METHODOLOGY MANUAL

Version 1.1

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Inclusive Carbon Standard

VERSION & REVISION CONTROL

Version	Date of Amendment	Section No.	Description of amendment	Amended by
0.1	14 September 2021	Whole document	First draft	Kenneth Slabbert
0.2	17 December 2021	Whole document		Robbie Louw
0.3	30 April 2023	Whole document	General review and update to reflect developments in the ICS Standard as well as the Online Platform.	Kenneth Slabbert, Robbie Louw

CONTENTS

1 OVERVIEW OF COMPONENT METHODOLOGY DESIGN

A component methodology is a related set of criteria and procedures that must be satisfied together with other component methodologies to create a valid project and claim emissions reductions. For a project to be registered on the ICS, it needs to use at least the core component methodologies but may include additional component methodologies for tagging compliance with conditions for application of credits to certain markets. The component methodologies are designed to configure the Project Report document, as they set out the information requirements for a project. The information requirements cover both project registration as well as verifications.

The design of each component methodology must specify inputs required for the setup of both the Project Report and the Monitoring Reports that will be generated over the life of the project. These inputs can be grouped into categories for related information input types. As part of the input design, adequate help text is provided to clearly indicate what information the project developer shall include.

Collectively inputs from all the Component Methodologies in a project must align to the requirements of the ICS Standard document.

Table 1: Component methodology types

Component Methodology Type	Description
Project Details Component Methodology	The Project Details Component Methodology (CM) is the first component methodology. It specifies the project details, and contains information about the purpose of the project along with a general description of the project activity. Information such as the technology and location shall be included.
Additionality Component Methodology	The Additionality Component Methodology contains the information related to the proving of the additionality of the project, and generates the additionality section of the Project Report document. For projects to be defined as additional they shall reduce emissions beyond the 'business as usual' scenario. This methodology generates the inputs a project developer will need to complete to demonstrate additionality.

Component Methodology Type	Description
Baseline Component Methodology	The Baseline component methodology outlines the baseline scenario. This methodology generates the baseline section of the Project Report document which is a description of the situation before project implementation.
Monitoring Component Methodology	The Monitoring Component Methodology generates both the monitoring section of the Project Report and the Monitoring Report. The methodology outlines the monitoring plan and calculation procedures for the project in the Project Report. It also describes the leakage in the project, if any. The Monitoring Report inputs outline the data, parameters and emission reductions for a specific monitoring period. Information about changes to the monitoring plan are included along with other project design related information.
Permanence Component Methodology	The Permanence Component Methodology is relevant to all carbon removal- and sequestration projects. This Component Methodology is used to outline the procedure for proving permanence for the carbon sequestered in a project activity. The Permanence Component Methodology must contain all the information and calculations required to demonstrate permanence of the GHG removal and sequestration for the project.
Tagging Component Methodology	The Tagging Component Methodology is an optional component methodology that can be added to a project. This methodology allows credits to be tagged with certain information. Tagging of projects can relate either to markets, or to co-benefits.

The ICS online platform auto-generates the Project Report and Monitoring Reports for a project activity. The system uses the component methodologies selected by the project owner to generate these documents. The set of component methodologies defines the information and data that a project owner is required to provide on the system.

Each component methodology is required to have a description. This description assists other users in deciding which methodologies to use when developing a project.

The description shall clearly articulate what type of component methodology it is and what project activities it must be compatible with. The description shall also include what physical properties will be required to calculate any emission reductions from projects using the methodology. Along with this, a brief description of information requirements shall be included.

2 PURPOSE OF COMPONENT METHODOLOGIES

The operation of the ICS during project registration and carbon credit issuance relies on the use of Component Methodologies. The Component Methodologies are used in the following steps:

1) Project Registration process:
    a. The Project Owner selects approved Component Methodologies of the required types for his proposed project. Note that only Component Methodologies that are compatible with each other can be selected.
    b. The ICS online system then auto-generates a template for the Project Report by using the selected Component Methodologies. This template has data entry fields that the Project Owner must complete.
    c. On completion of the data entry by the Project Owner, the ICS Online System auto-generates the Project Report using the Component Methodologies as well as the data entered by the Project Owner. It is important for the methodology developer to note that the Component Methodologies must be drafted in a way that allows for the Project Report to be a human-readable document of high quality.
2) Project operation:
    a. Data entry into the ICS Online System can happen in 2 ways.
        i. Human entry: The Component Methodologies must specify all variables that need to be manually entered into the system.
        ii. IoT devices: The Component Methodologies must specify all variables that require automatic data upload to eth ICS Online Platform through IoT devices.
    b. Calculation of the emission reduction: The Component Methodologies must specify the equations for the calculation of the emission reduction.
3) Issuance of credits: The Monitoring report is auto-generated by the ICS Online Platform based on the Component Methodologies, the information

entered by the Project Owner during the project registration process, as well as the data entered in the ICS Online System during the project operational phase.

In summary, the purpose of the Component Methodologies is to create the documents required for project validation and verification in an automated fashion in order to reduce the cost of issuing the carbon credits.

3 METHODOLOGY DEVELOPMENT PROCESS

3.1 Process Overview

The process for the development of new Component Methodologies is shown in the diagram below:

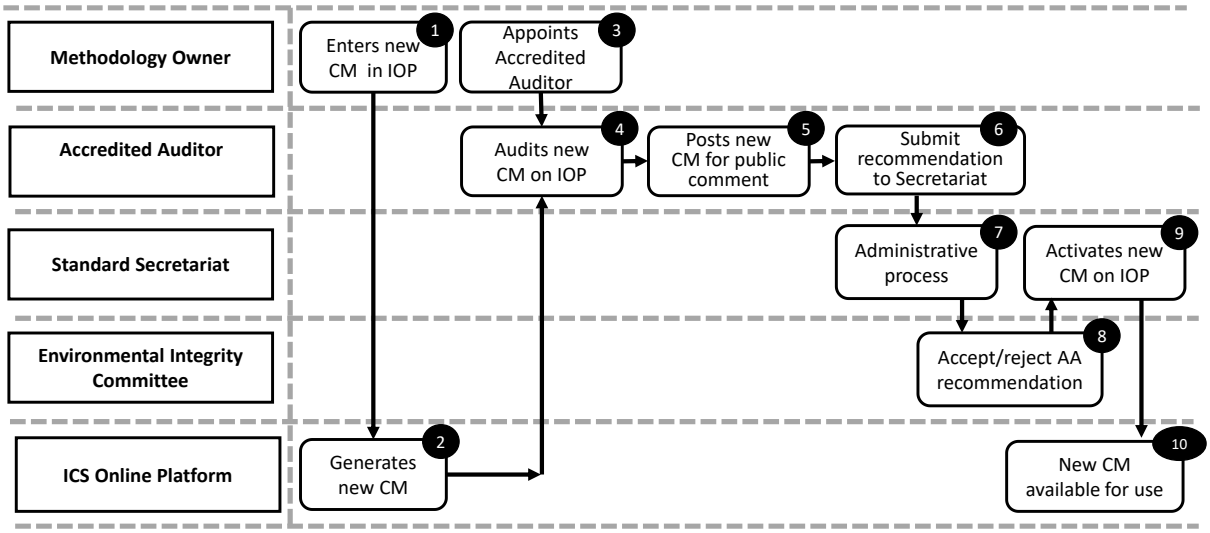

Figure 1: Process to develop a new Component Methodology

Step 1: In the first step, the proponent of the new Component Methodology, or the Methodology Owner, enters the new methodology on the ICS Online Platform, using the interface provided. The proposed new Component Methodology must be accompanied by an Example Project that demonstrates the application of the Component Methodology. The requirements for the new methodology are provided in this document.

Step 2: Upon submission by the Methodology Owner, the ICS Online Platform generates the new Component Methodology.

Step 3: The Methodology Owner appoints an Accredited Auditor to audit the proposed new methodology.

Step 4: The Accredited Auditor audits the new Component Methodology. During this process, the Accredited Auditor can require clarification or additional information from the Methodology Owner. This interaction is facilitated via the ICS Online Platform. The Accredited Auditor must also assess whether or not any existing approved Component Methodology can be used for the purpose of the proposed new methodology.

Step 5: The new Component Methodology is posted on the ICS Online Platform for public comment for a period of 30 days.

Step 7: If the Accredited Auditor recommends the proposed new Component Methodology for approval, it notifies the Standard Administrator of the Approval.

Step 7: The Standard Administrator schedules the new Component Methodology for the next EIC meeting.

Step 8: The EIC considers the recommendations of the Accredited Auditor regarding the proposed new Component Methodology.

Step 9: The Standard Secretariat activates the Component Methodology on the ICS Online Platform.

Step 10: The Component Methodology is now available for use by Project Owners.

3.2 Administrative Processes

3.2.1 Tasks for the Accredited Auditor

The tasks of the Accredited Auditor are:

1) The Accredited Auditor has to be appointed by the Component Methodology Owner (Figure 1, Step 3).
2) The Auditor accesses the proposed new Component Methodology and the Example Project on the ICS Online Platform.
3) The Auditor audits the proposed new Component Methodology and the associated Example Project.
4) During the Audit Process, the Auditor communicates with the proposer of te Component Methodology through the ICS Online Platform. This communication may include, for example, request for clarification, requests for supporting documentation, or corrective actions that may be required.
5) The Auditor prepares an Audit Report in which it recommends either Approval of the proposed new Component Methodology, or rejection.

3.2.2 Tasks for the Standard Secretariat

The Standard Secretariat will take action once the Auditor submits and audit report on a proposed new Component Methodology. It is the purpose of the Secretariat to put the proposed new Component Methodology on the agenda of the next meeting of the Environmental Integrity Committee.

Once the Environmental Integrity Committee has approved the new Component Methodology, then it is the task of the Secretariat to activate the new Component Methodology on the ICS Online Platform.

If the new Component Methodology is a new version of an existing approved Component Methodology, then it is the task of the Secretariat to de-activate the existing Component Methodology at the appropriate time.

3.2.3 Tasks for the Environmental Integrity Committee

The Environment Integrity Committee has to assess the proposed new methodology against the principles contained in this Guideline.

4 REQUIREMENTS RELATED TO THE DRAFTING OF COMPONENT METHODOLOGIES

All component methodologies shall contain the basic information requirements outlined in this document. The information in the following sections is required for all projects and shall be covered within the respective component methodologies as inputs.

A general description of the component methodology shall be provided to allow users to easily select the correct methodology for their project. The description shall briefly describe what projects are applicable as well as how emission reductions are achieved. A broad outline of the information requirements of the methodology shall be included in this description. All methodologies must include a motivation for their creation outlining why the methodology is required.

4.1 Requirement for new Component Methodologies

Before a Component Methodology can be approved, it must be established that the proposed new Component Methodology has unique features that are not covered by existing approved component methodologies. In this context the following should be considered with respect to the details of the proposed new Component Methodology, as compared to existing Component Methodologies:

- Applicability criteria: Applicability criteria are often used to limit the extent to which inputs are required in the project validation and verification processes. The purpose of the ICS is to streamline these processes as far as possible, and that would lead to the development of Component Methodologies with very restrictive applicability criteria. The preferred option in the ICS is to prepare new Component Methodologies that can accommodate a project type that does not meet the applicability criteria of an approved Component Methodology rather than to expand the applicability criteria of the existing methodology, and thereby complicate the project validation and/or verification processes.
- Compatibility issues: A new component methodology may be required if other approved Component Methodologies are not compatible in the context of the needs of a specific project.

4.2 Help text for users of a methodology

The online platform provides functionality for help text on each input of a component methodology. This help text shall be used to give users guidance on what information to provide. This text is uploaded to the system when creating the input fields for a component methodology.

The help text shall clearly articulate the information required within a field. This assists a user in uploading the correct information for their project.

5 COMPONENT METHODOLOGY DESIGN AND DEVELOPMENT

5.1 Universal Requirements

All component methodologies must obey the following:

5.1.1 Information provided outside of the Component Methodologies

The following information is not required in the Component Methodologies:

- Owner information: This information is captured in the OCS Online Platform when the project owner registers on the system;
- Project Title: This is provided when the Project Owner starts the project registration process, and prior to the selection of the Component Methodologies that is used in the development of the Project.
- Crediting period Start Date and Crediting Period End Date: This information is generated by the ICS Online Platform using the selection of the type of Crediting period and the date of Activation of the Project.

5.1.2 Applicability Criteria

All Component Methodologies must specify the conditions for the applicability of the methodology.

- What types of projects the methodology is applicable to. This may also include a statement on what types of projects the methodology is not applicable to;
- What technologies are applicable under the methodology; and
- Any other applicability criteria specific to the methodology.

Specific requirements for the different Component Methodology (CM) types are provided in the following sections. The component methodology must contain the related inputs for the following along with any additional inputs that may be relevant.

5.2 Requirement for Specific Component Methodologies

5.2.1 Requirements for Project Details Component Methodologies

Project Details Component Methodologies must contain the following:

- Description of the project: The project must be described in detail. The description must accurately capture the nature of the project, including a description of the technologies employed by the project.
- Location: The location of the project must be uniquely specified. For some project types a street address may be sufficient. Other project types may require GPS coordinates or even GIS shape files
- Crediting period information: Emission Reduction projects can have either a 5 year crediting period that is renewable twice, or a single 10 year crediting period.
- Stakeholders consultation information: Projects may require either local or global stakeholder consultation, based on the nature of the project. This information must be provided.
- Local legal requirements and relevant permit details: Projects must meet all regulatory requirements for implementation such as Environmental Authorisation in the relevant jurisdiction. Information related to the required and achieved legal compliance and permitting must be provided.
- Risk Assessment: Projects must submit a risk assessment with respect to the principle of Do NO Significant Harm. In the case of land based projects an assessment of the Cancun Safeguards must also be provided.
    - Alignment with the Sustainable Development Goals: Projects must indicate in what way the project contributes to the achievement of the SDGs. Note that this is not a detailed submission, as the Tagging Component

Methodologies make provision for Projects that wish to make specific claims with respect to specific SDGs.

- Various safeguard elements. The safeguard elements included in the Project Details component include:
  - Information on the prevention of double counting;
  - Credit and project ownership;
  - Details of local stakeholder consultations;
  - Environmental impact assessments;
  - Do No Significant Harm (DNSH) risk assessment; and
  - Cancun Safeguards for all REDD+ Projects.

The requirements for Project Details Component Methodologies related to the generation of reports are:

- Project Report: The Project Details Component Methodology must be structured in such a way that the Project Report, which is generated from the Component Methodology and the inputs provided by the Project Owner, must be a human readable report that accurately describes all of the aspects of the project that is relevant to the implementation and the Environmental Integrity of the Project.
- Monitoring Report: The information presented in the Project Details Component Methodology is not used in the Monitoring Report.

5.2.2 Requirements for Additionality Component Methodologies

The following inputs are required for all types of Component Methodologies:

- Regulatory Surplus: Projects must prove that the implementation of the project is not required by law.

The ICS allows for the following types of additionality:

- Automatic additionality may be proved using one of the following procedures:
  - Technology penetration rate: If the specific technology provides less than 5% of the output in the country, based on output/production. For example, the electricity produced using a specific technology in kWh represents less than 5% of the total electricity production on the grid.
  - NDC targets: If a technology is specified as automatically additional at a country level in the NDC of that country, or in Article 6.2 communications.
  - Pico-scale technologies: Technology implemented at household level, in communities where the income is below the country's defined poverty

threshold, or if the total estimated emission reduction in the project is less than 10 tons CO_2e per installation per year.

- Investment analysis: The analysis must provide a discounted cash flow analysis indicating that the internal rate of return (IRR) of the project is below the risk adjusted cost of capital for the project type, market and region. The Project Owner must justify the risk-adjusted investment benchmark.
- Barrier analysis: Proponents of Component Methodologies and/or Project owner may specify methodologies for barrier analysis. Some examples include the following. Note that this is not an exhaustive list:
  - Source of income: If a project has carbon revenue as the only source of revenue.
  - Split incentive barrier: If the economic benefit resulting from the implementation of the project accrues to a party that is different from the party that carries the expense of project implementation of the project.
- Previously registered projects: If a project has been registered under the CDM, VCS, or Gold Standard, and the additionality of such project has been proved under that standard, then the project will deem to be additional in the ICS.

The requirements for Additionality Component Methodologies related to the generation of reports are:

- Project Report: The Additionality Component Methodology must be structured in such a way that the Project Report, which is generated from the Component Methodology and the inputs provided by the Project Owner, must be a human readable report that accurately describes the additionality of the project.
- Monitoring Report: The information presented in the Additionality Component Methodology is not used in the Monitoring Report.

5.2.3 Requirements for Baseline Component Methodologies

Baseline Component Methodologies must contain the following:

- Description of the baseline scenario. This includes a description of the situation before the implementation of the Project.
- Baseline Emissions: A description of the emission sources that are relevant to the Baseline Scenario.
- Method for the calculation of the Baseline Emissions. This must include a description of the variables as well as the equations required for the calculation of the Baseline Emissions.

- Explanation of how the same type and level of service will be provided in the project activity compared to the Baseline Scenario.

The requirements for Baseline Component Methodologies related to the generation of reports are:

- Project Report: The Baseline Component Methodology must be structured in such a way that the Project Report, which is generated from the Component Methodology and the inputs provided by the Project Owner, must be a human readable report that accurately describes the baseline of the project.
- Monitoring Report: The information provided by the Baseline Component Methodology, and the information provided by the Project Owner during the project registration process, is presented as the baseline in the Monitoring Report.

5.2.4 Requirements for Monitoring Component Methodologies

Monitoring Component Methodologies must contain the following:

- Monitoring Plan for Project Activity
  - Description of monitoring system including metering
  - Metering line diagram specifically related to project
  - Description of the following:
    - Monitoring procedures: This must be provided as a text narrative on how the monitoring procedures will be implemented.
    - Monitored variables: The variables can be either entered by human interaction via the ICS Online Platform, or can be uploaded to the ICS Online Platform via IoT devices.
- Leakage emissions
  - If leakage emissions are not relevant for the projects applicable to the methodology, then these emissions shall be stated as not applicable
  - If leakage emissions are relevant, the methodology shall include:
    - Description of the leakage emissions.
    - Description of the inputs required for calculating the leakage emissions.
    - The equations and calculations for the quantification of the leakage emissions.

The requirements for Monitoring Component Methodologies related to the generation of reports are:

- Project Report: The information provided by the Monitoring Component Methodology and by the Project Owner must describe the Monitoring Plan of the Project in a human readable Project Report .
- Monitoring Report: The Monitoring Report must contain the description of the Monitoring Plan as well as the data entered either via human input or via the IoT.

5.2.5 Requirements for Permanence Component Methodologies

Permanence Component Methodologies are only relevant to land based and carbon removal projects. They must contain the following:

- Identification of all risks related to the permanence of the carbon removals. This includes internal risk, external risk, natural risk, and overall risk.
- Information related to calculating the risks.
- Information related to the mitigation of the risks.

The requirements for Permanence Component Methodologies related to the generation of reports are:

- Project Report: The information provided in the Permanence Component Methodology and provided by the Project Owner must be presented in the Project Report as a description of the permanence risks in the project in a human readable form.
- Monitoring Report: The Permanence Component Methodology and the monitored data must provide a description of the permanence risk in the Project as at the time of the latest Verification.

5.2.6 Requirements for Tagging Component Methodologies

The tagging methodology shall provide the criteria to be met for a specific tag. The methodology should include a detailed description of what the tag is. There are two main types of tags:

- Markets (e.g. location based (country))
- Co-benefits (e.g. job creation, gender equality, etc.)

Tags that are included must include the following information as inputs:

- Criteria that a project owner must comply with at validation in order to apply the tag
- Inputs related to ongoing verification of tag criteria. For example, job creation tags require periodic verification of the jobs created.

The requirements for Tagging Component Methodologies related to the generation of reports are:

- Project Report: The information provided in the Tagging Component Methodology and provided by the Project Owner must be presented in the Project Report as a description of the project characteristics related to the aspects for which the Project is being Tagged in a human readable form.
- Monitoring Report: The Tagging Component Methodology and the monitored data must provide a description of the aspects of the Project for which it is being tagged as at the time of the latest Verification.

6 VALIDITY AND REVISIONS OF COMPONENT METHODOLOGIES

Methodologies remain valid and in-use until one of the following events occur:

- The methodology is withdrawn from use by the Environmental Integrity Committee
- It is replaced by a revised version upon approval of the revised version.

Approved component methodologies available on the ICS platform can be revised. The revision of an approved Component Methodology can be triggered by the following:

- Request by the EIC.
- Action by the Methodology Owner.
- Request by a Project Owner of a project that employs the specific approved Component Methodology.

The procedure for the revision of Component Methodologies is:

- The Component Methodology Owner uploads a revised version of the approved Component Methodology onto the ICS Online Platform.
- The proposed revision is processed and approved in the same way as a proposed new Component Methodology.

The revision creates a new version of the Component Methodology that is not linked to the previous version. This allows registered projects to continue using the earlier version of the methodology.

The revised methodology must meet all the requirements for a Component Methodology in the Standard and the other sections of this document.

If the revision would impact the compatibility of the Component Methodologies and invalidates the Landmark Project, a New Component Methodology is required. If the revision does not impact the compatibility, the Landmark Project still applies.

7 MATHEMATICAL REPRESENTATION/FORMULAE

The physical representation of a project can be converted to a mathematical equation. The set of mathematical equations that allow the emission reductions to be calculated is the mathematical representation of a project. The equations describe the chemical or physical processes in a format that can be solved using mathematical procedures.

For example, in a renewable energy project, the baseline emissions are generated by combustion of fossil fuel. This chemical process can be represented with an equation using the quantity of fuel and an appropriate emission factor. This is indicated in the equation below:

$$Emissions = Quantity\ of\ fuel \times Emission\ Factor$$

These equations are converted into a format that can be understood by the equation solver for the system to calculate the emission reductions.

The ICS solves the mathematical representation of the project using an equation solver called AMPL. AMPL (A Mathematical Programming Language) is a mathematical equation solver developed for problems involving complex and large-scale computations. The AMPL solver then solves the set of generated equations and outputs the calculated results of this process to the user.

The sequence when building the calculation model is important. That order shall be:

1. Define the sets;
2. Define the parameters;
3. Outline the equations for the calculation.

7.1 Physical Representation

Each project activity consists of an activity that involves or substitutes a chemical or physical process. The project therefore has a physical representation which consists of the actual equipment for the activity.

An example of this would be a renewable energy project. In this example, a chemical process is substituted for a different process. The replaced process would be the combustion of fuel to generate electricity.

Another example would be a landfill gas management and extraction project. In this example, there are chemical processes occurring both within the landfill to generate the gas and within the flare where the landfill gas is combusted.

The physical representation of a project determines the various aspects that shall be measured such as the gas concentration or flow rate. This informs the mathematical representation of the project activity.

7.2 Representation of statements

Statements are the basic blocks in the AMPL model and can be one of two types: declaration statements or function statements. Declaration statements are used to declare a model object such as a set or parameter. Functional statements are used to perform a specific action such as a sum or product.

The AMPL solver has a general structure to the models it solves. The general structure is indicated below and is generated automatically by the system.

Declaration of sets

Declaration of parameters (including calculated parameters)

Declaration of variables

Declaration of equations

7.3 Sets

Sets are used in AMPL to compute values that form part of a collection. For example, a set defines the list of periods at which electricity generation has been measured. In this example, the set made up of January, February and March defines the months that electricity was generated. These sets function like subscripts in an equation and are present for the parameters, variables and equations related to a specific methodology ($electricity_{month}$). The values within a set are referred to as set elements (January, February, March).

During the component methodology creation process, the sets shall be generated as the first step in setting up the calculations.

When setting up time related sets, the user shall ensure that the set is aligned to the selected measurement frequency of the parameter. This ensures that no conflicts occur during the calculation process. For example, if a parameter is measured monthly, then the set associated with the parameter values should contain elements that are months. In the above example, the electricity generation parameter has a measurement frequency of months, and the set elements are January, February and March.

7.3.1 Mandatory sets

In order for the online ICS system to effectively and consistently report emissions reductions, there are certain sets that must be included to allow the system to calculate the total emission reductions in a period.

7.3.1.1 Timestamp

The first set must be the list of timestamps defining when the parameter was measured. This timestamp is the timestamp at which the data point originated (the date and time the parameters were measured). For example, the time at which the electricity was generated, or the diesel was consumed.

7.3.1.2 Monitoring periods

During each monitoring period, a monitoring report must be generated by the system for verification purposes. The monitoring report needs to contain the minimum amount of information to satisfy the conditions of the verification.

Monitoring periods are used to define the period within the crediting period for which credits are claimed. Their duration can vary due to the scale of the project and the trade-off between the frequency of claiming credits and the costs associated with the verification process.

The methodologies must define the level of detail required for the accurate calculation and assessment of emissions reduction. For practical purposes, not all data can be included in the monitoring report. The component methodology must define the level of aggregation for data to be included in the report. Data should be aggregated by month. For the monitoring report, data should also be aggregated as total values for the monitoring period. This requires setting up the aggregation sets, parameters and equations.

Monitoring periods must be sequentially numbered from 1 and managed through a set named MonitoringPeriod within the monitoring methodology. This must be accompanied with the definition of two parameters to store the start and end of the monitoring period – MPStart[mp] and MPEnd[mp]. These parameters have one dimension to indicate the MonitoringPeriod.

7.3.1.3 Delayed calibration

Carbon emission reductions are calculated based on measurements of physical phenomenon such as temperature, pressure, flow, electric current, and quantities of materials. The instruments used to make the measurements have specified accuracies which indicate the uncertainty related to the values measured and displayed by the instruments. The uncertainty of measurement may also be referred to as the error of the instrument.

With some instruments the error in measurement (or difference between the measured value and actual value) may change over time due to the properties of the instrument and the operating environment. To ensure an instrument keeps measuring within its specified accuracy it should be calibrated according to manufactures specifications. Calibration of an instrument involves comparing measured values against a second instrument which is known to be correct and has a higher accuracy than the instrument being calibrated or comparison against a

known reference such a s a calibration gas. The reading on the instrument being calibrated is then adjusted to match the values measured by the calibration instrument or defined by the reference.

Instrument specifications specify the maximum period allowed between calibrations. (In the ICS we refer to this as the calibration interval.) The uncertainty of a value displayed by an instrument is likely to be outside of its accuracy range If it is not calibrated within its calibration period. That is the uncertainty of the measurement is greater than the specified accuracy of the instrument, but the uncertainty is unknown. A delayed calibration is the next calibration after the specified calibration period. A calibration can be used to determine the error of the instrument's reading. The monitoring and reporting component methodology shall define the adjustment that must be made to measured parameter values for the period the measuring instrument is out of calibration. A suitable adjustment is to increase or decrease the measured value in line with the error determined during the delayed calibration.

Delayed calibrations and other calculations may need to determine the difference in time between two events. Events are represented by indexes rather than date and time stamps for simplicity and data efficiency. For example, a set Month could be defined to hold a list of months for which data is collected, represented below:

Month value
1 March 2020
1 April 2020
1 May 2020
1 June 2020

This is then stored as:

Name	Symbol
1 March 2020	1
1 April 2020	2
1 May 2020	3
1 June 2020	4

For example, if an electricity meter is scheduled to be calibrated every year and the calibration happens 2 months into the following year. Delayed calibration should be applied to adjust the measured values that fall within those two months.

In order for a component methodology to be approved, all metered parameters must allow for delayed calibration. The process for delayed calibration requires several sets to be defined as follows:

- CalibrationParameter (cp) – list of parameters which require calibration
- CalibrationEvent (ce) – Index for calibration events sequentially numbered from one used for each calibration

These sets shall be linked to the parameters as shown in section 7.4.5.5.

7.3.1.4 Project Elements

The ICS provides a built-in set called ProjectElements which provides a means to retrieve an element value linked to an element index within a set. ProjectElements contains all the elements used in a project and the corresponding indices and needs to be filtered for the set being considered. The example below sums the electricity consumption (ElecCons) for all months in a monitoring period. In {(mo,mv) in ProjectElement: mo in Month} we use mo and mv to represent the month index and the month value, respectively. The ": mo in Month}" filters the Month elements out of all the elements for the project. "&& MPStart[mp] <= num(mv) && num(mv) < MPEnd[mp]" checks if the month value or timestamp is between the start date and end date of a monitoring period. The full equation in this example is provided below in AMPL syntax.

ElecConsForMP{mp in MonitoringPeriod} = sum{(mo,mv) in ProjectElement: mo in Month && MPStart[mp] <= num(mv) && num(mv) < MPEnd[mp]} ElecCons[mo]

7.4 Parameters

Parameters are the measured or other input values to the calculation. Parameters can come from several sources such as inputs from the user or an IoT device.

The methodology developer shall include all parameters and equations necessary to aggregate the parameters to be included in the monitoring report to a monthly level. This aggregation is in addition to the aggregation at a monitoring period level.

During the creation process for the parameter, the user shall indicate whether the parameter values shall be included in the monitoring report. This ensures that the correct and relevant information is displayed when the monitoring report is generated. Only aggregated information should be included in the monitoring report. For example, if an electricity meter measures generation half hourly, this data should be aggregated monthly and only the monthly parameter should be included in the monitoring report.

Each parameter, variable or equation may be defined as having multiple sets assigned to it, for example a timestamp and a location. However, the sets used within a set of parameters and equations must be consistent for the solver to work.

The definition of both parameters and sets includes a name and a symbol. The name of the parameter or set is easily understandable to a user on the system and can have spaces in the text. The symbol for a parameter or set is used when referencing

it within the model. Symbols cannot have spaces and should be used to abbreviate the parameter name. When referencing parameters and symbols within equations, the syntax to use is as follows:

parameter symbol [set symbol]

7.4.1 Fixed parameters

Fixed parameters are defined at the methodology level and require a user to implement its value at a project level. These parameters are likely to remain the same throughout a project's lifecycle and are not monitored. Within the context of the AMPL syntax, fixed parameters are defined by constants. Constants have no dimensions associated with them, therefore during the component methodology creation process, no set shall be selected for these parameters. An example of a constant would be the global warming potential for methane which does not change frequently.

Where constants are unlikely to change, they shall be hardcoded into the formulas as numerical values. For example, instead of creating a parameter for the universal gas constant and including that in the equation, the numerical value of 8.3145 shall be input instead. When including these hardcoded values, the units shall be consistent with the overall equation.

7.4.2 Monitored parameters

7.4.2.1 Measured parameters

Measured parameters are inputs that come from a meter. These parameters shall have the same dimensions as the other parameters and variables in the methodology. The values for these parameters can be manually input by the project owner or uploaded using an IoT device.

7.4.2.2 Other input parameters

Other input parameters are user captured values that do not come directly from a meter. Examples of these inputs are grid emission factors or meter accuracies. The sources of these values include published documentation or surveys.

7.4.3 Mandatory input parameters

The following input parameters are mandatory and shall be included in all monitoring component methodologies:

Table 2 Mandatory Monitoring report input parameters

Name	Symbol	Description
MonitoringPeriodStart	MPStart[mp]	Stores the start of the monitoring periods
MonitoringPeriodEnd	MPEnd[mp]	Stores the end of the monitoring periods

Monitoring periods must be sequentially numbered from one and managed through a set named MonitoringPeriod within the monitoring methodology. This must be accompanied with the definition of the above parameters to store the start and end of the monitoring period. These parameters have one dimension to indicate the Monitoring Period.

7.4.3.1 Delayed Calibration

The following input parameters are mandatory for delayed calibration on metered values.

Name	Symbol	Description
CalibrationInterval	CalInt[cp]	The calibration interval for specified parameter
CalibrationDates	CalDate[cp,ce]	Date of the event where the specified parameter's measurement device was calibrated
CalibrationError	CalErr[cp,ce]	Calibration error determined for calibration event for the specified parameter
CalibrationTolerance	CalTol[cp]	Calibration error tolerance set by the component methodology developer

7.4.4 Calculated parameters – output variables

Models on the ICS shall be set up to make use of calculated parameters. The online ICS system refers to these calculated parameters as 'output variables.'

7.4.5 Mandatory output variables

All monitoring component methodologies shall include the following output variables always expressed as tCO_2e:

- Baseline Emissions
- Project Emissions
- Emission Reductions

7.4.5.1 Baseline emissions

The baseline emissions are the emissions that would occur in the baseline scenario. These emissions are needed to calculate the emission reductions from a project activity. The baseline emissions shall be aggregated at two different levels, as

defined by the timestamp set and for the monitoring period. The total monitoring period baseline emissions are aggregated based on the sum of the baseline emissions.

The baseline emissions are represented by the symbol **BE**. The total monitoring period baseline emissions are represented by the symbol **BEForMP**. This allows the solver to distinguish between the two results.

7.4.5.2 Project emissions

The project emissions are the emissions that would occur as a result of the project activity. These emissions are needed to calculate the emission reductions from a project activity. The project emissions shall be aggregated at two different levels, as defined by the timestamp set and for the monitoring period. The total monitoring period project emissions are aggregated based on the sum of the project emissions.

The project emissions are represented by the symbol **PE**. The total monitoring period project emissions are represented by the symbol **PEForMP**. This allows the solver to distinguish between the two results.

7.4.5.3 Emission reductions

The emission reductions are the quantity of emissions reduced by the implementation of the project activity. The emissions reductions shall be aggregated at two different levels, as defined by the timestamp set and for the monitoring period. The total monitoring period emission reductions are aggregated based on the sum of the emission reductions.

The emission reductions shall be represented by the symbol **ER**. as the total monitoring period emission reductions are represented by the symbol **ERForMP**. This allows the solver to distinguish between the two results.

The equation for calculated the emission reductions shall be defined as:

$$ER = BE - PE$$

With the inclusion of all necessary sets.

7.4.5.4 Monitoring Reports

The project emissions, baseline emissions and emissions reductions must have output variables defined for reporting these values at a monthly and at a monitoring period level. We prescribe the following output variables for this purpose. This allows the system to correctly allocate emission reductions to a monitoring period.

Table 3 Mandatory output variables required for monitoring reports

Parameter name	Symbol used in equations	Description
EmissionsReductionTotal	ERTotal	Total emissions reduction for the whole project
EmissionsReductionMP	ERForMP[mp]	Emissions reduction for a monitored period mp
EmissionsReductionMonth	ERForMonth[m]	Emissions reduction for a specified month
BaselineEmissionsTotal	BETotal	Total baseline emissions for the whole project
BaselineEmissionsMP	BEForMP[mp]	Baseline emissions for a monitored period mp
BaselineEmissionsMonth	BEForMonth[m]	Baseline emissions for a specified month
ProjectEmissionsTotal	PETotal	Total project emissions for the whole project
ProjectEmissionsMP	PEForMP[mp]	Project emissions for a monitored period mp
ProjectEmissionsMonth	PEForMonth[m]	Project emissions for a specified month

7.4.5.5 Delayed Calibration

The delayed calibration procedure will require an output variable for each parameter which is associated with a metered value. These variables shall be linked to the [m] set previously discussed for the timestamp. The naming convention for these parameters should include the original parameter name and prefixed with 'Adjusted.'

For example, in a simple Solar PV project, the electricity metered will need delayed calibration applied where relevant. The measured parameter for this would be ElectricityGeneration with a symbol ElecGen[m]. The output variable for delayed calibration would therefore be AdjustedElectricityGeneration (AdjElecGen [m]).

The general equation for adjusting a parameter for delayed calibration is as follows:

$$Adjusted\ Value = Measured\ Value - Calibration\ error$$

7.5 Representation of common mathematical functions in AMPL

7.5.1 Sum

The sum function is a numerical expression in AMPL. This function is useful to sum a parameter across multiple elements. The general format for the sum function is as follows, first in standard mathematical notation, then in AMPL syntax:

$$Sum = \sum mathematical\ expression$$

$$sum\{definition\ of\ sets\}\ ""mathematical\ expression""$$

For example, to sum across the emission reductions for all values, the function would be as follows:

$$Total\ emission\ reductions = \ sum\{x\ in\ Month\}\ ER[x]$$

Where Month is the set assigned to the values to be summed and ER is the emission reductions for each element in the set. The total emission reductions is equal to the sum of the emission reductions for each month in the set Month.

The sum function can also be used to sum across the results of a mathematical expression. The above function can be rewritten as follows:

$$Total\ emission\ reductions = \ sum\{x\ in\ Month\}\ BE[x] - PE[x]$$

Where BE and PE are the baseline and project emissions, respectively.

7.5.2 Average

The average value can be calculated using a combination of two functions, the sum function and the card function. The card function counts the number of elements in a set while the sum function sums up all the values associated with the set. For example, if we have a set for Month as {January, February, March} the card function will return a value of 3 as there are three set elements.

The average can therefore be calculated as follows:

$$Average = \sum_{1}^{n} expression/n$$

$$Average = \ sum\{definition\ of\ sets\}"expression"/card(X)$$

Where X is the set to iterate over. For example, to calculate the average emission reductions, the function would be as follows:

$$Average = \ sum\{x\ in\ Month\}\ ER[x]/card(Month)$$

7.5.3 Product

The product function works in the same way as the sum function but calculates the product instead of the sum. The general format for the product function, first in standard mathematical notation, then in AMPL syntax is:

$$Product = \prod mathematical\ expression$$

$$prod\{definition\ of\ sets\}\ ""mathematical\ expression""$$

For example, to take the product of all the emission reductions values, the function would be as follows:

$$prod\{x\ in\ Month\}\ ER[x]$$

7.6 The use of dates

The ICS online platform makes use of the Unix datetime format. All sets, parameters and variables that involve the use of dates must make use of this format.

Using this format ensures that the system can correctly compute and allocate values. The ICS platform will enforce this format on all date input fields.

The Unix datetime system represents a timestamp as the number of seconds from 1 January 1970 referred to as the Unix Epoch. To convert a conventional timestamp to Unix time, find the number of days between the date and 1 January 1970 and multiply by the number of seconds in a day. This calculation can be done in Excel or through an online converter. The equation is provided below:

$$Unix\ time = (Date - Epoch) * 86400$$

7.7 Examples of typical formulae

Carbon credit projects often make use of typical formulae in their calculations. The calculation of emission reductions is one example, indicated below.

$$ER = BE - PE$$

Another common calculation for carbon credit projects is the baseline emissions for electricity generated by the grid and the project emissions from electricity consumed from the grid. These emissions are calculated as follows:

$$BE = EG \times EF$$

$$PE = EC \times EF$$

Where:

BE is the baseline emissions (tCO_2e),

PE is the project emissions (tCO_2e),

ER is the emission reductions (tCO_2e)

EG is the amount of electricity generated (MWh),

EC is the amount of grid electricity consumed (MWh) and

EF is the grid emission factor (tCO_2e/MWh).

8 WORKED EXAMPLE

This section provides a worked example for a project that involves the generation of electricity with solar PV. This example involves the metering of electricity and therefore needs to accommodate delayed calibration for the electricity meter. The sections below outline the sets, parameters and equations required for the monitoring component methodology.

In this example, the baseline for the project is assumed to be grid generated electricity. The example also makes provision for any consumption of electricity from the grid which results in project emissions.

8.1 Sets

The table below contains all the sets required for the worked example methodology.

Table 4 Worked example sets

Name (Symbol)	Description
Month (m)	List of months used in measurements
CalibrationParameter (cp)	List of parameters which require calibration
CalibrationEvent (ce)	Index for calibration events, sequentially numbered from 1, used for each calibrated parameter
MonitoringPeriod (mp)	List of monitoring periods for a project

8.2 Parameters

The table below contains all the parameters required in the worked example.

Table 5 Worked example parameters

Name	Symbol	Type	Description
ElectricityGenerated	ElecGen [m]	InputParameter	Electricity generated by project and displacing grid electricity in month *m*

Name	Symbol	Type	Description
EmissionsReduction	ER [m]	OutputVariable	Emissions reduction for month *m*
GridEmissionFactor	EFGrid [m]	InputParameter	Grid emission factor for month *m*
TotalEmissionsReduction	ERTotal	OutputVariable	Total emissions reduction for project
ProjectEmissions	PE [m]	OutputVariable	Project emissions for month *m*
ProjectEmissionFactor	PEF	Constant	EF for project electricity generation. Assume there are no emissions from generating electricity in this example
GridElectricity	ElecConsPG	OutputVariable	Calculated grid electricity used during project. This is the electricity consumed by the project. The abbreviation PG is for project consumption from the grid.
BaselineEmissions	BE [m]	OutputVariable	Emissions from the baseline in month *m*
CalibrationInterval	CalInt [cp]	InputParameter	The calibration interval for specified parameter *cp*
CalibrationDates	CalDate [cp,ce]	InputParameter	Calibration dates for specified parameter *cp*

Name	Symbol	Type	Description
			and calibration event *ce*
AdjustedElectricityGen	AdjElec Gen [m]	OutputVariable	Electricity generated by project, adjusted for delayed calibration in month *m*
CalibrationError	CarErr[c p,ce]	InputParameter	Calibration error determined during calibration event *ce* for parameter *cp*
CalibrationTolerance	CalTol [cp]	InputParameter	Calibration error tolerance as set by the methodology developer for parameter *cp*
MonitoringPeriodStart	MPStart [mp]	InputParameter	Start of a monitoring period *mp*
MonitoringPeriodEnd	MPEnd [mp]	InputParameter	End of a monitoring period *mp*
BaselineEmissionsMP	BEForM P [mp]	OutputVariable	Baseline emissions for monitoring period *mp*
GridElectricityMP	ElecCon sPGFor MP [mp]	OutputVariable	Grid electricity used during monitoring period *mp*
ProjectEmissionsMP	PEForM P [mp]	OutputVariable	Project emissions for monitoring period *mp*
EmissionsReductionMP	ERForM P [mp]	OutputVariable	Emissions reduction for

Name	Symbol	Type	Description
			monitoring period *mp*

8.3 Equations

Creating equations on the ICS platform has certain criteria as follows and must be created in order. If the equations are not ordered correctly, the solver is unable to correctly parse the model. For example, the baseline emissions equation should be created before the emission reductions equation that uses the calculated baseline emissions.

The table below contains the equations for a worked example. The equations are named according to the order they should be created in.

Table 6 Worked example equations

Name	Description	Equation
Eqn1	Total emissions reductions	ERTotal=sum{x in Month} ER[x]
Eqn2	Emissions reduction per month	ER{m in Month}=BE[m]-PE[m]
Eqn3	Baseline emissions from electricity consumption	BE{m in Month}=ElecConsBL[m]*EFGrid[m]
Eqn4	Project emissions	PE{m in Month}=ElecConsPG[m]*EFGrid[m]+AdjElecGen[m]*PEF
Eqn5	Electricity consumption from grid by project	ElecConsPG{m in Month}=ElecConsBL[m]-AdjElecGen[m]
Eqn6	Adjustment of ElecGen for delayed calibrations	AdjElecGen{m in Month}; let {(mo,mv) in ProjectElement, (cp,"ElecGen")" in ProjectElement,(ce,cev) in ProjectElement, (ce2,cev2) in ProjectElement: m in Month && ce in

Name	Description	Equation
		CalibrationEvent && ce2 in CalibrationEvent && num(cev2)-num(cev)=1 && CalDate[cp,ce] != 0 && CalDate[cp,ce] <= num(mv) && num(mv) < CalDate[cp,ce2]} AdjElecGen[m] := ElecGen[m]
Eqn7	Emissions reduction per monitoring period	ERForMP{mp in MonitoringPeriod} = sum{(mo,mv) in ProjectElement: mo in Month&& MPStart[mp] <= num(mv) && num(mv) < MPEnd[mp]} ER[m]
Eqn8	Baseline emissions from electricity consumption for monitoring period	BEForMP{mp in MonitoringPeriod} = sum{(mo,mv) in ProjectElement: mo in Month && MPStart[mp] <= num(mv) && num(mv) < MPEnd[mp]} BE[m]
Eqn9	Project emissions for monitoring period	PEForMP{mp in MonitoringPeriod} = sum{(mo,mv) in ProjectElement: mo in Month && MPStart[mp] <= num(mv) && num(mv) < MPEnd[mp]} PE[m]

9 ROYALTIES

Royalties will be distributed at issuance. During the process of issuance, the amount of Royalties will be deducted from the issuance in the Registry account of the Project Owner, and listed in the registry Account(s) of the respective Methodology Owner(s).

The Royalties payable for component methodologies will be calculated on the basis of the guidelines at the Annexure to this Guideline. Fractions of a ton of CO_2e will be rounded up to the nearest ton. The Royalty amounts may be changed by the Board of Trustees of the ICS from time to time.

ANNEXURES

ANNEXURE 1: DECLARATION OF PROJECT OWNERSHIP

Declaration of Ownership by Project Owner:	
Represented by Authorised Representative:	
Project Name:	
Contact details:	
Address:	

1. INTERPRETATION

In this Declaration:

1.1. "Accountholder" means the holder of an account in the ICS Registry.

1.2. "Auditor / Accredited Auditor" means a third-party person or company that performs any auditing function for projects listed on the ICS. Auditors must be accredited by a body that is affiliated to the International Accreditation Forum (IAF) and must have completed ICS training.

1.3. "Additionality" means the condition under which a Project reduces emissions beyond the "business as usual" scenario. Projects can prove Additionality by applying one of the approved Additionality Component Methodologies.

1.4. "Authorised Representative" is the signatory to this Declaration who has been duly authorised by the Project Owner to sign this declaration.

1.5. "Carbon Credit" means a unit issued by a Carbon Standard representing the achievement of a greenhouse gas emission reduction or removal in an amount of one metric tonne of CO_2 equivalent.

1.6. "Carbon Removal" means when carbon dioxide is removed from the atmosphere through projects that sequester carbon, i.e., tree planting, as a result of the registered Project.

1.7. “Carbon Standard” means an emission reduction programme recognised by the ICS as a mechanism to enable the validation of GHG reduction projects and/or programs, the verification of GHG emission reductions and removals, and the issuance of carbon credits.

1.8. “Component Methodology” means a Methodology that deals with a specific aspect of the implementation of a project. There are different types of Component Methodologies, including:

1.8.1. Project details;

1.8.2. Additionality;

1.8.3. Baseline;

1.8.4. Monitoring and emission reduction calculations;

1.8.5. Permanence; and

1.8.6. Tagging.

1.9. "Crediting Period" means the period during which a Project can earn Carbon Credits. The crediting period start date and end date is specified for each project.

1.10. “Declaration” means this document.

1.11. “Emission reduction” means the emissions that are reduced, through mitigation activities, as a result of the implementation and operation of a registered Project.

1.12. “Environmental Attribute” means the outputs of the project that could lead to environmental benefit. The Environmental Attribute can manifest as Carbon Credits or other environmental assets such as renewable energy certificates (RECs) and Guarantees of Origin (GOs). An Environmental Attribute can only be claimed once. This means that if the project issues ICCs, it cannot issue any other Environmental Attribute.

1.13. “Guarantees of Origin (GOs)” means certificates issued by an authorised body, providing evidence that a specific quantity of energy was produced from a renewable source, ensuring transparency and traceability in the renewable energy market.

1.14. “ICS Rules” means the rules of the ICS as contained in the suite of documents that define the Standard.

1.15. “Inclusive Carbon Credit (ICC)” means a Carbon Credit token issued by the ICS that represents an absolute reduction or removal of greenhouse gases in the atmosphere. Each credit represents one tonne of carbon dioxide equivalent (tCO_2e). Recordation of an ICC in the account of the holder on the ICC IoT system is prima facie evidence of that holder’s entitlement to that ICC.

1.16. “International Accreditation Forum (IAF)” means the International Accreditation Forum, Inc. is the world association of Conformity Assessment Accreditation bodies and other bodies interested in conformity assessment in the fields of management systems, products, services, personnel and other similar programs of conformity assessment. “Methodology” means a set of approved rules that must be followed in the implementation of a Project. See also Component Methodology.

1.17. “Methodology” means a set of approved rules that must be followed in the implementation of a Project. See also Component Methodology “Project Owner” means the individual or entity that legally owns the project and has the necessary authorisation to sign this Declaration.

1.18. “Project Owner” means the legal owner of the Project in terms of this Declaration.

1.19. “Project Ownership” means the legal right to control and operate the project activities.

1.20. “Project Report” means the document that describes the Project.

1.21. “Registry, ICS Registry” means the electronic database wherein ICCs are stored. The Registry provides information relating to the ownership of Credits by providing and assigning a unique serial number for each verified Credit. The registry may be outsourced by the ICS.

1.22. “Renewable Energy Certificates (RECs)” means tradeable, non-tangible energy commodities that represent proof that one megawatt-hour (MWh) of electricity was generated from an eligible renewable energy resource.

1.23. “Termination of Project Registration” means that the Registered Project can no longer generate carbon credits (ICCs) on the ICS Platform.

1.24. **DECLARATIONS**

1.25. I hereby declare that:

1.25.1. I am duly authorised to make these declarations on behalf of the Project Owner.

1.25.2. All factual information that I provide in relation to this Declaration is, to the best of my knowledge, true, accurate, and complete in all material respects.

1.25.3. I have not made or provided, and will not make or provide, false, fraudulent, or misleading statements or information in relation to this Declaration. I understand that providing such information may result in penalties, including but not limited to the termination of the Registration of the Project, cancellation of the Issued Carbon Credits and/or potential legal consequences.

1.26. I hereby confirm that the Inclusive Carbon Credits (ICCs) claimed under the Project are not subject to double counting or double claiming in any way, including:

1.26.1. Registration under any other Carbon Standard or standard that expresses the Environmental Attribute of the Project in any form other than Carbon Credits, such as Renewable Energy Certificates (RECs) or other Guarantees of Origin (GOs).

1.26.2. Registration under any mandatory regulated scheme in the host country, such as an emission trading scheme or carbon tax scheme.

1.27. I acknowledge my responsibility to inform the ICS about any material changes to the Project or its status that might affect the declarations made in this declaration.

1.28. I declare that there are no conflicts of interest in the Project that could compromise its transparency and integrity.

1.29. I hereby acknowledge and agree that:

1.29.1. In the event of any double counting or double claiming, the ICS has the right to immediately terminate the Registration of the Project and/or cancel the Inclusive Carbon Credits (ICCs) that have been double counted or double claimed.

1.29.2. Neither the ICS, nor any of its respective affiliates, directors, employees, agents, licensors, and/or contractors, shall be liable with respect to any claims whatsoever arising out of this Declaration or erroneous information within the Project Report submitted to the ICS Online Platform for any damages, including, without limitation, claims brought against the ICS by Accountholders, Project Owners, Accredited Auditors, or any other third party.

1.29.3. I have read, understood, and will abide by the ICS Rules.

1.29.4. The ICS has the right to amend any of the ICS Rules at any time and shall not bear any liability for loss or damage or liability of any kind sustained by the Project Owner, or any other party involved in the Project in any way under the ICS as a consequence of such amendment.

2. GOVERNING LAW

This Declaration, along with any non-contractual obligations arising out of or in connection with it, shall be governed by the laws of South Africa. The South African courts shall have exclusive jurisdiction to resolve any disputes arising from or connected with this Declaration, including disputes regarding its existence, validity, termination, or the consequences of its nullity.

3. WARRANTIES

3.1. On behalf of the Project Owner, I hereby warrant and declare that:

3.1.1. I have the legal authority and capacity to enter into and perform all obligations under this Declaration and any other associated agreements or documents.

3.1.2. All necessary consents, approvals, and authorisations required for the execution, delivery, and performance of this Declaration have been obtained, and I am in compliance with all applicable laws, regulations, and requirements pertaining to the Project.

3.1.3. I will promptly notify the ICS of any material changes or events that could adversely affect the accuracy or validity of the declarations, warranties, or information provided in this Declaration or any related documents. I will do so as soon as I become aware of any possible adverse effects and as soon as reasonably possible.

3.1.4. There are no pending or threatened legal proceedings, claims, or disputes against the Project Owner that could materially and adversely affect the Project or my ability as the Project Owner's representative to fulfill the obligations under this Declaration or any related agreements or documents.

3.1.5. The Project Owner and I will comply with all applicable laws, regulations, and requirements related to the Project, including those concerning environmental, social, and governance matters.

3.2. On behalf of the Project Owner, I acknowledge and agree that any breach of these warranties may result in the termination of the Registration of the Project, the cancellation of the Inclusive Carbon Credits (ICCs) and/or other remedies as deemed appropriate by the ICS.

4. SEVERABILITY

If any provision of this Declaration is held to be invalid, illegal, or unenforceable by a court of competent jurisdiction, such provision shall be severed from this Declaration, and the remaining provisions shall remain in full force and effect.

5. INDEMNIFICATION

5.1. On behalf of the Project Owner, I hereby agree to indemnify, defend, and hold harmless the ICS and its affiliates, directors, officers, employees, agents, and representatives (collectively, the "Indemnified Parties") from and against any and all losses, liabilities, damages, costs, and expenses, including reasonable attorneys' fees and expenses, arising out of or resulting from:

5.1.1. Any breach by the Project Owner or its employees, agents, or representatives of any representation, warranty, covenant, or obligation set forth in this Declaration or any related agreements or documents;

5.1.2. Any negligent, grossly negligent, or willful act or omission by the Project Owner or its employees, agents, or representatives in connection with the Project or the performance of the Project Owner's obligations under this Declaration or any related agreements or documents;

5.1.3. Any claim, demand, or action brought by a third party against any of the Indemnified Parties, to the extent that such claim, demand, or

action arises out of or relates to the Project, the Project Owner's performance under this Declaration or any related agreements or documents, or any breach by the Project Owner of its obligations, representations, or warranties contained herein or in any related agreements or documents.

5.2. The indemnification obligations of the Project Owner or its employees, agents, or representatives under this section shall survive the termination or expiration of this Declaration and any related agreements or documents.

EXECUTED on _____ by:

_____ _____

Name Place

_____ _____

Witness Witness

ANNEXURE 2: DECLARATION OF METHODOLOGY OWNERSHIP

Declaration of Ownership by Methodology Owner:	
Represented by Authorised Representative:	
Project Name:	
Contact details:	
Address:	

1. INTERPRETATION

1.1. "Accountholder" means the holder of an account in the ICS Registry.

1.2. "Auditor / Accredited Auditor" means a third party person or company that performs any auditing function for projects listed on the ICS. Auditors must be accredited by a body that is affiliated to the International Accreditation Forum (IAF) and must have completed ICS training.

1.3. "Additionality" means the condition under which a Project reduces emissions beyond the "business as usual" scenario. Projects can prove Additionality by applying one of the approved Additionality Component Methodologies

1.4. "Authorised Representative" is the signatory to this Declaration who has been duly authorised by the Methodology Owner to sign this declaration.

1.5. "Carbon Credit" means a unit issued by a Carbon Standard representing the achievement of a greenhouse gas emission reduction or removal in an amount of one metric tonne of CO_2 equivalent.

1.6. "Carbon Removal" means when carbon dioxide is removed from the atmosphere through projects that sequester carbon, i.e., tree planting, as a result of the registered Project.

1.7. “Carbon Standard” means an emission reduction programme recognised by the ICS as a mechanism to enable the validation of GHG reduction projects and/or programs, the verification of GHG emission reductions and removals, and the issuance of carbon credits.

1.8. “Component Methodology” means a Methodology that deals with a specific aspect of the implementation of a project. There are different types of Component Methodologies, including:

1.8.1. Project details;

1.8.2. Additionality;

1.8.3. Baseline;

1.8.4. Monitoring and emission reduction calculations;

1.8.5. Permanence; and

1.8.6. Tagging.

1.9. “Component Methodology Owner” means the person who developed and proposed an approved Component Methodology. The Component Methodology Owner has the right to earn the Royalties resulting from the use of the Component Methodology.

1.10. "Crediting Period" means the period during which a Project can earn Carbon Credits. The crediting period start date and end date is specified for each project.

1.11. “Declaration” means this document.

1.12. “Emission reduction” means the emissions that are reduced, through mitigation activities, as a result of the implementation and operation of a registered Project.

1.13. “Environmental Attribute” means the outputs of the project that could lead to environmental benefit. The Environmental Attribute can manifest as Carbon Credits or other environmental assets such as renewable energy certificates (RECs) and Guarantees of Origin (GOs). An Environmental Attribute can only be claimed once. This means that if the project issues ICCs, it cannot issue any other Environmental Attribute.

1.14. “Guarantees of Origin (GOs)” means certificates issued by an authorised body, providing evidence that a specific quantity of energy was produced from a renewable source, ensuring transparency and traceability in the renewable energy market.

1.15. “ICS Rules” means the rules of the ICS as contained in the suite of documents that define the Standard.

1.16. “Inclusive Carbon Credit (ICC)” means a Carbon Credit token issued by the ICS that represents an absolute reduction or removal of greenhouse gases in the atmosphere. Each credit represents one tonne of carbon dioxide equivalent (tCO_2e). Recordation of an ICC in the account of the holder on the ICC IoT system is prima facie evidence of that holder’s entitlement to that ICC.

1.17. “International Accreditation Forum (IAF)” means the International Accreditation Forum, Inc. is the world association of Conformity Assessment Accreditation bodies and other bodies interested in conformity assessment in the fields of management systems, products, services, personnel and other similar programs of conformity assessment. “Methodology” means a set of approved rules that must be followed in the implementation of a Project. See also Component Methodology.

1.18. “Methodology Owner” means the legal owner of the Methodology in terms of this Declaration.

1.19. “Registry, ICS Registry” means the electronic database wherein ICCs are stored. The Registry provides information relating to the ownership of Credits by providing and assigning a unique serial number for each verified Credit. The registry may be outsourced by the ICS.

1.20. “Renewable Energy Certificates (RECs)” means tradeable, non-tangible energy commodities that represent proof that one megawatt-hour (MWh) of electricity was generated from an eligible renewable energy resource.

1.21. “Royalty / Royalty Fees” means the issued ICCs paid to Component Methodology Owners, who are employed by projects that successfully complete verifications and issue ICCs.

1.22. “Termination of Project Registration” means that the Registered Project can no longer generate carbon credits (ICCs) on the ICS Platform.

2. DECLARATIONS

2.1. I, the undersigned, hereby declare that:

2.1.1. I am duly authorised to make these declarations on behalf of the Methodology Owner.

2.1.2. All factual information provided in relation to this Declaration, to the best of my knowledge is true, accurate, and complete in all material respects.

2.1.3. I have not made or provided, and will not make or provide, false, fraudulent, or misleading statements or information in relation to this Declaration.

2.2. I confirm that the Methodology Owner:

2.2.1. Is the legal owner of the submitted Methodology and has the right to register the Methodology with the ICS.

2.2.2. Has the legal right to any royalties or benefits resulting from the use of the Methodology by Projects implementing the Methodology and Registered with the ICS.

2.2.3. Ensures that the submitted Methodology does not infringe upon any third-party intellectual property rights or violate any applicable laws or regulations.

2.3. I hereby acknowledge and agree that:

2.3.1. In the event of any breach of the declarations made in this Declaration, the ICS has the right to revoke the approval of the Methodology and discontinue any royalty payments to the Methodology Owner.

2.3.2. Neither the ICS, nor any of its respective affiliates, directors, employees, agents, licensors, and/or contractors, shall be liable with respect to any claims whatsoever arising out of this Declaration or erroneous information within the submitted Methodology, for indirect, consequential, special, punitive, or exemplary damages, including, without limitation, claims brought against the ICS by any third party.

2.3.3. I have read, understood, and will abide by the ICS Rules.

2.3.4. The ICS has the right to amend any of the ICS Rules at any time and shall not bear any liability for loss or damage or liability of any kind sustained by the Methodology Owner, or any other party involved in the development or use of the Methodology under the ICS, as a consequence of such amendment.

3. GOVERNING LAW

3.1. This Declaration, along with any non-contractual obligations arising out of or in connection with it, shall be governed by the laws of South Africa. The South African courts shall have exclusive jurisdiction to resolve any disputes arising from or connected with this Declaration, including disputes regarding its existence, validity, termination, or the consequences of its nullity.

4. WARRANTIES

4.1. The Methodology Owner hereby warrants and declares that:

4.1.1. The submitted Methodology is the original work of the Methodology Owner and has not been copied, in whole or in part, from any other source, except where such copying is explicitly permitted or required by law or regulation.

4.1.2. The Methodology Owner has obtained all necessary consents, licenses, and permissions required for the use of any third-party materials or intellectual property rights included in the Methodology.

4.1.3. The Methodology complies with all applicable laws, regulations, and the ICS Rules in force at the time of registration.

4.1.4. The Methodology does not contain any false, misleading, or fraudulent information, and all data, assumptions, and calculations provided within the Methodology are accurate and complete to the best of the Methodology Owner's knowledge and belief.

4.1.5. The Methodology Owner shall promptly notify the ICS of any material change or inaccuracy in the submitted Methodology or any breach of the warranties and declarations set forth in this Declaration.

5. SEVERABILITY

If any provision of this Declaration is held to be invalid, illegal, or unenforceable by a court of competent jurisdiction, such provision shall be severed from this Declaration, and the remaining provisions shall remain in full force and effect.

6. INDEMNITIES

6.1. The Methodology Owner hereby agrees:

6.1.1. To indemnify, defend, and hold harmless the ICS and its affiliates, directors, officers, employees, agents, licensors, and contractors from and against any and all claims, liabilities, damages, losses, costs, and expenses (including reasonable attorneys' fees) arising out of or in connection with any breach of the declarations, warranties, or obligations set forth in this Declaration.

6.1.2. To indemnify the ICS and its affiliates, directors, officers, employees, agents, licensors, and contractors for any infringement of third-party intellectual property rights arising from the development, submission, or use of the Component Methodology under the ICS.

6.1.3. To indemnify the ICS and its affiliates, directors, officers, employees, agents, licensors, and contractors for any losses or damages arising from any misrepresentation, negligence, or willful misconduct by the Methodology Owner or its representatives in relation to the development, submission, or use of the Component Methodology under the ICS.

6.2. The Methodology Owner's indemnification obligations under this section shall survive the termination or expiration of this Declaration and any related agreements or documents

EXECUTED on _____ by:

_____ _____

Name Place

_____	_____
Witness	Witness

ANNEXURE 3: DECLARATION OF ACCREDITED AUDITOR

Declaration of Accredited Auditor Firm:	
Represented by Authorised Representative:	
Project Name:	
Contact details:	
Address:	

1. INTERPRETATION

1.1. “Accountholder” means the holder of an account in the ICS Registry.

1.2. “Auditor / Accredited Auditor” means a third-party person or company that performs any auditing function for projects listed on the ICS. Auditors must be accredited by a body that is affiliated to the International Accreditation Forum (IAF) and must have completed ICS training.

1.3. “Additionality” means the condition under which a Project reduces emissions beyond the “business as usual” scenario. Projects can prove Additionality by applying one of the approved Additionality Component Methodologies.

1.4. “Authorised Representative” is the signatory to this Declaration who has been duly authorised by the Project Owner to sign this declaration.

1.5. “Carbon Credit” means a unit issued by a Carbon Standard representing the achievement of a greenhouse gas emission reduction or removal in an amount of one metric tonne of CO2 equivalent.

1.6. “Carbon Removal” means when carbon dioxide is removed from the atmosphere through projects that sequester carbon, i.e., tree planting, as a result of the registered Project.

1.7. “Carbon Standard” means an emission reduction programme recognised by the ICS as a mechanism to enable the validation of GHG reduction projects and/or programs, the verification of GHG emission reductions and removals, and the issuance of carbon credits.

1.8. “Component Methodology” means a Methodology that deals with a specific aspect of the implementation of a project. There are different types of Component Methodologies, including:

1.8.1. Project details;

1.8.2. Additionality;

1.8.3. Baseline;

1.8.4. Monitoring and emission reduction calculations;

1.8.5. Permanence; and

1.8.6. Tagging.

1.9. "Crediting Period" means the period during which a Project can earn Carbon Credits. The crediting period start date and end date is specified for each project.

1.10. “Declaration” means this document.

1.11. “Emission reduction” means the emissions that are reduced, through mitigation activities, as a result of the implementation and operation of a registered Project.

1.12. “Environmental Attribute” means the outputs of the project that could lead to environmental benefit. The Environmental Attribute can manifest as Carbon Credits or other environmental assets such as renewable energy certificates (RECs) and Guarantees of Origin (GOs). An Environmental Attribute can only be claimed once. This means that if the project issues ICCs, it cannot issue any other Environmental Attribute.

1.13. “Guarantees of Origin (GOs)” means certificates issued by an authorised body, providing evidence that a specific quantity of energy was produced from a renewable source, ensuring transparency and traceability in the renewable energy market.

1.14. “ICS Rules” means the rules of the ICS as contained in the suite of documents that define the Standard.

1.15. “Inclusive Carbon Credit (ICC)” means a Carbon Credit token issued by the ICS that represents an absolute reduction or removal of greenhouse gases in the atmosphere. Each credit represents one tonne of carbon dioxide equivalent (tCO2e). Recordation of an ICC in the account of the holder on the ICC IoT system is prima facie evidence of that holder’s entitlement to that ICC.

1.16. “International Accreditation Forum (IAF)” means the International Accreditation Forum, Inc. is the world association of Conformity Assessment Accreditation bodies and other bodies interested in conformity assessment in the fields of management systems, products, services, personnel and other similar programs of conformity assessment. “Methodology” means a set of approved rules that must be followed in the implementation of a Project. See also Component Methodology.

1.17. “Methodology” means a set of approved rules that must be followed in the implementation of a Project. See also Component Methodology “Project Owner” means the individual or entity that legally owns the project and has the necessary authorisation to sign this Declaration.

1.18. “Project Owner” means the legal owner of the Project in terms of this Declaration.

1.19. “Project Ownership” means the legal right to control and operate the project activities.

1.20. “Project Report” means the document that describes the Project.

1.21. “Registry, ICS Registry” means the electronic database wherein ICCs are stored. The Registry provides information relating to the ownership of Credits by providing and assigning a unique serial number for each verified Credit. The registry may be outsourced by the ICS.

1.22. “Renewable Energy Certificates (RECs)” means tradeable, non-tangible energy commodities that represent proof that one megawatt-hour (MWh) of electricity was generated from an eligible renewable energy resource.

1.23. “Termination of Project Registration” means that the Registered Project can no longer generate carbon credits (ICCs) on the ICS Platform.

2. DECLARATIONS

2.1. As an accredited auditor, I hereby declare that:

2.1.1. I have been accredited in accordance with ISO 14065: General Principles and Requirements for Bodies Validating and Verifying Environmental Information by an accreditation body that is a member of the International Accreditation Forum (IAF).

2.1.2. I have completed the training programme on the ICS Platform, as required by the Environmental Integrity Committee (EIC).

2.1.3. All factual information that I provide in relation to this Declaration is, to the best of my knowledge, following due inquiry true, accurate and complete in all material respects.

2.1.4. I have not made or provided, and will not make or provide, false, fraudulent or misleading statements or information in relation to this Declaration.

2.1.5. The Project Report and any other supporting documents, on which the Registration of a Project on the ICS Online Platform is based, are true and accurate in all material respects and do not contain any false, fraudulent or misleading statements or information.

2.1.6. As an Accredited Auditor, I am responsible for reviewing project implementation and monitoring reports submitted by the Project Owner. I will ensure that the project activities meet the validation, registration, monitoring and verification requirements set by the ICS and, in doing so, may achieve certified Inclusive Carbon Credits (ICCs).

2.1.7. I understand that I am the primary point of contact for the ICS regarding any comments raised by the public, Technical Sub-committee (TsC) and EIC. I will ensure that any clarification request or corrective action needed to modify project verification documents are communicated to the project owner.

2.1.8. I will comply with the requirements of the ICS and uphold its integrity. I will conduct my duties with impartiality, independence, and professionalism, and will continuously assess and improve my skills and knowledge in the field of greenhouse gas emission reduction and carbon removal projects.

2.1.9. I have read and understood the content of this Declaration, including the Code of Conduct and Ethical Principles set forth by the ICS, and I agree to abide by them in the performance of my duties as an Accredited Auditor.

2.2. I hereby confirm that the Inclusive Carbon Credits (ICCs) claimed under the Project are not subject to double counting or double claiming in any way, including:

2.2.1. Registration under any other Carbon Standard or standard that expresses the Environmental Attribute of the Project in any form other than Carbon Credits, such as Renewable Energy Certificates (RECs) or other Guarantees of Origin (GOs).

2.2.2. Registration under any mandatory regulated scheme in the host country, such as an emission trading scheme or carbon tax scheme.

2.3. I acknowledge my responsibility to inform the ICS about any material changes to the Project or its status that might affect the declarations made in this Declaration.

2.4. I declare that there are no conflicts of interest in the Project that could compromise its transparency and integrity.

2.5. I hereby acknowledge and agree that:

2.5.1. In the event of any double counting or double claiming, the ICS has the right to immediately terminate the Registration of the Project and/or cancel the Inclusive Carbon Credits (ICCs) that have been double counted or double claimed.

2.5.2. Neither the ICS, nor any of its respective affiliates, directors, employees, agents, licensors, and/or contractors, shall be liable with respect to any claims whatsoever arising out of this Declaration or erroneous information within the Project Report submitted to the ICS Online Platform for any damages, including, without limitation, claims brought against the ICS by Accountholders, Project Owners, Accredited Auditors, or any other third party.

2.5.3. I have read, understood, and will abide by the ICS Rules.

2.5.4. The ICS has the right to amend any of the ICS Rules at any time and shall not bear any liability for loss or damage or liability of any kind

sustained by the Project Owner, or any other party involved in the Project in any way under the ICS as a consequence of such amendment.

3. GOVERNING LAW

This Declaration, along with any non-contractual obligations arising out of or in connection with it, shall be governed by the laws of South Africa. The South African courts shall have exclusive jurisdiction to resolve any disputes arising from or connected with this Declaration, including disputes regarding its existence, validity, termination, or the consequences of its nullity.

4. WARRANTIES

4.1. I hereby warrant and declare that:

4.1.1. I have the legal authority and capacity to enter into and perform all obligations under this Declaration and any other associated agreements or documents.

4.1.2. All necessary consents, approvals, and authorisations required for the execution, delivery, and performance of this Declaration have been obtained, and I am in compliance with all applicable laws, regulations, and requirements pertaining to the Project.

4.1.3. I will promptly notify the ICS of any material changes or events that could adversely affect the accuracy or validity of the declarations, warranties, or information provided in this Declaration or any related documents. I will do so as soon as I become aware of any possible adverse effects and as soon as reasonably possible.

4.1.4. There is no pending or threatened legal proceedings, claims, or disputes against the accredited auditor that could materially and adversely affect the Project or my ability as the auditor's representative to fulfill the obligations under this Declaration or any related agreements or documents.

4.1.5. I will comply with all applicable laws, regulations, and requirements related to the Project, including those concerning environmental, social, and governance matters.

4.2. I acknowledge and agree that any breach of these warranties may result in the termination of my appointment as auditor, the termination of the Registration

of the Project, the cancellation of the Inclusive Carbon Credits (ICCs) and/or other remedies as deemed appropriate by the ICS.

5. SEVERABILITY

If any provision of this Declaration is held to be invalid, illegal, or unenforceable by a court of competent jurisdiction, such provision shall be severed from this Declaration, and the remaining provisions shall remain in full force and effect.

6. INDEMNIFICATION

6.1. I hereby agree to indemnify, defend, and hold harmless the ICS and its affiliates, directors, officers, employees, agents, and representatives (collectively, the "Indemnified Parties") from and against any and all losses, liabilities, damages, costs, and expenses, including reasonable attorneys' fees and expenses, arising out of or resulting from:

6.1.1. Any breach by the auditor or its employees, agents, or representatives of any representation, warranty, covenant, or obligation set forth in this Declaration or any related agreements or documents;

6.1.2. Any negligent, grossly negligent, or willful act or omission by the auditor or its employees, agents, or representatives in connection with the Project or the performance of the auditor's obligations under this Declaration or any related agreements or documents;

6.1.3. Any claim, demand, or action brought by a third party against any of the Indemnified Parties, to the extent that such claim, demand, or action arises out of or relates to the Project, the auditor’s performance under this Declaration or any related agreements or documents, or any breach by the auditor of its obligations, representations, or warranties contained herein or in any related agreements or documents.

6.2. The indemnification obligations of the auditor or its employees, agents, or representatives under this section shall survive the termination or expiration of this Declaration and any related agreements or documents.

EXECUTED on _____ by:

_____ _____
Name Place

_____ _____
Witness Witness

ANNEXURE 4: FRAMEWORK FOR DNSH RISK ASSESSMENT

The DNSH (Do No Significant Harm) Risk Assessment is a framework used to identify and mitigate potential negative impacts of a project on the environment, social well-being, and economic development of surrounding communities. It is an important step in ensuring that the project is designed and implemented in a way that aligns with DNSH principles. The following section outlines the key steps involved in conducting a DNSH risk assessment, including defining the project boundary, identifying potential impacts, assessing significance, developing mitigation measures, determining residual risk, developing a DNSH management plan, engaging with stakeholders, and documenting and reporting the findings.

1) Define the boundary of the DNSH risk assessment: Determine the geographical and temporal boundaries of the project, including the scope of activities and the potential beneficiaries.
2) Identify potential impacts: Identify the potential impacts that the project could have on the environment, social well-being, and economic development of the surrounding communities. This can be done through a scoping study or a preliminary impact assessment.
3) Assess significance: Determine the significance of the potential impacts identified in step 2. This can be done by comparing the potential impacts to relevant regulatory standards, guidelines, or benchmarks.
4) Develop mitigation measures: If required, develop a set of mitigation measures to address the potential impacts identified in step 2. Mitigation measures may be designed to minimise any adverse impacts, ensure positive impacts, and enhance social and environmental benefits.
5) Determine residual risk: Assess the residual risks associated with the project after the mitigation measures have been implemented. This can be done by comparing the residual risks to relevant regulatory standards, guidelines, or benchmarks.
6) Develop a DNSH management plan: If required, develop a DNSH management plan that outlines how the residual risks associated with the project can be managed over its lifespan. The plan may include monitoring, reporting, and evaluation measures to ensure that the project is meeting DNSH principles throughout its lifecycle.
7) Consultation and stakeholder engagement: Consult with relevant stakeholders and affected communities to gather their perspectives on the project and its potential impacts. This can be done through community meetings, surveys, or other engagement strategies.
8) Document and report findings: Document the findings of the DNSH risk assessment, including the potential impacts, mitigation measures, residual

risks, and DNSH management plan. This information should be reported in the project registration documents to demonstrate that DNSH principles have been considered in the project design and implementation.

ANNEXURE 5: ROYALTIES

The Royalties payable by Projects for the use of Component Methodologies are:

Component Methodology	Royalty
Project Description	0.5%
Additionality	0.5%
Baseline	1.0%
Monitoring	1.5%
Permanence	1.0%
Tagging	0.5%

Fractions of ICCs resulting for the royalty calculation will be rounded up to the next ton of CO_2 equivalent.

Royalties will be deducted from the registry account of the Project Owner upon issuance, and transferred to the registry account of the Component Methodology Owner.

ANNEXURE 6: DEFINITIONS, ACRONYMS AND ABBREVIATIONS

Refer to the definitions, acronyms and abbreviations tables in the *Inclusive Carbon Standard Glossary.*

Table 7: Methodology Nomenclature

Item	Description
mp	A set of criteria and procedures used to generate a portion of the Project Report or Monitoring Report.
m	Index for months
[m]v	Value for indexed element of set (e.g. value for month m)
mm	Index for minutes
y	Index for years
cp	Index for calibrated parameters
ce	Index for calibration events