

COMMENTS OF THE CENTER FOR CLIMATE AND ENERGY SOLUTIONS

Comments of the Center for Climate and Energy Solutions on the Notice of Intent Regarding Launching a Voluntary Carbon Dioxide Removal Purchasing Challenge; DOE Carbon Dioxide Removal Purchasing (CO₂ RP) Challenge (89 FR 18626 (March 14, 2024) Document No. 2024-05269)

This document constitutes the comments of the Center for Climate and Energy Solutions (C2ES) to the [Notice of Intent](#) (NOI) regarding the Voluntary Carbon Dioxide Removal Purchasing (CO₂ RP) Challenge, issued by the U.S. Department of Energy (DOE) Office of Fossil Energy and Carbon Management (FECM) and published in the Federal Register on March 14, 2024.

1. Overview of C2ES

C2ES is an independent, nonprofit, nonpartisan organization working to secure a safe and stable climate by accelerating the global transition to net-zero greenhouse gas emissions and a thriving, just, and resilient economy. A unique aspect of C2ES is our work with the business community, primarily through our Business Environmental Leadership Council (BELC), a group of 41 major companies, mostly in the Fortune 500.¹

In addition, C2ES has stood up four technology working groups (TWGs) focused on the critical path technologies of engineered carbon removal, sustainable aviation fuel, long-duration energy storage, and clean hydrogen.² These working groups provide a regular venue for stakeholders across the innovation ecosystem to convene to discuss the technical, market, and policy solutions needed to rapidly scale these technologies. C2ES uses insights from each working group to produce thought leadership, identify synergies between technologies, and generate policy recommendations that will enable rapid deployment and responsible commercialization of these critical path technologies. Each working group convenes representatives from across each technology's respective ecosystem, including innovators, large demand-side incumbents, financiers, technology providers, and other key stakeholders.

C2ES is supportive of the CO₂ RP Challenge and believes it will be an effective way to catalyze the private sector to responsibly purchase carbon dioxide removal credits. This comment was drafted with input from C2ES's engineered carbon removal technology working group and our BELC. The views expressed here are

¹ "BELC Membership," Center for Climate and Energy Solutions, last modified February 15, 2024, <https://www.c2es.org/belc/belc-membership>.

² "C2ES Technology Working Groups," Center for Climate and Energy Solutions, last accessed April 23, 2024, <https://www.c2es.org/accelerating-the-us-net-zero-transition/c2es-technology-working-groups>.

those of C2ES alone and do not necessarily reflect the views of all members within the BELC or the technology working group.

2. Overview of the C2ES Position on the Role of Carbon Removal in Corporate Strategy

C2ES has long been a champion of market-based approaches to tackling climate change, including carbon pricing and the responsible use of high-integrity carbon credits. We are part of the Executive Secretariat of the Integrity Council for the Voluntary Carbon Market (ICVCM) and serve as the secretariat for the Energy Transition Accelerator (ETA). C2ES believes carbon credits should adhere to the ICVCM's Core Carbon Principles and that the use of credits by companies to meet voluntary commitments should follow best practices laid out by the Voluntary Carbon Markets Integrity initiative (VCMI).³ We also believe that carbon removal should be treated as a necessary complement to industrial decarbonization and the transition to clean energy. C2ES shares the DOE's position in the NOI that states that carbon dioxide removal (CDR) "is best viewed as part of a decarbonization portfolio that first achieves maximum emissions reductions from existing sources."⁴

3. Key Support from C2ES regarding the Voluntary CO2 RP Challenge

In its current proposed structure (as in the NOI), the CO2 RP Challenge effectively addresses several of the key CDR barriers and uncertainties that we identified in our work with engineered carbon removal stakeholders. We are particularly supportive of DOE's goal to standardize and streamline the CDR credit purchasing process by: (1) setting norms for what qualifies as a high-quality CDR credit; (2) setting norms for what monitoring, reporting, and verification (MRV) methods and protocols are appropriate; and (3) conducting rigorous technical due diligence on all applicants and creating a pre-vetted pool of CDR project developers that have a high chance of producing durable carbon removal in the near term.

C2ES applauds the DOE for leading by example by investing in high-integrity CDR credits. This will provide a useful signal for the market in understanding how the voluntary carbon market may be leveraged in parallel to near-term decarbonization on the pathway to achieving net zero emissions. The "lack of clear and consistent direction by civil society groups working on corporate climate disclosure and action on the

³ "The Integrity Council for the Voluntary Carbon Market, The Core Carbon Principles," The Integrity Council for the Voluntary Carbon Market, last modified February 7, 2024, <https://icvcm.org/the-core-carbon-principles>. See ETA Framework, U.S. State Department, Bezos Earth Fund, and the Rockefeller Foundation, *Energy Transition Accelerator: Core Framework* (Washington, DC: Energy Transition Accelerator, 2023), https://www.etaccelerator.org/files/ugd/17314c_ce8fab2f2ce04e8cb29bdd3cc85f0f37.pdf. For VCMI best practices, see "VCMI - Delivering high-integrity carbon markets," VCMI, last modified February 26, 2024, <https://vcmintegrity.org>.

⁴ "Notice of Intent Regarding Launching a Voluntary Carbon Dioxide Removal Purchasing Challenge; DOE Carbon Dioxide Removal Purchasing (CO2 RP) Challenge," *Federal Register* 89, no. 51: 18626-18629 (March 14, 2024), <https://www.federalregister.gov/documents/2024/03/14/2024-05269/notice-of-intent-regarding-launching-a-voluntary-carbon-dioxide-removal-purchasing-challenge-doe>.

appropriate role for these credits in near-term decarbonization activities” is a salient challenge for our working group and BELC members, and guidance from the federal government will provide much-needed clarity.⁵

4. Key Recommendations from C2ES regarding the CO2 RP Challenge

The following recommendations outline how the Challenge could be enhanced to accelerate the uptake of carbon removal purchases by private sector buyers.

- 4.1. **Recommendation: The DOE should create a “buyers workshop” series to educate CO2 RP Challenge participants on key definitions, best practices, and the contracting process(es) for a CDR credit purchase agreement.** CDR credit purchasing is a new process for most private sector buyers. Creating an educational forum where both current and prospective buyers can ask questions and share lessons learned will elevate the knowledge base and discernment of all buyers.
- 4.2. **Recommendation: The DOE should set a CDR delivery timeline requirement for CO2 RP Challenge suppliers that is aligned with the delivery timeline expectations for Phase 3 winners of the CDR Purchase Pilot Prize.** The current eligibility requirement for suppliers in the CO2 RP Challenge is that they must “anticipate selling voluntary credits within the next calendar year” and that buyers in CO2 RP Challenge must “purchase and retire permanent CDR annually... starting no later than 2025.”⁶ This second statement implies that CDR suppliers must be able to deliver on CDR sales before the end of 2025. This may be unfeasible for CDR projects that still need to construct facilities and infrastructure. It is also inconsistent with the delivery timeline expectations of Phase 3 winners of the CDR Purchase Pilot Prize, who currently have up to 36 months to deliver on their sales. Aligning the delivery timelines of both initiatives will ensure that the CO2 RP Challenge does not inadvertently rule out multiple innovative CDR projects and technologies.
- 4.3. **Recommendation: The DOE should designate their model CDR credit purchasing templates and term sheets as “version 1.0” and regularly update them as the CDR industry continues to evolve.** The CDR industry is still nascent, and most purchasing contracts are bespoke. CDR suppliers and buyers have evolved their contracts multiple times over the past few years, and there is concern that it may be too early to create a standard template. By designating the model purchasing templates as “version 1.0” and setting a regular update schedule, the CO2 RP Challenge can ensure that its model evolves alongside the CDR industry.
- 4.4. **Recommendation: The DOE should provide information to CO2 RP participants on how they are assessing and weighing the environmental, integrity, economic, social, and other**

⁵ Ibid.

⁶ Ibid.

aspects of a CDR project. While private sector buyers may not always have the same priorities as the DOE, insight into how the DOE holistically assesses CDR project developers would provide a good starting point. This can also help private sector buyers design a CDR credit purchase strategy that aligns with their internal impact priorities.

- 4.5. Recommendation: The DOE should publish a non-prescriptive “DOE CO2 RP Challenge due diligence checklist” to help converge CO2 RP participants around the best practices and processes for evaluating and conducting due diligence on a CDR project and its associated credits.** There is no standardized approach to due diligence, which can lead to delay and additional costs for private sector buyers. While the DOE will conduct due diligence on the pool of CDR project developers within the CO2 RP Challenge, many buyers also want to learn how to effectively evaluate credit-producing CDR projects themselves.
- 4.6. Recommendation: The DOE should offer non-prescriptive guidance on how a buyer participating in the voluntary CO2 RP Challenge could build a portfolio across the four different CDR verticals within the competition.** Our discussions with companies indicate that most prefer taking a portfolio-based approach to CDR purchasing because it enables them to diversify risk while maximizing environmental impact. Since the CDR Purchase Pilot Prize and the CO2 RP Challenge are already taking a portfolio approach by evaluating and purchasing credits from four different removal pathways, the DOE could use this opportunity to showcase best practices.
- 4.7. Recommendation: The DOE should provide private feedback to the top applicants that were not selected as semifinalists for Phase 1 of the CDR Purchase Pilot Prize and the CO2 RP Challenge.** We recognize that providing feedback to non-selected applicants is a significant undertaking. However, suppliers need to be able to accurately interpret the signals the DOE is sending by selecting one CDR project over another. By identifying and providing feedback to a shortlist of suppliers who submitted high quality CDR Credit Concept Proposals but were not selected as semifinalists, the DOE can also prime these companies to be strong “next wave” applicants.

5. Additional considerations for the CO2 RP Challenge

C2ES would encourage the DOE to provide additional clarification regarding the following.

- 5.1. Private sector incentive: More clarity is needed on what makes the CO2 RP Challenge a “challenge” and whether there will be any incentives or rewards to encourage friendly competition amongst buyers.** Additionally, while the lack of a purchasing minimum is a good way to democratize the Challenge, it is confusing when paired with the expectation that buyers will need

to purchase “small and growing quantities” of permanent CDR.⁷ Providing a more concrete growth target for buyers could help them more accurately allocate long-term budget to the CO₂ RP Challenge. The DOE should also clarify whether the Challenge is intended to encourage single- or multi-year offtake agreements.

- 5.2. Clarifying CDR pathway eligibility: More clarity is needed on the intended scope and eligibility requirements of the “alternative planned and managed carbon sinks” pathway in both the CO₂ RP Challenge and the CDR Purchase Pilot Prize.** This pathway is intentionally broad to capture CDR pathways not included in the other three categories of the Challenge and Prize (i.e., Direct air capture (DAC), Biomass with carbon removal and storage (BiCRS), and enhanced geologic weathering or mineralization). Within this alternative planned and managed carbon sinks pathway, the DOE should emphasize support for emerging CDR technologies as opposed to established pathways. This would ensure that the focus of this pathway remains consistent with the overall objective of both the Challenge and Prize on supporting the development and deployment of innovative and emerging CDR technologies.
- 5.3. New CDR pathways: Related to our comment in section 5.2, we are interested in whether the DOE plans to expand the scope of the CO₂ RP Challenge or the CDR Purchase Pilot Prize, in any future version, to include novel forms of CDR as they emerge.** The CDR industry is rapidly evolving and there are several new durable carbon removal pathways outside of the four areas of focus. Given the recent appropriations announcement for an additional \$20,000,000 to continue the CDR Purchase Pilot Prize, it would be helpful to know if the DOE plans to expand the scope of the Voluntary CO₂ RP Challenge.⁸
- 5.4. Risk management: We are interested in how the DOE intends to manage delivery risk in their CDR Purchase Pilot Prize offtake agreements and what risk management guidance they plan to include in their model contracts and term sheets for the CO₂ RP Challenge.** Buyers need to understand the different types of delivery, reversal, technological, and financial risks they should consider when purchasing CDR credits. Buyers will likely ask the DOE how risks could be mitigated through contract structure (i.e., contracts for difference, reverse auctions, options) or insurance (i.e., delivery risk insurance, technology performance insurance). Providing a high-level overview of risks and potential mitigation measures will be helpful for buyers.
- 5.5. Price transparency: The DOE should consider how to enable price discovery and transparency in the CO₂ RP Challenge while simultaneously ensuring confidentiality**

⁷ Ibid.

⁸ Consolidated Appropriations Act, 2024, Pub. L. No. 118-122, 116 (2024), <https://www.congress.gov/bill/118th-congress/house-bill/4366>.

between buyers and sellers. The CO2 RP Challenge is in a unique position where it will be operating as quasi-marketplace for CDR. Buyers in this type of market continue to struggle with allocating budget for CDR credits without a credible and transparent price for different types of CDR. Given the nascency and diversity of the CDR industry and the limited pool of current buyers, we recognize that it may be too early to publish specific price estimates or ranges for different forms of carbon removal. We also recognize that most buyers sign non-disclosure agreements with CDR suppliers, preventing them from publicly sharing pricing data. However, determining what kinds of pricing information could still be shared with prospective buyers will be important to mobilizing the market during this critical stage.