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February 10, 2024

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

RE: Request for Information [88 FR 89410](#) titled Commission Guidance Regarding the Listing of Voluntary Carbon Credit Derivative Contracts; Request for Comment

Dear Secretary Kirkpatrick,

Thank you and the Commodity Futures Trading Commission (“CFTC”) for the opportunity to provide comments and thank you for proactively demonstrating the initiative to understand and provide regulatory guidance to this emerging, maturing carbon market. Sky Harvest supports the CFTC’s interest in regulating the Designated Contract Markets (“DCM”) and in-turn encouraging standardization and regulation across the Voluntary Carbon Market (“VCM”) as a whole.

Today’s market is a product of self-organization and self-regulation. It is rife with conflicts of interest. Recent attempts to self-regulate (IC-VCM, et al.) appear to be largely on-track to affirm the broken status quo. For successful regulation that will further transparency, liquidity, accurate pricing, market integrity, and scale, we need a new framework for regulation, one determined by a body in the absence of current market incentives. Sky Harvest believes the CFTC could be such a body. We believe we have such a framework: Carbon 2.0.

Carbon 2.0 presents a new definition for carbon credits. This new definition (i) quantifies the *duration* and *timing* of a credit (in addition to *mass*) and (ii) ensures a “pay-upon-delivery” model (rather than the payment for future promises of carbon dioxide storage). The success of the carbon market depends on rigorous quantification, and today’s status quo—limited to measuring mass only and “pay-for-promises”—is neither rigorous nor fully quantified.

The Carbon 2.0 framework requires *multiple tonnes* of carbon dioxide to be combined into each credit issued to ensure the impact of that credit properly and completely offsets the negative impact of greenhouse gas emissions, which remain in the atmosphere *forever*. This framework is broadly applicable to every type of carbon credit



(as demonstrated by the [United Nations's Article 6.4 proposal, Section 5.2](#)) and remains imperative to the successful growth of the VCM.

In the following pages are responses to select questions asked in the Request for Information ("RFI"). Throughout Sky Harvest's responses is an overarching theme: that any regulation of the VCM should necessarily consider the Carbon 2.0 framework.

I kindly ask that you duly consider the arguments included in this letter. Our team is humbly at your service to help. The implications of perpetuating the status quo will yield grave consequences for the future of carbon markets and the future of global warming.

Sincerely,

Will Clayton
CEO, Sky Harvest

Sky Harvest is a VCM project developer working exclusively with small-acreage¹ and underserved² timberland operators in the United States to generate carbon credits. More importantly, Sky Harvest is voluntarily issuing credits under the Carbon 2.0 framework, which requires us to issue fewer credits but ensures that each credit we issue properly and completely offsets the negative climate impact of emissions elsewhere. To our knowledge we are the only developer issuing credits with multiple tons of carbon in each credit.

For additional information and citations on the science behind Carbon 2.0, we incorporate the following resources as part of this letter by reference:

- [Carbon 2.0: A Better Yardstick for Carbon Markets](#)
- [Carbon 2.0 Calculator](#)

¹ Less than 2,500 acres

² As defined by the USDA



Answers to the RFI's specific questions



General

Question 1

In addition to the VCC commodity characteristics identified in this proposed guidance, are there other characteristics informing the integrity of carbon credits that are relevant to the listing of VCC derivative contracts? Are there VCC commodity characteristics identified in this proposed guidance that are not relevant to the listing of VCC derivative contracts, and if so, why not?

Yes, there are two characteristics informing integrity of carbon credits that are generally treated *qualitatively*, when instead they could be used *quantitatively* to calculate the number of credits issued: **duration** and **timing**.

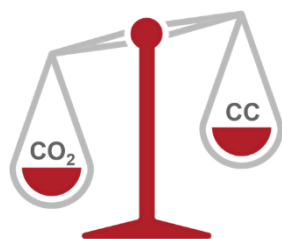
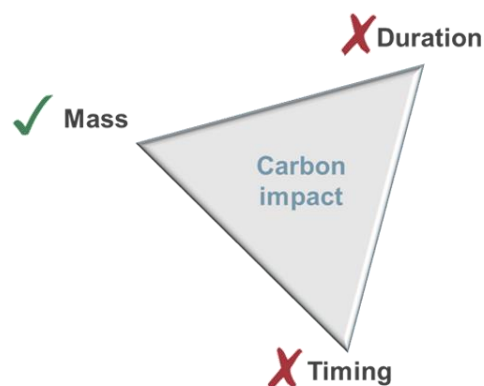
The current system defines a carbon credit as one metric tonne (mass) of carbon per carbon credit. Period. This definition lacks any consideration of how long the carbon is stored, that is, duration of storage. Was the carbon stored for 10 years? 20 years? 10,000 years? Moreover, it lacks any consideration of when the carbon was stored: timing. Did the carbon reduction happen 100 years ago or 10 years in the future? We do not know.

Let us look at these three attributes of carbon impact: mass, duration, and timing.

Of the three, our current system accounts for mass, but not so duration and timing.

Under the current system, buyers have no assurance about the carbon credit they buy. It could represent one tonne of carbon dioxide stored out of the atmosphere for 20 years, 100 years, or even 10,000 years.

And it could be past, present, or future, which means every credit issued has the potential to fall short of the emissions it is purportedly offsetting. In short, the scales do not balance.



This lack of clarity puts a burden on buyers ("buyer-beware!") and makes it difficult for companies to make informed decisions about their sustainability practices and carbon footprint reduction strategies.

On a global level, this is a bad deal for society. The lack of standardization causes higher transaction costs, increased confusion, greater market manipulation, lower



credibility, lower volumes of purchased credits, and ultimately less progress against climate change. It is time for a change to the carbon market system.

Question 2

Are there standards for VCCs recognized by private sector or multilateral initiatives that a DCM should incorporate into the terms and conditions of a VCC derivative contract, to ensure the underlying VCCs meet or exceed certain attributes expected for a high-integrity carbon credit?

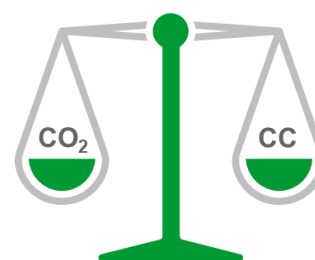
The current standards (Verra, GS, ACR, etc.) lack an accounting framework for properly valuing duration and timing, as mentioned above.

Pioneers in the space include the Quebec compliance market and The Climate Action Reserve, who have both independently implemented duration-based accounting frameworks (though CAR did this in select methodologies only).

The United Nation's Supervisory Body for the Article 6.4 mechanism wrote the best description of this framework, which can be found here: [United Nations's Article 6.4 proposal, Section 5.2.](#)

Efforts by IC-VCM and others to improve the integrity of the VCM, have largely affirmed the status quo framework, anchored on a mass-only approach. If this creates any revival in the VCM at all, it is likely to be a bubble that will also pop once buyers realize that the credits they are purchasing do not fully offset the emissions they are emitting.

The proper solution is an accounting framework—Carbon 2.0—that quantifies mass, duration, *and* timing. The Carbon 2.0 framework is a Rosetta Stone for carbon projects, standardizing impact across projects of any duration, any volume, and any time period into a common measure of impact: specifically, the impact of one metric ton of CO₂e emitted into the atmosphere *today forever*.



Question 3

In addition to the criteria and factors discussed in this proposed guidance, are there particular criteria or factors that a DCM should consider in connection with monitoring the continual appropriateness of the terms and conditions of a VCC derivative contract?



As mentioned above, **duration** and **timing** should also be considered when monitoring the continual appropriateness of the terms and conditions of a VCC derivative contract.

Not yet mentioned, but perhaps most helpful of all is that this framework allows for a pay-upon-delivery model. You would not buy a puzzle without all the pieces, so why would you pay for carbon credits that have not been delivered? This question challenges the current system of carbon credits, which are often built on promises of future behavior rather than measurement of historical impact. Surprisingly, both “*ex-ante*” and “*ex-post*” carbon credits are both built on these promises of future behavior.

Let us look at a standard nature-based carbon credit. Typically, a landowner will enter a contract for ~40 years (can range from 1 year to 100 years), and as soon as the contract is signed, credits are issued and sold to buyers based on forecasted impact. However, there are no guarantees that the land will be properly monitored, nor the environmental impact verified. These credits represent promises of impact not yet delivered. Carbon 1.0.

Enter Carbon 2.0. By measuring the value of carbon storage over a shorter period of time, we can issue credits after the impact occurs and is verified. For buyers, this means ‘pay-upon-delivery.’ In this model, if a wildfire burns a forest, the project developer cannot issue more credits, but the credits previously issued are still valid because only the carbon dioxide stored up to the time of the fire was credited.

While it is important to continue improving standards that normalize other attributes of carbon offsets, such as additionality and co-benefits, Carbon 2.0 represents a major step towards improving the quality of carbon credits. It is ready to be adopted now, and by doing so, we can create a more efficient and liquid market that will increase our ability to combat rising temperatures.

By implementing Carbon 2.0, we remove the burden from buyers to understand and decipher each type of carbon credit—and there are scores of carbon credit types. Instead, we create a standardized system that allows for easy apples-to-apples evaluation across different projects. This transparency will not only improve the credibility of carbon credit issuers, but also improve buyers’ confidence in the quality of their credits.

It is time to stop paying for empty promises. It is time to move toward a smarter model for carbon credits: It is time to pay upon delivery.



Question 4

In addition to the criteria and factors discussed in this proposed guidance, are there particular criteria or factors that a DCM should consider, which may inform its analysis of whether or not a VCC derivative contract would be readily susceptible to manipulation?

As previously mentioned, (i) credits not quantifying duration and timing and (ii) credits based on promise of future carbon storage are readily susceptible to manipulation. To be clear, this is the market status quo today.

The justification for the former is “we will let the market decide.” However, there is information asymmetry in the market that creates significant transaction costs preventing efficiency in the market. Buyers of carbon credits simply will not know as much about credits as sellers unless the impact is fully quantified and standardized for transparency.

The latter is subject to all types of manipulations, including a buffer pool system rife with conflicts of interest. Buffer pools are insurance pools determined by self-reported risk estimates and managed by entities who are compensated by the number of credits *not* required in the buffer pool. This mismanagement is evidenced in research conducted by independent non-profits: “Our calculations show that the program’s self-insurance buffer pool is effectively insolvent.”^{3,4}

Moreover, project developers seek to hide behind a registry’s binary stamp-of-approval without regard for the underlying project variability. For example, Verra requires projects to store carbon for a minimum of 40 years. In a “pay-for-promises” model this is difficult to enforce as transactions occur in Year 1 while impact is delivered over the 40-year stretch. Two notable projects under separate Verra methodologies issue credits for projects that have contracts with proponents for 20-years and 5-years, respectively. When asked how they will satisfy the 40-year duration requirement, the answer was “we’ll figure it out at the end of the contract term.”⁵

Shifting to a market that (i) accounts for duration and timing and (ii) operates on a pay-as-delivered model will be a significant regulatory change. That said, the VCM will not achieve integrity until these steps are completed.

Aside: There are other important characteristics of integrity, such as additionality and leakage, not addressed by Carbon 2.0. It is not a silver bullet. However, its

³ <https://carbonplan.org/blog/buffer-analysis-update>

⁴ <https://carbonplan.org/blog/buffer-update-three>

⁵ Independent conversations with two Verra VCS project developers; paraphrased.



adoption is a “no regrets” move that solves issues of non-permanence, non-conformity, and emissions equivalence.

Question 5

Should the VCC commodity characteristics that are identified in this proposed guidance as being relevant to the listing by a DCM of VCC derivative contracts, also be recognized as being relevant to submissions with respect to VCC derivative contracts made by a registered foreign board of trade under CFTC regulation 48.10?

No comment.

Transparency

Question 6

Is there particular information that DCMs should take into account when considering, and/or addressing in a VCC derivative contract’s terms and conditions, whether a crediting program is providing sufficient access to information about the projects or activities that it credits? Are there particular criteria or factors that a DCM should take into account when considering, and/or addressing in a contract’s terms and conditions, whether there is sufficient transparency about credited projects or activities?

Buyer beware: we are using a broken yardstick to measure the impact of carbon credits. Buyers have no assurance about a carbon credit bought today – it could represent one tonne of carbon dioxide stored out of the atmosphere for 20 years, 100 years or 10,000 years, and there’s no guarantee of when the impact occurs, which in some cases can be more than a decade into the future or a decade ago. This puts an onerous burden on buyers to tread carefully or pay-up for advisors to navigate the shifting and nuanced carbon markets. Climate pioneers like Microsoft, Stripe, etc. can bear this added burden, but the average company cannot. Either way, the lack of standardization causes higher transaction costs, increased confusion, greater market manipulation, lower credibility, lower volumes of purchased credits, and ultimately less progress against climate change.

In short, we are using a broken yard stick, and it is creating a credibility gap that is limiting the growth of carbon markets.

But there is a better yardstick in Carbon 2.0, and it is ready to adopt today. It will not standardize all project-related issues such as additionality and leakage, but it



will standardize the purported impact of the project and solve permanence at the same time.

Carbon credits were designed to be a commodity – indiffereniable, of equal value, and thus fluidly marketable. A true commodity would allow market forces to most efficiently allocate capital to projects, and most efficiently combat climate change.

However, carbon credits are no commodity today. Their values vary based on differentiable attributes like geography, technology, duration, and volume. We have identified 18 attributes:

Type	Attribute	Description	Applicability
Objective	Price	• Price of the carbon credit	Market-level
	Mass	• The volume of carbon kept out of the atmosphere	
	Duration	• The length of time that carbon remains out of the atmosphere	
	Timing	• The time period over which the benefit is realized	
Quality criteria	Verification	• Whether the credit is certified by a 3 rd -party auditor	Methodology-level and/or project-level
	Additionality	• Likelihood that benefit would occur absent the financial incentive of the credit	
	Permanence	• Risk of reversal, such as the unintended release of carbon back into the atmosphere	
	Leakage	• Likelihood of substitutionary, negating impacts (e.g., emissions elsewhere)	
	Negativity	• Negative externalities of the credit (e.g., operational emissions, enabled emissions)	
	Transparency	• The extent to which the developer's project design and calculation are understandable	
Demographic	Mechanism	• Whether the credit removes existing CO ₂ or avoids would-have-been CO ₂ emissions	Methodology-level and/or project-level
	Technology	• Whether the credit is a nature-based technology or an engineered solution	
	Ex-post/ex-ante	• Credits can be issued based on value delivered or anticipated forecasts	
	Registry	• Perceived quality of the registry on which the credit is listed	
	Geography	• Both perceived quality of country's verification and proximity to the buyer	
	Co-Benefits	• Additional benefits beyond carbon (e.g., biodiversity, economic development, etc...)	
	Vintage	• Year in which the credits are issued	
Scalability	• The degree to which the project can scale to global impact levels		

18 attributes

"Yardstick attributes"

But not all carbon credits are equal. The 18 attributes identified here create an enormous amount of variability in the impact and quality of each credit. For example, if a buyer is trying to assess the relative value of two credits, like a renewable energy credit and a direct-air-capture credit across these 18 variables, it is nearly impossible. And buyers typically are not challenged with assessing credit value across just two types of projects; rather they are seeking to build a blended portfolio from dozens of options. Without any standardization, buyers face the impractical task of evaluating the impact of each carbon credit individually. As mentioned above, this results in higher transaction costs for buyers and less climate impact overall.

While Carbon 2.0 does not standardize across all of these attributes, it does standardize the first three, which are objective and quantifiable.

Additionality



Question 7

Are there particular criteria or factors that DCMs should take into account when considering, and/or addressing in a VCC derivative contract's terms and conditions, whether the procedures that a crediting program has in place to assess or test for additionality provide a reasonable assurance that GHG emission reductions or removals will be credited only if they are additional?

Yes, additionality is essential to a carbon market based on “stocks.” Unless a global, mandatory carbon tax is implemented—one that taxes the “flows” of carbon into the atmosphere and rewards the flows of carbon out of the atmosphere—then we are operating in a market measuring “stocks,” and in this market additionality is essential to ensure that buyers are not frauded into paying for business as usual.

Additionality tests should include financial, legal, and regulatory tests. The simplest financial test will require a negative net present value absent carbon finance and a positive net present value with carbon finance.

Question 8

In this proposed guidance, the Commission recognizes VCCs as additional where they are credited for projects or activities that would not have been developed and implemented in the absence of the added monetary incentive created by the revenue from carbon credits. Is this the appropriate way to characterize additionality for purposes of this guidance, or would another characterization be more appropriate? For example, should additionality be recognized as the reduction or removal of GHG emissions resulting from projects or activities that are not already required by law, regulation, or any other legally binding mandate applicable in the project's or activity's jurisdiction?

Yes, legal and regulatory tests are needed in addition to financial tests. While a financial test will assess whether the project proponent has an economic incentive to perform some behavior, legal and regulatory are required to assess whether the project proponent is required to perform the behavior, regardless of economic incentive. Both are essential to ensuring additionality.

Risk of Reversal

Question 9

Are there particular criteria or factors that DCMs should take into account when considering, and/or addressing in a VCC derivative contract's terms



and conditions, a crediting program's measures to avoid or mitigate the risk of reversal, particularly where the underlying VCC is sourced from nature-based projects or activities such as agriculture, forestry or other land use initiatives?

The risk of reversals has never been appropriately solved and remains at the crux of the problematic implementation of carbon credit schemes. The best solution to-date has been buffer pools – a system relying on (i) self-reporting against project developer's own financial best interest and (ii) management by self-proclaimed regulators paid by the number of credits *not* in the buffer pool. This scheme is inherently problematic and must be reconsidered; it is the equivalent of asking the fox to watch the hen house.

More specifically, there are several issues associated with the buffer pool system:

- There is no assurance that reversals will be identified.
- There is no assurance that reversals, if identified, will be reported.
- There is an overt conflict of interest for the project proponent not to report reversals.
- There is no assurance that the buffer pool mechanism will adequately address reversals if they are identified and reported.
- There is no assurance that the buffer pool will be sized appropriately.
- There is no assurance that the buffer pool, if sized appropriately, will have appropriately designed mechanics.
- There is no assurance that the buffer pool, if sized appropriately with properly designed mechanics, will be managed appropriately... over a period of several decades... with changing leadership.
- The managers of the buffer pools face a conflict of interest, because they are paid by the number of credits issued that are *not* in the buffer pool.
- There is an inherent liability in the buffer pool mechanism: the deficit of unmitigated climate impact from the emissions purportedly offset.
- There is no accountability for who will bear that liability; the only backstop is the common global citizen who will bear the cost in the form of climate change.

These issues point to a single conclusion about buffer pools: **We cannot ensure the integrity of credits issued for impacts that have not yet been delivered.** Fortunately, there is an alternative.

Carbon 2.0 eliminates the possibility of reversals because Carbon 2.0 *only* measures impact already delivered. It is a more flexible, specific framework that



can measure carbon impact for any period of time and equate that impact to the negative impact of one metric ton of carbon dioxide emitted into the atmosphere forever.

Question 10

How should DCMs treat contracts where the underlying VCC relates to a project or activity whose underlying GHG emission reductions or removals are subject to reversal? Are there terms, conditions or other rules that a DCM should consider including in a VCC derivative contract in order to account for the risk of reversal?

The simplest way to eliminate the need to regulate reversals is to eliminate the possibility of reversals using Carbon 2.0, as described in the answer to Question 9, and further detailed in the answer to Question 11.

Robust Quantification

Question 11

Are there particular criteria or factors that a DCM should take into account when considering, and/or addressing in a contract's terms and conditions, whether a crediting program applies a quantification methodology or protocol for calculating the level of GHG reductions or removals associated with credited projects or activities that is robust, conservative and transparent?

Yes. We request the CFTC consider the adoption of a Carbon 2.0 framework to leapfrog the glaring credibility issues of Carbon 1.0.

When we say Carbon 2.0, we specifically request that the CFTC consider the adoption of a tonne-year accounting framework with the following characteristics:

- An infinite time horizon⁶
- A discount rate of 3.0%⁷
- Ex-post measurement, reporting, verification, *and* issuance (“pay-upon-delivery”)
- Minimum storage durations, determined on a methodology-specific basis

⁶ Infinity can be logically approximated as 1,000,000 years.

⁷ Note: we think there are arguments for rates throughout the 2.0-3.5% range. More importantly, the only discount rate that we know is not right is the one used by the status quo: 0%. The CFTC is well situated to establish a precedent discount rate, reserving flexibility to adjust it as needed in the future.



- Lashof model of accounting⁸

This will not be a popular decision. It will be opposed by the vocal lobby for engineered removals who currently benefit from ex-ante issuance and ambiguity in the value of permanence. It will also be opposed by incumbent project developers in the AFOLU space, who benefit from ex-ante outcomes and as-of-yet unaccounted-for shorter storage durations.

However, the CFTC's role is not to facilitate a market that caters to the profitability of developers. The CFTC's role is to promote the integrity, resilience, and vibrancy of the U.S. derivatives markets. Namely, in this context, its role is to ensure that its definition of a carbon credit equates to the cost of the emissions that credit is purported to offset.

Doing so will reduce transaction costs, decrease confusion, minimize market manipulation, boost market integrity and thus credibility, and ultimately enable carbon markets to scale, mitigating climate change.

In conclusion, we ask that you adopt Carbon 2.0 as a more robust carbon accounting framework to resolve the problematic mechanisms adopted in today's self-regulating, self-appointed voluntary carbon market.

Governance

Question 12

In addition to a crediting program's decision-making, reporting, disclosure, public and stakeholder engagement, and risk management policies, are there other criteria or factors that a DCM should take into account when considering, and/or addressing in a VCC derivative contract's terms and conditions, whether the crediting program can demonstrate that it has a governance framework that effectively supports the program's transparency and accountability?

Today's self-appointed registry bodies (i.e., standards bodies who also act as registries, e.g., Verra, The Gold Standard, etc.) collect revenue based on the number of carbon credits issued. This conflict of interest is a concern for any proper governance structure.

Tracking and No Double Counting

⁸ As opposed to the Moura Costa model, which has been proven to overestimate credit quantification.



Question 13

In addition to the factors identified in this proposed guidance, are there other factors that should be taken into account by a DCM when considering, and/or addressing in a VCC derivative contract's terms and conditions, whether the registry operated or utilized by a crediting program has processes and procedures in place to help ensure clarity and certainty with respect to the issuance, transfer, and retirement of VCCs?

Publicly listed and auditable third-party registry use is important.

Question 14

Are there particular criteria or factors that a DCM should take into account when considering, and/or addressing in a VCC derivative contract's terms and conditions, whether it can be demonstrated that the registry operated or utilized by a crediting program has in place measures that provide reasonable assurance that credited emission reductions or removals are not double-counted?

No comment.

Inspection Provisions

Question 15

Should the delivery procedures for a physically-settled VCC derivative contract describe the responsibilities of registries, crediting programs, or any other third-parties required to carry out the delivery process?

No comment.

Sustainable Development Benefits and Safeguards

Question 16

Certain private sector and multilateral initiatives recognize the implementation by a crediting program of measures to help ensure that credited mitigation projects or activities meet or exceed best practices on social and environmental safeguards, as a characteristic that helps to inform the integrity of VCCs issued by the crediting program. When designing a VCC derivative contract, should a DCM consider whether a crediting program has implemented such measures?

No comment.



Question 17

Certain private sector and multilateral initiatives recognize the implementation by a crediting program of measures to help ensure that credited mitigation projects or activities would avoid locking in levels of GHG emissions, technologies or carbon intensive practices that are incompatible with the objective of achieving net zero GHG emissions by 2050, as a characteristic that helps to inform the integrity of VCCs issued by the crediting program. When designing a VCC derivative contract, should a DCM consider whether a crediting program has implemented such measures?

No comment.