

CLEAN COOKING CARBON MARKETS

An Overview of Service Providers and Buyers

KEY MESSAGES

There are eight main stages in carbon project development, roughly divided into initial set up and a recurring monitoring and issuance phase. Several specialized service providers can support at each stage.

Advisory firms can be hired at any stage, and provide strategic guidance on project design, feasibility assessment, legal advisory, and support in carbon certification.

Validation and verification bodies (VVBs) provide auditing services. There are 13 firms that have experience in auditing clean cooking projects.

Intermediaries can support in carbon credit sales. Brokers and traders facilitate direct sales between project developers and buyers for a fee; whereas aggregators tend to provide technical and sometimes financial support from an early stage in exchange for a share of future carbon revenues.

Carbon credit buyers typically transact credits in one of three ways: spot sales, forward sales, and guaranteed forward sales.

Buyers are not publicly listed for three quarters of carbon credit retirements.

INTRODUCTION

This briefing note is intended to support clean cooking ventures in their first steps towards accessing carbon finance. Seeking carbon certification is a complex and technically challenging process.¹ Project developers can either choose to do this internally or seek assistance from an array of specialised service providers.

The note serves as a reference resource to help with the identification of service providers active in the clean cooking carbon market.

These include:

- **Advisory firms** - who assist developers with technical expertise during the various stages of carbon project development.
- **Validation and Verification Bodies (VVBs)** – who are required for conducting audits of project design and performance documentation.
- **Intermediaries** – who connect project developers with buyers and can offer support throughout the project development process.

The roles of these firms in project development, their business models, and reasons to consider working with them are described.

This briefing note also offers an overview of clean cooking carbon credit buyers. In addition, common transaction structures explaining how buyers interact with project developers are presented.

THE ROLE OF SERVICE PROVIDERS

BOX 1: METHODOLOGY

This briefing note is informed by publicly available data contained in two leading carbon standard registries: the Gold Standard and Verra's Verified Carbon Standard. To identify service providers, details on clean cooking projects active in the carbon market today were analysed based on a review of over 50 clean cooking projects and voluntary project activities (VPAs) for analysis.

For each project, all available project documentation was assessed, including Project Design Documents (PDDs), validation reports, monitoring reports and verification reports to compile a list of all service providers involved at each of these steps.

Further online research into specific service providers and intermediaries was conducted to complement this step and confirm their role in the market. Supporting information was also gathered via online research.

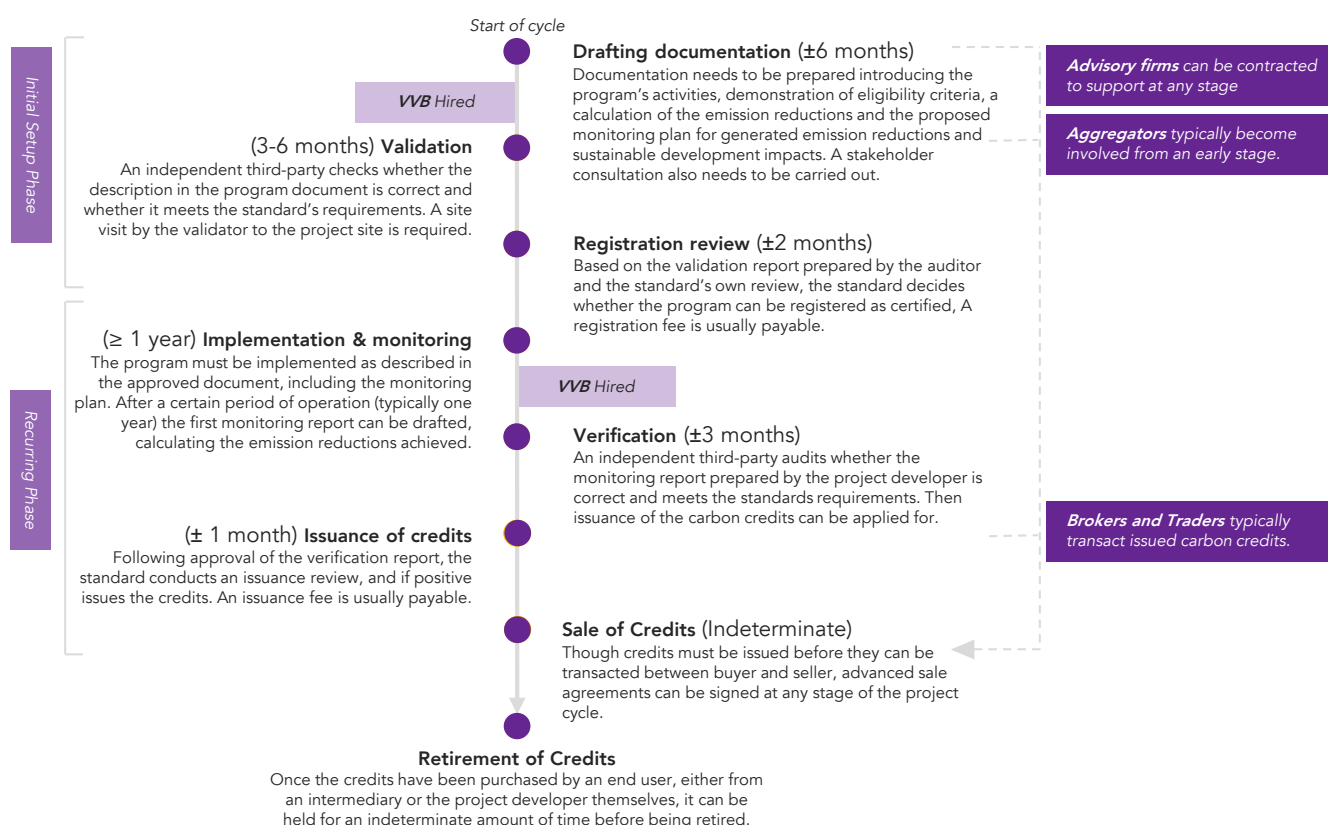
Buyers of credits were analysed via carbon standard registry retirement data of issued carbon credits. Parties responsible for each retirement of clean cooking credits were identified - to the extent publicly listed - for the period 2014 – 2023. From a total of 239 registered project activities (including all separate VPAs), carbon credit retirements have been recorded for 99 activities.

Several types of specialised service providers are available to support project developers throughout the various stages of the project cycle (Figure 1):

- **Advisory firms** can be contracted to provide strategic guidance on carbon project design, to conduct feasibility assessments, to support in the drafting of certification documentation and respond to questions raised during the audit processes. They can also provide legal advisory in carbon credit transactions.
- **Validation and Verification Bodies (VVB)** must be hired by project developers to conduct independent audits of the original project design as well as subsequent impact monitoring efforts.
- **Intermediaries**, which include:
 - » Brokers and traders facilitate direct sales between project developers and buyers for a fee. They are typically involved in the latter parts of the process, supporting established projects with finding a route to market.
 - » Aggregators are third-parties that specialise in selling carbon credits to end buyers. These firms partner with developers to provide technical and sometimes also financial support from an early stage in the project development cycle in exchange for a share of future carbon credits.



Woman cooking, Zimbabwe. Photo by Kirk Smith

Figure 1. The carbon project development cycle and role of specialised service providers.²

ADVISORY FIRMS

The Role of Advisory Firms

Developing a clean cooking carbon project from an initial idea to successful issuance and sale of credits is a long and complex process. It requires a good understanding of the carbon standard guidelines and requirements, expertise in greenhouse gas accounting, and an understanding of the different steps of the carbon project development process.

Some established project developers can cover these capacities in-house. Newcomers typically seek assistance from specialised advisory firms that offer technical expertise in carbon certification and can guide project developers along the way. Typical areas of support that advisory firms can offer include conducting feasibility studies, organising stakeholder consultations, drafting project design documentation, addressing issues raised during third party audits, and liaising with the certifying carbon standard. Some advisory firms also provide legal and regulatory advice, especially regarding carbon credit transactions and the negotiation of Emission Reduction Purchase Agreements, which outline the conditions and obligations of transferring carbon credits to a buyer.

When to Hire Advisors?

Advisory firms are typically hired at an early stage of project development to confirm project feasibility and provide guidance on important project design decisions that can have long-term implications on the monitoring activities and other responsibilities of the project developer. However, it is possible to hire advisors at any stage of the project cycle depending on the needs of the developer.

Advisory Firm Business Models

Advisory firms can apply two forms of commercial structures. Most firms operate as consultancies, charging fees for the time offered. This may be of interest to developers in need of guidance on certain stages of the development cycle, as opposed to support throughout the entire process, or where developers wish to retain full ownership of eventual credits. Some firms also offer a risk-reward model by agreeing to cover upfront certification costs in exchange for a share of future carbon credits or revenues.

VALIDATION AND VERIFICATION BODIES

The Role of Validation and Verification Bodies

To register a project and issue carbon credits, two separate forms of audit must be completed by a third-party auditor endorsed by the carbon standard. These auditors are also known as Validation and Verification Bodies (VVB) (Figure 1). The task of VVBs is to review project documentation to ensure it meets the standard's rules and requirements and confirm the project correctly and accurately measures and reports on achieved GHG emission reductions and other claimed co-benefits. They will typically do this through a site visit and stakeholder interviews, as well as conducting a detailed review of project documentation and supporting evidence.

The project developer (often through the help of an advisory firm) is expected to address all comments received. Only upon satisfactory completion of this process will final audit reports be shared with the carbon standard of choice seeking either project registration or carbon credit issuance (Figure 1).

When to Hire a VVB?

Project developers are responsible for hiring VVBs at two key stages in the project cycle: once before the start of the project to confirm the project's eligibility for carbon crediting (termed validation), and subsequently on a recurring basis (typically annually) to audit the project's performance (termed verification).

As verification occurs several times during the project, a verifier must be hired several times. The verifier hired may be the same firm which oversaw the validation, or a different firm. The same verifier can be hired to complete all verification reports for the duration of the project.

Choosing a VVB

There are many accredited VVBs to choose from, though their experience with clean cooking projects varies. The Gold Standard lists 24 certified VVBs, while Verra's Verified Carbon Standard lists a total of 30.

Our analysis identifies 15 firms that have experience in the validation and verification of clean cooking projects specifically. This includes the following auditors:

- 4K Earth Science,
- AENOR INTERNACIONAL,
- Applus+ Certification,
- Bureau Veritas Certification,
- Carbon Check,
- Det Norske Veritas,
- Earthood Services,
- EPIC Sustainability Services,
- Germanischer Lloyd Certification,
- KBS Certification Services,
- RINA Services,
- Swiss Association for Quality and Management Systems
- TÜV Nord,
- TÜV Rheinland,
- TÜV SÜD.

All of these have the scope to audit projects in any jurisdiction using any clean cooking technology type; however often VVBs with local representation are chosen to ensure there are no language barriers and (international) travel costs are minimised. VVBs will need to be contacted directly to determine whether they have local representatives available.

VVB Business Model

Auditors are hired by the project developer on a simple fee for services basis.

INTERMEDIARIES

The Role of Intermediaries

Aside from technical support with project certification, project developers often require support with the sale of credits generated. Intermediaries are organisations that connect projects with a network of buyers.

They can also help to reduce upfront financial risk by offering to take on carbon certification tasks in exchange for a share of future carbon revenues or credits.

When to Work with an Intermediary?

Intermediaries are typically sought in cases where the project developer does not already have access to companies that have interest in engaging in carbon credit purchases.

Intermediary Business Models

Intermediaries can employ a range of different business models.

Brokerage firms and traders function as points of connection between project developers and carbon credit end buyers. These firms will typically have networks with a diverse range of buyer types, and tend not to take any risk in the underlying carbon asset development. Traders purchase directly from developers and then sell on to corporate buyers, while brokers facilitate sales directly between developer and buyer, usually for a percentage fee of the final sale amount. These firms generally become involved in projects once they have already issued credits.













Aggregators typically enter into contractual arrangements with project developers to share future carbon revenue. These agreements are highly variable: aggregators may agree to split revenues from credits sold or may simply receive a portion of credits generated. Similar agreements may see firms take a direct equity share in the project developer. Such structures also facilitate the provision of early-stage financial support to the developer.

Carbon exchanges are different in that they tend not to be as closely involved in projects, but instead facilitate the direct sale of carbon credits via digital market platforms. They tend to operate by taking a margin on the carbon credit sales price. As well as direct sale of credits, platforms often offer derivatives such as standardized contracts compiling the credits of multiple projects of the same category or futures contracts. Credits must be issued in order to list them on exchanges.

Clean Cooking Specific Intermediaries

A total of 84 organisations engaged in the voluntary carbon market were assessed for their role as intermediaries in the transaction of clean cooking carbon credits. Notably, 37 were found to actively participate in clean and improved cooking transactions, with just 12 focusing on clean cooking projects (Table 1). The most prevalent technology or fuel among the specified intermediaries is biogas, while Africa and Asia are the primary regions of operation. It is worth noting that the listed intermediaries do not constitute an exhaustive list, and that there are other organisations that provide clean cooking carbon credit transaction services.

Table 1. Overview of intermediaries in clean cooking carbon credit transactions.

ORGANISATION	INTERMEDIARY TYPE	TECHNOLOGIES & FUELS	REGIONS OF OPERATION	HEADQUARTERED IN
 myclimate shape our future	Project aggregator	Biogas, Solar, Hydroelectric, Wind	Africa, Asia, Europe, South America	Switzerland
 CLIMATE IMPACT PARTNERS	Project aggregator	Biogas, Electricity, Ethanol/Alcohol, Liquefied Petroleum Gas (LPG)	Africa, Asia, Europe, North America, South America	United Kingdom
 VNV ADVISORY	Project aggregator	Biogas	India	India
 south pole	Project aggregator	Biogas, Electricity, Ethanol/Alcohol, Solar	Asia, Europe, Latin America	Switzerland
 STX	Brokerage firms and traders	Biogas, Electricity, Ethanol/Alcohol	Europe, Central Asia, North America	Netherlands
 native A Public Benefit Corporation	Brokerage firms and traders	Solar	Africa, Asia, North America, South America	United States
 Trafigura	Brokerage firms and traders	LPG	Sub-Saharan Africa	Singapore
 LPG4SDG7 FOR CLEANER COOKING	Multiple roles	LPG	Sub-Saharan Africa	Multiple countries
 FAIR CLIMATE FUND	Project aggregator	Biogas, Solar	Africa, Asia, South America	Netherlands
 think • go climate conscious atmosfair	Project aggregator	Hydroelectric	Sub-Saharan Africa, India	Germany
 firstclimate green Energy, Climate Justice, Water	Project aggregator	Biogas	Africa, Asia, Europe, North America, South America	Germany
 ecoact	Project aggregator	Biogas	Africa, Asia, South America	France

CARBON CREDIT BUYERS

Carbon credit buyers are essential in enabling clean cooking projects to be realised, enabling households to access clean cooking technologies. Aside from purchasing issued credits, end buyers can also support developers through forward purchases and long-term sale agreements. Such arrangements can include upfront financing to support project development, which offers greater financial security. Some large corporate buyers also seek to be involved in a project from the very early stages to influence strategic decisions regarding the design of the

project. For a more detailed assessment of buyer and transaction types, see briefing note [Making Carbon Finance Work for Clean Cooking](#).

Credit Transaction Types

There are three ways carbon credits sales are commonly transacted. The different structures of these bring varying benefits and drawbacks for project developers.

Projects which have issued credits can directly sell credits to a buyer with credits being immediately transferred to the registry account of the buyer. Such transactions, known as spot sales, present minimal delivery risk for the buyer but introduce uncertainty for the carbon credit seller, who may not secure a buyer.

Forward sales involve agreements for the purchase of credits which have yet to be issued at a set price and delivery schedule. Partial prepayments may be included to support project developers. Prices are typically lower than spot sales given the increased risk for buyers but offer security for project developers.

Guaranteed delivery forward sales are similar, except that the developer must guarantee the exact amount of credits to be delivered at the chosen date. If they are unable to deliver, they must source comparable credits as substitutes at their own expense. Such sales are priced higher as they reduce risks for buyers but are typically only offered to large established developers given the risks involved.

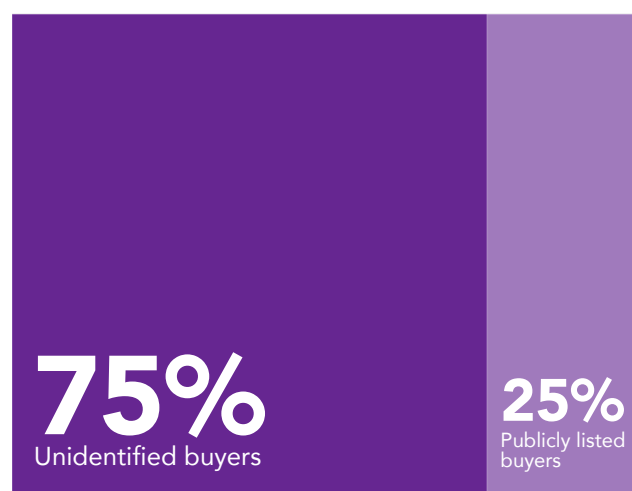
Value Drivers

In the current market, high integrity is the primary driver of value for clean cooking carbon credits.³ To demonstrate integrity to buyers facing increasing scrutiny, credits must ensure performance in several key criteria as summarized in the Integrity Council for Voluntary Carbon Markets Core Carbon Principles.⁴ The Clean Cooking Alliance has also developed a set of *Interim Principles* that will be developed into a Code of Conduct governing the responsible carbon financing approaches.⁵

Who is Buying Clean Cooking Credits?

The purchase and retirement of credits is an opaque process. Although registries provide the option to self-disclose who a credit is retired for, it is neither compulsory nor common practice. As such, the vast majority of clean cooking credit buyers remain unknown. Our analysis of retirements from the major registries has identified organizations behind roughly one quarter of total retirements (Figure 2).

Figure 2. Identification of retirements.



Out of these, ten buyers dominate clean cooking retirements (Figure 3) across all project types. Separating these out per project type gives a more nuanced picture, with domestic biogas taking the lion's share of retirements (Table 2). This is partly explained by the fact that domestic biogas dominates clean cooking credit supply; accounting for 83% of total issuances since 2010 from the clean cooking project category.⁶

Table 2. Five largest publicly listed retirees per clean cooking type. Note that buyers are not listed for three quarters of clean cooking retirements.

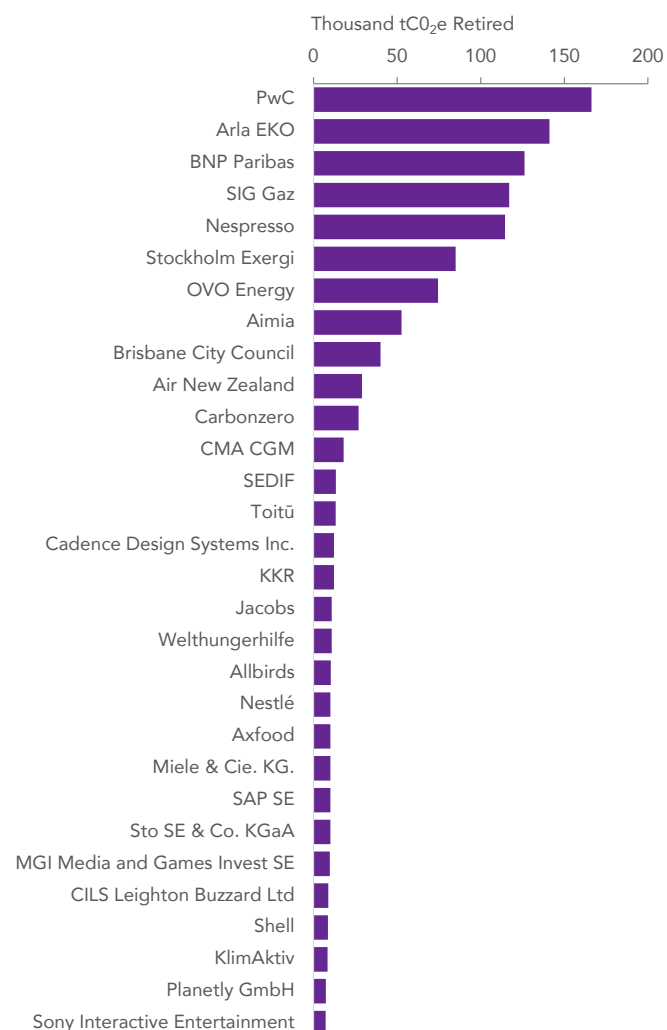
DOMESTIC BIOGAS		SOLAR COOKERS		BIOMASS OR BIOFUEL	
Buyer	Credits	Buyer	Credits	Buyer	Credits
Arla EKO	141,141	PwC	124,995	Workday	3,000
BNP Paribas	125,052	Brisbane City Council	40,000	DEXUS Property Group	400
SIG Gaz	116,999	Air New Zealand	15,012		
Nespresso	114,525	Cadence Design Systems Inc.	12,239		
Stockholm Exergi	85,000	KKR	12,172		

Most buyers tend to source credits from single clean cooking projects, largely due to the relatively small retirements volumes (Figure 3). However, some buyers have quite diverse portfolios that source credits from several projects (Table 3).

Table 3. Most diverse retirement beneficiaries.

RETIREMENT BENEFICIARY	NUMBER OF PROJECTS
Toitū	11
Stockholm Exergi	11
Air New Zealand	10
Arla	9
PwC	8

Figure 3. Largest beneficiaries of clean cooking credit retirements.



ENDNOTES

- ¹ For a more detailed overview of the project development cycle, please refer to our accompanying publication 'Overview of the Project Development Process' [here](#).
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- ³ For more details, refer to Galt, H.; Mikolajczyk, S.; Long, I.; Della Maggiore, M.; Bravo, F. and Tierney, M. (2023) The Role of Voluntary Carbon Markets in Clean Cooking. Climate Focus and the Modern Energy Cooking Services programme. Available [here](#).
- ⁴ ICVCM's Core Carbon Principles are available [here](#).
- ⁵ Clean Cooking Alliance (2023) CCA Launches Interim Principles for Responsible Carbon Finance in Clean Cooking. Available [here](#)
- ⁶ Galt, H.; Mikolajczyk, S.; Long, I.; Della Maggiore, M.; Bravo, F. and Tierney, M. (2023) The Role of Voluntary Carbon Markets in Clean Cooking. Climate Focus and the Modern Energy Cooking Services programme. Available [here](#).



Women cooking, Zimbabwe. Photo by Albrecht Fietz

ACKNOWLEDGEMENTS

This work has been funded by Loughborough University and Modern Energy Cooking Services.

Modern Energy Cooking Services (MECS) is a seven-year programme funded by UK aid (FCDO) which aims to accelerate the transition in cooking away from biomass to modern energy. By integrating modern energy cooking services into energy planning, MECS hopes to leverage investment in clean electricity access, both grid and off-grid, to address the clean cooking challenge. Modern energy cooking is tier 5 clean cooking, and therefore MECS also supports new innovations in other relevant cooking fuels such as biogas, LPG (bio) and ethanol, though the evidence points to the viability, cost effectiveness, and user satisfaction that energy efficient electric cooking devices provide. The intended outcome is a market-ready range of innovations (technology and business models) which lead to improved choices of affordable, reliable and sustainable modern energy cooking services for consumers. We seek to have the MECS principles adopted in the SDG 7 global tracking framework, including integrating access (7.1), renewables (7.2) and energy efficiency (7.3) and promote an informed integrated approach.

For more information, visit www.mecs.org.uk

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Citation

Citation: Galt, H., Tierney, M., and Mallol Díaz, J. (2024). *Clean Cooking Carbon Markets: An Overview of Service Providers and Buyers*. Climate Focus and the Modern Energy Cooking Services programme



This material has been funded by UKAid from the UK government; however, the views expressed do not necessarily reflect the UK government's official policies.