ALSTON & BIRD

WWW.ALSTON.COM

Environment, Land Use & Natural Resources ADVISORY ■

**SEPTEMBER 1, 2021**

# Carbon Capture & Sequestration Faces Significant Permitting and Regulatory Obstacles in California

by Matt Wickersham

Carbon capture and sequestration (CCS) removes carbon dioxide from an emissions stream at a power plant or industrial facility. New technology also allows for the removal of carbon dioxide directly from the air. Once removed, this captured carbon can be permanently stored by the injection of carbon dioxide via a well into deep rock formations for long-term storage.

If California continues to push aggressive carbon reduction goals, CCS will need to play a critical role by reducing carbon emissions in the atmosphere without incurring substantial economic disruption to existing industries. The federal government has encouraged the implementation of CCS projects. Congress has enacted the Section 45Q tax credit, which provides up to $50 per metric ton of sequestered $CO_2$. The current language of the infrastructure bill pending in Congress also allocates over $12 billion for CCS projects. These significant investments signal the importance of CCS to the country's climate change strategy.

While CCS will play a significant role in achieving carbon reductions, substantial permitting and regulatory hurdles must be surmounted for these projects to be developed and implemented at the scale contemplated by California's aggressive policies.

## Permitting of CCS Projects Is Infrequent and Expensive

The EPA regulates geological sequestration through its Underground Injection Control (UIC) Class VI permit. To ensure the safety of underground sources of drinking water, the Class VI rule includes stringent requirements for all phases of a project. States, however, can apply for primacy to take over management responsibilities from the EPA. Only North Dakota and Wyoming have obtained primacy for Class VI wells so far, but more states may seek primacy as geological sequestration becomes a more viable and popular undertaking. Facilitating geological sequestration projects will require recognition of its challenges and cooperation among industry leaders, policymakers, and other stakeholders to navigate the complex regulatory landscape.

Despite the benefits of geological sequestration in reducing carbon emissions, the EPA has issued only six Class VI permits to date, four of which expired without any well construction. The small number of these permits can largely be attributed to the complicated and relatively new permitting process. Streamlining this process is essential to the nation's long-term climate mitigation strategy—the United States has enough geological storage capacity for hundreds of years of $CO_2$ emissions. California, in particular, has significant opportunities for geological sequestration, with 90% of natural gas power plants, cement plants, and refineries reportedly located within 50 km of a potential sequestration site.

The Class VI rules, which were modeled after the Class I Industrial and Municipal Waste Disposal Wells rules, adopt a very precautionary approach. The application requirements are therefore extremely onerous, iterative, and time intensive, with an average of six years to receive approval for a permit. If the state intends to meet its ambitious goals, it may need to obtain primacy over the program to adopt a more risk- and performance-based approach. This change will accelerate the permitting process to meet the recommended goals of issuing a permit to drill within six months of application and a permit to inject within six months of receiving a well completion report.

## The Uncertainty of Post-Injection Site Care and Long-Term Liability

Site operators are typically liable for damages caused by the storage site during all phases of the project, including monitoring, mitigation, and remediation of health or environmental impacts. After injection operations are complete, the operator generally remains liable. The Class VI rules set a 50-year default post-injection site care period, though it can be adjusted at the discretion of the EPA administrator. However, under California's Low-Carbon Fuel Standard (LCFS) CCS Protocol, project operators must monitor sites for 100 years to receive LCFS credits. These long-term liabilities and responsibilities increase costs and discourage project development.

Some states, such as Montana, North Dakota, and Louisiana, allow liability for stored $CO_2$ to be transferred to the state upon meeting certain criteria. For example, Montana would assume liability after a 30-year post-injection site monitoring period. State assumption of liability from the beginning of a project would further incentivize early-mover projects. Similarly, Texas and Mississippi established trust funds that can be used for monitoring and remediation after the state assumes liability.

These types of programs would encourage investment and reduce uncertainty for companies seeking to implement CCS projects.

## Ownership of Pore-Space Rights

Many property documents do not define who owns the pore-space rights on a site, which makes acquiring carbon storage rights difficult for CCS project developers. Only a few states have addressed the issue, with Montana, Wyoming, and North Dakota defining subsurface pore space as the property of the surface owner. To inject $CO_2$, a project developer would therefore need to either own the pore-space rights or receive permission from the owner. This could increase costs of storage and create conflicting uses of the subsurface. For most saline formation $CO_2$ storage projects, securing these pore-space rights could require agreement from hundreds of landowners. Conflicting uses may also arise when the subsurface is used for oil, gas, or geothermal energy production. Moreover, no mechanisms currently exist to grant access and use to pore-space rights for CCS projects on federal or state lands.

Some states allow forced unitization of mineral resources, which means that if some percentage of owners agree, the remaining owners can be forced to participate. This has yet to be extended to pore-space rights, but North Dakota adopted an analogous approach that allows for amalgamation of pore-space rights.

Only six states have addressed the ownership of $CO_2$ post-injection: Montana, Wyoming, North Dakota, Texas, Oklahoma, and Louisiana. In those states, the project operator owns the $CO_2$ until liability is transferred to the state, and the pore-space owner, if different from the operator, is not responsible for the $CO_2$ at any time. Louisiana also allows the project operator to transfer the $CO_2$ ownership while the $CO_2$ is in the storage facility.

These issues would need to be resolved in California to encourage investment in and development of CCS projects.

## Pathways Forward

Although the Class VI permit approval process may raise complicated legal issues, project developers have successfully received permits before. The first permit approvals involved constant back-and-forth between project developers and the EPA to navigate and clarify the regulatory pathway, which future developers can benefit from. These past projects can provide useful insight moving forward.

Under the existing system, the long permitting process is mainly attributed to extensive discussions between project developers and the EPA so the agency could understand the technical bases for the Class VI permit application. Because the process is new, it is extremely iterative, requiring frequent exchanges of additional information as the application progresses. Communication with the regulator is therefore key to understanding and meeting the requirements under a new regulatory regime.

Alston & Bird's attorneys have substantial experience in CCS projects at the federal and state levels and would be happy to answer any questions your company may have about a CCS project.

***Summer associate Ytran Hoang provided valuable assistance in the research and drafting of this advisory.***

You can subscribe to future *Environment, Land Use & Natural Resources* advisories and other Alston & Bird publications by completing our **publications subscription form**.

If you have any questions or would like additional information, please contact your Alston & Bird attorney or any of the following:

## Environment, Land Use & Natural Resources Group


Lee Ann Anand
404.881.4609
leeann.anand@alston.com

Gina Angiolillo
213.576.2606
gina.angiolillo@alston.com

Doug Arnold
404.881.7637
doug.arnold@alston.com

Megan Ault
415.243.1056
megan.ault@alston.com

Greg Berlin
213.576.1045
greg.berlin@alston.com

Caleb Bowers
415.243.1038
caleb.bowers@alston.com

Meaghan Goodwin Boyd
404.881.7245
meaghan.boyd@alston.com

Jeffrey Carlin
213.576.1008
jeff.carlin@alston.com

Nicki Carlsen
213.576.1128
nicki.carlsen@alston.com

Edward Casey
213.576.1005
ed.casey@alston.com

Greg Christianson
415.243.1012
greg.christianson@alston.com

Ha Chung
213.576.1151
ha.chung@alston.com

Julia Consoli-Tiensvold
213.576.2517
julia.consoli@alston.com

Jeffrey Dintzer
213.576.1063
jeffrey.dintzer@alston.com

Leland Frost
404.881.7803
leland.frost@alston.com

Ronnie Gosselin
404.881.7965
ronnie.gosselin@alston.com

Maya Lopez Grasse
213.576.2526
maya.grasse@alston.com

Kathleen Hill
213.576.1056
kathleen.hill@alston.com

Clay Massey
404.881.4969
clay.massey@alston.com

Kevin Minoli
202.239.3760
kevin.minoli@alston.com

Vickie Chung Rusek
404.881.7157
vickie.rusek@alston.com

Phil Sandick
202.239.3632
phil.sandick@alston.com

Shannon Vreeland
404.881.7429
shannon.vreeland@alston.com

Megan Walker
404.881.7942
megan.walker@alston.com

Andrea Warren
213.576.2518
andrea.warren@alston.com

Sara Warren
404.881.7472
sara.warren@alston.com

Matt Wickersham
213.576.1185
matt.wickersham@alston.com


ALSTON & BIRD

WWW.ALSTON.COM




ATLANTA: One Atlantic Center ■ 1201 West Peachtree Street ■ Atlanta, Georgia, USA, 30309-3424 ■ 404.881.7000 ■ Fax: 404.881.7777
BEIJING: Hanwei Plaza West Wing ■ Suite 21B2 ■ No. 7 Guanghua Road ■ Chaoyang District ■ Beijing, 100004 CN ■ +86.10.85927500
BRUSSELS: Level 20 Bastion Tower ■ Place du Champ de Mars ■ B-1050 Brussels, BE ■ +32 2 550 3700 ■ Fax: +32 2 550 3719
CHARLOTTE: One South at The Plaza ■ 101 South Tryon Street ■ Suite 4000 ■ Charlotte, North Carolina, USA, 28280-4000 ■ 704.444.1000 ■ Fax: 704.444.1111
DALLAS: Chase Tower ■ 2200 Ross Avenue ■ Suite 2300 ■ Dallas, Texas, USA, 75201 ■ 214.922.3400 ■ Fax: 214.922.3899
FORT WORTH: 3700 Hulen Street ■ Building 3 ■ Suite 150 ■ Fort Worth, Texas, USA, 76107 ■ 214.922.3400 ■ Fax: 214.922.3899
LONDON: 5th Floor ■ Octagon Point, St. Paul's ■ 5 Cheapside ■ London, EC2V 6AA, UK ■ +44.0.20.3823.2225
LOS ANGELES: 333 South Hope Street ■ 16th Floor ■ Los Angeles, California, USA, 90071-3004 ■ 213.576.1000 ■ Fax: 213.576.1100
NEW YORK: 90 Park Avenue ■ 15th Floor ■ New York, New York, USA, 10016-1387 ■ 212.210.9400 ■ Fax: 212.210.9444
RALEIGH: 555 Fayetteville Street ■ Suite 600 ■ Raleigh, North Carolina, USA, 27601-3034 ■ 919.862.2200 ■ Fax: 919.862.2260
SAN FRANCISCO: 560 Mission Street ■ Suite 2100 ■ San Francisco, California, USA, 94105-0912 ■ 415.243.1000 ■ Fax: 415.243.1001
SILICON VALLEY: 1950 University Avenue ■ Suite 430 ■ East Palo Alto, California, USA 94303 ■ 650.838.2000 ■ Fax: 650.838.2001
WASHINGTON, DC: The Atlantic Building ■ 950 F Street, NW ■ Washington, DC, USA, 20004-1404 ■ 202.239.3300 ■ Fax: 202.239.3333