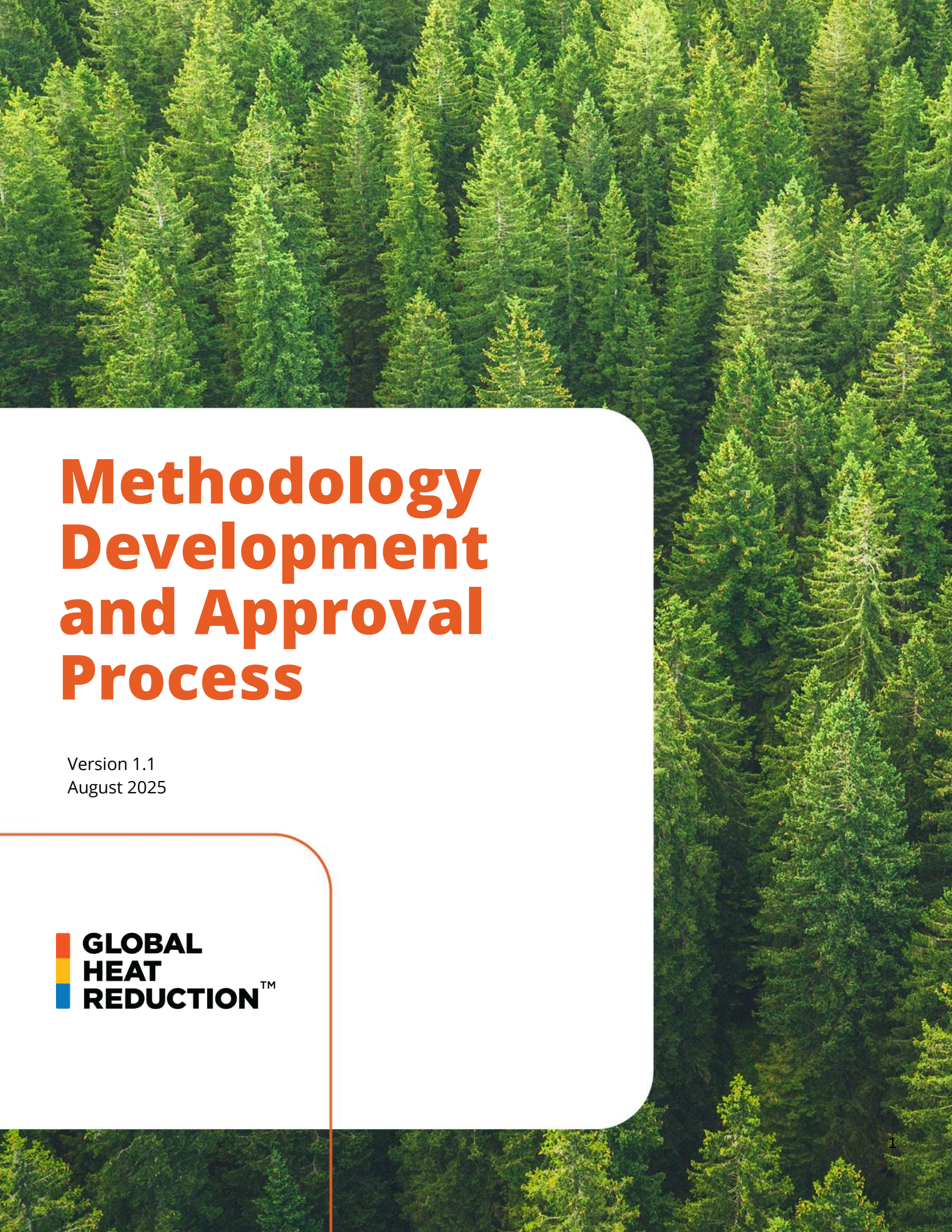

Methodology Development and Approval Process

Version 1.1
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GLOBAL HEAT REDUCTION™

Methodology Development and Approval Process

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Background

Carbon registries serving global carbon markets have historically focused on the issuance and trading of carbon credits that target greenhouse gas (GHG) mitigation, primarily carbon dioxide (CO_2). These registries issue carbon credits based on the amount of carbon dioxide equivalents (CO_2e) reduced or removed by a given project as compared to a baseline scenario. The agreements reached at the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26) in November 2021 solidified the rules governing the international trade of carbon credits, emphasizing the need for a more robust, transparent, and accountable global carbon market.

The integrity of carbon crediting is fundamentally linked to the integrity of the methodologies used to quantify and verify emissions reductions or removals. Methodologies establish the criteria for project eligibility, the calculation of emissions reductions or removals, monitoring, reporting, and verification (MRV) requirements, and the baseline against which project performance is measured. For this reason, the development and review of Methodologies must be carried out in an objective, transparent, and high-integrity manner.

While strategies primarily targeting CO_2 reduction and removal remain essential, it has become increasingly clear that addressing climate change requires a broader approach. The latest consensus reports from the Intergovernmental Panel on Climate Change (IPCC) and other scientific bodies underscore the importance of considering additional climate forcing agents and factors that influence the earth-atmosphere energy balance. Dependence on the 100-year global warming potential (GWP100) metric, commonly used to calculate CO_2e, undervalues the near-term impacts of short-lived climate pollutants (SLCPs) such as methane and hydrofluorocarbons (HFCs). Reducing SLCP emissions is a key lever to achieve near-term climate goals and avoid critical climate system tipping points.

Besides the greenhouse gases, other pollutants also influence the earth-atmosphere energy balance, either by trapping more heat (positive “radiative forcing”) or reflecting more heat back into space and thereby cooling the atmosphere (negative “radiative forcing”). Non-gaseous pollutants like black carbon also play a significant role in accelerating warming, both in the atmosphere and when deposited on ice and snow. Simultaneously, the reduction or removal of certain pollutants, such as sulfur dioxide (SO_2), while beneficial for air quality, has inadvertently accelerated global warming by removing aerosols that previously had a cooling effect on the planet.

To remain relevant and scientifically sound, carbon registries must develop and adopt methodologies that account for this expanded range of climate forcing agents. This includes integrating the latest scientific insights, such as those from the IPCC’s Sixth Assessment Report (AR6), which details the urgent need for comprehensive climate action across multiple fronts. Interventions are needed that not only reduce emissions, but also contribute to broader climate resilience with projects that address climate adaptation, biodiversity conservation, and social co-benefits, aligning with the goals of sustainable development.

The Global Heat Reduction Registry (the “Registry”) has been established as an initiative of Scientific Certification Systems Inc. (SCS) to address this expanded scope, focusing on projects that can lead to heat reduction through the reduction of positive radiative forcing, with a special emphasis on near-term results. The excess trapped heat in the atmosphere, which has reached unprecedented levels, makes clear the urgency of developing methodologies that can effectively target and reduce this imbalance. Projects that reduce this heat through innovative means by enhancing surface albedo, restoring degraded ecosystems, or other approaches, are critical to stabilizing the climate and preventing further warming.

I. Methodology Scope

Methodologies in the Registry must be designed in accordance with the requirements described in the *Global Heat Reduction Registry Standard*, including:

- Eligibility, additionality, and risk assessment
- Project types and technologies
- Baseline and project scenarios
- Project and life cycle boundaries
- Analysis of the risk of secondary effects of projects
- Climate forcer sources, sinks and reservoirs
- Calculation methods
- Co-benefits and trade-offs
- Data sources, documentation, monitoring, and reporting requirements
- Credit issuance and buffer pool contribution considerations

The Methodologies provide guidance for each of these parameters, and in addition, provides guidance for data collection and calculations consistent with the *Radiative Forcing Protocol: Methods and Applications* (RF Protocol).[1]

[1] SCS Global Services and International Centre for Integrated Mountain Development. (2023) Radiative Forcing Protocol: Methods and Applications, Version 1.1. Prepared by SCS Global Services, and published together with the International Centre for Integrated Mountain Development (ICIMOD).

II. Development of New Methodologies

Several parties are involved in the development of a new Methodology, or modification of an existing Methodology.

In some cases, the Registry will take the lead in methodology development, in which case an initial version of the Methodology will be developed, put through internal SCS review, independent expert review, and public consultation before being finalized. In other cases, a Project Proponent or other third-party organization may submit a Methodology that applies to climate mitigation projects not currently within the scope of an existing GHR Methodology.

The process for development of new Methodologies is shown in Figure 1 and described below.

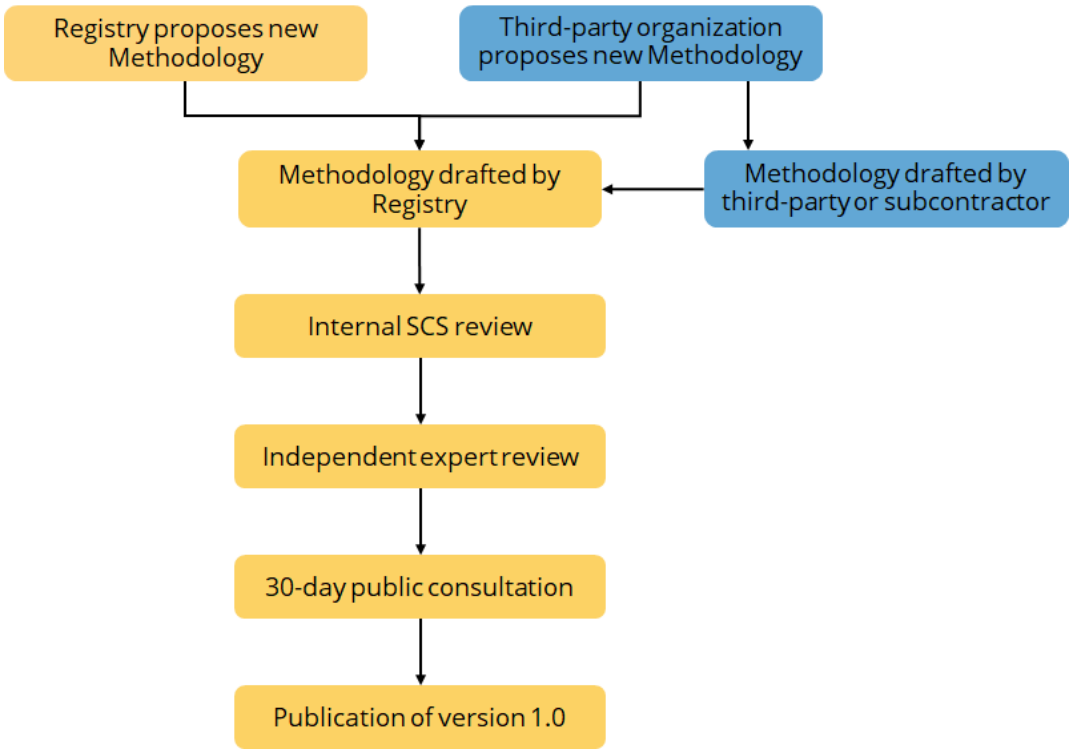

Figure 1. New methodology development process for the Registry

A. Registry-initiated Methodology development

Step 1. New Methodology proposed

1. The Registry identifies the need for a new Methodology based on emerging technologies, market demands, strategic gaps, or other reasons.

Step 2. Initial Methodology draft

1. The Registry engages with key stakeholders, gathering insights from existing projects to inform the methodology, as applicable.

2. The Registry develops the initial draft Methodology, ensuring alignment with all technical, methodological, and procedural elements of the Registry Standard, and optimizing for key criteria such as additionality, risk management, permanence, maximizing co-benefits, and mitigation of secondary effects.

Step 3. Internal SCS review

1. SCS staff reviews the draft Methodology, focusing on subject-specific technical, policy, and industry considerations.
2. Based on the internal review, the Registry then revises the draft as needed, incorporating feedback to ensure that the Methodology is ready for external review or finalization.

Step 4. Independent expert review

1. The Registry selects independent external advisors with subject matter expertise relevant to the Methodology. These advisors must be recognized experts in the field of carbon accounting, specific project types, or related scientific disciplines.
2. The external advisors conduct a thorough review of the Methodology, assessing its scientific rigor, feasibility, and alignment with existing standards and protocols.
3. The Registry reviews the feedback provided by the external advisors and makes any necessary revisions to the Methodology to address the comments and recommendations provided by these experts.

Step 5. Public consultation

1. The draft Methodology is released for a 30-day public consultation. This period allows a broad range of stakeholders, including project proponents, industry experts, NGOs, academics, and the public to review the draft and submit comments, suggestions, and concerns through a structured feedback process.
2. During the consultation period, the Registry may host webinars, workshops, or public forums to facilitate discussion and clarify any aspects of the draft Methodology.
3. After the public consultation period ends, the GHR technical team reviews all comments. Relevant and constructive feedback is incorporated into the Methodology to enhance clarity, applicability, and rigor. Response to the public comments and issue resolution will be posted publicly following document finalization.

Step 6. Publication

1. Before publication, a final quality assurance (QA) review is conducted to verify that all aspects of the Methodology are accurately documented and that any potential issues identified during the review process have been resolved.
2. The approved Methodology is published on the Registry website, making it publicly accessible to Project Proponents and other stakeholders. At this stage, the Methodology is now available for use in project registration and credit issuance within the Registry.

All Methodologies are subject to periodic reviews (as specified in the Methodology and at a minimum of every five years), and updates to reflect new scientific findings, changes in industry practices, or lessons learned from their implementation.

B. Third-party organization-initiated methodology development

Methodologies may be proposed for inclusion on the Registry by third-party organizations, such as Project Proponents, environmental organizations, or other interested parties. The process for methodology development and review is shown in Figure 1 and described below.

Step 1. New Methodology Proposed

1. The third-party organization submits a Methodology proposal to the Registry using the Registry's Methodology Concept Template, which includes:
    a. A brief description of the need for a new Methodology.
    b. A description of the proposed methodology, including activities, scope, additionality, and a summary of measurement and monitoring approaches.
    c. Identification of existing Methodologies that are directly or indirectly related to the category (including other registries), if known.
    d. A brief description of the project that would apply for credits under the new methodology, if the third-party organization is a Project Proponent.
2. The Registry provides confirmation to proceed, or may request that more information be provided (e.g., in the form of a Feasibility Study) to determine whether a Methodology is viable.

    NOTE: Confirmation to proceed does not guarantee acceptance of a Methodology into the Registry.

    NOTE: If additional feasibility information is requested, the Registry will review any such information provided to it by the third-party organization, then provide a decision on whether to proceed. If approved to proceed, the Project Proponent proceeds with Methodology development.

Step 2. Initial Methodology draft

The third-party organization may ask GHR to develop the Methodology, or proceed independently (or with the assistance of a subcontractor) to develop the initial Methodology draft. If the latter, then:

1. The draft must meet the requirements of the *Registry Standard*. It is recommended that third-party organization and any subcontractor consult with the Registry during the methodology development process.
2. The third-party organization will submit the completed draft to the Registry for review.

If a third-party organization develops a Methodology that is implemented in the Registry, Methodology Use Fees are paid by Project Proponents to the third-party organization for a limited period of Methodology usage. See the Registry Fee Schedule for details.

In some circumstances, the Registry may take the lead in developing a methodology that is initially proposed by a third-party organization.

Steps 3 – 6. Internal SCS review, independent expert review, public consultation, and publication

The Methodology process proceeds in accordance with Steps 3 through 6 described in Section II.A above.

Throughout this process, if the third-party organization has submitted the initial draft methodology, the Registry may request further development of the Methodology to address program requirements. In such cases, the third-party organization will be required to address specific areas identified during the review process. Alternatively, the Registry may directly revise the draft in consultation with the third-party organization to address gaps or inconsistencies.

III. Modification of Existing Methodologies

The process for revising Methodologies is shown in Figure 2 and described below.

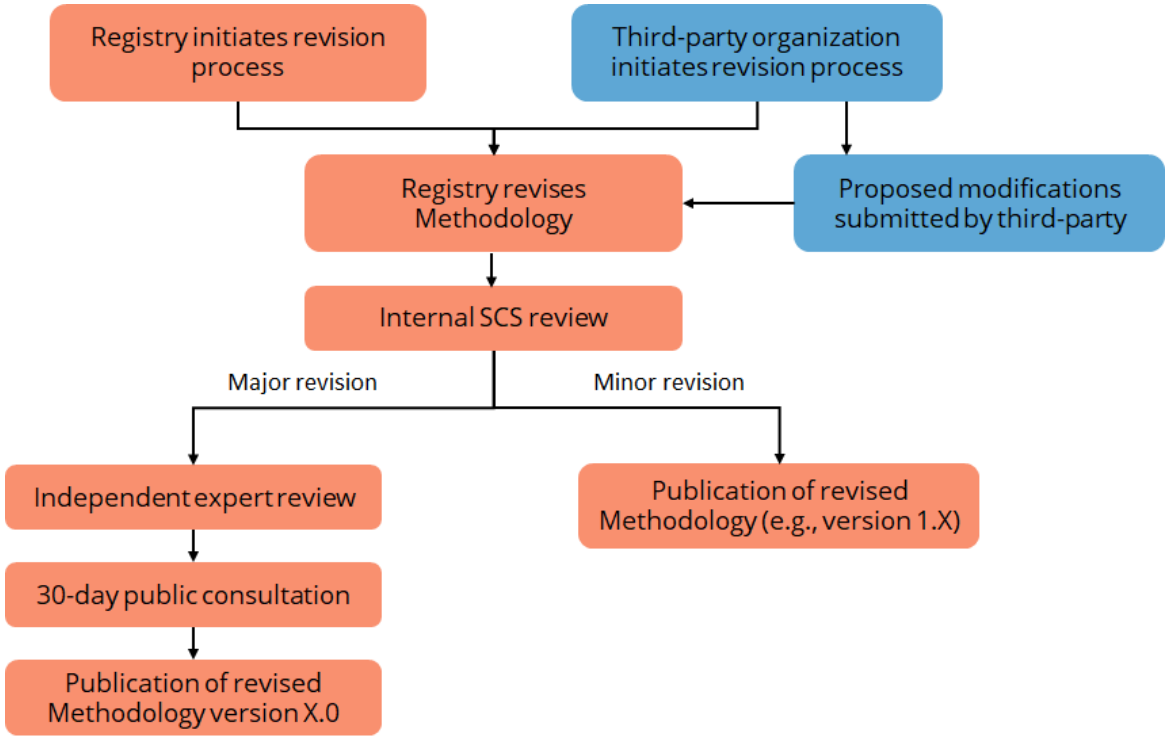

Figure 2. Process for modification of existing Registry Methodologies

A. Registry-initiated Methodology revision

Step 1. Needs assessment and announcement

1. The Registry identifies the need for revising an existing Methodology due to factors such as advancements in technology, changes in industry practices, stakeholder feedback, or new scientific insights. The Registry continuously monitors the regulatory landscape for the specific sectors it has protocols in to ensure project activities have not become legally required and therefore, non-additional. These ongoing assessments allow the Registry to update performance standards and standardized baselines to ensure they continue to effectively screen projects for additionality and accurately represent "business as usual" emissions.
2. The Registry communicates the need and expected timeline for revision to relevant stakeholders, including Project Proponents and VVBs. The expected timeline is determined based on the complexity of the identified revision.

Step 2. Registry revises current Methodology

1. The Registry conducts an analysis of the existing Methodology, focusing on the identified areas for revision. This includes reviewing current practices, scientific literature, and any relevant data sources.
2. The Registry drafts the revised Methodology, incorporating necessary updates and improvements, in accordance with the Registry Standard. Throughout this process, the Registry may engage with stakeholders, including industry experts, VVBs, and Project Proponents, to gather input and validate the proposed changes.

Steps 3 – 6. Internal SCS review, independent expert review, public consultation, and Publication

If major revisions are made, the remaining process will follow the same steps as the Registry-initiated methodology development process (Section II.A) – i.e., internal SCS review, independent expert review, public consultation, and publication. Major revisions include:

- Material changes to the methodology scope, such as baseline or project scenarios or eligible activities;
- Changes that significantly alter credit issuance amounts for given project activities;
- Major revisions to MRV requirements; and
- Changes that are likely to have a substantial impact on stakeholders, such as VVBs or Project Proponents.

If only minor revisions are made, the methodology will undergo internal SCS review, followed by publication (Steps 3 and 6, respectively, of the Registry-initiated methodology development process described in Section II.A). In this scenario, independent expert review and public consultation are not required. Minor revisions include:

- Clarifications and corrections;
- Updates to references and parameter values;
- Minor adjustments to procedures meant to streamline the requirements; and
- Administrative updates that do not affect the technical content.

B. Third-party organization Methodology revision request

Step 1. Modification proposal

1. A third-party organization, such as a Project Proponent, environmental organization, or other relevant stakeholder, submits a proposal to the Registry, requesting modifications to an existing Methodology.
    a. The proposal should clearly outline the reasons for the requested modifications, including any supporting evidence or data, and how the proposed changes will improve the Methodology's effectiveness, accuracy, or applicability.
    b. The proposal must also address any potential impacts of the modification, such as on additionality, permanence, secondary effects, co-benefits, trade-offs, or other key considerations.
2. The Registry evaluates the modification request to determine its applicability and relevance. This includes an assessment of the rationale behind the proposed changes and the quality of the supporting documentation. The Registry may request additional information or clarification from the third-party organization before proceeding.
3. The Registry communicates its decision to the third-party organization and any relevant stakeholders, outlining the next steps in the modification process if the proposal is accepted. If the proposal is not accepted, the Registry provides the reasons for the decision.

Step 2. Submission of proposed modifications and completion of Methodology revisions

1. The third-party organization prepares and submits the proposed modifications.
2. The Registry reviews the submission to ensure that the proposed modifications are clearly articulated and align with the initial proposal, and focusing on the technical accuracy, feasibility, and potential implications of the changes.
3. The Registry incorporates the modifications into a revised Methodology draft. The Registry may engage in further discussions with the third-party organization to refine the submission or to address any concerns that arise during the review process.

Steps 3 – 6. Internal SCS review, independent expert review, public consultation, and publication

The remaining process will follow the same process outlined in Steps 3 through 6 of the Registry-initiated Methodology modification section (III.A) for both major and minor revisions.

IV. Review, Suspension or Withdrawal of Existing Methodologies

Where the Registry has concerns that pollutant emission reductions or removals are being overestimated or that additionality might not be ensured, the Registry does the following:

Step 1. Review Evidence

Registry team members will conduct a thorough review of the evidence available concerning additionality or overestimations. Team members may consult external experts as needed.

Step 2. Communicated with interested parties

Where this concern directly affects ongoing or prospective projects, the Registry will communicate our concerns to those projects to hear their feedback and understand perspectives on how to address the concerns.

Step 3. Registry Decision

Where the Registry team believes the evidence and application of the Methodology should be revised to address the concern, the Registry will follow the "Registry-Initiated Methodology Revision" described above.

Where the Registry team believes the evidence and application of the Methodology presents valid concerns on overestimation or additionality that can be addressed through improved technologies or imminent changes in the implementation environment, the Registry will suspend the Methodology until such time as the concerns can be adequately addressed. This decision will be publicly announced.

Where the Registry team believes the evidence demonstrates a substantial concern on overestimation or additionality that cannot be addressed in the near future, the Registry will withdraw the Methodology. This decision will be publicly announced.