Cookstoves Rating Framework V2.0

WHITEPAPER

Sylvera

Executive Summary

This document details the V2.0 Rating framework logic for the Cookstove project type.

Cookstove projects reduce household fuel emissions by replacing inefficient traditional cooking technologies using solid fuels (e.g., biomass, charcoal) and polluting fossil fuels (e.g., kerosene). These projects generate carbon credits through two primary mechanisms: providing more efficiency cooking technologies to reduce consumption of baseline fuels (improved efficiency), and switching to lower-emission-intensive modern clean fuels (fuel switching). Under V2.0 of our framework, a single unified approach covers all household energy cooking projects regardless of fuel type — including improved efficiency and fuel-switch technologies. This expansion also enables coverage of metered and measured projects.

This whitepaper contains a **description** of each component used in the assessment, **scoring logic** which breaks down the rules used to derive a quality score for each component, and **data inputs** where these are used in specific tests.

Rating Grade

Pt.1

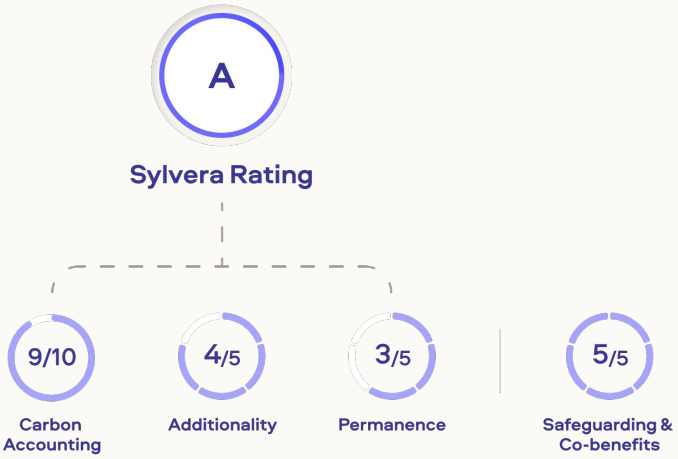
Rating Grade

AAA — D

Description

The eight point **Rating Grade** spans **AAA–D**, reflecting carbon removal integrity — the likelihood that each credit represents 1 tCO2e sequestered. The **Rating Grade** combines each scoring pillar, **Carbon Accounting**, **Additionality** and **Permanence,** mapping these against Ratings matrices to ensure that fundamental flaws or underperformance in key areas drives integrity insights.

A **Safeguarding and Co-Benefits** scoring pillar is also calculated to assess beyond-carbon aspects but is not factored into the **Rating Grade.**



Carbon Accounting	Additionality	Permanence	Safeguarding & Co-Benefits
Assesses over-crediting risks considering methods to monitor fuel savings and the conservativeness of carbon accounting choices.	Assesses the likelihood that clean cooking technology adoption would only have been implemented due to project implementation and carbon revenue.	Evaluates risk of reversals to assess the likelihood that carbon removals will persist for an atmospherically significant period of time.	Assesses biodiversity and community impact, considering safeguards against negative outcomes, and beyond-carbon benefits.

Notes:

High scores indicate low risk. Carbon Accounting scored on 1-10 scale; all other pillars scored on 1-5 scale.
(10 = very low risk; 1 = very high risk).
(5 = very low risk; 1 = very high risk).

Rating Grade

Pt.2

Scoring Logic - Ratings matrices

Step 1: The unrounded (1-10) **Additionality** and **Carbon Accounting** scores are combined to create a **"Carbon Impact"** score. This score represents the maximum impact of a project, or the likelihood that each claimed credit represents an accurately quantified, and additional tCO2e reduced, assuming there is no risk of reversal.

Carbon Impact

Carbon Accounting \ Additionality	1	2	3	4	5	6	7	8	9	10
1	1	1	1	1	1	1	1	1	1	1
2	1	2	2	2	2	2	2	2	2	2
3	1	2	3	3	3	3	3	3	4	4
4	1	2	3	4	4	4	4	4	5	5
5	1	2	3	4	5	5	5	5	5	5
6	1	2	3	4	5	5	6	6	6	6
7	1	2	3	4	5	6	7	7	7	7
8	1	2	4	5	5	6	7	8	8	8
9	1	2	4	5	5	7	8	9	9	9
10	1	2	4	5	5	7	8	9	9	10

Step 2: The **Carbon Impact** and unrounded **Permanence** scores are combined to produce the **Rating Grade,** representing the likelihood that one credit represents one tCO2e reduced for an atmospherically significant amount of time.

Rating

Carbon Impact (Carbon Accounting x Additionality) \ Permanence	1	2	3	4	5	6	7	8	9	10
1	D	D	D	D	D	D	D	D	D	D
2	D	D	D	D	D	D	D	D	D	D
3	D	D	C	C	C	C	C	C	C	C
4	D	C	C	B	B	B	B	B	B	B
5	D	B	B	B	BB	BB	BB	BB	BB	BB
6	D	B	B	BB	BB	BBB	BBB	BBB	BBB	BBB
7	D	B	B	BB	BBB	BBB	BBB	BBB	BBB	BBB
8	D	B	B	BB	BBB	A	A	A	A	A
9	D	B	B	BB	BBB	A	A	A	AA	AA
10	D	B	B	BB	BBB	AA	AA	AA	AA	AAA

Carbon Accounting

Description

This component assesses the over-crediting risks, considering whether the approaches to monitoring fuel savings, and carbon accounting choices to quantify of emission reductions claims associated with fuel savings are accurate and conservative.

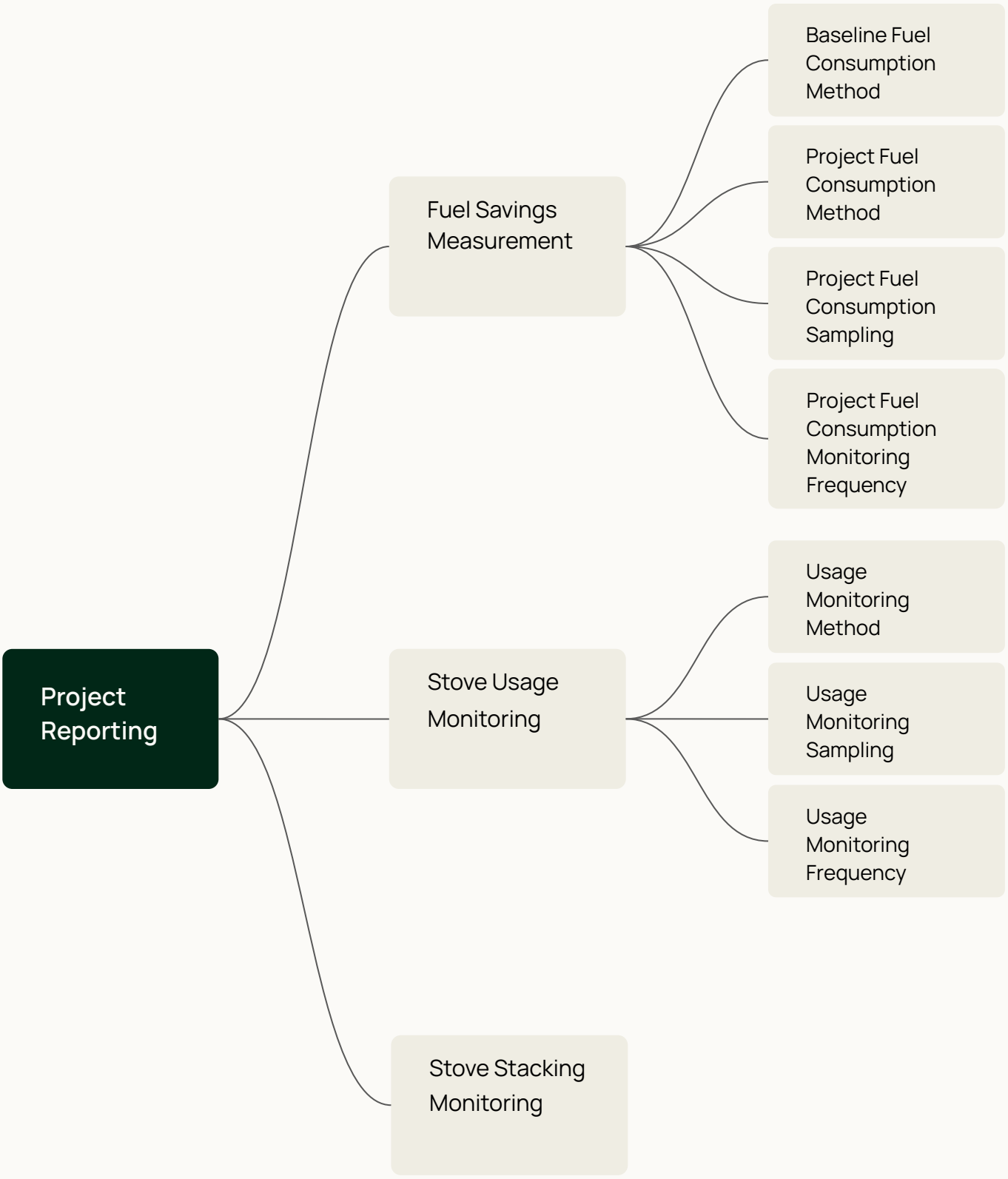
Scoring Logic

The **Carbon Accounting** score is calculated by combining the **Project Reporting** and **Carbon Modeling** components.

Project Reporting assesses the quality of methods used to measure the volume of fuel saved after project technologies are distributed compared to a baseline scenario across all project devices, considering fuel consumption monitoring, stove usage monitoring, and stove stacking monitoring.

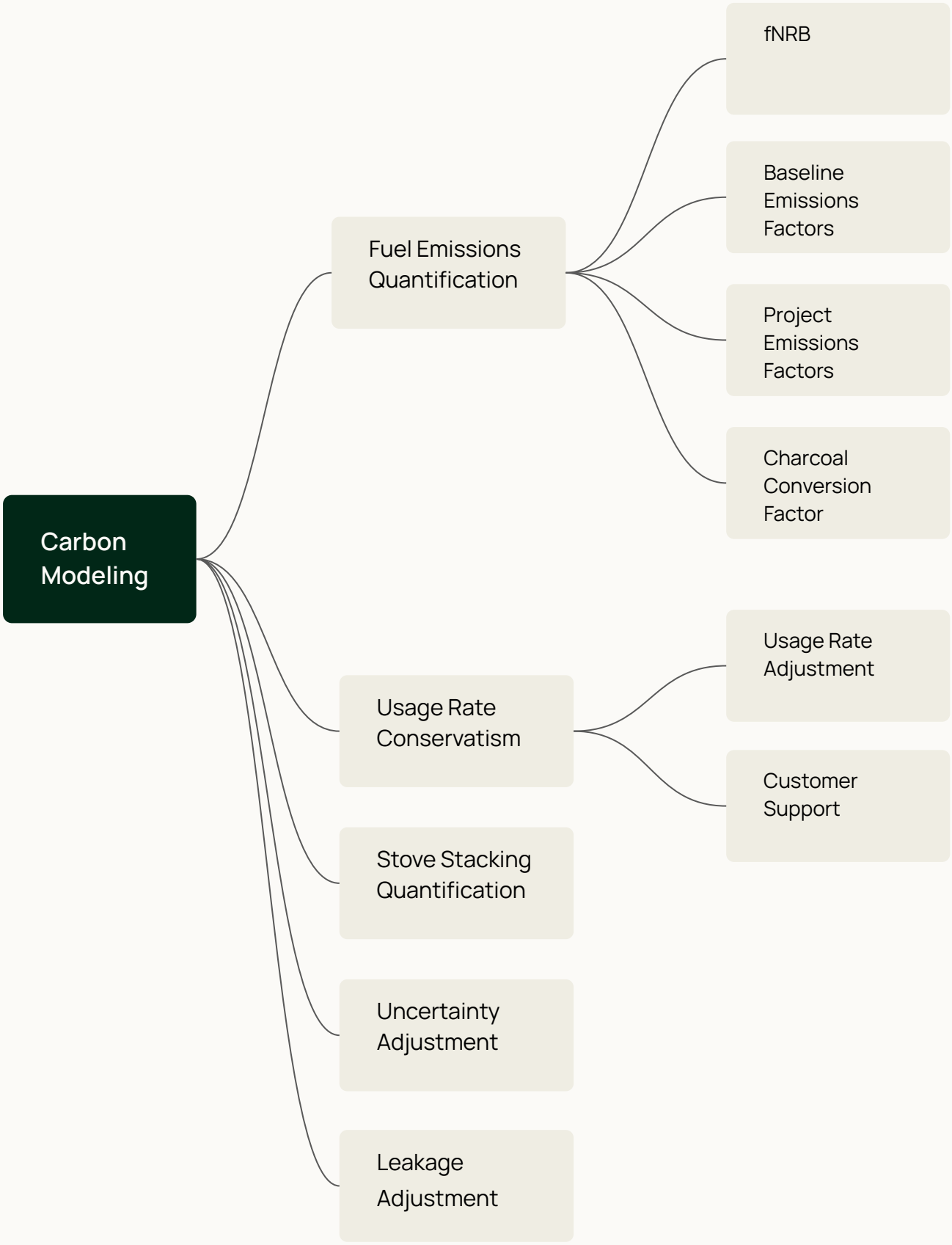
Carbon Modeling considers accounting choices and assumptions made to quantify the net emissions reductions associated with fuel savings, including key parameters such as the fraction of non-renewable biomass (fNRB), emissions factors (EFs), charcoal conversion factors, and other elements of net reductions calculations outside of fuel savings, such as leakage emissions, and uncertainty adjustments.

Carbon Accounting



Carbon Accounting

Pt.2



Project Reporting

CARBON ACCOUNTING

Description

The strength and accuracy of methods used to measure and monitor the volume of fuel saved following the implementation of project devices, and considering stove usage and stove stacking prevalence.

Scoring Logic

The **Project Reporting** score combines the **Fuel Savings Measurement**, **Usage Monitoring**, and **Stove Stacking Monitoring** components in a weighted average.

The highest weighted component is **Fuel Savings Measurement**, followed by **Usage Monitoring**, with **Stove Stacking Monitoring** being the lowest weighted.

The score includes a capping mechanism, to cap the overall **Project Reporting** score within the “Moderate Risk” range if certain low quality methods to measure and monitor fuel savings are used, such as back-calculation using laboratory based water-boiling tests (WBTs) instead of direct measurements of fuel consumption.

Fuel Savings Measurement

Description

The quality the methods for measuring or estimating the volume of fuel saved across project devices following their implementation compared to the volume that was consumed in baseline devices.

Scoring Logic

The **Fuel Savings Measurement** score assesses the methods used to measure fuel savings across project devices considering, the method to monitor or estimate baseline fuel consumption volumes (**Baseline Fuel Consumption Method**) and project fuel consumption volumes (**Project Fuel Consumption Method**), as well as the approach to sampling households when taking measurements (**Project Fuel Consumption Sampling**), and the frequency at which fuel consumption measurements are taken throughout the project lifetime (**Project Fuel Consumption Frequency**).

The scoring uses a weighted average where **Baseline Fuel Consumption Method** and **Project Fuel Consumption Method** carry the highest weightings. Methods the quantify fuel savings that use direct measurements of fuel consumed at baseline and during the project within real households (e.g., direct metering and kitchen performance tests [KPTs]) are awarded the highest scores. Methods the rely on an estimation of fuel savings based on efficiency differences between project and baseline devices and make limited use of real household fuel consumption measurements score the lowest.

Representative sampling, and high frequency monitoring also contribute to higher scores.

Baseline Fuel Consumption Method

CARBON ACCOUNTING – PROJECT REPORTING – FUEL SAVINGS MEASUREMENT

Description

The method to quantify the amount of fuel used by households in baseline technologies, such as direct measurements (e.g., Kitchen Performance Tests [KPTs]), back-calculation based on efficiency differences (e.g., Water-Boiling Tests [WBTs]), surveys, or default data on fuel household fuel consumption.

Scoring Logic

The **Baseline Fuel Consumption Method** score maps risks to the method used to measure or estimate the amount of fuel participant households use in baseline, traditional cooking technologies.

Non-metered projects: Direct measurements of sampled households reflecting real world cooking (e.g., KPTs) are assigned lower risks than estimates of fuel consumption based on laboratory derived efficiency differences between the project and baseline devices (e.g., WBTs) or self-reported values from surveys. Conservative default values are acceptable in challenging monitoring contexts.

Metered projects: Methods using direct measurements (e.g., KPTs) are favoured; back-calculation using WBTs, or controlled-cooking tests (CCTs) are acceptable as the estimation of displaced baseline fuel is based on robust, continuous, metered fuel consumption data in the project scenario. Conservative default values are also acceptable in challenging monitoring contexts.

Data Inputs

Input name	Description
Baseline fuel consumption method	The method to quantify the volume of fuel consumed at baseline, or displaced by the project device as a component of the fuel savings calculation as reported in project documentation.

Project Fuel Consumption Method

CARBON ACCOUNTING – PROJECT REPORTING – FUEL SAVINGS MEASUREMENT

Description

The quality of the method to quantify the volume of fuel used by households in project technologies and whether it relies on direct measurements (e.g., Metering, Kitchen Performance Tests [KPTs]) or uses other methods such as calculation based on efficiency gains (e.g., Water-Boiling Tests [WBTs]), or surveys.

Scoring Logic

The **Project Fuel Consumption Method** score maps risks to the method used to measure or estimate the amount of fuel participant households use in project technologies.

Non-metered projects: Direct measurements of sampled households reflecting real world cooking (e.g., KPTs) are assigned lower risks than estimates of fuel consumption based on laboratory derived efficiency gains (e.g., WBTs) or self-reported values from surveys.

Metered projects: Direct fuel or energy metering across all project devices is considered the most robust project fuel consumption monitoring method, providing continuous real-world fuel consumption data across all households, capturing all behavioral variations.

Data Inputs

Input name	Description
Project fuel consumption method	The method to quantify the volume of fuel consumed in project devices as a component of the fuel savings calculation as reported in project documentation.

Project Fuel Consumption Sampling

Pt.1

CARBON ACCOUNTING – PROJECT REPORTING – FUEL SAVINGS MEASUREMENT

Description

For project technologies where direct metering of all stoves is not supported, this component assesses if the sampling regime used to monitor fuel consumption in a subset of participant households is representative and accounts for seasonality in household cooking practices.

Scoring Logic

The **Project Fuel Consumption Sampling** score considers if the sampling of households for fuel consumption is representative of the total number of participant households and their cooking practices.

Non-metered projects: Considers the sample size of households included in fuel consumption monitoring against the total number of devices distributed, or households included in the project to ensure sample sizes meet the minimum requirement of 90/10 confidence level. Project documentation is assessed for evidence that seasonality was taken into account and any relevant household stratification was included (e.g., urban vs rural).

Metered projects: If all stoves are directly metered the sample size is considered 100% of all participant households, and is, therefore, representative. Project documentation is assessed for evidence that seasonality was taken into account and any relevant household stratification was included (e.g., urban vs rural).

Project Fuel Consumption Sampling

Pt.2

CARBON ACCOUNTING – PROJECT REPORTING – FUEL SAVINGS MEASUREMENT

Data Inputs

Input name	Description
Total number of devices distributed (per vintage)	Cumulative # stoves distributed per monitoring period. Used in post-issuance project Ratings.
Estimated total number of devices distributed (ex-ante)	Proposed total number of stoves the project aims to distribute over the project lifetime. Used in pre-issuance project Ratings.
Fuel consumption sample size (per vintage)	Sample size for project fuel consumption parameter as reported in project documentation for each monitoring period. Used in post-issuance project Ratings.
Estimated fuel consumption sample size (ex-ante)	Proposed sample size for project fuel consumption parameter as reported in project documentation. Used in pre-issuance project Ratings.
Evidence of consideration of seasonality	Qualitative assessment of evidence provided in project documentation that seasonality was taken into account in the fuel consumption sampling regime. Evidence in project documentation is cross-referenced with desk-based assessments on seasonality in the project region to ensure the approach taken and justification is appropriate.

Project Fuel Consumption Monitoring Frequency

CARBON ACCOUNTING – PROJECT REPORTING – FUEL SAVINGS MEASUREMENT

Description

The frequency that fuel consumption measurements, or household fuel consumption surveys are taken.

Scoring Logic

The **Project Fuel Consumption Monitoring Frequency** score considers if measurements are taken at a reasonable frequency to capture behavioral variation. Higher frequencies are assumed to produce more accurate data on fuel consumption volumes.

Non-metered projects: Where continuous fuel or energy metering is not supported by the project technology or fuel type, period monitoring at higher frequencies is scored lower risk than less frequent monitoring. Biennial monitoring is considered reasonable, with risks decreasing if monitoring is done more than one every two year, and increasing higher risk if monitoring is done less than one every two years.

Metered projects: If all stoves are directly metered, then the monitoring frequency is considered continuous and given the lowest risk.

Data Inputs

Input name	Description
Fuel consumption monitoring frequency	How often the project fuel consumption parameter is monitored (e.g., frequency of KPT, frequency of fuel consumption survey, continuous direct metering) as reported in project documentation.

Stove Usage Monitoring

Description

The method used to monitor the number and proportion of project stoves that remain in use (uptake rate). Accurate stove usage monitoring is important in quantifying total fuel savings across all distributed project devices. Stove usage monitoring should follow a robust approach, uses a representative sample size, and is conducted frequently.

Scoring Logic

The **Stove Usage Monitoring** score assess the method to monitor the proportion of distributed stoves that remain in use, or the uptake rate, considering the monitoring approach used (**Usage Monitoring Method**), as well as whether sampling of households for stove usage is representative of all participant households (**Usage Monitoring Sampling**), and the frequency at which usage measurements are taken throughout the project lifetime (**Usage Monitoring Frequency**).

Usage Monitoring Method

Description

The method by which stove usage is monitored, for example, by direct metering of all project stoves, stove-use-monitors (SUMs), or through household surveys.

Scoring Logic

The **Usage Monitoring Method** score maps risks to the method used to monitor project stove usage across participant households

Non-metered projects: Where direct metering is not supported by the project stove technology or fuel type, usage is usually assessed through household surveys. Survey-based approaches are assessed for their quality (e.g., in-person vs. remote), cross-checks (e.g., visual checks, heat tests). In-person surveys with relevant cross-checks are assigned lower risk than remote, self-reported surveys. The additional use of SUMs, decreases risks by providing continuous usage data.

Metered projects: Direct fuel or energy metering across all project devices provides continuous real-world usage data — the lowest risk method.

Data Inputs

Input name	Description
Usage monitoring method	The method to monitor stove usage as project documentation (e.g., direct metering, in-person survey, remote survey, etc).
Use of SUMs	Binary check for evidence for use of SUMs to supplement usage surveys in non-metered projects, as reported in project documentation. t

Usage Monitoring Sampling

Pt.1

CARBON ACCOUNTING – PROJECT REPORTING – STOVE USAGE MONITORING

Description

For project technologies where direct metering of all stoves is not supported, this component assesses if the approach to sampling households for stove usage surveys is representative.

Scoring Logic

The **Usage Monitoring Sampling** score considers if the sampling of households for stove usage is representative of the total number of participant households and their cooking practices.

Non-metered projects: Considers the sample size of households included in usage monitoring surveys against the total number of devices distributed, or households included in the project to ensure sample sizes meet the minimum requirement of 90/10 confidence level.

Metered projects: If all stoves are directly metered the sample size is considered 100% of all participant households and is, therefore, representative.

Usage Monitoring Sampling

Pt.2

Data Inputs

Input name	Description
Total number of devices distributed (per vintage)	Cumulative # stoves distributed per monitoring period. Used in post-issuance project Ratings.
Estimated total number of devices distributed (ex-ante)	Proposed total number of stoves the project aims to distribute over the project lifetime. Used in pre-issuance project Ratings.
Usage survey sample size (per vintage)	Sample size for the usage rate parameter as reported in project documentation for each monitoring period. Used in post-issuance project Ratings.
Estimated usage sample size (ex-ante)	Proposed sample size for the usage rate parameter as reported in project documentation. Used in pre-issuance project Ratings.

Usage Monitoring Frequency

Description

Assesses how often stove use monitoring and/or household stove usage surveys are conducted.

Scoring Logic

The **Usage Monitoring Frequency** score considers if usage monitoring is conducted at a reasonable frequency to capture behavioral variation. Higher frequencies are assumed to produce more accurate data on fuel consumption volumes.

Non-metered projects: Where continuous metering is not supported by the project technology or fuel type, periodic monitoring at higher frequencies is scored lower risk than less frequent monitoring. Biennial usage monitoring is considered reasonable, with risks decreasing if monitoring is done more frequently, and increasing don less frequently. If SUMs are used, this is considered continuous usage monitoring, reducing risks further.

Metered projects: If all stoves are directly metered, then the monitoring frequency is considered continuous and given the lowest risk.

Data Inputs

Input name	Description
Usage monitoring frequency	How often the usage rate/uptake rate parameter is monitored (e.g., continuous direct metering, frequency of household usage surveys) as reported in project documentation.

Stove Stacking Monitoring

Description

Stove stacking is the continued use of traditional baseline cooking devices alongside project stoves, lowering emissions reductions compared to what would be achieved if project devices completely replaced all cooking events. It is important to monitor the prevalence of stove stacking for accurate emissions reductions quantification across all participant households.

Scoring Logic

The **Stove Stacking Monitoring** score assigns risks to the method to monitor the continued use of the baseline technology based on its accuracy and robustness

Non-metered projects: KPTs measuring total household fuel consumption using are the lowest risk method as lower fuel savings consumption from the continued use of baseline devices is directly captured and quantified. Survey responses about the continued use of baseline devices are considered higher risk. The quality of survey-based approaches is also considered (e.g., in-person vs remote).

Metered projects: Stove stacking monitoring is considered low risk — direct metering of all project stoves only quantifies emission reductions from the fuel displaced by the project stove, increased stove stacking reduces the proportional use of project stoves, and is reflected in fuel metering data. However, additional KPTs to account for total household fuel consumption can decrease risks further by identifying issues such as total energy consumption increases (Jevons paradox).

Data Inputs

Input name	Description
Stove stacking monitoring method	The method to monitor stove stacking as reported in project documentation (e.g., KPTs, survey, etc).

Carbon Modeling

CARBON ACCOUNTING

Description

The quality of key parameters used in the quantification of net emission reductions associated with the amount of fuel saved following the implementation of project cookstoves in terms of tCO2e.

Scoring Logic

The **Carbon Modeling** score assesses choices and assumptions made in the carbon accounting calculator to quantify net emission reductions associated with fuel savings, combining the **Fuel Emissions Quantification, Usage Rate Conservatism, Stove Stacking Adjustment, Leakage Adjustment, Uncertainty Adjustment** components in a weighted average.

Fuel Emissions Quantification is the core component in this score, given the highest weighting, as it addresses accounting parameters used to quantify the emissions reductions associated with each unit of fuel saved that have a significant impact on total crediting volumes and over-crediting risks. **Usage Rate Conservatism** is the next highest weighted components, as this is key in determining the total fuel emissions reductions volumes across all project devices, followed by **Stove Stacking Adjustment** component. The **Leakage Adjustment** and **Uncertainty Adjustment** components carry the lowest weightings in the score.

This component includes scenario-based capping mechanisms to cap the overall **Carbon Modeling** score within the “Low Risk” and “Moderate Risk” categories when certain severe over-crediting risks are present in the **Fuel Emissions Quantification,** and/or **Usage Rate Conservatism** components.

Fuel Emissions Quantification

CARBON ACCOUNTING – CARBON MODELING

Description

Considers the appropriateness of parameters used to quantify the gross emissions reductions associated with fuel savings in terms of tCO2e.

Scoring Logic

The **Fuel Emissions Quantification** score assess the key factors and assumptions used to quantify emissions reductions in terms of tCO2e associated with each unit of fuel saved. These parameters are key to understanding over-crediting risks as the choice of assumptions greatly alters credit volumes, with non-conservative assumptions inflating credit claims significantly above achieved emission reduction volumes. As such, this component is a key limiting factor of the **Rating** grade and carries a high-weighting in the overall **Carbon Modeling** and **Carbon Accounting** scores.

The score combines the **fNRB**, **Baseline Emission Factors**, **Project Emission Factors**, and **Charcoal Conversion Factor** components (where applicable for projects including charcoal fuels) into a weighted average.

This component includes scenario-based score capping mechanisms that cap the score within the "High Risk" category if significantly inflated fNRB values that invalidate a large portion of emission reductions claims are present.

Note:

- **fNRB** score is ***NOT included*** if the project does not reduce biomass-fuel use.
- **Project Emission Factors** are only considered for **fuel-switch projects**. Baseline and project fuels are identical in Improved-efficiency projects — individual assessment is not required.
- **Charcoal Conversion Factor** is only included for projects where charcoal fuels are present in the baseline or project scenarios.

Irrelevant components are nullified excluded from the assessment depending on the project design. Weightings and caps differ depending on the combination of components, with all possible combinations pre-defined in the framework logic.

Description

fNRB refers to the fraction of non-renewable biomass. For projects that reduce biomass fuel usage, only the non-renewable portion can be credited as emission reductions. Project fNRB values should not overestimate the non-renewable proportion and should reasonably align with MoFUSS values, or follow conservative Tool 33 defaults (30%). Other reasonable methods to derive fNRB may be considered on a case-by-case basis.

Scoring Logic

The **fNRB** score compares the project reported values to the national and regional values estimated by the *Modeling Fuelwood Savings Scenarios* (MoFuSS)[1] model. MoFuSS benchmark values are selected based on the spatial extent of the project. Project's operating nationally or across several regions are compared with national MoFuSS. Projects operating in one region are compared with MoFuSS values for the relevant administrative boundary.

Project values that align with, or are lower than the MoFuSS estimates score the lowest risk. Project values higher than MoFuSS estimates indicate a risk of over-crediting, increasing proportionally with the size of the discrepancy. The score also considers whether the project value falls within one standard error above the mean MoFuSS benchmark value. Discrepancies can be tolerated if the project value falls within what can be considered a reasonable range. Scoring also considers the methodology used to derive fNRB values, such as conservative defaults (30%), or additional analyses, to adjust scoring on a case-by-case basis.

Pre-issuance projects: proposed fNRB value used in ex-ante ER calculations is compared to MoFuSS.

Issuing projects: fNRB values from each monitoring period are individually compared to MoFuSS, and combined in a weighted average to give the overall risk score that can change over time as fNRB values are updated.

[1] Ghilardi, A., & Bailis, R. (2025). MoFuSS global simulations 1km 2010-2050 [Data set]. Zenodo. https://doi.org/10.5281/zenodo.15054385

Data Inputs

Input name	Description
MoFuSS fNRB mean (National)	2020–2030 Mean admin 0 fNRB value for relevant country (Ghilardi, A., & Bailis, R. [2025]. MoFuSS global simulations 1km 2010-2050)
MoFuSS fNRB SE (National)	2020–2030 admin 0 SE value for relevant country (Ghilardi, A., & Bailis, R. [2025]. MoFuSS global simulations 1km 2010-2050)
MoFuSS fNRB (Regional)	2020–2030 admin 1 fNRB value for relevant region (Ghilardi, A., & Bailis, R. [2025]. MoFuSS global simulations 1km 2010-2050)
MoFuSS fNRB SE (Regional)	2020–2030 admin 1 SE value for relevant country (Ghilardi, A., & Bailis, R. [2025]. MoFuSS global simulations 1km 2010-2050)
Country	Country the project operates in. Used to select relevant MoFuSS value for comparison.
Project region	Region the project operates in. Used to determine if regional value (admin 1) should be taken over national values and to select the relevant regional MoFuSS value for comparison
Project fNRB (ex-ante)	fNRB value used in ex-ante emission reduction calculations as reported in the project documentation (e.g., Project Design Document). Used for pre-issuance project Ratings.
Project fNRB (ex-post, per-vintage)	fNRB value used in ex-post emission reduction calculations as reported in the project documentation for each monitoring period (e.g., Monitoring Report, Verification Report). Used for issuing project Ratings.
fNRB source	The source of, or method to derive, project fNRB values (e.g., Tool 30, Tool 33, MoFuSS, Tool 33 with uncertainty deduction, etc.)

Baseline Emission Factors

Pt.1

CARBON ACCOUNTING – CARBON MODELING – FUEL EMISSIONS QUANTIFICATION

Description

Emissions factors (EFs) are used to quantify the greenhouse gas emissions from the combustion or use of a unit of a given fuel burnt or consumed.

Scoring Logic

The **Baseline Emission Factors** score uses the WHO cooking fuel dataset and IPCC default fuel EFs to calculate a weighted average "Baseline EF" representative of the proportional fuel mix available to the target population at the year the project started. This is compared to the project reported baseline EFs to ensure that the proposed baseline fuel use mix is appropriate and reflects all fuels likely to be used at baseline by the target households.

Illustrative Example:

Project:
Project distributes stoves to rural populations across a nation and claims only biomass is used at baseline, applying a standard biomass CO2 EF of 112 tCO2e/TJ.

Sylvera Assessment:
WHO cooking fuel dataset indicates 70% of the national rural population primarily used biomass and 30% used LPG at the time the project started. IPCC defaults EFs (Biomass: 112 tCO2e/TJ; LPG 63.1 tCO2e/TJ).

Weighted average EF: (112 * 0.7) + (63.1 * 0.3) = 97.33 tCO2e/TJ.

This example indicates there is is a sizable portion of the target population that already use lower emissions intensity fuels that are not included in emissions accounting boundaries and may overstate baseline fuel emissions as a result.

Note that the score does not suggest that the Sylvera EF be used in place of IPCC defaults, but asses the plausibility of the baseline scenario, and quantifies over-crediting risk associated with baseline assumptions. Discrepancies indicate some households may have adopted, or would adopt, fuels that are not considered in emissions accounting for a portion of cooking throughout the project lifetime.

Baseline Emission Factors

Pt.2

CARBON ACCOUNTING – CARBON MODELING – FUEL EMISSIONS QUANTIFICATION

Data Inputs

Input name	Description
Baseline fuel(s)	List of fuels the project states will be used by target households in a baseline scenario that are included in baseline emission calculations as reported in project documentation.
Project baseline EF (per fuel)	The CO2 emission factor the project applies for each fuel included in baseline emissions calculation as reported in project documentation.
Proportion of target population primarily reliant on each fuel category (per year, per fuel category)	WHO cooking fuel and technology database % of the relevant country's population primarily reliant on each fuel (electricity, gas, kerosene, biomass, charcoal, coal) within a given year, stratified by rural/urban/total.
IPCC default CO2 EF (per fuel)	Default CO2 emission factors for stationary combustion per fuel (2006 IPCC Guidelines for National Greenhouse Gas Inventories).
Country	Country the project operates in. Used to select relevant country from the WHO cooking fuel and technology database.
Target population for distribution	Population the project distributes stoves to (urban, rural, both, etc). Used to select the relevant stratification from the WHO cooking fuel and technology database.
Project start date	Date the project started as reported in project documentation. Used to select primary fuel proportions for the target populations in the relevant year from the WHO cooking fuel and technology database.

Project Emission Factors

Pt.1

CARBON ACCOUNTING – CARBON MODELING – FUEL EMISSIONS QUANTIFICATION

Description

The EFs used to quantify the emissions associated with project fuel consumption is a key parameter in calculating project emissions and the total emission reduction compared to baseline.

Scoring Logic

The **Project Emission Factors** score compares project fuel(s) EFs to accepted IPCC default values, country grid-emissions, and/or conservative off-grid emissions factors (depending on project fuel type) to ensure that reported EFs do not understate project emissions.

Fuel-efficiency projects: Component not computed.

Fuel-switch projects: The component first identifies what fuels the project states will be used in the project-scenario and then compares the project reported EFs to relevant accepted external sources on EFs for the combustion/use of each fuel. EFs should align with accepted values for the relevant fuel(s) to avoid understanding fuel consumption emissions in the project scenario.

For example, if a project the distributes electric stoves connected to the national grid the project's reported grid electricity EF will be compared with the latest available data on national grid emissions intensity. If a project supplies LPG stoves, we compare the project reported LPG EF and ensure this is in line with IPCC LPG combustion default EFs.

Project Emission Factors

Pt.2

CARBON ACCOUNTING – CARBON MODELING – FUEL EMISSIONS QUANTIFICATION

Data Inputs

Input name	Description
Project fuel(s)	List of fuels the project states will be used by target households in the project scenario that are included in project emission calculations as reported in project documentation.
Project EF (per fuel)	The CO2 emission factor the project applies for each fuel included in project emissions calculation as reported in project documentation.
IPCC default CO2 EF (per fuel)	Default CO2 emission factors for stationary combustion per fuel (2006 IPCC Guidelines for National Greenhouse Gas Inventories).
National Grid EF	National power grid CO2 EF for the relevant year(s).
Off-grid EFs	Default conservative CO2 EFs for diesel and petrol generators derived from desk research.
Country	Country the project operates in. Used to select relevant national grid data fuel and technology database.
Project start date	Date the project started as reported in project documentation. Used to select primary fuel proportions for the target populations in the relevant year from the WHO cooking fuel and technology database.

Charcoal Conversion Factors

Pt.1

CARBON ACCOUNTING - CARBON MODELING –FUEL EMISSIONS QUANTIFICATION

Description

For projects where charcoal is a baseline and/or project fuel, charcoal production emissions can be included. Conservative wood-to-charcoal ratio (4:1 or 6:1), or accepted IPCC charcoal EFs should be applied to ensure emissions from charcoal production are not overstated.

Scoring Logic

The **Charcoal Conversion Factor** score assesses if the projects accounting of emissions from charcoal production are conservative.

Projects can account for charcoal production emissions in two ways:

1. Converting the volume of charcoal fuel consumed to the amount of wood required to produce it and then applying biomass EFs to the wood volume. This conversion uses a numerical ratio (wood-to-charcoal conversion factor) that expresses the amount of wood required to produce a unit of charcoal.
2. No conversion of charcoal volumes to wood volumes — applying charcoal EFs that directly account for production emissions to the volume of charcoal fuel consumed.

This component assesses whether the project has either applied a conservative charcoal conversion factor, or uses accepted IPCC charcoal EFs.

Wood-to-charcoal emission factors of 4:1 or 6:1 are considered low risk. Higher ratios indicate higher over-crediting risks from the over-estimation of charcoal production emissions.

Default IPCC charcoal EFs are considered acceptable and low risk if wood-to-charcoal conversion was not conducted. EFs above reasonable defaults are flagged as an over-crediting risk.

Charcoal Conversion Factors

Pt.2

CARBON ACCOUNTING – CARBON MODELING – FUEL EMISSIONS QUANTIFICATION

Data Inputs

Input name	Description
Baseline fuel(s)	List of fuels the project states will be used by target households in a baseline scenario as reported in project documentation. Used to determine if charcoal is present and if the component is executed.
Project fuel(s)	List of fuels the project states will be used by target households in the project scenario as reported in project documentation. Used to determine if charcoal is present and if the component is executed.
Charcoal conversion factor	The wood-to-charcoal ratio used by the project to account for charcoal production emissions.
Charcoal emission factor	The CO2 EF for charcoal fuel (including charcoal production) as reported in project documentation.

Usage Rate Conservatism

Description

The usage rate applied in emission reductions calculations to quantify emission reductions across all project stoves. Usage rates should be realistic and conservative to account for potential inaccuracy in surveyed or monitored stove usage, and the potential risk that households discontinue using project stoves.

Scoring Logic

The **Usage Rate Conservatism** score assesses if the applied usage rate is conservative and accounts for potential monitoring accuracy depending on the method used to monitor stove uptake. Projects that cannot continually track usage should apply conservative usage caps.

The score considers the applied usage rate and use of conservative caps (**Usage Rate Adjustment**) and any actions to support continued uptake (**Customer Usage Support**). Risk scores are assigned using scenario based mappings.

Metered projects: Usage caps are waived as continuous usage monitoring data is available. The applied usage rate is considered accurate to real-world usage and scores low risk by default.

Non-metered projects: Projects that apply a usage rate higher than 90% are considered high risk of over-crediting from over estimating the number of project stoves that remain in use. Projects that apply a usage rate up to 90% and conduct all best-practice customer support activities are considered low risk. If best-practice uptake support is not conducted projects can apply a usage rate up to 75%. Rates above 75% without customer support are considered high risk. If the project uses SUMs, then caps are waived and higher usage rates can be considered low risk if supported by continuous usage monitoring data from SUMs.

Usage Rate Adjustment

CARBON ACCOUNTING – CARBON MODELING – USAGE RATE CONSERVATISM

Description

The percentage of stoves the project reports as remaining in use. Where continuous usage monitoring is not possible conservative usage caps (up to 90% for best-practice support scenarios; up to 75% otherwise) are expected.

Scoring Logic

The **Usage Rate Adjustment** score assesses if the usage rate is likely to be accurate and conservative.

Metered projects: Usage caps are waived as continuous usage monitoring data is verifies real-world usage. Metered projects score low risk by default.

Non-metered projects: No usage caps (>90%) score as high risk. Usage caps (90% or 75%) are lower risk. Caps are waived if the project uses SUMs.

Scoring considers the usage rates applied across all monitoring periods the overall risk score combined the applied rates in a weighted average.

Data Inputs

Input name	Description
Usage rate (ex-post, per vintage)	Usage rate in emission reduction calculations reported in project documentation for each monitoring period. Used for issuing project Ratings.
Usage rate (ex-ante)	Usage rate in ex-ante emission reduction calculations reported in project documentation. Used for pre-issuance project Ratings.
Use of SUMs	Binary check for evidence for use of SUMs to supplement usage surveys in non-metered projects, as reported in project documentation.

Customer Usage Support

Description

Customer support efforts to promote stove uptake (e.g., stoves suitable for local cooking preferences, support/materials on proper use/operational issues, access to repairs/replacements). Best-practice support activities can justify higher usage rates. Higher rates without such actions may be non-conservative and unjustified.

Scoring Logic

The **Customer Usage Support** score assesses if the project conducts efforts to support continued stove uptake among the target population. Scoring is based on the presence or absence of recommended support actions.

Implementing all recommended customer support actions increases the likelihood of sustained uptake and reduces the risk of stove abandonment.

Implementing no customer support actions decreases the likelihood of sustained uptake and increases the risk of stove abandonment.

Data Inputs

Input name	Description
Customer support actions	Actions to support stove uptake as reported in project documentation.

Stove Stacking Adjustment

Description

Accounting for the continued use of baseline stoves in net emission reductions.

Scoring Logic

The **Stove Stacking Adjustment** score assesses if the project has accurately and conservatively accounted for stove stacking by adjusting relevant parameters in its net emission reduction accounting.

Stove stacking may be accounted for in different parameters, such as through deduction factors, or directly within usage or fuel consumption parameters. Scoring checks if stacking has been evidently accounted for by an appropriate method.

Failure to account for stove stacking in net emissions reductions increases risks of over-crediting.

Data Inputs

Input name	Description
Stove stacking accounting	Checks for evidence that stove stacking is accounted for in emission reduction calculations.

Uncertainty Adjustment

Description

Adjustments are made in the net emission reductions calculation to account for any imprecision or error in monitored parameters.

Scoring Logic

The **Uncertainty Adjustment** score assesses if the project has quantified and accounted for errors in monitored parameters, or applies conservative deduction factors to account for potential uncertainty.

Evidence of quantifying and accounting for uncertainty reduces over-crediting risks.

No accounting for uncertainty increases the risk of over-crediting.

Data Inputs

Input name	Description
Uncertainty deductions	Checks for the presence of a uncertainty adjustments in emission reduction calculations.

Leakage Adjustment

Description

Conservative deductions to account for potential unintended increase in emissions outside of the project boundary due to project activities within net emission reductions.

Scoring Logic

The **Leakage Adjustment** score assesses if the project has conservatively accounted for potential leakage emissions by applying a leakage deduction factor.

Cookstove projects typically apply a flat 5% leakage deduction. Although the exact amount of leakage may be greater or lesser than the deduction, this approach is considered reasonable and conservative given monitoring challenges. The presence of a leakage deduction reduces over-crediting risks.

Assuming leakage emissions to be zero and applying no deduction factor increases the risk of over-crediting.

Data Inputs

Input name	Description
Leakage deductions	Checks for the presence of a leakage deduction in emission reduction calculations.

Additionality

Description

The project's additionality reflects the likelihood that the emission removals/reductions are a direct consequence of the project activities and would not occur in the absence of the project. Assessing additionality involves examining the credibility of the difference between the project and baseline scenario by considering the financial viability of the project activities, policy and regulatory incentives/restrictions, as well as common practice in the project's region.

Financial Additionality:
The likelihood of that sale of carbon credits is required to make stove distribution economically viable.

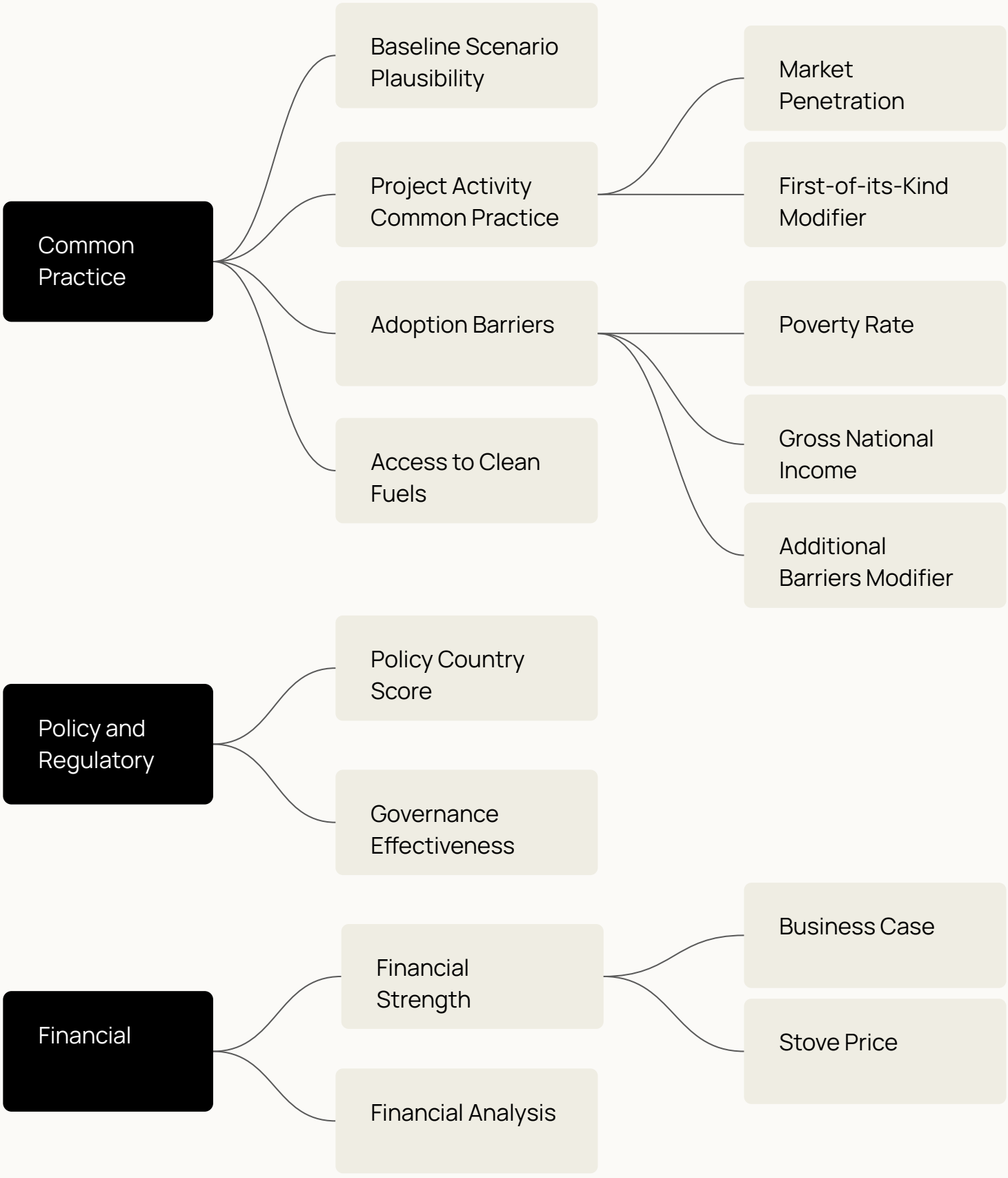
Policy & Regulatory:
Whether there are legal or regulatory mandates to uptake clean cooking technologies and if there are policy aims or fiscal incentives that could promote clean cooking technology uptake among the target population in a without-project scenario.

Common Practice:
The extent to which the adoption of clean cooking technologies of a similar or greater efficiency is already common in the project country/region, with the assumption that a project is less likely to be additional if clean cooking uptake (due to non-VCM intervention) is prevalent and there is insufficient evidence that the target population faces significant localized barriers to technology adoption that would make regional trends are irrelevant.

Scoring Logic

Combines the additionality components **Financial**, **Common Practice** and **Policy & Regulatory** in a weighted average, with the key limiting factor taking the highest weighting.

Additionality



Common Practice

ADDITIONALITY

Description

Examining whether the project or baseline activities are common practice in the project's region helps with identifying significant uptake barriers or the need for supported adoption. This could highlight the necessity (or lack thereof) of the carbon project and undermine/support the project's additionality.

Scoring Logic

The **Common Practice** score combines the **Baseline Scenario Plausibility, Project Activity Common Practice, Adoption Barriers** and **Access to Clean Fuels** scores in scenario based mappings.

The **Access to Clean Fuels** and **Baseline Scenario Plausibility** components take the highest weighting as these scores provide quantitative insights on the penetration and uptake of different cooking technologies in the country/region. However, the **Adoption Barriers** score can modify the overall score and override cooking technology penetration data if there is evidence of significant barriers for the target population to uptake clean cooking technologies that are not visible in national/regional level data. .

Baseline Scenario Plausibility

Pt.1

ADDITIONALITY – COMMON PRACTICE

Description

The credibility of the proposed baseline cooking scenario considering the prevalence of the cooking fuels among the target population in the relevant country.

Scoring Logic

The **Baseline Common Practice** score assesses the plausibility of the baseline cooking scenario.

Fuels the project claims participant households would use at baseline are compared to the proportion of fuels primarily used by the target population at the time the project started, as reported by the WHO cooking fuels and technology dataset. A higher prevalence of the reported baseline fuel indicates the baseline scenario is plausible, with a large proportion of the population realtiant on traditional fuels and cooking practices. A lower prevalence indicates a less plausible baseline scenario and a lower likelihood of additionality as the population has already moved away from traditional fuels and cooking practices.

The WHO cooking fuels and technology database provides data on fuel use for urban, rural and total populations. Comparison is selected based on what is most representative of the target population for stove distribution (e.g., rural vs urban).

Baseline Scenario Plausibility

Pt.2

ADDITIONALITY – COMMON PRACTICE

Data Inputs

Input name	Description
Proportion of target population primarily reliant on each fuel category (per year, per fuel category)	WHO cooking fuel and technology database % of the relevant country's population primarily reliant on each fuel (electricity, gas, kerosene, biomass, charcoal, coal) within a given year, stratified by rural/urban/total.
Country	Country the project operates in. Used to select relevant country from the WHO cooking fuel and technology database.
Target population for distribution	Population the project distributes stoves to (urban, rural, both, etc). Used to select the relevant stratification from the WHO cooking fuel and technology database.
Project start date	Date the project started as reported in project documentation. Used to select primary fuel proportions for the target populations in the relevant year from the WHO cooking fuel and technology database.

Project Activity Common Practice

ADDITIONALITY – COMMON PRACTICE

Description

Whether the project's core activities are already commonly carried out in the region without carbon finance, which could reduce the case for additionality.

Scoring Logic

The **Project Activity Common Practice** score considers the prevalence of adoption of the specific cooking technology distributed by the project. Unlike the **Baseline Plausibility**, and **Access to Clean Fuels** components that are fuel based tests, this test is technology specific.

The score combines the **Market Penetration** and **First-of-its-Kind Modifier** components to assess whether the technology the project distributes are novel and/or not yet widely adopted in the project country. Evidence that the project activities are already common practice increases the risk that project activities are not additional.

The **Market Penetration** score indicates whether uptake of similar technologies is already common practice. The **First-of-its-Kind Modifier** acts only as a positive modifier to identify where adoption of specific clean cooking technologies is considered novel, this avoids penalizing projects in countries where there have been long standing efforts to increase access to clean cooking but barriers to adoption have hindered mainstream adoption.

Market Penetration

Description

The extent to which similar clean cooking technologies have already been adopted in the country.

Scoring Logic

The **Market Penetration** score assesses whether technologies distributed by the project are already common practice by evaluating the existing reach and uptake of comparable technologies or interventions through desk research.

High rates of market penetration (e.g., >30%) indicate a project may not be additional and that uptake of similar clean cooking technologies may be mainstreamed enough to support spontaneous adoption through consumer markets instead of requiring supported uptake reliant on carbon revenues. Due to difficulties distinguishing between uptake resulting from other carbon market activities, high penetration thresholds are set before risk scores are impacted and the component is weighted alongside other factors, such as adoption barriers, to provide the overall view on whether activities are common practice.

Data Inputs

Input name	Description
Project technology	Clean cooking technology distributed by the project (fuel type, technology type).
Country	Country the project operates in.
Market penetration	% adoption of comparable clean cooking technologies from desk research.

First-of-its-Kind Modifier

Description

How novel project activities are considering when efforts to promote improved cookstove adoption began in the country relative to the project's start date and whether the project represents a first-of-its-kind initiative to distribute clean cooking technologies in the country.

Scoring Logic

The **First-of-its-Kind Modifier** score compares the date the project started to the date when there is first evidence of similar clean cooking technologies being introduced in the country.

Project activities are considered to be one of the first-of-its-kind if the project started less than five years after the first evidence of similar clean cooking technology introduction.

This modifier only ever positively influences the **Project Activities Common Practice** score when the above condition is true. In all other cases, the **Project Activities Common Practice** score is driven by the **Market Penetration** score to ensure projects in countries where efforts to support clean cooking adoption have not yet led to successful uptake at scale are not penalized.

Data Inputs

Input name	Description
Project start date	Date the project started
Year of first cookstove activity	Year there is evidence that efforts to support similar cleanc booking adoption started as identified from desk research.

Adoption Barriers

ADDITIONALITY – COMMON PRACTICE

Description

Barriers target households face in adopting clean cooking technologies, considering projects operating in low-income nations that may indicate a stronger reliance on additional carbon revenue to enable implementation and uptake.

Scoring Logic

The **Adoption Barriers** score assesses material barriers to target households adopting clean cooking technologies without project support (e.g., through consumer markets). The final score combines the average the **Gross National Income, Poverty Rate** and **Additional Adoption Barriers** score.

Cookstove projects often operate in low-income countries or target particularly marginalized communities that lack access or capacity to adopt clean cooking technologies and distribution networks (e.g., rural communities). This score ensures that localized barriers that would suggest national fuel use and market level data trends are not representative is considered to understand if clean cooking adoption is common practice for the target population.

Data Inputs

Input name	Description
Gross National Income Score	The country's income classification at the project start year (World Bank). Lower-income contexts are considered more likely to face financial and infrastructural barriers to adopting clean cooking fuels and technologies.
Poverty Rate	The national poverty rate (World Bank, Poverty headcount ratio at national poverty lines [% of population]). High poverty rates suggests household incomes levels create financial barriers to adopting clean cooking.
Additional adoption barriers	Other localized barriers specific to the target population in the context of transitioning to improved or fuel-switch cookstoves — identified through desk research and developer engagement.

Access to Clean Fuels

ADDITIONALITY – COMMON PRACTICE

Description

The WHO population with primary reliance on clean fuels and technologies for cooking, proportion (%) metric to assess the proportion of the project target population that already has access to clean cooking fuels and technologies of similar or higher efficiency than the project technology at the start of the project. High adoption of clean fuel or cooking technology with similar efficiency to project devices indicates that project activities are less additional.

Scoring Logic

The **Access to Clean Fuels** score assesses the level of uptake of modern clean fuels among the target population at the time the project started.

High rates of clean fuel adoption (e.g., >30%) indicate less need for project supported adoption of improved or clean cooking technologies as uptake of clean cooking technologies may be mainstreamed enough to support spontaneous adoption through consumer markets.

The WHO population with primary reliance on clean fuels and technologies for cooking, proportion (%) metric data or urban, rural and total populations. Comparison is selected based on what is most representative of the target population for stove distribution (e.g., rural vs urban).

Access to Clean Fuels

ADDITIONALITY – COMMON PRACTICE

Data Inputs

Input name	Description
Proportion of target population with primary reliance on clean fuels and technologies for cooking	WHO population with primary reliance on clean fuels and technologies for cooking, proportion (%) metric within a given year, stratified by rural/urban/total.
Country	Country the project operates in. Used to select relevant country from.
Target population for distribution	Population the project distributes stoves to (urban, rural, both, etc). Used to select the relevant stratification level
Project start date	Date the project started as reported in project documentation. Used to select the metric for the relevant year.

Policy & Regulatory

ADDITIONALITY

Description

Examining the policy and regulatory environment to identifying the regulations or policies that could mandate or incentivize project activities (clean cooking adoption). The evidence of policies or regulations restricting the baseline cooking practices or and/or mandating or incentivizing the project activities could undermine the project's additionality claim.

Scoring Logic

The **Policy & Regulatory** score is determined using the **Policy Country Score** and the **Governance Effectiveness Score**. Where the policy country score indicates fully supportive conditions, it is used on its own. If the gov country score is not applicable, the final score is equal to the policy country score. In all other cases, the final score is calculated as the sum of the policy country score and the gov country score.

Policy Country Score

ADDITIONALITY – POLICY AND REGULATORY

Description

All relevant policies that could apply to the project or baseline activities in the project's country are taken into account, as their extensiveness and effectiveness (or lack thereof) can undermine/support the project's additionality.

Scoring Logic

This components filters a database of policies that we have assessed while rating Cookstove projects. The test filters policies on applicability, based on whether they are in the same jurisdiction and are relevant to the project activities, taking the maximum (highest risk) applicable policy.

Individual policies may be manually overridden and removed from the assessment if deemed irrelevant to the specific project context.

Data Inputs

Input name	Description
Country	Country the project operates in. Used to filter relevant policies.
Project start date	Date the project started. Used to filter relevant policies.
Policies	List of all relevant policies extracted, marked as incentive or regulation.
Policy override	Manual override of filtered policies deemed irrelevant to the project's specific context — based on analyst desk research.

Governance Effectiveness

ADDITIONALITY – POLICY AND REGULATORY

Description

A modifier applied to the **Policy Country Score** in contexts with weak governance. Governance effectiveness can affect whether policies or regulations are effectively implemented or enforced. In national contexts with weak governance any identified policies or regulations may not be effective enough to have a such a significant impact on additionality.

Scoring Logic

The **Governance Effectiveness** score is applied where national governance metrics are weak enough to undermine project and regulatory implementation. This score ensures that only policies and regulations likely to be effectively implemented have a strong negative impact on the **Policy & Regulatory** score.

Data Inputs

Input name	Description
Governance effectiveness	An indicator derived from a combination of Worldwide Governance Indicators reflecting the quality of public institutions, regulatory effectiveness, and government capacity in the project's host country.
Country	Country the project operates in

Financial Additionality

ADDITIONALITY

Description

Whether carbon credit revenues are a necessary factor for implementing and sustaining the project's clean cooking technology distribution activities.

Scoring Logic

The **Financial Additionality** score is determined by the project design, technology type, and the availability of a financial model.

Where no financial model is provided, the assessment is based on the **Financial Strength** score that considered the relative likelihood that carbon revenue is needed to support stove distribution based on the project's design.

Where a financial model is available, an **IRR Financial Additionality Assessment** is conducted alongside the **Financial Strength** score.

Financial Strength

ADDITIONALITY – FINANCIAL ADDITIONALITY

Description

The project's business model and distribution approach as indicators of whether the project requires carbon revenue to cover the cost of distributing project stoves and operational costs.

Scoring Logic

The Financial Strength score combines the **Business Case** score with a **Stove Price** score modifier.

The **Business Case** score considers the distribution model as a proxy for the likelihood that carbon revenues would be required to recoup the cost of stove distribution to target households. The **Stove Price** modifier can increase the **Financial Strength** score further for higher cost, technologically advanced stoves that require more capital to distribute and higher financial barriers for households to adopt without project support.

Data Inputs

Input name	Description
Business case	The project's cookstove distribution model as reported in project documentation (e.g., donations, subsidised sales, or sold at full market price) to assess the likelihood that additional revenue is required to cover the cost of distribution. It is assumed that donation-based models are financially additional and subsidised sales are likely additional. Stoves sold at full-market price are unlikely to be financially additional.
Stove price	Estimated retail price of the clean cooking technologies distributed by the project (US$).

Financial Analysis

Description

Whether the project's expected financial returns indicate a reliance on carbon credit revenues to proceed. This assessment compares projected returns under a business-as-usual scenario and the project scenario against an appropriate hurdle rate, and evaluates the extent to which carbon revenues improve project viability. Projects that remain financially unattractive without carbon revenues demonstrate stronger financial additionality, while projects that are financially viable regardless of carbon revenues demonstrate weaker additionality.

Scoring Logic

The **Financial Analysis** score takes the lower of the **IRR Score** and the **Uplift Score**.

Data Inputs

Input name	Description
IRR Score	Assesses the relative financial attractiveness of the project by comparing the internal rate of return of the business-as-usual scenario, the project scenario, and an applicable hurdle rate. This input evaluates whether the project is financially viable without carbon revenues, marginally viable, or only viable once carbon revenues are considered.
Uplift Score	Assesses the extent to which carbon credit revenues improve the project's financial returns relative to the business-as-usual scenario. Larger improvements in returns indicate a greater reliance on carbon revenues to enable the project and therefore stronger financial additionality.

Permanence

Description

The likelihood of carbon being successfully stored for an atmospherically significant time (i.e. 100 years) by examining potential risks that could prevent long-term carbon storage. Although cookstove projects are avoidance-based and reduce emissions at the point of use, Sylvera's view is that cookstove projects resulting in biomass fuel savings are still subject to reversal risk, as saved biomass must remain stored to be considered permanent. If saved biomass is subject to non-permanence risks such as fire or drought, this represents a risk to the integrity of the issued carbon credits. As of March 2026, Sylvera consulting with stakeholders across academia, market standards, and market participants to develop the most robust, scientifically backed stance on this issue.

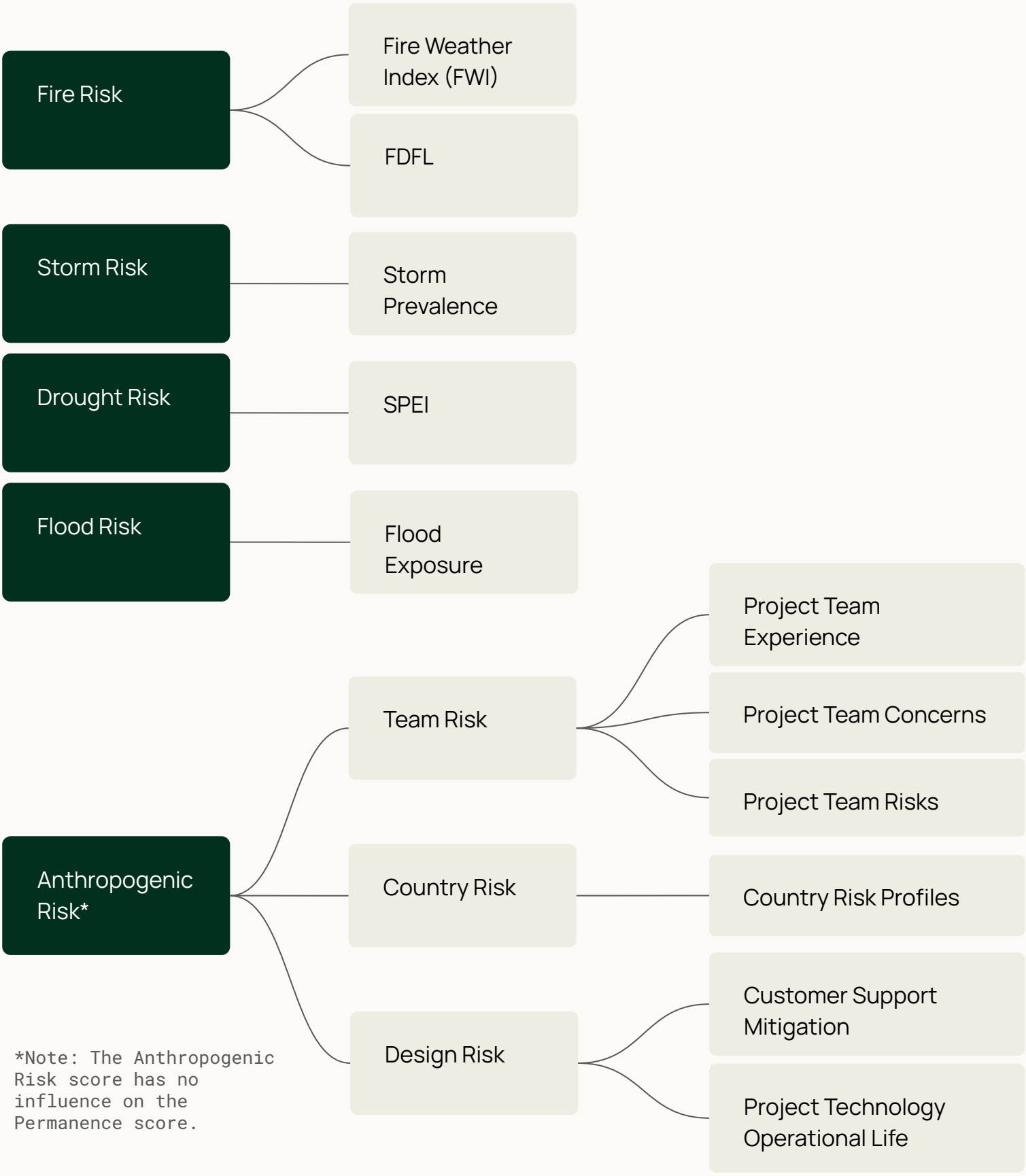
Sylvera's Permanence score takes an additive risk approach; we assess multiple causes of carbon stock loss individually and let each risk speak for itself. The approach considers metrics for each risk factor that assess the likelihood of that risk factor occurring to give an indicative view of the likelihood of an event that may cause biomass losses at the national level. Likelihood is assessed through variables that (1) demonstrate that the physical destruction of trees by this phenomenon is historically common and/or increasing, and (2) are from third party models which demonstrate short return intervals for significant events.

Scoring Logic

Baseline fuel is biomass: Permanence score uses national geospatial statistics to reflect exposure to physical non-permanence risks (**Drought**, **Fire, Storm, Flood**). An **Anthropogenic Risk** score considering project design factors to support long-term stove uptake is also used to to assess whether benefits (continued emission reductions and co-benefits) are likely to be sustained long-term but does not influence the overall **Permanence** score or **Rating**.

Baseline fuel is not biomass: Permanence score set at 5/5 — emissions reductions considered non-permanent by default. The **Anthropogenic Risk** score is calculated but does not influence the overall **Permanence** score or **Rating**.

Permanence



*Note: The Anthropogenic Risk score has no influence on the Permanence score.

Fire Risk

PERMANENCE

Description

Fire is one of the main physical drivers of carbon stock losses in projects that involve biological storage, which can ultimately lead to credit reversal events. Assessing fire risk is essential for understanding the likelihood of the project's impact being reversed by a natural hazard.

Scoring Logic

The **Fire Risk** score is first assigned using predefined rules where specific combinations of **FDFL** and **Fire Weather Index (FWI)** apply. These rules directly assign scores for clearly defined low and high risk combinations.

Fire Weather Index (FWI)

PERMANENCE – FIRE RISK

Description

The (FWI) is a numerical scale indicating wildfire risk based on weather conditions. It ranges from 0 to 100 with higher values signifying a greater likelihood and intensity of potential fires. The FWI is calculated using temperature, relative humidity, wind speed, and rainfall data to assess and quantify fire risk conditions.

Scoring Logic

The **Fire Weather Index (FWI)** score assesses long-term wildfire risk by evaluating how frequently fire danger exceeds moderate levels, using both historical observations and future climate projections. FWI captures meteorological conditions that influence fire ignition and spread, drawing on weather variables such as temperature, precipitation, relative humidity, and wind speed.

The assessment considers two time horizons:

- **FWI Historic Score**, based on observed conditions over the period 2001–2024; and
- **FWI Future Score**, based on projected conditions from 2025–2100 under a high-emissions climate scenario.

The final FWI score is calculated as the minimum of **FWI Historic Score** and **FWI Future Score**.

Data Inputs

Input name	Description
FWI historic score	How often fire danger exceeded moderate during the historical period (2001-2024).
FWI future score	How often future climate projections (2025-2100, SSP5 - 8.5) predict fire danger levels above moderate.

Fire-Driven Forest Loss（FDFL）

PERMANENCE – FIRE RISK

Description

Fire-Driven Forest Loss (FDFL) assesses the extent to which the project area has historically experienced forest loss caused by fire. This component evaluates both the absolute area and the proportion of the project boundary affected by fire-induced forest loss over a long historical period, providing an indication of the project's underlying exposure to fire disturbance.

Scoring Logic

The **FDFL** score is based on the proportion of the country that experienced fire-driven forest loss during the issuance period. Projects in countries with a smaller share of area affected by historical fire receive higher scores, reflecting lower inherent fire exposure, while projects with larger proportions of fire-driven loss receive lower scores, reflecting higher underlying fire risk.

Storm Risk

PERMANENCE

Description

Storm Risk assesses the project's exposure and vulnerability to storm-related reversal events, such as extreme weather damage with an assessment of how prevalent storm impacts are in the relevant country.

Scoring Logic

The **Storm Risk** score is calculated based on **Storm Prevalence**, with risk levels mapped to constrained ranges

Storm Prevalence

PERMANENCE – STORM RISK

Description

Storm Prevalence assesses how frequently the country has been exposed to severe storm events, with a focus on high-speed wind storms that pose a risk to forest permanence. This component evaluates historical storm activity affecting the country, capturing exposure to extreme wind events capable of causing significant damage to carbon stocks.

Scoring Logic

Storm Prevalence is informed by geospatial storm data derived from the **EDH Storm Event Analytics Dataset**. The score is based on the frequency of years in which severe storms affected the country, including storms reaching high wind-speed thresholds. The assessment incorporates both the number of years with severe storm exposure between 2001 and 2024 and the occurrence of very high-speed storms detected in the region since 1995. Projects with less frequent exposure receive higher scores, while projects with more frequent or extreme storm exposure receive lower scores.

Data Inputs

Input name	Description
EDH storm event analytics dataset	This dataset provides national and state-level, annual storm observations, including the average maximum wind speed (in knots) of storms. The data has global spatial coverage and temporal coverage from 1995 onwards, enabling assessment of long-term storm exposure and associated permanence risk from high-speed wind events.

Drought Risk

PERMANENCE

Description

Drought is one of the main physical drivers of carbon stock losses in projects that involve biological storage, which can ultimately lead to credit reversal events. Assessing drought risk is essential for understanding the likelihood of the project's impact being reversed by a natural hazard.

Scoring Logic

The **Drought Risk** score is determined based on the level of drought exposure — assessed using the **Standardised Precipitation and Evapotranspiration Index (SPEI)**, which captures the severity of drought conditions affecting the country. Risk levels are assigned based on predefined thresholds.

Standardised Precipitation and Evapotranspiration Index

PERMANENCE – DROUGHT RISK

Description

The Standardised Precipitation and Evapotranspiration Index (SPEI) metric is a relative measure of surface water surplus (for positive values) or deficit (negative SPEI values) with respect to the climate of the reference period, and it is based on a global initiative of standardised simulations of climate change.

Scoring Logic

Within the **Drought Risk** assessment, SPEI values are converted into a drought risk indicator by reflecting how frequently drought conditions exceed normal levels. Higher drought severity contributes to higher drought risk, while lower severity contributes to lower risk.

Data Inputs

Input name	Description
Standardised Precipitation and Evapotranspiration Index	The Standardised Precipitation and Evapotranspiration Index (SPEI) measures relative water surplus or deficit over time by comparing precipitation and evaporative demand against long-term climatic conditions, enabling identification of drought severity and duration.

Flood Risk

PERMANENCE

Description

Flood Risk assesses the project's vulnerability to flood-related disturbances that may result in carbon losses by evaluating exposure to flooding.

Scoring Logic

The **Flood Risk** score is calculated based on the level of **Flood Exposure** with predefined thresholds used to directly assign scores where flood risk is clearly characterised.

Flood Exposure

PERMANENCE – FLOOD RISK

Description

Flood Exposure assesses the extent to which the country is physically exposed to flooding risk. This component evaluates both the severity and likelihood of flooding affecting the project region, capturing how deep floodwaters may be, how frequently floods may occur, and how much of the country could be impacted. Higher exposure indicates a greater risk of flood-related damage to vegetation and carbon stocks.

Scoring Logic

Flood Exposure is calculated using the **Flood Exposure Dataset**, which combines information on flood depth, flood frequency, and the proportion of the country exposed to flooding. Risk is assessed across multiple flood-depth categories and weighted by the likelihood of occurrence, with the aggregated result reflecting the total percentage of the country exposed to a severe flood event. Higher values indicate greater overall flood exposure.

Data Inputs

Input name	Description
Flood Exposure Dataset	The Flood Exposure Dataset is a geospatial product derived from predictive flood models that estimate the proportion of land area exposed to flooding under a 1-in-100-year flood scenario, incorporating flood depth and frequency with global spatial coverage.

Anthropogenic Risk

PERMANENCE

Description

The project's long-term impact could hindered due to human-driven factors. Assessing potential internal and external anthropogenic risks is crucial for understanding the likelihood of the project benefits being interrupted and/or halted due to human factors.

Scoring Logic

The **Anthropogenic Risk** score takes the average of **Country Risk, Team Risk,** and **Design Risk**.

Team Risk

PERMANENCE – ANTHROPOGENIC RISK

Description

Team Risk assesses the likelihood of project operations being interrupted or ceasing due to the capacity, experience, and reliability of the project team. This component evaluates whether the project team has the expertise, organisational strength, and financial backing required to implement and sustain project activities over time.

Scoring Logic

The **Team Risk** score is first determined using specific conditions where **Project Team Risks** or uniformly moderate assessments across **Project Team Experience, Project Team Risks**, and **Project Team Concerns** directly assign the score. In all other cases, the score is calculated by converting **Project Team Experience, Project Team Concerns,** and **Project Team Risks** into risk-oriented values, averaging these inputs, and mapping the result to a higher-risk score range. Lower experience, greater concerns, and higher identified risks result in higher risks.

Project Team Experience

PERMANENCE – ANTHROPOGENIC RISK – TEAM RISK

Description

The project team's experience (or lack thereof) could affect the effective implementation of project activities. This could potentially limit or ensure the long-term effectiveness of the activities.

Scoring Logic

Projects are scored on the basis of the proponents track record in developing carbon projects. **Project Team Experience** is based on the presence of a demonstrable history of carbon project development (number of projects internal project stakeholders have developed or worked on) and evidence of technical expertise. The most favourable of these indicators are taken as the final score.

Lack of evidence of a demonstrable track record of similar carbon project or technical expertise can indicate the project team lacks the technical capacity, knowledge and experience to operate a carbon project or sustain cookstove distribution and uptake.

Data Inputs

Input name	Description
Entities	The entities involved with the project. Used to generate a count of project's the project stakeholders have developed or worked on using Sylvera's project catalogue.
Technical expertise	Assessment of the experience of project team stakeholders based on individuals named in project documentation and desk research.

Project Team Concerns

PERMANENCE – ANTHROPOGENIC RISK – TEAM RISK

Description

The project's team reputation could point to potential mismanagement risks, which could limit the long-term effectiveness of the project activities or interrupt their implementation.

Scoring Logic

The **Project Team Concerns** score evaluates potential risks associated with the project team using compliance checks (e.g., ComplyAdvantage). It assumes that links with nefarious activities could undermine the effectiveness of project operations.

- If there are no ComplyAdvantage results of concern → very low risk.
- If there is one ComplyAdvantage result of concern → moderate risk.
- If there are multiple ComplyAdvantage results of concern → very high risk.

Data Inputs

Input name	Description
Known proponent legal flags	Whether there any ComplyAdvantage hits of concern related to the project proponents.

Project Team Risks

PERMANENCE – ANTHROPOGENIC RISK – TEAM RISK

Description

Project Team Risks assesses potential risks associated with the project team based on findings from adverse media reviews. This component captures reputational, legal, or operational concerns that may affect the team's ability to successfully deliver and sustain the project.

Scoring Logic

The **Project Team Risks** score is determined based on the presence and severity of adverse media findings related to the project team. Teams with no identified adverse media receive higher scores, while teams with minor or significant adverse findings receive progressively lower scores, reflecting increased risk.

Country Risk

Description

External factors associated with the geopolitical context of the project's country could interrupt the project's activities. Assessing potential geopolitical risks is crucial for understanding the likelihood of the project's impact being hindered.

Scoring Logic

The **Country Risk** score is based on the **Country Risk Profiles** component.

Country Risk Profiles

Description

Country risk reflects the risk levels associated with a variety of factors that could hinder the project's implementation, including the country's political stability, government effectiveness and reputation, corruption levels etc.

Scoring Logic

Country Risk Profile scores are generated using:

- Government reputation
- Political stability and
- Track record with human rights

to infer the inherent risk to operations in that country.

See more with Country Profiles.

Data Inputs

Input name	Description
Sylvera Country Profiles Product	Risk profiles for carbon credit projects across key countries.

Design Risk

PERMANENCE – ANTHROPOGENIC RISK

Description

Community buy-in is necessary for successful project operations. The project design should contain elements to support long term clean cooking technology uptake to reduce the risk of stove abandonment so that the benefits of clean cooking are sustained long-term.

Scoring Logic

Design Risk is first assigned using specific rule-based combinations of **Customer Support Mitigations**, and **Project Technology Operational Life.** Lower underlying input scores indicate higher risk.

Customer Support Mitigation

PERMANENCE – ANTHROPOGENIC RISK – DESIGN RISK

Description

Customer Support efforts to efforts and plans the project has in place to support continued, long-term cookstove uptake among community stakeholders throughout and after the project period, particularly beyond the operational life of the project device.

Scoring Logic

The **Customer Support Mitigation** score assesses if the project conducts efforts to support continued stove uptake among the target population. Scoring is based on the presence or absence of recommended support actions and the total number of support actions.

Implementing all recommended customer support actions increase the likelihood of sustained uptake and reduce the risk of stove abandonment.

Implementing no customer support actions decreases the likelihood of sustained uptake and increases the risk of stove abandonment.

Support actions, such as continued community engagement, communications on proper stove use and maintenance, and access to repairs/replacements can promote long-term adoption to sustain the continue the delivery of emission reductions and co-benefits associated with the transition to cleaner cooking technologies.

Data Inputs

Input name	Description
Customer support actions	Actions to support stove uptake as reported in project documentation.

Project Technology Operational Life

PERMANENCE – ANTHROPOGENIC RISK – DESIGN RISK

Description

The operational lifespan of cooking technology(ies) delivered by the project compared to the project duration. A short operational life may mean emissions reductions and other benefits associated with cookstove uptake cannot continue to be delivered for the entire project duration, or a relatively shorter period compared to other projects.

Scoring Logic

The **Project Technology Operational Life** score is based on the absolute length of time the distributed stove model(s) is expected to remain in good working order, and its length compared to the project crediting period.

Short operational lifetimes compared to other clean cooking technologies may indicate that the project will deliver emission reductions and co-benefits for a shorter period of time than some other projects.

A shorter operational lifetime relative to project crediting period indicates that the project may fail to deliver emission reductions and benefits for the entire project lifetime, raising questions about the project's total reported impact and future credit delivery.

Data Inputs

Input name	Description
Stove operational life	Estimated operational life of project technology(ies) based on manufacturer specifications.
Project crediting period	Project crediting period (years) as reported in project documentation

Safeguarding and Co-Benefits

Description

Ensuring that the necessary community and environmental safeguards are in place for a project, where relevant, is critical to ensure the project's successful on-going operations (captured within the Permanence Score), as well as reputation, and ensuring the *No Net Harm principle* is met. The extent to which the project goes above and beyond carbon impact to contribute to the local community and biodiversity is measured as "Co-benefits" considering the type of project activities and benefit-sharing mechanisms as place, which can be used as a quality differentiator dependent on the user's priorities.

Scoring Logic

The **Safeguarding and Co-Benefits** score provides a blended view of a project's overall beyond-carbon impact, combining Safeguarding and Co-benefits to evaluate the likelihood and extent that a project delivers a net benefit for communities and biodiversity by confirming if the requirement of No Net Harm is met, and quantifying Sustainable Development Goal (SDG) contributions. The score assumes that significant risk of net harm to the community or biodiversity prevents any net positive co-benefits.

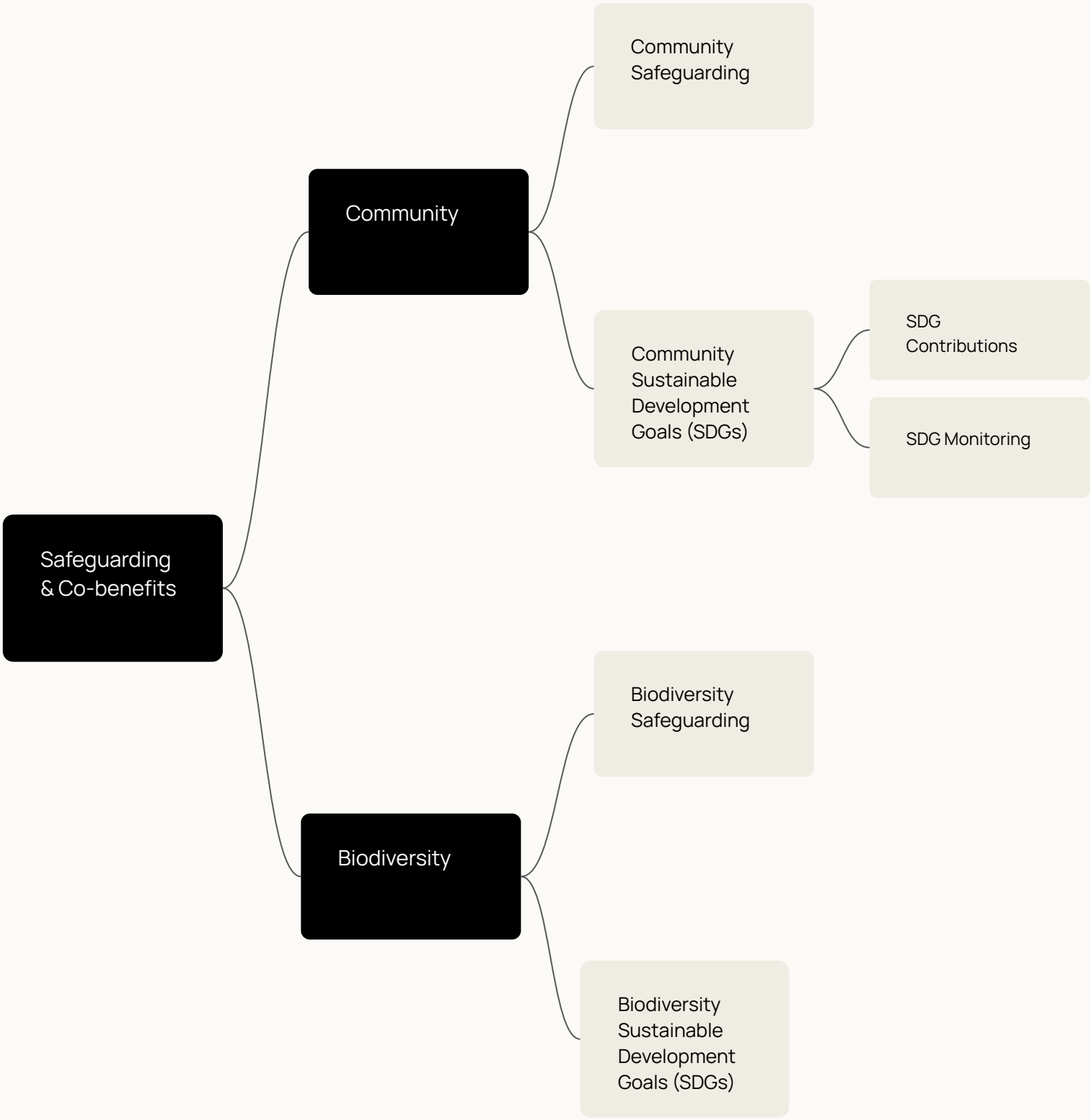
If significant safeguarding risks are present:

- The score is the minimum of the **Biodiversity** and **Community** scores.
- This ensures positive outcomes in one sub-component cannot override evidence of severe harm in the other — a net benefit in both **Biodiversity** and **Community** are required for a positive score.

If significant safeguarding risks are not present:

- The score takes the maximum of the **Biodiversity** and **Community** scores to ensure cookstove project's meaningful contributions to target communities is not obfuscated by less direct biodiversity co-benefits.

Safeguarding and Co-Benefits



Community

SAFEGUARDING AND CO-BENEFITS

Description

A holistic view of the likelihood that project activities produce a net benefit to local communities. Considering whether the project meets the principle of *Not Net harm*, and the scale of positive impacts above this minimum requirement. The potential impact of project activities on relevant community stakeholders, both positive and negative, is assessed to evaluate whether safeguards are in place to mitigate any potential harm, and if project activities deliver additional community focussed co-benefits aligned with SDGs.

Scoring Logic

The **Community** score combines the **Community Safeguarding** and **Community Sustainable Development Goals (SDGs)** components**.** Where **Community Safeguarding** indicates severe risk of net harm, this acts as a score cap to indicate the overall impact is negative. Otherwise, the two component scores are averaged.

Community Safeguarding

Pt.1

SAFEGUARDING AND CO-BENEFITS - Community

Description

A gated assessment of the of potential impact of project activities on local communities. Community stakeholders (e.g., land-ownership, employment, livelihoods, etc) are first identified, and the project's activities.are assessed for their potential to cause harm to community stakeholders within the local context. Where stakeholders may be impacted, disclosures of relevant procedures within the documentation assessed to ensure community rights protection to ensure appropriate safeguards are in place to mitigate any negative impact to meet the principle of *No Net Harm*.

Scoring Logic

The **Community Safeguarding** score considers **eight** safeguarding themes:

1. **Community Engagement, Participation and Transparency**
   Assesses the level of evidence of appropriate prior community engagement and that stakeholders are informed of project activities, where relevant.

2. **Access to Grievance Redress**
   Checks if a transparent, fair, and free-to-access grievance redress mechanism is in place, and the redress process is described.

3. **Human Rights, Indigenous Peoples and Local Communities**
   Checks if IPLCs with land rights have given Free, Prior, and Informed Consent (FPIC), and flags any other reported rights abuses. Cookstove project activities (the distribution of cleaner cooking technologies) generally carry minimal risks to IPLC rights and the score defaults to "Very Low Risk" unless there are any reported rights abuses.

4. **Equity and Benefit Sharing**
   Checks if community stakeholders have a right to equity in the project or if there that project activities will displace existing livelihoods or resource access that compensation through benefit-sharing is in place. As cookstove project activities do not displace existing livelihoods that would require compensation though benefit sharing, the score defaults to "Very Low Risk"

Community Safeguarding

Scoring Logic

5. **Land Rights, Resource Access and Involuntary Resettlement**
   Assesses the existing land tenure context to check of community stakeholders have land/resource/access rights, and/or if there was a transfer of land rights/ownership before the project started. In these contexts, the disclosure of relevant land agreements is checked within the project documentation. Cookstove project activities are not land-based, so are not expected to result in rights violations. The score defaults to "Very Low Risk" unless there are any reported land rights or resource disputes.

6. **Labour Rights and Working Conditions**
   Identifies if the project employs local community members in project planting activities and whether project documentation discloses information on fair wages, alignment with employment law, and fair working policies.

7. **Gender Equality**
   Assesses whether the project has measures in place to avoid gender based discrimination and harassment of employees or other community stakeholders, where relevant.

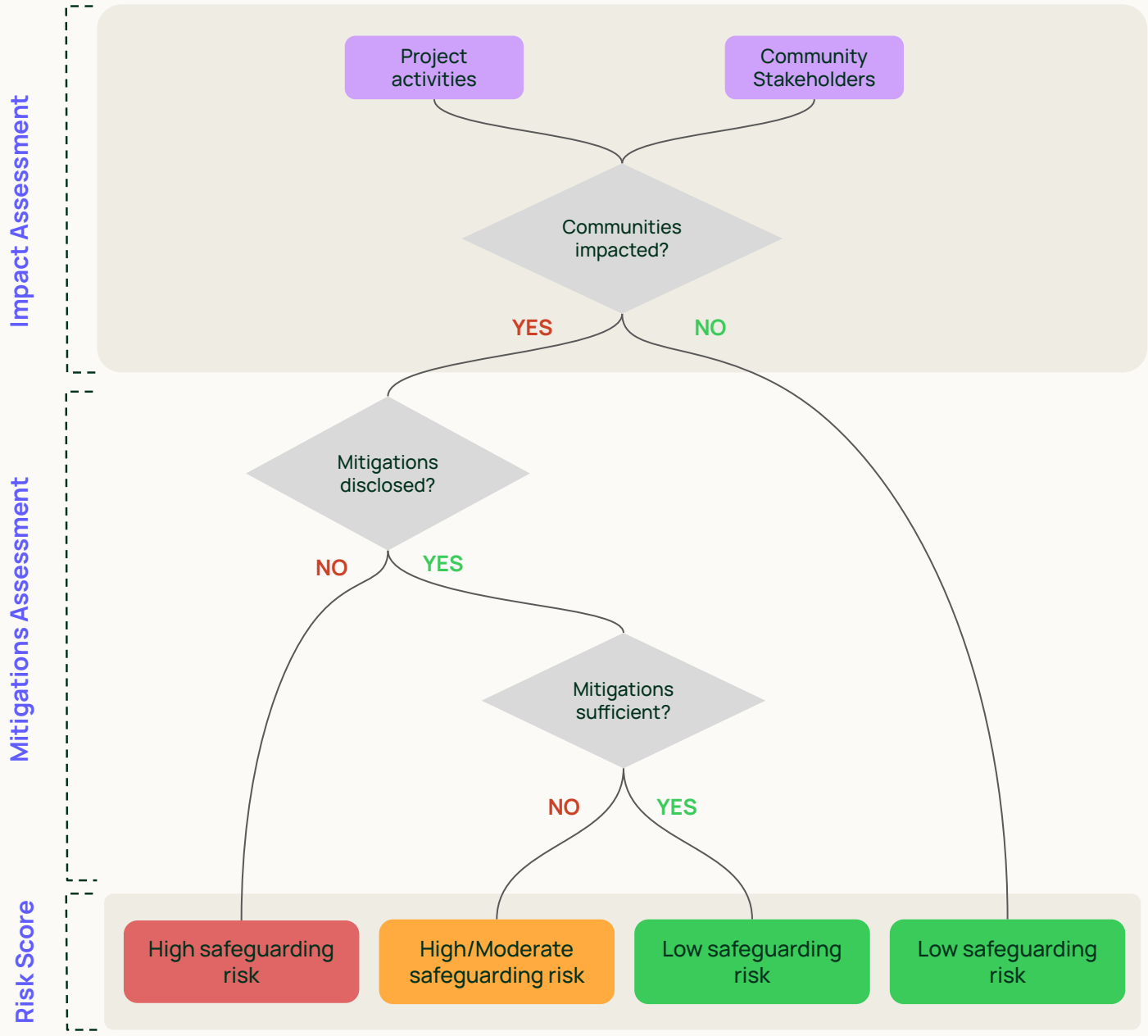
8. **Health and Safety**
   Assesses if the cooking technologies delivered carry any health and safety risks to participant households. Scoring is based on ISO safety tier data as reported by manufacturers and lab-test results. If there is a lack of data on safety, the score defaults to "Moderate Risk".

The final score follows a set of rules-based scenarios, potential for severe harm, or reports of materialized harms in any of the themes can cap the overall score. Otherwise, an average of scores are taken, with weightings applied depending on the severity of impact across themes.

Community Safeguarding

SAFEGUARDING AND CO-BENEFITS - COMMUNITY

Scoring Logic - illustrative example



Community Sustainable Development Goals (SDGs)

Description

Considers community co-benefits through the lens of UN SDGs. Project activities or additional community-focussed initiatives implemented by the project that align with SDG targets and indicators are considered to asses the scale of positive community impact.

Scoring Logic

The **Community Sustainable Development Goals (SDGs)** score considers the number of SDGs that the project activities and initiatives target (**SDG Contributions)**, alongside the evidence of tangible impact towards targeted SDGs (**SDG Monitoring**).

SDG Contributions

Pt.1

SAFEGUARDING AND CO-BENEFITS - COMMUNITY - COMMUNITY SDGs

Description

Considers the project activities and community initiatives alignment with the 17 UN SDG targets and indicators to assess the potential for meaningful and tangible contributions to community-focussed SDGs.

Scoring Logic

The **SDG Contributions** score maps project activities and community initiatives against SDGs aims, providing a count of SDGs targeted. Alignment with a given SDG targets indicate tangible impacts towards community sustainable development aims — only rewarding contributions clearly aligned with SDG targets.

Cookstove projects usually align with SDG 3 (Good Health & Well-being), SDG 5 (Gender Equality), and SDG 7 (Access to Affordable and Clean Energy), among others as the transition to improved or clean cooking technologies provides more efficient cooking technologies, or modern clean fuels, reduces time and cost spent on collecting or purchasing household fuels, and reduces harmful indoor smoke exposure, primarily benefiting women and girls.

SDG impact varies across technologies. Higher technology stoves (e.g., high-performing biomass stoves; modern clean fuels), meeting the definition of clean cooking, deliver greater efficiency gains and reductions in harmful smoke emissions (carbon monoxide [CO], particulate matter [PM], black carbon) that produce higher SDG impacts. Some improved stoves (e.g., lower-efficiency biomass stoves) do not reduce smoke exposure enough to produce health benefits and provide relatively lower household fuel consumption reductions. The project technology(ies) ISO tiers on efficiency, and CO and PM emissions scale SDG scores based on relative performance to identify higher impact projects.

A weighted score is calculated for each targeted SDG, based on the technology type and ISO performance tiers, and country's progress in achieving that SDG to identify high-impact co-benefits. Projects contributing to a variety of SDGs aligned with national development aims receive higher scores.

SDG Contributions

Data Inputs

Input name	Description
Community contributions	List of community initiates/activities implemented by the project as reported in project documentation.
SDG targets	SDG targets and indicators as described by the United Nations.
Country	Country the project is located in.
SDG country progress	Country progress towards SDGs (SDG Report 2025, United Nations).
Project stove model(s)	List of cooking technologies distributed by the project.
ISO efficiency tier	Efficiency tier of the project technology(ies).
ISO CO tier	CO emissions performance tier of the project technology(ies).
ISO PM tier	PM emissions performance tier of the project technology(ies).

SDG Monitoring

Description

Monitoring plans to track contributions towards SDGs ensures a project can evidence and demonstrate that co-benefits activities have been implemented and their impacts can be reliably monitored and quantified to demonstrate tangible community co-benefits.

Scoring Logic

The **SDG Monitoring** score identifies whether project has a mechanism in place to monitor the implementation and impact of co-benefits activities. Monitoring plans with clear, quantitative metrics that are aligned with SDG targets and indicators are considered best-practice to demonstrate tangible and relevant contributions to community sustainable development. The absence of a monitoring plan, vague metrics, or misalignment with SDG targets lowers the confidence that the project delivered verifiable and material co-benefits.

Data Inputs

Input name	Description
SDG monitoring plan	Whether the project documentation contains a monitoring plan to track co-benefits and SDG contributions. The relevance and quality of metrics used is assessed against relevant SDG targets.

Biodiversity

SAFEGUARDING AND CO-BENEFITS

Description

A holistic view of the likelihood that project activities produce a net benefit to biodiversity and the environment. Considering whether the project meets the principle of *Not Net harm*, and the scale of positive impacts above this minimum requirement. The potential impact of project activity implementation, both positive and negative are assessed compared to the baseline situation to assess whether safeguards are in place to mitigate any potential ecological harm, and if project activities deliver additional biodiversity focussed co-benefits align with Sustainable Development Goals (SDGs).

Scoring Logic

The **Biodiversity** score combines the **Biodiversity Safeguarding** and **Biodiversity Sustainable Development Goals.** Where **Biodiversity Safeguarding** indicates severe risk of net harm, this acts as a score cap to indicate the overall impact is negative. Otherwise, the two component scores are averaged.

Biodiversity Safeguarding

Description

An evaluation of the risk of the potential ecological impact of the project's activities. Activities are assessed for their potential to cause harm to local ecosystems and any mitigations to avoid such risks.

Scoring Logic

The **Biodiversity Safeguarding** score considers **two** safeguarding themes:

1. **Environmental Damage and Pollution Prevention**

   Assesses whether the project activities have any risk of adverse environmental or ecological damage compared to a baseline scenario.

   Cookstove project activities are not expected to cause significant adverse impacts to the environment, as projects generally reduce fuel consumption, and associated pollution, with the score usually defaulting to "Very Low Risk".

2. **Biodiversity Conservation and Sustainable Management**

   Assesses whether project activities might put pressure on natural ecosystems for resource extraction, or increase unsustainable resource management. Cookstove project activities are usually aligned with sustainable resource management, aiming to reduce household fuel consumption. Cookstove projects that reduce baseline biomass fuel consumption are expected to a net positive impact compared to a baseline scenario by reducing the pressure on forests for fuelwood. The score usually defaults to "Very Low Risk"

The score combines the two themes into specific scenario-based scores. Where severe harm is found in either theme, this can cap the overall score. Otherwise, both themes are weighted equally.

Biodiversity Sustainable Development Goals (SDGs)

Pt.1

Description

Considers co-benefits through the lens of UN SDGs. Cookstove projects have the potential to indirectly contribute to SDG 15 (Life on the Land) by reducing pressure on forests for biomass fuel.

Scoring Logic

The **Biodiversity Sustainable Development Goals (SDGs)** score identifies how well aligned the project activities are with UN SDG 15 through the **SDG Contributions** input score.

Baseline fuel is biomass: Project activities show some alignment with the aims of SDG 15 as introducing more efficient or modern clean cooking technologies is expected to reduce pressure on forests for biomass fuels. ISO efficiency tiers are used to identify projects that have the potential to deliver relatively greater reductions in household biomass fuel consumption. A weighted SDG score is generated based on the relative efficiency and the country's progress towards achieving SDG 15, with higher scores awarded to higher-efficiency technologies in countries with greater need to conserve biodiversity. Overall impact is capped as project activities do not involve targeted biodiversity conservation and due to challenges in quantifying actual impact of project activities on forest preservation.

Baseline fuel is not biomass: Project activities do not align with the aims of SDG 15 and score is considered low impact by default. Benefits such as reduced fossil fuel consumption may be addressed in the **Community** component.

Biodiversity Sustainable Development Goals (SDGs)

Data Inputs

Input name	Description
Baseline fuel(s)	List of fuels the project states will be used by target households in a baseline scenario as reported in project documentation.
ISO efficiency tier	Efficiency tier of the project technology(ies).
SDG 15 targets	SDG 15 targets and indicators as described by the United Nations.
Country	Country the project is located in.
SDG 15 country progress	Country progress towards SDG 15 (SDG Report 2025, United Nations).

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