

October 7, 2022

Christopher Kirkpatrick  
Secretary of the Commission  
Commodity Futures Trading Commission  
1155 21st Street NW  
Washington, DC 20581

*Re: Request for Information on Climate-Related Financial Risk  
CFTC-2022-0029-0001*

*Via: CFTC Comments Portal (<https://comments.cftc.gov>)*

Secretary Kirkpatrick:

Thank you for the opportunity to provide the Commodity Futures Trading Commission (CFTC) feedback regarding its Request for Information (RFI) on Climate-Related Financial Risk. Mitigating risks from increasingly severe and frequent weather events as well as the transition to a net-zero, low-carbon economy is critical for a sound financial system.

Hedera Hashgraph (Hedera) is a third-generation distributed ledger technology (DLT) with features unique to modern blockchains, including best-in-class environmental sustainability (e.g., carbon negativity),<sup>1</sup> ultra-low energy consumption, and industry-leading security. We are overseen by the Hedera Global Governing Council<sup>2</sup>, which includes up to 39 highly diversified organizations that lead the Hedera network. Each Council member has a shared responsibility for the ongoing innovation, stability, and continued decentralization of the Hedera network.

The HBAR Foundation (THF) is an impact-driven accelerator launched at the end of 2021 to support adoption and growth of Hedera's public distributed ledger network. Neither issuer of Hedera's native cryptocurrency (the HBAR) nor a member of its governance body, THF operates independently to grow Hedera's ecosystem through VC investments, thought leadership, and policy advocacy. For example, through our Sustainable Impact Fund (SIF) we stimulate development of Hedera-enabled transformative climate-tech and climate-finance solutions to sustain and regenerate our planet, with the goal ultimately of bringing the environmental balance

---

<sup>1</sup> <https://hedera.com/blog/going-carbon-negative-at-hedera-hashgraph> Hedera has purchased carbon credits against what is already a minimal amount of energy use by our platform. In addition, a study led by University College of London (UCL) has demonstrated that Hedera uses the lowest amount of energy per transaction than any other DLT in their data set.

<sup>2</sup> <https://hedera.com/council>

sheet of the planet to the public ledger.<sup>3</sup> Our investee ecosystem includes a broad array of companies and non-profit organizations committed to helping the voluntary carbon markets scale with integrity. Examples include DOVU<sup>4</sup>, a Hedera powered ‘trust layer’ for carbon offset integrity that offers granular tracking of carbon offset credits, so that buyers have confidence in the origin and source of the credits. Also built on Hedera is a powerful Digital Measurement, Reporting, and Verification (dMRV) tool called the Guardian, built by Envision Blockchain in close collaboration with the HBAR Foundation and Swirlds Labs.<sup>5</sup> This Policy Workflow Engine (PWE) enables fast, cost-effective development of applications delivering tailored, standards-compliant tokenization implementations in the ESG space.<sup>6</sup>

Hedera and the THF appreciate the commitment of the Commodity Futures Trading Commission (CFTC) to better understand climate-related financial risks. We are dedicated to enhancing our distributed ledger technology platform to continue to meet real-world requirements in the carbon credits market as they evolve. Our organizations look forward to engaging with the Office of Technology Innovation (OTI) at the CFTC to ensure our enhancements in this area are congruent with current regulations, in keeping with the principle of a ‘responsible development of digital assets’.

In addition, our organizations are prepared to share our time and expertise in advancing efforts to tackle climate change and the transition to a clean and reliable electricity grid. Given the Commodity Exchange Act (CEA) is broad in terms of determining what is a commodity, and to the extent that there are assets in the form of carbon credit futures and options that are traded based off of voluntary carbon credits, we recognize and appreciate the role of the CFTC would be to ensure there is no fraud or manipulation in the underlying carbon-credit spot markets. All of the projects mentioned above that are being developed on the Hedera network benefit from the underlying unique hashgraph algorithm. This highly secure and computationally efficient example of DLT attracts exactly the profile of free market participants who are interested in developing a functioning, fair, and transparent marketplace for carbon credits such as offsets, removals, or other climate-focused assets in biodiversity, water rights, and conservation. That is why we believe we can help you meet the goals that Chairman Behnam has described in finding ways within the CFTC’s jurisdiction to enhance the voluntary carbon markets ecosystem in a way that can help meet our climate goals of being carbon neutral by 2050.

---

<sup>3</sup> <https://www.hbarfoundation.org/blog-post/building-on-the-sif-ecosystem>

<sup>4</sup> <https://hedera.com/users/dovu>

<sup>5</sup> <https://envisionblockchain.com/introducing-the-guardian/>

<sup>6</sup> <https://github.com/hashgraph/guardian>

Our response is limited to questions regarding the voluntary carbon markets and digital assets based on the nature of our expertise and potential benefits that our insights can provide the CFTC.

Sincerely,

A handwritten signature in black ink, appearing to read "Brett McDowell". The signature is fluid and cursive, with the first name "Brett" being more prominent than the last name "McDowell".

Brett McDowell  
Chair  
Hedera Hashgraph LLC

A handwritten signature in black ink, appearing to read "Jonathan Rackoff". The signature is elegant and cursive, with the first name "Jonathan" being more prominent than the last name "Rackoff".

Jonathan Rackoff  
VP, Head of Global Policy  
The HBAR Foundation

***Q22. Are there ways in which the Commission could enhance the integrity of voluntary carbon markets and foster transparency, fairness, and liquidity in those markets?***

While Hedera and THF generally support CFTC’s exploration of appropriate means and opportunities to enhance the integrity of voluntary carbon markets through imposition of narrowly tailored, evidence-based regulatory guardrails, we urge the Commission to interpret its statutory authority conservatively. When regulated industries undergo the kind of transformational change now unfolding in climate and Web3, many agencies interpret their organic statutes expansively to preserve their oversight roles, sometime threatening or actually bringing costly enforcement actions with respect to novel fact patterns and legal issues of first impression and that the regulated community could not reasonably have foreseen *ex ante*. The approach can win *de facto* compliance for extended periods, but at the price of regulatory uncertainty, which incentivizes overcautiousness instead of the innovation we need to fight climate change. Even if the Commission were to succeed in devising a regulatory framework that optimally supported the voluntary carbon markets, promulgating it without sufficient legal basis does more harm than good. A rule that cannot survive judicial review under the major questions doctrine recently announced by the U.S. Supreme Court’s 6-3 decision in *West Virginia v. EPA* merely reduces the urgency behind developing private governance solutions or passing a legislative fix.

Where, however, the Commission believes that it can withstand judicial scrutiny, Hedera and THF would offer several potential regulatory targets, all of which currently pose growth-limiting risks to market integrity. As an initial matter, CFTC’s entry into the voluntary carbon markets would enable oversight of the usual mix of market abuses, from price manipulation to money laundering, to collusion. Although there is no evidence that such risks are enhanced over legacy commodities, oversight may help to signal market maturity. But for the Commission to help mitigate risks specific to the carbon markets, the primary target must be environmental integrity, which is to say trust that each asset traded is in fact delivering the expected environmental benefit.

The voluntary carbon markets evolved to achieve discrete climate policy goals. One carbon credit has value because it corresponds to one mtCO<sub>2</sub>e removed (or avoided) from the atmosphere. Problems such as double issuance (more than one credit is issued for the same emission or emission reduction), double claiming (the same emission reduction is applied to two mitigation claims), or double use (the same credit is used more than once to attain a mitigation commitment) reduce the environmental benefit and therefore cast doubt on the legitimacy of the credit’s price. Similarly, without reliable dMRV – rules and processes to ensure the transparent and accurate tracking of emissions/emission reductions – market participants cannot achieve high confidence that credits transacted represent actual reductions or removals (i.e., that they are additional, durable, permanent, etc.) in the first

instance. In essence, this is a product-quality grading challenge. Private-sector governance from registries such as Verra and Gold Standard is currently the sole mechanism available to market participants to gauge quality. The best means at the Commission's disposal for exceeding the registries' performance may, in fact, be to require carbon spot exchanges subject to CFTC jurisdiction to deploy the very DLT innovations now being explored.

Implementation of such a mandate could be scoped in a variety of ways, but Hedera and THF would each be grateful – together or separately – for any opportunity to provide the Commission with detailed, in-depth technical assistance. Currently, governance of carbon credits relies on a high degree of policy experimentation by private entities, but without the audibility, transparency, and standardization available on public DLT networks, low-quality credits will persist across jurisdictional boundaries and the voluntary carbon credit markets may fail to scale. A regulatory nudge from CFTC toward best available technologies may help.

***Q24. Should the Commission consider creating some form of registration framework for any market participants within the voluntary carbon markets to enhance the integrity of the voluntary carbon markets? If so, what would a registration framework entail?***

Hedera and THF are not opposed in principle to the creation of any registration framework that does indeed boost the integrity and impact of the voluntary carbon markets, the robust functioning of which we regard to be critical to achieving climate goals. However, we again urge close scrutiny of the Commission's legal authority. CFTC's jurisdiction over the voluntary carbon market is likely limited to policing fraudulent and manipulative activities in interstate commerce. Carbon credits may qualify as underlying commodities, but the CFTC does not generally oversee transactions that do not involve margin, leverage, or financing. Requiring a carbon-credit spot exchange that does not offer futures contracts – i.e., where carbon credits are actually delivered within the spot delivery period without margin or leverage – to register would arguably exceed the Commission's jurisdiction. Hedera and THF believe that the CFTC may be able to play a key role in facilitating transparency, standardization, integrity, quality, and ultimately credibility across the voluntary carbon markets, but only if the Commission succeeds in minimizing litigation risk. This is not the time for overreach that could lead to setbacks. In the near term, continued reliance on the current fast developing mix of polycentric, multilevel private governance tools is preferable to the uncertainty that would accompany years-long judicial challenges.

***Q25. Are digital asset markets creating climate-related financial risk for CFTC registrants, registered entities, other derivatives market participants, or derivatives markets? Are there any aspects of climate-related financial risk related to digital assets that the Commission should***

***address within its statutory authority? Do digital assets and/or distributed ledger technology offer climate-related financial risk mitigating benefits?***

Hedera and THF would first observe that digital asset markets cannot be plausibly claimed to present climate-related financial risk for CFTC registrants, registered entities, other derivatives market participants, or derivatives markets that consistently quantitatively exceed or are in significant respect qualitatively distinct from those of any number of software, data center, AI, or other similar compute-heavy legacy industries. Much has been written about the energy requirements and associated carbon intensity of Bitcoin mining and proof-of-work blockchains, and we will not recapitulate those debates here. It is sufficient to say that modern proof-of-stake distributed ledgers such as Hedera – and to our knowledge every DLT network working seriously to bridge carbon credits on chain – are dramatically more sustainable than our competitors, lower energy, and not a meaningful source of GHG emissions. No “mitigation” is necessary because DLT is not the source of the problem. However, it can be part of the solution.

For a sustainable economy to be built, trust and transparency are vital. Direct financing of “green” assets and climate technologies must be dynamically informed by rigorous scientific data collected from the “ground up.” Current challenges of insufficient data and opaque climate assets need to be urgently improved with standardization, trusted environmental markets, and transparent carbon accounting tools. Artificial Intelligence (AI) and Internet of Things (IOT) advancements are already racing to reduce costs and improve prediction quality and monitoring. Combatting the climate crisis requires cogent cross-country collaboration between commerce, governments, and people – and DLT readily delivers on this requirement when combined with transparent and robust governance.

Digital assets on public ledgers could be used by the voluntary carbon markets as a tool in the effort to improve auditability and transparency in environmental, nature-based, biodiversity, water rights, and comparable platforms for tokenized assets. Like other emerging technologies, digital assets have different use cases. One of the most promising use cases is monitoring and mitigating climate impacts for systems, that today have many roles and permissioned systems siloed in different organizations, involved in accounting for a single outcome such as a metric tonne of Greenhouse Gas (GHG) emissions or the capture of a metric tonne of CO<sub>2</sub> or its equivalent (mtCO<sub>2</sub>e).

As there are often complexities of siloed systems (including a lack of granular information and an inability or agility to scale), well-governed public DLT platforms are a good tool in combating double counting of GHG credits and doing so in a publicly visible manner with all parties represented and involved in cryptographically signing for their part in the process. To do this across many emissions sources or carbon sinks, there are a large variety of

methodologies for accounting today. Each methodology has corresponding roles, actors who fulfill those roles within the methodologies, and the data produced for both energy and climate impact in the form of GHG emissions generated or mtCO<sub>2</sub>e removed/captured.

Tools such as ‘Carbon Emissions Tokens’ and audit trails that describe the credentials of each participant in accounting for these assets have enormous potential to provide insights that leads to a full picture of the source and types of emissions, where they originate from, and what organization (or even what devices) are involved in attesting to the accuracy along with information about projects tied to the asset itself. The CFTC could leverage this emerging best practice of using public ledgers for this purpose to help ensure carbon offsets are ‘real’ with measurable impacts that combat climate change.

With the CME Group already providing global emissions offset futures<sup>7</sup>, battling fraud and manipulation in the voluntary carbon markets will be essential to keep these derivative marketplaces fair and orderly. One recent report of these markets indicated 90%<sup>8</sup> did not meet certain standards such as saving forestry not in danger, saving forestry already protected by a government policy, projects that will take the timber once the project timeframe expires or projects under certain unstable Governments or at risk of natural disasters which would negate the impact of such a carbon offset project.

Using a scalable and well-governed DLT platform in combination with tokenized assets with audit trails linked to those assets, allows information to be reported granularly for the first time with full attestations from each party in a publicly auditable way down to the device level and gives authorities auditability to the sub-metric tonne for emission offsetting, mitigations, and removals in adjacent industries such as water.

Well-governed public DLT platforms provide cryptographically verifiable transparency for each participant to build their own auditable reputation over time, and industry standard capabilities such as Decentralized Identifiers, Verifiable Credentials, and Verifiable Presentations have strong potential to enable broad adoption of interoperable and verifiable accounting artifacts created by Validation and Verification Bodies (VVBs). This could include their associated registries and public disclosures which would lead to better outcomes, especially when you consider how inherently decentralized many of the processes are. There already exists a multiplicity of data sources across multiple roles, actors, and devices required to “sign off” on the truthfulness of information in order to reliably avoid double counting. This can be done while appropriately protecting the privacy of individuals

---

<sup>7</sup> <https://www.cmegroup.com/trading/energy/cbl-global-emissions-offset-futures.html>

<sup>8</sup> <https://www.compensate.com/reforming-the-voluntary-carbon-market>

as they interact with devices and organizations in this model through prudent application of selective and progressive disclosure of sensitive personal information.

While there is certainly more that needs to be done in terms of demonstrating how DLT platforms can deliver a trusted and scalable mechanism for the global modernization of how carbon credits are currently accounted for, we would like to highlight the recent announcement by Verra, the market leader in this category, seeking public comment regarding the use of tokens with a DLT platforms to explore ways of improving transactions of credits within the marketplace, while ensuring that the proper KYC / AML procedures are carried out in the world of digital assets.

Using well-governed public DLT platforms would allow for scaling of standards approval by allowing registration and grassroots creation of new methodologies, upskilling new VVBs for those processes (based on the reputations they build) in the regions they're serving, and improving data transparency by auditing organizations for the results. This also applies to emissions measurement where GHG Protocol, EPA Standards, amongst other standards-compliant environmental reporting can be scaled by organizations using verifiable criteria to deliver better outcomes, and establishing discoverable and verifiable reputations over time.

## **Conclusion**

In conclusion, Hedera and THF believe that carbon credit tokens issued on well-governed public DLT platforms are a key component of our mission to bring the balance sheet of the planet to the public ledger. More transparency and visibility into how the carbon credits offset market works can only help provide for future marketplace participants to have the confidence to purchase these offsets in a fair and orderly manner. Our aspiration is that this new technology, coupled with good governance, can be leveraged by free market participants to quickly scale carbon credit tokenization in a way that will help individuals and organizations find a market opportunity and incentive to invest in creating meaningful, reliable projects that counteract carbon emissions through an orderly, fair, and reliable carbon credits marketplace, in the U.S. and abroad.