



To: USDA Forest Service (FS)

From: Carbon Capture Coalition

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Re: 88 FR 75530

Executive Summary

The Carbon Capture Coalition ([the Coalition](#)) has prepared the following comments on the U.S. Department of Agriculture’s Forest Service (USFS) proposed rule regarding “Land Uses; Special Uses; Carbon Capture and Storage Exemption.” Carbon management technologies are essential tools in a broader federal strategy to reduce greenhouse gas emissions while providing societal and economic co-benefits such as reducing air pollutants and creating family-sustaining jobs. Robust federal policy support to incentivize and bolster the sustained deployment of these technologies and associated infrastructure across the economy is crucial to maintain and grow American leadership in the carbon management sector as well as environmental stewardship, more broadly.

The Carbon Capture Coalition is a nonpartisan collaboration of more than 100 companies, unions, conservation and environmental policy organizations, building federal policy support to enable economywide, commercial-scale deployment of carbon management technologies. This includes carbon capture, removal, transport, reuse, and storage from industrial facilities, power plants, and ambient air. Coalition members recognize that economywide adoption of carbon management technologies is critical to achieving net zero emissions to meet midcentury climate goals, strengthening and decarbonizing domestic energy, industrial production and manufacturing, and retaining and expanding a high-wage jobs base. Successful commercial deployment of these technologies requires prioritizing meaningful engagement and consultation with local communities as well as associated workforce development.

This proposed rule is a necessary step to scale U.S. storage capacity for captured CO₂ to ensure carbon management technologies fulfill their emissions reduction potential. The relevant language is narrow both in scope and function, amending [36 CFR Part 251, Subpart B](#) by adding the following definition for carbon capture and storage:

“...the capture, transportation, injection, and storage of carbon dioxide in subsurface pore spaces in such a manner as to qualify the carbon dioxide stream for the exclusion from classification as a ‘hazardous waste’ pursuant to United States Environmental Protection Agency regulations at [40 CFR 261.4\(h\)](#).”

Furthermore, the proposed language clarifies:

“The proposed use will not create an exclusive or perpetual right of use or occupancy, provided that the Forest Service may authorize exclusive and perpetual use and occupancy for carbon capture and storage in subsurface pore spaces.”

In short, the rule clarifies the role of the USFS in considering applications to permanently and securely store CO₂ in available pore space overlaid by USFS-managed lands. **Importantly, it does not approve or allow for the construction of any projects until project developers comply with all applicable federal regulations at both the USFS and the Environmental Protection Agency (EPA). As part of this review, agencies will have determined that proposed CO₂ storage projects do not present a significant health risk to nearby communities or the environment.**

In this comment, the Coalition details the importance of increasing CO₂ storage capacity to ensure carbon management technologies can fulfill their essential role in a broader set of climate mitigation tools to reach midcentury climate targets. Additionally, this comment examines how other government policies, particularly the federal Section 45Q tax credit, have catalyzed the economywide deployment of these technologies. These technologies also benefit from strong monitoring, reporting, and verification (MRV) processes at EPA that prioritize public health and safety. Additionally, the Coalition supports the efforts of the [Pipeline and Hazardous Materials Safety Administration \(PHMSA\)](#) to enhance safety standards for CO₂ pipelines and will engage with the agency on the forthcoming proposed rule. The Coalition appreciates the USFS’ work to harmonize the regulatory framework across agencies to facilitate the secure storage of climate-warming CO₂ in deep, secure geologic formations overlaid by USFS lands and urges the agency to finalize and implement the proposed rule.

The Importance of Geologic Storage for Effective Carbon Management

The International Energy Agency’s (IEA) [Net Zero Roadmap](#) estimates that the current slate of projects under development globally will capture and store about 40 million metric tons of CO₂ per year in the next five years. To reach net zero emissions by midcentury, that number must increase to 1.6 gigatons per year by 2030 and 7.6 gigatons per year by 2050. These figures underscore the urgent need to scale carbon management technologies at the rate and pace required to meet climate targets, protect and create family-sustaining jobs, and provide tangible health benefits to affected communities.

Keeping that in mind, over the course of the 117th Congress, the Coalition and its members played a central role in ensuring that key carbon management priorities, such as important modifications to the federal Section 45Q tax credit, were reflected in

broadly bipartisan pieces of legislation and subsequently included in larger legislative vehicles like the [Bipartisan Infrastructure Law \(BIL\)](#) and the [Inflation Reduction Act \(IRA\)](#). 45Q is the foundational policy mechanism for the development of the broader carbon management industry, and maintaining the credit's integrity and providing transparency are necessary components to ensure full public and policymaker confidence in the tax credit. 45Q is a performance-based tax credit, meaning that projects must demonstrate that the captured carbon oxide (CO₂ or CO) is permanently stored or utilized to receive the credit. Today, thanks to Congress' continued bipartisan commitment to ensuring the 45Q tax credit works as originally envisioned, the [U.S. policy framework](#) is now recognized as the most comprehensive and robust policy support for carbon management technologies in the world.

The value of the [45Q tax credit](#) goes well beyond being a key driver of private investment – it serves as the anchor to ensure these technologies fulfill their full emissions reduction potential. Since the 2018 restructuring of the tax credit under the FUTURE Act and the subsequent enhancements made to the program in 2022, 45Q has reduced the cost and risk to private capital of investing in the deployment of carbon management technologies and associated transport and storage infrastructure across a range of industries. This has resulted in the [public announcement of more than 190 carbon management projects under development](#). These projects span both the carbon management value chain and stages of project development—from pilot scale, and feasibility (front-end engineering and design studies) up to commercial scale projects. Of these projects, 59 have been announced in 2023 alone, with more projects being announced each month, signaling that increased federal policy support for carbon management technologies will translate into real-world projects. **Additionally, most of the announced capture projects intend to store captured CO₂ deep underground safely and permanently in saline geologic formations.**

A. Regulations Governing Safe Transport of CO₂ and Permanent Geologic Storage

While commercially practiced today, scaling up development and responsible permitting of secure geologic storage at gigaton scale is key to enabling industries to reach net zero emissions targets and midcentury climate goals. Domestically, the [Great Plains Institute](#) (GPI) estimates that there are 542 facilities who have been identified as near- and medium-term opportunities for installing carbon capture technologies based on each facilities' 45Q eligibility and emissions profile. This represents the potential to capture and store hundreds of millions of metric tons of CO₂ emissions per year from existing industry and power sources by 2035. Safe and permanent injection and storage of CO₂ in deep geologic formations represents a well-understood commercial practice worldwide. The longest operating CO₂ storage facility, the Sleipner carbon capture and storage project operating offshore of Norway in the North Sea, has safely and permanently stored about 1 million metric tons of CO₂ annually since storage operations began in 1996. Once captured from industry, power, or directly from the atmosphere, CO₂ may be transported via pipeline to suitable sites for safe, permanent geologic storage. While pipelines are the safest and most cost-effective mode of transport at

large scale, rail or trucks are occasionally used. Currently, 50 operating pipelines span over 5,000 miles and safely transport millions of tons of CO₂ annually across entire regions of the U.S. Safety data reported by PHMSA, the agency charged with overseeing CO₂ pipeline safety, shows that CO₂ pipelines have been and can be operated at the highest level of safety by best-practice operators.

Since reporting began, CO₂ pipelines have had a strong safety record. With that said, a rare but serious pipeline failure in Satartia, Mississippi in 2020 has increased public and policymaker concerns about pipeline safety and the overall reliability of these systems as they scale. Following the Satartia incident, PHMSA announced its intention to initiate a rulemaking to update safety standards for CO₂ pipelines. The Coalition supported the agency's announcement to update the existing safety standards to ensure that all industry operators meet these high levels of safety operations, for every pipeline, every time.

Project safety is best guaranteed when it is prioritized at every step of the approval and implementation process. As such, the Coalition made several safety recommendations to PHMSA in our foundational document, the [2023 Federal Policy Blueprint](#). These include:

- **Expanding first responder safety training for CO₂ pipeline safety incidents;**
- **Requiring that project proponents more rigorously consider potential geohazard impacts on CO₂ pipelines during design, siting, construction, and maintenance;**
- **Requesting that PHMSA conduct additional reporting on the public safety record of CO₂ pipelines; and,**
- **Carrying out a national assessment of the CO₂ network necessary to meet net zero emissions.**

CO₂ storage risks are well understood, decrease over time, and can be mitigated with best practices and by adhering to regulatory standards. The EPA regulates and permits geologic storage projects using the Underground Injection Control (UIC) Class VI Well Program. The UIC Class VI well requirements are designed to protect public health, underground sources of drinking water, and ensure geology in the project area can receive and permanently store injected CO₂. To receive a UIC Class VI permit, CO₂ storage operators must undertake extensive site characterization and computational modeling, develop well plugging, corrective action, testing and monitoring and emergency and remedial response plans, and maintain financial responsibility until closure is authorized by the designated regulatory agency, which can be the EPA or an approved state agency. To receive a permit to begin injecting CO₂, project developers must also comply with EPA's public participation process which provides points of engagement for members of the public, including submitting comments, requesting public hearings, and appealing final permitting decisions.

Complementary to the Class VI program is EPA's Greenhouse Gas Reporting Program Subpart RR, which requires reporting of greenhouse gas emissions from facilities injecting CO₂ for permanent storage. These facilities must also develop and implement

an EPA-approved MRV plan and annually report the amount of CO₂ permanently stored as well as any monitoring activities they conduct. MRV plans must be developed and approved in order to claim the 45Q tax credit.

According to the U.S. Geological Survey, an estimated 130 million acres of federal lands overlay suitable geological storage, and the USFS manages 21 percent of that land. However, federal regulatory authorities have historically lacked the proper procedures to authorize and manage the storage of CO₂ on federally managed lands, including those located offshore on the Outer Continental Shelf (OCS). Providing clarity on regulatory procedures is critical to providing developers access to CO₂ storage capacity that aligns with 2050 greenhouse gas emissions reduction targets. Furthermore, geologic storage of captured CO₂ is safe and permanent. According to the IPCC's [Synthesis Report for the Sixth Assessment](#), "if the geological storage site is appropriately selected and managed, it is estimated that the CO₂ can be permanently isolated from the atmosphere."

In 2022, enacted as part of the BIL, Congress clarified that agencies associated with the management federal lands have the authority to consider applications for permanent CO₂ storage in pore space overlaid by federally managed lands. Furthermore, this clarification included a requirement that federal land management agencies promulgate rules to provide a regulatory framework for considering applications for leases and easements for CO₂ storage on federal lands.

Congress continues to show bipartisan interest in the permanent storage of CO₂ in federally managed environments. In November of 2023, the Senate Energy and Natural Resources Committee held a hearing to examine federal offshore energy strategy and policies. The overwhelming outcome from the discussion suggested that regulatory guidance is necessary to clarify federal authority across federal agencies to consider CO₂ storage under federally managed lands.

By finalizing this proposed rule, the USFS would ensure the proper framework and procedures are in place to consider secure, permanent geologic storage of CO₂ in pore space managed by the agency, allowing for the possibility to store a significant amount of CO₂ beneath USFS-managed lands. Doing so is essential to ensuring we can scale carbon management technologies to meet the administration's emissions reduction targets, set at 50 – 52 percent relative to 2005 levels by 2030 and net zero by midcentury.

The Proposed Rule

Federal lands are an important national resource and agencies must carefully balance often competing demands placed on these resources. Public benefits provided by federally managed lands include culturally important sites for Tribal Nations, sites for recreation, biodiversity, and natural habitats, sources of renewable and non-renewable resources, agriculture, and other benefits.

As stated before, the [proposed rule](#) is narrow in scope and would allow for a review of applications for permanent geologic storage of CO₂ on USFS-managed lands. Approving any application and ultimately issuing a permit to a carbon storage project would constitute a “special use” of the National Forest System (NFS) under existing regulations. Granting special use authorizations is a routine practice, as the USFS already “administers approximately 74,000 special use authorizations for use and occupancy of NFS lands for a wide variety of purposes, including powerline facilities, communications facilities, outfitting and guiding, campground concessions, and resorts.”

Recognizing the importance of carbon management technologies to achieving net zero emissions by 2050, and especially given the number of announced carbon management projects, it stands to reason that granting a special use authorization for carbon storage – a process detailed in [36 CFR 251.54\(e\)\(1\)](#) and [\(5\)](#) – would contribute significantly to “the national economy and the social and economic foundation of rural communities.”

Additionally, while the geologic storage of captured CO₂ is permanent, this rule does not authorize perpetual use of the surface land that these projects would occupy for transport, injection, and storage. After well construction and during injection, these projects have relatively small physical footprints. For example, the [ADM Class VI Well](#) in Decatur, IL, has the capacity to inject over 1 million tons of CO₂ per year with a surface well pad footprint of 200 feet by 150 feet. Subsequently, the SEACARB Black Warrior Site in Alabama’s Tuscaloosa County well pad was 100 feet by 100 feet. This demonstrates that, if properly sited and done in a manner that protects public access and benefits; and minimizes surface disturbance, the geologic storage of CO₂ beneath federal lands offers a significant opportunity to catalyze a domestic carbon management industry. As such, the Coalition supports the USFS’ proposal to “amend the initial screening criterion that prohibits authorizing exclusive and perpetual use and occupancy of NFS lands to provide an exemption for carbon capture and storage.”

Federal agencies currently lack the proper procedures to authorize permanent storage of CO₂ on federally managed lands. For example, the Bureau of Land Management (BLM), an agency under the authority of the U.S. Department of Interior, has authorized mineral extraction projects that impact the subsurface of federal lands for nearly a century. Despite this fact, there has yet to be a Class VI well authorized for permanent CO₂ storage on federal lands. In June 2022, BLM took a step forward in unlocking domestic CO₂ storage potential by issuing a new policy authorizing the use of federal lands for the geologic storage of CO₂. However, without clear regulatory guidance uncertainty remains for CO₂ storage developers, including questions surrounding pore space ownership, land use plans, and interaction with other regulatory agency authorizations for CO₂ storage. This challenge is not unique to BLM, but more to the point: until federal agencies have the capacity to implement policies that address these uncertainties for project developers, it is unlikely the U.S. will meet CO₂ storage quantities that are in line with 2050 climate goals.

Looking at it from another angle, EPA already exempts CO₂ from classification as a hazardous waste if “captured, transported, and stored in compliance with the requirements for” the Class VI Underground Injection Control Program. These requirements include:

“a detailed technical review to ensure that the area around the proposed location for the well does not have abandoned wells that could leak carbon dioxide and to determine whether the well would be constructed in a manner that would protect it from seismic activity and from leaking carbon dioxide into the groundwater.”

USFS aligning its rules with other agencies helps eliminate ambiguity in federal regulation to give developers confidence in approaching how to build these projects while protecting the public benefits conferred by federal lands. **It does not, however, reduce the high standards already in place for carbon storage projects to be approved.**

Conclusion

The U.S. Forest Service’s proposed rule is an important step both in terms of unlocking CO₂ storage potential on federal lands and harmonizing regulations across agencies to minimize uncertainty for project investors. Additionally, while it would provide a pathway to allow for the permanent geologic storage of CO₂ on forest service lands, it does not approve any such project application, which would still be subject to rigorous federal or state safety reviews at the design, planning, engineering, construction, operation, and closure phases. Finally, EPA’s existing regulations ensure that monitoring and maintenance, as well as emergency response, are prioritized appropriately to mitigate any risks associated with geologic storage.

The rule proposed by the USFS represents a vital effort to streamline the federal regulatory framework across government agencies for the secure geologic storage of captured CO₂, and the Coalition urges the Service to finalize and implement the proposed rule. We look forward to working with the USFS and the administration to ensure that transparent and rigorous regulations governing the safe and permanent storage of CO₂ on federal lands across multiple jurisdictions are issued and finalized in the coming months. Thank you again for the opportunity to comment on the proposed rule and should you have any questions, please do not hesitate to contact our Executive Director, Jessie Stolark, at jstolark@carboncapturecoalition.org.