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Carbon Sequestration, Conservation, and Capitalism: An analysis of West Virginia's Senate bill 162

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Introduction to the Bill

On January 20th, 2023, the West Virginia Senate Bill 162 became effective from passage. This bill allows for the West Virginia Division of Natural Resources to lease state-owned pore spaces beneath state forests and wildlife management areas for geologic carbon sequestration with approval from the Commerce secretary. Terms of the bill include that the highest responsible bidder would receive a lease offer, and the Division of Natural Resources may reject all sealed bids and restart the process if necessary. The Commerce and Economic Development secretaries may also mutually agree to avoid the bidding process and directly award a lease if determined necessary for economic development. All proceeds received from the approved bid would go to the Division of Natural Resources.

Guiding Inquiries and Theory

- Are there any circumstances or factors, possibly economic, environmental, or political, that create the necessity for this bill?
- Why are state forests and wildlife management areas included in lease opportunities, but not state parks?
- Could enterprising motivators have pushed the bill through too quickly that the viability of geologic carbon sequestration as an option was not given the proper consideration?

I theorize that the West Virginia legislation is economically motivated by interests in hydrogen hub production and that the bill was not justified in terms of environmental outcomes. I intend to examine what the pressures behind the rush for approval are and if critical considerations of how this would affect conservation within state parks and wildlife areas were overlooked.

Methodology

- Conduct research on geologic carbon sequestration processes, uses, and environmental effects.
- Critically examine the content and wording of the bill's enacting clause and the overall status timeline.
- Conduct interviews with conservation experts in West Virginia to obtain a broader perspective on the surrounding pressures that encouraged the bill and the potential effects on land use.
- Apply primary and secondary source research to the initial theory to analyze the results and formulate a conclusion stance.

Carbon Sequestration Explained

Geological carbon sequestration is a process in which anthropogenic carbon dioxide (CO2) is pressurized to cause a phase change and stored underground within geologic formations. This is different than biological

carbon sequestration: CO2 is stored and converted to biomass or organic compounds through natural pathways, such as photosynthesis and soil microbes for example.

Example Mechanisms

- Residual
- Physical
- Solubility
- Capillary
- Mineral
- Hydrodynamic

Uses

Geo-sequestration can be partnered with hydrogen energy production to validate the "clean energy" claim since carbon emissions during the process can be sequestered instead of released into the atmosphere. This may also be employed to reduce the impact of greenhouse gases on climate change.

- Hydrogen hubs: a network of hydrogen energy infrastructure (production, storage).

Concerns and Unknowns

- Increased risk of seismicity along faults that have the potential for storage.
- The ability of a site to retain injected carbon is difficult to determine. There may be resulting leakage into the soil, water, and air.
- Building infrastructure at injection sites could also interfere with recreational activity, and aesthetics of the natural area, and privatize public land.
- Machinery used may be destructive to the natural ecosystem and its species to some degree.

Interview Results

1) Neal Barkus, Conservation West Virginia President

Chosen for his specialty in conservation issues and career in the legal field to provide insight on legislative decisions.

When asked about the usually quick nature of the bill's passage, he inferred that "...there was serious consideration behind closed doors before the legislation was in session. If there had been more transparency, it potentially might have taken much longer". He attributed this to the fact that there's a significant environmental lobby present in the state and speculated that there may have been a supporter present who pushed to exempt state parks from the bill.

To the question of his thoughts on the bill's ambiguity, Barkus said "You can't go back on the overall decision to approve the concept, you can only argue the details", saying how he was concerned about what kind of mechanism would be used for sequestration. WV public officials are looking to bring good, high-paying jobs to the state, losing all sense of propriety when enticed by large economic projects.

2) Wendy Greene, Deputy Director of Legislative Affairs, WV Division of Natural Resources

Chosen as a representative for the DNR that could provide commentary on the DNR's jurisdiction over the lease agreements, and potential supportive stance on the bill as a contrast to the first interview source.

When asked about what might be results regarding economic advancement and possible benefits to the state forests, Greene said that economic development and job creation would certainly result, and that "... carbon sequestration on state lands would generate revenue for conservation efforts".

However, Greene also said that she did not know what machinery/equipment would be utilized, or how it would affect recreation. She also should have commented on whether or not conservation was still a reflected priority of the bill.

Application and Prediction

The timing of the bill is strongly correlated with the intent to promote hydrogen hub projects, supported by:

- Predating SB 161 (which allows the DNR within the Department of Commerce to sell, lease, or dispose of land).

- $8 billion in federal funding for the Regional Hydrogen Hub program.

Sequestering emissions from energy production will allow the overall process to be deemed "green", which may increase funding and decrease opposition to the establishment of these production sites. Though this method could reduce greenhouse gas emissions that would contribute to climate change, there isn't reassurance from the West Virginia government on how potential negative ramifications on state forests and wildlife management areas would be considered or eased.

Based on the way West Virginia conservation appears to be moving backward, once protected areas are endangered by being integrated into a competitive market as business transactions. Because legislation appears to be more concerned with economic advancement, the use of state-owned land may move more towards project expansion and away from species protection and recreation as the use of hydrogen energy expands.

Conclusions

- Bills such as this one are not created to solve isolated issues. Instead, they are promotive of legislative goals such as in the case of bringing hydrogen energy to the state of West Virginia.
- Though these legislative decisions may be made discreetly and unknown to the general public, there may be indicators that connect to the overarching purpose.
- Careful attention should be paid in the future to how geologic sequestration processes will have an effect.
- Legislation can employ greenwashing to conceal the true attempt to capitalize off of the need for sustainable integration in policy.

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