



C-Capsule Code

SD-01: Methodology Guidelines

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1 Introduction

This document represents the Methodology Guidelines for the C-Capsule Code for Carbon Dioxide Removal (CDR) and outlines the eligibility criteria set out by C-Capsule for CDR Methodologies to become approved. At Facility registration, Registrants must select a Methodology approved by the International REC Standard Foundation (“Foundation”).

1.1 The C-Capsule Certificate

C-Capsule is an ex-post, evidence-based Product Certificate for Carbon Dioxide Removal (CDR), as defined by the International Panel on Climate Change (IPCC)¹. Facilities can replace existing contractual agreements for CDR activity in exchange for reliably and robustly tracked certification to organise ownership of Attribute rights. Issuance of C-Capsule Certificates can provide primary or additional revenue streams for independently verified CDR activity.

C-Capsule can be used to neutralise direct emissions (Scope 1) and indirect emissions (Scope 3) for end-users around the world, without restriction². C-Capsule Certificates allow end-users to make an informed and evidence-based choice for CDR from their preferred technology or process.

The unit of measure for a C-Capsule Certificate is metric-tonne of CO_{2eq}. Each unit of CO_{2eq} is uniquely attributable to the point of CDR and contains a unique reference that can be traced throughout the chain of custody back to the Facility. A metric-tonne of CO_{2eq} recognised through the Issuance of a C-Capsule Certificate is a globally fungible product, but the method of CDR is always unique.

1.2 The C-Capsule Code

The C-Capsule Code for CDR describes implementation of the International Attribute Tracking Standard (the “Standard”), owned by the Foundation. The C-Capsule Code provides a robust and reliable method for certifying the Attributes of CDR activity by utilising an open book and claim system. It sets out the definitions, principles, processes, and procedures that form the specification

¹ IPCC, 2018: Annex I: Glossary [Matthews, J.B.R. (ed.)]. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press

² Subject to country specific NDC and Corresponding Adjustment requirements. *Please note: An annual report will be created by the Code Manager that declares the total exports and imports of CO_{2eq} tonnes from one country to another that is publicly available.*

of the C-Capsule certificate.

2 Terms and Definitions

2.1 Defined Terms

Term	Definition
Accredit or Accreditation	The act of acknowledging that a Product or Entity is compliant with the Standard.
Audit Report	A document detailing the findings of a Facility Audit, performed on a Facility by an approved Verification Authority.
Audit Period	A period within which the CDR activity of a Facility is eligible for the issuance of C-Capsule against a specific Facility Audit.
Attribute	A set of verifiable facts that describe the process of how, when, and where a tonne of carbon was removed.
Calculated Emissions	Lifecycle Emissions included in the calculation of a Facility's Removal Performance.
Capture	The process of capturing GHG directly from the atmosphere prior to Durable Sequestration.
Carbon Dioxide Removal (CDR)	Anthropogenic activities removing CO ₂ from the atmosphere and durably storing it in geological, terrestrial, or ocean reservoirs, or in products. It includes existing and potential anthropogenic enhancement of biological or geochemical sinks and direct air capture and storage, but excludes natural CO ₂ uptake not directly caused by human activities ¹ .
C-Capsule Certificate	A tradeable instrument that represents the collection of environmental Attributes describing a specific record of CDR at a Facility Issued as set out in the Standard and this Product Code. A single C-Capsule is assigned to one unit (CO _{2eq}) of CDR.
CO_{2eq}	A Carbon Dioxide equivalent or CO_{2eq} is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential (GWP), by converting amounts of other greenhouse gases to the equivalent amount of Carbon Dioxide with the same global warming potential. In this Product Code, the associated volume of CO_{2eq} relating to GHG is defined using the related values of global warming potential over a 100-year time-horizon (GWP100) defined in the version of the Assessment Report last published by the IPCC at: https://www.ipcc.ch/.

Code Manager	The Entity responsible for coordinating Services within the scope of the Standard and this Product Code. The nature of those Services is defined within the C-Capsule Code.
Durability	The ability to withstand an EOCD over a minimum 100-year time horizon.
Eligible Quantity	Formula used to determine the volume of C-Capsule Certificates eligible per quantity of Removal Output.
Emissions Inventory	The Emissions Inventory of a Facility including assessment of Lifecycle Emissions of CDR activity. The Emissions Inventory is performed at Facility Audit and shall be verified by the Verification Authority.
Entity	An organisation or individual with 'legal' status (e.g. registered incorporated or incorporated business, public sector entity, or private individual).
Event of Carbon Default (EOCD)	An unpredictable Reversal of CDR Attributed to a C-Capsule Certificate. An EOCD reflects GHG emissions that have been released back into the atmospheric cycle after the CDR event occurred.
Expected Effect	The probability for CDR activity to achieve Durable Sequestration for 100 years, without an EOCD.
Facility	One or more assets where Capture and Sequestration takes place through one or more identifiable measurement point(s).
Facility Audit	The systematic, independent, and documented assessment of a Facility by the Verification Authority against the selected Methodology.
GHG	Greenhouse gas, as defined by the Kyoto Protocol. Quantities of GHG are expressed in tons of CO _{2eq} .
Insurance Buffer	A secondary buffer, applied after the Leakage Buffer, commensurate to the risk of an EOCD.
International REC Standard Foundation or Stichting I-REC	The governance body for the International Attribute Tracking Standard (Standard). A not-for-profit foundation that is independent of the various Entities that may be Accredited. The I-REC Standard Foundation owns the Standard and is staffed and supported by a secretariat. Legally known as "Stichting I-REC" and founded in the Netherlands under Chamber of Commerce number 59458844.
Issue or Issuance	The act of creating a record of one or more Product Certificates in an Account on a Registry.
Issue Request	A formal request by a Registrant of a Facility to an Issuer to Issue a Product Certificate in relation to that Facility against evidence provided for a given Removal Period.
Issuer	An Accredited Entity contracted by the Code Manager to register Facilities and Issue C-Capsules in a designated country/region.
Leakage	Predictable Reversal accounted in the Removal Performance where GHG emissions re-enter the atmospheric cycle post-CDR activity at a Facility.

Leakage Buffer	A mandatory buffer applied to C-Capsule Certificates Issued, commensurate to the amount of Leakage evidenced in a particular Methodology.
Lifecycle Emissions	GHG emissions occurring as a result of the activity of a Facility. This includes Scope 1, Scope 2, and Scope 3 emissions from the CDR activity.
Methodology	The detailed requirements for an eligible CDR technology or process to be registered under the C-Capsule Code on the Registry. A Methodology shall be approved by the Foundation before use at Facility Registration.
Product	A unit of output or production whose Attributes are being tracked, defined as tonnes of CDR under this Product Code.
Product Certificate	An Attribute certificate that is a verified record of an event of production at a registered Production Facility Issued according to a Product Code Accredited under the Standard. Use of a Product Certificate in this Product Code refers to a C-Capsule Certificate.
Product Code	A document or set of documents that sets out the rules and procedures, and other information required to form the specification of a Product.
Registrant	The Facility owner, or an Entity legally empowered by that Facility owner, to register that Facility and request the issuance of C-Capsules. Registrants do not require Accreditation.
Registry	A register of C-Capsules which includes records of the full lifecycle of ownership and use from Issuing to Redemption.
Removal Output	Physical output produced or processed by a Facility during the CDR activity. It can be a stable product, a pure CO ₂ stream, or alternative product defined by a Methodology.
Reversal	Captured and sequestered GHG that has re-entered the atmospheric cycle post-sequestration event.
Sequester or Sequestration	The Durable utilisation or storage of a GHG emission from the atmosphere.
Verification Authority	A suitably qualified Entity approved by the Foundation as being competent to independently verify information provided by a Registrant. An Issuer may act in the capacity of a Verification Authority.

2.2 Interpretation

Unless expressly given, the terms in this Product Code that are identified by capitalisation have the meanings assigned to them in section 2.1.

The singular of a term defined in section 2.1. shall include the plural and vice versa.

Where a word or phrase is given a particular meaning in section 2.1, other parts of speech and grammatical forms of that word or phrase have corresponding meanings.

In this code, the following verbal forms are used:

- "Shall" specifies a requirement.
- "Shall not" specifies an act that is prohibited.
- "Should" specifies a recommendation.
- "May" specifies a permission.
- "Can" specifies a possibility or a capacity.

3 Core Eligibility Criteria

This section outlines the core eligibility criteria that submitted Methodologies are assessed against, for approval by the Foundation. To be approved, a Methodology must satisfy the expectations of the Foundation in reaching C-Capsule's eligibility criteria outlined below.

3.1 Measurable

Methodologies shall demonstrate how the CDR activity can be precisely measured. Methodologies shall identify one or more Removal Output and measurement points where the volume of CDR is accurately determined through robust and reliable measurement equipment. Methodologies shall demonstrate a quality method of determining data collection for the reliable and measurable Issuance of C-Capsule Certificates.

3.2 Durable

Methodologies shall demonstrate durable Sequestration for a minimum 100-year time horizon. This time horizon shall be clearly evidenced and verifiable. A Leakage Buffer must be applied to each Methodology to account for predictable GHG emissions (Leakage) over the first 100-years of Sequestration. Methodologies shall also demonstrate an Expected Effect to quantify the risk of an Event of Carbon Default (EOCD) occurring over a 100-year time horizon.

3.3 Verifiable

Methodologies shall demonstrate how CDR activity can be robustly monitored, reported, and verified. Methodologies shall include a list of one or more Verification Authorities that can be used to conduct Facility Audits and how measurements of CDR activity can be verified and validated for Issuance of C-Capsule Certificates.

3.4 Additional

Methodologies shall demonstrate financial additionality, meaning the CDR activity would not have happened without the incentive created by carbon financing. Methodologies may convey additionality where substantial non-carbon financing is present if technological, financial, and regulatory barriers or risk are present. Methodologies shall set out bespoke methods to determine additionality or use a standardised method.

4 Eligibility Conditions

4.1 Context and General Provisions

Methodologies shall summarise the full lifecycle of the eligible CDR activity, describing the end-to-end process from Capture to Sequestration. As a minimum, each Methodology shall describe one method of Capture linked to one method of Sequestration. A Methodology may include multiple methods of Capture or Sequestration, providing all information included in the Methodology (including Expected Effect) remains valid and uniform for all the described methods of Capture or Sequestration. The Foundation must satisfy itself that the variability in method of Capture or Sequestration remains minimal enough for these processes to be considered under the same Methodology.

One single method of Direct Air Capture (DAC) may be linked to various methods of Sequestration described as part of the same Methodology (geological storage in saline aquifers, geological storage in depleted oil/gas field, production of carbonated cement).

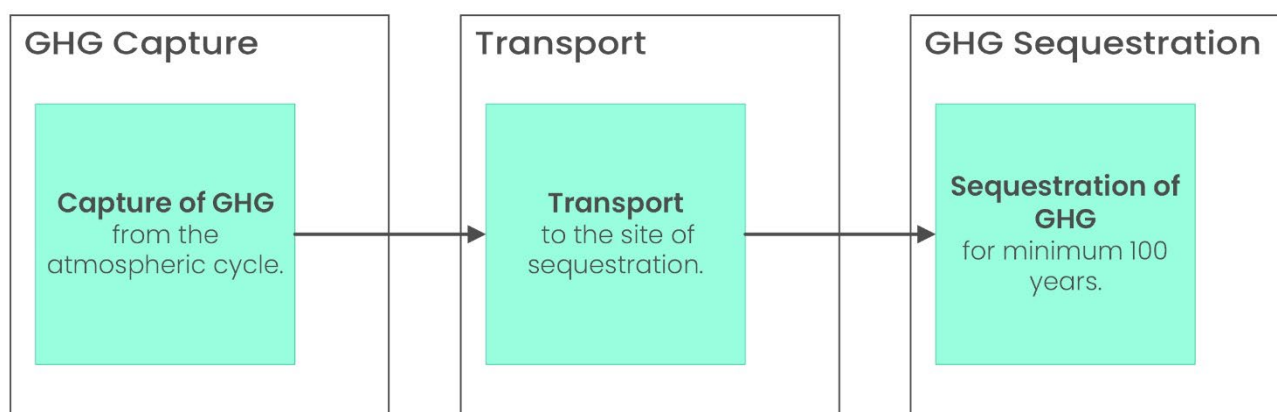


Figure 1. Schematic diagram template for end-to-end CDR activity.

4.2 Minimum Requirements

Each Methodology shall describe the minimum requirements for a Facility to be deemed eligible for registration. This shall include a detailed description for the eligible means of Capture, Transport, and Sequestration that a Facility must meet.

4.2.1 Eligible Capture

The minimum requirements applying to the Capture process shall include the following details:

- a) The nature of GHG Captured by the process,
- b) The eligible process or equipment used to Capture GHG emissions,
- c) The eligible sources (e.g. air, biogenic carbon) of GHG Capture, including eligible feedstocks, and
- d) Acceptable types of evidence for the Capture of GHG emissions.

4.2.2 Eligible Transport

The minimum requirements for the types of transport involved across the full lifecycle of CDR activity shall be included.

4.2.3 Eligible Sequestration

The minimum requirements applying to the Sequestration process shall include the following details:

- a) Eligible forms the Captured GHG emissions can be Sequestered as,
- b) Acceptable types of evidence for the Sequestration of GHG, and
- c) The minimum requirements for sites of Sequestration.

4.3 Process Flow Diagram

Each Methodology shall provide a process flow diagram (e.g. engineering diagram), including each stage of the CDR process. This schematic diagram shall include:

- a) The most upstream part(s) of the process,
- b) The section where the Capture occurs,
- c) All stages of transport involved,
- d) The section(s) where the Sequestration occurs,
- e) The most downstream part of the process, and
- f) The GHG flow path between the points identified in a) and e).

5 Emissions Inventory

5.1 Context and General Provisions

This section outlines the emission inventory requirements for Methodologies and how the Eligible Quantity shall be calculated per Issue Request.

Methodologies shall use terminology concurrent with the GHG Protocol Standard to distinguish between direct and indirect emissions to be included or excluded from the calculation of Eligible Quantity (Scope 1 and 2)³. Methodologies shall distinguish between varying natures of Lifecycle Emissions including CO₂, CH₄, N₂O and others.

Methodologies shall provide guidance on the Emissions Inventory required for Facilities in alignment with the requirements of this section. This includes any type of standard or protocol for LCA/GHG accounting (e.g. ISO, GHG Protocol etc.) that the Emissions Inventory shall follow at Facility Audit.

Lifecycle Emissions included in the calculation of Eligible Quantity are defined as Calculated Emissions.

Lifecycle Emissions shall be expressed in tonnes of CO_{2eq} using the Global Warming Potential (GWP) for the 100-year time horizon as recommended last by the IPCC⁴.

³ The Greenhouse Gas Protocol Initiative (2004) "A Corporate Accounting and Reporting Standard", World Resources Institute and World Business Council for Sustainable Development (Available at: <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>).

⁴ Using the values of GWP100 defined in the version of the Assessment Report published last by the IPCC at: <https://www.ipcc.ch/>.

5.2 Emission Boundaries

Scope 1, 2, and 3 emissions from Capture to Sequestration shall be included in the calculation of the Eligible Quantity. Methodologies should encourage the use of evidencing Scope 2 emissions through other Product Certificates Accredited under the International Attribute Tracking Standard or another tracking scheme approved by the Code Manager and Foundation. If Scope 2 emissions are evidenced through Product Certificates, these Lifecycle Emissions may be removed from the Eligible Quantity formula.

5.3 Eligible Quantity

The Methodology shall include a clear method for quantifying the CDR event or activity to be per Issue Request submission. See example formula below:

$$Q_{Eligible} = (R_{O.} - E_{Facility} - B_{Leakage}) \times Q_{Ro}$$

Q_{Eligible}: Eligible Quantity of C-Capsule Certificates to be Issued per CDR activity.

R_{O.}: GHG (expressed in CO_{2eq}) embedded in the Removal Output [tonne of CO_{2eq}/tonne of Removal Output]

E_{Facility}: Calculated Emissions of the Facility per tonne of Removal Output [tonne of CO_{2eq}/tonne of Removal Output]. Calculated Emissions are Facility-specific and are defined as part of the Facility Audit.

B_{Leakage}: Buffer representing the Leakage of GHG post CDR event or activity [tonne of CO_{2eq}/tonne of Removal Output]. The Leakage value is defined in the relevant Methodology.

Q_{Ro}: Quantity of Removal Output measured per CDR event or activity [tonne of Removal output].

The Eligible Quantity shall be provided to the nearest whole kg of CO_{2eq}.

5.4 Data Confidentiality

Full data disclosure in the Methodology is encouraged for transparency purposes and to provide an accurate basis for approval of the Methodology.

The Methodology shall outline which data should not be made publicly accessible for confidentiality purposes. A Non-Disclosure Agreement will be signed between the Foundation and Methodology Writer to protect any sensitive information provided in the Methodology. Visibility of data disclosed by the Code Manager and the Foundation on the public version of the Methodology may be restricted.

6 Durability

6.1 Context and General Provisions

This section outlines the Durability requirements for a Methodology and how the risk of Reversal of CDR activity shall be accounted for.

Each Methodology shall include best-practice monitoring procedures to ensure Sequestration over a 100-year time horizon at a Facility.

C-Capsule recognises the impact of potential non-permanence from CDR activity over a 100-year time horizon. Reversal of GHG emissions is recognised in two forms:

- **Leakage:** Predictable Reversal events that are accounted for in the Leakage Buffer calculation of Eligible Quantity.
- **Event of Carbon Default:** unpredictable Reversal events that are accounted for in the Insurance Buffer.

6.2 Leakage

Some CDR activities may involve the partial Reversal of GHG emissions back into the atmospheric cycle, defined as Leakage. The Methodology shall clearly define all stages in the CDR lifecycle

where Leakage can occur⁵. The Methodology shall determine a value for each identifiable Leakage point with sufficient scientific underpinning.

The Leakage Buffer shall be expressed in each Methodology as a percentage, or as tons of CO_{2eq} per tonne of Removal Output to be included in the calculation of Eligible Quantity. The Leakage buffer may vary between Facilities and will need to be validated at Facility Audit.

Where there is paucity of data, information or science, the Leakage Buffer shall be increased to its most conservative value in the Methodology. As improved science and metrology emerge, the Leakage Buffer may be reduced or increased accordingly.

6.3 Event of Carbon Default

Every CDR process is susceptible to intentional or unintentional forms of Reversal due to unforeseen events or poor management, known as Events of Carbon Default (EOCD). This risk is a direct reflection of a CDR activity's Expected Effect, which is a percentage-based likelihood for Durable Sequestration over a 100-time horizon.

Each Methodology shall clearly attribute the CDR activity described with a value for its Expected Effect. This value may vary between Facilities and will need to be validated at Facility Audit.

By factoring in the risk of an EOCD over a quantified horizon of 100 years, C-Capsule acknowledges the tragedy of the horizon. Any Reversal of GHG emissions unaccounted for in the Leakage Buffer is considered an EOCD.

6.3.1 Expected Effect

Each Methodology shall include a standard determination method for the Expected Effect. The Expected Effect shall be expressed as a percentage (%) likelihood for Durable Sequestration without occurrence of an EOCD. The Expected Effect provided as part of the Facility Audit shall depend on local factors that shape the risk of EOCD.

Where local conditions have a negligible impact on the Expected Effect, the Methodology may provide a standardised value applicable to all prospective Facilities. The method of calculating this standardised value shall be detailed in the Methodology and supported by scientific underpinning or other means of reasonable justification.

The Expected Effect of a CDR activity shall be determined by the potential for EOCD's identified in the risk register (section 6.4) and risk mitigation outlined in any procedures and response plans

⁵ If no Leakage occurs throughout the CDR lifecycle, the Methodology shall evidence why no Leakage Buffer will be included in the quantification of Eligible Quantity.

(section 6.5).

6.4 Risk Register

Each Methodology shall provide a risk register for every identifiable risk of an EOCD. The risk register shall account for all risk factors (political, economic, social, technological, legal, environmental) that could impact the likelihood of an EOCD (see *Annex 2- Example EOCD Risk Factors*). The risk register should follow the format provided in *Annex 1- Tabulation of EOCD Risk Register*.

6.5 Procedures and Response Plans

Where applicable, an appropriate procedure or response plan shall be identified to help mitigate each EOCD risk identified in the risk register. Robust procedures and response plans will be looked upon favourably when considering approval of Methodologies and will positively impact the numerical value attributed to the Expected Effect.

The procedure and response plans may be included in the risk register.

6.6 Suggestion of Research

C-Capsule recognises that CDR technologies and processes are subject to evolution and change, particularly the associated Measurement, Reporting and Verification (MRV) systems. Methodologies should provide suggestions for directions of research to enhance understanding of Leakage and Expected Effect, as well as methods of mitigating such risks.

Any suggestions for research may be inherited by academics to improve the quality of the Methodology. Research outcomes may help reduce the impact of Leakage Buffer and increase the Expected Effect. Where a Methodology has been approved by the Foundation but an advance in technology or information demonstrates a change in the Eligible Quantity formula, this change should be reflected in a revised Methodology.

Any change to a Methodology shall be submitted with supporting evidence to the Code Manager. Proposed changes are considered in the first instance by the Code Manager before being presented to the Foundation.

Upon approval of changes to an existing Methodology, the previous version of the Methodology will remain active for registered Facilities registered until their Audit Period expires.

7 Measurement, Reporting and Verification (MRV)

7.1 Context and General Provisions

This section outlines how Methodologies shall demonstrate a robust and reliable means of Measurement, Reporting and Verification (MRV) CDR activity throughout its lifecycle. Only Verification Authorities shall conduct Facility Audits, retrospective auditing of Issue Requests, and EOCD investigations. Verification Authorities are approved by the Foundation as part of the Methodology approval procedure. Further Verification Authorities may be approved by the Foundation after approval of the Methodology.

7.2 Verification Authorities

Each Methodology shall define a list of Verification Authorities. A Verification Authority shall adhere to nationally or internationally recognised standards for validation and verification services to qualify as an approved Verification Authority. The Verification Authority shall be able to provide the following as part of the approval process:

- a) A scanned official certificate of any relevant standard(s),
- b) Expiration date of the certification, and
- c) An intention letter.

The intention letter shall outline the responsibilities the Verification Authority intends to perform in a legally binding agreement. If the Entity fails to keep all required information up to date, the Entity shall be withdrawn from the list of approved Verification Authorities.

7.3 Facility Audit

Methodologies shall define the minimum requirements for Facility Audits and how they are conducted, including, but not limited to:

- a) Pre-audit meeting attending list,
- b) Assessment checklist of the audit,
- c) Post-audit meeting attending list,
- d) final Audit Report,
- e) Data and components of the Facility to be audited,
- f) Need for on-site audit, and
- g) Frequency of audits.

7.4 Accepted Evidence

A list of acceptable types of evidence for measurement of the Removal Output and eligible forms of Sequestration shall be provided as part of the Methodology. This evidence format will be required for each Issue Request submitted by the Registrant.

Examples may include direct metering, measured quantity documentation or proof of sale. Facilities registered against the Methodology will have to follow the format of evidence provided in this Methodology.

8 Additionality

8.1 Context and General Provisions

Methodologies shall outline how Additionality can be demonstrated, meaning the CDR activity would not have otherwise happened without the incentive created by carbon financing. Even where substantial non-carbon finance is present, Methodologies may be deemed Additional where technological, financial, institutional, or regulatory barriers are evidenced.

Methodologies shall set out one or more eligible methods for demonstrating Additionality using a standardised or bespoke method. Either method shall ensure there is a requirement to fulfil regulatory surplus (see 8.2).

8.2 Regulatory Surplus

The Methodology shall have a requirement that no Facility can be registered where there the technology or process is required by existing laws, regulations, or other binding obligations. This constitutes the minimal requirement for a Facility to be considered Additional and eligible for Facility Registration.

8.3 Standardised Method

A Methodology may include standardised methods as an effective tool to streamline the determination and assessment of Additionality. Methodologies using this approach shall be based on one or more examples below.

8.3.1 Market Penetration

A market penetration assessment may be used by a Methodology to determine the extent to which a given CDR activity is common practice within a defined geographical area and requires carbon financing to become commercially viable.

In a geographical region where market penetration of the CDR activity is below 5%, it shall be considered Additional given the activity is facing significant economic barriers to entry and requires the support of carbon financing. Alternatively, if the type of CDR activity defined in the Methodology has been commercially available in the applicable country for less than three years, it shall also be considered Additional.

In order to qualify for Additionality under a market penetration assessment, the following steps shall be followed.

- a) The market size of a CDR activity shall be clearly defined in terms of recent uptake or stock installations,
- b) The geographical region of market penetration shall be clearly defined, and
- c) The CDR activity shall not be considered Additional if market penetration exceeds 5%.

8.3.2 Financial Attractiveness

A benchmark or investment comparison analysis may be used by a Methodology to determine the financial attractiveness of a Facility without the revenue stream generated from carbon financing. Either analysis shall involve a comparison of the CDR activity's economic performance against a financial benchmark or against alternative means of investment. The prospective Facility shall be considered Additional only if the CDR activity is unable to meet the required financial benchmarked in the absence of carbon financing.

In order to qualify for Additionality under a benchmark or investment comparison assessment, the following requirements shall be adhered to:

- a) A financial indicator, for example internal rate of return (IRR) or net present value (NPV) shall be used in the calculation,
- b) The calculation of the financial indicator shall include all relevant expenditure (CAPEX, OPEX) and revenue (REVEX), including subsidies or development aid if applicable,
- c) The assumptions, data and conclusions shall be transparently documented, appropriately

- evidenced and consistent with any information submitted to the Facility owner's board of directors or banks/equity holders financing the mitigation activity,
- d) The cash flows used in the assessment shall be expressed in either real or nominal terms, and the calculation shall be consistent with the benchmark used, such as project IRR or equity IRR,
 - e) The benchmark shall be consistent with the weighted average cost of capital or equity, if applicable, relevant to the country, sector and type of CDR activity,
 - f) The period of assessment shall reflect the duration of expected operation i.e. the technical lifetime of the CDR activity and prospective facility, and
 - g) A sensitivity analysis shall be conducted to demonstrate whether any conclusion of financial attractiveness is robust to reasonable variation amongst the critical assumptions.

In the case where carbon financing is the single revenue stream for a Facility's operations eligible against the Methodology, Facilities are de facto considered additional without the need for the above section's requirements. The Methodology shall describe how that condition would be verified at the Facility level.

8.4 Bespoke Method

A Methodology may include bespoke methods to determine Additionality for every Facility. Methodologies using this approach shall demonstrate how the CDR activity is not common practice (section 8.4.1) and faces significant barriers to implementation (section 8.4.2).

8.4.1 Market Penetration

A Facility shall evidence that the technology or process is not common practice:

CDR activity shall not be common practice within the country or region in comparison to projects that have received no carbon financing.

If the CDR activity is common practice, the Registrant shall identify their barriers to implementation in comparison to other projects in that country or region.

8.4.2 Barrier Analysis

A Facility shall evidence one or more barriers to deployment:

- a) Financial: investment barriers that carbon financing can overcome.
- b) Technological: technological barriers that carbon financing can overcome.
- c) Institutional: cultural, social, political barriers that carbon financing can overcome.

9 Environmental and Social Safeguards

9.1 Context and General Provisions

Methodologies shall demonstrate clear ‘no harm’ protections that prevent or mitigate against the potential for negative externalities on the surrounding ecosystem and community. This shall include clear guidance and procedures to ensure Facilities can identify, assess, and mitigate potential environmental and social risks.

Methodologies shall include robust environmental and social safeguards adherent to international standards and industry best-practice. This includes, but not limited to, the International Finance Corporation’s (IFC) Social and Environmental Performance Standards, the UNDP Social and Environmental Standards, the UNEP Environmental, Social and Sustainability Framework and the International Labour Organisation Fundamental Conventions (ILO).

9.2 Risk Register

Methodologies shall provide a risk register for all potential environmental and social risks that may result from the CDR activity. A description of the risk type, along with its likelihood and impact shall be included. Example procedures and response plans shall be provided to ensure robust mitigation of any associated risks.

As recommended by the IC-VCM, Methodologies shall consider the following environmental and social impacts and corresponding safeguard requirements, including reference materials, tools, and best-practice.

- a) Labour rights and working conditions
- b) Resource efficiency and pollution prevention
- c) Land acquisition and involuntary resettlement
- d) Biodiversity conservation and sustainable management of living natural resources
- e) Indigenous people, local communities, and cultural heritage
- f) Human rights, stakeholder engagement, and grievance
- g) Gender equality

Annex 1 – Tabulation of EOCD Risk Register

Risk Category	Description	Likelihood	Magnitude	Supporting Evidence	Procedures / Response Plans
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Annex 2 – Example EOCD Risk Factors

a) Natural hazard risk

Risks associated with natural hazard events. Examples may include:

- Geophysical
- Climatological
- Hydrological
- Meteorological
- Biological

b) Financial risk

Risks associated with financial events or circumstances that result in the Entity responsible for Sequestration no longer being operational.

c) Project management risk

Risks associated with the efficacy of the management team to effectively operate a project. Considerations include:

- Lack of technical expertise
- Non-adherence to monitoring, reporting or project protocols
- Poor management skills

d) Socio-political risk

Risks associated with the socio-political landscape of the geographical location of the sequestration facility. Considerations include:

- Changes in government policy
- Changes in legal frameworks
- Changes in societal views on natural resources

e) Methodology specific risk

Risks that are specific to the methodology under consideration. Since each methodology is diverse in nature, there are no overarching guidelines.

f) Positive legislative impact

These are negative risks, considerations that would lower the likelihood of an EOCD, resulting from legislation that positively impacts on long-term sequestration. Considerations include:

- Governance of land use
- Conservation zones
- Legislature specifically aimed at CDR activities



C-Capsule Code SD-01: Methodology Guidelines