

Submitted electronically

Aug 30th, 2018

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95814
<https://www.arb.ca.gov/lispub/comm/bclist.php>

Re: Second 15-day comments on Carbon Capture and Sequestration Protocol under the Low Carbon Fuel Standard

Dear Clerk of the Board,

The Center for Climate and Energy Solutions (C2ES), Clean Air Task Force (CATF), Environmental Defense Fund (EDF) and Natural Resources Defense Council (NRDC) appreciate the opportunity to provide comments to the California Air Resources Board (ARB) on the proposed amendments to the Low Carbon Fuel Standard (LCFS) regulation, specifically Attachment B: Proposed Second 15-day Modifications to the Carbon Capture and Sequestration Protocol (Protocol) under the Low Carbon Fuel Standard.

Our comments below are limited to the topic of post-injection monitoring for geologic sequestration projects. We recognize and appreciate the improvements that ARB has made to other aspects of the Protocol, but the provisions pertaining to post-injection monitoring require further revision in order to achieve ARB's goal of developing and implementing a Protocol that is fully informed by the best available scientific knowledge and maximizes environmental protection.

Introduction

Over the past several months, we have repeatedly raised our concerns with ARB on the proposed post-injection monitoring provisions, and have submitted extensive supportive material to the record. Most recently, the concerns expressed in CATF and NRDC's July 5th, 2018 comments have not been adequately addressed by the second 15-day revisions.

ARB staff is proposing some limited changes in the second 15-day version of the Protocol that are directionally correct. For example, the Protocol now allows for more generic class of monitoring methods ("near-surface") in place of specific methods that have already proven to be problematic in practice (soil gas monitoring).¹

However, the overall rationale and problematic structure of the previously proposed versions remain unchanged. The requirements for monitoring after plume stabilization has been

¹ Protocol at proposed § 5.2.(b)(3)(G)(2) (p. 120).

demonstrated do not afford the degree of environmental protection that is feasible, and are insufficiently informed by today's best science and practices.

Our concerns are summarized as follows:

- The proposed subset of monitoring methods is too limited and hampers both the project operator's ability to select the best tools and strategies for monitoring, and also ARB's capability to accurately evaluate post-injection risk. Importantly, monitoring at depth will in most cases afford more reliable and timely warnings of leakage than near-surface monitoring.
- The value of historical project performance and compliance with the extensive preventative provisions of the Protocol is not utilized to inform whether post-injection monitoring should be modified based on site-specific conditions.
- Geologic sequestration, accompanied by monitoring and verification, is fundamentally different and has a longer-lasting carbon reduction benefit compared to the shorter-term benefit and inherent impermanence risks of forest carbon sequestration, where the 100-year post-injection monitoring requirements in question appear to have their roots. Therefore, monitoring and verification approaches in geologic storage require a different treatment than those in ARB's Forest Offset Protocol.

As such, we continue to believe that the Protocol creates the illusion of rigorous oversight through field monitoring over the entire 100-year permanence period without ensuring the environmental protection associated with a fit-for-purpose monitoring strategy, and fails to fully leverage current and future scientific understanding of geologic sequestration and technological capabilities.

Recommendation

To address these issues in a systematic fashion, we strongly urge that the Board adopt a resolution during its September, 2018 meeting, ensuring that these provisions will be further analyzed and revisited in the next calendar year pursuant to specific direction as follows:

WHEREAS carbon dioxide emission reduction projects using CCS can help California efficiently meet its 2030 LCFS and greenhouse gas reduction targets.

WHEREAS the CCS Protocol requires 100 years of leak detection monitoring following cessation of injection.

WHEREAS experience with CCS projects in California and worldwide will have increased significantly by the time such CCS projects regulated under the Protocol reach the post-injection phase.

WHEREAS we anticipate that monitoring methods and strategies will evolve in the future as projects are permitted and undertaken.

WHEREAS scientific methods to demonstrate plume stability, and the understanding of, and statistical data on, any residual risk of leakage of injected carbon dioxide will advance considerably over the coming decades.

NOW, THEREFORE, BE IT RESOLVED that the Board directs the Executive Officer to work with stakeholders, including scientists and researchers, project developers and environmental groups, to evaluate the optimal methods and requirements for monitoring and leak detection of CCS projects and demonstration of permanence.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to work with stakeholders, including scientists and reseachers, project developers and environmental groups, to evaluate and to determine under what circumstances it is scientifically supported and environmentally protective for monitoring and leak detections to either be continued for a defined period or to be discontinued following the cessation of injection and after plume stabilization has been established.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to propose amendments to the CCS Protocol that are informed by the stakeholder process and that specifically address the duration, frequency and nature of post-injection monitoring, including authorizing the termination of monitoring in the event that it can be demonstrated with a high degree of confidence that permanence will be achieved by a particular CCS project.

We encourage ARB staff to contact us for any clarification, and appreciate the opportunity ARB has provided for our review and recommendations on the second set of 15-day modifications to the Protocol.

Respectfully,

Jeffrey Bobeck, Director of Energy Policy Engagement, Center for Climate and Energy Solutions

Deepika Nagabhushan, Energy Policy Associate, Clean Air Task Force

L. Bruce Hill, Ph.D., Chief Geoscientist, Clean Air Task Force

James P. Duffy, Associate Attorney, Clean Air Task Force

Timothy O'Connor, Senior Director, Energy Program, Environmental Defense Fund

Briana Mordick, Senior Scientist, Natural Resources Defense Council

George Peridas, Senior Scientist, Natural Resources Defense Council