Article 6 rules must be consistent with the science

With the remaining carbon budget for 1.5°C almost exhausted, no form of offsetting should be treated as equivalent to cutting fossil fuel emissions at source.

In this context we raise concerns about discussions at COP31 on Article 6.4 guidance to the Supervisory Body (SBM) under the Paris Agreement Crediting Mechanism (PACM), which could further weaken the SBM's work on methodologies, guidance and standards.

While the standard on non-permanence and reversals and the reversal risk assessment tool adopted by the SBM In October 2026 are a step forward in recognising reversal risk**, these rules still fall short of what environmental integrity requires. They allow temporary carbon storage in forests, soils and other ecosystems to be credited against fossil fuel emissions that will affect the climate for thousands of years.** This undermines the critical role of ecosystems in stabilising the carbon cycle, which depends on ending both fossil fuel use and deforestation.[1,2]

Scientific evaluations document extensive over-crediting, non-additionality and limited durability in carbon crediting schemes.[3–6]

We therefore call for a precautionary, science-based approach in the SBM's work on methodologies, guidance and standards, particularly regarding permanence, reversal risk and physical remediation:

1. Distinguish durable from temporary storage

Crediting removals requires verifying that atmospheric CO_2 is durably stored. Geological sequestration is the only form of storage reasonably considered permanent on climate-relevant timescales, although this remains untested.

Protecting ecosystem carbon stocks is essential for climate stabilization, but this carbon is vulnerable to disturbance, land-use change and climate impacts. Temporary biospheric storage is therefore not commensurable with fossil fuel emissions, whose climate influence persists for millennia.[7,8]

The PACM must distinguish *durable* geological storage from *temporary* ecosystem storage, through separate durability categories of carbon credits (A6.4ERs). Without such categories, only geological removals should qualify as A6.4ERs.

2. Set a credible standard for reversal risk

Reversal risk includes loss of credited storage through fire, harvest, pests or climate impacts. Land-based assessments must account for ecosystem integrity and resilience to avoid overstating carbon stability or incentivising high-risk landscapes, such as monoculture plantations and degraded forests.[9]

The methodological tool must establish scientifically robust ratings with a traceable empirical basis, particularly for "negligible risk", which determines monitoring and remediation obligations. A 100-year assessment is inadequate against fossil CO_2 impacts lasting thousands of years.

Negligible reversal risk should mean that the probability and magnitude of loss result in no more than 0.1% of issued A6.4 emission reductions being reversed over a minimum 1,000-year assessment period.

3. Require physical remediation of reversals

The SBM is considering insurance, monetary reserves and third-party guarantees as alternatives to physical buffer pools, yet evidence that these can address millennial-scale risks is limited.[10] Financial compensation does not restore atmospheric integrity: reversals require verifiable physical replacement of lost carbon storage.

Any insurance, monetary reserve or third-party guarantee must guarantee the replacement of reversed tonnes with permanent physical mitigation, not financial damages. Any remediation mechanism must be fully capitalised, independently governed and legally enforceable for as long as the carbon remains at risk, so that no reversal is left without a party obligated to replace it.

Reversal risk, especially for land-based removals, remains high and uncertain. Article 6.4 must recognise the asymmetry between fossil emissions and temporary biospheric storage, apply stringent durability standards and require physical remediation rather than compromise environmental integrity to preserve market supply.

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*denotes member of the Lethal Humidity Global Council

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