Senate EPW Hearing
"Advancing Carbon Capture, Utilization and Sequestration Technologies and Ensuring Effective Implementation of the USE IT Act"
February 12, 2025
Hearing Summary

Attending Senators:

- Ranking Member

U.S. Senator Sheldon Whitehouse

2-12-25 Opening Statement.pdf (138.8 KBs)

- Chair

U.S. Senator Shelley Moore Capito

02-12-2025 Chairman Capito Opening Statement .pdf (615.5 KBs)

- Majority

Kevin Cramer

Cynthia Lummis

John Curtis

Lindsey Graham

Dan Sullivan

Pete Ricketts

Roger Wicker

John Boozman

Jon Husted

- Minority

Bernard Sanders

Jeff Merkley

Edward Markey

Mark Kelly

Alex Padilla

Adam Schiff

Lisa Blunt Rochester

Angela Alsobrooks

Attending Witnesses:

- Kevin Connors

Assistant Director for Regulatory Compliance and Energy Policy, Energy and Environmental Research Center

2.12.25 Connors Testimony.pdf

- Dan Yates

Executive Director, Ground Water Protection Council, Inc.

2.12.25 Yates Testimony.pdf

- Jack Andreasen Cavanaugh

Manager, Carbon Management, U.S. Policy and Advocacy, Breakthrough Energy

2.12.25 Cavanaugh Testimony.pdf

Hearing Summary: Discussion/Member Q&A

The Senate committee hearing featured discussions on key issues related to carbon capture, utilization, and storage (CCUS), with a particular focus on Class VI well permitting, state primacy, and funding challenges for carbon management projects.

State Primacy for Class VI Wells
Sen. Jon Husted (R-OH) emphasized the importance of state authority over Class VI well permitting, highlighting Ohio's experience in managing Class I and II wells. Dr. Yates supported this position, stating that state regulators possess superior local knowledge and resources, making them better suited to handle Class VI wells efficiently. Sen. Pete Ricketts (R-NE) echoed these concerns, pointing out that while Nebraska has successfully permitted projects like the Tallgrass pipeline, many others remain stuck in the EPA's backlog. He noted that states with Class VI primacy, such as North Dakota and Wyoming, process permits in 8-12 months, whereas the federal timeline extends to 2-4 years.

Permitting and Regulatory Hurdles
Chairman Shelley Moore Capito (R-WV) questioned whether federal task forces are effectively addressing permitting delays. Mr. Connors acknowledged initial slow progress but expressed confidence in forthcoming recommendations aimed at streamlining the process. Mr. Cavanaugh noted that the current permitting structure remains complex, particularly for projects spanning

multiple agencies. He emphasized the need for improved coordination across federal and state levels.

Loan Program and Funding Concerns
Ranking Member Sheldon Whitehouse (D-RI) raised concerns over the potential freeze on DOE Loan Programs Office funds, which could impact major carbon storage initiatives such as the Monolith project in Nebraska. Mr. Cavanaugh warned that freezing these funds would severely hinder CCUS deployment, as industry investment often relies on stable federal support.

USE IT Act and Bipartisan Efforts to Address Delays
Sen. John Curtis (R-UT) and Sen. Ricketts advocated for full implementation of the USE IT Act, which aims to expedite CO_2 pipeline permitting. Dr. Yates highlighted transparency issues in the EPA's approval process, particularly its reliance on the "crosswalk" tool, which lacks clear progress indicators for state applicants. Mr. Connors suggested that prioritizing primacy applications from high-activity states like Texas, Illinois, and California could alleviate the current permitting backlog.

Direct Air Capture and Energy Needs
Chairman Capito inquired about the role of direct air capture (DAC) in CCUS. Mr. Cavanaugh noted that DAC wells require approximately one million tons per year of captured CO_2 to justify permitting, a threshold that current projects struggle to meet. He stressed that reducing DAC costs will require access to low-cost, reliable energy sources such as natural gas with CCUS, nuclear, hydro, and geothermal power.

Future Policy Considerations
As the hearing concluded, Sen. Cramer (R-ND) and Chairman Capito underscored the need for permitting reform to support large-scale carbon storage projects. Witnesses emphasized that regulatory efficiency, increased funding for state programs, and bipartisan legislative action will be crucial in advancing CCUS initiatives nationwide.

<u>Sheldon Whitehouse opening statement:</u>

- **Urgency of Carbon Capture Deployment**: Whitehouse emphasized the critical need to accelerate carbon capture deployment, citing alarming climate data showing that Earth has already surpassed 1.5°C of warming. He stressed that carbon dioxide removal (CDR) is essential to achieving net-negative emissions and stabilizing the climate.
- **Current Deployment is Insufficient**: He pointed out that while carbon capture technology is proven—referencing the Boundary Dam Power Station in Canada—the current global capture capacity of 50 million tons per year is far below the gigaton scale required.
- **Legislative Efforts & Support**: Whitehouse highlighted his role in bipartisan initiatives supporting carbon management, including co-leading the **USE IT Act**, improving the **45Q tax credit**, and advocating for **DOE's carbon removal and transportation programs** under the Bipartisan Infrastructure Law. He also supports funding for **EPA's Class VI well permitting program** for CO_2 storage.

- **Economic Risks of Inaction**: He warned that failing to scale up carbon capture and climate action will lead to severe economic consequences, including a crisis in **homeowner's insurance, real estate markets, and supply chains**, citing studies that project trillions in financial losses.
- **Call for a Price on Carbon**: He underscored the need for a cost on fossil fuel emissions to incentivize large-scale deployment of CDR technologies.

Overall, Whitehouse's remarks framed carbon capture as an urgent necessity to mitigate both environmental and economic risks, urging faster deployment and policy support.

<u>Chairman Shelley Moore Capito opening statement:</u>

- **Bipartisan Support for CCUS**: Capito reaffirmed her commitment to working with Ranking Member Whitehouse and the committee to advance **carbon capture, utilization, and storage (CCUS) technologies** as a key emissions reduction strategy, particularly for industries facing location and operational challenges.
- **West Virginia's Leadership in CCUS**: She highlighted several ongoing initiatives in her state, including **West Virginia University's direct air capture research**, DOE's **National Energy Technology Laboratory's CCUS projects**, and **West Virginia's participation in the Appalachian Regional Clean Hydrogen Hub (ARCH2)**.
- **Permitting Delays & USE IT Act Implementation Issues**: Capito criticized the slow implementation of the **USE IT Act**, which was meant to streamline CCUS permitting. Key concerns include:
    - **Lack of clear guidance** from CEQ to expedite CCUS permitting.
    - **Delayed formation of federal task forces** (required under the law), which were only chartered in April 2024—**twice the mandated timeline**.
- **Class VI Well Permitting Backlog**: She expressed frustration with the **EPA's slow approval of Class VI well applications** for CO_2 storage, despite Congress providing $75 million through the **Infrastructure Investment and Jobs Act (IIJA)** to accelerate permitting and grant **state primacy**.
    - She noted that under the Biden administration, only **two states (Louisiana and West Virginia)** received Class VI well primacy, despite the backlog of applications. She urged **EPA Administrator Zeldin to prioritize clearing the backlog**.
- **Energy Reliability & Grid Concerns**: Capito cited findings from the **North American Electric Reliability Corporation** warning of potential **electric reliability issues** due to increasing energy demand and early fossil fuel retirements. She argued that **CCUS can help sustain and expand reliable electricity generation** while reducing emissions and supporting economic growth.

Key Takeaways:

- Capito strongly supports **bipartisan CCUS deployment**.
- She emphasized the **importance of permitting reform** to accelerate projects.
- She called for **EPA accountability** on Class VI well approvals.
- She framed CCUS as essential for **both environmental and energy reliability goals**.

Kevin Connors' Opening Statement

UND EERC's Role in CCUS

- Connors emphasized the **University of North Dakota Energy & Environmental Research Center (EERC)** as a key institution in **CCUS research and deployment**, particularly in **Class VI well development**.
- EERC leads the **Plains CO2 Reduction (PCOR) Partnership**, a **10-state, 4-Canadian province** regional initiative advancing CCUS.
- North Dakota was the **first state to receive Class VI well primacy** in 2018, and EERC has been the **technical lead** for all nine Class VI storage projects in the state.

Barriers to CCUS Deployment

1. **High Costs of CCUS Retrofits** – Retrofitting coal-fired power plants with post-combustion carbon capture remains financially challenging.
2. **CO_2 Pipeline Permitting & Public Opposition** – Concerns over **safety and eminent domain laws** hinder interstate pipeline expansion.
3. **Delays in Class VI Well Permitting** – The **EPA backlog** of **161 Class VI well applications** across **13 states** slows down deployment.

Proposed Solutions

- **45Q Tax Credit Adjustments** – Industry advocates for increased **45Q credits** to offset inflation-driven costs in materials and labor.
- **CO_2 Pipeline Safety & Permitting Reforms** – The **Pipeline and Hazardous Materials Safety Administration (PHMSA)** is proposing **new safety regulations** to address public concerns.
- **Accelerating Class VI Well Primacy Approvals** –
    - Connors highlighted that states with **Class VI primacy (ND, WY, LA, WV)** issue permits significantly faster than EPA.
    - **North Dakota: 8-month average** for approvals, compared to **EPA's 2-4 years**.
    - If **10 additional states** receive primacy, the **EPA permitting backlog could be reduced by 39%**.

- **Allowing Aquifer Exemptions for Class VI Wells** –
    - Current EPA rules **prohibit new aquifer exemptions** for Class VI injection, **limiting CO_2 storage potential** across the U.S.
    - Connors argued that exemptions are necessary to fully utilize **North Dakota's storage capacity** and accelerate CCUS growth.

Federal Task Forces & Regulatory Coordination

- The **USE IT Act task forces** (established in 2023) are working on **guidance to streamline CCUS permitting** on private and federal lands.
- The **White House Council on Environmental Quality (CEQ)** and **DOE** finalized an MOU in October 2023 to **improve interagency coordination**.

Key Takeaways

- **State-led Class VI primacy programs are more efficient** than EPA's process.
- **Regulatory reforms (Class VI primacy, aquifer exemptions, pipeline permitting)** are critical to accelerating CCUS.
- **Industry and federal collaboration** is essential to overcoming financial and permitting challenges.

<u>Dan Yates' Opening Statement</u>

GWPC's Role in Underground Injection Control (UIC) and Class VI Wells

- The **Ground Water Protection Council (GWPC)** has supported **state UIC programs** for 40+ years, working on **CO_2 injection for enhanced oil recovery (EOR), CCUS rule development, and Class VI well permitting**.
- GWPC maintains a **repository of Class VI well information** used by **state regulators, federal agencies, and industry stakeholders**.

State Primacy and Class VI Well Permitting

- **North Dakota (2018), Wyoming (2020), and Louisiana (2023) have Class VI well primacy**, allowing them to issue permits independently of EPA.
- **West Virginia's primacy approval is expected soon**, with several other states in the **application process (TX, AK, OK, MS, UT, AL, AZ, CO)**.
- **161 Class VI well applications are pending before EPA**, with **56 in Texas and 55 in California**.
- Since 2011, **EPA has issued only eight (8) Class VI permits nationally**, four of which were issued in December 2024.

- **North Dakota alone has issued eight permits since receiving primacy in 2018**, demonstrating the efficiency of state-led programs.

Challenges in Attaining Class VI Primacy

- **Complexity of EPA's Class VI Primacy Application Process** –
    - The **crosswalk template**, used to compare state and federal regulations, is not user-friendly and slows approval.
    - **States with existing UIC programs** (Classes I-V) should have a **streamlined path to Class VI primacy**.
- **Limited State Capacity** –
    - **States lack technical staff and funding** to expand Class VI permitting programs.
    - **EPA has yet to release $1.2 million in FY24 funding** for state training programs.
- **Data Management Challenges** –
    - States need **better tracking systems** for **permit history, inspections, regulatory actions, and compliance**.

Recommendations for Congressional Action

- **Increase Funding for State Class VI Programs** –
    - Provide direct funding for **staffing, training, and regulatory capacity-building**.
    - Expedite the release of **previously allocated funds** for Class VI training.
- **Streamline Class VI Primacy Approvals** –
    - Reduce bureaucratic hurdles for states with existing UIC programs.
- **Support Geologic Storage Development** –
    - Fund **site characterization studies** to expand **CO_2 storage capacity**.

Key Takeaways

- **State-led primacy programs** improve permitting efficiency and regulatory oversight.
- **EPA's slow approval process** is a major barrier to CCUS deployment.
- **Congressional funding and regulatory reform** are needed to expand state Class VI programs and accelerate geologic storage.

<u>Jack Andreasen Cavanaugh Opening Statement</u>

Jack Andreasen Cavanaugh, Manager of U.S. Policy and Advocacy at Breakthrough Energy, provided testimony before the U.S. Senate Committee on Environment and Public Works on February 12,

2025, during a hearing focused on advancing carbon capture, utilization, and sequestration (CCUS) technologies and ensuring effective implementation of the USE IT Act. In his testimony, Cavanaugh emphasized the critical role of carbon management practices, such as carbon capture and associated infrastructure, in reducing emissions within the industrial and power sectors. He highlighted Breakthrough Energy's mission to accelerate energy innovation and build industries of the future without emissions, deploying various investment funds, nonprofit and philanthropic programs, and policy efforts toward that goal.

Cavanaugh also shared a personal anecdote about his family's farm in Hastings, Nebraska, which became part of a CO_2 pipeline project in 2024. This project, a retrofit of an existing natural gas pipeline, transports CO_2 from bioethanol facilities to Class VI wells in Wyoming for safe geologic storage. He noted that such initiatives exemplify public-private partnerships in carbon management, made possible by incentives like the 45Q tax credit and decades of federally funded research and development in low-carbon fuel, pipeline, and storage technologies.

Regarding the climate justification for carbon management, Cavanaugh referenced data indicating that global temperatures have risen by 1.3°C (2.34°F) since pre-industrial levels due to human activities, primarily the burning of hydrocarbons contributing to the greenhouse gas effect. He underscored the urgency of deploying technologies like CCS and carbon dioxide removal (CDR) to mitigate these impacts and stabilize the climate.

Cavanaugh offered several recommendations to address infrastructure challenges associated with CCUS:

1. **Guidance for Project Developers**: He suggested that the Council on Environmental Quality (CEQ) establish guidance to assist developers and operators of CCUS facilities and CO_2 pipelines, ensuring efficient and safe deployment.
2. **Support for the White House Task Force**: Cavanaugh emphasized the importance of ensuring that the White House Task Force for Carbon Dioxide Capture, Utilization, and Sequestration remains a priority, is regularly convened, and receives adequate funding to complete its work promptly.
3. **Federal Support for Research and Development**: He advocated for additional federal support for research and development across the carbon management portfolio, including advancing geologic storage resources and improving the efficiency of direct air capture (DAC) technologies.
4. **Permitting Clarity**: Cavanaugh highlighted the need for clear federal siting and permitting authority for CO_2 pipelines to facilitate the development of critical carbon management infrastructure.

These recommendations aim to foster the deployment of CCUS technologies and infrastructure at scale, decrease permitting times, and provide best practices to the carbon management sector.