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## **Carbon Capture and Pore Space Issues**

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# DRAFTING AND NEGOTIATING INSTRUMENTS TO ACQUIRE PORE SPACE RIGHTS FOR CCS

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- § 1.01 Background
  - [1] What Takes Place During Carbon Capture and Storage (CCS)? What Are Some of the Risks?
  - [2] Incentives for Doing CCS
  - [3] Applicable Regulatory Scheme
- § 1.02 Why the CCS Operator Needs to Acquire Pore Space Rights
- § 1.03 What Should Be the Nature of the Agreement for Subsurface Rights?
- § 1.04 Issues and Provisions to Consider for Pore Space Agreements for CCS
  - [1] What Rights Will the CCS Operator Need?
  - [2] Relation of CCS Rights to Mineral Rights
    - [a] Surface Use Rights
    - [b] Use of the Storage Reservoir
    - [c] Drill-Through Rights
    - [d] Increased Expense of Drilling Through a CO<sub>2</sub> Storage Formation
    - [e] Geophysical Issues
  - [3] Duration of Agreement
  - [4] What Should Be the Compensation Model?
    - [a] Why the Compensation Model Should Include One or More Fixed Payments
    - [b] Why the Compensation Model Should Include a Payment to the Landowner Based on Injection Volumes or Economic Benefit to the CCS Operator
  - [5] Depths or Formations Where CCS Operator Will Have Storage Rights
  - [6] Reasonable Diligence by CCS Operator
  - [7] “Pooling” or “Unitization”
  - [8] Surface Use, Surface and Subsurface Damages, Surface Restoration, and Removal of Equipment
  - [9] Miscellaneous Contract Provisions
- § 1.05 Alternatives to Agreement
- § 1.06 With Whom Must the CCS Operator Contract—Surface Owner, Mineral Owner, or Both?
- § 1.07 Could Someone Rely on an Oil and Gas Lease for the Authority to Conduct CCS?
- § 1.08 Determining Market Value?
- § 1.09 Conclusion

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## § 1.01 Background\*

Scientists believe<sup>1</sup> that human activities are causing an accumulation of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases<sup>2</sup> in the atmosphere, and that this accumulation is causing a change in the world's climate. Scientists warn that the change in climate could be very disruptive to human societies. As one of several policy responses to this risk, the United Nations

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\* This paper is based on a paper presented by the author at the 69th Annual Natural Resources & Energy Law Institute in July 2023, though the author has made minor revisions and updates. The citation for that prior paper is: Keith B. Hall, "Drafting and Negotiating Instruments to Acquire Pore Space Rights for CCS," 69 *Nat. Resources & Energy L. Inst.* 5-1 (2023).

Keith B. Hall is the Nesser Family Chair in Energy Law at Louisiana State University, where he serves as Director of the Mineral Law Institute and Director of the John P. Laborde Energy Law Center. He teaches Mineral Rights, International Petroleum Transactions, Civil Law Property, and Energy Law & Regulation. Professor Hall is a co-author or editor of four books: (1) *The Law of Oil and Gas*; (2) *International Petroleum Law and Transactions*; (3) *Hydraulic Fracturing: A Guide to Environmental and Real Property Issues*; and (4) *The Regulation of Decommissioning, Abandonment and Reuse Initiatives in the Oil and Gas Industry*. Professor Hall's shorter publications have addressed carbon capture and storage, implied covenants in oil and gas leases, pooling and unitization, joint operating agreements, hydraulic fracturing, induced seismicity, and the management of produced water. Professor Hall has served as an arbitrator, author of amicus briefs, and as an expert witness in oil and gas disputes arising in several different states, as well as outside the United States. Before joining the LSU faculty in 2012, Professor Hall practiced law at a major firm in New Orleans for 16 years, and before that he worked for eight years as a chemical engineer.

<sup>1</sup> Nat'l Energy Tech. Lab'y (NETL), U.S. Dep't of Energy, "Carbon Storage Atlas," at 7 (5th ed. 2015).

<sup>2</sup> Greenhouse gases are gases that trap heat in the atmosphere. See U.S. Env't Prot. Agency (EPA), "Overview of Greenhouse Gases," <https://www.epa.gov/ghgemissions/overview-greenhouse-gases> (also noting CO<sub>2</sub> accounted for 79% of U.S. greenhouse gas emissions in 2020). Other greenhouse gases include methane and hydrofluorocarbons. *Id.*

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