Proposal to Create a Long-term Reversal Monitoring System

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1 BACKGROUND

Verra is considering establishing a long-term monitoring system for detecting reversals in VCS projects during the post-crediting period. Since many types of nature-based carbon credits have inherent risks of non-permanence, concerns have been raised that the extent of potential reversals over the long term remains largely unknown. Therefore, there is a risk that current procedures and buffer credit cancellations to compensate for long-term reversals may be inadequate.

The proposed long-term reversal monitoring system (LTRMS) would use remote sensing and emerging technologies to detect loss events and quantify reversals in VCS AFOLU (Agriculture, Forestry and Other Land Use) projects past the end of their crediting periods. Buffer credits would be cancelled at the time of the loss event based on the quantified size of the reversal.

Verra seeks stakeholder input on the design, use and implications of the LTRMS. This public consultation document provides details about the development and implementation of the monitoring system and its use by Verra to improve the environmental integrity of VCS AFOLU projects and their resulting credits.

This public consultation will be open for 60 days until February 14, 2022.

2 OBJECTIVES

Verra proposes implementing the LTRMS using a phased approach that will allow Verra to leverage a range of data sources, methods, and technology platforms in determining the best way to remotely monitor reversals in VCS nature-based projects. The primary functions of the system are:

1) Detecting and quantifying reversals from different loss events (e.g., human-induced deforestation, natural disturbances, disease outbreaks, etc.) occurring within the project boundaries of VCS AFOLU projects over the long term;
2) Cancelling VCS buffer pool credits, which could exceed individual project contributions, when reversals occur rather than at the end of the project crediting periods; and

3) Periodically updating the *AFOLU Non-permanence Risk Tool* withholdings based on observed reversal trends categorized by risk, ensuring the integrity and long-term solvency of the VCS buffer.

3 PROPOSED DESIGN AND IMPLEMENTATION

Currently, most VCS AFOLU projects are forest carbon projects, with REDD (Reduced Emissions from Deforestation and Degradation), ARR (Afforestation, Reforestation and Revegetation), and IFM (Improved Forest Management) being the most common project types. Since it is already feasible to monitor forest cover changes, detect fires and tree mortality, and spot other disturbances using remote sensing, the system would begin by identifying these types of changes in VCS forest carbon projects during their crediting periods to alert Verra. Verra would then validate these identified losses with the project proponents and ensure that all reversals are recorded and quantified following existing VCS requirements. Then, as methods and technologies improve, Verra would expand the scope to cover other VCS AFOLU project types and go beyond loss identification by adding carbon quantification capabilities to calculate the extent of any reversals using remote sensing technologies. These methods could then be applied during project post-crediting periods to determine the number of buffer credits to cancel to compensate for reversals at the time of the loss event and adjust future non-permanence risk estimation methods and potential withholding percentages in the VCS AFOLU Non-Permanence Risk Tool.

The table below outlines key activities in each of the three phases of the proposed development of the LTRMS.

Phase	Key Activities	Estimated Timing
1: Forest Project Loss Alerts	• Generate remote sensing-based alerts of potential loss events in VCS forest carbon (REDD/ARR/IFM) projects during the crediting period and for any projects prematurely terminated • Validate alerts with project proponents to improve data and methods for detecting reversals • Develop procedures for determining whether reversals have occurred using remote sensing and other innovative technologies	2022-2023

2: Expanded AFOLU Loss Alerts	• Develop Verra's custom LTRMS platform with increased automation of detection and reporting • Expand alerts to additional nature-based project types during the crediting period and for any projects prematurely terminated • Create new rules for cancelling VCS buffer pool credits in the post-crediting period and improve non-permanence risk assessment based on LTRMS data	2023-2025
3: Reversal Quantification	• Verra begins remotely quantifying reversals from carbon loss events using technological advances in remote sensing, modelling and machine learning, and other innovations that will increase the accuracy and transparency of loss event monitoring. • Continue monitoring projects during crediting period and begin monitoring projects that have entered the post-crediting period • Implement new rules for cancelling buffer credits based on observed reversals in the post-crediting period • Periodically update the VCS AFOLU Non-Permanence Risk tool withholding percentages, and potentially criteria, to reflect actual losses by risk category.	2025 onwards

4 PROPOSED UPDATES TO THE VCS NON-PERMANENCE APPROACH

Cancellation of Buffer Credits

The current VCS approach to addressing non-permanence risk uses the AFOLU pooled buffer account. When a project's crediting period ends, all buffer credits associated with the project are cancelled to compensate for potential future reversals. There is no ongoing monitoring of the underlying carbon stocks after the project ends. However, without long-term monitoring, there is no way to know how individual projects, and the VCS AFOLU portfolio at large, perform over the long term and whether the cancelled buffer credits cover future reversals that may occur. This undermines confidence in the buffer approach and the permanence of AFOLU VCUs. With the implementation of the LTRMS, Verra would change the rules for cancelling buffer credits at the end of a project's crediting period. Verra would develop new rules to cancel buffer credits only when and to the extent to which reversals occur as determined using the LTRMS. There could also be an independent review of the LTRMS data and procedures for determining reversals and quantification to ensure that the cancellations are correctly implemented. Further, Verra could hire insurance or other risk experts to periodically stress test the VCS buffer and ensure its long-term health.

Non-permanence Risk Assessment

The VCS uses the *AFOLU Non-permanence Risk Tool* to assess project buffer pool withholdings. Verra would modify Section 2.4.2 of the *VCS Standard*[1] to state that the withholdings in the non-permanence risk assessment, such as the Natural Risk and Political Risk components, should be updated with data from the LTRMS. This would improve the assessment of non-permanence risk by using actual data on reversals from different project types, geographies and management regimes and allow Verra to adjust the buffer withholding percentages based on evolving risks, such as climate change impacts or other natural disturbances. Specifically, Verra would develop and introduce a requirement for reviewing and updating the Non-permanence Risk Tool every five years based on LTRMS data.

5 POTENTIAL BENEFITS OF LTRMS

Verra anticipates that implementing the LTRMS would strengthen the VCS Program's non-permanence risk approach and confidence in AFOLU carbon credits, benefiting project proponents and buyers. By regularly providing data on different types of reversals across AFOLU projects, the system would transform the current approach to ensure all losses are accurately compensated for and the AFOLU pooled buffer account remains resilient over the long term. For buyers, the LTRMS would provide improved transparency in monitoring and greater assurance of the long-term environmental integrity of VCS AFOLU credits. For project developers, the LTRMS would give greater accuracy and certainty in non-permanence risk calculations and the corresponding buffer credit withholdings, and this would help improve the design and development of future projects.

6 REQUEST FOR INPUT

Verra requests input on the following considerations and questions regarding a long-term reversal monitoring system (LTRMS) for VCS AFOLU projects:

1) Should Verra monitor VCS AFOLU projects for reversals during the post-crediting period? If so, why, if not, why not?
2) What would be the key opportunities, benefits, challenges, and risks of Verra doing this?
3) What types of VCS AFOLU projects could currently be monitored for reversals effectively and efficiently using available remote monitoring approaches? How are remote monitoring technologies expected to evolve in the near future, and should this enable monitoring for additional AFOLU project types and activities (e.g., degradation)? If so, which and by when?
4) Would the LTRMS and associated proposed periodic adjustments to the VCS withholding percentages (based on monitored losses by risk category) increase confidence in the long-term resilience of the AFOLU buffer pool and issued project credits?

[1] VCS Standard currently states that the risk analysis criteria and buffer withholding percentages in the *AFOLU Non-Permanence Risk Tool* may be adjusted to ensure that there are always sufficient buffer credits in the AFOLU pool buffer account to cover project losses.

5) Over how long a period should Verra monitor reversals after the project crediting period ends (e.g., 50 years, 100 years)?

6) How frequently should Verra aim to monitor for loss events (e.g., quarterly, bi-annually)?

7) If Verra ceases to operate or manage the LTRMS prior to the end of this monitoring commitment how could environmental integrity be maintained (e.g., through cancellation of all buffer credits associated with the project)?

8) What best practices, standards and/or guidance should the LTRMS follow? Are there potential limitations to the applicability, accuracy, reliability and credibility of a remote monitoring approach for identifying AFOLU reversals?

9) What sort of oversight/quality assurance practices are necessary to ensure the LTRMS functions properly and that the identification and quantification of reversals in the post-crediting period is accurate?

10) What else should Verra keep in mind when considering how best to develop and implement a robust and workable LTRMS system?