6 July 2023

RE: Submission to the Call for Input 2023 - Structured public consultation: Removal activities under the Article 6.4 mechanism

Members of the Supervisory Body to Article 6, paragraph 4 of the UNFCCC Paris Agreement,

The Indigenous Environmental Network (IEN) would like to express deep concern regarding the content and the process through which this consultation was conducted. The timing of the call for submissions' release, the short period allowed for input, as well as the narrow and biased questions, have undermined meaningful engagement, particularly for Indigenous Peoples and grassroots organizations representing communities that are most affected by climate change, carbon pricing, carbon offset and carbon dioxide removal (CDR) projects.

IEN is a non-profit 501(c)3 Indigenous-led organization based in Minnesota, United States with remote offices throughout North America, Turtle Island. For nearly 30 years, IEN has participated and observed The United Nations Framework Convention on Climate Change (UNFCCC), The United Nations Conference on Biodiversity (UNCBD), The United Nations Permanent Forum on Indigenous Issues (UNPFII), The United Nations Office of the High Commissioner for Human Rights (OHCHR) and various other UN fora.

Below, we have gone through the questionnaire for this submission. We would like to reiterate how this questionnaire has been written in a biased manner, which assumes that CDR will be included in Article 6.4 of the Paris Agreement. However, we have attempted to answer the questions in order to put on record our deep concerns regarding carbon pricing, carbon offsets, CDR, and consultation processes with Indigenous Peoples' Organizations.

Cross-cutting questions:

1. **Discuss the role of removals activities and this guidance in supporting of the aim of balancing emissions with removals through mid-century**

This question assumes that removals[1] are a viable way to balance emissions under the aim of keeping warming to 1.5 degrees. In order to reach this goal of the Paris Agreement, there should be a rapid phase out of greenhouse gas emissions. The crucial focus is not about balancing emissions with removals but rather how to phase out global greenhouse gas emission at source to their lowest possible level in a way that is globally equitable.

Removals delay and diminish greenhouse gas emissions phase out, allowing dirty industry to continue business as usual. Emissions reductions through phasing out fossil fuels is the principal and most important way to achieve targets set out in the Paris Agreement, yet under current implemented

[1] We use the term removals, as reflected in the questionnaire, and carbon dioxide removals (CDR) interchangeably.

policies, global temperatures are projected to increase by 3.2 degrees Celsius (IPCC, 2023). Further, studies by organizations such as the International Institute for Sustainable Development (IISD) and the International Energy Agency (IEA) find that new oil and gas fields are "incompatible" with the 1.5 degree Celsius target (IISD 2022, IEA 2023). Therefore, based on the most recent science, removals used as offsetting tools, such as those being explored for inclusion in Article 6.4 are antithetical to phasing out fossil fuels and emissions reductions to the extent necessary to keep warming to 1.5 degrees Celsius.

Biological Removals

Biological removals, including those using forests, peat marshes, coastal wetlands, and in agricultural contexts are not viable as a way to reduce greenhouse gas emissions for a number of reasons. From a physical science perspective, the carbon extracted and combusted from the Earth's crust increases greenhouse gasses in a biological system that is already saturated with carbon dioxide. Further, the longevity and exact amount of carbon stored in biological systems ("sinks") lack scientific consensus due to imprecise measuring, or in the case of ensuring longevity of sinks, is virtually impossible to guarantee. For example, in the case of forests, scientists have argued for years that it is old growth and existing forests that have the capacity to contain large amounts of carbon dioxide due to the ability to store in trunks, downed wood, leaf litter, and soils (Harmon et al., 1990, McGarvey et al., 2015).

The science surrounding biological removals reveals a false equivocation between fossil carbon and biological carbon.[2] As stated above, fossil carbon and biological carbon, including terrestrial (land-based) and ocean carbon, belong to distinct cycles. Mackey et al. (2013) effectively explain why using land-based carbon sinks as offsets for emissions from fossil fuel combustion is scientifically flawed. They demonstrate that the current potential for terrestrial removal and storage primarily results from the decline of carbon sinks due to historical land use.[3] As forests and ecosystems have finite capacities to sequester carbon, increasing carbon in these sinks merely increases the burden on existing biological systems. In contrast, the formation of fossil carbon was meant to be permanently locked away. When we extract and burn fossil fuels, we release carbon from permanent storage into the active carbon cycle, leading to an overall increase in land, ocean, and atmospheric carbon levels. Once this additional carbon enters the system, natural sinks cannot remove it on a relevant timescale for climate mitigation.[4] **The 6.4 Supervisory Body must recognize that the process of shifting fossil carbon into the biosphere cannot continue indefinitely and no amount of biological sequestration in the coming years, or decades, can compensate for or offset the millions of years it takes to sequester fossil carbon, especially when understanding the increasing rates of deforestation, soil damage and ocean acidification. The time scales involved in these processes are fundamentally different and incompatible.**

With the realities of increasing forest fire rates, increased and intensifying extreme weather events, ocean acidification, deforestation, decreasing soil quality, pollution, disease, and pests, among others, the longevity of projects used as biological removals is far from guaranteed. For example, mangrove restoration projects are easily threatened by changes in groundwater flows (which are impacted by changes in terrestrial vegetation cover and by droughts especially, both of which are nearly impossible

[2] W. Carton et al. 2021. Undoing Equivalence: rethinking carbon accounting for just carbon removal. Front. Clim. 3: 664130. Retrieved from: https://www.readcube.com/articles/10.3389/fclim.2021.664130

[3] Mackey, B., Prentice, I. C., Steffen, W., House, J. I., Lindenmayer, D., Keith, H., et al. (2013). Untangling the confusion around land carbon science and climate change mitigation policy. *Nat. Clim. Chang.* 3, 552–557. doi: 10.1038/nclimate1804

[4] Steffen, W., Fenwick, J., and Rice, M. (2016). *Land Carbon: No Substitute for Action on Fossil Fuels*.

to avoid in the long-term) and sensitivity to excess nutrients and to reduced sediment supply (Adame et al., 2020). In the case of agricultural soil carbon sequestration (ASCS), carbon dioxide storage is considered volatile given the ease of land-use change and even in the absence of land-use change face significant reversibility risks (Murray et al., 2006). Even long-standing and old growth forests, which have been regarded as reliable carbon sinks, risk becoming *sources* of carbon emissions because of the increase in forest fires due to climate change (Brando et al., 2020; Gramling, 2020).

The lack of scientific evidence surrounding the ability of current or near-term biological removals to sequester carbon over the long-term poses a significant risk of reversals for biological carbon removals, which is risky both in the physical sense of carbon entering the atmosphere but also for the integrity and/or functionality of a carbon market. Unreliable and fake carbon credits continue to undermine the entire mitigation plan, which should force a reevaluation of the carbon market and pricing systems altogether because they continue to undermine our ability to limit warming to 1.5 degrees Celsius.

Physical threats to removals projects aside, there is also the question of accurately predicting and measuring the amount of carbon sequestered (example: often carbon sequestration in trees is measured by the tree species but doesn't take other ecosystem factors into account). In the case of forest ecosystems and trees for example, there is a wide range of potential carbon dioxide sequestration. Scientists estimate it to be about 40-100 Gt with some even going as high as 260 Gt (Lewis et al., 2019; Bastin et al., 2019; American University). Not only is this range so wide that it is basically useless, it cannot be accurate because absorption depends on many changing and unpredictable factors, particularly the moisture and heat of tropical forest areas (Lewis et al., 2019).

These scientific questions aside, there is the matter of feasibility. All combined land ecosystems can hold between 40-100 additional gigatonnes of carbon dioxide (GtCO2)--but last year alone global carbon dioxide emissions were estimated to be 36.8 Gt, a number that is steadily increasing (Lewis et al., 2019; IEA, 2023). Simply put, current carbon emissions are far greater than Mother Earth's ability to hold carbon. It is also more logically and scientifically sound to prevent further carbon (and other greenhouse gasses) from entering the atmosphere than to release carbon and then attempt to sequester it later, which creates an ex post facto issue. Even if this were not the case, and even if the biosphere could theoretically hold endless quantities of fossil fuel based greenhouse gasses, there is simply not enough available land on Mother Earth to meet the biological removal pledges already made by countries (Dooley et al., 2022).

Engineered Removals

Removals based on engineered technology including carbon capture and storage (CCS/CCUS), bioenergy and carbon capture and storage (BECCS), and direct air capture (DAC) are unproven technologies. The UNFCCC's Information Note on Removal Activities Under the 6.4 Mechanism raises concerns based on the effectiveness of engineered removals by stating that "engineering-based removal activities are technologically and economically unproven, especially at scale, and pose unknown environmental and social risks" (Pg. 18). The UNFCCC Information Note further argues that engineered removals do not serve the objectives of the Article 6.4 mechanism, that they are not suitable for use in developing countries, and engineered removals do not contribute to sustainable development goals.

Moreover, Smith, et. al. (2016) raise similar concerns, particularly around negative impacts that BECCS, DAC and other CDR technologies present. They stress that "biophysical and economic

resource implications may directly impose limits on the implementation of [negative emissions technologies] in the future, but they may also indirectly constrain [these technologies] by interacting with a number of societal challenges facing humanity in the coming decades, such as food, water and energy security, and thereby sustainable development" (Pg. 48).

Importantly, the practice of storing carbon dioxide in these locations is an older and existing technology known as Enhanced Oil Recovery (EOR). It has been used for years by the fossil fuel industry and should not be considered a new technology. The 2021 Global CCS Institute reported that 22 of the 29 active commercial CCS facilities and projects are used for EOR. EOR directly contradicts the aim of emissions reductions by using sequestered emissions to squeeze out remaining fossil fuels from their sites. The greenhouse gas emissions that are combusted from the extracted fossil fuels through EOR are never counted in the greenhouse gas assessments. What is worse, when these unaccounted for emissions are then traded for carbon offsets.

The long-term, underground storage of carbon dioxide from engineered removals pose severe and diverse threats. As carbon dioxide is transferred from point to point, it is physically imperative that it is kept under high pressure to convert the gas to a liquid state, which many studies agree pose health and safety risks (Onyebuchi et.al., 2018). Further, the potential for leakage back into the atmosphere from faulty pipe infrastructure, transfer stations and hubs, is certain based on statistics from natural gas pipelines (Ibid.). Additional leakage may result from wells containing certain minerals and pH levels (Zhang, et.al., 2019). While the geologic storage of carbon dioxide has been hailed as one of the most secure places for storage, the injection of carbon dioxide into deep saline aquifers can cause pressure buildups—thereby impacting land stability and groundwater health—as far as 100km from the injection site (Kelemen, 2019).

Lu, et. al. (2020) review carbon dioxide transport pipelines with the authors concluding how the current industry suffers from poor management, while noting that: 1) the impurities of carbon dioxide present concerns for infrastructure integrity, 2) efforts to utilize corrosion-free transport materials have been slow, and 3) there is no widely used system to address issues of pipeline safety and risk assessment.

Finally, the places most considered for underground storage are former oil and gas sites. In the US and throughout the world, these sites are located on or next to Indigenous Peoples' territories. Engineered removals are already perpetuating an environmental justice crisis on Indigenous Peoples' inherent rights jurisprudence, lives and livelihoods in North America where CCS, DAC and BECCS are being most rapidly implemented globally.

Additional concerns around engineered removals center around their effectiveness to actually reduce emissions, particularly, around the full scope of emissions and harms associated with the use of these technologies. In a comprehensive review of life cycle analysis (LCA) reports on CDR technologies (including CCS, BECCS, DAC, among others), Terlouw, et. al. (2021) find that studies routinely fail to adequately address the environmental impacts these technologies pose to lands, waters, and ecosystems. For example, Direct Air Capture with Carbon Storage (DACCS) requires substantial energy use, and is vulnerable to underperformance and/or failure. Realmonte, et. al. (2019) estimate that betting on DACCS to achieve climate goals, in spite of its vulnerabilities could actually increase warming by at least 0.8 Celsius. Further still, modeling and data collections on the LCAs of engineered removals are not clear or transparent (Ibid.). LCA's demonstrate that emissions reductions are often less than expected. Relying on CDR technologies—and banking on their promises above actually reducing emissions—will lead to greater planetary harm. Rather than relying on uncertain technology,

the IPCC AR6 report warns—with high confidence— that "feasible, effective, and low-cost options for mitigation and adaptation are already available" (Pg. 28).

2. **What are the roles and functions of the following entities in implementing the operations referred to in this guidance?**

Under Decision 3/CMA 3, section B: "Governance and Functions," the Supervisory Body has a mandate and was explicitly tasked with establishing requirements and processes that respect and promote "human rights, the right to health, the rights of Indigenous Peoples, local communities, migrants, children, persons with disabilities, and people in vulnerable situations." Additionally, the body must consider gender equality, empowerment of women, intergenerational equity, and ensure the application of robust social and environmental safeguards.

Given the complexities, uncertainties, and unaddressed risks associated with removals, especially for Indigenous Peoples, we urge the 6.4 Supervisory Body to prioritize the Precautionary Principle and prevent harm to Indigenous Peoples, local communities, and rural/coastal communities affected by such projects.

Questions on specific elements

A. Definitions

Discuss the role and potential elements of definitions for this guidance, including "Removals".

Although the Supervisory Body on Article 6.4 has repeatedly pointed to the IPCC's Sixth Assessment Report (AR6) as calling for using removals, in truth the role of removals in the AR6 report is addressed in a very limited way. In fact, the IPCC AR6 report states that removals should only serve as a tool to address "hard-to-abate residual GHG emissions," whereas the primary tool for meeting targets is emissions reductions (Pg. 28). Therefore, the role of removals is at best minor and supplementary. Removals are not a climate solution in their own right and are not a substitute for greenhouse gas emissions reductions.

In this context, a clear, universal and binding definition of "hard to abate residual emissions" is vital. Buck, et. al. 2023 find that, on average, Annex 1 countries classify 18% of their country's total GHG emissions as "residual."[5] The United States claims 24.5% (Ibid.). Countries cannot allow inconvenient or costly excuses to take the place of actual emissions reductions. If the definition of "hard-to-abate residual GHG emissions" is not strict and universal, CDR and carbon markets will undoubtedly increase, along with the risks and concerns outlined here.

B. Monitoring and Reporting

2. Discuss any further considerations to be given to the core elements for monitoring and reporting in A6.4-SB003-A03; where possible, identifying the applicable scope, i.e., relevance to all 6.4 mechanism activities, to removals activities, or to specific removal activity categories or types.

IEN would like to express deep concern surrounding the integrity of existing monitoring, verification and reporting (MVR) as it pertains to A6.4.

[5] Buck, et. al. (2023) analyzed the long-term low emissions development strategies (LT-LEDS) of 18 Annex 1 countries and found that "residual" emissions comprise substantial portions of countries LT-LEDS.

There is a fundamental conflict of interest on the side of the private corporations and organizations that provide MVR services. As they are paid for their services, they have an incentive to verify carbon removals projects so that they are re-hired for future projects. Effectively, regardless of a project's actual ability to sequester carbon, third party MVR providers are motivated to be lenient or even outright fraudulent in their legitimizing of carbon removal projects. This conflict of interest is built into the structure of how MVR is conducted and short of a significant restructuring of how and who does MVR, there is no clear way around it.

Moreover, there is often a second conflict of interest present because most of the companies that conduct MVR are simultaneously implementing carbon offsetting projects themselves (Chen & Letmathe 2020). In these cases it is simply not possible to provide the accurate, impartial, economic, and objective services required for MVR (Kohl et al., 2019). More than that, it nullifies the purpose of having a third party conduct the MVR of carbon credits in the first place.

The conflict of interests inherent in the MVR process combined with the threats to Indigenous People's inherent rights jurisprudence and sovereignty renders existing MVR ethically dubious and functionally ineffective (Rifai et al., 2015). Lessons from REDD+ and the CDM have shown us that MVR third party verifiers have repeatedly harassed and targeted Indigenous Peoples (direct research from author).

Further, IEN has serious concerns about the increasing use of satellite and other technological methods of monitoring on or near Indigenous Peoples' territories (Mitchell et al., 2017). These types of monitoring systems violate Free, Prior and Informed Consent (FPIC) because Indigenous Peoples are rarely informed that their territories will be monitored by technologies they are unaware exist.

MVR is dangerous because it creates a false and unverifiable sense of having successfully sequestered carbon, when in fact, there is no real scientific evidence to show a clear and reliable method to measure, monitor, verify or report how much carbon is sequestered biologically or engineered. At best, there is a human-made mathematical equation that is re-worked and shifted across sectors. At worst, MVR is completely made up (direct research from author with third party verifiers).

G. Avoidance of other negative environmental, social impacts

Discuss considerations to be given to core elements for avoidance of other negative environmental, social impacts; where possible, identifying the applicable scope, i.e., relevance to all 6.4 mechanism activities, to removals activities, or to specific removal activity categories or types.

IEN firmly supports a built-in grievance structure that allows Indigenous Peoples and local communities to file grievances and be released from any legal documents that tie their involvement in any carbon offset, pricing and trading systems. It is of utmost importance that the SB develops a robust grievance mechanism in collaboration with Indigenous Peoples to be effectively integrated into Article 6.4. Furthermore, any processes of consultation and implementation of Article 6.4 must respect, protect, and enhance social and environmental safeguards, especially Free, Prior, and Informed Consent (FPIC), and the rights of Indigenous Peoples as articulated by the United Nations Declaration on the Rights of Indigenous Peoples. All activity proponents, registry administrators, host parties, and other stakeholders share the responsibility to uphold these rights.

IEN has worked to oppose carbon trading and carbon offsets for over two decades. The Clean Development Mechanism (CDM) paved the way for large-scale offsets programs giving a free pass to polluting industries in the Global North. For almost two decades we have witnessed the CDM fail to uphold Indigenous Peoples' rights and sovereignty, address climate change, or reduce emissions.

Collectively, over these two decades, IEN staff have spoken with and listened to Indigenous Peoples and communities in over 25 countries who are living next to CDM projects. Not once have we observed a project that reduced emissions or supported the impacted communities. On the contrary, we have listened to Indigenous Peoples and local communities' experiences related to violence, land evictions, increased polluting, silencing tactics and grief both in the Global North and South.

IEN has serious concerns that Article 6.4 will continue to be a fraudulent mechanism and will generate profits for the biggest polluters in the world, delay real action on climate change that would phase out fossil fuels, and continue to cause human rights violations and violence against Indigenous Peoples on their sovereign territories. The failure will continue because the basic concept of carbon offsetting and carbon markets are flawed.

Carbon removal credits are risky for the climate and for frontline communities, particularly Indigenous Peoples. Voluntary markets have included credits generated from land-based removal activities such as REDD and other forest offsets. Far too often, forest offset brokers and managers have targeted Indigenous Peoples, driven up land prices, and forced Indigenous communities from their territories. Building in removals to Article 6.4 will expand carbon markets and allow dubious projects to be developed at the expense of Indigenous Peoples' inherent rights jurisprudence, lands, livelihood, and human rights. These are not concerns only brought forth by those on the front lines, but by the IPCC as well. In fact, their AR6 in relation to biological removals warns against "adverse socio-economic and environmental impacts, including on biodiversity, food and water security, local livelihoods and the rights of Indigenous Peoples, especially if implemented at large scales and where land tenure is insecure" (page 21).

We strongly urge the SB and CMA to prohibit the use of carbon removals as carbon offsets in Article 6.4, strongly recommend the bodies reconsider the entire premise of carbon offsets, pricing and trading altogether as the main mitigation program, and demand a plan to phase out greenhouse gasses at source.

Sincerely,
Indigenous Environmental Network