE (May 2020), [https://media.rff.org/documents/CCS\\_101.pdf](https://media.rff.org/documents/CCS_101.pdf).

36. UNITED STATES GEOLOGICAL SURVEY, *supra* note 1.

gas.<sup>37</sup> The image from the National Energy Technology Laboratory below illustrates how it is injected and either stored or used for advanced recovery purposes.



Source: National Energy Technology Laboratory<sup>38</sup>

The CO<sub>2</sub> is then permanently captured and stored and therefore prevented from contaminating the atmosphere.<sup>39</sup> However, injected substances have the potential to contaminate other resources if they are not carefully placed.<sup>40</sup> Accordingly, the EPA requires UIC permits for subsurface injections.<sup>41</sup>

37. *Id.*

38. *Carbon Storage FAQs: What is Carbon Capture and Storage?* NAT'L ENERGY TEC. LAB'Y, <https://netl.doe.gov/carbon-management/carbon-storage/faqs/carbon-storage-faqs> (last accessed Jun. 23, 2024).

39. *Id.*

40. ENV'T PROT. AGENCY & DRINKING WATER ACAD., *Introduction to the Underground Injection Control Program*, (Jan. 2003), <https://cfpub.epa.gov/watertrain/pdf/uic.pdf> (last accessed Jun. 23, 2024).

41. *Class VI – Wells Used for Geologic Sequestration of Carbon Dioxide*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/uic/class-vi-wells-used-geologic-sequestration-carbon-dioxide> (last accessed Jun. 23, 2024).

The permits are divided into the following classes: Class I (for industrial and municipal waste disposal wells); Class II (for oil and gas related injection wells); Class III (for solution mining wells); Class IV (for shallow hazardous and radioactive waste injection wells); Class V (for wells that inject non-hazardous fluids into or above underground sources of drinking water); and Class VI (for geologic sequestration wells).<sup>42</sup> Well classes are based on type, depth, and potential danger to underground sources of drinking water.<sup>43</sup>

GS requires a UIC Class VI permit for storage.<sup>44</sup> CO<sub>2</sub> injections require unique considerations, including: buoyancy issues, mobility issues, corrosion, and injection volume.<sup>45</sup> The steps of the permitting process include the following: (1) notifying and applying to the EPA; (2) EPA authorization; and (3) the cessation and eventual close of the injection site.<sup>46</sup> Class VI requirements protect ground water and other resources from contamination or other adverse effects.<sup>47</sup> Importantly, operators must predict and report the expected extent of the carbon plume's reach and must test and monitor the plume's movement and changes in pressure.<sup>48</sup>

### *B. Developing Attitudes Towards GS*

Businesses can employ CCS to curb their own carbon emissions.<sup>49</sup> Other businesses developed entirely around assisting others in their subsurface storage efforts as the demand for carbon sequestration grew.<sup>50</sup> This section will explain how companies and countries alike are recognizing CCS as a tool in aiding the battle against human-driven climate change by capturing CO<sub>2</sub> and preventing its return to the atmosphere.

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42. *Protecting Underground Sources of Drinking Water From Underground Injection (UIC)*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/uic> (last accessed Jun. 23, 2024).

43. *Underground Injection Control Well Classes*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/uic/underground-injection-control-well-classes> (last accessed Jun. 23, 2024).

44. U.S. ENV'T PROT. AGENCY, *supra* note 41; *see also* Schremmer, *supra* note 27.

45. *Id.*

46. *Id.*

47. *Id.*

48. *Id.*

49. *See Our Technology: Capture and Storage – Capturing, Transporting, and Storing Carbon*, EXXONMOBIL, <https://lowcarbon.exxonmobil.com/lower-carbon-technology/carbon-capture-and-storage> (last accessed Jun. 23, 2024).

50. *See About Us*, AKER CARBON CAPTURE, <https://akercarboncapture.com/about-us/> (last accessed Jun. 23, 2024).



### 1. *International Agreements*

Developments in international and domestic policy seek to mitigate anthropogenic climate change. The Paris Agreement, an international agreement in force as of 2016, is a treaty<sup>51</sup> focused on climate change.<sup>52</sup> The United States, originally party to the agreement, joined it again after a brief period of withdrawal and is a current party to this agreement.<sup>53</sup> The agreement seeks to curtail increases to the average global temperature to below 2 degrees Celsius above the pre-industrial<sup>54</sup> average.<sup>55</sup> Ideally, however, this increase will stay below 1.5 degrees Celsius.<sup>56</sup> The consequences of a 1.5 degree increase include 70–99% of all coral reefs dying off, more powerful storms, increased flooding, and others.<sup>57</sup> Projected

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51. When the United States enters a treaty, its domestic commitment and remedy structure depend on whether the treaty is self-executing or non-self-executing. Self-executing treaties are immediately enforceable within the United States, while non-self-executing treaties need additional domestic legislation to be domestically legally binding. See Sean Murphy, *Principles of International Law*, 291 (3d. ed. 2018). The United States' participation in the Paris Agreement is understood as a non-self-executing treaty, meaning there are limited domestic remedies absent a similar domestic statute with the same provisions. See Kayla Clark, *The Paris Agreement: Its Role in International Law and American Jurisprudence*, 8.2 NOTRE DAME J. INT'L & COMPARATIVE L. 107, 123 (2018).

52. *The Paris Agreement*, UNITED NATIONS, <https://www.un.org/en/climatechange/paris-agreement> (last accessed Jun. 23, 2024).

53. See Micheal R. Pompeo, *On the U.S. Withdrawal from the Paris Agreement*, U.S. Dep't of State (Nov. 4, 2019), <https://2017-2021.state.gov/on-the-u-s-withdrawal-from-the-paris-agreement> (Jun. 23, 2024) (explaining the United States' withdrawal from the Paris Agreement under the Trump Administration), and Anthony J. Blinken, *The United States Officially Rejoins the Paris Agreement*, U.S. Dep't of State (Feb. 19, 2021), <https://www.state.gov/the-united-states-officially-rejoins-the-paris-agreement> (last accessed Jun. 23, 2024) (explaining that the U.S. rejoined the Paris Agreement under the Biden Administration).

54. See *FAQ Chapter 1*, IPCC, <https://www.ipcc.ch/sr15/faq/faq-chapter-1/> (defining pre-industrial as between 1850–1900) (last accessed Jun. 23, 2024); see also Rebecca Lindsey and Luann Dahlman, *Climate Change: Global Temperature*, Jan. 18, 2024, NOAA, <https://www.climate.gov/news-features/understanding-climate/climate-change-global-temperature> (last accessed Jun. 23, 2024) (defining pre-industrial “in NOAA’s record” as 1850-1900).

55. *The Paris Agreement: What is the Paris Agreement*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, <https://unfccc.int/process-and-meetings/the-paris-agreement> (last accessed Jun. 23, 2024).

56. *Id.*

57. Lauren Sommer, *This is What the World Looks Like if We Pass the Crucial 1.5-degree Climate Threshold*, NPR, Nov. 8, 2021, <https://www.npr.org/2021/11/08/1052198840/1-5-degrees-warming-climate-change> (last accessed Jun. 23, 2024).

risks are compounded should the earth reach a 2 degree increase, which would drastically increase the severity of the previously mentioned consequences.<sup>58</sup> The warming would kill 99% of coral reefs, triple insect species loss, more than double the exposure to extreme heat, and increase the number of arctic ice-free summers tenfold.<sup>59</sup> GS, accompanied by other mitigating strategies, can be a valuable tool for public and private actors to help curb rising global temperature and meet these climate goals.<sup>60</sup>

Two-hundred nations agreed to curb fossil fuels at the United Nations Framework Convention on Climate Change (UNFCCC) 28<sup>th</sup> Conference of the Parties (“COP 28”) in January 2024, hoping to achieve net zero<sup>61</sup> emissions by 2050.<sup>62</sup> Countries have a handful of options to meet their own goals, including carbon capture and storage.<sup>63</sup> Oil-producing countries, such as the United Arab Emirates, advocate for the acceleration of carbon capture use and technologies.<sup>64</sup> However, some climate advocates are skeptical of GS because it allows continued fossil fuel production.<sup>65</sup> The earth has an estimated 8,000–55,000 gigaton<sup>66</sup> subsurface storage capacity.<sup>67</sup> This massive amount of storage space is also economically

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58. *Id.*

59. Andrea Willige, *The Stark Difference Between Global Warming of 1.5 and 2.0*, FORBES, Jan. 26, 2022, <https://www.forbes.com/sites/mitsubishiheavyindustries/2022/01/26/the-stark-difference-between-global-warming-of-15c-and-20c/?sh=8945eae2a487> (last accessed Jun. 23, 2024).

60. Valerie Volcovici, Gloria Dinkie, and William James, *Nations Strike Deal at COP28 to Transition Away From Fossil Fuels*, REUTERS (Dec. 13, 2023), <https://www.reuters.com/business/environment/countries-push-cop28-deal-fossil-fuels-talks-spill-into-overtime-2023-12-12/> (last accessed Jun. 23, 2024);

61. The United Nations defines “net zero” as “as close to zero as possible, with any remaining emissions re-absorbed by the atmosphere.” *See For a Liveable Climate: Net-Zero Commitments Must Be Backed by Credible Action*, UNITED NATIONS, <https://www.un.org/en/climatechange/net-zero-coalition> (last accessed Jun. 23, 2024).

62. Volcovici, *supra* note 60.

63. *Id.*

64. *Id.*

65. Valerie Volcovici, *Carbon Removal Industry Challenges Findings of Skeptical UN Body*, REUTERS (May 26, 2023), <https://www.reuters.com/business/environment/carbon-removal-industry-challenges-findings-skeptical-un-body-2023-05-26/> *see also Skepticism Remains About Hydrogen and Carbon Capture Systems Benefiting Our Climate Goals*, CLEAN AIR COUNCIL, <https://cleanair.org/skepticism-remains-about-hydrogen-and-carbon-capture-systems-benefiting-our-climate-goals/> (last accessed Jun. 23, 2024) (expressing concerns that the use of enhanced recovery leads to more emissions).

66. A gigaton equals a billion metric tons.

67. Raimund Malischek & Samantha McCulloch, *The World Has Vast Capacity to Store CO<sub>2</sub>: Net Zero Means We’ll Need It*, INT’L ENERGY AGENCY (Apr. 1, 2021),

convenient and practical, as formation space is available within about 62 miles (or 100 km) to almost 70% of carbon emissions.<sup>68</sup>

The debate over the vices and virtues of GS is significant, and public opinion could influence whether state and private actors further embrace and invest in GS technology and projects. Comparing and contrasting the different methods and philosophies of climate change mitigation is beyond the scope of this comment, but experts have acknowledged GS capacity to assist countries in reaching their net zero goals, even if CCS, by itself, is not enough to meet mitigation goals.<sup>69</sup>

## 2. Domestic Plans

Domestically, the United States hopes to reduce greenhouse gas emissions by 50–52% and reach a net-zero emission economy by 2050.<sup>70</sup> The Biden Administration embraces the 1.5-degree goal and the United States' role in curbing global emissions.<sup>71</sup> The United States leads the world in CCS development and has vast amounts of storage space from saline and oil and gas reservoirs.<sup>72</sup> The image below, displaying a screenshot of a map provided by the International Energy Agency, shows carbon emissions compared with potential storage locations.

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<https://www.iea.org/commentaries/the-world-has-vast-capacity-to-store-co2-net-zero-means-we-ll-need-it> (last accessed Jun. 23, 2024).

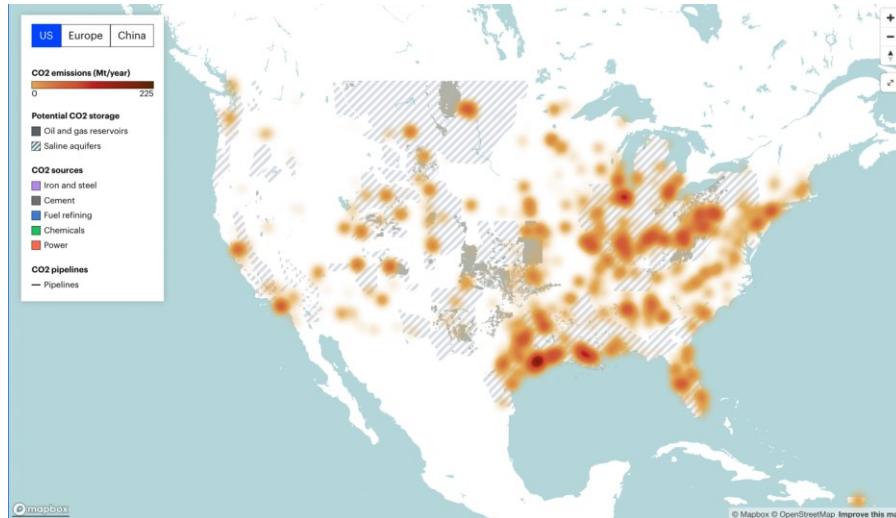
68. *Id.*

69. Kirsten Zickfeld and Pep Canadell, Analysis: *Carbon Removal Can Help Achieve Net Zero, But Comes With its Own Climate Risks*, PBS NEWSHOUR (Dec. 10, 2023), <https://www.pbs.org/newshour/science/analysis-carbon-removal-can-help-achieve-net-zero-but-comes-with-its-own-climate-risks> (last accessed Jun. 23, 2024).

70. *National Climate Task Force: President Biden's Actions to Tackle the Climate Crisis*, THE WHITE HOUSE, <https://www.whitehouse.gov/climate/#:~:text=Reducing%20U.S.%20greenhouse%20gas%20emissions,clean%20energy%20to%20disadvantaged%20communities> (last accessed Jun. 23, 2024).

71. *The Climate Crisis: Working Together for Future Generations*, U.S. Dep't of State, <https://www.state.gov/policy-issues/climate-crisis/> (last accessed Jun. 23, 2024).

72. Malischek, *supra* note 67.



Source: International Energy Agency<sup>73</sup>

Some states have announced their own studies and plans regarding climate change. Colorado, for example, created a 2021 action roadmap that included developing a Carbon Capture, Utilization, and Storage task force.<sup>74</sup> Other states, such as Oklahoma, have adopted very few, if any, formal plans directly targeting climate change mitigation.<sup>75</sup> However, such states can still have a leading role in GS developments.<sup>76</sup>

73. *Id.*

74. *Colorado Greenhouse Pollution Reduction Map: Executive Summary*, COLO. ENERGY OFFICE, <https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap-20> (last accessed Jun. 23, 2024).

75. *Preparing for Climate Change in Oklahoma*, GEO. CLIMATE CENTER, <https://www.georgetownclimate.org/adaptation/state-information/oklahoma/overview.html> (last accessed Jun. 23, 2024).

76. *SB 200: Oklahoma Carbon Capture & Geological Sequestration Report* (Jul. 31, 2023), <https://ee.ok.gov/wp-content/uploads/2023/08/OK-Carbon-Capture-Geological-Sequestration-Report.pdf> (last accessed Jun. 23, 2024) (explaining the state's interest in geologic sequestration and the state's unique history as the first state to inject carbon dioxide into the subsurface).

### 3. Domestic Incentives

The Inflation Reduction Act of 2022 provided attractive incentives for GS efforts.<sup>77</sup> Aimed at curbing inflation and combatting climate change, the Act included approximately \$369 billion of incentives for clean energy programs.<sup>78</sup>

The United States Code provides for a tax credit for CO<sub>2</sub> capture and sequestration operations.<sup>79</sup> Title 26, Section 45Q (“45Q”) lays out a credit scheme for CCS operations based on the method of capture and other factors.<sup>80</sup> Since 2018, the tax credit has applied to all carbon oxides, not just carbon dioxide.<sup>81</sup> The adjustments were made in hopes of increasing energy and investment in GS operations.<sup>82</sup> The Inflation Reduction Act of 2022 made additional changes to 45Q credits by adding up to \$85 per ton for permanent CO<sub>2</sub> storage and \$60 a ton for EOR or other uses.<sup>83</sup>

### 4. Carbon Sequestration and Property Issues

Many states are aware of the need to accommodate the growing carbon sequestration industry.<sup>84</sup> However, as in oil and gas law, there are several different approaches to key questions that could have a significant bearing on outcome for a GS operator and property owners, outlined below.

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77. *Inflation Reduction Act: Landmark Legislation Supercharges U.S. Clean Energy Effort*, S&P GLOBAL (Oct. 19, 2022), <https://www.spglobal.com/en/research-insights/featured/special-editorial/inflation-reduction-act> (last accessed Jun. 23, 2024).

78. *Id.*

79. 26 U.S.C. § 45Q.

80. *Id.*

81. *Section 45Q Credit for Carbon Oxide Sequestration*, INT’L ENERGY AGENCY (last updated Aug. 21, 2023), <https://www.iea.org/policies/4986-section-45q-credit-for-carbon-oxide-sequestration> (last accessed Jun. 23, 2024).

82. *Id.*

83. *Inflation Reduction Act 2022: Sec. 13104 Extension and Modification of Credit for Carbon Oxide Sequestration*, INT’L ENERGY AGENCY (last updated Nov. 17, 2022), <https://www.iea.org/policies/16255-inflation-reduction-act-2022-sec-13104-extension-and-modification-of-credit-for-carbon-oxide-sequestration> (last accessed Jun. 23, 2024).

84. See Drew Hutchison, *Growing Carbon Capture Industry Spurs States to Set Guardrails* (Aug. 15, 2024), BLOOMBERG LAW, <https://news.bloomberglaw.com/environment-and-energy/growing-carbon-capture-industry-spurs-states-to-set-guardrails> (last accessed Aug. 15, 2024).

a) *Trespass vs. nuisance regimes and their implications*

GS CO<sub>2</sub> injections can and will laterally migrate away from the injection site,<sup>85</sup> though operators can use methods to mitigate this.<sup>86</sup> Case law involving subsurface CO<sub>2</sub> trespass is limited, so guiding practice on subsurface intrusions in general should be instructive.

Some scholars argue that the subsurface ownership right is nonpossessory, and therefore, that any “intrusion” should be analyzed under a nuisance doctrine, rather than the possessory trespass doctrine.<sup>87</sup> Courts use nuisance-like language to describe wrongs and remedies, and yet, still use the “trespass” name for the cause of action.<sup>88</sup> Though not the main topic of discussion here, it is important to note this distinguishment and its implications for potential court treatment and recognize that these discrepancies are an incentive for interstate cooperation.

The Restatement of Torts defines an intrusion as “a fact situation only”<sup>89</sup> in which a “possessor’s interest in the exclusive possession of his land has been invaded by the presence of a person or thing upon it without the possessor’s consent.”<sup>90</sup> The Restatement explicitly defines trespass as possible beneath the land’s surface.<sup>91</sup> Nuisance, on the other hand, can mean many things, but in this context is best defined as “the conduct or condition and the resulting harm with the addition of the legal liability that arises from the combination of the two.”<sup>92</sup> One is liable for the mere *act* of trespassing, while nuisance creates liability for any of the act’s resulting *harm*.<sup>93</sup> Subsurface carbon intrusions might be hard to notice and prove, so this difference is key in analyzing potential legal remedies.<sup>94</sup> For this comment’s purposes, nuisance is a more favorable legal theory as it often

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85. Gresham, *supra* note 3.

86. Paul R. Tough, Thomas M. Weber, *VIII. Practical Hurdles in Developing A CCS Project in Texas*, 2023 TXCLE Oil and Gas Disputes Course, STATE BAR OF TEXAS.

87. See Joseph A. Schremmer, *Getting Past Possession: Subsurface Property Disputes as Nuisances*, 95 WASH. L. REV. 315, 338 (March 2020).

88. *Id.*

89. Restatement (First) of Torts § 158 (1934).

90. *Id.*

91. *Id.*

92. Restatement (Second) of Torts § 821A (1979).

93. 36 P.L.E. NUISANCE § 1 (LexisNexis Matthew Bender 2024)

94. While beyond the scope of this comment, nuisance is a more favorable legal theory as it often provides a meaningful measure (damage and/or injury) to base remedies on. For an explanation of these different regimes and states that practice them, see Schremmer, *supra* note 87.

provides a meaningful measure (damage and/or injury) upon which to base remedies.<sup>95</sup>

*b) Detecting Migrating Plumes and Intrusions*

Monitoring injected carbon plumes is essential for estimating volume, plume boundaries, and potential leaks.<sup>96</sup> Seismic analysis can measure carbon plumes, and non-seismic measurements can analyze shallow areas.<sup>97</sup> Testing methods include “well logging tools, downhole monitoring tools, subsurface fluid sampling, tracer analysis, seismic-imaging methods, high-precision gravity methods, and electrical techniques.”<sup>98</sup>

Though plumes can be measured, an everyday landowner might not have access to such technology and might not even be aware of migrating plumes intruding on their property. Operators have to regulate their own injections and monitor and mitigate for migration,<sup>99</sup> however, unless said operators disclosed the leaks or migration path to their neighbors, property owners might have no way of knowing about the subsurface intrusions into their property. If they are unaware of the intrusion and do not utilize the pore space available to them, it follows that there is hardly a risk of any trespass or nuisance action. Equipped mineral estate holders, or their lessees, on the other hand, might be more likely to monitor the subsurface due to the nature of their operations and have evidence for some cause of action.<sup>100</sup>

*c) Interference With Oil and Gas Rights*

The Rule of Capture, as applied to oil and gas, entitles mineral rights holders to the oil and natural gas within the subsurface that they are able to capture and bring to the surface.<sup>101</sup> The rule “acknowledges the natural movement or migration of oil and gas across property lines without human

95. Restatement (Second) of Torts § 821A (1979).

96. Manzar Fawad & Nazmul Haque Mondol, *Monitoring Geological Storage of Co2: A New Approach*, NATURE, <https://www.nature.com/articles/s41598-021-85346-8> (last accessed Jun. 23, 2024).

97. Lianjie Huang & Xianjin Yang, *Evaluating Different Monitoring Techniques for Geological Carbon Storage*, 1, LAWRENCE LIVERMORE NAT'L LIBR (Jul. 26, 2021), <https://www.osti.gov/servlets/purl/1867099> (last accessed Jun. 23, 2024).

98. *Subsurface Monitoring*, NAT'L ENERGY TECH. LAB'Y, <https://netl.doe.gov/node/5873> (last accessed Jun. 23, 2024).

99. See U.S. ENV'T PROT. AGENCY, *supra* note 41.

100. *Id.*

101. Bruce M. Kramer & Owen L. Anderson, *Symposium Article: The Rule of Capture – An Oil and Gas Perspective*, 35 ENV'T. L. 899, 908 (2005).

intervention.”<sup>102</sup> In other words, the rule grants the property owner the *opportunity* to withdraw oil and gas from the subsurface, rather than any specific material below an estate holder’s property.<sup>103</sup> As such, plaintiffs could find it difficult to prove a trespass claim against a co-owner of a shared mineral resource. Horizontal wells<sup>104</sup> and hydraulic fracturing<sup>105</sup> further challenge this rule.<sup>106</sup>

There is no clear guidance on carbon plume intrusion, but saltwater injection trespass presents an analogous issue that could be instructive. In *FPL Farming, Ltd. v. Env’t. Processing Sys., LLC*, the Texas Court of Appeals held that if a party had a permit to inject a substance into the subsurface, the migration of said substance did not constitute a trespass.<sup>107</sup> However, the Texas Supreme Court later reversed and held that the Injection Well Act does not shield operators from civil liability for damages caused by injections.<sup>108</sup>

In an earlier case, *Boudreaux v. Jefferson Island Storage & Hub, LLC*, plaintiffs argued that migrating saltwater contaminated the empty storage space beneath their property.<sup>109</sup> The Fifth Circuit held that this was not a trespass, and furthermore, that plaintiffs had no unjust enrichment claim.<sup>110</sup> The court held that because the saltwater simply displaced any existing saltwater and did not otherwise affect “enjoyment of the land,” it did not constitute a trespass.<sup>111</sup>

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102. *Wildgrass Oil & Gas Comm. v. Colorado*, 447 F.Supp. 3d 1051, 1058 (D. Colo. 2020), *aff’d*, 843 F. Appx. 120 (10th Cir. 2021).

103. Kramer, *supra* note 101 (explaining that “[o]il, like a fluid, like water, it is not the subject of property except while in actual occupancy.”).

104. “[H]orizontal drilling in conjunction with hydraulic fracturing allows developers to profitably extract oil and gas directly from the less permeable shale[.]” *Murphy Expl. & Prod. Co. - USA v. Adams*, 560 S.W.3d 105, 111 (Tex. 2018), corrected Nov. 30, 2019.

105. Fracking injects sandy water and/or chemicals into the ground to break up materials for easier access to oil and gas deposits. See *Hydraulic Fracturing*, U.S. GEOLOGICAL SURVEY, Mar. 2, 2019, <https://www.usgs.gov/mission-areas/water-resources/science/hydraulic-fracturing> (last accessed Jun. 23, 2024).

106. Victoria N. Georgevich, *Tapping Into Trespass: Fracking, the Rule of Capture, and Landowner Protection*, 69 DEPAUL L. REV. 793 (2020).

107. 305 S.W.3d 739 (Tex. App. 2009), *rev’d*, 351 S.W.3d 306 (Tex. 2011).

108. *FPL Farming Ltd. v. Env’t Processing Sys., L.L.C.*, 351 S.W.3d 306, 314 (Tex. 2011).

109. *Boudreaux v. Jefferson Island Storage & Hub, LLC*, 255 F.3d 271, 273 (5th Cir. 2001).

110. *Id.* at 276.

111. *Id.* at 275.



Surface owners might generally own the pore space and be protected if displaced saltwater or carbon plumes interfered with their enjoyment of the land, but the mineral estate holder could also have a protected right against subsurface trespasses if the intrusion caused damage to their subsurface use rights.<sup>112</sup> Accordingly, surface estate and mineral estate holders alike might expect some sort of protection against damage from migrating carbon plumes, and should have an interest in an established, consistent intrastate and interstate scheme.

*d) Risks of Doing Nothing*

If states do not coordinate with each other, GS operators could simply ignore the risks of subsurface carbon migration and take their chances with potentially contradictory property regimes and litigation. One could imagine relatively limited risks in this scenario, depending on the neighboring property owners' ability to monitor the subsurface.<sup>113</sup> Though some property owners might not be able to detect and take legal action on stray plumes, mineral owners equipped with monitoring tools might be able to do so.<sup>114</sup> In such cases, state governments should be incentivized to create explicit guidelines so property owners have a clear course of action and expectations should their property rights be encroached upon.

Without guidance, GS operators could be disincentivized from operating in certain areas at all if they feared the carbon plumes would migrate across state boundaries to an incompatible property regime, where they might be liable to both a surface estate and mineral estate holder.<sup>115</sup> This potential chilling effect on GS operations could negatively impact economic growth and climate change mitigation efforts.

### *III. Interstate Agreements*

#### *A. Why Do States Cooperate in the First Place?*

States have jurisdictional boundaries, but these boundaries do not isolate them from one another, nor from the people, wildlife, water, and subsurface resources such as oil and gas that can migrate across their lines and become subjected to different legal regimes. Accordingly, states cooperate with one another to resolve different and sometimes incompatible criminal,

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112. See Owen L. Anderson, *Subsurface "Trespass": A Man's Subsurface Is Not His Castle*, 49 WASHBURN L.J. 247, 255 (2010).

113. Fawad, *supra* note 96.

114. *Id.*

115. *Cf.* Lewis, *supra* note 6.

administrative, contractual, and property-related legal doctrines. The Interstate Commission for Adult Offender Supervision is an example of one of the most successful and long-lasting interstate compacts.<sup>116</sup> Originally created in 1937 and revised in 2022 to track criminal offenders who cross state lines, the compact boasts membership from all 50 states, plus D.C., the U.S. Virgin Islands, and Puerto Rico.<sup>117</sup>

Though not directly relevant to natural resources or environmental issues, this compact is an excellent example of states addressing a common issue, public safety, and their work to equitably problem solve with the full force of federal law behind them.<sup>118</sup> There are several committees within the Commission, including but not limited to committees on Rules, Training, Technology, and Compliance.<sup>119</sup> The Commission provides information for offenders, victims, and state actors, and developed ICOTS, the Interstate Compact Offender Tracking System, an online interstate transfer tracker.<sup>120</sup> This compact lies on the more sophisticated and structured side of interstate agreements, but states have a variety of other options to address different interstate issues, discussed *infra*.

## B. Interstate Cooperation Options

### 1. Overview

States have several options for cooperation at their disposal, ranging in formality. These options, though similar at times, differ in their enforcement, level of federal involvement (if any),<sup>121</sup> oversight through a commission or other governing board, and remedies for any breaches or violations. This section contains a simplified summary of these interstate agreements.

This section simplifies these umbrella agreement categories as follows:

- 1) Agreements to mirror statutes between states (reciprocity between states);

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116. *About*, INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION, <https://interstatecompact.org/about> (last accessed Jun. 23, 2024).

117. *Id.*

118. *Id.*

119. *Committees*, INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION, <https://interstatecompact.org/committees> (last accessed Jun. 23, 2024).

120. *What is ICOTS?* INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION, <https://interstatecompact.org/icots/what-is-icots> (last accessed Feb. 11, 2024).

121. Generally, unless the agreement encroaches on some sort of federal interest, it might be left alone to local control. *See* U.S. Steel Corp. v. Multistate Tax Comm'n, 434 U.S. 452, 460 (1978).

- 2) Interstate MOUs (Memorandum of Understanding); and
- 3) Formal interstate compacts, formed under the Compacts Clause, with congressional approval, effective as both a contract and a statute.

Examples of these agreements and their advantages and disadvantages are addressed later. This comment will specifically focus on two umbrella categories, formal interstate compacts and less formal interstate MOUs, along with their potential differentiating qualities.

## 2. Congressional Consent

Constitutionally speaking, all interstate agreements require congressional consent.<sup>122</sup> However, the Supreme Court has held that the literal meaning of this clause has since been lost.<sup>123</sup> The Court reasoned that the clause “could not have been intended to reach every possible interstate agreement” and that it was therefore necessary to examine the clause in relation to its entire section.<sup>124</sup> The Court developed a test in *Virginia v. Tennessee* (1893), first discussed in dicta and then formally adopted in later cases, that balanced the agreement-making capacity of states with the federal government’s powers.<sup>125</sup> This test examined an interstate agreement “tending to the increase of political power in the states, which may encroach upon or interfere with the just supremacy of the United States.”<sup>126</sup> In other words, a compact that threatens the United States’ superior sovereignty is subject to congressional approval. An imbalance of power between compacting states and non-compacting states, or any agreement that intruded on powers reserved to the federal government would also trigger the congressional consent requirement.<sup>127</sup>

It is key to note, for purposes of this comment, that congressional approval may be required for formal and informal interstate agreements.<sup>128</sup>

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122. U.S. Const. art. I, § 10, cl. 3 (“No State shall, without the consent of Congress . . . [e]nter into any Agreement or Compact with another State, or with a foreign Power[.]”). See also Mulligan, note 130, *infra*.

123. U.S. Steel Corp., 434 U.S. at 463.

124. *Id.* at 468.

125. *Id.* at 467–471.

126. *Id.* at 471.

127. *Bench Book – 1.4.1 When Consent is Required*, INTERSTATE COMM’N FOR ADULT OFFENDER SUPERVISION, <https://interstatecompact.org/bench-book/ch1/1-4-1-when-consent-required> (last accessed Jun. 23, 2024).

128. U.S. Steel Corp., 434 U.S. at 471.

Levels of an agreement's formality and federal oversight are not mutually exclusive issues.

Additionally, some agreements might not even be considered compacts subject to congressional approval. The Supreme Court noted an interstate compact's key qualities include a joint regulatory body, conditioned actions depending on the actions of the other party states, and reciprocity requirements.<sup>129</sup> Accordingly, it is less clear that an agreement lacking these qualities would be subject to the same type of congressional scrutiny.

### 3. *Types of Interstate Agreements*

#### a) *Agreements for Implementing Similar Statutes, Reciprocity*

In *Northeast Bancorp, Inc. v. Board of Governors of Federal Reserve System*, Massachusetts and Connecticut entered an agreement to create reciprocal statutes regarding bank acquisitions.<sup>130</sup> Though certainly an agreement between states, the Supreme Court found that it did not qualify as a compact under the Compact Clause because "several of the classic indicia of a compact [were] missing."<sup>131</sup> It did not create a joint governing body, did not condition itself to the other state's action, and allowed each state to change their own laws without permission from the other state.<sup>132</sup>

#### b) *MOUs*

MOUs are agreements or understandings that could, depending on their purpose and wording, be subject to congressional approval. If the MOU states a qualifying agreement under the Compact Clause, and the agreement impacts federal supremacy, it will likely need congressional approval or risk invalidation.<sup>133</sup> Otherwise, it would be a simple agreement between states that either developed a framework, a course of action, an understanding of procedure, or arranged some other non-binding agreements.<sup>134</sup> Although in some circumstances, an MOU might be legally

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129. *Ne. Bancorp, Inc. v. Bd. of Governors of Fed. Rsrv. Sys.*, 472 U.S. 159, 175 (1985) (holding that similar state statutes requiring reciprocal privileges in interstate acquisitions did not amount to an interstate agreement subject to compact clause analysis).

130. Stephen P. Mulligan, *Interstate Compacts: An Overview*, CONG. RSCH. SERV., 3, Aug. 15, 2022, <https://crsreports.congress.gov/product/pdf/LSB/LSB10807/1> (last accessed Jun. 23, 2024).

131. *Bancorp*, 472 U.S. at 175.

132. *Id.*

133. Mulligan, *supra* note 130.

134. Examples of these Memoranda discussed below.

binding,<sup>135</sup> only federal statutes, regulations, and formal compacts are “binding means of resolving interstate policy issues.”<sup>136</sup> Accordingly, an interstate MOU could: (1) risk triggering the Compact Clause and need congressional approval, (2) become invalidated if challenged, or, (3) if it does not trigger the Clause, simply act as a non-binding agreement. For purposes of this comment, “MOUs” will refer to agreements that are not legally binding on their face that risk triggering the Compact Clause.

*c) Formal, Interstate, Congressionally Approved Compacts with Overseeing Boards, Committees, or Commissions*

Formal compacts “exist simultaneously as both (1) statutory law and (2) contracts between states.”<sup>137</sup> Compacts are an exceptionally more powerful tool than less-formal interstate agreements because, as federal statutes, courts recognize their ability to supersede conflicting state laws.<sup>138</sup> The presence of a provision for a special committee, administrative board, or commission within a compact signal a signature element of many successful interstate compacts.<sup>139</sup>

*4. Similarities Between MOUs and Interstate Compacts*

MOUs and Interstate Compacts are both agreements that allow states to reconcile differences and/or proactively address issues while maintaining local interests. They can memorialize an agreed course of action, but the differences in enforcement substantially outweigh their similarities.

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135. See *Blanchard v. Gulf Coast Premium Seafoods, LLC (In re Blanchard)*, 2021 Bankr. LEXIS 3207 (Bankr. E. La.) (explaining that MOUs can be binding if the agreement is signed and assigns duties); *Glendale City Employees’ Ass’n v. Glendale*, 15 Cal. 3d 328, 337 (Cal. 1975) (stating that MOUs adopted by public governing bodies relating to the Merers-Milias-Brown Act are binding agreements); and *Robert E. Lee Silver Min. Co. v. Omaha & Grant Smelting & Refining Co.*, 16 Colo. 118, 133 (Colo. 1891) (holding that memoranda mirroring contracts will be treated as contracts even if not formally written out).

136. *Bench Book – 1.2.1 Interstate Compacts are Formal Agreements Between States*, INTERSTATE COMM’N FOR ADULT OFFENDER SUPERVISION, <https://interstatecompact.org/bench-book/ch1/1-2-1-interstate-compacts-formal-agreements-between-states> (last accessed Jun. 23, 2024).

137. *Id.*

138. *Id.*

139. See *The Delaware River Basin Commission*, <https://www.nj.gov/drbc/>; *The Interstate Mining Compact Commission*, <http://imcc.isa.us/>; *The Multistate Tax Compact*, <https://www.mtc.gov/>; *The Midwest Interstate Low-Level Radioactive Waste Compact Commission*, <https://midwestcompact.org/>; and *The New England Interstate Water Pollution Control Compact Commission*, <https://neiwpc.org/>.

### 5. Key Differences Between MOUs and Interstate Compacts

The main differences between MOUs and Compacts are their: (1) structure, (2) level of federal involvement, (3) interstate enforcement, and (4) intrastate enforcement. Each difference is discussed below.

#### a) Structure

MOUs can be agreements for their own sake, or they can be added to clarify existing compacts. For example, Colorado, Utah, Wyoming, and New Mexico created a stand-alone agreement not attached to a particular existing compact.<sup>140</sup> An example of a MOU on top of an existing compact is the Memorandum of Understanding Between the Interstate Oil and Gas Compact Commission and the U.S. Environmental Protection Agency.<sup>141</sup> Governing administrative bodies from different states or levels of governments can also enter MOUs, an example of which is a memorandum of agreement between the Railroad Commission of Texas and the New Mexico Energy, Minerals, and Natural Resources Department, regarding oil and gas production from proposed horizontal wells.<sup>142</sup>

“Interstate compacts” can refer to any interstate agreement.<sup>143</sup> However, for the sake of this comment, “interstate compacts” mean formal agreements between states subject to congressional approval and governed by an Interstate Commission. Formal interstate compacts, unlike MOUs, are both a contract and federal law.<sup>144</sup>

#### b) Federal Involvement

The federal government would likely be able to involve itself in an agreement (whether an MOU or compact) that either met the criteria

140. *Memorandum of Understanding: Western Inter-States Hydrogen Hub*, signed Feb. 23, 2022, available at [https://www.governor.state.nm.us/wp-content/uploads/2022/02/FINAL-Western-Inter-States-Hydrogen-Hub-MOU-V5\\_022322.pdf](https://www.governor.state.nm.us/wp-content/uploads/2022/02/FINAL-Western-Inter-States-Hydrogen-Hub-MOU-V5_022322.pdf) (last accessed Jun. 23, 2024).

141. Renewed in October 2019, this agreement fosters collaboration and communication by renewing a joint task force between the two agencies. The agreement explicitly stated it was not legally binding. The text of the agreement is available here: [https://oklahoma.gov/content/dam/ok/en/iogcc/documents/news/iogcc\\_epa\\_mou\\_signed10-8-2019.pdf](https://oklahoma.gov/content/dam/ok/en/iogcc/documents/news/iogcc_epa_mou_signed10-8-2019.pdf)

142. *Memorandum of Agreement Between The New Mexico Energy, Minerals, & Natural Resources Department, Oil Conservation Division, and the Oil and Gas Division, Railroad Commission of Texas*, signed Sept. 1, 2022 (Tex.) and Sept. 2, 2022 (New Mexico). See also Molly Samsell, *Oil’s Well That Ends Well – An Application for a New Mexico-Texas Transboundary Well and Its Implications*, 52 N.M. L. REV. 488 (2022).

143. Mulligan, *supra* note 130.

144. *Kansas v. Nebraska*, 574 U.S. 445, 477 (2015).

established in *Virginia v. Tennessee* or significantly impacted federal interests.<sup>145</sup> Additionally, if trust tribal land is involved, federal involvement is certain.<sup>146</sup>

*c) Interstate Enforcement, Jurisdiction*

Congressionally approved agreements, as statutes, grant federal jurisdiction over disputes.<sup>147</sup> While parties can still bring their disputes to state courts, congressionally approved agreements have a wider array of jurisdictional options to settle them.<sup>148</sup> Additionally, parties can seek federal remedies for violations of the interstate compact.<sup>149</sup> Aside from other federal laws or regulations, interstate compacts are the only binding instruments for interstate conflicts.<sup>150</sup> So, while an MOU could be useful, it would not be as powerful and binding as a compact.

*d) Intrastate Enforcement*

Formal interstate compacts are adopted by each participating state's own legislature.<sup>151</sup> Therefore, once adopted, all state actors within participating states are bound by the compact.<sup>152</sup> MOUs, on the other hand, are agreements that can exist without local statutory backing and might only *request* compliance between the parties named in the agreement.<sup>153</sup>

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145. Mulligan, *supra* note 130.

146. *See Order No. 3335: Reaffirmation of the Federal Trust Responsibility to Federally Recognized Indian Tribes and Individual Indian Beneficiaries*, U.S. DEP'T OF THE INTERIOR, Aug. 20, 2014, available at <https://www.doi.gov/sites/doi.gov/files/migrated/news/pressreleases/upload/Signed-SO-3335.pdf> (last accessed Jun. 23, 2024).

147. *Bench Book – 1.4.3 Implications of Congressional Consent*, INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION, <https://interstatecompact.org/bench-book/ch1/1-4-3-implications-congressional-consent> (last accessed Jun. 23, 2024).

148. *Id.*

149. *Id.*

150. INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION, *supra* note 136.

151. *Bench Book – 1.1 Who Must Comply with an Interstate Compact?* INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION, <https://interstatecompact.org/bench-book/ch1/1-1-who-must-comply-with-interstate-compact> (last accessed Jun. 23, 2024).

152. *Id.*

153. *See* IOGCC/EPA MOU, *supra* note 141.

## 6. Examples of Interstate MOUs

### a) *Western Inter-States Hydrogen Hub*

In 2022, Colorado, Wyoming, New Mexico, and Utah signed an MOU on the Western Inter-States Hydrogen Hub (WISHH).<sup>154</sup> The Bipartisan Infrastructure Act of 2021<sup>155</sup> funded an \$8 billion hydrogen hub program (H2Hubs).<sup>156</sup> The program sought to build between 6-10 hydrogen hubs across the country.<sup>157</sup> The western WISHH-hopeful states coordinated to apply for funding for such a hub and developed a framework for interstate cooperation to meet this goal.<sup>158</sup> The document notes that “[w]estern states have a long history of coordination on regional issues and opportunities.”<sup>159</sup> Importantly, the document noted that additional western states could be added as desired and that states could terminate their involvement in the agreement at-will.<sup>160</sup> Though competing for a federal grant, the agreement does not mention congressional approval to form.<sup>161</sup> The agreement could be terminated at-will, and the agreement did not bind the parties; rather, it is an agreement to exclusively work towards a Hydrogen Hub application.<sup>162</sup>

### b) *Memorandum of Understanding for the Coordination of Natural Resources Damage Assessment and Restoration Activities in the Tri-State Mining District*

Another example of interstate and intertribal cooperation is the Memorandum of Understanding for the Coordination of Natural Resource Damage Assessment and Restoration Activities in the Tri-State Mining District.<sup>163</sup> The Memorandum included Kansas, Missouri, Oklahoma, the

154. *Western Inter-States Hydrogen Hub*, *supra* note 140.

155. H.R. 3684, Public Law No: 117-58 (Nov. 15, 2021), <https://www.congress.gov/117/plaws/publ58/PLAW-117publ58.pdf>.

156. *Regional Clean Hydrogen Hubs*, U.S. Dep’t of Energy, Office of Clean Energy Demonstrations, <https://www.energy.gov/oced/regional-clean-hydrogen-hubs-0> (last accessed Jun. 23, 2024)

157. *Id.*

158. *Western Inter-States Hydrogen Hub*, *supra* note 140.

159. *Id.*

160. *Id.*

161. *Id.*

162. *Id.*

163. *Amended Memorandum of Understanding Among State of Kansas, State of Missouri, State of Oklahoma, Cherokee Nation, Eastern Shawnee Tribe of Oklahoma, Miami Tribe of Oklahoma, Ottawa Tribe of Oklahoma, Peoria Tribe of Oklahoma, Seneca-Cayuga Nation, Wyandotte Nation, U.S. Department of the Interior, for Coordination of Natural Resource Damage Assessment and Restoration Activities in the Tri-State Mining District*, 1,



Cherokee Nation, the Eastern Shawnee Tribe of Oklahoma, the Miami Tribe of Oklahoma, the Ottawa Tribe of Oklahoma, the Peoria Tribe of Indians of Oklahoma, the Seneca-Cayuga Nation, the Wyandotte Nation, and the U.S. Department of the Interior as parties.<sup>164</sup> The stated goal of the Memorandum was to clarify trustee responsibilities and the relationship between tribal, state, and federal laws as related to identifying natural resources and potential damages in the tri-state mining district.<sup>165</sup> Under the Memorandum, the parties agreed to consult natural resource management plans and consider restorative alternatives, cooperate with the trustees, cooperate on qualifying and quantifying potential injury, and to recognize the importance of preserving Native American traditions and culture related to the natural resource and mining areas.<sup>166</sup> This MOU did not create new law; rather, it relied on existing law and clarified responsibilities and procedures under the law to meet obligations involving natural resources in the area.<sup>167</sup>

*c) Memorandum of Understanding Between the State of Wyoming and the State of Colorado Regarding Direct Air Capture Industry Development*

In 2023, Colorado and Wyoming entered an agreement to “advance [their] interests in achieving reductions in greenhouse gas emissions and increasing jobs and economic development.”<sup>168</sup> Though the agreement did not establish a commission, it established a work group to meet the MOU’s goals.<sup>169</sup> The agreement included a non-exhaustive list of tasks such as: application preparation, market analysis, and empowering interstate and intertribal stakeholders.<sup>170</sup>

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U.S. GEOLOGICAL SURVEY, [https://www.cerc.usgs.gov/orada\\_docs/DocHandler.ashx?task=get&ID=7842](https://www.cerc.usgs.gov/orada_docs/DocHandler.ashx?task=get&ID=7842) (last accessed Jan. 5, 2024).

164. *Id.*

165. *Id.* at 2–4.

166. *Id.*

167. *Id.*

168. *Memorandum of Understanding Between the State of Wyoming and The State of Colorado Regarding Direct Air Capture Industry Development*, signed Jun. 21, 2023, available at <https://drive.google.com/file/d/11k3YiM9F9UCji4hL0fkxtt4N3gIqB-pE/view> (last accessed Jun. 23, 2024).

169. *Id.*

170. *Id.*

### 7. *Examples of Formal Interstate Compacts*

The following compacts, ranging in subject matter, are illustrative on key characteristics of successful interstate compacts with governing commissions (or a similar governing body).

#### a) *The Interstate Oil and Gas Compact Commission*

Since oil and gas are some of the very products retrieved from the pore space at issue, interstate oil and gas agreements could be especially instructive on how states can handle the empty space the oil and gas leave behind, and future uses for said space.

The Interstate Oil and Gas Compact Commission (IOGCC), created in 1935, works to advance cooperation between the states for oil and gas production.<sup>171</sup> The agreement between Oklahoma, New Mexico, Texas, Colorado, Kansas, and 25 other states was approved by Congress.<sup>172</sup> In its Strategic Plan, the IOGCC states that it will work towards environmental protection by assisting “the states in development of programs for the safe storage and distribution of gases such as carbon dioxide and hydrogen.”<sup>173</sup> The IOGCC also commits to identifying and acting on emerging issues in the oil and gas field.<sup>174</sup>

In response to the increasing activity in GS, the IOGCC created a Geologic CO<sub>2</sub> Sequestration Task Force (“Task Force.”)<sup>175</sup> The Task Force created an analysis of each state’s capacity for GS and developed a framework for states.<sup>176</sup> However, these resources are over a decade old.<sup>177</sup> Additionally, they do not provide guidance on subsurface trespass theories and/or remedies, whether interstate or intrastate.<sup>178</sup>

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171. *Our History*, INTERSTATE OIL & GAS COMPACT COMM’N, <https://oklahoma.gov/iogcc/about-us.html> (last accessed Jun. 23, 2024).

172. *Charter*, INTERSTATE OIL & GAS COMPACT COMM’N, <https://oklahoma.gov/iogcc/about-us/charter.html> (last accessed Jun. 23, 2024).

173. *Strategic Plan*, INTERSTATE OIL & GAS COMPACT COMM’N, <https://oklahoma.gov/iogcc/about-us/strategic-plan> (last accessed Jun. 23, 2024).

174. *Id.*

175. *Carbon Sequestration*, INTERSTATE OIL & GAS COMPACT COMM’N, <https://oklahoma.gov/iogcc/issues/carbon-sequestration.html> (last accessed Jun. 23, 2024).

176. *Id.*

177. *Id.*

178. *Id.*

*b) The Colorado River Compact*

Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming signed the Colorado River Compact in 1922 to manage the division of water from the Colorado River between the states.<sup>179</sup> The Compact's priorities included apportionment and protection.<sup>180</sup> The compact provides for a dispute resolution-oriented commission, as the need arises, made up of a representatives appointed by interested state governors.<sup>181</sup> Under the compact, the commission has the power to "consider and adjust such claim or controversy, subject to ratification by the Legislatures of the State so affected,"<sup>182</sup> but the compact notes that nothing in the agreement prevents states from pursuing legal or equitable action.<sup>183</sup>

*c) The Pecos River Compact*

Case history can be a helpful tool in analyzing how courts might approach a future interstate compact. Significant litigation arose out of the Pecos River Compact in particular. The compact created a commission to oversee water usage of the Pecos River, which flows from New Mexico down to Texas, to ensure Texas receives its fair share of the water resources.<sup>184</sup> This Compact highlighted the intersection between state and federal law. The Compact provided that the water must maintain a certain level by the time it reached the Texas-New Mexico border and created the permanent Pecos River Commission with permanent Commissioners.<sup>185</sup>

In *Texas v. New Mexico* (1983),<sup>186</sup> Texas filed suit against New Mexico for breaching the compact by depleting the Pecos River beyond the prescribed amount.<sup>187</sup> The Supreme Court held that it had the power to enforce the interstate compact, setting precedent for future compact disputes.<sup>188</sup> It also stressed its preference that states resolve their disputes

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179. *Colorado River Compact*, text available at <https://www.usbr.gov/lc/region/g1000/pdfiles/crcompact.pdf> (last accessed Jun. 23, 2024).

180. *Id.* Art. I.

181. *Id.* Art. VI.

182. *Id.*

183. *Id.*, Art. IX.

184. *Pecos River Compact Commission*, TEX. COMM'N ON ENV'T QUALITY, available at: <https://www.tceq.texas.gov/permitting/compacts/pecos.html> (Last accessed Jun. 23, 2024).

185. *Texas v. New Mexico*, 462 U.S. 554, 558–560 (1983).

186. There are multiple *Texas v. New Mexico* cases for this specific compact, so each mention of the respective cases will be followed by their year for clarity on which case is being discussed.

187. 462 U.S. 554 (1983).

188. 462 U.S. 554, 567 (1983).

through cooperation and gave deference to the compact's Special Master<sup>189</sup> to resolve compact issues.<sup>190</sup>

In *Texas v. New Mexico* (1988), the Supreme Court approved the compact Special Master's suggestion to appoint someone as a River Master, responsible for accounting and reporting on compact obligations.<sup>191</sup> The Court also ordered that the River Master report on New Mexico's compliance or non-compliance with its compact obligations.<sup>192</sup>

Most recently, in *Texas v. New Mexico* (2020), the Court considered how to account for evaporated water under the powers of the compact.<sup>193</sup> In this case, the Court repeatedly noted and agreed with the River Master's conclusions.<sup>194</sup> The Supreme Court's willingness to adjudicate cases such as these signals a safeguard for the equity of potential interstate GS compacts. These cases also signal the Supreme Court's deference to the agreements made between the states and the capability of their agents to handle the matters.

The Supreme Court provided additional guidance on remedies for breach of interstate compacts in *Kansas v. Nebraska*.<sup>195</sup> The Court ordered a financial remedy to be paid from Nebraska to Kansas for knowingly violating provisions of the Republican River Basin Compact, an agreement between Colorado, Nebraska, and Kansas which provided water allocations between the states.<sup>196</sup> The Court noted that it has "broad remedial authority" in resolving compact disputes.<sup>197</sup> Finally, the Court kept with its theme of giving great deference to the key compact administrators, such as the Special Master of the compact.<sup>198</sup>

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189. In federal courts, "Special Masters" are appointed pursuant to FRCP 53. The Special Master is empowered to hold hearings (FRCP 53(1)(B)), address pre-trial matters, instead of a judge (FRCP 53(1)(C)), and take up any other matters that the parties consent to (FRCP 53(1)(A)).

190. 462 U.S. at 575–76.

191. 485 U.S. 388, 391 (1988).

192. *Id.*

193. 592 U.S. 98, 99 (2020).

194. *Id.* at 108.

195. 574 U.S. 445 (2015).

196. *Id.* at 512–16.

197. *Id.*

198. 574 U.S. 445.

### 8. *Additional Considerations: Multiple Agreements or Compacts*

Unless specifically provided in the agreement or compact,<sup>199</sup> a party would likely not be precluded from entering multiple agreements or compacts. Multi-compact and agreement membership is especially common for interstate water resources.<sup>200</sup> In fact, utilizing multiple agreements would likely give states more leverage if one or more of their neighbors were unwilling to join a larger compact. A state could, in theory, accomplish its goals of developing a predictable system for carbon sequestration efforts through multiple interstate agreements, so long as not prohibited by any of the other agreements.

## IV. *Suggested Approach*

### A. *Preliminary Notes on Crafting Similar State Statutes*

The easiest option for neighboring states might be to craft similar statutes to each other to eliminate questions on property law regarding trespass or nuisance for subsurface injections without any sort of formal interstate agreement, similar to the approach taken by Massachusetts and Connecticut in *Bancorp*.<sup>201</sup> Such an agreement would not likely be considered a compact for Constitutional purposes, and, on its face, could evade federal involvement. However, *Bancorp* directly involved two states.<sup>202</sup> It seems improbable for every state in a larger coalition to make similar satisfactory agreements with each of their neighbor states. Additionally, crafting similar statutes would not give the same coalition-building benefits as a compact could. Finally, due to the unique federal interests in interstate natural resource agreements,<sup>203</sup> injection permits,<sup>204</sup> and the potential for involvement with tribal lands,<sup>205</sup> the federal

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199. The Western Inter-States Hydrogen Hub MOU, *supra* note 140, explicitly stated that party states should not join other agreements for hydrogen hub purposes.

200. See *Interstate Compacts Filed with the State Records Center and Archives as of March 28, 2022*, N.M. COMM'N OF PUBLIC RECORDS, <https://www.srca.nm.gov/interstate-compacts/>; *Interstate Compacts*, COLO. DEP'T OF NAT. RES., DIV. OF WATER RES., <https://dwr.colorado.gov/services/water-administration/interstate-compacts>; *Interstate Rivers and Compacts*, KAN. DEP'T OF AGRIC., <https://agriculture.ks.gov/divisions-programs/dwr/interstate-rivers-and-compacts>; and *Interstate Stream Compacts*, OKLA. WATER RES. BD., <https://oklahoma.gov/owrb/water-planning/interstate-stream-compacts.html>.

201. 472 U.S. at 172.

202. *Id.* at 177.

203. See INTERSTATE OIL & GAS COMPACT COMM'N, *supra* note 171.

204. See U.S. ENV'T PROT. AGENCY, *supra* note 43.

205. See U.S. DEP'T OF THE INTERIOR, *supra* note 146.

government is more likely than not to be involved anyway, making reciprocity agreements a substandard choice.

*B. Formal, Interstate Agreements are the Most Effective Options for All Stakeholders*

A formal, congressionally approved compact with a governing commission would be the most effective option for carbon sequestration management. Not only could such an agreement cover pore space property issues, but it could also respond to developing needs regarding carbon sequestration and pore space in general. It would also provide a coalition-building benefit for affiliated states and provide harmonious state and federal statutes. This section will analyze the benefits and address concerns over such compacts and, in the alternative, analyze potential for less-formal agreements. Ultimately, some agreement action is better than none, but a compact would be the superior option.

*1. Building On Existing Interstate Compacts*

States don't necessarily have to start from scratch in creating a specific carbon sequestration compact and commission. The IOGCC names carbon sequestration as one of its issues but does not provide much updated guidance otherwise.<sup>206</sup> Reviving this wing and turning towards more actionable steps, including guidance on issues of interstate trespass, could prove beneficial. It would provide a perfect opportunity to meet the IOGCC's strategic goal of identifying and addressing emerging oil and gas issues.<sup>207</sup> Party states amended the contract in 1970, proving the compact's capacity for adjustment as needed.<sup>208</sup>

This method would be the easiest and most effective option because it would lean on an already-existing compact, with existing resources and legitimacy among states and the federal government. The IOGCC would be able to take meaningful steps in resolving interstate discrepancies for subsurface intrusions, as well as other issues involving pore space and carbon sequestration. It could recommend appropriate action to states and coordinate the member states' police powers as appropriate,<sup>209</sup> and survey

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206. *Carbon Sequestration*, INTERSTATE OIL & GAS COMPACT COMM'N, <https://oklahoma.gov/iogcc/issues/carbon-sequestration.html> (last accessed Jun. 23, 2024).

207. *Strategic Plan*, *supra* note 173.

208. *Charter*, INTERSTATE OIL & GAS COMPACT COMM'N, <https://oklahoma.gov/iogcc/about-us/charter.html> (last accessed Jun. 23, 2024).

209. *Id.*

state statutes for incompatibilities or absences regarding carbon plume intrusions.<sup>210</sup>

## 2. *Creating a new compact*

Developing a new, formal interstate compact would: (1) ensure that an interstate agreement had teeth as both a federal statute and contract; (2) allow for local control and delegation; (3) increase dispute resolution alternatives; (4) allow for federal court jurisdiction; and (5) create a clear path to remedy should a party violate its provisions.<sup>211</sup> As a legally binding contract and statute, an interstate compact to preserve carbon sequestration and property interests would allow states to ensure accountability of other party states.<sup>212</sup> Accordingly, operators could reference harmonized state statutes and feel more confident in business decisions.

Another benefit of an interstate compact is delegation. The Supreme Court has held that states may delegate rule-making powers to administrative bodies.<sup>213</sup> Such delegation would allow member states more power and agency through federal provisions and the statutorily created agency.<sup>214</sup>

Additionally, a compact would allow local opinion to guide decisions through the selection of representatives from each state.<sup>215</sup> States could arrange agreements regarding pooling for subsurface injections, compensation for property owners, and remedies should plumes deviate outside of the pooled land. For example, a dispute-resolution provision like that in the Colorado River Compact (1922) could serve a carbon-sequestration based compact well in resolving any disputes.<sup>216</sup>

Finally, if a dispute went beyond administrative remedies and supervision, an interstate compact would allow an injured party to bring suit in federal court.<sup>217</sup> Since the statute is federal, courts are granted federal

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210. *State Statutes*, INTERSTATE OIL & GAS COMPACT COMM'N, <https://oklahoma.gov/iogcc/member-states/state-statutes.html> (last accessed Jun. 23, 2024).

211. *See generally Part III: Interstate Agreements*, § (B), discussed *supra*.

212. *See Frequently Asked Questions: What is an interstate compact?* NAT'L CENTER FOR INTERSTATE COMPACTS, <https://compacts.csg.org/faq/> (last accessed Jun. 23, 2024).

213. *State ex. rel. Dyer v. Sims*, 341 U.S. 22, 30 (1951).

214. *Frequently Asked Questions: How are compacts administered and enforced?* NAT'L CENTER FOR INTERSTATE COMPACTS, <https://compacts.csg.org/faq/> (last accessed Jun. 23, 2024).

215. *See Member States*, INTERSTATE OIL AND GAS COMPACT COMM'N, <https://oklahoma.gov/iogcc/member-states.html> (last accessed Jun. 23, 2024).

216. *See Colorado River Compact*, Article VI, *supra* note 179.

217. *See INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION*, *supra* note 147.

question jurisdiction over issues that might arise.<sup>218</sup> Courts could appoint Special Masters to work on cases and could give them great deference.<sup>219</sup> Special Masters would be uniquely equipped to handle disputes under an existing compact and would be able to use that specific knowledge and expertise to recommend a more equitable solution, targeted towards an industry that some judges might find unfamiliar.<sup>220</sup> This structure combines the advantages of an administrative governing body with the advantages of state agency, control, and partnership. States would be empowered to find amicable solutions and smooth out potential property disputes through negotiation and representation.

### *3. Developing an Interstate Compact*

To create an interstate compact, interested groups should research pore space property and carbon sequestration issues in their state and neighbor states.<sup>221</sup> Then, stakeholders should craft language to meet their property goals.<sup>222</sup> A compact on carbon plume intrusion might consider the best legal framework for determining whether migrating carbon dioxide plumes across state lines constitute a trespass or nuisance claim, and if so, what the appropriate remedy (if any) should be, as well as providing for any special remedies parties might seek. It might also consider pooling agreements between state lines should states be interested in allowing operators to inject carbon dioxide near their borderlines, while fairly compensating property owners that are either unable or unwilling to pool their pore space.<sup>223</sup>

Once compact language is agreed upon, a state must get approval from its legislature and governor to formally join.<sup>224</sup> All party states must have the same statutory language in order for the agreement to be enforceable.<sup>225</sup>

Once a minimum number of states enact their own legislation, and the compact is approved by Congress (if required), the compact can establish its governing administration.<sup>226</sup>

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218. *Id.*

219. *See Texas v. New Mexico*, 462 U.S. 554 (1983), *supra* note 185.

220. *Supra* note 189.

221. *See Frequently Asked Questions: What are the steps in the compact development process?* NAT'L CENTER FOR INTERSTATE COMPACTS, <https://compacts.csg.org/faq/> (last accessed Jun. 23, 2024).

222. *Id.*

223. *Cf. OKLA. STAT. ANN. tit. 52, § 87.1(e)*, *supra* note 4; and *S.B. 831 § 5(a)*, *supra* note 5.

224. NAT'L CENTER FOR INTERSTATE COMPACTS, *supra* note 221.

225. *Id.*



*C. MOU Alternative*

Alternatively, if states were unwilling to put the time and energy into creating a formal compact, or if they had other concerns about federal oversight or oversight from other states, they could enter a less formal MOU. This agreement, while better than nothing, would likely not be as effective in decision-making and regulation as a formal compact and commission. It would not have the same weight as a federally recognized statutory contract, nor as a compact whose terms and provisions are reflected in a state's own legislation.<sup>227</sup> Additionally, depending on the language of the MOU, states might be able to leave freely without penalty, subjecting operators and property owners to unpredictable property regimes once again.<sup>228</sup> Finally, while not barred from doing so, an MOU would be less likely to include a comprehensive, enforceable framework directed at resolving other carbon sequestration or pore space issues that might arise between states. An MOU could be a proactive coalition-building tool, such as the Western Inter-States Hydrogen Hub MOU,<sup>229</sup> but likely wouldn't have the same persuasion as long-standing committees and advocacy wings of interstate compacts such as the IOGCC and Interstate Commission for Adult Offender Supervision.<sup>230</sup>

The most instructive MOU example for carbon sequestration and intrusion is likely the Tri-State Mining District Memorandum.<sup>231</sup> It addressed the recovery for damages pertaining to damaged or destroyed natural resources due to the discharge of hazardous materials or oil.<sup>232</sup> Since a carbon plume could migrate and interfere with another's property rights, an MOU could serve interested parties in a similar way. States could reach an informal understanding on how they would address interstate plume

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226. *Id.*

227. See INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION, *supra* note 136.

228. See *Western Inter-States Hydrogen Hub*, *supra* note 140 (noting that party states could terminate at-will).

229. See *Western Inter-States Hydrogen Hub*, *supra* note 140.

230. See IOGCC, *supra* note 171; and INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION, *supra* note 116.

231. *Amended Memorandum of Understanding Among State of Kansas, State of Missouri, State of Oklahoma, Cherokee Nation, Eastern Shawnee Tribe of Oklahoma, Miami Tribe of Oklahoma, Ottawa Tribe of Oklahoma, Peoria Tribe of Oklahoma, Seneca-Cayuga Nation, Wyandotte Nation, U.S. Department of the Interior, for Coordination of Natural Resource Damage Assessment and Restoration Activities in the Tri-State Mining District*, *supra* note 163.

232. *Id.*

migration issues and ask for some sort of reciprocity on the matter. A state's agencies should be able to enter a memorandum on behalf of their host states as well. For example, Texas and New Mexico respectively vested their authority in the New Mexico Energy, Minerals, & Natural Resources Department and the Railroad Commission of Texas to come to an agreement on horizontal well production.<sup>233</sup>

Should states be inclined and find that they would prefer an arrangement somewhere in the middle between an informal MOU and a formal interstate compact and commission, they could craft an agreement of their own design based on the various factors mentioned in Part III, *supra*. For example, depending on the particular state, its stakeholders, and its neighbor's interest, local interests between two to three states might be better suited to a less formal compact without a governing body. Alternatively, should states already be party to natural resource related interstate compacts, a subset of the states could enter their own MOU to add responsibilities or clarify obligations relating to pore space and carbon sequestration.<sup>234</sup> Ultimately, states should take some sort of action to guard the expectations and incentives of property owners and operators, even if that action does not fit neatly within one of the previously mentioned categories.

### *V. Conclusion*

Carbon capture and sequestration can play a key role in mitigating climate change and driving economic growth. This technology can provide great economic opportunities for participating states. Familiar and novel property issues arise from the novel science, and states can be proactive leaders in the industry by cooperating to prevent illogical legal scenarios for GS operators and property owners alike. These novel issues, including the potential liability for GS operators should plumes of carbon migrate from their initial injection property or state, are worthy of interstate cooperation to assist political and judicial expediency.<sup>235</sup> Ideally, states would develop and implement comprehensive and compatible statutory guidance. If they

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233. *Memorandum of Agreement Between the New Mexico Energy, Minerals, & Natural Resources Department, Oil Conservation Division, and the Oil and Gas Division, Railroad Commission of Texas*, *supra* note 142.

234. *Cf. IOGCC/EPA MOU*, *supra* note 141 (an MOU layered on top of an existing compact).

235. *See Lewis*, *supra* note 6.

do not, they risk getting left behind in a growing economic and environmental field.

By working through these differences, states would incentivize carbon sequestration operators to choose their states as injection sites. In addition, meaningful agreements would allow better working relationships between the states and prevent interstate disputes. Several successful memorandums of understanding, interstate compacts, and agreements have been employed between states for water, oil and gas production, criminal law, and other subject areas.<sup>236</sup> States can commit to compacts and provide statutory guidance, or, at the very least, enter MOUs to manage the expectations of surface and mineral estate owners.<sup>237</sup>

To have even more agency over the continuous regulation and adjudication of carbon sequestration and pore space, states should enter interstate compacts rather than relying on less formal agreements like MOUs.<sup>238</sup> Compacts would give states the ability to hold each other accountable to their set terms and provide the participants with more agency through representation on managing commissions and committees.<sup>239</sup> Additionally, compacts further legitimize interstate agreements by requiring the joining parties to enact statutes within their own legislation.<sup>240</sup> This guards against an interstate agreement effectively being minimized to a letter of intent.

Finally, joining a formal interstate compact would open new options for jurisdiction and remedies.<sup>241</sup> Additionally, should disputes arise, courts would be able to appoint Special Masters uniquely qualified to answer questions and make recommendations regarding a specific area of expertise.<sup>242</sup> These factors and formalities provide states with real agency that would otherwise be lost if left to their own devices.

Predictability would greatly benefit this new frontier of property rights and could motivate entrepreneurship and development to help mitigate climate change and provide new economic opportunities. States must not let the industry get ahead of their laws, rules, and regulations. If states take initiative and address pore space and carbon sequestration issues before they occur, they will signal to GS operators that their states are ideal places

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236. See generally *Part III: Interstate Agreements*, discussed *supra*.

237. See *Part IV: Suggested Approach*, Section (C), discussed *supra*.

238. See *Part IV: Suggested Approach*, Section (B), discussed *supra*.

239. See *Part IV: Suggested Approach*, Section (C), discussed *supra*.

240. INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION, *supra* note 151.

241. See INTERSTATE COMM'N FOR ADULT OFFENDER SUPERVISION, *supra* note 136.

242. *Supra* note 189.

to do business. A rapidly growing industry provides just as many risks for novel litigation as it does rewards. In short, the sooner states can take a proactive leap on GS, the better.