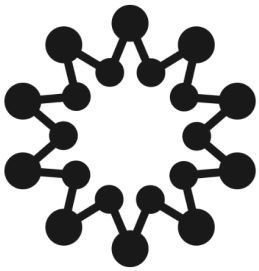

THE HBAR FOUNDATION

Response of The HBAR Foundation to the Article 6.4 Supervisory Body's "*Call for input 2024 - Issues included in the annotated agenda and related annexes of the fourteenth meeting of the Article 6.4 Supervisory Body*"[1]

Sustainable Impact Fund
September 2024

[1] Authored by Wes Geisenberger (Vice President, Head of Sustainability and ESG), Jonathan Rackoff (Vice President, Head of Global Public Policy), and Hania Othman (Director, Sustainable Impact). Submitted to the Supervisory Body via email at A6.4mechanism-info@unfccc.int on 1 October 2024 with the subject line: "SBM 014 annotated agenda and related annexes."

INTRODUCTION

The HBAR Foundation Sustainable Impact Fund (THF-SIF) welcomes this opportunity to comment with respect to issues surrounding the annotated agenda and related annexes of the fourteenth meeting of the Article 6.4 Supervisory Body – and specifically "*A6.4-SBM014-AA-A09 - Draft standard: Application of the requirements of Chapter V.B (Methodologies) for the development and assessment of Article 6.4 mechanism methodologies*."

We are a US$100+ million climate-tech focused grant fund operating within the Hedera Hashgraph distributed ledger technology (DLT) ecosystem. Hedera is an environmentally sustainable proof-of-stake network capable of high speeds and best-in-class security – the attributes necessary to address the real-world climate data infrastructure challenges. As a fund, our mission is to drive pro-climate and nature-positive behaviors that fight climate change, protect biodiversity, and achieve the UN Sustainable Development Goals (SDGs) by catalyzing transformative, open-source carbon accounting and climate finance solutions – ultimately bringing the balance sheet of the planet to the public ledger.

To this end, we have allocated tens of millions of dollars in grant funds to accelerate digitization within climate markets, from registry digitization, to digital standards improvement, to project developer tech readiness and stakeholder education. We have supported the creation of powerful new Digital Public Goods (DPGs) to increase transparency, auditability, and equity across environmental projects. We believe those investments will strengthen trust and ambition in climate negotiations; improve the credibility and integrity of existing decarbonization mechanisms; provide real-time visibility into the effectiveness of new emissions reduction and sequestration approaches; help to redirect private capital to environmental preservation and regeneration through carbon project development; and democratize ownership of the resulting natural capital, reallocating economic power to precisely those local and indigenous communities in the Global South least responsible for, yet most vulnerable to rising climate impacts.

COMMENTS

The Importance of Digitizing Methodologies

Carbon credits are intangible assets wholly dependent for their value on demonstrable environmental benefit. In order for market-based mechanisms such as Article 6.4 of the Paris Agreement to succeed in facilitating robust and growing emissions reductions and removals, it is essential for buyers to trust and have the ability to transparently verify the methodologies – the processes, methods, tools, roles, and actors – used to calculate and confirm the veracity of those benefits. Numerous offset methodologies are in circulation today. We rely on them to establish baselines, define additionality, address leakage, and much more.

In this way, high quality, fit-for-purpose methodologies serve as the backbone of carbon-crediting mechanisms by providing standardized, credible approaches for measuring, reporting, and verifying (MRV) emissions reductions or removals – in short, by ensuring that

carbon assets bought and sold represent genuine environmental benefits justifying their price. Clearly, for a healthy market to emerge under 6.4, the importance of broadly vetted, scientifically sound methodologies encompassing all policies, protocols, processes, and procedures for delivering and documenting impact cannot be overstated. Yet, traditionally, methodologies in the VCM have often been opaque, inaccessible, and difficult to compare or assess. Often developed and applied manually, their limitations – from being slow to adapt to changes in technology or scientific understanding, to insufficient granularity to assess complex systems, to human factors leads to error in data collection and analysis processes.

For transparent, science-based definitions and universal industry standards to emerge that are capable of driving project quality across impact categories, it is essential that these methodologies – both existing libraries and newly developed ones – be made available in digital form. Digitization requires leveraging modern digital infrastructure technologies like Hedera's open-source Guardian solution. This requirements-based, DLT-enabled tokenization service and policy workflow engine for minting and creating digital MRV with auditable links to climate assets such as carbon emissions, carbon offsets, renewable energy certificates, and conservation tokens works in conjunction with Hedera's public distributed ledger to facilitate the comparatively rapid and inexpensive digitization of existing libraries of analog methodologies as well as production of novel methodologies in natively digital form. By enabling users to rapidly digitize and open-source methodologies, the Guardian avoids the hazards of manual approaches while enabling a trusted, transparent, credibly accounted for impact via digital-first activity data correlated to finance, as well as accounts that can both receive value and attest data from stakeholders in qualifying 6.4 carbon projects.

This is why we urge the SB to require digitization of mechanism methodologies upfront: it is feasible and cost-effective today using existing tools, and it will give climate scientists, project developers, carbon registries, environmental regulators, and digital offset buyers straightforward, equitable access to methodologies that are auditable and cross-comparable with respect to enforcement rules, operational data, and project participants, with independent review enabled by default in an open-source format directly linking assets to their corresponding trust chains. The resulting improvements they bring – in data granularity, accuracy, and real-time adaptability, among others – will be particularly critical under Article 6.4, with corresponding risks in their absence to any framework for international carbon trading that aligns with national commitments under the Paris Agreement. To wit:

Enhanced Data Granularity and Accuracy

A major advantage of digitized methodologies is the ability to capture highly granular data. In carbon crediting, small discrepancies in data collection or analysis can have large implications for the integrity of the credits issued. Digitization allows for real-time data collection through sensors, remote monitoring, and automated data management systems. These systems can track emissions at a more detailed level than manual methods, ensuring that reductions or removals are accurately measured and reported.

This increased granularity enables more precise baseline setting, which is essential for ensuring that emissions reductions are truly additional and not merely business-as-usual activities. Traditional analog methods may rely on generalized or outdated data, leading to over- or under-crediting. Digitized methodologies, in contrast, allow for real-time adjustments based on current conditions, ensuring that baselines reflect actual emissions levels and potential reductions.

Improved Transparency and Trust

Transparency is a cornerstone of effective market-based mechanisms, especially now, in the face of high profile criticism of the voluntary carbon market that have, fairly or not, damaged its reputation at a time when, if anything, dramatic increases in credibility and environmental integrity were needed to drive demand. Article 6.4 will not be immune from these background attitudes. Without clear, accessible data, stakeholders – including carbon project developers, climate financiers, government signatories of the Paris Agreement, buyers of 6.4ERs, and national and supranational environmental regulatory – may doubt the validity of the credits being issued. This doubt risks undermining the SB's legitimacy and social license to operate, threatening the Mechanism's success.

Digitizing methodologies solves for these concerns by dramatically enhancing transparency via auditable, traceable records of all the data and calculations used in the crediting process. A requirements-based, DLT-enabled rules engine such as Hedera's open-source Guardian solution can document each step in mechanism methodologies, from data collection to final 6.4ER issuance. This openness builds trust among stakeholders, because all parties can freely access and verify the same data using the same tools, reducing the potential for disputes or inconsistencies. Moreover, automated systems reduce the risk of error due to human factors, further ensuring that the data is accurate and reliable.

Adaptability to Changing Conditions

The world of climate action is dynamic, with scientific knowledge, technology, and policy frameworks constantly evolving. Methodologies need to be flexible enough to adapt to these changes, so that ever more precisely defined challenges may be answered by narrowly tailored, fit-for-purpose solutions. Traditional, analogue methodologies, by contrast, are static, lacking the infrastructure necessary to keep pace with evolving requirements. This ossification leads to outdated baselines, crediting approaches that fail to reflect current science, an inability to respond to changing market conditions, and a range of other maladaptive imprecisions.

Digitized methodologies, on the other hand, can be updated quickly and efficiently within a rules engine. As new data becomes available—whether through advancements in emissions tracking technology or updates in national climate policies—these methodologies can be adjusted in real time. This ensures that the crediting process remains relevant and aligned with the latest scientific and policy developments.

Streamlined MRV Processes

Measurement, reporting, and verification (MRV) are critical components of any carbon crediting mechanism. However, traditional MRV processes can be time-consuming, expensive, and prone to errors. Digitization streamlines these processes by automating data collection and analysis, reducing the need for manual intervention. For example, remote sensing technologies can automatically and continuously monitor emissions from a project site, feeding real-time data into the rules engine. This data can then be analyzed to calculate emissions reductions, greatly reducing the time and cost associated with MRV. Furthermore, automated systems can apply standardized methodologies consistently across projects, ensuring uniformity and fairness in crediting.

Mitigating the Risk of Non-Permanence and Leakage

Various perennial challenges to environmental integrity are faced by every carbon-crediting mechanism. Two include: non-permanence (the risk that carbon sequestered will be re-released) and leakage (the displacement of emissions to other areas). Here again, digitizing mechanism methodologies build the technology infrastructure needed to mitigate these risks – e.g., by enabling incorporation of real-time monitoring and predictive analytics into the crediting process. A digitized system can continuously track a forest project's carbon sequestration levels, flagging any signs of deforestation or other degradation that could lead to non-permanence. Similarly, by integrating broader datasets – such as economic activity in nearby regions – a rules engine can assess the likelihood of leakage and adjust crediting accordingly. These automated processes ensure that potential risks are identified and addressed early, preserving the integrity of the credits issued.

Implications for Crediting Mechanisms Without Digitized Methodologies

The absence of digitized methodologies in Article 6.4 would pose acute risks to the credibility and effectiveness of the mechanism, both initially and over time. Without digitization, A6.4 methodologies may lack the granularity needed to assess emissions reductions precisely, accurately, and transparently, potentially leading to over-crediting or under-crediting, or, nearly as damaging, simply a perception of the same. In either case, faith in the environmental integrity mechanism-produced assets will be undermined, creating or allowing to persist destructive doubts that 6.4ERs may not in fact represent real, additional emissions reductions.

Moreover, without the automation only digitization can enable, MRV processes will continue to rely on manual data collection and analysis, which can be slow, expensive, and prone to errors. This not only increases the cost of participating in A6.4 markets, but also delays the issuance of credits, limiting the scalability of climate action. Static, manual-input heavy methodologies are simply less nimble, less able to adapt to changes in scientific knowledge or policy frameworks. This means that resulting credits issued may become outdated or irrelevant over time.

And again, transparency stands as a key concern. Without a fully digitized market, stakeholders will have limited visibility into how credits are calculated, which risks eroding trust

at a time when confidence in these systems has never been more important. Without transparency, resolving disputes and rebuting criticism become significantly harder, which may create or allow opportunities for fraud or manipulation to flourish that damage the credibility of the mechanism even further.

In contrast, the benefits of digitizing methodologies are clear. A digitized system enhances data granularity and accuracy, ensuring that credits are issued based on real, verifiable emissions reductions. It improves transparency, fosters trust among stakeholders, and makes it easier to scale climate action. By automating MRV processes, digitization reduces costs and speeds up the crediting process, making carbon markets more efficient and accessible. Finally, digitized methodologies are adaptable to changes in technology, science, and policy, ensuring that crediting mechanisms remain relevant and effective over time.

CONCLUSION

It is not sufficient, in our view, to urge – as Paragraph 26(g) does – that mechanism methodologies contain provisions ensuring "where appropriate, the use of remote sensing and digital technologies to enable transparent, accurate and credible calculation and estimation of emission reductions and removals." Digitizing methodologies is not merely a nice-to-have technical upgrade, but rather a necessary step for ensuring the credibility, transparency, and scalability of the Article 6.4 mechanism. As the global community intensifies its efforts to combat climate change, robust, data-driven methodologies will be essential for tracking progress and ensuring that carbon markets deliver real, measurable climate benefits. Without digitization, these methodologies risk becoming outdated, inaccurate, and opaque, undermining the integrity of the entire carbon market system.