

June 19, 2023

[Supervisory-Body@unfccc.int](mailto:Supervisory-Body@unfccc.int)

Article 6.4 Supervisory Body

United Nations Framework Convention on Climate Change (UNFCCC)

Bonn, Germany

RE: Call for input 2023 – structured public consultation: Removal activities under the Article 6.4 mechanism

Dear Article 6.4 Mechanism Supervisory Body:

JPMorgan Chase & Co. (“JPMorgan Chase,” “we”) appreciates the opportunity to provide comments in response to the call for public inputs regarding removal activities under the Article 6.4 mechanism, for consideration at the upcoming sixth meeting of the Article 6.4 Mechanism Supervisory Body.<sup>1</sup> Our input specifically relates to *Information Note A6.4-SB005-AA-A09: Removal activities under the Article 6.4 mechanism (Version 04.0)* (“A6.4-SB005-AA-A09”). Thank you for the opportunity to respond to your important work.

The A6.4-SB005-AA-A09 Information Note, which will inform how the Supervisory Body implements the Article 6.4 mechanism, expresses concerns about engineering-based carbon removal in the context of global carbon market objectives as outlined in Article 6 of the Paris Agreement. Although the Information Note finds that “[e]ngineering-based removal activities result in permanent net removal of carbon dioxide from the atmosphere,” it also characterizes engineering-based solutions as “technologically and economically unproven,” and states that engineering-based solutions are not suitable for implementation in developing economies in light of their costs, and do not contribute to sustainable development nor to reducing global mitigation costs.<sup>2</sup>

We wish to take the opportunity to explain our concern with this characterization of engineering-based carbon removals specifically, as well as to outline our perspective on carbon removals generally<sup>3</sup> as the result of conducting extensive due diligence as part of our procurement and carbon management strategy.

As one of the world’s largest financial institutions, in addition to evaluating and purchasing credits as part of our own carbon management program, JPMorgan Chase provides carbon market-related financing, advice, and services to clients across many parts of our business. We also continue to engage with and learn from other experts in the field with the shared goal of scaling a more robust, transparent, and effective voluntary carbon market to support the path to net-zero emissions.

According to the Intergovernmental Panel on Climate Change (IPCC), both dramatic reductions in greenhouse gas (GHG) emissions and the large-scale removal of GHGs from the atmosphere will be necessary to stabilize the climate by 2050 and preserve a chance of keeping temperature rise below 1.5°C. The IPCC estimates cumulative removal needs of 100 to 1,000 billion metric tons of carbon

---

<sup>1</sup> *Call for input 2023 - structured public consultation: Removal activities under the Article 6.4 mechanism*, available at <https://unfccc.int/process-and-meetings/the-paris-agreement/article-64-mechanism/calls-for-input/sb005-removals-activities>.

<sup>2</sup> *Removal activities under the Article 6.4 mechanism (A6.4-SB005-AA-A09)*, p. 18, <https://unfccc.int/sites/default/files/resource/a64-sb005-aa-a09.pdf>.

<sup>3</sup> JPMorgan Chase & Co., *Carbon Market Principles*, <https://www.jpmmorganchase.com/content/dam/jpmc/jpmorgan-chase-and-co/documents/carbon-market-principles.pdf>.

dioxide (GtCO<sub>2</sub>e) globally by 2100, with interim annual removal rates that approach 10 GtCO<sub>2</sub>e by mid-century.<sup>4</sup> Further, IPCC's Synthesis Report of the IPCC Sixth Assessment Report (AR6) stated that the use of carbon dioxide removal to reach net-zero emissions is "unavoidable."<sup>5</sup>

We therefore strongly support the need for engineering-based removal activities in addition to nature-based solutions in the context of a trusted, credible, and viable global voluntary carbon market.

We recognize the concerns regarding the early stages of carbon dioxide removal (CDR) technology, given relative scarcity and higher costs. While significant investment is required for scalability of removal technologies, efforts to make progress are already underway.

To help speed and scale the growth and development of CDR technologies, JPMorgan Chase has engaged in long-term agreements to purchase over \$200 million in high quality, durable carbon removals and to provide carbon removal services. These agreements are intended to remove 800,000 metric tons of carbon dioxide equivalent (mtCO<sub>2</sub>e) from the atmosphere. Our ambition is to purchase durable CDR to address all unabated direct emissions by 2030, signalling future demand of approximately 100,000 mtCO<sub>2</sub>e of CDR annually. As part of achieving this target, we are investing aggressively in CDR solutions to secure future supply.

Specifically, JPMorgan Chase has signed on to:

- A binding 9-year agreement with Climeworks to deliver 25,000 mtCO<sub>2</sub>e of carbon removal services. Valued above \$20 million USD, this agreement supports measurable, 100% additional, and permanent removal of CO<sub>2</sub>. Agreements of this magnitude and beyond enable the capacity build-up needed to fight global warming at scale, as acknowledged by the intent of programs such as the \$3.5 billion in funding for direct air capture (DAC) provided by the U.S. Department of Energy's DAC Hubs program to establish regional DAC hubs capable of capturing, storing, and/or utilizing at least one million metric tons of CO<sub>2</sub>.
  - On the project development side, such agreements are an essential component of the equation that enables project developers and solution providers such as Climeworks to bring new, larger projects to life. A few corporate off-takers securing a portion (in the range of 5-10%) of a future plant's lifetime capacity through advance purchases of CDR services de-risks project development, supports raising of additional financing, and acts as a catalyst for other corporate buyers.
- Purchase carbon removals from Charm Industrial, removing and storing approximately 28,500 mtCO<sub>2</sub>e over 5 years.
  - Charm is already delivering durable removals in the US right now, including to JPMorgan Chase.<sup>6</sup> With over 2 million abandoned or orphaned oil and gas wells in the US alone, there is a tremendous potential to store liquid forms of carbon and repurpose oil and gas infrastructure and expertise honed over hundreds of years in the US to reduce atmospheric CO<sub>2</sub>.
  - In addition, Charm's use of waste agricultural feedstocks and forestry residues can help improve air quality, reduce the threat of wildfires, and create additional revenues for US farmers.

---

<sup>4</sup> Intergovernmental Panel on Climate Change (IPCC), *Working Group III contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_FullReport.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf).

<sup>5</sup> *Id.*, at p. 36.

<sup>6</sup> Charm Industrial, *Registry*, <https://charmindustrial.com/registry>.

- Charm is also commercializing the use of bio-oil to produce carbon negative iron, which could help decarbonize the 6% of global emissions from iron-making while also delivering durable carbon removals.
- Significant commitments in the form of a long-term agreement with CO280 Solutions Inc. and Frontier Climate, an advance market commitment for carbon removal.

These agreements reflect our intent to support scale, innovation, and evolution in these technologies. This is because we believe that alongside reducing emissions, the world needs significant investment in durable carbon removal solutions with gigaton-scale potential. Moreover, these agreements reflect our conviction that technology-based carbon removal pathways offer strong potential economic and sustainability benefits.

The increasing commercial availability of and investment in carbon removal technologies, evidenced by the above agreements, argues against the characterization in A6.4-SB005-AA-A09 that they remain technologically or economically unproven. As an established corporate buyer having recently undertaken one of the highest volume sets of commercial offtake agreements ever announced, JPMorgan Chase has demonstrated there is indeed scalable development of carbon removal and storage as commercial solutions today.

We would also highlight strong demand, both current and future, for such solutions which further emphasizes the market potential of engineering-based removals. The Global Carbon Dioxide Removal Market Size is valued at \$485.35 million in 2022.<sup>7</sup> Looking ahead, BloombergNEF estimates that the total value of carbon credits produced and sold could approach \$1 trillion as soon as 2037,<sup>8</sup> supported by more rigorous definitions of quality and greater emphasis on carbon removal which could solidify market confidence, lift prices, and drive demand.

Further, we agree with the statement in A6.4-SB005-AA-A09 that “[e]ngineering-based removal activities result in permanent net removal of carbon dioxide from the atmosphere,” and view such solutions as a critical tool in carbon management. As an established corporate buyer, we have defined and published a set of core principles and supplemental considerations that guide our engagement with the voluntary market,<sup>9</sup> which call for emission reductions and removals that are real and measurable, and which represent durable sequestration of carbon from the atmosphere. These principles encompass our approaches to both nature-based solutions and engineering-based removals. The more than \$200 million in durable carbon removals that JPMorgan Chase recently announced all met these and our other core carbon market principles.

Together, our latest agreements are intended to durably remove more than 800,000 metric tons over the atmosphere – but that is still far from close to the scale that the IPCC has determined will be necessary to support 1.5°C or even 2°C ambition, emphasizing the need to utilize all available carbon removal solutions.

---

<sup>7</sup> Insight Ace Analytic, *Global Carbon Dioxide Removal Market Research Report*, <https://www.insightaceanalytic.com/report/carbon-dioxide-removal-market/1677#:~:text=The%20Global%20Carbon%20Dioxide%20Removal,forecast%20period%20for%202023%2D2031>.

<sup>8</sup> Harrison, *Carbon Offset Market Could Reach \$1 Trillion With Right Rules*, BloombergNEF, <https://about.bnef.com/blog/carbon-offset-market-could-reach-1-trillion-with-right-rules/>.

<sup>9</sup> JPMorgan Chase & Co., *Carbon Market Principles*, p. 11-12, <https://www.jpmorganchase.com/content/dam/jpmc/jpmorgan-chase-and-co/documents/carbon-market-principles.pdf>.

While the voluntary carbon market is not a silver bullet, it is an important tool for both nature-based and engineering-based solutions in enabling the low-carbon transition to occur at a pace and scale commensurate with the climate challenge. In particular, it can help to mobilize capital and reduce costs to aid widespread deployment of climate solutions. We see a growing variety of initiatives aimed at enhancing the integrity and function of the voluntary market, across both nature-based and engineering-based solutions, as well as a corresponding evolution in practices for many market participants.

We therefore respectfully request that the Supervisory Body consider the role of engineering-based removals and their overall importance in enabling meeting the temperature targets outlined in the Paris Agreement.

Finally, we note three additional areas where clarification is needed to maximize the effectiveness of implementation of the Article 6.4 mechanism:

1. **Alignment or harmonization with existing global frameworks.** We would encourage reference to or alignment with existing global frameworks for accounting systems or metrics, such as the GHG Protocol, with a view toward supporting harmonization of disclosures globally to the extent possible.
2. **Clarity on corresponding adjustments.** Clarity on corresponding adjustments is needed to provide the certainty needed for the market to develop and scale successfully.
3. **Clarity on relative treatment of projects not certified under Art. 6.4.** It will be essential to clarify that credits issued under Article 6.4 are not characterized de facto as more or less beneficial as credits from projects accredited by other bodies.

We appreciate the opportunity to provide input on this important work and would be pleased to offer our support in future engagements on this topic.

Sincerely,

/s/

Brian DiMarino  
Head of Operational Sustainability  
JPMorgan Chase & Co.