Gold Standard for the Global Goals

ACTIVITY REQUIREMENT

ENGINEERED REMOVALS

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SUMMARY

This document outlines the eligibility requirements for engineered removal activities, with a focus on Carbon Dioxide Removals (CDR). It enables eligible activities to undergo design and performance certification, including issuance of Certified Sustainable Development Goal (SDG) Impact Statements and Products such as Gold Standard verified emission reductions/removals (GS-VERs).

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1| INTRODUCTION

1.1.1 | This document lists the requirements for engineered carbon dioxide removal (CDR) activities which may be eligible for certification and/or to issue Gold Standard Certified Impact Statements and Products. It provides requirements and guidelines, including the requirements for reversal risk mitigation and buffer contributions.

2| TERMS AND DEFINITIONS

2.1.1 | In addition to the definitions contained in the GS4GG Glossary, the following definitions apply in this document:

Table 1. Terms and definition

Term	Definition
Alkaline mineral	Minerals that are rich in alkaline earth elements such as calcium, magnesium, and potassium.
Anaerobic digestion	A biochemical conversion process in which biomass is broken down by microorganisms (e.g., bacteria, yeasts, or enzymes) in the absence of oxygen. Example: biomass is broken down into a biomethane and a digestate.
Avoidable reversal (non-force majeure)	Avoidable reversals are reversals caused by factors over which the activity developer has influence or control and is not covered under *unavoidable reversal (non-force majeure).*
Biochar	A stable, carbon-rich material produced by heating biomass in an oxygen-limited environment.
Bioenergy	Energy derived from any form of biomass or its metabolic by-products.
Biogenic carbon	Carbon derived from, or incorporated within, biological material such as plants, algae, and other micro-organisms.
Carbon dioxide capture	The separation of carbon dioxide from other atmospheric or industrial gases.
Carbon (dioxide) capture and storage (CCS)	A process in which carbon dioxide is separated (captured), processed, and transported to a storage location for long-term isolation from the atmosphere. CCS is typically discussed in the context of carbon dioxide sourced from industrial and energy-related process (e.g., flue gas).
Carbon (dioxide) capture and utilization (CCU)	A process in which carbon dioxide is captured and then used to produce a new product, often with a temporary lifetime.
Carbon dioxide removal (CDR)	Anthropogenic activities which remove carbon dioxide from the atmosphere and durably store it in geological, terrestrial, or ocean reservoirs, or in products

Carbon (dioxide) storage	The isolation of carbon (dioxide) from the atmosphere for a temporary or durable period.
Carbon mineralization	A process in which carbon dioxide becomes a solid mineral material, such as carbonate.
Closed system	A system in which the carbon capture and storage activities involve closed pathways that are easily controlled and measured.
CO_2 capture in biomass	A process in which atmospheric carbon dioxide is taken up by plants/ algae during photosynthesis and the associated carbon is stored in biomass (biogenic carbon).
CO_2 capture from the industrial processing of biomass	A process in which: i. Atmospheric carbon dioxide is taken up by plants/ algae during photosynthesis and the associated carbon is stored in biomass (biogenic carbon). ii. The biomass is then subject to industrial processes e.g., combustion for bioenergy, or anaerobic digestion, fermentation, gasification or pyrolysis to produce products (e.g., biogas, ethanol, hydrogen and bio-oils, respectively). The biogenic carbon dioxide produced during the industrial processing is captured using solvents, sorbents, membranes, or cryogenic condensation.
Combustion	A process in which a material reacts with oxygen to produce heat, also known as burning. Example: biomass is burned to produce heat which is converted into energy. This process can also produce carbon dioxide and other gases.
Direct air capture (DAC)	A process in which carbon dioxide is captured directly from the atmosphere/ ambient air using chemical solvents, sorbents, or membranes.
Direct air capture and storage (DACCS)	A process in which carbon dioxide is captured directly from the atmosphere/ ambient air with subsequent long-term storage.
Direct ocean capture (DOC)	A process in which carbon dioxide is captured from seawater using (e.g.) electrochemical techniques.
Durable/ durability	The **timeframe** for which carbon is **likely** to remain stored. Durability is comprised from two components: the timeframe of the storage (i.e., number of years) and the likelihood that the carbon will remain stored for this timeframe (i.e., the likelihood that there will not be a reversal). Durability can be established for technology types and shall be defined at a methodology or activity level. Durability requirements can be set according to the intended use case(s).
Engineered CDR	CDR activities which: i. rely on technology to deliver solutions that would not occur naturally or spontaneously, and/or ii. utilize technology to accelerate natural processes.
Enhanced mineralization	A process in which: i. Alkaline minerals are crushed to increase their reactive surface area and are spread across the land.

Also referred to as in situ mineralization	ii. Atmospheric CO_2 is captured following mineral weathering reactions and then precipitates as a stable carbonate mineral.
Enhanced weathering	A process in which: i. Alkaline minerals are crushed to increase their reactive surface area and are spread across the land. ii. Atmospheric CO_2 is captured following mineral weathering reactions and converted into aqueous bicarbonate ions. iii. Aqueous bicarbonate is transported via surface waters to the ocean where it is durably stored.
Fermentation	A biochemical conversion process in which a carbohydrate is broken down (glycolysis) by microorganisms (e.g., bacteria, yeasts, or enzymes) in the absence of oxygen. Example: biomass is broken down into carbon dioxide and ethanol.
Fossil carbon	Organic carbon incorporated within fossil fuels such as natural gas, crude oil, and coal.
Gasification	A thermal process in which solid or liquid materials are converted into gas(es) without combustion and with a controlled input of oxygen and/or steam. Example: Biomass is converted into hydrogen and carbon monoxide (syngas).
Geological carbon	Organic or inorganic carbon incorporated within mineral materials, excluding fossil fuels.
Geological reservoir	A subsurface body of rock with sufficient porosity and permeability to store and transmit fluids.
Geological storage	Carbon storage in geological reservoirs.
Greenhouse gas removal (GGR)	The process of separating greenhouse gases from the atmosphere through anthropogenic activities and durably store them.
Mineral	A solid substance with a defined chemical composition and/or structure. In CDR, the term mineral is often used in the context of inorganic materials (e.g., carbonates); however, minerals may also be organic (e.g., inertinite).
Ocean alkalinity enhancement (OEA)	A process in which alkaline minerals or alkaline solutions are added to the ocean. This can increase the ocean's pH (i.e., make it more alkaline/ less acidic) and enhance its capacity to draw down carbon dioxide from the atmosphere.
Ocean fertilization	A process by which: i. Nutrients such as iron, phosphorous, and/or nitrogen are added to the upper ocean (eutrophic zone) in areas where their supply is limited. This is done by spreading them across the ocean's surface or by circulating them from the deep ocean via enhanced upwelling. The addition of nutrients to the surface promotes the growth of phytoplankton which uptake carbon dioxide during photosynthesis and store the associated carbon in their biomass.

	ii. When the plankton die, their biomass (biogenic carbon) can be transported to the deep ocean where it is stored. This may be facilitated by enhanced downwelling.
Open system	A system in which the carbon capture and storage activities involve pathways that are largely outside of human control, i.e., they rely on complex natural biogeochemical cycles.
Pyrolysis	The thermal treatment of organic material (e.g., biomass) in the absence of oxygen.
Unavoidable reversal (force majeure)	An unavoidable reversal (force majeure) are reversals caused by factors over which the activity developer has no influence or control. Such events may include, but are not limited to: a. An act of war (whether declared or not), invasion, revolution, insurrection, terrorism, or any other acts of a similar nature or force, that prevents travel to activity site b. Natural disasters such as floods, earthquakes, etc. c. A change in Governmental requirements, policy, etc. that affect the activity implementation and operation. A reversal caused by a shortage of personnel, industrial action, economic downfall, sickness of personnel, breach of contract by subcontractors and/or liquidity or solvency problems are not considered unavoidable (force majeure).

3| SCOPE, APPLICABILITY AND ENTRY INTO FORCE

3.1 | SCOPE

3.1.1 | This document outlines the requirements and guidelines for engineered removal activities seeking certification of an activity design and issuance of Gold Standard Certified Impact Statements and/or Products (e.g., GS-VERs).

a. The term ***engineered*** refers to activities that:
   i. rely on technology to deliver solutions that would not occur naturally or spontaneously, and/or
   ii. utilise technology to accelerate natural processes.

b. The term ***removal*** refers to anthropogenic processes that remove greenhouse gases (GHGs), such as CO_2, from the atmosphere and durably store it in geological, terrestrial, or ocean reservoirs, or in products (IPCC).

3.1.2 | The current version of this document focuses on carbon dioxide removal (CDR) but may be expanded and applied to cover additional GHGs.

3.1.3 | The scope of this document does not cover activities that:

a. lead to emissions reductions, including carbon capture and storage (CCS) of CO_2 from geological and/or fossil fuel sources,
b. involve nature-based carbon storage from land use and forestry (LUF) activities, such as afforestation and reforestation (A/R), improved forest management (IFM), blue carbon (BC), agricultural land management (AGR) for soil organic carbon (SOC), and agroforestry.

3.2 | Applicability

3.2.1 | The Engineered Removal Activity Requirements document is applied in conjunction with the Principles & Requirements, Safeguarding Principles & Requirements, an approved GS4GG Methodology, GHG Emissions Reductions & Sequestration Product Requirements and any other applicable standard requirements.

3.3 | Entry into force

3.3.1 | This standard document comes into force on its publication date.

4| ELIGIBILE ACTIVITY TYPES

4.1 | Eligible activity types

4.1.1 | The following holistic activity types shall be considered eligible:

a. Enhanced weathering
b. Enhanced mineralization
c. Ocean alkalinity enhancement

4.1.2 | The following carbon capture activities shall be considered eligible when the storage-related criteria outlined in the subsequent paragraph are also met:

a. Direct air capture (DAC)
b. Direct ocean capture (DOC)
c. CO_2 capture in sustainably sourced biomass
d. CO_2 capture from the industrial processing of sustainably sourced biomass, e.g.:
    i. Combustion (bioenergy)
    ii. Anaerobic digestion
    iii. Fermentation
    iv. Gasification
    v. Pyrolysis

4.1.3 | The following storage activities shall be considered eligible when the capture-related criteria outlined in the preceding paragraph are also met:

a. Geological storage, whereby either:
    i. CO_2 is pressurized to produce a liquid/ supercritical fluid which is injected into a geological reservoir.
    ii. CO_2 is dissolved into a solution which is injected into a geological reservoir (this may facilitate subsurface carbonate mineralization).
    iii. Biomass is treated to produce bio-oil which is injected into a geological reservoir.
    iv. Carbon-rich slurries are injected into a geological reservoir.
b. Storage in products/ materials, whereby:

i. Carbon is used as a feedstock to produce products or materials. The product may not exist in its original form over the extent of the durability timeframe, but the carbon-containing component shall not degrade (e.g., a carbonate mineral contained within a building material, such as concrete, can remain stable even if the building is demolished).

ii. Products and materials include, for example, stable carbonate minerals, biochar and biopolymers.

4.1.4 | The list of eligible activity types may be amended or extended in future versions based on the latest scientific understanding. Activity developers are encouraged to contact the Gold Standard Secretariat via standards@goldstandard.org for suggestions on new activities to include.

4.1.5 | The following activities shall not be eligible under the Engineered Removal Activity Requirements due to uncertainties surrounding the proportion of biogenic carbon that is transferred to deep ocean:

a. Ocean fertilization

b. Sinking of biomass in the deep ocean (deep ocean storage)

4.2 | Ineligible activity types

4.2.1 | Activities involving the enhanced recovery of hydrocarbon shall not be considered eligible for Gold Standard certification in line with Gold Standard's Principles & Requirements.

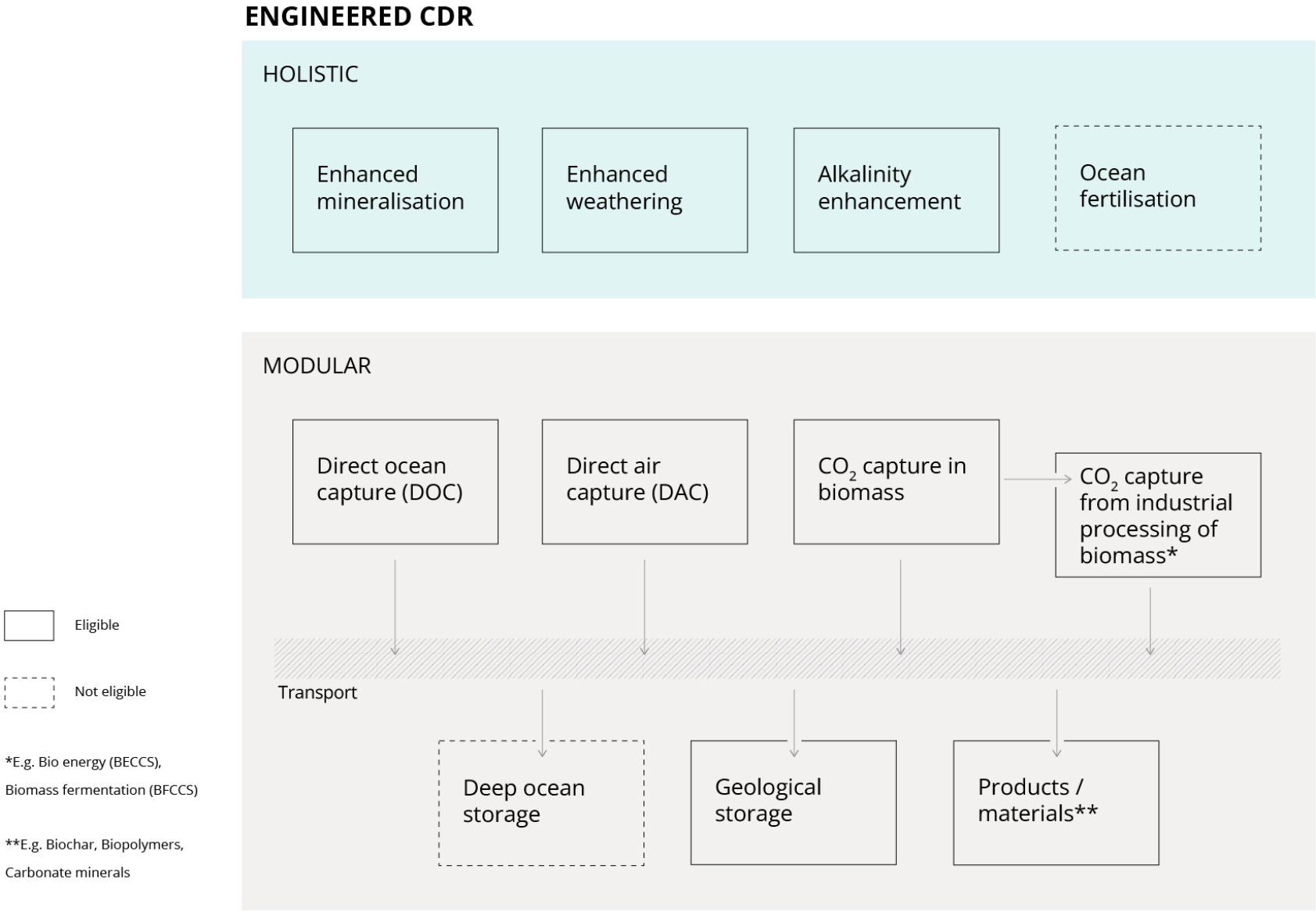

Figure 1– Taxonomy of holistic and modular engineered CDR solutions showing eligibility

5| PRINCIPLES AND REQUIREMENTS

PRINCIPLE 1: CONTRIBUTION TO CLIMATE SECURITY AND SUSTAINABLE DEVELOPMENT

5.1 | Minimum SDG contributions:

5.1.1 | The activity shall contribute to Sustainable Development Goal (SDG) 13 (Climate Action) and two other SDGs. SDG Impacts shall be a primary effect, i.e., an intentional, direct effect of the project.

5.2 | Alignment with local and national priorities:

5.2.1 | The selection of the SDGs (beyond SDG 13) to which the project contributes shall be justified and demonstrably aligned with:

a. The host country's national sustainable development strategies, plans, or priorities.
b. The specific local development priorities identified in consultation with local stakeholders through the mandatory consultation process outlined in the Stakeholder Consultation and Engagement Requirements.

5.3 | Enhancing overall impact:

5.3.1 | The activity shall conduct a mandatory, comprehensive Sustainable SDG impact assessment. This assessment shall systematically identify, evaluate, monitor, and report on the project's impacts—both positive and negative—on a pre-defined set of core SDGs. These core SDGs should include, at a minimum: SDG 1 (No Poverty), SDG 5 (Gender Equality), SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), SDG 10 (Reduced Inequalities), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), SDG 14 (Life Below Water), and SDG 15 (Life on Land)

5.3.2 | Recognizing that the primary intentional effect of engineered CDR is climate action (SDG 13), activity developers are strongly encouraged to maximize the overall sustainable development footprint and deliver broader value beyond the core requirement direct SDG impacts (para 5.1.1). Therefore, the activity should contribute beyond direct SDG impacts taking into account the local priorities with specific emphasis on achieving positive impacts for social equity-focused SDG (i.e., SDG 1 (No Poverty), SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities)) and environmental co-benefit focused SDG (e.g.,

SDG 6 (Clean Water and Sanitation), SDG 14 (Life Below Water), and SDG 15 (Life on Land)).

PRINCIPLE 2: SAFEGUARDING PRINCIPLES AND REQUIREMENTS

5.3.3 | The Projects shall conduct an upfront risk assessment and ongoing monitoring for all relevant risks as stipulated by the Safeguarding Principles & Requirements.

5.3.4 | In addition to the Safeguarding Principles & Requirements, the activities where applicable, shall demonstrate compliance with the following:

a. For activities affecting Indigenous Peoples and Local Communities (IPLCs), Free, Prior, and Informed Consent (FPIC) shall be demonstrably achieved and documented through a culturally appropriate, iterative process that ensures genuine partnership.

b. For activities located in or impacting water-scarce regions, a comprehensive Water Stewardship Plan is mandatory. The plan must demonstrate sustainable water sourcing and aim for water neutrality or a net positive water impact for the local catchment and its users.

PRINCIPLE 3: STAKEHOLDER INCLUSIVITY

5.3.5 | The activity developer shall engage relevant stakeholders and seek expert stakeholder input where necessary in the design, planning and implementation. The activity shall comply with the requirements outlined in the Stakeholder Consultation and Engagement Requirements for conducting local and global stakeholder consultation.

PRINCIPLE 4: DEMONSTRATION OF REAL OUTCOMES

5.4 | Activity start date

5.4.1 | The activity start date shall be the earliest date on which the activity developer has committed to expenditures related to the implementation of the activity. This excludes expenditures relating to research and development (R&D), proof-of-concept studies, pilot studies, and commercial design work.

5.5 | Life Cycle Assessment (LCA) for resource use and GHG emissions

5.5.1 | **Mandate and scope:** All CDR activities shall undergo a mandatory, independently verified cover of the full project lifecycle ("cradle-to-grave"), unless exempted by the applicable methodology.

5.5.2 | **GHG emissions quantification:** The LCA shall comprehensively quantify all significant greenhouse gas (GHG) emissions (including CO_2, CH_4, N_2O, and relevant F-gases).

5.5.3 | **Resource input quantification:** The LCA shall comprehensively quantify all major resource inputs for the project. The assessment shall include, at a minimum:

a. **Energy:** Disaggregated by source and carbon intensity.
b. **Water:** Detailing the source and net consumption.
c. **Land:** Quantifying both direct and indirect land use.
d. **Critical Materials:** Identifying types and quantities.[1]
e. **Biomass (if applicable):** Detailing the type, origin, and sustainability attributes.

5.5.4 | **Methodology and reporting:** The LCA shall be conducted using internationally recognized methodologies (e.g., ISO 14040/14044 or equivalent). The final report must transparently disclose all assumptions and data.

5.5.5 | **Application to emission accounting:** Where results from the LCA(s) indicate a potential source of significant emissions (as per the materiality threshold defined in the applied methodology or the VVS), the(se) emission source(s) shall be included in the project emission calculations in order to determine the net removals, in line with the applied methodology.

5.6 | Monitoring reports

5.6.1 | Activities shall be monitored using data derived from measurements, sampling, remote sensing, third party sources and published literature and/or models that are scientifically robust, statistically representative, conservative, and take into account associated uncertainties. Monitoring methods shall be outlined in the methodology document applied to the activity.

5.6.2 | Activity developers shall prepare monitoring reports after implementing monitoring operations and methods as specified in monitoring plans, including for seeking issuance of GS-VERs.

5.6.3 | Monitoring reports shall contain:

a. An outline of the monitoring plan with a description of the monitoring operations and methods used to implement the plan, and the resulting calculated removals during the monitoring period along with the associated uncertainties in the calculation.

[1] These include sorbents (such as amines, Metal-Organic Frameworks (MOFs), and zeolites for S-DAC) and solvents (e.g., potassium hydroxide for L-DAC), as well as catalysts and potentially membranes for specific processes.

b. Field data collected, including remotely sensed data, or if the data set is too voluminous, a summary of the data and an indication of how the complete data set may be accessed.
c. Records and logs of observed events that could potentially lead to the reversal of removals as well as a summary of any reversal notifications that were submitted during the monitoring period.
d. Estimates of any reversals that occurred during each monitoring period, including descriptive information on how reversals occurred, whether they were avoidable or unavoidable, and remedial actions taken.
e. Information on how the environmental and social impacts were assessed, monitored and addressed by applying robust environmental and social safeguards as per GS4GG requirements.
f. Information on how reversal risks were assessed monitored and addressed consistent with risk mitigation measures described in the applicable reversal risk assessment tool or methodology.

5.6.4 | Monitoring reports shall be prepared without a gap between the two successive monitoring periods, which may be of the same or different durations according to the activity developer's implementation plan.

5.6.5 | In each monitoring report, the activity developer shall follow the applied methodology to:

a. Calculate the net removals by estimating and deducting emissions within the activity boundary resulting from the activity's implementation and/or from any event that could potentially reverse removals, as well as any leakage emissions.
b. Compare the current cumulative net removals to those in the previous monitoring report. If the current cumulative net removals are less than those in the previous report, this constitutes a reversal.

5.6.6 | Monitoring plans shall include measures to mitigate risks identified in the reversal risk assessment tool.

5.6.7 | Monitoring beyond the end of the last crediting period[2] shall be in line with regulatory requirements and/ or the minimum duration as outlined in the applied methodology or Tool.

5.6.8 | During the post-crediting monitoring period, the activity developer shall undertake monitoring, reporting, verification, and remediation measures to confirm the continued existence of removals and address any reversals of removals for which GS-VERs were issued during the activity's active crediting period(s). No GS-VERs shall be issued for removals generated after the last active crediting period, including during the post-crediting monitoring period.

[2] "Last crediting period" refers to the last crediting period during which the activity was implemented for the purpose of issuing GS-VERs, which can describe possible crediting periods permitted by methodology applied (subject to renewal procedures)

5.6.9 | Activity developers may submit requests to conclude post-crediting monitoring for the consideration and approval by the Technical Advisory Committee (TAC), by demonstrating using transparent and verifiable information and evidence that

a. the stored GHGs are at negligible risk of reversal; or
b. the potential future reversals of removals are remediated as per sections 5.16 and 5.17, taking into account the residual reversal risk of the activity based on its current reversal risk assessment.

5.6.10 | Activity developers shall indicate the arrangements for monitoring, reporting, and remediating reversals during the post-crediting monitoring period in the project design document. They shall communicate any updates to the plan at each renewal of the crediting period and before the end of the last active crediting period.

5.7 | Crediting period

5.7.1 | The activity may have maximum crediting period of 45 years, unless stated otherwise in the applied methodology. The applied methodology document supersedes this standard's requirements where any conflict occurs.

5.7.2 | At the renewal of the crediting period, the activity developer shall apply the latest version of the methodology and methodology tools, if applicable.

5.7.3 | If there is a delay for more than 3 years between the proposed start date of crediting period and the date the crediting period commences, the activity shall follow the latest methodology version available at the time of actual start date.

5.8 | Renewal of the crediting period

5.8.1 | The activity shall follow a 5-year certification cycle for renewal of the crediting period, unless stated otherwise in the applied methodology or Activity Requirements.

5.8.2 | For renewal of the crediting period, the activity shall apply the latest available version of the methodology, and the requirements as outlined in the applicable methodology for renewal of crediting period.

5.9 | Accounting for removals

5.9.1 | Removals eligible for crediting shall exceed the applicable baseline as determined by the applied methodologies' requirements for the period covered under given monitoring period.

5.9.2 | Removals shall be calculated as described in the previous paragraph for each year (or other specified time frame) during the post-crediting monitoring period.

5.9.3 | If an activity involving removals also results in emission reductions, appropriate guidance shall be applied using a relevant methodology or a

combination of methodologies applicable to the activity, in accordance with the provisions to be developed by A6.4 Supervisory body or Gold Standard.

5.10 | Avoidance of leakage

5.10.1 | Activity developers shall address leakage risks and account for any leakage when calculating net removals, as specified in the applied methodology or tool. Specific methodologies and tools may impose additional requirements for particular types or categories of removal activities.

5.11 | Reversal risks

5.11.1 | Activity developers shall:

a. Assess the risk of reversals associated with the activity using the tools or methods prescribed in the applied methodology.
b. Implement measures to mitigate (i.e., avoid or minimize) the risks of reversals.
c. Monitor the activity to determine whether a reversal(s) have occurred or may occur.
d. Address all reversals fully, in accordance with the requirements outlined in this document.

5.12 | Reversal risk assessment

5.12.1 | The risks of reversals may be related to, inter alia:

a. Activity finance and management, asset ownership, rising opportunity costs.
b. Regulatory uncertainty and social instability, political, governance and legal risks, acts of terrorism, crime, and war.
c. Natural disturbances and extreme events such as fires, pests, and droughts, hurricanes, floods, and landslides, earthquakes, volcanic eruptions, geological faults, and fractures.
d. Climate change impacts exacerbating any of the above risks.

5.12.2 | To assess the risk of reversals, activity developers shall conduct a comprehensive reversal risk assessment at the activity level, as prescribed in the applied methodology and/ or tool.

5.12.3 | The assessment shall include methods to:

a. Identify, evaluate, quantify, and score reversal risks
b. Evaluate factors including the nature, scale, likelihood, and duration of potential reversals.
c. Prescribe a percentage-based reversal risk rating and/or default percentage which can be translated to the quantity of GS-VERs that are required for transfer to the Gold Standard buffer pool.
d. Detail the application of remediation measures (e.g., buffer pool contribution) for addressing reversal risks and actual reversals.

5.12.4 | Developers shall review and revise the risk assessment every 5th year and in any of these circumstances:

a. If verification reveals the need for a revision.
b. Following any significant reversal event that reveals a risk factor was underestimated or not considered.
c. As per the existing and applicable national or regional regulations specified by the host Party.

5.12.5 | If a material risk of reversal is identified in line with the prescribed risk assessment tool(s)/ method(s), the activity may not be considered eligible for Gold Standard Certification.

5.13 | Reversal risk mitigation measures

5.13.1 | Developers shall detail the identified reversal risks in the project design document (PDD) and shall describe and implement measures (i.e., steps taken) to mitigate the risks. Any risks that cannot be eliminated shall be addressed as specified in subsequent sections of this document.

5.13.2 | Developers shall review and revise the mitigation measures every 5th year and in any of these circumstances:

a. If verification reveals the need for revised mitigation measures.
b. Following any significant reversal event.
c. As per the existing and applicable national or regional regulations specified by the host Party.

5.13.3 | Activity developers shall obtain and maintain sufficient coverage under an insurance policy or comparable guarantee product approved by the Gold Standard. This coverage shall ensure the continued implementation of the activity in case reversals occur which require remediation. For small- and micro-scale activities, developers may detail a plan to ensure continued operation in case of reversals (e.g., ring fenced funds) in place of in insurance policy/ guarantee product. The insurance policy, guarantee product, or plan shall be submitted at the time of issuance.

5.14 | Reversal risk monitoring

5.14.1 | Developers shall describe plans to monitor the identified risks in the PDD.

5.14.2 | Developers shall submit the 1st monitoring report within 3 years from the start date of the first crediting period.

5.14.3 | Subsequent monitoring reports shall be submitted at least every two years for high-risk activities or every three years for low-risk activities, in terms of reversal potential.

5.14.4 | Developers shall review and revise the monitoring plan every 5th year and in any of these circumstances:

a. If verification reveals the need for revised monitoring methods.
b. Following any significant reversal event.

c. As per the existing and applicable national or regional regulations specified by the host Party.

5.15 | Buffer pool contributions and operations

5.15.1 | Activity developers shall contribute a portion of GS-VERs to the Buffer Pool upon issuance. This portion shall be proportionate to the activity's reversal risk rating (as prescribed in the reversal risk assessment), or the minimum contribution set by the applied methodology or tool, whichever is higher.

5.15.2 | The Buffer Pool is managed through a registry holding account that aggregates all Buffer GS-VER contributions. The Gold Standard oversees this account, which is administered and accessible only by the Gold Standard registry administrator.

5.15.3 | Following a review of a full monitoring report reflecting reversals by the TAC, the registry administrator will be notified of the findings. The administrator shall then cancel Buffer GS-VERs equal to the number of unavoidable reversals requiring remediation. These reversals shall be addressed by cancelling GS-VERs from the same vintages and eligibility criteria (e.g., activity type, durability, host country) where possible.

5.16 | Addressing reversal risks – post reversal notification

5.16.1 | The activity developer shall notify the Gold Standard of reversals occurring within their activity boundary.

5.16.2 | A preliminary notification shall be provided within 30 days of an observed event that has, or potentially could, lead to a reversal. This notification, which may be provided digitally, shall include at minimum the date, location, and a brief description of the event, taking into account risks identified in the risk assessment and applied methodology.

5.16.3 | Activity developers wishing to demonstrate that removals for which GS-VERs have been issued were not affected by the observed event shall submit a verified preliminary assessment report, verified by the VVB, of the information prior to submitting a full monitoring report. This report may be provided digitally.

a. A full monitoring report serving as a reversal notification shall be provided within 180 days of the observed event.

b. If the reversal event is ongoing and a delayed submission would result in more complete and accurate information, the activity developer shall submit a verified preliminary assessment report to request an extension from the original deadline for the full monitoring report submission.

5.16.4 | After submitting a preliminary notification, the activity developer will be unable to issue, transfer, or cancel Emission Removals (ERs) from the notified activity. This restriction remains in effect until the activity developer either:

a. Submits a verified preliminary assessment report or a full monitoring report demonstrating that removals for which GS-VERs have been issued were not affected by the observed event, or
b. Receives confirmation from the Gold Standard registry administrator that the reversal has been remediated according to section 5.17.

5.16.5 | Following the submission of the preliminary notification, the activity developer shall initiate appropriate corrective measures and demonstrate in requisite updates to a reversal risk assessment, mitigation measures, and monitoring plan that accompanies a full monitoring report reflecting reversals, including:

a. Assessing the cause and occurrence of the reversal.
b. Developing plans to prevent further reversals by improving control measures, storage conditions, and handling procedures, as well as arranging additional personnel training in various aspects of the removal process.
c. Reassessing compliance with applicable local and international regulations.
d. Increasing the activity risk rating, resulting in higher buffer contributions, if required, by the updated risk assessment.
e. Potential introduction of new or revised monitoring methods.

5.17 | Addressing reversals – corrective measures

5.17.1 | Reversals of removals for which GS-VERs have been issued shall be fully remediated by cancelling an equivalent number of GS-VERs.

5.17.2 | Measures for effecting this cancellation shall include the cancellation of the GS-VERs from Buffer Pool and/or the direct cancellation of GS-VERs from the affected activity or other CDR activities.

5.17.3 | Reversals shall be addressed by cancelling GS-VERs with the same vintage and eligibility criteria (e.g., activity type, durability, host country) where possible, or a more recent vintage and/or higher durability.

5.17.4 | These measures may be used on a standalone basis or in combination and shall be as follows:

a. If the reversal is unavoidable AND the activity is insured, the underwriter shall cancel GS-VERs equivalent to the reversal event(s).
b. If the reversal is unavoidable AND the activity is not insured, Gold Standard shall cancel GS-VERs from the Buffer Pool equivalent to the reversal event(s).
c. If the reversal is avoidable AND the activity is insured, the activity developer or underwriter shall cancel GS-VERs equivalent to the reversal event(s).
d. If the reversal is avoidable AND the activity developer does not have insurance, the activity developer or shall cancel GS-VERs equivalent to the reversal event(s).

5.17.5 | GS-VERs from the buffer pool shall not be used to address avoidable reversals. Activity developers shall be responsible for addressing reversals found to be avoidable, even when the activity is contributing to the Buffer Pool. Developers shall indicate in the PDD that the activity will forgo the use of the GS-VERs from the Buffer Pool throughout all active crediting periods and the post-crediting monitoring period.

5.17.6 | In the case(s) where it is unclear whether the reversal event was avoidable or unavoidable, the case(s) shall be assessed by the TAC who shall determine the classification.

5.18 | Cross-border delivery of carbon

5.18.1 | For modular CDR activities, the cross-border (i.e., transboundary) delivery of carbon (e.g., compressed CO_2) shall be considered eligible when the following conditions are demonstrated in order to prevent double counting:

a. If neither Party account for the removal within their inventory, the activity developer shall provide evidence that the removal activity is excluded from the inventories of both/ all Parties.

b. If there is an existing mechanism (e.g., legislation or agreement) which governs accounting for both Parties, the activity developer shall detail the legislation and demonstrate compliance to ensure no double counting.

c. If there is no existing mechanism which governs accounting for both Parties and a risk of double counting, the removals may be allocated to the location where the final storage occurs, providing both the developer and site owner have a legal agreement in place. This shall be layered with monitoring of the host Party's inventory reporting and demonstration that the removal is not accounted for in any national inventory.

PRINCIPLE 5: FINANCIAL ADDITIONALITY AND ONGOING FINANCIAL NEED

5.18.2 | All activities seeking the issuance of Certified Impact Statements and/or Products shall demonstrate Financial Additionality and ongoing financial needs in accordance with the Requirements for Additionality Demonstration or the applicable tool as outlined in the methodology.

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