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Call for input on issues included in the annotated agenda and related annexes of the fifth meeting of the Article 6.4 Supervisory Body – Removals agenda item 2.3 parag 11

We would like to submit comments in response to the call for inputs on SB05 agenda item 2.3 paragraph 11, specifically on Information Note A6.4-SB005-AA-A09.

We previously submitted comments on the Information Note A6.4 SB004-AA-A04. That Information Note was very unbalanced between engineering-based and land-based removals. We are not surprised that this generated a large number of inputs from stakeholders seeking to get more balance for engineering based removals. We are pleased to see that the Information Note A09 has more balance, but still exhibits some unsupported bias in certain aspects and does not reflect all the inputs with evidence base on engineering based removals.

Specifically:

Information Note	Comment
Section 3.2 Eligibility. Table 3 Engineering-based. Cons. Engineering-based removal activities are technologically and economically unproven, especially at scale, and pose unknown environmental and social risks (P-12, R-83:a, R-84:a, R-50:c,d).	Please see our submission of 14/03/23 which addressed the environmental impacts of DACCS compared to other removal types (Land and Engineered). For example DACCS could have much less impact on land and water than other removal methods such as afforestation (see Realmonte et al, (2019)).
Section 3.2 Eligibility. Table 3 Engineering-based. Cons. These activities do not contribute to sustainable development, are not suitable for implementation in the developing countries and do not contribute to reducing the global mitigation costs, and therefore do not serve any of the objectives of the Article 6.4 mechanism.	These statements appear to be an opinion and without any evidence base cited. With respect to the statement on not reducing mitigation costs, this statement is wrong. The climate scenario models used by the IEA, most recently MAGICC (IEA WEO 2022 and IEA ETP 2023), are based upon achieving 1.5C with least cost mitigation, taking in account technology maturity and country circumstances. These conclude that in the IEA NZE Scenario there should be 70Mt CO2 pa captured by DACCS in 2030 and 600 Mt pa CO2 by 2050 (ref IEA WEO 2022 and IEA ETP 2023). Its inclusion in the IEA output scenarios means therefore that engineered removals do indeed contribute to reducing the global mitigation costs.

	With respect to sustainable development please see our submission of 14/03/23. For example DACCS could have much less impact on land and water than some land-based options such as afforestation (see Realmonte et al 2019). Specifically, for SDG6 Clean Water, there is the potential for some DACCS technologies to be net producers of water (Beuttler et al 2019, Fasihi et al, 2019, and IEAGHG 2021-05). For geological storage assessed against the sustainable development goals Mikunda et al (2021) conclude "*When evaluated against the SDGs, CCS shows several positive 'enabling' interactions, and fundamentally CCS is 'indivisible' with SDG 13 regarding combating climate change. ……. CCS is therefore a sustainable option to combat climate change and does not prohibit the achievement of any other SDG* ". The IPCC AR6 SYR concludes, with high confidence and in general, that mitigation and adaptation options have more synergies than trade-offs with the SDGs and that those synergies and trade-offs will depend on context and scale of implementation. It also acknowledges that, both engineered and nature-based, CDR plays an important role for addressing 'hard-to-abate' emissions and that both can have adverse impacts (ref IPCC AR6 SYR). It should be for developing countries to decide what reduction and removal types they pursue in the context of sustainable development for their own circumstances. For example Kenya has a strong interest in engineered removals. {ref Alliance for Science blog 2023, illunimem article 2023, also more generally for developing countries in IEA DAC report 2023, Fridalh 2018}. We do not see how a statement can be made here that engineered-based removals do not meet the objectives of the Article 6.4 mechanism, which are: (*a) To promote the mitigation of greenhouse gas emissions while fostering sustainable development;* *(b) To incentivize and facilitate participation in the mitigation of greenhouse gas emissions by public and private entities authorized by a Party;*

	(c) To contribute to the reduction of emission levels in the host Party, which will benefit from mitigation activities resulting in emission reductions that can also be used by another Party to fulfil its nationally determined contribution; and *(d) To deliver an overall mitigation in global emissions.* (Paris Agreement 2015)
Section 3.2 Eligibility. Table 3 Land-based. Cons	Land-based removals, as well as the Pros listed, also carry a similar number of Cons. These should be included, and are provided in inputs such as P-12. We again refer to the balanced discussion of land-based and engineered CDR in IPCC AR6 SYR (ref IPCC AR6 SYR)
Section 7.6.1 Leakage caused by Resource Competition	If this is to apply to Engineering based removals then it should also apply to Land-based.

The IPCC has issued a Fact Sheet on removals. This Fact Sheet reminds us of the need for removals to achieve climate goals, and summarises the different types of removals, both land-based and engineered, observing that all types have positive aspects and also trade-offs and risks. (IPCC CDR Factsheet 2023). Such balance should be reflected in the work of the Article 6.4 Supervisory Body.

We are pleased with the references to the CDM Modalities and Procedures for CCS (Decision 10/CMP.7). Whilst it is correct to note that the IPCC GHG Inventory Guidelines do not cover DACCS at the moment, it should also be noted that the IPCC GHG Inventory Guidelines 2006 has a specific chapter on CCS to cover CO_2 geological storage. We welcome the acknowledgement of the London Protocol's work to be very precautionary on marine geoengineering (ie for research purposes only) and it should be noted that the London Protocol Parties chose to amend the Protocol to allow CO_2 geological storage, being more assured of the science basis, risks and benefits for the oceans. This was undertaken after thorough scientific risk assessments by the London Convention Scientific Group (ref IMO website).

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References

IEAGHG submission in response to 7/CMA.4 on Article 6.4 removals, provided 14/03/23

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Kenya ready for carbon removal, says President William Ruto's climate change Special Advisor - Alliance for Science

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The LC/LP and Climate Change (imo.org)

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IEAGHG is an international collaborative research programme, established in 1991 by the International Energy Agency (IEA). We are autonomous from the IEA. The programme is funded by 18 member countries and 18 organisations. The technology of primary focus is carbon dioxide capture and geological storage (CCS). Our scope includes engineered carbon dioxide removal (CDR) techniques such as direct air capture with storage (DACCS) and bioenergy with CCS (BECCS). Our activities include producing over 360 technical reports (externally peer-reviewed) on all aspects of CCS including technology development and deployment, running the largest conference series on CCS (the GHGT series), operating Networks of experts and Summer Schools, and instigating a scientific journal of impact factor up to 5.11. Our work is used, for example, to inform the IPCC, UNFCCC, IEA, London Convention and ISO, and by USDOE, US EPA and by our other members in the development of climate change mitigation policies and technologies.