Study on States' Policies and Regulations per CO_2-EOR-Storage Conventional, ROZ and EOR in Shale:

Permitting, Infrastructure, Incentives, Royalty Owners, Eminent Domain, Mineral-Pore Space, and Storage Lease Issues

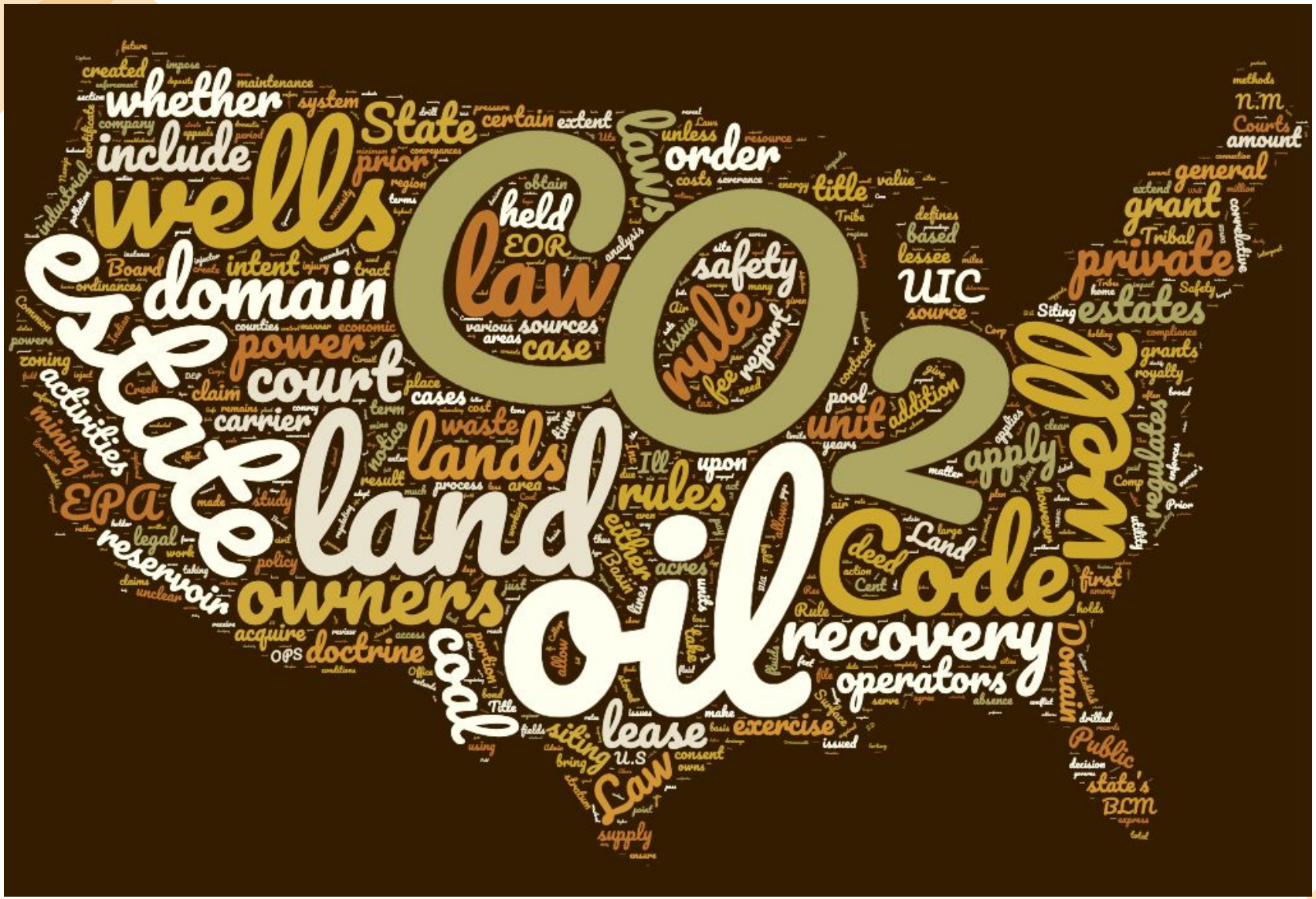
Disclaimer

The information in this presentation does not, and is not intended to, constitute legal advice or any solicitation for legal representation. These materials are for general informational purposes only and may not constitute the most up-to-date legal or other information.

The views expressed herein are those of the individual authors writing in their individual capacities only – not those of their employers, universities, or of the United States Energy Association or the Department of Energy. All liability with respect to actions taken or not taken based on the contents of this report are hereby expressly disclaimed.

The content on this posting is provided “as is;” no representations are made that the content is error-free. The authors are grateful for the support of the United States Energy Association and the Department of Energy, and for the exceptional support and research assistance provided by the student contributors and by staff at the University of Wyoming and University of West Virginia.

This report is current as of September 30th 2020.



The Project

- Federal Lands
- Environmental Law
- 12 States
- Regional analysis
- Trends
- Opportunities for Further study

Federal Land and Regulatory Federalism

- Important to projects with both federal and private surface and subsurface interests
- Challenges/Opportunities:
  - Federal permitting process
  - Uncertainty of Ownership
  - Preemption issues
  - Preference in multiple mineral development
  - Lack of federal geologic storage land use regulations
  - Eminent domain authority
  - Federal Environmental laws

State-to-State Comparisons

Pennsylvania

- No statutory regime for CO_2 sequestration
- No CO_2 distribution network
- Only public utility corporations given eminent domain authority
- Ownership of pore space uncertain
- CO_2 treated as a pollutant
- EPA administers UIC programs for all classes

Wyoming

- State laws include unitization for geologic storage and pore space ownership
- Federal lands and federal law likely involved in any project
- Current CO_2-EOR production within the state with opportunity for additional CO_2-EOR use.
- Existing and growing CO_2 pipeline network
- Class I-Class VI UIC Primacy

State-to-State Comparisons:

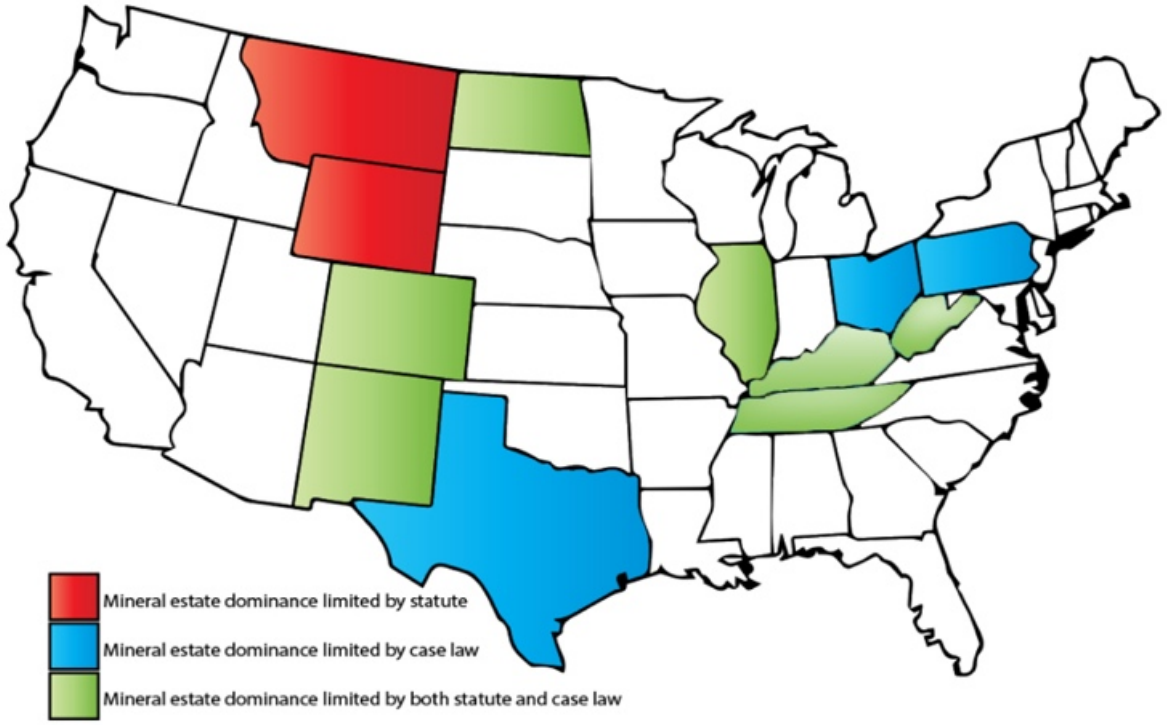
Pennsylvania

- Environmental Rights Amendment
- Robinson Township v. Commonwealth (2016)
- Regional Greenhouse Gas Initiative

Wyoming

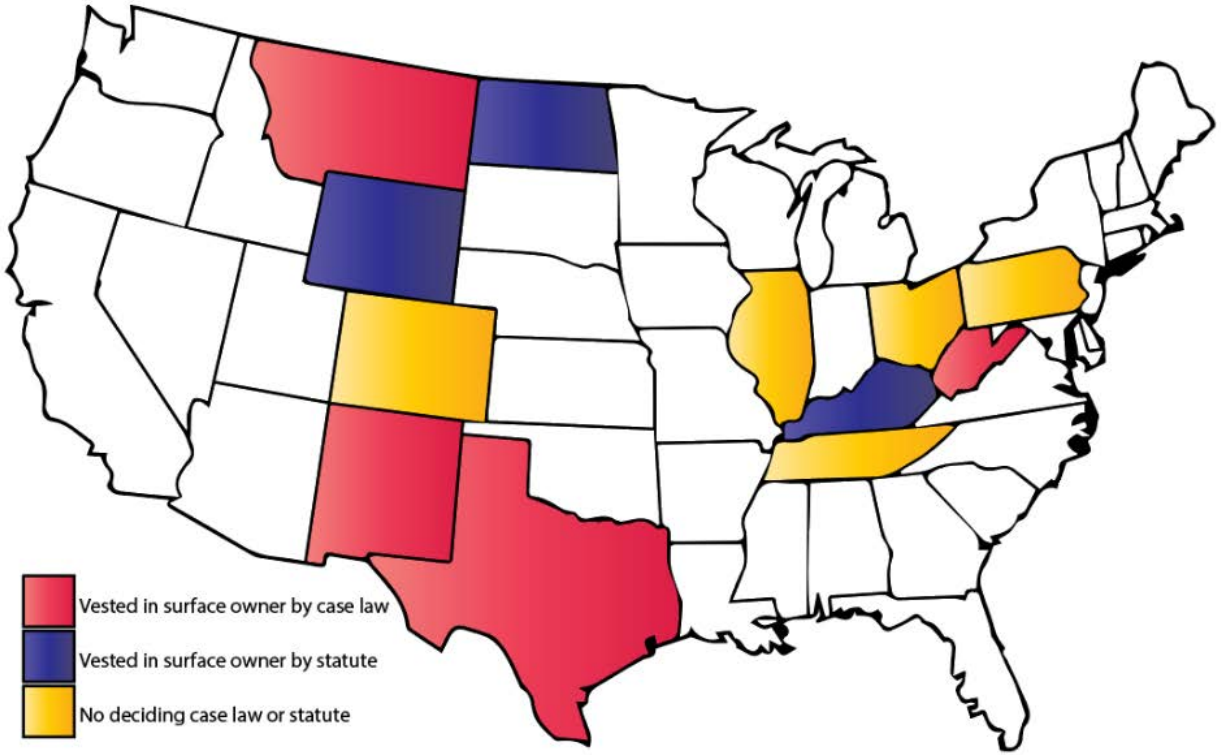
- Most local regulation preempted
- Eminent Domain laws allow condemnation of rights-of-way for CO_2 pipelines
- Multiple Mineral Development
- Surface Owner Protections
- Uncertainty on pore space ownership in split estates

Dominance of the Mineral Estate



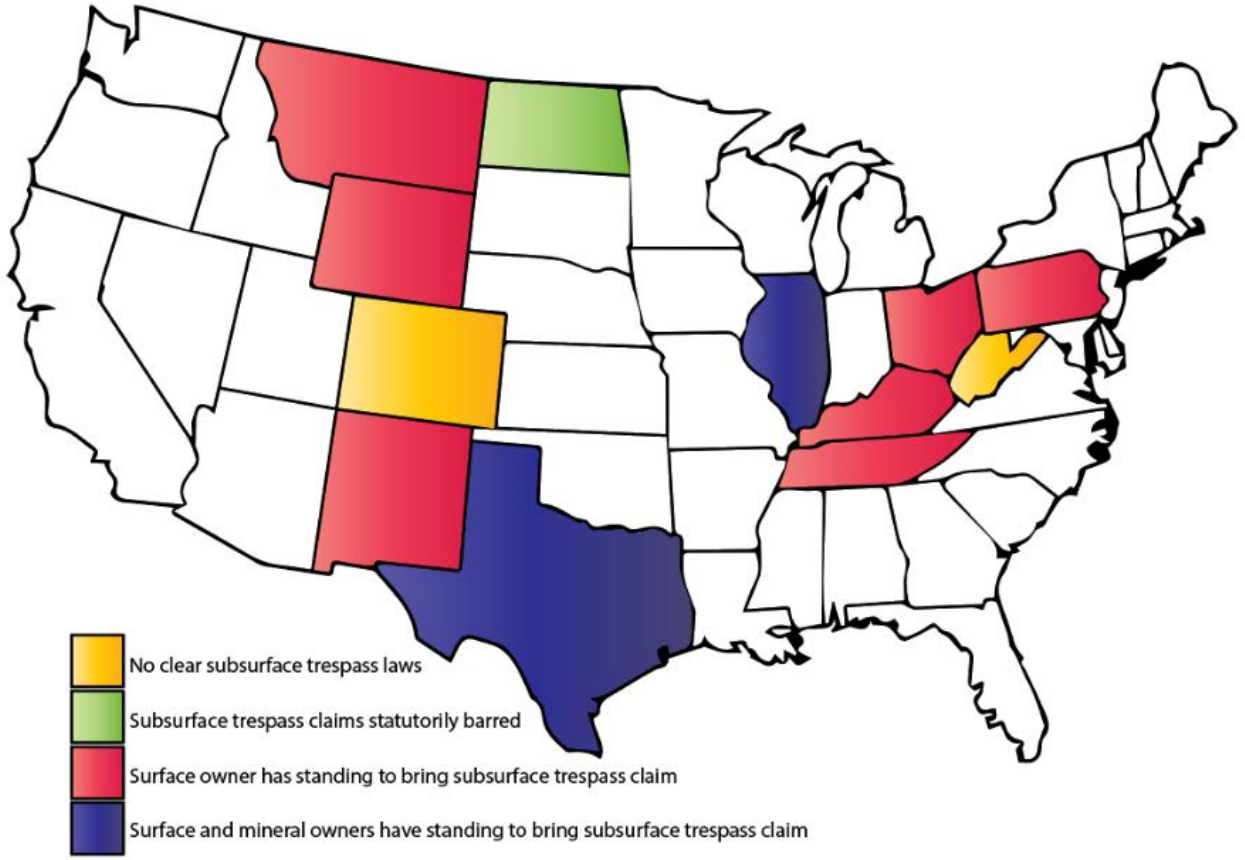
- Varying approaches to resolving surface-mineral disputes
- Statutes vary significantly in compensation and procedural requirements
- Possibility of statutory damages for subsurface use
- Differences may affect cost and feasibility, but are unlikely to pose issues with regional coordination

Pore Space Ownership



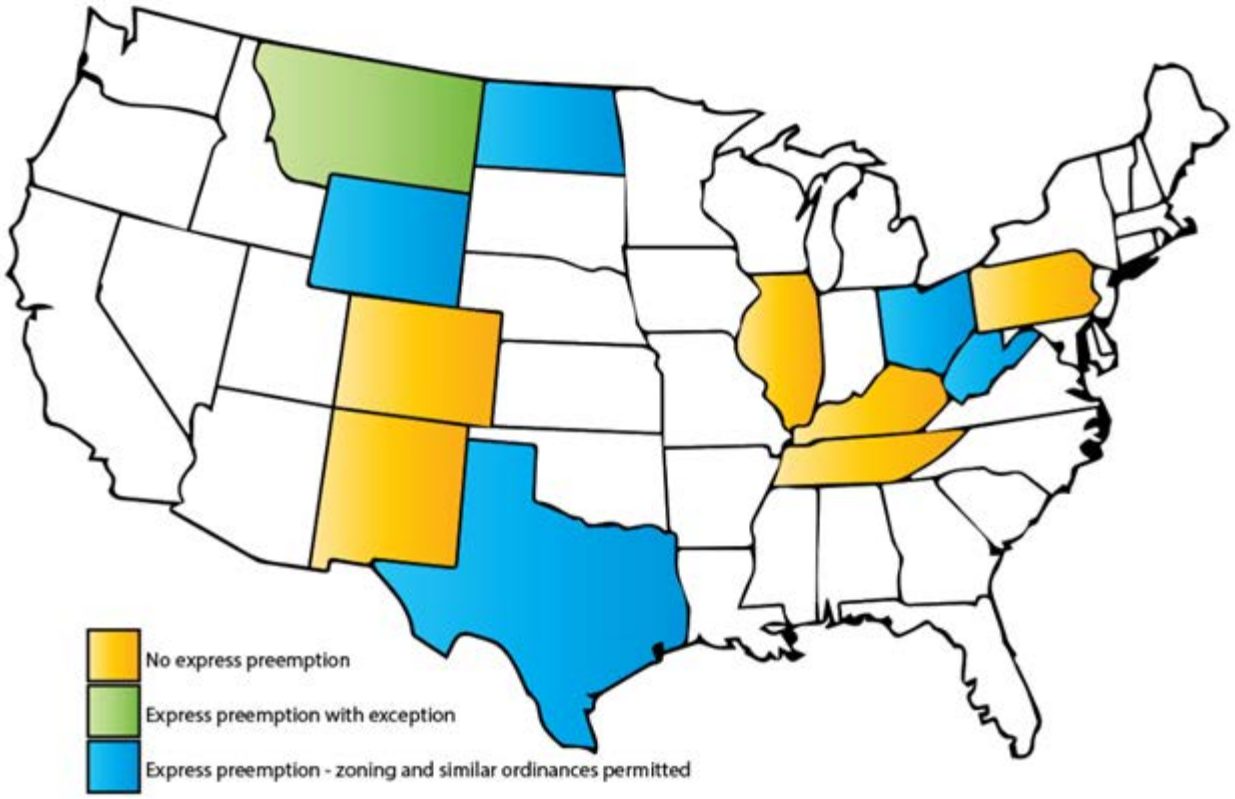
- State law may be preempted in split estates
- Most states have vested in surface owner, but many will still require individual title analysis or judicial interpretation of deeds
- Some states have not yet determined ownership of pore space estate

Subsurface Trespass



- Almost no precedent on CO_2 storage – based on review of transboundary fracking and produced water disposal cases
- Existing cases are fact specific and may have limited precedential value
- ND statute currently subject to constitutional challenge

Local Regulation of Oil and Gas Development

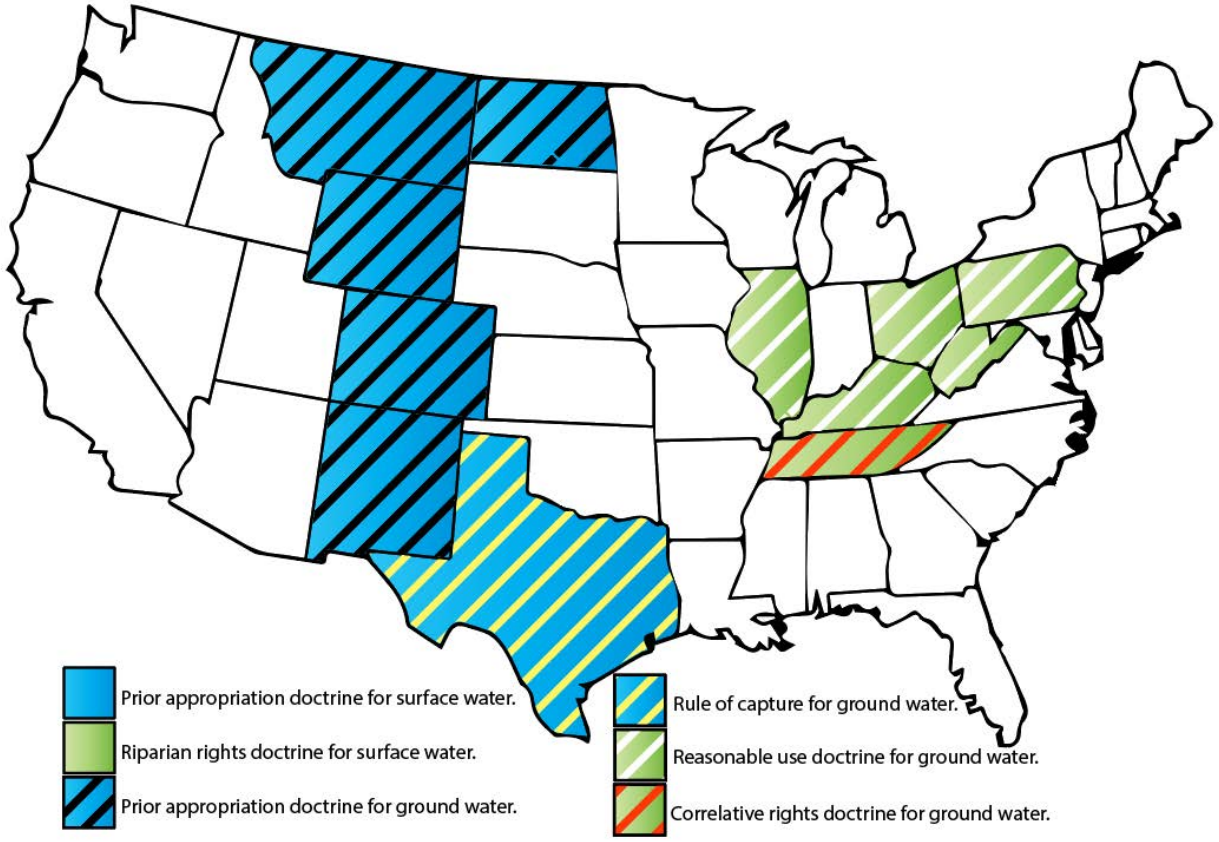


- Preemption: North Dakota, Ohio, Pennsylvania, Texas, West Virginia, Wyoming
- No preemption: Colorado, Illinois, Kentucky, Montana*, New Mexico, Tennessee,
- All states allow some local government regulation through zoning, and no state allows local government to regulate all aspects of oil and gas development
- Preemption or non-preemption may be by case law or statute

Eminent Domain for Pipelines and Storage

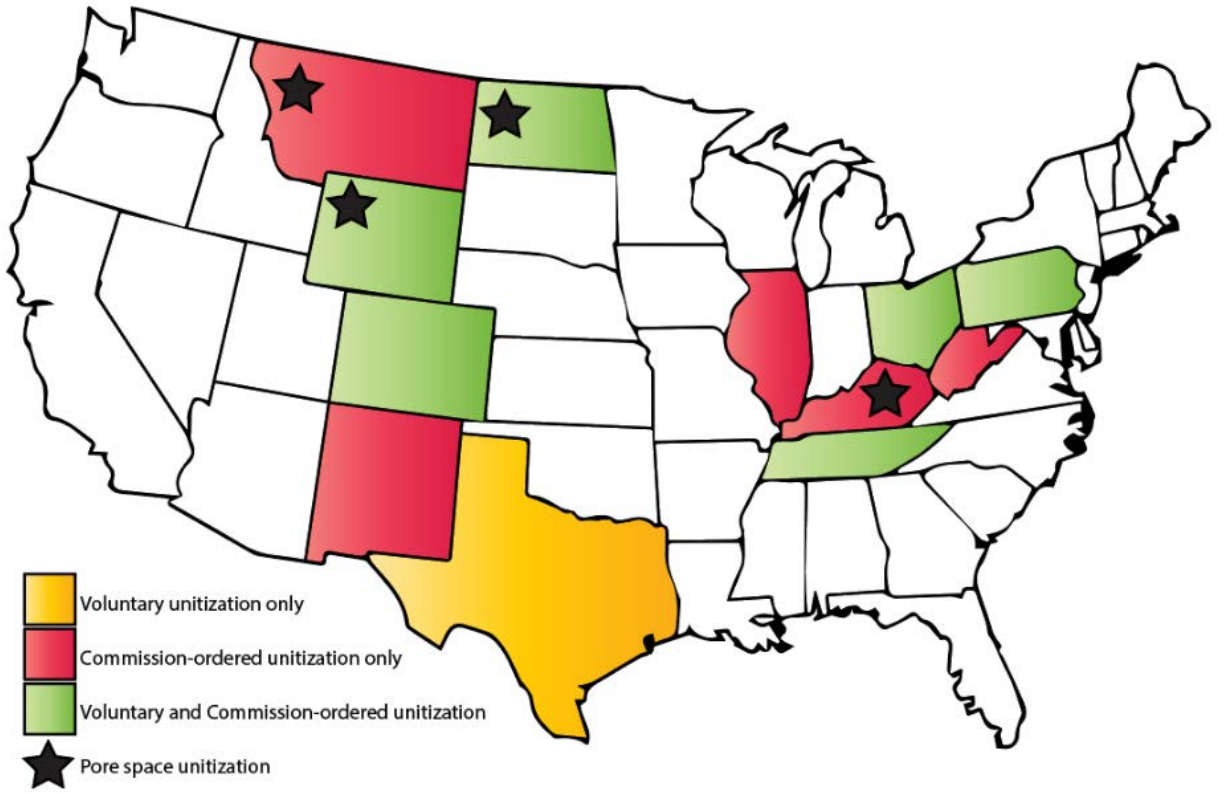
- Majority of states recognize eminent domain authority of pipeline operators, though few have specific CO2 pipeline regulatory frameworks
- Inconsistency regarding common carrier requirements
- Most states permit condemnation of subsurface rights for some purposes, though application for geologic storage is uncertain
- Anti-Kelo laws may limit use by private parties
- Wyoming prohibits use of eminent domain for pore space

Water Rights, Produced Water, and Water Acquisition



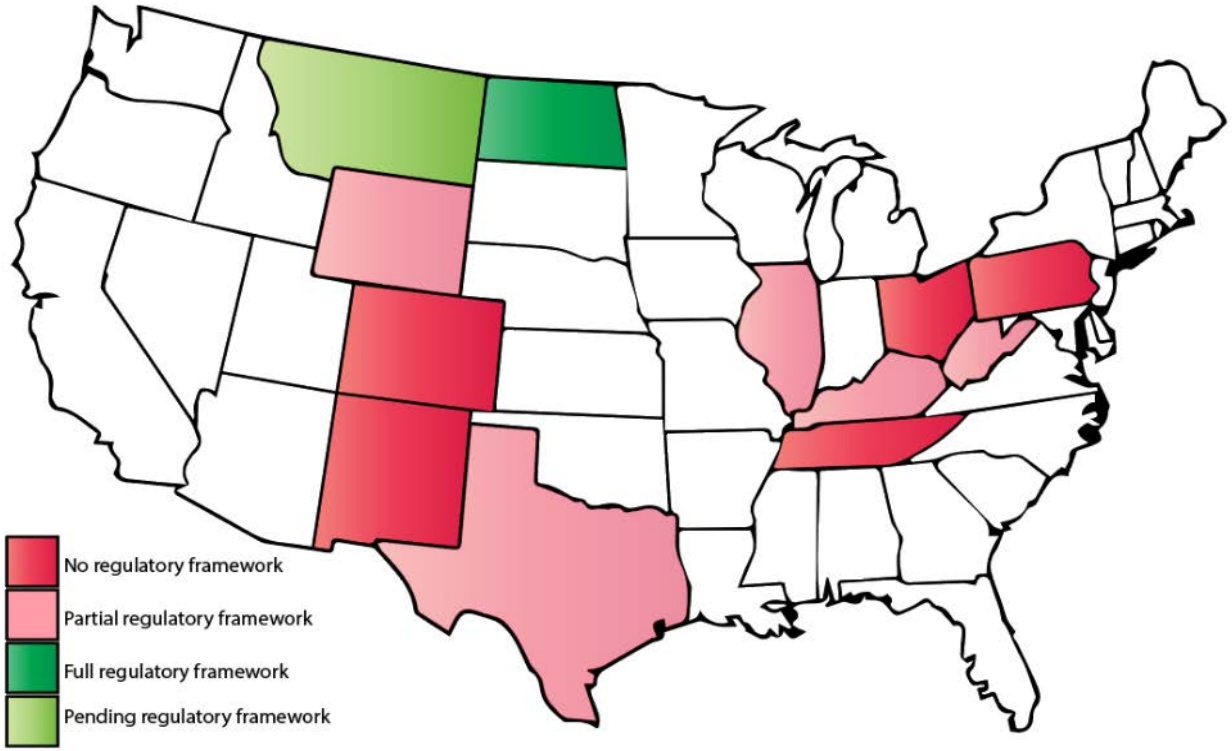
- Water rights differ regionally and for surface and groundwater
- Western states may permit appropriation of produced water whereas most eastern states have not addressed the issue
- All states have some mechanism for state and local water acquisition

Oil and Gas Regulation and Unitization



- Most states except Texas have laws for compulsory pooling and/or unitization
- Only a few permit unitization of pore space for geologic storage

Geologic Storage Regulatory Framework



Significant differences in the extent and reach of regulatory frameworks including liability transfer, administration, unitization, certification of injected volumes, bonding, and ownership of injected CO_2.

Key Findings

- Significant uncertainty in all states
- Legislative opportunities on a state-by-state basis
- Opportunities for regional coordination
- Need to harmonize state and federal regulatory requirements
- In some areas, federal backstop regulations may help facilitate interstate components

Tara Righetti
College of Law
Tara.Righetti@uwyo.edu

Jesse Richardson
College of Law
jesse.richardson@mail.wvu.edu

Kris Koski
School of Energy Resources
Kkoski@uwyo.edu

Dr. Sam Taylor
Energy Institute
samuel.taylor@mail.wvu.edu