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CHRIS GOULD
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Submitted electronically via ww2.arb.ca.gov

Rajinder Sahota
Deputy Executive Officer for Climate and Research
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments on the April 23, 2024, CARB Public Workshop and the Proposed Amendments to the Cap-and-Trade Program Regulations

Dear Ms. Sahota:

Carbon TerraVault Holdings, LLC (“CTV”) appreciates the opportunity to comment on the California Air Resources Board’s (“CARB” or “the Board”) public workshop held on April 23, 2024, regarding potential amendments to the Cap-and Trade (“C&T”) program regulations. CTV believes that carbon capture and storage (“CCS”) is an integral part of CARB’s scoping plan to achieve California’s climate goals. Without CCS, California risks losing access to both federal IRA dollars, as well as private investment to other states. CTV therefore respectfully requests that CARB revise the proposed amendments to ensure that: (1) the Mandatory Reporting Rule (“MRR”) be revised to account for sequestered greenhouse gas (“GHG”) emissions from covered facilities that have deployed CCS, and (2) similarly revise the C&T regulations to clarify that the CCS at a covered facility allows for a reduction in the applicable C&T compliance obligation. The requested changes are essential in order to promote CCS projects, end regulatory uncertainty in the state, thereby promoting necessary investment in California which has a vital role in meeting California’s climate goals.

About Carbon TerraVault Holdings, LLC

Carbon TerraVault Holdings, LLC (“CTV”) a subsidiary of California Resources Corporation (“CRC”), provides services that include the capture, transport and storage of carbon dioxide for its customers. CTV is engaged in a series of CCS projects that inject CO₂ captured from industrial sources into depleted underground reservoirs and permanently store CO₂ deep underground. For more information about CTV, please visit www.carbonterravault.com.

About Carbon TerraVault Joint Venture

Carbon TerraVault Joint Venture (“CTV JV”) is a carbon management partnership focused on carbon capture and sequestration development, and was formed between Carbon TerraVault, a subsidiary of CRC, and Brookfield Renewable. The CTV JV develops both infrastructure and storage assets required for CCS development in California. CRC owns 51% of the CTV JV with

Brookfield Renewable owning the remaining 49% interest. Brookfield Renewable has made an initial \$500 million private equity commitment to CTV JV with an option to make additional investments of more than \$1 billion assuming it fully participates in future CTV JV projects.

Proposed Recommendations

As a California-based company committed to the energy transition, CTV supports CARB's overall goal of achieving carbon neutrality by 2045 and reducing greenhouse gas emissions by 2045 to a level that is 85% below 1990 levels.

As discussed in greater detail below, we respectfully request that as part of updating the California Cap-and-Trade Program and MRR, CARB provide detailed CCS permanence and quantification methodologies in the current rulemaking process.

Representative Projects

CTV JV is involved in several new clean energy initiatives. These include the Grannus Ammonia and Hydrogen Project, which expects to sequester 370,000 metric tons ("MT") of CO₂ annually and produce clean ammonia and hydrogen in Northern California. The project aims to be California's first clean ammonia and hydrogen facility producing 150,000 MT per annum of clean ammonia and 10,000 MT per annum of clean hydrogen. Additionally, the Lone Cypress Hydrogen Project, in collaboration with Lone Cypress Energy Services, expects to sequester 100,000 MT of CO₂ per year from a new hydrogen plant, with an expansion plan to 205,000 MT and the production of 60 tons per day of hydrogen.¹ Such projects will constitute new regulated entities with captured CO₂ emissions sources that will have significant compliance obligations under the Cap-and-Trade regulations if they cannot reduce their obligations through CCS.

The expectation is that these projects will contribute to our sustainability goals to reduce carbon emissions, promote clean energy and should not be penalized as if they emit CO₂ to the atmosphere when that CO₂ is captured and sequestered. CARB could incentivize the proliferation of these projects and others like them, which is fully consistent with its 2022 Scoping Plan and the State's energy transition goals, by amending the Cap-and-Trade regulations as suggested herein.

In addition to the projects discussed above, CTV JV intends to partner with existing sources of CO₂ emissions considered in CARB's 2022 Scoping Plan, which desire to reduce their compliance cost under Cap-and-Trade. These projects rely on this relief, in part, for economic justification.

¹ Lone Cypress CDMA Press Release, California Resources Corporation (Dec. 7, 2022).

CTV's Recommendations and Comments on Potential Cap-and-Trade Amendments

I. CTV recommends CARB incorporate CCS permanence and quantification methodologies in the upcoming Cap-and-Trade program rulemakings without delay.

The California Climate Crisis Act, AB 1279 established the State's ambitious goal to achieve carbon neutrality by 2045 and contained clear directives from the legislature to CARB on CCS. AB 1279 expressly notes the need to prioritize direct emission reductions and for CARB to identify and implement policies that support the deployment of CCS. While CARB acknowledged the critical role CCS plays in its 2022 Scoping Plan, CARB's existing regulations are inadequate to achieve the Legislature's aggressive goal of supporting direct GHG emission reductions through the use of technologies like CCS because current regulations still do not allow for the quantification of sequestered carbon for purposes of either MRR reporting or Cap-and-Trade program obligations. Consequently, such operators are required to purchase allowances or offsets under the Cap-and-Trade program even if their carbon emissions are 100% captured and sequestered. This creates a paradox by which, despite not emitting a single carbon dioxide molecule to the atmosphere, such net zero sources like the previously mentioned Lone Cypress Hydrogen Facility are treated the same as uncontrolled sources (*e.g.*, a fossil power plant without CCS installed). This paradox has created uncertainty for CTV and the others that are needed to invest the millions of dollars in projects to reduce emissions on existing operations, which could lead to an effective moratorium on the CCS projects that the 2022 Scoping Plan called for on hard-to-abate industries.

Such an approach is not consistent with CARB's 2022 Scoping Plan or the intent of the California Legislature when it passed AB 1279. Both AB 1279 and the C&T regulations prioritize and seek to incentivize direct GHG emission reductions. If certain hard to decarbonize sources, such as baseload power generating facilities, are forced to only rely on carbon allowance and offset purchases to achieve compliance with C&T requirements, the goals of AB 1279 and the 2022 Scoping Plan cannot be met. For these hard to decarbonize sources, CCS represents the best and shortest path to achieve timely direct emission reductions. And yet, CARB's delay in creating rules for accounting for GHG emissions from sources utilizing CCS has the perverse effect of disincentivizing early action by these sources to deploy CCS because they receive no compliance benefit. If CCS is to be rapidly adopted as part of California's energy transition, as well as clear a path to the required data centers for artificial intelligence in agriculture and biotechnology, these counterproductive regulations must be revised as soon as possible in order to support state goals and achieve the Legislature's express intent to support direct GHG emission reductions.

CARB acknowledged the need for a CO₂ quantification and permanence methodology for CCS projects over a decade ago when it originally adopted the C&T regulations. Since that time, the U.S. Environmental Protection Agency has implemented the federal requirements for quantifying CO₂ emission reductions from CCS projects found at 40 C.F.R. § 98 Subpart RR, approving numerous monitoring, reporting and verification plans without any issues or substantive concerns. In addition, CARB has already adopted a CO₂ permanence methodology for CCS under

the Low Carbon Fuel Standard CCS Protocol. There are clear, well-defined guideposts available to help CARB finally define its approach to quantifying GHG emissions from C&T facilities that would seek to utilize CCS. CARB, and California, cannot afford any further delay.

The treatment (or rather lack thereof) of CCS by the Cap-and-Trade program has remained unchanged despite previous attempts to raise awareness to this conflict. The lack of progress appears to emanate from SB 905 which, amongst other matters, establishes a unified permitting framework for CCS within California. However, nothing in SB 905 addresses (1) emission reporting under the MRR or (2) the C&T program, and so any actions required under SB 905 cannot reasonably be said to prevent or otherwise limit CARB from updating other aspects of its regulations to address CCS. If anything, SB 905 represents a strong signal from the legislature for CARB to press ahead with developing a comprehensive suite of regulations addressing CCS. Moreover, updating the MRR and the C&T regulations to recognize GHG emission reductions from CCS is arguably a necessary first step, or at a minimum a complimentary step, required to support the establishment of the comprehensive CCS permitting program called for by SB 905. The statutory text of SB 905 expressly does not prioritize any unified CCS permitting rulemakings over other CCS rulemakings or otherwise prevent CARB from acting on issues raised by CTV. CARB has read unnecessary restrictions into SB 905. To end this impasse and ensure there are no further delays permitting CCS projects once ultimately CARB establishes the unified framework under SB 905, CARB should revise the MRR and C&T regulations now to account for GHG reductions for CCS.

Delaying CCS rulemaking also threatens the net zero goals established by Assembly Bill (“AB”) 32 which requires CARB to develop a Scoping Plan, laying out California’s strategy for meeting the state’s climate goals.² The 2022 Scoping Plan provides a detailed pathway to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85% below 1990 levels no later than 2045. Part of this pathway includes fitting natural gas-fired electric generating units with CCS to provide baseload power, supplementing existing solar, wind, and battery power sources by the year 2045.³ Yet, CARB is poised to ignore this opportunity to make a much needed and long awaited revisions to the current C&T regulations by finally adopting a GHG quantification methodology for CCS, which will provide another pillar of support the use of CCS as CARB envisioned in the 2022 Scoping Plan.

In connection with any final rulemaking, we recommend that CARB adopt the following amendments to the Cap-and-Trade and MRR programs. First, under its Cap-and-Trade program, CARB should finalize the placeholder provision in California Code of Regulations Title 17 § 95852(g) to allow for accounting for GHG sequestered from CCS. Reductions in C&T compliance obligations should be proportional to the amounts of carbon dioxide successfully captured and sequestered in the subsurface. Second, complementary amendments to the MRR program should allow CCS operators to realize back-end emissions reductions through their CCS deployments against their MRR emissions calculations for fuel flow on the front end.

² Cal. Code Regs. Title 17, § 38561.(a)-(h) (2023).

³ See, e.g., 2022 Scoping Plan, page 92.

Conclusion

In order to accelerate California's ambitious climate goals, CTV recommends CARB incorporate CCS crediting in its upcoming revisions to the Cap-and-Trade program. We believe that amendments to this program are necessary to ensure consistency with the 2022 Scoping Plan and, importantly, to recognize the importance of California-based energy producers in meeting the state's net zero goals. Without clarity on CCS inclusion in Cap-and-Trade, California risks losing access to both federal IRA dollars, as well as private investment to other states.

CTV appreciates the opportunity to comment on the April 2024 Cap-and-Trade program workshop. We thank CARB for its consideration of our comments and look forward to continued dialogue.

Respectfully submitted,

A handwritten signature in cursive script that reads "Chris Gould".

Chris Gould
Managing Director