

Carbon Project Ratings - Clean Cooking Methodology

MSCI ESG Research

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Methodology overview

Objective

MSCI Carbon Project Ratings are composite ratings that independently assess the integrity and risks of carbon credit projects across multiple criteria, including their impacts on the climate, environment and society.

A project with a higher rating has a greater likelihood of having a positive emissions impact and a reduced risk of overestimating its emissions impact. It is also more likely that such an emissions impact will have been implemented in a way that supports positive social and/or environmental outcomes and upholds legal and ethical standards. Consequently, a project with a higher rating has a lower likelihood of incurring reputational risks.

Document description

This document describes the detailed project type-specific methodology used to assess Carbon Project Ratings and Pipeline Carbon Project Ratings (but not Preliminary Carbon Project Ratings) for clean cooking projects.

This project type-specific methodology is applied in addition to, and partially in replacement of, the methodology that is described in the overall MSCI Carbon Project Ratings methodology document, "MSCI Carbon Project Ratings and Assessments Methodology." Where an element of the overall methodology is replaced by this project type-specific methodology, it is detailed below. Every element of the overall MSCI Carbon Project Ratings methodology also applies to MSCI ESG Research's assessment of Carbon Project Ratings and Pipeline Carbon Project Ratings for clean cooking projects unless explicitly excluded in this document.

This methodology is subject to MSCI ESG Research's methodology governance and update process, as outlined in the overall methodology note. This ensures that updates and refinements to the methodology align with evolving best practices, stakeholder input, and data updates. For details on the governance process, methodology updates, and review timelines, please refer to Section 12 of the MSCI Carbon Project Ratings methodology document.

Section 2 introduces the core concept of carbon credit integrity and why its assessment is important to the development of the global carbon credit market. Section 3 introduces and defines clean cooking projects. Sections 4-8 provide details on the project type-specific methodology, including data sources and assumptions, used in MSCI ESG Research's Carbon Project Ratings and Pipeline Carbon Project Ratings assessments for clean cooking projects.

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Introduction to carbon project integrity

What is carbon credit integrity?

Carbon credits have varying quality characteristics. These stem from fundamental differences in project types, but also from which methodologies have been used to define each project and create the credits (these methodologies are among the standards set by carbon crediting programs, and are hereafter called crediting program methodologies) and how rigorously they have been applied. Projects also differ in terms of their potential co-benefits and their legal and ethical characteristics.

This variation in quality was not intended. Standard setting and governance bodies attempted to create a system in which all carbon credits had an equivalent climate benefit (representing a tonne of carbon dioxide equivalent (CO₂e) removed or avoided) which could be used for voluntary or compliance purposes. This effort dates back to the Clean Development Mechanism (CDM) created under the 1997 Kyoto Protocol and has continued with the evolution of the carbon credit market.

A key challenge lies in the quantification of the climate benefit of a project - i.e., whether the carbon credits calculated for a project are genuinely equivalent to mitigating or removing one tonne of carbon dioxide from the atmosphere. This difficulty stems from the calculation method used to determine what would have happened in the absence of a project, i.e., in the "baseline" scenario (sometimes referred to as the "counterfactual" scenario).

Another difficulty is that projects differ hugely in age, size and technology. The science behind some crediting program methodologies has also evolved over time, as has the enforcement of standards and levels of governance.

Readers should note that, within the carbon markets, the words "quality" and "integrity" tend to be used somewhat interchangeably. Through the rest of this document, we use the word integrity when referring to carbon projects.

The importance of assessing carbon credit integrity

Corporate climate action is critical in the fight against climate change, and carbon credits represent an important mechanism for corporates to mitigate their carbon footprint. However, concerns over carbon credit integrity may have held back, and may continue to hold back, the global carbon credit market from reaching its potential. These concerns center around the perception that many carbon credits are of low integrity and are not delivering the benefits they claim to.

In 2021, the Taskforce for Scaling the Voluntary Carbon Market (TS-VCM) found that credit integrity was at the "heart of buyers' hesitancy,"¹ with 45% of buyers identifying it as a key pain point. Buyer concerns around credit integrity and the related risk of being accused of greenwashing due to the use of low-integrity credits have only grown since then. For example, some 55% of respondents to an April 2023 survey run by the Science-Based Targets Initiative (SBTi) stated that the risk of a greenwashing accusation was stopping them from buying more credits.²

Concerns over carbon credit integrity have been central to the creation of two major initiatives: the Integrity Council on the Voluntary Carbon Market (IC-VCM) and the Carbon Credit Quality Initiative (CCQI). The IC-VCM aims to create minimum standards of integrity with a set of Core Carbon

¹ "Taskforce on Scaling Voluntary Carbon Markets: Summary of the Public Consultation Report," ICVCM, June 3, 2021.

² "Beyond Value Chain Mitigation (BVCM) Research," SBTI_press_release, September 1, 2023.



Principles (CCPs), and the CCQI has developed a comprehensive scoring system for certain project types. Both initiatives primarily assess integrity at the project-type level (primarily based on a project's methodology used) or at the project-registry level (a project registry is an organization that registers mitigation activities and issues carbon credits for the emission reductions or removals achieved by the mitigation activities). Neither initiative assesses integrity at the individual-project level.

MSCI ESG Research's assessment methodology draws on the IC-VCM's and CCQI's approach to assessing integrity, building on their principles to apply a more in-depth evaluation of integrity at the individual-project level.

The key components of carbon project integrity assessment

Market approaches to assessing carbon project integrity typically focus on three main issues:

- A. Emissions impact integrity: How much CO2e has been reduced/removed?
- B. Implementation integrity: How did that project reduce/remove that CO2e?
- C. Usage integrity: How are the credits then reviewed and used?

Emissions impact integrity and implementation integrity can each be further broken down into three main areas of common concern. These are summarized Figure 1, and outlined in detail below.

Emissions impact integrity, implementation integrity and usage integrity are each described in more detail in the overall MSCI Carbon Project Ratings methodology document, "MSCI Carbon Project Ratings and Assessments Methodology."

Figure 1: Key components of carbon project integrity

Carbon Credit Integrity

A. Emissions Impact Integrity:

B. How much CO₂e has been reduced/removed?

B. <u>Implementation Integrity</u>: How did that project reduce/ remove that CO₂e?

1.	2.	3.	4. Co-Benefits	5. Legal and	6. Delivery
Additionality	Quantification	Permanence		Ethical	Risks
How likely is it that the reduction/ removal of CO ₂ e would have occurred even in the absence of the incentives created by the carbon credit?	How likely is it that the actual CO ₂ e impact of the project has been accurately estimated?	How likely is it that the CO ₂ e reductions /removals achieved will not be reversed for a sufficiently long- term?	How likely is it that the project generated a net sustainable development benefit beyond the CO ₂ e it reduced/ removed?	How likely is it that the project has been delivered by parties that have taken an ethical and legal approach to project implementation?	How likely is it that ex-ante credits will be issued in-line with expectations?



Introduction to clean cooking projects

What are clean cooking projects?

Many households in developing countries still rely on burning solid fuels, such as wood or charcoal, within open fire systems for cooking and heating. Over 2.5 billion people worldwide use polluting fuels for domestic cooking and heating. This not only has a detrimental effect on health but also contributes to 3% of global emissions.³

The principle behind clean cooking projects is a simple one: by supplying more efficient stoves for cooking, less fuel and firewood are required to meet a household's needs, reducing emissions of both greenhouse gases and other pollutants.

The benefits can be large and far-reaching. Aside from the reduced emissions from lower fuel consumption, clean cooking projects can support gender empowerment in communities through improved health outcomes and reducing the time that women spend collecting fuelwood. They can also reduce local deforestation and degradation, and support job creation.

Market overview

Clean cooking represents one of the largest project types within the voluntary carbon market. Currently, there are over 650 registered projects in the voluntary carbon market that are enabling communities to adopt cleaner cooking methods. These projects collectively issued over 30 million tonnes (Mt) of CO₂e credits in 2022-2023, comprising 5% of total credit issuance⁴.

The number of clean cooking projects is expected to continue to grow. As shown in Figure 2, clean cooking projects currently represent over 25% of expected issuance from carbon projects currently undertaking the registration process with the Verra and Gold Standard registries ("pipeline" projects)⁴.



Figure 2: Pipeline project issuance volume by project type (MtCO2e)

Data as of September 2024. Source: MSCI Carbon Markets

³ Fellendorf, A., 2018. Trading the temperature-voluntary carbon offsetting as climate change mitigation tool for developing countries: lessons from cookstove projects in Nepal (Doctoral dissertation, Wien); Bailis, R., Drigo, R., Ghilardi, A. et al. The carbon footprint of traditional woodfuels. Nature Clim Change 5, 266–272 (2015). https://doi.org/10.1038/nclimate2491

⁴ Source: MSCI Carbon Markets



Key integrity considerations

While the idea behind clean cooking projects is a simple one, their successful execution involves a complex multistep process. Understanding this activity chain is important to identifying the key risks and drivers of integrity for clean cooking projects.

There are three particularly important risk topics in this activity chain that need to be analyzed in depth (illustrated in Figure 3 and described below):

- **Target Population Characteristics:** Central to the question of additionality (see Section 5) is whether the project targets a population that would otherwise have faced significant barriers to adopting efficient stoves.
- **Usage:** Stoves must be designed to meet local cooking habits and supported by user training to ensure that stoves are used as intended on an ongoing basis for long after they are handed out, and do not result in "stove stacking" where improved cookstoves are used in addition to, rather than instead of, previous methods.
- **Monitoring and Quantification:** Quantification of a project's emission reductions involves a number of hard-to-measure assumptions, and this introduces uncertainty and risk. Rigorous monitoring is also crucial to measure usage through the project's lifetime.



Figure 3: Clean cooking activity chain and key integrity risks



Approach to assessing the integrity of clean cooking projects

MSCI ESG Research's assessment of clean cooking projects builds on the overall MSCI Carbon Project Ratings methodology to provide more in-depth analysis of clean cooking projects. This project type-specific assessment includes sub-criteria that are additional to, and partially in replacement of, the sub-criteria of assessment used in the overall MSCI Carbon Project Ratings methodology, as detailed below. These project type sub-criteria evaluate a deeper set of questions, which are focused on the most important, specific drivers of integrity for clean cooking projects.

These project type-specific assessments are conducted at the individual project level, including a comprehensive review of each individual project's data and assumptions. In this way, these assessments represent a more granular, project-level review of clean cooking projects than what would be possible using the overall MSCI Carbon Project Ratings methodology alone.

In total, MSCI ESG Research assesses 11 sub-criteria and 20 metrics (see Figure 5) under this project type-specific methodology that are either not assessed or are assessed differently in the overall MSCI Carbon Project Ratings methodology, as illustrated in Figure 4. These sub-criteria are focused on addressing the key drivers of integrity for clean cooking projects. Each of these sub-criteria align with and replace corresponding sub-criteria scores in the overall MSCI Carbon Project Ratings methodology.

Figure 4: MSCI ESG Research Overall Carbon Project integrity assessment





Figure 5: Sub-criteria and metrics that differ in the clean cooking assessment approach

	1. Additionality		
1.1.1.1 % of Revenue from Carbon Credits	How crucial is carbon revenue for the existence of the project?	2.1	I.2 Tran
	Is the project targeted at a population	ess of oach	Es Te
Analysis	which faces significant barriers to accessing clean cooking technologies?	obustne it Appre	M
1.5 Baseline Reasonableness	Does the project account for increased access to clean cooking in their baseline scenario?	2.1.3 Ro Projec	E
			Ac
		suracy	Accu
		tion Acc	Risl S
		dunss	Un Adj
		2.2 A	RED
			Adj F

	2	. Quantification
2.1.	2 Transparency	How much quantification information is provided?
oacii	Estimation Techniques	Does the project use scientifically robust techniques for calculating fuel saving?
sct Appr	Monitoring Updates	Are key assumption factors updated in successive monitoring reports?
	Effective Monitoring	Are key parameters monitored in a representative, effective and regular way?
	Accuracy of fNRB [*]	Does the project's fNRB estimate appear accurate and appropriate?
	Accuracy of Fuel Saving	Does the project's fuel saving calculation appear accurate and representative?
	Risk of Stove Stacking	Does the project appropriately account for risks of stove stacking?
	Uncertainty Adjustments	Does the project make conservative adjustments to account for uncertainties?
	REDD+ Double Counting	Does the project overlap with, and carry double counting risk, with REDD+ projects?
	Adjustment Factors	Does the project use accurate and representative adjustment factors, such as for charcoal conversion?
2	.3 Monitoring Performance	What is the gap between projected and actual emission reductions?



Notes: * fNRB (fraction of nonrenewable biomass) is the proportion of biomass saved that is nonrenewable (that is, the proportion of woody biomass that did not come from sustainable sources). ** Sustainable Development Goals (SDGs) are a collection of environmental, social and economic objectives created by the United Nations.



Assessment of all other criteria and sub-criteria, for example, Criterion 5, Legal and Ethical Risks, and Sub-criterion 1.2, Common Practice, within the clean cooking analysis use the same metrics and methodology as in the overall MSCI Carbon Project Ratings methodology framework. The granularity of the overarching framework for those sub-criteria, and the fact that their assessment is consistent across all project types (i.e., with no clean cooking-specific characteristics), means that no further enhancement is required.

For a detailed explanation of MSCI ESG Research's approach to data quality and update processes — including measures to ensure data accuracy, handle missing data, and update data in a frequent and recurring manner — please refer to our overall methodology note. This document outlines the steps MSCI ESG Research takes to verify data reliability and address any data gaps, ensuring consistency and accuracy across all project types.



Criterion 1 – Additionality

If a mitigation activity is not additional, then purchasing carbon credits has not led to any additional reduction or removal of emissions. Additionality is therefore a crucial component of the integrity of carbon credits. A non-additional carbon credit has no direct net positive environmental impact given that the emission reductions/removals would have occurred anyway. However, it is worth noting that funding a non-additional credit may still indirectly help stimulate further investment in the same activity by raising its return.

For clean cooking projects, the key consideration for additionality is whether the target household would have adopted an improved cookstove even without carbon credits. On the supply side, for example, the project developer may have distributed cookstoves in a similar manner even without carbon credits. On the demand side, households may have chosen to invest in improved cookstoves given their financial benefits even if the cookstoves were not provided at subsidized prices.

Figure 6 illustrates the sub-criteria and metrics through which the additionality of clean cooking projects is assessed, and the overall MSCI Carbon Project Ratings methodology sub-criteria that they correspond to. MSCI ESG Research's project type-specific approach to assessment of the additionality of clean cooking projects focuses on evaluating three key topics with five main metrics. The detailed sub-criteria are described in Figure 7.



Figure 6: Clean cooking additionality assessment approach



Figure 7: MSCI ESG Research Additionality integrity assessment framework

Sub-ci	riteria	Metrics	Rationale	REDD+	Renewables	ARR	Cookstoves	Biochar	Landfill Gas	Safe Water	IFM	Waste Mgmt.	Blue Carbon
redits	activeness	1.1.1.1 % of Revenue from Carbon Credits	The higher the proportion of a project's revenue that comes from carbon credits, the greater the importance of credits to its financial attractiveness.	~	~	~	~	~	~	~	~	~	~
1 t Carbon C	ancial Attı	1.1.1.2 IRR Analysis	Credits should play a decisive role in making a project financially attractive that would otherwise have not been.	~	~	~	~	~	~	~	*	~	~
1. ⁷ res withou	1.1.1 Fin	1.1.1.3 Prior Consideration	Carbon credits should have been clearly considered at the time the decision to go ahead with a project was taken.	~	~	~	~	~	~	~	*	~	~
Incentiv	1.1.2 Barrier Analysis	Strength of Barriers	Projects that face high barriers to implementation would be less likely to go ahead without the added incentives of carbon credits.		~	x	~	~	x	~	×	~	~
1.2 Co Practio	ommon Market If a practice market, it in ice Penetration project will of carbon cr		If a practice is already common within a market, it indicates that these types of project will go ahead without the introduction of carbon credits.	x	~	~	~	~	~	~	~	~	~
1.3 Le Consid	.3 Legal Legal considerations Requirements		Projects that are legally required or incentivized are unlikely to be additional. However, if laws are not enforced, then may still be additional.	x	×	x	x	×	~	¥	~	~	~
1.4 Ba Approa	4 Baseline pproach Baseline Approach		Each project methodology is scored on the extent to which it mitigates the key risks associated with establishing a baseline scenario.	~	×	×	x	×	×	¥	<	x	~
1 E Do	Baseline Transparency		Transparent detail on a project's assumptions is required to make an objective assessment of a project's performance and additionality.	~	×	~	x	×	×	ĸ	<	×	~
1.5 Baseline Reasonableness		Baseline Assumptions	MSCI ESG Research assesses the key baseline scenario assumptions for each project type — for example, for clean cooking projects we assess the adoption growth of more efficient cookstoves within that region.	~	~	~	~	~	~	~	~	~	~
1.6 Red and Green FlagsNews scanningReview of academic papers, industry sources and the news for Red or Green Flags to project's additionality.						V	Stan	dardiz	zed ap	proa	ch		·

🗸 Assessed 🛛 😕 Not Assessed



1.1.1.1 % of Revenue from Carbon Credits

Financial attractiveness plays a key role in determining whether carbon credits are crucial to the implementation of the project.

More efficient cookstoves can be sold without the use of carbon credits by both private enterprises and NGOs. For example, organizations could receive external funding, or sell cookstoves to endusers at a high enough price to support their operations without the need for carbon credits. Understanding a project's revenue and funding sources therefore helps to assess whether carbon credits played an important role in incentivizing the distribution of cookstoves to communities that would otherwise not have access or enough funding for them. When cookstove projects receive all (or the vast majority) of their revenue from carbon credits, it indicates that credits were more decisive in the project going ahead.

The score for this criterion is based on both the level of end-user payment for that technology and whether any other sources of revenue exist for the project. This is summarized in sub-criterion 1.1.1.1.1 User Payments and Other Revenue Sources.

1.1.1.1.1 User Payments and Other Revenue Sources

User Payments and Other Revenue Sources relates to whether carbon credits play a decisive role in increasing the affordability of the stove technology.

For a project to be additional, it is important that carbon credits both played an important financial role in incentivizing the project to go ahead and ensuring the technology could be accessed.								
On the project side, a project receiving revenue from sources other than carbon credits may be less financially additional as it could be implemented without the need for credits. Projects without additional revenue are financially dependent on the carbon credits for the project to occur and are therefore very likely to be financially additional.								
On the user-sid financially addi dependence on free of charge of We also take in encourage own	e, the greater tional. If proje carbon cred or at a very hi to account th ership of the	the subsidy for t ects are only part its to implement gh level of subsic at some projects cookstoves, and	he cookstove, ially funded, tl it. Projects pro dy have a grea charge a sma this prevents	, the more likely here is less fina oviding cooksto ter financial ac all fee to the er the risk of reve	y it is to be ancial oves to users Iditionality. nd user to ersal.			
Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets			
\checkmark								
Each project is scored on a 2-5 scale, where 2 indicates that projects do not provide any subsidies and revenue outside of carbon credits and product sales and 5 indicates projects have no other source of revenue and provide the technology at free or highly discounted price. If this information is not provided, a project scores 2.5.								
MSCI ESG Rese and at what prid subsidized cos	MSCI ESG Research assess whether there are any other sources of revenue disclosed and at what price cookstoves are provided to end-users compared to their non- subsidized cost.							
	For a project to important finant technology cour On the project s may be less fina- credits. Project credits for the p On the user-sid financially addir dependence on free of charge of We also take in encourage own Project Documentation Each project is any subsidies a projects have n discounted prior MSCI ESG Rese and at what prior	For a project to be additional important financial role in in technology could be access. On the project side, a project may be less financially addit credits. Projects without add credits for the project to occ. On the user-side, the greater financially additional. If project dependence on carbon cred free of charge or at a very hi We also take into account the encourage ownership of the Project Documentation Geospatial Cocumentation Geospatial Documentation MSCI ESG Research assess and at what price cookstove subsidized cost.	For a project to be additional, it is important to important financial role in incentivizing the protechnology could be accessed. On the project side, a project receiving revenue may be less financially additional as it could be accessed. On the project side, a project receiving revenue accedits. Projects without additional revenue accedits for the project to occur and are therefore. On the user-side, the greater the subsidy for to financially additional. If projects are only part dependence on carbon credits to implement free of charge or at a very high level of subside. We also take into account that some projects encourage ownership of the cookstoves, and the metation account that some projects and the metation. Project Geospatial Project Methodology Documentation and revenue outside of carbon projects have no other source of revenue and discounted price. If this information is not prome and at what price cookstoves are provided to subsidized cost.	For a project to be additional, it is important that carbon crimportant financial role in incentivizing the project to go and technology could be accessed. On the project side, a project receiving revenue from source may be less financially additional as it could be implement credits. Projects without additional revenue are financially credits for the project to occur and are therefore very likely on the user-side, the greater the subsidy for the cookstove financially additional. If projects are only partially funded, t dependence on carbon credits to implement it. Projects profere of charge or at a very high level of subsidy have a great We also take into account that some projects charge a smeencourage ownership of the cookstoves, and this prevents Project Geospatial Project Methodology Documentation Academic Literature Project is scored on a 2-5 scale, where 2 indicates the any subsidies and revenue outside of carbon credits and p projects have no other source of revenue and provide the to discounted price. If this information is not provided, a project MSCI ESG Research assess whether there are any other scond at what price cookstoves are provided to end-users co subsidized cost.	For a project to be additional, it is important that carbon credits both play important financial role in incentivizing the project to go ahead and ensurt technology could be accessed. On the project side, a project receiving revenue from sources other than credits. Projects without additional as it could be implemented without the credits. Projects without additional revenue are financially dependent on the credits for the project to occur and are therefore very likely to be financial. On the user-side, the greater the subsidy for the cookstove, the more likely financially additional. If projects are only partially funded, there is less final dependence on carbon credits to implement it. Projects providing cookstof free of charge or at a very high level of subsidy have a greater financial action account that some projects charge a small fee to the errencourage ownership of the cookstoves, and this prevents the risk of reverence and and revenue outside of carbon credits and product sales are projects have no other source of revenue and provide the technology at fr discounted price. If this information is not provided, a project scores 2.5. MSCI ESG Research assess whether there are any other sources of revenuand at what price cookstoves are provided to end-users compared to the subsidized cost.			



In particular, MSCI ESG Research consider whether there is any outside government financing or if the cookstoves are provided to users free of charge or sold at a reduced price.

The level of alternative funding source and end-user payment is then combined with a view on the type of technology provided by the project. More advanced technologies that create higher user benefit compared to the baseline technology therefore receive a multiplier, given that the same subsidy will have a greater impact on the financial incentives for these projects.

Firstly, an initial score is created based on end-user payment and other revenue sources. This scoring is determined as follows:

	Other Revenue Sources						
End User Cost	Yes	No	Not Found				
Free	4.0	5.0	4.2				
Low / Subsidized Cost	3.75	4.75	4.0				
Materials Only	3.5	4.5	3.7				
Monthly Instalments	3.0	4.0	3.2				
Not Found	2.0	3.0	2.2				

This is then combined with a view on the (i) type of technology and (ii) sophistication of the stove provided by the project.

(i) Type of Technology

More advanced technologies that create higher user benefit compared to the baseline technology therefore receive a higher score, given that the same subsidy will have a greater impact on the financial incentives for these projects. For example, to be financially additional, it is less important for a project that provides LPG and biogas stoves in its activities to provide these for free given the amount of end-user value being provided here.

This concept of an 'energy ladder' and stove sophistication is used as a multiplier effect on the scoring above as follows:

- **Low:** 1.0x Improved Cookstoves
- **Medium:** 1.05x Solar Stoves and Combined Safe Water and Cookstove Projects
- High: 1.1x Biogas stoves
- **Highest:** 1.25x Inclusion of LPG and bio-ethanol

(ii) Stove Sophistication

There are a wide range of stoves that are provided as part of clean cooking projects, some of which are more sophisticated than others. More sophisticated stoves will create higher user benefits, and will also be developed at higher costs, to less sophisticated stoves. Therefore, it is also less important for a project providing more sophisticated stoves to be provided for free.

Through detailed desk research, the level of stove sophistication is assessed on six dimensions: (i) the thermal efficiency of the stove; (ii) the materials used; (iii) the design, build and lifetime of the stove (eg whether it is a one burner or two burner pot); (iv) tier of stove as defined by the World Health Organization/ISO standards; (v) the main fuel used; (vi) the approximate cost of the stove.



Each stove is assessed on these components to develop a stove sophistication indicator, categorized from Very Low to Very High.

The level of stove sophistication is then combined with the end-user cost to score each project on a 1 to 5 scale, as follows:

	Stove Sophistication							
End User Cost	Very Low	Low	Medium	High	Very High			
Free	3.25	3.5	4.5	5	5			
Low / Subsidized Cost	2.25	2.5	3.75	4.25	4.75			
Materials Only	2.25	2.5	3.75	4.25	4.75			
Monthly Instalments	1.75	2.0	3.25	3.75	4.25			
Not Found	2.0	2.5	2.75	3.25	3.75			

1.1.1.3 Prior Consideration

Projects that can clearly demonstrate that carbon credits were considered prior to their decision to start, provide more evidence that credits acted as an important incentive in starting mitigation activities.

Two key sub-criteria are used to evaluate this:

- **1.1.1.3.1 Evidence of Consideration:** Whether any evidence exists that credits were considered prior to the project start.
- **1.1.1.3.2 Registration Gap:** Whether a significant gap exists between the start of the project's activities and the initial registration and issuance date.

The overall score for 1.1.3 Prior Consideration is determined by an equal weighting of these subcriteria.

1.1.1.3.1 Evidence of Consideration

Evidence of consideration refers to whether the project has clear evidence that demonstrates that the use of carbon credits was considered prior to the project start date.

Rationale	Evidence that carbon credits were considered prior to the project start date indicates that credits played an important role in this decision process. On the other hand, if no evidence of prior consideration exists, there is a higher chance that the decision to go ahead with the project occurred without any expectation of carbon credits.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets		
	\checkmark							
Scoring Definition	Each project is scored on a 1-5 scale, where 1 indicates that no evidence has been made available, and 5 indicates that good quality evidence of prior consideration exists.							
Scoring Approach	MSCI ESG Research identifies whether any evidence exists that carbon credits were considered prior to the project start date. This evidence may include a letter or notification of intent sent to a registry (such as CDM or Verra), the employment of a							



carbon credit consultant, or board meeting minutes indicating that carbon credits were analyzed.

The date of any evidence of carbon credit consideration is then compared to the project start date to determine whether credits were considered prior to the start date or not.

1.1.1.3.2 Registration Gap

Registration gap evaluates the gap between the start date of the project activity and the project being registered with a crediting standard and able to issue credits.

Rationale	A longer gap between the start of project activity and the project's registration suggests the project was able to maintain, at least to an extent, activities, and investment even in the absence of carbon credits. If credits were very important and decisive in the project going ahead, then we would typically expect a project to work hard to minimize this time taken in the registration process.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets		
	\checkmark							
Scoring Definition	Each project is scored on a 1-5 scale, where 1 indicates a very significant gap between the initial decision date and the registration date and 5 indicates a short or inconsequential gap.							
	MSCI ESG Research assesses the project's start date, and the project's registration and first issuance date.							
	The project stated start date is compared to the registration and first issuance date. This gap is then categorized into a 1 to 5 scale:							
Scoring Approach	- 5: - 4: - 3: - 2: - 1:	= 2 years or fe = 3-4 years = 5 to 6 years = 7 to 9 years = 10 years or l	ewer					

1.1.2 Barrier Analysis

The strength of the barrier plays a key role in determining the additionality of a project and the extent to which it requires carbon credits for implementation. For clean cooking projects, the lack of income of end-users represents a key financial barrier to adoption of more efficient cookstoves as households lack the wealth to make up-front payments for them. The extent of this financial barrier depends on the socioeconomic condition of the target population: rural, Least Developed Countries-(LDCs-) focused target populations tend to experience higher financial barriers. In this way, the size of barriers is related to the inherent characteristics of the project's target population.

Project developers can also seek to evidence and justify the presence of barriers as part of their additionality tests. They can, for instance, cite investment barriers or a common practice analysis. A



strong barrier analysis considers various barriers and provides several sources of evidence to prove the need for carbon investment.

There are two metrics used to evaluate this sub-criterion:

- **1.1.2.1 Inherent Barriers**: If the project is located in an urban or rural region, whether it is implemented in an LDC and if this is on a small or large scale.
- **1.1.2.2 Evidenced Barriers**: The number of tests used to justify the additionality of the project and the strength of barriers evidencing this.

Each project is scored on a 1 to 5 scale based on these two metrics. The highest score of the inherent barriers (1.1.2.1) and evidenced barriers (1.1.2.2) is taken as the overall score for Strength of Barriers. This is to account for many of the projects being of small or micro scale and in LDCs, and therefore deemed automatically additional by the crediting program methodologies. They would not be required to perform additionality tests such as the barrier analysis, and therefore would not receive a score for 1.1.2.2 Evidenced Barriers.

1.1.2.1 Inherent Barriers

Inherent barriers relate to the extent to which the project's target population faces barriers to adopting efficient cookstoves due to the project's inherent characteristics, such as the specific location and target population's level of income.

Rationale	Populations that have lower income or less access to more efficient cookstoves face more inherent barriers. Projects that are targeted at populations with these characteristics are therefore more likely to require carbon credits to overcome these barriers.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets		
	\checkmark			\checkmark		\checkmark		
Scoring Definition	Each project is scored on a 1-5 scale, where 1 indicates developed, urban regions with large-scale projects that are less likely to be additional. Projects scoring 5 are likely to be smaller scale in rural LDCs and therefore more likely to be additional.							
	MSCI ESG Rese on three main of example, wheth population and and target popu Carbon Market	earch identifie components: ner a project i whether it is ulation are ba s Platform an	es the presence a (i) project's size, s located in an L small, large or m sed on a combin d a detailed revie	and severity of (ii) location ar DC, whether it nicroscale. Dat nation of inforr ew of project o	barriers for pro nd (iii) target po targets a rural a on project's s nation from the locumentation	ojects based opulation. For or urban size, location e MSCI		
Scoring Approach	For grouped projects, project size is assessed at the grouped level, based on the aggregate size of the grouped project.							
	For target population, a review of project information is conducted to determine the specific income characteristics, area type and community type targeted. Therefore, a urban located project in an upper-middle income country that targets very low income groups with specific characteristics will receive a higher score than a project located in an urban location without these population targets.							



			Country Type	5
Project Scale	Location Type	LDC	Lower- middle	Upper-middle
Large	Rural	4.5	3.0	2.5
Large	Both	3.5	2.0	1.5
Large	Urban	1.5	1.0	1.0
Large	Not Found	2.5	1.0	1.0
Small	Rural	5.0	4.0	3.5
Small	Both	4.5	3.0	2.5
Small	Urban	2.5	1.0	1.0
Small	Not Found	3.5	2.0	1.5
Micro	Rural	5.0	5.0	4.5
Micro	Both	5.0	4.0	3.5
Micro	Urban	3.5	2.0	1.5
Micro	Not Found	4.5	3.0	2.5

Each project is scored on a 1 to 5 scale, with examples of this scoring as follows:

1.1.2.2 Evidenced Barriers

This refers to whether the project owner convincingly and accurately justifies its case that significant barriers to implementation exist that carbon credits helped to overcome.

Rationale	Projects that of role in them goi Research evalua evidence. Projecthat exist, are m academic refere	fer more con ng ahead ins ates whether cts that use a hore likely to ences or deta	nprehensive evide pire greater conf projects justify t a variety of sourc be additional. Hig ailed surveys of th	ence that carb idence in their he existence o es to support gh-quality sou ne local popul	oon credits play r additionality. I of barriers with the justificatio rces may come ation.	ved a decisive MSCI ESG high-quality n of barriers e through
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
Rey Sources	\checkmark				\checkmark	\checkmark
Scoring Definition	Each project is provide any evide provide any evide provides a rang	scored on a 1 dence for the e of well-rega	I-5 scale, where 1 existence of bar arded primary and	l indicates tha riers and 5 inc d secondary e	at the project de dicates that the evidence.	oes not project
	MSCI ESG Rese documentation	arch reviews	a project's barrie	er analysis usi	ng its project	
Scoring Approach	The strength of and quality of e many barriers w For quality of ev project to justify or third-party da	documentation. The strength of the barrier analysis is then evaluated based on its comprehensiveness and quality of evidence. For comprehensiveness, MSCI ESG Research assesses how many barriers were identified (such as investment, social awareness, technological). For quality of evidence, MSCI ESG Research identifies the key sources used by the project to justify the existence of these barriers, such as primary research, expert input or third-party data.				

⁵ Country Type definitions are defined by the United Nations and based on indicators of socioeconomic development. There were 33 LDCs as of August 2024.



The number of barriers and the sources used are then combined to create a strengthof-barrier score shown in the table below.

		Nur	Number of Sources of Evidence							
		0	1	2	3					
	0	1.0	1.5	2.0	3.0					
	1	1.5	2.5	3.0	4.0					
Number of	2	2.0	3.0	3.5	4.5					
Barriers	3	2.0	3.0	3.5	4.5					
	4	3.5	3.5	4.0	5.0					
	5+	3.5	4.5	5.0	5.0					

1.5 Baseline Reasonableness

Baseline reasonableness relates to whether the project assumes an increasing penetration of efficient cookstoves in its area compared to the baseline scenario (described below), over time.

Rationale	For clean cooking projects, the baseline scenario is generally the continued usage of the cooking practice prior to the project, such as an open fire. Given the limited baseline scenarios that exist, the risk of inaccurate baseline selection is reasonably low for cookstove projects.							
Kationale	Note, with some populations, one would expect, even without the project's activity, there would be a gradual adoption of more efficient stoves. Projects that do consider the possible increased adoption of efficient technology by the population therefore display more conservativeness in their approach.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets		
	\checkmark				\checkmark			
Scoring Definition	Each project is use of improve cooking penetr the baseline is	scored on a s d cookstoves ation, and 5 ir appropriate g	scale of 1 to 5, wl in the baseline s ndicates that the iven the growth i	here 1 indicate cenario despi uptake in use n penetration.	es no considera te high growth of improved co	ation of the in clean pokstoves in		
	MSCI ESG Research assesses whether project owners have assumed that there would be an increased usage of improved cookstoves in the baseline scenario.							
Scoring Approach	Data is incorpo country to asse project's counti	rated from th ess both the le ry since the p	e World Bank ⁶ or evel and growth i roject start date.	n clean cookin n clean cookir	g penetration v ng penetration	vithin each in the		
	Given that no projects that have an MSCI Carbon Project Rating have accounted for any increased usage of improved cookstoves in their baseline, the overall score is based on the level and growth in penetration as follows:							

⁶ IEA, IRENA, UNSD, World Bank, WHO. 2023. Tracking SDG 7: The Energy Progress Report. <u>https://data.worldbank.org/indicator/EG.CFT.ACCS.ZS</u>



				Rate of An	nual Growth	l	
		Very Low (<0.5%)	Low (0.5%-1%)	Mid (1-2%)	Mid / High (3-4%)	High (5- 9%)	Very High (10%+)
	Very Low (<5%)	5.0	4.5	4.0	3.5	3.25	3.0
Low (9%)	Low (5- 9%)	4.5	4.0	3.5	3.0	2.75	2.5
Level of Penetration	Mid (10- 19%)	4.0	3.5	3.0	2.5	2.25	2.0
at <u>Project</u> Start Year	Mid / High (20-29%)	3.5	3.0	2.5	2.0	1.75	1.5
	High (30- 39%)	3.25	2.75	2.25	1.75	1.5	1.25
	Very High (40%+)	3.0	2.5	2.0	1.5	1.25	1.0



Criterion 2 – Quantification

Quantification refers to the likelihood that the emission reduction or removals claimed by the project are accurate, assuming the baseline scenario is correct. It includes both emission reductions or removals within a project area, and those that have occurred outside the project area, known as leakage.

Along with the strength of baseline assessment, Quantification is a key determinant of the risks of over-crediting: whether the number of credits issued by the project is equal to the CO₂e actually reduced/removed. In theory, all carbon credits are worth the equivalent of one tonne of CO₂e reduced or removed. A low carbon quantification score means that the emission reductions or removals delivered by the credit is likely to be less than one tonne. In this case, buyers should be cautious in using one credit to offset one tonne of their own CO₂e emissions, as they are unlikely to be equivalent.

As shown in Figure 8, quantifying a clean cooking project's emission reduction involves a complex calculation that requires a project owner to make a number of hard-to-measure assumptions, such as about the stove's thermal efficiency, the fraction of nonrenewable biomass, the baseline fuel consumption and the risks of stove stacking. Assessing the quantification of clean cooking projects therefore requires a detailed evaluation of a project's approaches to, and assumptions about, the following key inputs:



Figure 8: Clean cooking quantification equation

illustrates the sub-criteria through which MSCI ESG Research assesses the carbon quantification of clean cooking projects, and the overall MSCI Carbon Project Ratings methodology sub-criteria that they correspond to. The detailed sub-criteria are described in Figure 10.



Figure 9: Clean cooking quantification assessment approach





Figure 10: MSCI ESG Research Quantification integrity assessment framework

Sub-criteria	Metrics	Rationale	REDD+	Renewables	ARR	Cookstoves	Biochar	Landfill Gas	Safe Water	IFM	Waste Mgmt.	Blue Carbon
2.1	2.1.1 Methodology Approach	Through setting the assumptions that projects must make, and the sources that can be used to estimate them, crediting program methodologies can play an important role in reducing or even increasing the level of quantification risk.			~	Stan	dardiz	zed ap	proa	ch		
2.1 Quantification Approach	2.1.2 Project Transparency	Transparent documentation and detail on a project's assumptions are required to make an objective assessment of its approach to carbon quantification.	~	~	~	~	~	~	~	~	~	~
	2.1.3 Project Approach	Two projects with the same methodology may carry different quantification risks depending on the approaches that each uses.	~	~	~	~	~	~	~	~	~	~
2.2 Assumption Accuracy	Quantification Accuracy	Each project type has a set of key assumptions that determine the accuracy of their carbon quantification. Evaluating the reliability and accuracy of these key assumptions shows whether a project has over- or understated their emission reductions or removals.	~	~	~	~	~	~	~	~	~	~
2.3 Monitoring Performance	2.3.1 Monitoring Plan	Projects that have effective processes in place to regularly monitor and measure key quantification inputs and assumptions are more likely to accurately estimate and update their emissions impact.	~	~	~	~	~	~	~	~	~	~
	2.3.2 VVB Analysis	Projects that use a mix of well-regarded verification and validation bodies (VVBs) will improve the likelihood that key quantification details are accurately checked and validated.		✓ Standardized approach								
2.4 Red and Green Flags	News scanning	Review of academic papers, industry sources and the news for Red or Green Flags relating to project's quantification.			~	Stan	dardiz	zed ap	proa	ch		



2.1.2 Project Transparency

Project Transparency relates to whether the project provides information on all relevant factors contributing to carbon quantification.

Rationale	A project that provides all information relevant to the measurement of carbon quantification shows more transparency. Projects which are more transparent enable MSCI ESG Research to more accurately score the project with regards to the criteria.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	\checkmark					
Scoring Definition	Each project is scored on a scale of 1 to 5, where 1 indicates a range of critical information is missing or a complete lack of public project documentation, and 5 indicates almost all the important information has been provided via relevant documentation.					
Scoring Approach	Through a detailed review of key project documentation, MSCI ESG Research collects information on a number of key parameters regarding a project's quantification approach and assumptions. Four parameters are assessed: (i) usage rates, (ii) monitoring sample sizes, (iii) fNRB values and (iv) type of thermal efficiency test performed. Projects that provided all of these parameters received a 5, while those that did not provide any of these factors received a 1.					

2.1.3 Project Approach

Projects that use more scientifically best-practice techniques increase the likelihood that key assumptions are accurately estimated.

Clean cooking projects need to estimate a number of hard-to-measure key quantification assumptions prior to the project launch and through the project's lifetime across monitoring periods. The assessment of the project approach therefore needs to incorporate the suitability of initial estimation techniques and the representativeness of subsequent monitoring period updates. In total, MSCI ESG Research considers three main sub-criteria:

- **2.1.3.1 Estimation Techniques:** Whether the project uses best-practice techniques to estimate the quantity of woody biomass saved.
- 2.1.3.2 Monitoring Report Updates: Whether the project continues to update key assumptions through its lifetime.
- **2.1.3.3 Effective Monitoring:** Whether monitoring report updates are conducted effectively, through regular monitoring of a significant sample size of the population.

Each sub-criterion is assessed independently and scored on a 1 to 5 scale. The overall score for 2.1.3 Project Approach is then calculated by giving a weighting of 40% for estimation techniques, 40% for monitoring report updates and 20% for effective monitoring.

2.1.3.1 Estimation Techniques

Whether the project uses best-practice techniques to estimate thermal efficiency and baseline quantity of biomass used.



Rationale	Academic studi estimate the tru such as laborat tests were used representative. inaccurately est specific popular Similarly, the ba projects and ter of the amount of estimate of this area prior to the amount of fuel	es have show the thermal effory-based was l, it would be Projects usin timating the t tion. The seline quantion the sto be very of woody bior the key input. A the distribution usage in the	wn that in-field ki ficiency of an imp ater boiling tests more likely that ng water boiling t true thermal effic ity of woody bior y specific to the mass used by a t high-integrity pro of improved coo baseline scenari	tchen perform proved cookst ⁷ . If more accu the thermal ef ests or defaul iency of a sto mass used is h population. La arget populatio ject would im kstoves, to de o.	nance tests mo cove than other urate kitchen pe ficiency estima t values are at l ve when being nighly variable a rige-sample, in- ion provide a m plement surve termine the ap	re accurately methods, erformance te would be higher risk of used by a across field surveys ore accurate ys within its propriate		
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets		
	\checkmark			\checkmark		\checkmark		
Scoring Definition	Each project is both its therma that best-practic	scored on a 1 l efficiency ar ce kitchen pe	1-5 scale, where nd baseline quan erformance test a	1 indicates that itity of biomas and in-field sui	at it uses a defa ss estimate, and rveys were used	ault value for d 5 indicates d.		
Scoring Approach	MSCI ESG Rese improved cooks project quantity academic litera For thermal effe water boiling te are used. For baseline qu score of 5 is giv	MSCI ESG Research assesses the methods through which the project estimated the improved cookstove thermal efficiency, the baseline quantity of biomass used and the project quantity of biomass used. These methods are then reviewed against a range of academic literature to score approaches based on the level of scientific best-practice. For thermal efficiency, a score of 1 is given for default value approaches, and 4 for water boiling tests. A score of 5 indicates that best-practice kitchen performance tests are used.						
	For project quar a kitchen perfor stoves, while a estimated throu project fuel use	For project quantity of biomass fuel saved, a score of 5 is given if an in-field survey (eg a kitchen performance test (KPT)) is performed on both the baseline and project stoves, while a score of 3 is given if the quantity saved is not measured directly, but estimated through back-calculating the stove's thermal efficiency and baseline or project fuel use.						
	incoc results a	ie then wergi						

⁷ Johnson, M., Edwards, R. & Masera, O. (2010). Improved stove programs need robust methods to estimate carbon offsets. Climatic Change, 102(3), 641–649.



2.1.3.2 Monitoring Report Updates

Monitoring report updates refers to whether the project updates its key assumptions through successive monitoring reports.

Rationale	Key project estimates are unlikely to remain static throughout a project's lifetime. For example, factors such as the stove's thermal efficiency and the level to which stoves are used by the end-user will likely change over the project's lifetime. Projects that continue to test and update these assumptions through their monitoring reports will therefore ensure that the quantification remains accurate throughout the project's crediting period.
Key Sources	Project Project Academic Third-party MSCI Carbon Documentation Geospatial Methodology Literature Data Markets
Scoring Definition	Each project is scored on a 1 to 5 scale, where 1 indicates there has been no update of stove factor throughout the project so far and 5 indicates regular updates.
Scoring Approach	 MSCI ESG Research reviews project's monitoring reports in detail to assess the extent to which key assumptions are updated. MSCI ESG Research assesses whether three main assumptions were updated in monitoring reports: stove usage rate, stove loss rate and stove thermal efficiency. For each of these assumptions, the frequency of the updates which is the number of updates of each metric compared to the amount of time since first issuance is considered, as well as the level of change in thermal efficiency over the project. Therefore, in aggregate, there are four factors we consider for this metric. Each of the four factors is scored on a 1 to 5 scale. The frequency of the updates for each of the three assumptions is categorized into four groups: Never, Rarely, Occasionally and Regularly with scores of 1, 2, 3 and 5, respectively, assigned to each. The level of thermal efficiency change estimated is categorized into Low, Medium, High, with scores of 1, 3 and 5, respectively, assigned to each. The overall score is then based on an equal weighting of these four factors.

2.1.3.3 Effective Monitoring

Effective monitoring relates to the effectiveness of a project's monitoring procedures and whether its monitoring covers a representative sample of the population.

Rationale	Effective moni estimates in th monitoring a re its estimates b	toring proced leir monitorin epresentative leing accurate	lures improve the g reports. More e sample size of th e.	accuracy of t ffective monit ne population	he project's qua toring procedur to maximize th	antification res include re likelihood of
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	\checkmark					



Scoring Definition	Each project is scored on a 1 to 5 scale, where 1 indicates weak or unrepresentative monitoring and 5 indicates rigorous, representative monitoring of the population.
	MSCI ESG Research reviews project's monitoring reports to understand both the frequency of monitoring and the sample size of the population monitored.
Scoring Approach	For frequency of monitoring, projects score a 2 if they use continuous monitoring or 1 if monitoring takes place every 2 years or less regularly.
	For sample size, projects are scored on a 0 to 3 scale, where 0 indicates no monitoring sample size is provided and 3 indicates that the project samples over 5% of the target population.
	The overall score is then reached by adding each of these factors to reach a 1 to 5 score.

2.2 Assumption Accuracy

The quantification of clean cooking projects relies on projects estimating multiple important assumptions. Numerous academic studies have shown that, in general, there is significant risk of projects overestimating these assumptions, with many projects being credited for more emission reductions than have been achieved in practice.

A detailed evaluation of key project assumptions is therefore required to assess the accuracy of project's quantification. These key assumptions are assessed through five sub-criteria:

- **2.2.1 Fraction of nonrenewable biomass (fNRB)**: Whether the project has accurately and conservatively estimated the fraction of nonrenewable biomass.
- **2.2.2 Fuel savings**: Whether fuel saving estimates appear accurate and representative for the project.
- **2.2.3 Stove Stacking:** Whether the project has accounted for and minimized the risk of stove stacking.
- **2.2.4 Uncertainty Adjustments**: Whether the project makes suitable adjustments in their quantification of emissions reduction to conservatively account for key uncertainties.
- **2.2.5 Adjustment Factors:** Whether the project's adjustment factors, efficiency and conversion factors, appear accurate and reasonable.
- 2.2.6 REDD+ Double Counting: Whether the project area overlaps with, or is close to the boundaries of, any REDD+ project areas, and therefore risks double counting any reduced deforestation due to biomass saved.

Each of the first five sub-criteria are assessed independently and scored on a 1 to 5 scale. The overall score is then calculated through weighting each of the first five factors, and then finally making any deduction due to REDD+ double counting. The fNRB is weighted 40% with the other four sub-criteria each weighted 15%. This weighting reflects the latest academic consensus that has identified the fraction of nonrenewable biomass as the most significant driver of quantification accuracy.⁸ The score for 2.2.6 REDD+ Double Counting is then deducted from this gross score where applicable to reach the overall score.

⁸ Wiehl, Annelise & Kammen, Daniel & Haya, Barbara. (2023). Cooking the books: Pervasive over-crediting from cookstoves offset methodologies. 10.21203/rs.3.rs-2606020/v1.



2.2.1 Fraction of nonrenewable biomass (fNRB)

This approach focuses on assessing the reasonableness of the fNRB value provided by the project to calculate its emission reductions.

The fNRB represents the proportion of woody biomass harvested unsustainably in a given area. It is expressed as a percentage, with higher values indicating a greater degree of unsustainable harvesting.

The fNRB composition of baseline biomass fuel used by target communities is difficult to estimate owing to different factors such as site of collection, type of biomass used and regional variations in forest growth. Therefore, it becomes a major source of uncertainty when quantifying CO₂ emission reductions. It is of great importance that this value has been calculated accurately and is supported by high-quality evidence.

Projects that have justified their fNRB value comprehensively and supported by multiple high-quality sources provide greater confidence in its accuracy. Regardless of the justification, it is then important that the fNRB value appears accurate compared to regional benchmarks, both from other similar projects and academic literature. To assess this criterion, MSCI ESG Research considers three metrics:

- **2.2.1.1 Justification**: Whether the project has comprehensively justified their fNRB value, supported by high-quality evidence.
- **2.2.1.2 Regional Benchmarking:** Whether the project's fNRB value appears accurate and reasonable compared to other projects in the same region.
- **2.2.1.3 Literature Benchmarking:** Whether the project's fNRB appears accurate and reasonable against key third-party academic estimates.

The scores of the 2.2.1.1 Justification, 2.2.1.2 Regional Benchmarking and 2.2.1.3 Literature Benchmarking are weighted 10%, 10% and 80% respectively to reach an overall score. A project scoring a 5 will have a comprehensive fNRB value supported with strong evidence which meets or is below the regional benchmark and meets the literature standards.

2.2.1.1 fNRB Justification

fNRB Justification relates to whether the project's fNRB value has been comprehensively justified and supported by high-quality sources.

Rationale	Projects providi quality evidence risk of overestir supporting evid	ing comprehe e to support i mation. In co lence sugges	ensive values for it are more likely ntrast, projects w st greater uncerta	fNRB which a to be accurate hich use defa inty and risk.	re calculated w and therefore ult values and	rith high- have a lower lack
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
Scoring Definition	Each project is no evidence pro with high qualit	scored on a s ovided. Projec y of evidence	scale of 1 to 5, w cts scoring a 5 w e to support this.	here 1 indicate ill have high le	es a lack of fNF vels of compre	RB data with hensiveness



Documentation for each individual project is reviewed to assess both the comprehensiveness and quality of evidence behind the project's fNRB estimate.

The assessment of comprehensiveness considered the number of indicators of fNRB evaluated and described. For example, key fNRB indicators include an increase in wood scarcity, increased time traveling for wood, depleting carbon stocks in the area and increasing wood fuel prices. The comprehensiveness of each project's fNRB is categorized low, medium, or high based on the number of indicators mentioned. Projects that considered at least two of these indicators received a score of high, projects that considered one of these indicators received a score of Medium, while projects that did not consider any received a score of low.

To assess quality of evidence for a project's fNRB value, MSCI ESG Research evaluates the type of sources used. Each source used is scored based on its quality, as shown in the below table. The total points are then summed for each source used, with projects receiving a low, medium, or high depending on the total number of points received. A total score of 8 or above is considered high-quality evidence, a total between 5 and 7 is considered medium-quality evidence and below 5 is considered low-quality evidence.

Scoring Approach

Quality of Evidence							
Factor	Points						
Satellite Imagery	4						
In-field Survey	4						
Third-party Forestry	2						
Data							
Academic Literature	2						
Government Data	2						
Default Value	1						

The overall score is then based on a combination of the comprehensiveness and quality of evidence provided as shown in the table below.

		Comprehensiveness			
		Low	Medium	High	
Evidence	Low	1	2	3	
	Medium	2	3	4	
	High	3	4	5	



2.2.1.2 Regional Benchmarking

Regional Benchmarking refers to whether the project's fNRB value appears accurate and appropriate when benchmarked against similar projects located in the same region.

Rationale	Projects within similar areas will share similar characteristics and similar fNRB values. Projects that estimate an fNRB value significantly higher than comparable projects therefore have a greater risk of overestimation.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets		
	\checkmark					\checkmark		
Scoring Definition	Each project is the regional average.	Each project is scored on a scale of -1 to 1, where 1 indicates the fNRB value is below the regional average and -1 indicates the project fNRB value is above the regional average.						
	Each individual average fNRB a Project Rating.	project's fNF assumption f	RB assumption is or other registere	compared to d cookstove p	the country or projects with ar	regional MSCI Carbon		
Scoring Approach	Each individual	project is the	en scored as sho	wn below.				
	Similar	rity to regional	average Po	pints				
	Below		1					
	In-line		0					
	Above		- 1					

2.2.1.3 Academic Literature Benchmarking

Academic literature benchmarking relates to whether the project's fNRB values appear accurate and appropriate when compared to key estimates from academic literature for that region.

Rationale	Projects that have estimated fNRB values in-line with third party academic or independent estimates indicate greater accuracy and validation. In contrast, projects that use outdated or low quality academic and independent sources have a higher risk of overestimating their fNRB values. For example, the UNFCCC's historic fNRB default values were discontinued as they were found to be overestimations.						
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets	
	\checkmark	\checkmark		\checkmark	\checkmark		
Scoring Definition	Each project is scored on a scale of 1 to 5, where 1 indicates projects scoring significantly above a range of third-party and academic literature benchmarks. A project scoring 5 indicates the value is close to academic literature averages.						
Scoring Approach	Project's fNRB region from aca Savings Scenar	Project's fNRB assumptions are compared against a range of fNRB estimates for that region from academic literature and other institutions, including Modeling Fuelwood Savings Scenarios (MoFuSS) benchmarks.					
	In total, the proj	ject's assump	otions are compa	red against th	ree benchmarl	ks:	



- Academic Average: Academic literature average for that country
 MoFuSS Average: Average MoFuSS fNRB estimate for the specific region, using project's geo-coordinates
 MoFuSS Upper Bound: Upper bound MoFuSS fNRB estimate for the specific region, using project's geo-coordinates
Where project's exact geo-coordinates are not known, country-level average estimates are used from MoFuSS.
The comparison against both the average and upper-bound MoFuSS values are used to account for the uncertainty inherent in fNRB calculations.
Projects are scored on a 1 to 5 scale on each of these three components where 1 indicates 100% of fNRB is over-estimated, 3 indicates 50% of project's fNRB appears over-estimated and 5 indicates the project's fNRB is in-line with benchmarks.

2.2.2 Baseline Fuel Savings

The fuel savings achieved by using improved efficiency cookstoves are based on estimating the baseline amount of fuel used prior to the project and the thermal efficiency of the new stoves. The accuracy of these assumptions is critical to the overall accuracy of a project's emission reductions. To evaluate the accuracy of the project's fuel saving MSCI ESG Research considers the following metrics:

- **2.2.2.1 Baseline Quantity of Biomass Saved**: Whether the quantity of biomass saved appears accurate and appropriate compared to other projects based in the same region.
- 2.2.2.2 Improved Cookstove Efficiency Benchmark: Whether the thermal efficiency of the improved cookstove appears accurate and appropriate compared to third-party improved cookstove efficiency data for the same stove model.

Each metric is assessed independently and scored from 1 to 5. The overall score is then based on an average of these two metrics. A project scoring a 5 will represent projects with biomass saved values and improved efficiencies close to those of similar projects.

2.2.2.1 Baseline Quantity of Biomass Saved

Baseline quantity of biomass saved refers to whether the quantity of biomass saved estimated by the project appears accurate and appropriate compared to other similar projects located in the same region.

Rationale	The baseline q projects within fundamental c considerably h overestimatior of inaccurately	The baseline quantity of biomass used should be somewhat comparable between projects within the same location, given they will likely share many of the same fundamental characteristics. Projects that estimate their quantity of biomass saved considerably higher than the average in that country indicate a higher risk of overestimation. In contrast, projects using more conservative values have a lower risk of inaccurately estimating carbon quantification.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets			
	\checkmark								



Scoring Definition	considerably different values of biomass saved compared to a benchmark set. Projects scoring 5 are those below or close to the average and are therefore at lower risk of overestimating.							
	Each individual project's biomass saved per stove is compared to the average across all projects with similar stove sophistication. In this way, project's assumptions are only compared against projects with similar levels of stove sophistication and thermal efficiency levels.							
l								
Scoring Approach	Difference from benchmark	Risk	Points					
	Below benchmark	Very Low	5					

Low

High

Medium

Very High

4

3

1

2.2.2.2 Improved Cookstove Efficiency Benchmark

Equal to benchmark

20% above benchmark

50% above benchmark

Greater than 50% above benchmark

Improved cookstove efficiency benchmark refers to whether the estimated thermal efficiency of the improved cookstove appears accurate and appropriate compared to independent third-party estimates of the efficiency of similar stove types.

Rationale	Similar types of improved cookstoves should have similar levels of efficiency at the start of the project. Therefore, projects with stated thermal efficiencies which are considerably higher than that of literature or benchmark analysis are more likely to be an overestimation. This also therefore risks overestimation of total emission reductions.						
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets	
	\checkmark				\checkmark		
Scoring Definition	Projects are sco of projects usin have more cons benchmark and	ored on a 1 to g the same s servative valu I the third-pai	o 5 scale. Project stove, and above ues for the therm rty values.	s scoring a 1 third-party dat al efficiency a	will have score a. Projects sco nd will be belov	s above that oring a 5 will w the	
Scoring Approach	Project's stated stove thermal efficiency assumptions are first compared against third party data on the thermal efficiency of the same stove type to assess the variation between projects from this benchmark. Secondly, the project's assumption is compared against the country average for this assumption across all clean cooking projects (the project average benchmark).						
	The third-party International Or Agreement (IW,	data is collec ganization fo A). This deter	cted from a comb or Standardizatio rmined the scorir	bination of aca n (ISO) and Ini ng approach b	ademic sources ternational Wo elow.	s and the rkshop	



			Project Average Benchmark				
			Higher	Equal	Lower	Not Available	
	Third Party Benchmark	Higher	1	3	4	2	
		Equal	3	4	5	3	
		Lower	4	5	5	4	
		Not Available	2	3	4	2	

2.2.3 Stove Stacking

Stove stacking is a key area of uncertainty in emission reduction calculations for clean cooking projects. Stove stacking occurs when a household continues to use its previous, less efficient cookstove as well as the improved efficiency cookstove during the projects' lifetime. Therefore, the predicted emission reductions may not be achieved as the same amount of fuel, if not more, may be used as in the baseline.

MSCI ESG Research's approach to evaluating stove stacking risks uses the following sub-criterion:

- **2.2.3.1 Accounting for Stove Stacking**: Whether stove stacking is appropriately considered and accounted for by the project.
- **2.2.3.2 Response to Stove Stacking:** Whether the project has put in place any plans to prevent or address this occurrence.

The scores of the metrics above are totaled to create a 1 to 5 score. A project scoring a 5 will both account for and respond to the risks of stove stacking in the project area.

2.2.3.1 Accounting for Stove Stacking

Accounting for stove stacking relates to whether the project accounts for the risk of stove stacking when calculating emission reductions.

Rationale	Projects which account for stove stacking when calculating their emission reductions acknowledge the risk that users may also continue to use their old stoves and are therefore more likely to account for this when calculating their emission reductions. This reduces the risk of overestimation.						
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets	
	\checkmark						
Scoring Definition	Each project is scored on a scale of 1 to 3, where 3 indicates there is a high likelihood that stove stacking is accounted for and 1 indicates there is no mention of stove stacking.						
Scoring Approach	MSCI ESG Rese whether the pro This may includ use cases for w acknowledge th account for this	arch conduct ject explicitly le a compreh- rhich a house le use of stov s inherent risk	ts a detailed revie r mentioned any l ensive acknowled hold uses a stove res for other purp	ew of project of key drivers and dgement and e. For example poses beyond	documentation d risks of stove description of f e, projects that heating are mo	to determine e stacking. the types of explicitly ore likely to	



2.2.3.2 Response to Stove Stacking

Response to Stove Stacking refers to whether the project has appropriately mitigated any risks of stove stacking through the project's design and implementation.

Rationale	Projects taking active measures to reduce the risk of stove stacking therefore reduce the risk of overestimation. This may occur through the provision of additional stoves to households, stoves which are suited to traditional dishes and not assuming the space heating effect in baseline fuel calculations.						
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets	
	\checkmark						
Scoring Definition	Each project is scored on a scale of 0 to 2, where 2 indicates the project has a plan in place to reduce stove stacking and 0 indicates there is no mention of a response to stove stacking.						
	MSCI ESG Research assesses whether the project has put in place any measures and estimation techniques to respond to and mitigate stove stacking risks.						
Scoring Approach	For example, projects can provide households with two-pot stoves that reduce the likelihood that the previous baseline stove is still required. Also, projects may design a stove specifically focused on the target population's local cooking habits and needs, and therefore mitigate stove stacking risk in this way.						

2.2.4 Uncertainty Adjustment

Uncertainty Adjustment refers to whether the project makes any conservative adjustments to their emission reduction calculations to account for key uncertainties in the quantification process.

Rationale	As well as the fNRB and fuel savings, a project's emission reduction estimates require multiple other assumptions, such as the stove usage rates and leakage factors. These other assumptions tend to be optional for projects to include but can ensure that projects conservatively account for additional quantification uncertainties. Projects that make deductions to their emission reductions to account for these uncertainties therefore lower the risk of overestimation.						
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets	
	\checkmark						
Scoring Definition	Each project is measures are i	Each project is scored on a scale of 1 to 5, where 5 indicates most of the uncertainty measures are included and 1 indicates there is no uncertainty adjustment.					
Scoring Approach	MSCI ESG Research assesses how many of the 5 key uncertainty adjustments a project has made. The five uncertainty adjustments MSCI ESG Research considers are:						
	- Stove end-us	Usage Factor er.	: The proportion	of time the ne	ew cookstove is	s used by the	



- **Stove Loss Rate:** The proportion of stoves which will not be operational each year.
- **Leakage:** The potential for emission reductions to be offset by increases outside the project boundary.
- **Emission Factors:** The inclusion of only CO₂ as an emission factor.
- Adjustment Factor: An overall uncertainty adjustment

The Stove Usage Factor assumed by the project is combined with the frequency, type of usage monitoring and after sales support provided by the project to assess the level of uncertainty here. Further, the stove loss rate is combined with the repair service provided by the project to evaluate the level of conservativeness here.

Projects received 1.5 points for each of these uncertainty adjustments made. A score of 5 is therefore achieved if a project made at least 4 of these uncertainty adjustments.

2.2.5 Adjustment Factors

To convert emissions impact from clean cooking projects into a standardized CO₂e format, the projects may need to rely on certain adjustment factors. These adjustment factors are subject to some uncertainty, and therefore projects may over/under-estimate their emissions impact through their choice of these factors.

MSCI ESG Research's approach to evaluating adjustment factors uses the following sub-criterion:

- **2.2.5.1 Emission Factors:** Whether the project uses emission factors that are accurate and appropriate.
- **2.2.5.2 Charcoal Conversion Factor:** Whether the project uses a wood-to-charcoal conversion factor that is accurate and appropriate.

Each of these sub-criteria is scored on a 1 to 5 scale, with the overall score reached through an equal weighting of these factors.

2.2.5.1 Emission Factors

Emission Factors relates to whether the project uses emission factors that are accurate and appropriate.

Rationale	Projects may use emission factors that are under- or over-estimated, and therefore can contribute to lower or higher risk of overestimation.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Third-party Data	MSCI Carbon Markets			
	\checkmark							
Scoring Definition	Each project is scored on a scale of 1 to 5, where 1 indicates significant over- estimation of the relevant emission factor and 5 indicates that conservative emission factor choices have been made.							
Scoring Approach	MSCI ESG Rese assumptions fo compared agai assess the deg	MSCI ESG Research reviews project documentation to determine the project's assumptions for their CO ₂ and non-CO ₂ emission factors. These assumptions are then compared against the standard default emission factors provided by the IPCCC to assess the degree to which they have been over or under-estimated.						



Note: For projects that do not include non- CO_2 emission sources, the score is only based on the CO_2 emission factor accuracy.

The level of under/over-estimation compared to the standard emission factors is as follows:

- 1 = Significant over-estimation (20% higher for CO_2 and 150% higher non- CO_2)
- 3 = Moderate over-estimation (10-20% higher for CO₂ and 50%-100% higher for non-CO₂)
- 4 = In-line with standardized values
- 5 = Under-estimation (value used is below the standardized values)

2.2.5.2 Charcoal Conversion Factor

Charcoal Conversion Factor relates to whether the project uses a wood-to-charcoal conversion factor that is accurate and appropriate.

Rationale	For projects in which charcoal is the baseline fuel type used, the wood to charcoal production ratio is a necessary input to estimate the amount of biomass used and saved by the project. Inaccurate estimates of this conversion factor can contribute to inaccuracies in the emissions impact calculation.								
Key Sources	Project Project Academic Third-party MSCI Carbon Documentation Geospatial Methodology Literature Data Markets								
Scoring Definition	Each project is scored on a scale of 1 to 5, where 1 indicates significant over- estimation of the charcoal conversion factor and 5 indicates a conservative estimation.								
	For projects in which charcoal is used by end-users, MSCI ESG Research review project documentation to determine the project's assumptions for their wood-to-charcoal conversion factor. This assumption is then compared against academic literature estimates.								
	Revised IPCC guidelines state that the typical conversion factors in developing countries range from 2.5 to 3.5. However, the factor's true value can vary significantly based on location. If there is not granular third party data at a local level, a project's estimate is compared against a standardized value of 4.0 to account for the uncertainties in the IPCC guideline figures.								
	The score is then based on the level of under/over-estimation compared to the standardized value:								
	 1 = Significant over-estimation (150% difference; charcoal conversion factor of greater than 10 used by the project) 3 = Moderate over-estimation (50% difference; charcoal conversion factor of 6+ used by the project) 4.5 = In-line with standardized values 5 = Under-estimation (charcoal conversion factor of lower than 4 used by the 								



2.2.6 REDD+ Double Counting

REDD+ Double Counting refers to whether the clean cooking project is located within or in close proximity to any REDD+ projects, and therefore risks double counting the protection and avoided deforestation of trees within this area.

Rationale	Clean cooking amount of defo meet the house within or near a then the avoide to create credit	Clean cooking projects ultimately create emission reductions through reducing the amount of deforestation that occurs as less fuel wood is required to be sourced to meet the household's cooking or heating needs. If a clean cooking project is located within or near a REDD+ project, which may be already protecting the local vegetation, then the avoided deforestation of that vegetation risks being double counted (i.e., used to create credits under both projects).									
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets					
		\checkmark				\checkmark					
Scoring Definition	Each project is scored on a scale of -2 to 0, where -2 indicates that the project is located within or in close proximity (<10km) to a REDD+ project and 0 indicates it is not.										
Scoring Approach	MSCI ESG Rese project's location the voluntary ca between the clo	MSCI ESG Research conducts geospatial analysis to compare the clean cooking project's location against the project locations of all registered REDD+ projects across the voluntary carbon market. This analysis then identifies whether any overlap exists between the clean cooking and REDD+ project boundaries.									

2.3 Monitoring Performance

Monitoring performance relates to whether the project's actual emission reductions appear similar on average to their estimated emission reductions, and therefore provides support that the initial ex-ante estimates were accurate.

Rationale	Projects which reductions (ex-a Where there is I suggests that a	cts which have properly conducted baseline studies to estimate emission ctions (ex-ante) are more likely to achieve similar results in actual implementation. re there is high variation between ex-ante estimates and actual issuances it ests that a project has overestimated its emission reductions.										
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets						
	\checkmark					\checkmark						
Scoring Definition	Each project is between actual great difference	ach project is scored on a scale of 1 to 5, where 5 indicates there is a low difference etween actual and estimated annual emission reductions and 1 indicates there is a reat difference between actual and estimated annual emission reductions.										



MSCI ESG Research assess the difference between actual and estimated emission reductions. With particular focus on projects overestimating their emission reductions. The difference in actual and estimated emission reductions is scored as shown below.

	Gap Percentage	Risk	Score		
Scoring Approach	Below 20%	Low	5		
	20-40%	Medium	3		
	40-60%	High	2		
	Above 60%	Highest	1		



Criterion 3 - Permanence

Permanence refers to the likelihood that the emission reductions or removals achieved by a project will be sufficiently long-term and not released back into the atmosphere. There is growing consensus that 100 years represents a good benchmark for projects to be classified as "permanent".⁹

A permanent reduction or removal can only be guaranteed where it is physically impossible for a reversal to occur. However, for most projects, a risk of reversal does, to some extent, exist. This risk may be due to natural risks, such as wildfires, or human risks, such as poor project management.

Though the emission reductions achieved by a stove cannot be later directly reversed, clean cooking projects do face an indirect risk of reversal. As clean cooking projects reduce the amount of biomass used for cooking purposes, they indirectly reduce local deforestation via reduced demand for fuelwood. Any reduced deforestation achieved due to clean cooking projects is still subject to other risks to deforestation, both natural (e.g., fires) and human.

Clean cooking projects can, however, mitigate some of the more human-based drivers of permanence risk through effective community engagement and a well-designed stove maintenance and replacement plan.

Under current crediting program methodologies, clean cooking projects do not compensate for this indirect permanence risk. The size of this indirect permanence risk must therefore be assessed.

Figure 11 illustrates the sub-criteria through which MSCI ESG Research assesses the permanence of the emissions reductions achieved by clean cooking projects and the overall MSCI Carbon Project Ratings methodology sub-criteria that they correspond to. The detailed sub-criteria are described in Figure 12.

⁹ "Raising our ambition: Puro Standard CORCs will require 100 years minimum carbon storage," Puro Earth Press Release, November 9, 2022; "2023 Review of the Carbon Credits Act 2011," Climate Change Authority, December 2023.





3.2.2.5: Training

Opportunities

Does the project provide training

opportunities for local stakeholders?

Figure 11: Permanence integrity assessment approach



Figure 12: MSCI ESG Research Permanence integrity assessment framework

Sub-	criteria	Metrics	Rationale	REDD+	Renewables	ARR	Cookstoves	Biochar	Landfill Gas	Safe Water	IFM	Waste Mgmt.	Blue Carbon
Non- Risk	3.1.1 Project Type Risk	Project Type Significance	Different project types have inherently different levels of non-permanence risk.			~	Stan	dardiz	ed ap	proad	ch		
evel of	3.1.2	3.1.2.1 Natural Risks	The risk of fire, drought, landslide and other natural risks in that project area.	~		~					~		~
Project ຕໍ່ຝື Risk	3.1.2.2 Human Risks	Human-related permanence risks include the strength of land tenure rights or a project developer's experience.	~		~					~		~	
2.2 Mitigation		3.2.1 Mitigation Activities	rojects can mitigate non-permanence risks nrough implementing activities that focus n addressing key risks.			~	~	~		<	~		~
5.2 N	Antigation	3.2.2 Local Stakeholder Engagement	Successfully engaging with local stakeholders lowers the risk of human-based non-permanence.	<		~	~	~		~	~		~
3.3.1 Project Contributions		3.3.1 Project Contributions	A project's buffer pool contributions should appropriately account for the non- permanence risk.			~	~	~		~	~		~
3.3 Com and	pensation	3.3.2 Buffer Pool Capitalization	An under-capitalized buffer pool may have insufficient credits to cover future losses.			~	Stan	dardiz	ed ap	proad	ch		
Cont	ributions	3.3.3 Buffer Pool Mechanics	A buffer pool should have mechanisms in place to ensure projects appropriately account for and estimate their buffer pool credits.	✓ Standardized approach									
3.4 E Non- Perm	vidence of nanence	Non-Permanence Events	If significant reversals have occurred without being accounted for, then carbon stock reversals have already occurred.	~		~					~		
3.5 R Gree	Red and n Flags	News scanning	Review of academic papers, industry sources and the news for Red or Green Flags relating to project's permanence.			~	Stan	dardiz	ed ap	proa	ch		_

3.2.1 Mitigation Activities

The actions a project takes to reduce the risk of reversal of the project are crucial in ensuring permanence throughout the project lifetime. Specifically for clean cooking there is a risk of reversal through the potential loss of stoves throughout the project lifetime, particularly due to stove breakage and efficiency drops due to lack of maintenance. This may cause the end user to revert to the use of baseline stoves, increasing the risk of reversal.

Furthermore, projects which make an effort to properly communicate the rights through which users benefit from carbon credits to the end users can minimize this risk. If the end user is aware that they are under a contractual binding agreement there is a greater accountability and ownership.



MSCI ESG Research evaluates this through the following sub-criteria:

- **3.2.1.1 Stove Lifetime:** Whether the project includes a stove replacement and maintenance plan to ensure stoves are used throughout the project's lifetime.
- **3.2.1.2 Carbon Property Rights:** The transparency and the quality of the end-user agreements.

Each project is scored on a scale of 1 to 5 on each sub-criteria, with the overall score for 3.2.1 Mitigation Activities based on an average of these two scores. Projects scoring a 5 will represent projects which ensure the long lifetime of the cookstoves through replacement and maintenance throughout the project lifetime whilst providing information to end-users regarding carbon property rights.

3.2.1.1 Stove Lifetime

Stove lifetime refers to whether the project includes a stove replacement and maintenance plan to ensure the usage of improved stoves by a household is maximized.

Rationale	Projects that replace and maintain efficient stoves increase the likelihood that improved efficiency stoves will continue to be used over the project's lifetime.									
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets				
	\checkmark									
Scoring Definition	Each project is scored on a scale of 1 to 5, where 5 indicates very low risk that stoves will not be used through the project's lifetime and 1 indicates very high risk of efficient stoves not being used continuously due to breakage or efficiency loss.									
Scoring Approach	MSCI ESG Research assesses whether a stove replacement plan is proposed and how this will reduce the risk of permanence of the project. Further, whether the project has a specific stove maintenance plan in place is considered.									

3.2.1.2 Carbon Property Rights

Carbon Property Rights relates to whether carbon property rights are suitably conveyed to end-users.

Rationale	If the end-users is an increased reducing any pe	f the end-users are more aware of the terms and conditions of a carbon project, there s an increased chance that they will continue to use efficient stoves, therefore educing any permanence risk.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets			
	\checkmark								
Scoring Definition	Each project is scored on a scale of 1 to 5 scale, where 5 indicates that the project provides individual end-user agreements with clear carbon property rights information and 1 indicates that no information on either end-user agreements or carbon property rights is provided.								



Scoring Approach

MSCI ESG Research assesses whether the project has provided transparent end-user agreements to users, and the strength of these agreements.

For carbon property rights, projects receive a score of 2 if carbon property rights have been transparently disclosed to participants, and 0 if not. For strength of end-user agreement, projects that have individual end-user agreements receive 3 points, projects that have printed agreements receive 2 points, and otherwise 1 point.

These scores are summed up to reach an overall score for 3.2.1.2 Carbon Property Rights.

3.2.2 Local Stakeholder Engagement

Projects with higher levels of stakeholder engagement have a lower risk of reversal due to the community's involvement in the project. Therefore, projects putting additional resources and time into consulting the community and modifying the project to suit the end users are more likely to ensure the continued use of the project stoves rather than reverting to the traditional ones.

MSCI ESG Research evaluates this through the following sub-criteria:

- **3.2.2.1 Effective Consultation**: Has the project used appropriate techniques to conduct consultations?
- **3.2.2.2 Representation and Inclusivity**: Has the project ensured proper and inclusive representation of stakeholders?
- **3.2.2.3 Access to Information:** Has the project relayed the relevant information to the stakeholders?
- **3.2.2.4 Feedback and Grievances:** Does the project display effective feedback and grievance redressal mechanisms?
- **3.2.2.5 Worker Relations**: Whether the project provides training and employment opportunities to stakeholders.

Each project is scored on a 1 to 5 scale for each of these sub-criteria and an overall score is reached through a straight average of these five scores. Projects scoring a 5 will represent projects with a detailed stakeholder consultations which are representative of the target users. These stakeholders will be informed on the project and provided with the opportunity to voice their opinions and have an influence on the project.

3.2.2.1 Effective Consultation

Effective consultation relates to whether the project uses best-practice techniques to engage and consult with stakeholders.

Rationale Projects that use multiple methods of in-person consultation provide more open and effective channels to engage with stakeholders and receive any feedback. Therefore, they are more likely to take into account relevant feedback from stakeholders, and therefore design a project that will be more aligned with stakeholder interests.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	\checkmark					



Scoring Definition	Each condi stake	ach project is scored on a scale of 1 to 5 scale, where 5 indicates that the project onducts multiple in-person engagements and 1 indicates that very limited in-person takeholder consultation is performed.								
	MSCI ESG Research assess whether both the types and in-person level of consultation conducted. The types of consultation may include surveys/questionnaires, in-person meetings, signed documents or interview calls.									
	Proje	cts then receive a s	score from ²	I to 5 based or	n both the type a	ind in-person level:				
Scoring Approach				In-person (Consultation					
				No	Yes					
		Number of	0	1	3					
		Consultation	1-2	2	4					
		Activities	3-5	3	5					

3.2.2.2 Representation and Inclusivity

Representation and Inclusivity relates to whether the project has ensured that it consults with a representative and inclusive range of stakeholders.

Rationale	Projects which o permanence ris This allows mor involvement.	rojects which consult a greater number of stakeholders tend to have a lower ermanence risk as more of the local community are involved in the planning process. his allows more end users to voice their opinions on the project and have greater avolvement.								
Key Sources	Project Documentation	Project Project Aca Documentation Geospatial Methodology Lite Documentation		Academic Literature	Third-party Data	MSCI Car Market	rbon ts			
	\checkmark									
Scoring Definition	Each project is scored on a scale of 1 to 5 scale, where 5 indicates that the project transparently consults with a representative group of stakeholders, including women (who tend to be the largest users and beneficiaries of clean cooking appliances) ¹⁰ , while 1 indicates that no information is provided on which stakeholders were consulted.									
	MSCI ESG Reservice provided. In para attendees is dis	arch asses ticular, if th closed. Th	sses if the number of ne total number of sta is is then scored as s	stakeholders akeholders an shown in the ta	in attendan d the numb able below.	ce has beer er of female	n e			
Scoring Approach				# Stakel	holders Cons	sulted				
				Unknown	<50	50+				
	Transpar	rency	Total, including women	3	4	5				
	Of Discio	sules	Total	2	3	4				

¹⁰ WHO (2016). Burning Opportunity: Clean Household Energy for Health, Sustainable Development, and Wellbeing of Women and Children.



	None	1	n/a	n/a	
					_

3.2.2.3 Access to Information

Access to Information refers to whether the project provides transparent and comprehensive information to stakeholders regarding the project's activities.

Rationale	Through provid project's activit project meets t	ling greater a ies and more heir needs.	ccess to informa able to provide f	tion, stakeholo feedback to th	ders will be info e project to en	ormed on the sure the	
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets	
	\checkmark						
Scoring Definition	Each project is scored on a scale of 1 to 5 scale, where 5 indicates that the project provides access to transparent information through both documentation and in-person meetings, and 1 indicates that limited access to information is provided to stakeholders.						
	MSCI ESG Rese project informa	earch assess ation or wheth	es whether in-pei ner clear docume	rson meetings entation is prov	were conducto vided.	ed to present	
Scoring Approach	Scoring Approach For in-person meetings, projects receive a score of 2 if they have conducted meeting to present information on the projects, and 0 otherwise. For documentation, we asser if any documentation has been provided to local communities, and projects receive a score of 3 if Project Design Documents and/or pamphlets are provided, and 1 otherwise.						
	The overall sco	ores are based	d on adding each	of these to re	ach a score fro	om 1 to 5.	

3.2.2.4 Feedback and Grievance

Feedback and Grievance refers to whether the project has procedures in place to receive and act on feedback received from stakeholders.

Rationale	Projects are mechanism an	ojects are more likely to satisfy the needs of stakeholders if there is a clear feedback echanism and projects disclose and take actions as a result of the feedback.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets			
Scoring Definition	Each project is transparently d feedback mech disclosed eithe	Each project is scored on a scale of 1 to 5 scale, where 5 indicates that the project transparently discloses and acts on stakeholder feedback and has an ongoing feedback mechanism in place, and 1 indicates that no feedback procedure has been disclosed either at the project start or during its operation.							



	Three aspects of a project's feedback procedure are assessed:
	 Feedback Mechanism: Whether the project has a feedback and grievance procedure in place.
	 Feedback Disclosure: Whether the project transparently discloses any feedback received.
Scoring Approach	 Feedback Response: Whether the project has clearly taken action on any feedback received.
	Projects receive a score of 3 if they have a feedback mechanism in place, and 1 otherwise. For the other 2 factors, projects receive a score of 1 if they satisfy this factor. The overall scores are then based on adding each of these components to reach a score from 1 to 5.

3.2.2.5 Worker Relations

Worker Relations refers to whether the project provides training and/or employment opportunities to stakeholders.

Rationale	Through the pro engagement ar the improved c increased emp	hrough the provision of training opportunities there may be more community ngagement and education about the project which may encourage end users to use he improved cookstoves. It may also provide benefits to the local community through hereased employment opportunities and improved knowledge.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets			
	\checkmark								
Scoring Definition	Each project is provided to loca opportunities.	Each project is scored on a 1 to 5 scale, where 5 indicates training opportunities are provided to local stakeholders and 1 indicates there is no mention of training opportunities.							
Scoring Approach	MSCI ESG Research assesses whether the project will provide training opportunities for local stakeholders. In particular, if this training relates to the construction or maintenance of improved cookstoves.								



Criterion 4 - Co-benefits

Co-benefits reflect the sustainable development benefits (and safeguards) of a project beyond the CO₂e it saves, in other words, its "externalities." These environmental and societal externalities are typically positive but can, on occasion, be negative.

Carbon projects have the potential to reduce/remove CO₂e, and simultaneously have a broader positive societal impact via issues such as development, adaptation and biodiversity.

Clean cooking projects have the potential to deliver significant positive social and environmental outcomes outside of their emissions impacts. For example, the usage of improved-efficiency stoves can directly improve the health outcomes of users due to reduced indoor air pollution, while users may save time and resources as they are required to source and collect less biomass. Given that many of the users of these improved cookstoves are women located in low-income communities, these benefits may particularly impact women.

MSCI ESG Research's approach to co-benefit assessment builds on the UN's Sustainable Development Goals (SDG) framework. We focus on assessing both the SDG relevance of a project and the extent to which the project provides evidence of these outcomes being achieved through effective monitoring.

Figure 13 illustrates the sub-criteria through which MSCI ESG Research assesses the co-benefits of clean cooking projects, and the overall MSCI Carbon Project Ratings methodology sub-criteria that they correspond to. The detailed sub-criteria are described in Figure 14.



Figure 13: Co-benefits integrity assessment approach



Figure 14: MSCI ESG Research Co-benefits integrity assessment framework

Sub	criteria	Metrics	Rationale	REDD+ Renewables ARR Cookstoves Biochar Landfill Gas					Landfill Gas	Safe Water	IFM	Waste Mgmt.	Blue Carbon	
e,	4.1.1 Project	4.1.1.1 Relevance to Project Type	Different project types have an inherently different impact on each sustainable development impact.	ifferent project types have an inherently ifferent impact on each sustainable evelopment impact.										
s Relevanc	Type Relevance	4.1.1.2 Contribution to Net Zero	Some project types create 'carbon lock-ins' of technologies or practices that are not compatible with a net zero economy.			~	Stan	dardiz	ed ap	proad	ch			
1 Co-benefit	4.1.2 Project	4.1.2.1 Project Intentions to Activities	The specific design and implementation of a project's activities are critical drivers for whether a project generates positive sustainable development impact.	~	~	~	~	<	<	<	~	<	~	
4.	Relevance	4.1.2.2 Biodiversity Value	Nature-based projects that enhance or protect areas of rich biodiversity have greater environmental value.	~		~					~		~	
4.2 (Co-benefits	4.2.1 Certification	Achieving certification involves more stringent project verification. This improves the likelihood that a project's co-benefits have been realized. ✓ Standardized approach					ch						
Evid	ence	4.2.2 Evidence of Outcomes	Projects can increase the confidence that co-benefits are attributed to their actions through measuring, monitoring, and quantifying the outcome.	~		~	~	~		~	~		~	
4.3.1 Reg Safeguards 4.3 Safeguards 4.3.2 Loc Stakeholo Engagem		4.3.1 Registry Safeguards	More effective environmental and social safeguards required by registries reduce the likelihood of projects causing harm.			~	Stan	dardiz	ed ap	proa	ch			
		4.3.2 Local Stakeholder Engagement	Projects that successfully engage with local stakeholders reduce the likelihood of any negative impacts occurring.	~	~	~	~	~	~	~	~	~	~	
4.4 I Gree	Red and In Flags	News scanning	Review of academic papers, industry sources and the news for Red or Green Flags relating to project's co-benefits.	✓ Standardized approach										

4.1.2.1 Project Intentions to Activities

While cookstove projects may typically create a range of inherent social and environmental benefits, the significance of these co-benefits is clearly impacted by the project's design and implementation. Projects that more explicitly target certain impacts increase the relevance and significance of these impacts.

There are five metrics used to evaluate this sub-criterion:

- **4.1.2.1.1 Target Impacts:** The social and environmental benefits that the project explicitly identifies and targets.



- **4.1.2.1.2 Pollution Benefits**: The potential health benefits of the clean cooking technologies through reducing indoor air pollution.
- 4.1.2.1.3 Local Manufacturer: Whether improved cookstoves are manufactured locally.
- **4.1.2.1.4 Involvement of Women:** Whether local women are involved in core project activities, such as being provided with employment opportunities.
- **4.1.2.1.5 Employment:** Whether the project generates significant employment opportunities for the local community.

Each project is scored on a scale of 1 to 5 based on the evaluation of these metrics. Projects which employ locals in the manufacturing of the stoves and actively seek gender equality within the project whilst achieving sustainable development outside of climate action will score the maximum of 5.

4.1.2.1.1 Target Impacts

Target Impacts refers to whether the project explicitly or implicitly targets specific SDGs with their project activities.

Rationale	Projects which that this SDG is	Projects which implement specific activities targeted at an SDG increase the likelihood that this SDG is relevant.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets			
	\checkmark			\checkmark	\checkmark				
Scoring Definition	Each project is do not target a activities targe	Each project is scored on a scale of 1 to 5, where 1 indicates that the project's activities do not target any sustainable development impacts and 5 indicates the project's activities targets seven or more sustainable development impacts.							
Scoring Approach	MSCI ESG Rese and targeted by identifies all the reduced time c development). The overall sco development in	MSCI ESG Research identifies the number of SDGs explicitly and implicitly mentioned and targeted by the project. For projects that do not refer to SDGs, MSCI ESG Research identifies all the sustainable development impacts mentioned by the project (such as reduced time collecting fuel wood, improved air pollution and local economic development). The overall score is then based on the total quantity of SDGs or sustainable development impacts identified by the project.							

4.1.2.1.2 Pollution Benefits

Target Impacts refers to whether the project explicitly or implicitly targets specific SDGs with their project activities.

Rationale	The majority of clean cooking projects inherently have high health benefits through reducing the amount of air pollution. Projects located in areas of particularly high air pollution, and where more sophisticated stoves are being installed, have the potential for the highest health benefits.
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Key Sources	Project Ge Documentation	eospatial C	Project Methodology Jocumentation	Acaden Literatu	nic Third- Ire Da	party N ta	ISCI Carbon Markets		
	\checkmark				~	2			
Scoring Definition	Each project is scored on a scale of 1 to 5, where 1 indicates that the project's stoves do not appear to significantly reduce air pollution relative to the benchmark and are not located in areas of high pollution problems, and 5 indicates the project's stoves are likely to significantly reduce air pollution within an area that suffers from significant health issues due to pollution.								
	Pollution benefits are assessed for an individual project based on the severity of pollution-related health problems ¹¹ in that region, and the level of stove sophistication of the installed cookstoves.								
	The severity of pollution-related health problems are based on the relative significance of indoor air pollution-related deaths in that country compared to the global average.								
	This is then compared against the level of stove sophistication of the installed cookstoves (as described in 1.1.1.1.1 User Payments and Other Revenue Sources).								
Scoring Approach	Each project is the follows:	n scored on	a 1 to 5 scal	le based o	n these two co	omponent	s, as		
				Level of In	door Air Polluti	on Deaths			
			Very Low	Low	Medium	High	Very High		
		Very	1.50	1.38	1.25	1.13	1.00		
		Low							
	Stove	Low	2.00	1.88	1.75	1.63	1.50		
	Sophistication	Medium	3.00	2.88	2.75	2.63	2.50		
		High	4 0 0	3 88	3 75	3.63	3 50		

4.1.2.1.3 Local Manufacturer

Local Manufacturer relates to whether the stoves are manufactured locally, and therefore directly support the local economy.

5.00

4.88

4.75

4.63

4.50

Very

High

Rationale	Projects which supporting loc significance of locally will hav	manufacture al employme certain SDG e a lower imp	e stoves locally m nt and training. T s. In contrast, pro act.	nore directly in herefore, they jects that do r	npact social be increase the re not manufactur	nefits such as levance and re stoves
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	\checkmark					

¹¹ Household Air Pollution Attributable Death Rate, World Health Organisation, <u>Household air pollution attributable death rate (per</u> <u>100 000 population, age-standardized</u>), Accessed on 09/11/2024



Scoring Definition	Each project is scored on a scale of 0 to 0.5, where 0 indicates that stoves were imported or not manufactured locally and 0.5 indicates there is clear evidence that stoves were manufactured locally.
Scoring Approach	MSCI ESG Research assesses whether the clean cooking appliances were constructed locally (either in full, or from imported parts) or imported from other locations.

4.1.2.1.4 Involvement of Women

Involvement of women relates to whether the project directly involves women in the project's core activities, such as through employment.

Rationale	One of the bigg to women's em in key project a	ne of the biggest potential co-benefit impacts of cookstove projects is contribution women's empowerment and gender equality. Projects which actively involve women hey project activities increase the gender impact potential of the projects.						
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets		
	\checkmark							
Scoring Definition	Each project is women employ opportunities t	scored on a vment and 0.9 o women in t	scale of 0 to 0.5, 5 indicates there i he project area.	where 0 indica is a clear effor	ates no specific rt to provide eq	c evidence of ual work		
Scoring Approach	MSCI ESG Research assesses how women are involved in the project's activities. Focusing on if there is mention of equal employment opportunities for women or if the number of female employees is included in project documentation.					ctivities. omen or if the		

4.1.2.1.5 Employment

Employment relates to the number of permanent jobs created by the project, in proportion to its emissions reduction impact.

Rationale	Projects which have a larger a can have multi infrastructure a it generates.	Projects which generate more permanent employment and training opportunities will have a larger and longer-term impact on the local economy. Employment opportunities can have multiplier effects on the economy as a whole, as supporting businesses and infrastructure are developed to support this employment, and cater to the local income it generates.							
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets			
	\checkmark								
Scoring Definition	Each project is scored on a 1 to 5 scale, where 1 indicates no quantified job information is provided by the project and a 5 indicates that at least 5 jobs are created per thousand tonnes of estimated annual emissions reductions.								



MSCI ESG Research reviews project documentation in detail to assess how many permanent and temporary jobs were expected to be created from the project.

The number of jobs is then divided by the project's estimated annual emissions reductions. This ratio is then categorized into scoring bands as shown below, which reflected higher scores for the greater proportion of job creation.

Scoring Approach	Points Scoring	# Jobs per kiloton CO ₂ e
	1	0
	2	0-1
	3	1-2.5
	4	2.5-5
	5	5+

4.2.2 Quantification of Outcomes

Quantification of outcomes relates to whether the project monitors and/or quantifies the impact of the project on targeted sustainable development goals.

Rationale	Assessing the evidence of co-benefit impacts is crucial to evaluating the degree to which co-benefits are achieved and can be attributed to a project. Projects that measure, quantify, and monitor their co-benefit impacts provide greater evidence in support of the targeted social and environmental benefits being achieved.						
Key Sources	Project Documentation	Geospatial	Project Methodolo Documentat	gy Acade ion Literat	mic ure	Third-party Data	MSCI Carbon Markets
	\checkmark						
Scoring Definition	Each project is scored on a scale of 1 to 5, where 1 indicates there is no quantification or monitoring of sustainable development impacts and 5 indicates that benefits are quantified and monitored.						
	MSCI ESG Research assesses the level to which co-benefits have been quantified and/or monitored within a project's monitoring reports.						
Scoring Approach	Quantified						
			Yes	No	4		
	Monitored	Yes	5	1	1		
		No	3	1			



Appendix – Key References

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Change log

Date	Key Changes
19-Sep-2024	Initial publication
16-Jan-2025	 Evaluation of financial additionality, fuel savings benchmarks and health impacts based on an assessment of the stove sophistication of the project's stove.
	 Incorporation of new sub-criteria on the pollution impacts (4.1.2.1.2 Health Impacts) and employment impacts (4.1.2.1.5 Employment).
	 Incorporation of geospatially-derived MoFuSS benchmarks for assessment of project's fNRB assumption.
	 Assessment of whether electronic monitoring is used within the project's emissions calculations.
	 Analysis of the project's project fuel estimation approach, in addition to the assessment of the project's baseline fuel estimation approach and thermal efficiency approach.



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