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To: Supervisory-Body <Supervisory-Body@unfccc.int>

Cc: Erik Osmundsen <erik.osmundsen@verdane.com>; Sasha Olshanetsky <sasha.olshanetsky@verdane.com>

Subject: Call for input 2022 - activities involving removals under the Article 6.4 Mechanism of the Paris Agreement

Hi,

Verdane Advisors AS welcomes the opportunity to submit its views on several documents related to the "Call for input 2022 - Activities involving removals under the Article 6.4 Mechanism of the Paris Agreement". We appreciate the public and collaborative nature of this process, and it is encouraging to see that the Supervisory body has developed a well-worked through proposed mechanism for removals as part of Article 6.4.

Attached are our comments on the different documents mentioned in the call for input. In case of any questions or additional clarification do not hesitate to reach out to me.

Best regards,

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A response to a call for public inputs on A6.4-SB002-AA-A05 (October 2022)

Verdane Advisors AS welcomes the opportunity to submit its views on several documents related to the “Call for input 2022 - Activities involving removals under the Article 6.4 Mechanism of the Paris Agreement”.

Verdane appreciates the public and collaborative nature of this process. It is encouraging to see that the Supervisory body has developed a well-worked through proposed mechanism for removals as part of Article 6.4. Our comments below are focused on the areas that we believe could benefit from further detail or precision in the language.

Requirements for the development and assessment of mechanism methodologies pertaining to activities involving removals (Annex 5 to the SB002 annotated agenda)

1.5.e) Permanence period: Different carbon removals should be treated differently depending on the differing permanence periods. For example, a user should not be able to account for their carbon footprint with a 1 tCO₂ with a <100y permanence the same way as something with significantly longer storage period (1000y+).

1.2.18 Simplified reporting: While simplified reporting is acceptable for monitoring, the scope of this could be clarified. Additionally, new detailed measurements should be implemented as part of re-crediting mentioned in 1.4.32. In the case of long-term storage then there should be a mechanism for periodic more detailed measurements, for example every 15-20 years.

1.3.26 Activity boundary: Activity boundaries should as mentioned include all material emissions and calculated in line with the GHG Protocol, accounting for both upstream, operational, and downstream activities (e.g. emissions related to ongoing monitoring over time), and existing life cycle assessment methodologies.

1.6.42 Avoidance of other impacts: The avoidance of negative environmental and social impacts should consider the full value chain, not just within the operations of the activity, with the same activity boundary as mentioned in the previous point.

5.22 Environmental and socio-economic impact assessments for geological storage: Storage using Enhanced Oil Recovery should be limited and the lifecycle emissions impact of such a method should be considered if this method is used.

Removal activities under the Article 6.4 mechanism (Annex 6 to the SB002 annotated agenda)

3.24.b Removal through engineering/chemical methods (engineering-based activities): Bio-energy Carbon Capture and Storage (BECCS) is not included in the identified types of removal activities. This is surprising to us given the significant emphasis placed on this technology in recent IPCC reports (e.g. [AR6 Mitigation of Climate Change 2022](#)) and other expert reports such as the Energy Transition Commissions “[Mind the Gap](#)” report). In these reports BECCS is identified as a crucial carbon removals technology, see for example table 3.5 on page 506 of AR6 Mitigation of Climate Change 2022 Full Report:

3.4.7 Other Carbon Dioxide Removal Options

Table 3.5: Carbon dioxide removal in assessed pathways. Scenarios are grouped by temperature categories, as defined in section 3.2.4. Quantity indicates the median and 5-95% range of cumulative sequestration from 2020 to 2100 in GtCO₂. Count indicates the number of scenarios with positive values for that option.

CDR Option	Below 1.5°C with no or limited OS		Below 1.5°C with high OS		Likely below 2°C	
	Quantity	Count	Quantity	Count	Quantity	Count
Total CDR	584 (192 to 959)	95	645 (333 to 1221)	123	533 (193 to 895)	294
CO ₂ removal on managed land including A/R	262 (17 to 397)	64	330 (28 to 439)	82	209 (20 to 415)	196
BECCS	334 (32 to 780)	91	464 (226 to 842)	122	291 (174 to 653)	294
Enhanced weathering	0 (0 to 47)	2	0 (0 to 0)	1	0 (0 to 0)	1
DACCS	30 (0 to 308)	31	109 (0 to 539)	24	19 (0 to 253)	91

4.3.3 Additionality: For removals it is crucial to ensure that the implementation of the activity would not have been done otherwise (because of for example other commercial considerations). These types of commercial considerations could for example include increased agricultural yields that may come from improved farm practices (which at the same time increase carbon stocks in soil).

4.3.4. Double counting: in addition to the identified double counting methods, there is another risk of double counting in the case of BECCS or other combined land based and engineered solutions, where credits are generated from reforestation, while at the same time being accounted for in the capture of biogenic CO₂ from point sources. This is important to ensure mechanisms for when there is an intersection between land based and engineered solutions.

4.5.1 Determination of permanence period: The voluntary carbon markets are currently looking at significantly longer permanence periods than the current periods mentioned in the document (42-150 years). For example, market leaders such as [Frontier](#) requires permanence of >1000 years to be acceptable as a permanent carbon removals credit. This has been echoed from several other public purchasers and experts in the carbon removals space, for example [Carbon Direct](#) the [Next Generation](#)

[Carbon Removal Purchase Facility](#). Setting a permanence period of 42-150 years is functionally similar to delaying emissions, which is insufficient if we are going to maintain ourselves within the global carbon budget required over the long term. Therefore, we encourage as long a permanence period as is feasible. This becomes critical to level the playing field between short-lived (<100y), often land-based and long lived (>1000 years), often engineered, carbon removals, which are fundamentally very different in nature and with different impacts on atmospheric carbon levels over time.

4.7.1.186 BECCS removals: We agree that there is a need for a nuanced approach to BECCS and the potential second order consequences. For example BECCS based on waste streams/biogenic byproducts of existing processes (such as in the pulp and paper industry) is significantly more sustainable (providing the underlying forestry is sustainably managed), than BECCS based purely on energy crops grown for BECCS purposes and competing with e.g., food production.

4.8.1.199 Long term storage methods: there are several additional storage methodologies that are long term, e.g., mineralization in underground rock formations (e.g. Carbfix's technology on Iceland), mineralization in cement and/or concrete.