



Gold Standard[®]
for the Global Goals

TEMPLATE

MONITORING REPORT

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VERSION v. 1.1

RELATED SUPPORT – **TEMPLATE GUIDE Monitoring Report v. 1.1**

This document contains the following Sections

Key Project Information

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KEY PROJECT INFORMATION

Programme of Activity Information – (delete below table if N/A)

GS ID of Programme	GS7591
Title of Programme	International Programme for Safe Water Access and Efficient Cookstoves
Version of POA-DD applicable to this monitoring report	V7
Name and GS ID of fully Validated CPA/VPAs (i.e. non compliance check)	GivePower Kenya Solar Water Farms (GS10987)

Key Project Information

GS ID (s) of Project (s)	GS10987
Title of the project (s) covered by monitoring report	GivePower Kenya Solar Water Farms
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	9
Version number of the monitoring report	Version 7
Completion date of the monitoring report	27/03/2025
Date of project design certification	09/08/2021
Date of Last Annual Report	21/12/2023
Monitoring period number	MP2
Duration of this monitoring period	01/01/2022 to 31/03/2024
Project Representative	Stephen Morris, CO2balance UK Ltd
Host Country	Republic of Kenya
Activity Requirements applied	<input checked="" type="checkbox"/> Community Services Activities <input type="checkbox"/> Renewable Energy Activities <input type="checkbox"/> Land Use and Forestry Activities/Risks & Capacities <input type="checkbox"/> N/A
Methodology (ies) applied and version number	TPDDTEC v3.1
Product Requirements applied	<input checked="" type="checkbox"/> GHG Emissions Reduction & Sequestration <input type="checkbox"/> Renewable Energy Label <input type="checkbox"/> N/A

Table 1 - Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG Good Health and Wellbeing	3 Number of additional persons consuming safe water in the project activity compared to the baseline scenario	2022-28,454 2023-37,022 2024-44,415	Additional people consuming safe water
SDG Gender Equality	5 Reduction in time spent collecting water per day	2022-2.15 hours 2023-2.23 hours 2024-2.23 hours	Hours
SDG 6 Clean Water and Sanitation	Number of additional persons having access to safe water in the project activity compared to the baseline scenario	2022-26,756 2023-39,388 2024-47,254	Additional people with access to safe water
SDG Climate Action	13 Emissions Reductions	2022-15,917 2023-26,982 2024-7,951	VERs

Table 2 – Product Vintages

			Amount Achieved			
Year	Start Dates	End Dates	GS VERs	Paccess	TRy	Psafe
2022	01/01/2022	31/12/2022	15,917	26,756	2.15	28,454
2023	01/01/2023	31/12/2023	26,982	39,388	2.23	37,022
2024	01/01/2024	31/03/2024	7,951	47,254	2.23	44,415

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

With a population of 50 million, 41% of Kenyans do not have access to safe drinking water¹. Open water sources are highly susceptible to contamination. The rural population especially rely on boiling water to ensure a potable supply.

The project aims to reach peri-urban to rural communities on the coast of Kenya. People's fuel use is typically related to their income and location with a typical mix between using wood fuel and charcoal on inefficient three stone fires and inefficient traditional charcoal stoves to purify drinking, cleaning and washing water. This process results in the release of greenhouse gas emissions from the combustion of fuels – this can be avoided if a technology that does not require fuel (wood or fossil) supplies clean water desired by households. The communities involved in the project are all low to middle income in areas with salty groundwater across coastal Kenya. Water access varies by community and income level, with a large market for unpotable water. This results in communities collecting water from unsafe sources such as rivers, streams, lakes, unprotected springs and open wells.

GivePower Foundation have developed a revolutionary solar-powered clean water solution. The containerized solar-powered desalination units provide sustainable and scalable safe water supply.

There are three different models of solar desalination plant that have been in use during the monitoring period: the MAXI, Mobi and Mobi⁺.

¹ <https://www.unicef.org/kenya/water-sanitation-and-hygiene>



Figure 3. Photograph example of the GivePower MAXI plant.

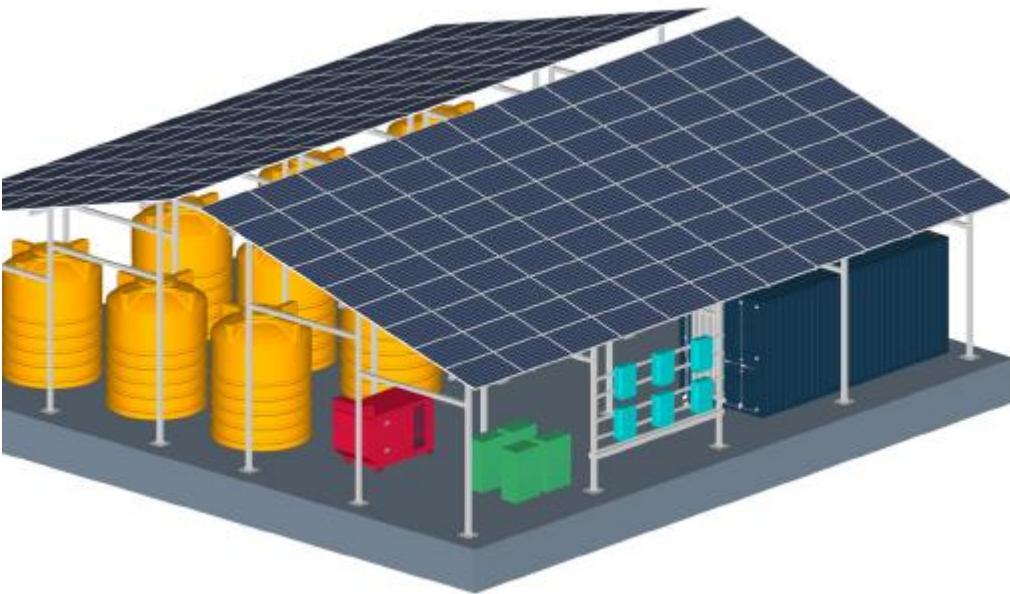


Figure 4. Digital drawing of GivePower MAXI plant.

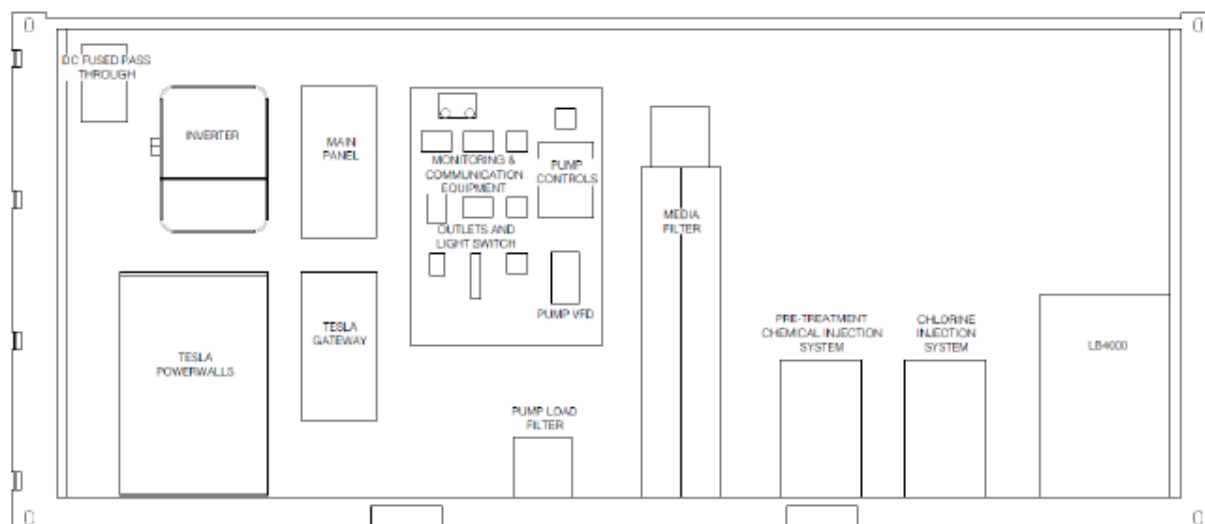


Figure 5. Mobi+ schematic.

Technical Specifications:

Model	MAXI	Mobi+	Mobi
Treatment Capacity (litres per day)	75,000	15,000	6,000
Water storage capacity (litres)	60,000 (potable) 20,000 (raw)	10,000	2,270
Operational Power requirements (kW of solar energy)	50	7.7	7.7
Energy storage capacity (kWh)	135	27	27
Targeted water consumption (litres per person per day)	10-15	10-15	10-15
Maximum targeted population to serve	20,000	4,250	4,250
Expected Lifespan	20 years	20 years	20 years

A.2. Location of project

Below are details of the physical location to allow unique identification of the project. The project boundary lies in the coastal region of Kenya, within which solar desalination plants could be installed. This project boundary is clearly indicated below. The target

area and the fuel collection area are defined as being contained within the project boundary, with the outer limits of the project boundary being clearly defined below. As the majority of beneficiaries that collect or buy their wood fuel and charcoal do so locally, the wood fuel collection area and charcoal collection area and target area are considered the same.

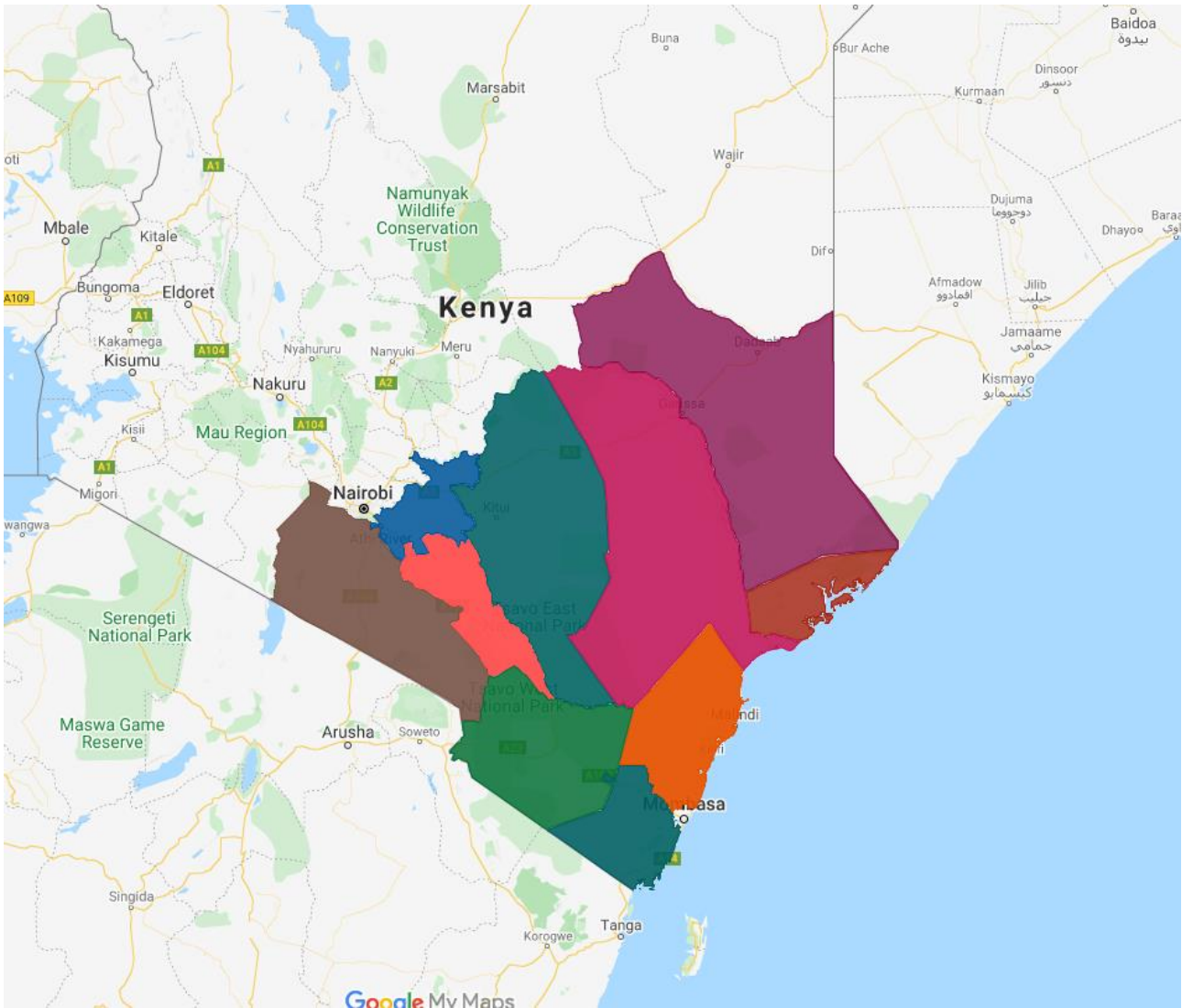


Figure 1. Project Boundary.

Project Area Extremities		
	Latitude	Longitude
North	0.95092	39.4953
South	-4.71569	39.37513
East	-1.65802	41.56236
West	-4.71569	39.37513

Each project technology included in the project for the monitoring period has the following GPS coordinates.

Plant ID	Location	Latitude	Longitude	Status
MAXI 1	Likoni	-4.083603	39.66408	Live (added MP1)
MAXI 2	Bamburi	-3.9954026337	39.7086165205	Live (added MP1)
MOBI+ 1	Makindu	-2.27047	37.82081	Removed (MP2)
MAXI 3	Kitengala	-1.54946111	36.94079167	Live (added MP2)
MAXI 4	Kiunga	-1.74989444	41.48407778	Live (added MP2)
MOBI 1	Mokowe	-2.22891389	40.84672222	Live (added MP2)
MAXI 5	Mtongwe	-4.09572222	39.64060833	Live (added MP2)
MOBI+ 2	Mwingi	-0.93858333	38.05832778	Live (added MP2)
MOBI+ 3	Wote	-1.76888611	37.62950833	Live (added MP2)

A.3. Reference of applied methodology

This project utilises the Gold Standard Methodology ‘Technologies and Practices to Displace Decentralized Thermal Energy Consumption V3.1’.

To calculate FNRB CDM Tool 30 EB 108 Annex 11 v3.0 2020 has been used.

A.4. Crediting period of project

The date of installation was used as the start date of operation. It was conservatively assumed that the first day of crediting is not counted and the crediting period begins the following day after the installation. The length of the crediting period is to be 5 years, twice renewable totalling 15 years as per the approved PDD.

Please find the start dates for the projects below (Crediting Period begins the following day):

Project ID	Start Date	Crediting Period Start Date	Crediting Period End Date
GS10987	31/08/2020	01/09/2020	31/08/2025

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The project partner, GivePower, supports the provision of safe water, using photovoltaic cells to power desalination technology, to thousands of households in coastal Kenya. By providing safe water, the project ensures that households consume less firewood and charcoal during the process of water purification and as a result there is a reduction of carbon dioxide emissions from the combustion process.

GivePower Foundation installed three solar desalination plants in Monitoring Period 1; in Monitoring Period 2, six solar desalination sites were added, and one removed. A summary is provided below. Technology types are consistent with the registered Project Design Document.

Plant ID	Technology	Community	Project Date	Inclusion
MAXI 1	MAXI	Likoni	31/08/2020	
MAXI 2	MAXI	Bamburi	28/06/2021	
MOBI+ 1	MOBI+	Makindu	Removed	
MAXI 3	MAXI	Kitengala	20/06/2022	
MAXI 4	MAXI	Kiunga	01/01/2022	
MOBI 1	MOBI	Mokowe	24/09/2022	
MAXI 5	MAXI	Mtongwe	26/12/2022	
MOBI+ 2	MOBI+	Mwingi	14/11/2022	
MOBI+ 3	MOBI+	Wote	08/04/2022	

MOBI+ 1 however was taken offline on 19/10/2021 and will not be included in the project moving forward from this date.

B.1.1. Forward Action Requests

FAR ID 01: In accordance with the deviation request dated 14/12/2021, the PD shall assure that the Hygiene campaigns are performed as soon as the country situation allows. The details of the hygiene campaigns shall be checked at the time of the next periodic verification.

Hygiene campaigns have been carried out in this monitoring period. Throughout the monitoring period, hygiene campaigns involved encouraging and demonstrating clean jerrican use at the GivePower sites, holding group sessions at the sites, and distributing leaflets which illustrate how to improve WASH practices.

FAR ID 02: As per para 2.1.1 of COVID 19: Interim Measures /28/, project developer may postpone physical stakeholder consultation meetings and the Stakeholder Feedback Round (SFR) for Gold Standard project/POA/VPAs until the COVID-19 situation eases. CME/CPA implementer need to carry out the physical stakeholder consultation meeting and SFR at a later stage as soon as the situation allows. The compliance of this FAR shall be checked at the time of the next periodic verification.

The LSC was conducted in Bamburi in March 2022. This involved bringing together various stakeholders such as end users, local and international NGOs, Women's Groups and local officials to discuss the project.

FAR ID 03: During the 1st verification of the VPA, Verification team need to check supportive document for the methodology requirement "The water in its improved form should be available within 1 km walking/pedaling distance from the households. There is a two-year grace period (from date of registration) for any households falling outside of this distance, however once this period is over these households would not be included in the emission reductions calculation. The compliance of this FAR shall be checked at the time of the next periodic verification.

As per DEV663, user lists were not able to be collected during the monitoring period. Due to the nature of the project, it is not possible to determine the location of all purchasers of GivePower water, as it is a sales model with various locations where water can be purchased. Future user lists (used for sampling) will be collected to ensure there is a list of users which can be sampled for monitoring activities, but this will not be all users of GivePower water. Evidence has been supplied through satellite images of the locations of where water is accessible, with a 1km buffer showing the large quantity of people within 1km of where GivePower water is sold

FAR ID 04: During the 1st verification of the VPA, a deviation request was approved by the SustainCERT. In accordance with the deviation request, the requirements on the

usage rate shall be complied by the PP and other points of the deviation request may be addressed during the next periodic verification.

DEV663 and DEV664 have been approved for this current monitoring period relating to the usage rate. The usage rate has been calculated for the monitoring period and applied to the emission reduction calculations.

B.2. Post-Design Certification changes

Changes to the certified design of the project are detailed below.

B.2.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline

DEV_663- Deviation request was approved on 27/04/2024. The deviation refers to section B.7.2 of the VPA-DD states that "Individual participants will be selected from the project user database using the random selection process outlined in the monitoring plan." Whereby "The project will collect user lists via the WASH gatherings implemented once Covid-situation in the host country enables"

In compliance with section B.7.1 of the VPA-DD, continuous hygiene outreach was conducted at GivePower sites in 2022 among users purchasing water, which fulfilled the annual hygiene campaign requirement in section B.7.3. However, a substantial end-user list was not compiled during this period. Similarly, in 2024, WASH gatherings in group sessions did not have enough attendees to create adequate user lists for sampling.

It was suggested that the annual monitoring for the monitoring period should remain valid despite the deviation from the VPA-DD. It was stated that sampling will adhere to section B.7.2 of the VPA-DD when enough users are present at future WASH gatherings.

This was confirmed by gold standard in which "PD shall be exempted from the requirement of monitoring survey as mentioned in the VPA-DD. However this shall not be considered as a precedent for the future monitoring periods. PD shall follow the VPA-DD monitoring plan and shall select end users from the project user database using the random selection process outlined in the monitoring plan, for future monitoring periods."

DEV_664 - Deviation request was approved on 27/04/2024. The deviation refers to the annual monitoring surveys conducted in 2022, where the total sample size failed to reach of the minimum requirement of 100.

Additionally, a second deviation was requested for annual monitoring activities covering period 1 (01/01/2022 – 31/12/2022) and period 2 (01/01/2023 - 31/12/2023). In period 1, most annual monitoring surveys were conducted within the 12-month period, with a final completion date of 09/01/2023. In period 2, the annual monitoring occurred in March 2024, three months after the end of the annual period.

It was suggested that annual monitoring conducted in March 2024 be applied to the period (01/01/2023 – 31/03/2024). While the number of annual monitoring surveys in 2022 was below the minimum requirement, there was a significant increase to 159 surveys in 2024, surpassing the sampling guidelines and ensuring comprehensive representation across all age groups.

It was proposed to apply the 2022 and 2024 annual monitoring survey results to the monitoring period, with 2022 results applied for 12 months and 2024 results applied for the following 15 months up to 31/03/2024.

This was confirmed by Gold Standard, stating: "PD has been granted exemption for conducting 83 survey samples for the first set of annual monitoring covering the period 01/01/2022 – 31/12/2022." The second deviation was also accepted: "The annual monitoring activities carried out in March 2024 for the year have also been exempted." Gold Standard noted: "PD shall note that this exemption shall not set a precedent for future monitoring periods and surveys, with respect to the minimum total sample size of 100 and at least 30 samples for project technologies from each group. The same guidelines must be followed for the 2024 monitoring and future surveys in line with the TPDDTEC methodology.

B.2.2. Corrections

Corrections in Monitoring Period 2

The PD has corrected the misapplication of the 3:1 emissions factor ratio for charcoal present in the Design Certified VPA-DD. In the VPA-DD, the emissions factor of wood was multiplied by three to determine the emissions factor of charcoal. However, the

conversion is for the production of wood required to generate charcoal. The calculation now reflects the appropriate application of a 4:1 production ratio of wood to charcoal, recently approved by the ICVCM².

To calculate the emissions of charcoal to an equivalent quantity of wood, the emissions factor of wood is used and the approved production ratio of 4:1 is applied to the calculation of emissions.

Previous calculation of charcoal emissions in the VPA-DD was:

$$BE_{b,y, \text{charcoal}} = B_{b,y, \text{charcoal}} * ((fNRB_y * EF_{b, \text{fuel}, \text{co2}, \text{Charcoal}}) + EF_{b, \text{fuel}, \text{nonco2}, \text{Charcoal}}) * NCV_{b, \text{fuel}, \text{Charcoal}}$$

The calculation is now:

$$BE_{b,y, \text{charcoal}} = B_{b,y, \text{charcoal}} * 4 * ((fNRB_y * EF_{b, \text{fuel}, \text{co2}, \text{Wood}}) + EF_{b, \text{fuel}, \text{nonco2}, \text{Wood}}) * NCV_{b, \text{fuel}, \text{Wood}}$$

The same equations have been updated to the calculation of the project emissions.

Therefore, the parameter boxes for the emissions factor and NCV of charcoal have been removed from the monitoring report.

Approved corrections from Monitoring Period 1

Table 1 (page 3) of this monitoring report – under SDG Impacts column, the definition of SDG 3 has been corrected from “Number of additional persons having access to safe water in the project activity compared to the baseline scenario” to “Number of additional persons consuming safe water in the project activity compared to the baseline scenario”. This reflects the different definitions between SDG 3 and SDG 6 as previously they had the same definition which was incorrect.

B.2.3. Changes to start date of crediting period

N/A

² https://icvcm.org/wp-content/uploads/2025/03/GS_TPDDTEC_v4_2025.pdf

B.2.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

N/A

B.2.5. Changes to project design of approved project

N/A

SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

All surveys are administered by trained staff that are local to the area and conversant in the local dialects to ensure that the responses are consistent and not biased by any regional language barriers. Training is conducted before monitoring takes place and ensures the following objectives are met:

- Orientation for data collectors on monitoring surveys
- Ensure all team members have the knowledge and skills to carry out the required work with confidence and to a high standard
- Ensure data collectors understand the guidelines and survey tools for usage and project surveys.
- Familiarize data collectors with carbon finance and Gold Standard principles and requirements during surveying

The results of the surveys are collated in excel spreadsheets by field staff who also cross-check the data. The excel data is then stored on a central server in an electronic format and sent to the UK head office for data analysis. The documentation procedure ensures a minimum chance of original data being lost –all original copies of our project documentation are retained in the Kenyan office and are available scanned upon request of the UK team. UK staff use scanned copies to check data input and quality control before submitting for verification.

Data cannot be collected for a total database of end-users in the project. This is because the technology works on a sales-based model. Individuals collect water via several methods, listed below:

- 1- Collection direct from the solar desalination site
- 2- Leave water containers at the site, which are filled and delivered back to the home by cart or tuk-tuk
- 3- Purchase water from kiosks located in the local area. Water is delivered to kiosks by water trucks, and then sold on to end-users in quantities of 10L or 20L jerricans.

This means that end-users constitute any individual which purchases water.

Each participant is provided with a briefing on the purpose of the survey and is assured that no individual names are used in the analysis

Below is a summary of the key information that has been collected and monitored as part of this project.

Installation Record

The installation record includes the following information:

- Date of installation
- GPS location of the technology
- Quantity of plants installed
- The total volume of water being sold by each plant
- Mode of use: commercial/domestic

The total number of people using the safe water produced by the project has been determined through the quantity of water sold, divided by the default value for $Q_{p,y}$; 4 litres per person per day.

Project Database

The project database will be derived from the Installation Record, with project technologies differentiated by different project scenarios (if required).

All data collected in relation to the project will be held in the local office and/or on the Project Database for the entire life cycle of the project and a period of 2 years afterwards. The data may be archived during the project in order to maintain clarity and security.

Operationality

A comprehensive maintenance programme is required in order to guarantee a consistent supply of pure water from the solar desalination plants that have been installed. Daily checklists are in place as standard practice. Also, the solar desalination plants contain consumable parts that require periodic replacement. All maintenance is conducted by trained local GivePower Foundation employees and will endure the activity of the project. If any issues are discovered and the appropriate repairs can be conducted. During the monitoring period, no serious issues were raised using this approach. Sales databases showed days of no sales made. These were classified as days of non-operationality for the purpose of calculating emissions reductions. In

addition, water quality test failure days were classified as days of non-operationality for purposes of project technology day calculation and are included in the table below.

Plant ID	Technology	Community	Days of non-operationality 2022	Days of non-operationality 2023	Days of non-operationality 2024
MAXI 1	MAXI	Likoni	5	2	0
MAXI 2	MAXI	Bamburi	3	8	0
MAXI 3	MAXI	Kitengala	3	81	36
MAXI 4	MAXI	Kiunga	9	179	29
MOBI 1	MOBI	Mokowe	105	204	8
MAXI 5	MAXI	Mtongwe	0	1	0
MOBI+ 2	MOBI+	Mwingi	7	81	40
MOBI+ 3	MOBI+	Wote	4	1	1

Carbon Rights Transfer

After the point of technology installation, a Carbon Transfer Form (CTF) has been signed and uploaded to our database stating that the rights to the carbon credits will lie with GivePower Foundation. The site manager of the project technology has signed a CTF on behalf of all users thereof. Each desalination plant site has contact information available for users to contact the project.

Ongoing Monitoring Studies

The following ongoing monitoring studies were conducted; the results are given in the parameter boxes tables in Section D.

- Annual Monitoring Surveys** – Annual Monitoring Surveys include both the project survey and usage survey. The project survey is conducted on representative end users of the project technology. The survey asks questions on household characteristics, and water use. The survey acquires results to determine the following parameters for SDG impact; TP,y (SDG 5) and Qp,cleanboil,y (SDG 6). The usage survey provides a single usage parameter Up,y that is weighted based on drop off rates that are representative of the age distribution for project technologies in the installation record.

The first round of annual monitoring surveys was conducted between the 16/12/2022 and 09/01/2023, with a total of 83 end-users being sampled. The second round of annual monitoring surveys, relevant for the stated monitoring period, was sampled between the 18/03/2024 and 27/03/2024. Here a total of

159 end-users were surveyed. For both rounds the surveys were conducted at the respective GivePower sites, ensuring selected respondents were exclusively users of GivePower water. The interviews were held by the responsible local "site leads" for each GivePower site, as well as supported by "site-hands". The results from the annual monitoring survey are used to determine the proportion of beneficiaries that use the GivePower water which is factored into the emission reduction calculations. To ensure conservative figures CO2Balance will impose a cap of 95% usage rate if the results exceed this figure. Data collected during the survey further explores:

- General Household information (Name, address, telephone number etc.)
- Household socio-demographic information
- Water use and purification characteristics

- **Water consumption field test** Default figures as per the methodology have been used of 4 litres per person per day.
- **Quality of the treated water** – Quarterly water quality test results have been submitted. The parameters used to assess the water quality are in line with Kenyan standards for potable water and all parameters will be shown to be within levels considered acceptable for domestic human consumption. Kenyan standards for potable water are provided by the Kenya Bureau of Standards (KEBS)³.
- **Leakage Assessment** – The potential sources of leakage will be investigated ($LE_{p,y}$). If the assessment quantifies an increase in fuel consumption by the non-project households attributable to the project activity, then calculations will be adjusted to account for this.
- **Non-renewable Biomass Assessment update** - In accordance with the methodology, the NRB assessment will remain fixed for the entire crediting period, although the project proponent may choose to reexamine the assessment at any time.
- **N_{p,y} Project Technology Days**
Number of persons consuming water supplied by project scenario p through year y. Sum of the total number of people using each solar desalination plant in the project multiplied by the number of days crediting each project technology earns in this monitoring period. The total number of households using each solar desalination plant will be determined through information supplied by GivePower Foundation and in house field teams. Using this method, a proxy for the total number of people using each solar desalination plant will be known and hence a figure for person days can be calculated. All monitoring tasks will be selected at random.

³ KS EAS 12:2018

- **Hygiene Campaign**

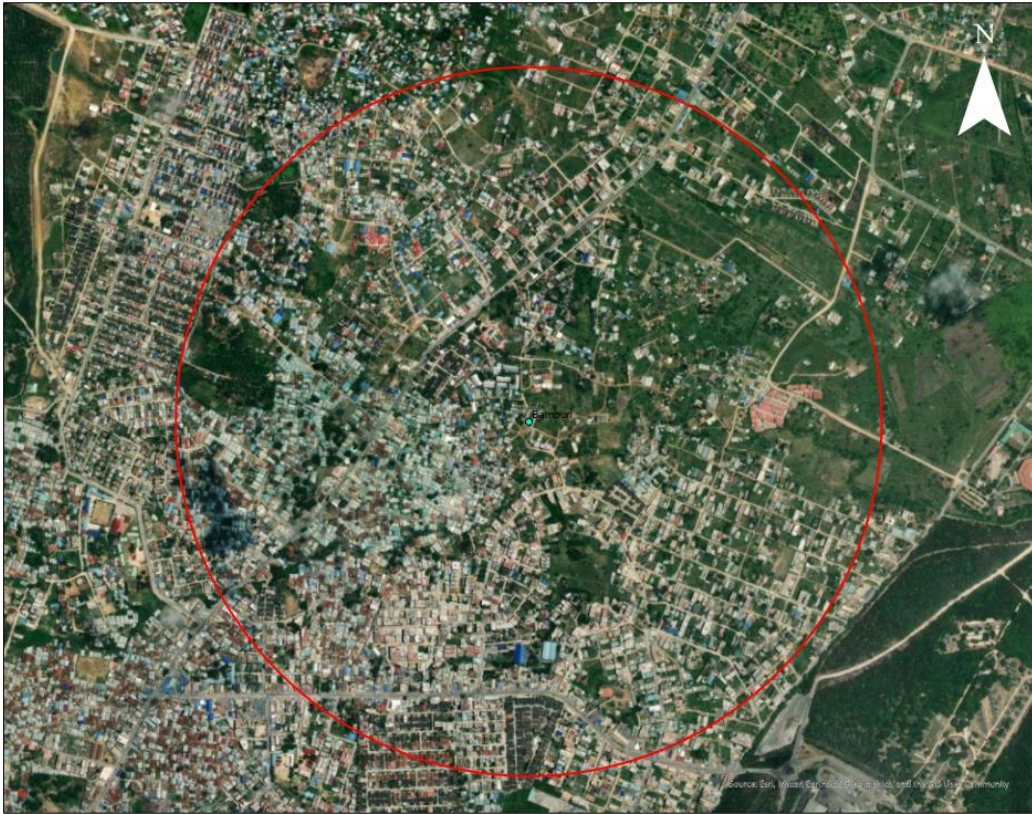
A hygiene campaign is conducted annually in the format of Water, Sanitation and Hygiene (WASH) training at the community level. WASH training was conducted at the GivePower sites at specific events and as continuous programme of jerrican cleanliness training. Evidence of annual WASH activities is provided in each verification.

Outbreaks of water-borne diseases in areas surrounding each project technology shall be reported on for each monitoring period.

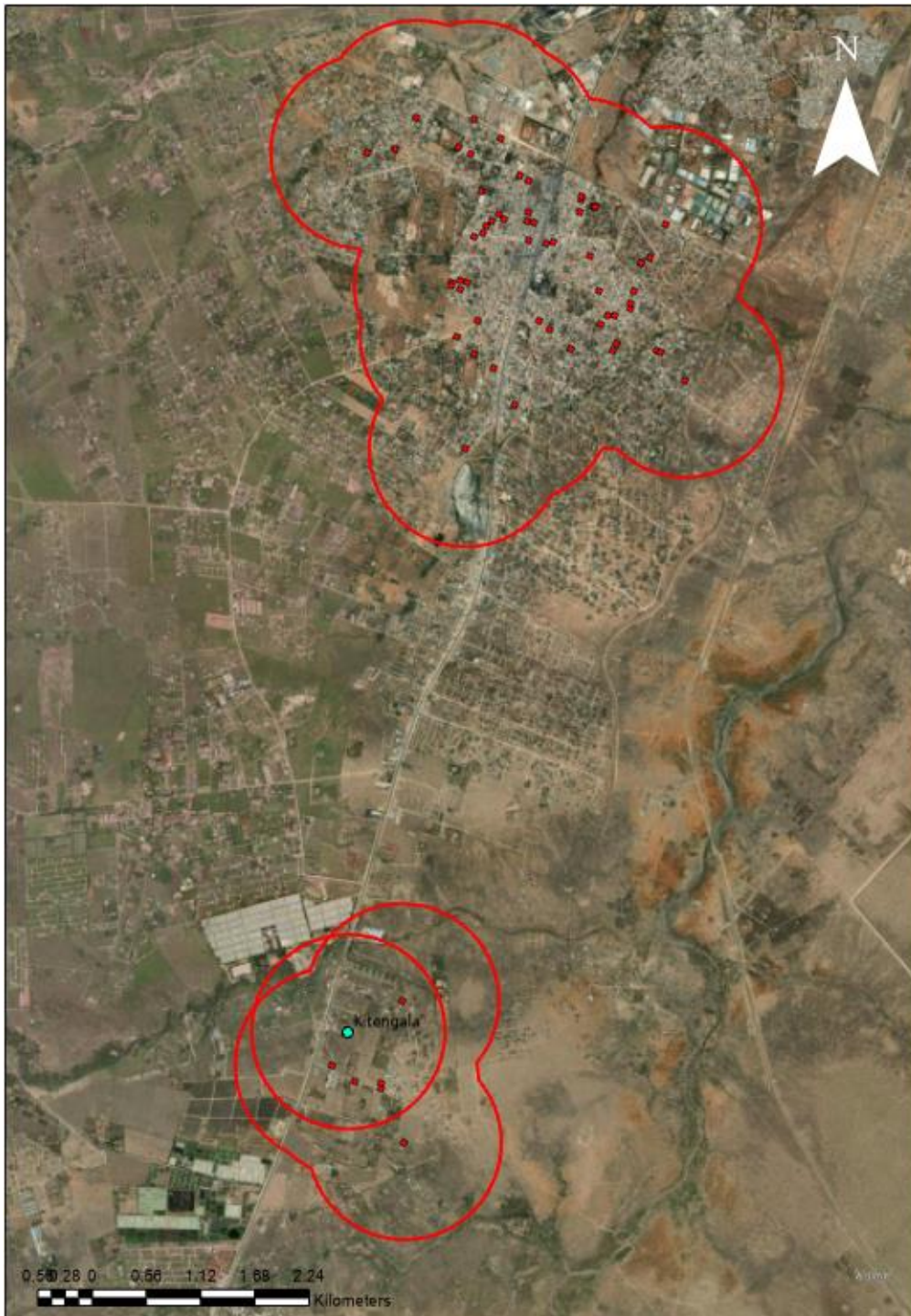
Number of people with access to GivePower sites: this was derived from the litres of water produced (average daily production) per site divided by the default quantity used in the Gold Standard methodology for drinking (4 L/person/day). This calculation provides a value of people who use the site for drinking water, on average, per day. To cross check the calculated values, 1km buffer from centralised water collection points were mapped using ArcGIS to ensure there are sufficient quantities of households within 1km to satisfy the calculation. Please see examples of the images below the table.

Plant ID	Technology	Community	People per site 2022	People per site 2023	People per site 2024
MAXI 1	MAXI	Likoni	10,155	10,222	11,379
MAXI 2	MAXI	Bamburi	10,445	11,135	13,888
MAXI 3	MAXI	Kitengala	10,601	13,901	14,698
MAXI 4	MAXI	Kiunga	2,984	4,005	4,153
MOBI 1	MOBI	Mokowe	788	908	2,000
MAXI 5	MAXI	Mtongwe	3,721	8,641	12,944
MOBI+ 2	MOBI+	Mwingi	410	2,170	2,530
MOBI+ 3	MOBI+	Wote	1,474	1,814	1,747

Example of 1km buffer around Solar WaterFarm (Bamburi):



Example of ArcGIS 1km buffer WaterFarm and Water Distribution Points (Kiosks) (Kitengala):



SECTION D. DATA AND PARAMETERS

D.1. Data and parameters fixed ex ante or at renewal of crediting period

SDG13

Data/parameter	EF _{b,co2} Wood
Unit	tCO ₂ /TJ
Description	CO ₂ emission factor arising from use of wood fuel in baseline scenario
Source of data	Calculated from IPCC defaults; Volume 2: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2, Table 2.5
Value(s) applied	112 – see GS Methodology
Choice of data or Measurement methods and procedures	Deemed valid by Methodology
Purpose of data	Calculation of baseline emissions
Additional comment	<p>To calculate the emissions of charcoal to an equivalent quantity of wood, the emissions factor of wood is used and the production ratio of wood to charcoal of 4:1 is applied to the calculation of emissions.</p> <p>https://icvcm.org/wp-content/uploads/2025/03/GS_TPDDTEC_v4_2025.pdf</p> <p>As per VPA-DD, the design certified value for EF_{b,co2} Charcoal is “336”, which is misapplication of a conversion factor of wood to charcoal. Section B.2.2 outlines the corrections to the calculations for charcoal emissions.</p>

Data/parameter	EF _{b,non co2} wood
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Unit	tCO ₂ e/TJ
Description	Non-CO ₂ (CH ₄ and N ₂ O) emission factor arising from use of wood fuel in baseline scenario
Source of data	<p>IPCC Default emissions factor – https://www.ipcc-nggip.iges.or.jp/public/gp/bgp/2_2_Non-CO2_Stationary_Combustion.pdf</p> <p>GWP – https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf</p>
Value(s) applied	9.46
Choice of data or Measurement methods and procedures	Deemed valid by Methodology
Purpose of data	Calculation of emission reductions
Additional comment	<p>To calculate the emissions of charcoal to an equivalent quantity of wood, the emissions factor of wood is used and the production ratio of wood to charcoal of 4:1 is applied to the calculation of emissions.</p> <p>https://icvcm.org/wp-content/uploads/2025/03/GS_TPDDTEC_v4_2025.pdf</p> <p>As per VPA-DD, the design certified value for EF_{b,co2} Charcoal is “28.38”, which is misapplication of a conversion factor of wood to charcoal. Section B.2.2 outlines the corrections to the calculations for charcoal emissions.</p>

Data/parameter	EF _{p,co2} wood
Unit	tCO ₂ /TJ

Description	CO ₂ emission factor arising from use of wood fuel in project scenario
Source of data	Volume 2: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2, Table 2.5
Value(s) applied	112
Choice of data or Measurement methods and procedures	Deemed valid by Methodology
Purpose of data	Calculation of emission reductions
Additional comment	<p>To calculate the emissions of charcoal to an equivalent quantity of wood, the emissions factor of wood is used and the production ratio of wood to charcoal of 4:1 is applied to the calculation of emissions.</p> <p>https://icvcm.org/wp-content/uploads/2025/03/GS_TPDDTEC_v4_2025.pdf</p> <p>As per VPA-DD, the design certified value for EF_{b,co2} Charcoal is "336", which is misapplication of a conversion factor of wood to charcoal. Section B.2.2 outlines the corrections to the calculations for charcoal emissions.</p>

Data/parameter	EF _{p,non co2} wood
Unit	tCO ₂ e/TJ
Description	Non-CO ₂ (CH ₄ and N ₂ O) emission factor arising from use of wood fuel in project scenario
Source of data	<p>IPCC Default emissions factor –</p> <p>https://www.ipcc-nggip.iges.or.jp/public/gp/bqp/2_2_Non-CO2_Stationary_Combustion.pdf</p>

	GWP – https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf
Value(s) applied	9.460
Choice of data or Measurement methods and procedures	Deemed valid by Methodology
Purpose of data	Calculation of emission reductions
Additional comment	To calculate the emissions of charcoal to an equivalent quantity of wood, the emissions factor of wood is used and the production ratio of wood to charcoal of 4:1 is applied to the calculation of emissions. https://icvcm.org/wp-content/uploads/2025/03/GS_TPDDTEC_v4_2025.pdf As per VPA-DD, the design certified value for EF_{b,CO_2} Charcoal is “28.38”, which is misapplication of a conversion factor of wood to charcoal. Section B.2.2 outlines the corrections to the calculations for charcoal emissions.

Data/parameter	NCV_b Wood
Unit	TJ/ton
Description	Net calorific value of the wood fuel used in the baseline
Source of data	IPCC Default emissions factor
Value(s) applied	0.0156
Choice of data or Measurement methods and procedures	Deemed valid by Methodology
Purpose of data	Calculation of emission reductions

Additional comment	<p>To calculate the NCV_b for charcoal, the NCV_b of wood is used and the production ratio of wood to charcoal of 4:1 is applied to the calculation of emissions.</p> <p>https://icvcm.org/wp-content/uploads/2025/03/GS_TPDDTEC_v4_2025.pdf</p> <p>As per VPA-DD, "0.0295" is the design certified value for NCV_b Charcoal, but the correction to the calculations has been made as per section B.2.2.</p>
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Data/parameter	NCV_p Wood
Unit	TJ/ton
Description	Net calorific value of the wood fuel used in the project
Source of data	IPCC Default emissions factor
Value(s) applied	0.0156
Choice of data or Measurement methods and procedures	Deemed valid by Methodology
Purpose of data	Calculation of emission reductions
Additional comment	<p>To calculate the NCV_p for charcoal, the NCV_p of wood is used and the production ratio of wood to charcoal of 4:1 is applied to the calculation of emissions.</p> <p>https://icvcm.org/wp-content/uploads/2025/03/GS_TPDDTEC_v4_2025.pdf</p> <p>As per VPA-DD, "0.0295" is the design certified value for NCV_p charcoal, but the correction to the calculations has been made as per section B.2.2.</p>

Data/parameter	$f_{NRB,i,y}$
Unit	Fractional non-renewability
Description	Non-renewability status of woody biomass fuel in scenario i during year y
Source of data	Calculated in line with CDM Tool 30 EB 108 Annex 11 v3.0 2020

	CDM Default Values found here: https://cdm.unfccc.int/DNA/fNRB/index.html
Value(s) applied	0.92
Choice of data or Measurement methods and procedures	Calculation using CDM Tool 30 EB 108 Annex 11 v3.0 yielded an fNRB of 97%. For conservativeness, the project will use the lower now expired default value of 92% found here: https://cdm.unfccc.int/DNA/fNRB/index.html
Purpose of data	Calculation of emission reductions
Additional comment	-

Data/parameter	$W_{b,y}$
Unit	T/litre
Description	Quantity of wood fuel that is used to treat 1 litre of water in the baseline scenario b during year y
Source of data	Default value
Value(s) applied	0.0004
Choice of data or Measurement methods and procedures	Default values as per TPDDTEC v3.1 will be used rather than conducting a full baseline water boiling test
Purpose of data	Calculation of emission reductions
Additional comment	-

Data/parameter	$W_{p,y}$
Unit	T/litre
Description	Quantity of wood fuel that is used to treat 1 litre of water in the project scenario b during year y
Source of data	Default value

Value(s) applied	0.0004
Choice of data or Measurement methods and procedures	Default values as per TPDDTEC v3.1 will be used rather than conducting a full baseline water boiling test
Purpose of data	Calculation of emission reductions
Additional comment	-

Data/parameter	$W_{b,y}$ Charcoal
Unit	T/litre
Description	Quantity of charcoal that is used to treat 1 litre of water in the baseline scenario b during year y
Source of data	Default value
Value(s) applied	0.0001
Choice of data or Measurement methods and procedures	Default values as per TPDDTEC v3.1 will be used rather than conducting a full baseline water boiling test
Purpose of data	Calculation of emission reductions
Additional comment	-

Data/parameter	$W_{p,y}$ Charcoal
Unit	T/litre
Description	Quantity of charcoal that is used to treat 1 litre of water in the project scenario b during year y
Source of data	Default value
Value(s) applied	0.0001

Choice of data or Measurement methods and procedures	Default values as per TPDDTEC v3.1 will be used rather than conducting a full baseline water boiling test
Purpose of data	Calculation of emission reductions
Additional comment	-

Data/parameter	Cj
Unit	Percentage
Description	Portion of users of project safe water supply who were already in baseline using a non-boiling safe water supply
Source of data	Baseline Study
Value(s) applied	7%
Choice of data or Measurement methods and procedures	Deemed valid by Methodology
Purpose of data	Calculation of emission reductions
Additional comment	-

Data/parameter	Xboil Non-Suppressed Demand
Unit	Percentage
Description	Percentage of premises that in the absence of the project activity would have used non-GHG emitting technologies like chlorine treatment techniques (if available) in the project boundary,.
Source of data	Baseline study. Credible literature, studies, survey, reports, relevant to the project target area
Value(s) applied	17.4%

Choice of data or Measurement methods and procedures	Suppressed demand will be determined through a set of questions in the project survey that establish the method households use to purify their water, if any, and how they would choose to purify if they were not subject to monetary and access barriers. This is in line with the Gold Standard principles of suppressed demand outline in annex 2. A fixed suppressed demand baseline has been opted for, however, in the event the project surveys show a substantial change in fuel use characteristics, a new baseline shall be conducted.
Purpose of data	Calculation of emission reductions
Additional comment	-

SDG 3

Data/parameter	$P_{b, \text{boil}}$
Unit	Percentage
Description	Percentage of persons boiling water in the baseline
Source of data	Baseline Survey
Value(s) applied	24.6%
Choice of data or Measurement methods and procedures	The percentage of people stating that they used to boil their water for purification in the baseline scenario, evaluated through the baseline survey.
Purpose of data	Determination of number of persons boiling water in the baseline
Additional comment	-

SDG 5

Data/parameter	$T_{b,y}$
Unit	Hours
Description	Time spent collecting water per household per day prior to project

TEMPLATE-

Source of data	Baseline survey
Value(s) applied	2.4
Choice of data or Measurement methods and procedures	Measured by question on time spent collecting firewood in the baseline survey.
Purpose of data	Calculation of SDG 5
Additional comment	-

D.2. Data and parameters monitored

SDG 3

Data / Parameter	P_y
Unit	Number
Description	Number of persons having access to safe water from the project activity
Source of data	Water point Project Database; Default Values
Value(s) applied	2022- 40,578 2023- 52,796 2024- 63,339
Measurement methods and procedures	Data on total volumes of water produced and sold during the monitoring period by project technologies will be divided by the value for $Q_{p,y}$.
Monitoring frequency	Annual
QA/QC procedures	Data is cross-checked with other associated data records regarding water production and sale. Sales data is recorded using a point-of-sale platform. Water production data is recorded using water meters. Technical issues in this monitoring period regarding the meter's connectivity and internet outages resulted in inconsistent meter data recorded. Therefore, the PD has applied the variance calculated in the first monitoring period between the production and sales records. This variance is used to adjust treatment capacity calculations with the most conservative value being used. The value used for this monitoring period is a variance of 0.41% and the treatment capacity was adjusted downwards accordingly.
Purpose of data	To measure the additional persons with access and provision to safe water in the project scenario, which will positively impact good health and wellbeing, as well as access to clean water and sanitation.
Additional comment	-

SDG 5

Data / Parameter	$T_{p,y}$
Unit	Hours
Description	Project time spent collecting water per household per day.
Source of data	Project survey
Value(s) applied	2022- 0.25 hours 2023- 0.17 hours 2024- 0.17 hours
Measurement methods and procedures	Established through questions in the project survey on a representative sample of the end users.
Monitoring frequency	Annual
QA/QC procedures	Cross checking of Project Survey was performed by CO2balance staff. Clarifications are sought from the partner if required.
Purpose of data	To measure the % decrease in hours spent collecting water and firewood, a responsibility falling disproportionately on women, as an indicator of reduced time poverty of women.
Additional comment	-

SDG 6

Data / Parameter	$Q_{p,cleanboil,y}$
Unit	Litres per person per day
Description	Quantity of safe water boiled in the project scenario p during the year y using the zero or low emissions clean water supply technology
Source of data	Project Survey
Value(s) applied	2022- 0 2023 - 0.1258 2024 - 0.1258

Measurement methods and procedures	Established through questions in the project survey on a representative sample of the end users.
Monitoring frequency	Annual
QA/QC procedures	Cross checking of Project Survey was performed by CO2balance staff. Clarifications are sought from the partner if required.
Purpose of data	Emission reduction calculations
Additional comment	Boiled water consumed for drinking, cooking and basic personal hygiene considered safe for human consumption prior to boiling. This is assumed from the stated water source. Value is calculated by the proportion of survey respondents boiling project water times by the default of 4L/p/day

Data / Parameter	$Q_{p,rawboil,y}$
Unit	Litres per person per day
Description	The raw unsafe water that is still boiled after installation of the water treatment technology
Source of data	Methodological default
Value(s) applied	0
Measurement methods and procedures	Methodological default
Monitoring frequency	Annually
QA/QC procedures	N/A
Purpose of data	Emission reduction calculations
Additional comment	-

Data / Parameter	Quality of Treated Water
Unit	Parameters as per national standards
Description	Performance of the treatment technology

Source of data	Laboratory Tests
Value(s) applied	<p>2022-</p> <p>99 Water quality failure days (5.79%) 94.21% pass</p> <p>2023-</p> <p>538 Water quality failure days (18.42%) 81.58% pass</p> <p>2024- 101 Water quality failure days (13.87%) 86.13% pass</p> <p>Total – 738 Water quality failure days (13.77%) and 86.23% pass</p>
Measurement methods and procedures	The water quality was tested in line with national standards in Kenya. The water samples are taken at source by the testing body.
Monitoring frequency	Quarterly
QA/QC procedures	<p>At least four tests each year conducted by an accredited laboratory.</p> <p>Period of time between any fail and subsequent pass is removed from ER claims.</p>
Purpose of data	Criteria of methodology
Additional comment	<p>Water is tested in accredited laboratories. Tested water is collected from source.</p> <p>Mtongwe (MAXI 5) and Mwingi (MOBI+ 2) first test was conducted before commissioning of the site in order to determine aquifer water quality properties.</p>

Data / Parameter	Hygiene campaigns
Unit	Outcome of WASH meetings
Description	Hygiene campaigns carried out among project technology users
Source of data	Annual hygiene campaign results
Value(s) applied	WASH evidence (photos, videos)

Measurement methods and procedures	WASH Report
Monitoring frequency	Annual
QA/QC procedures	Sharing and checking of meeting pictures and participants lists.
Purpose of data	In accordance with TPDDTEC v3.1 methodology
Additional comment	-

SDG 13

Data / Parameter	$LE_{p,y}$
Unit	tCO ₂ e per year
Description	Leakage in project scenario p during year y.
Source of data	Annual Monitoring Survey 2022 Annual Monitoring Survey 2024 Baseline Project Survey
Value(s) applied	5%
Measurement methods and procedures	Assessed every two years using baseline and monitoring surveys
Monitoring frequency	Biennial
QA/QC procedures	
Purpose of data	Emission reduction calculations
Additional comment	5% value applied based on Annual Monitoring results. Leakage was deemed to be below the 5% threshold but 5% is applied for conservativeness

Data / Parameter	$N_{p,y}$ [Wood]
Unit	Project Technology Days
Description	Number of persons consuming water supplied by project scenario p through year y

Source of data	Project Database
Value(s) applied	2022- 2,739,533 2023- 4,236,671 2024 - 1,248,834 Total for MP2 - 8,225,038
Measurement methods and procedures	Sum of the total number of people using each project technology multiplied by the number of days crediting each project technology earns in this monitoring period
Monitoring frequency	Continuous
QA/QC procedures	Calculations are double-checked
Purpose of data	Emission reduction calculations
Additional comment	Household lists of users including details for the main contact from the household

Data / Parameter	Np,y [Charcoal]
Unit	Project Technology Days
Description	Number of persons consuming water supplied by project scenario p through year y
Source of data	Project Database
Value(s) applied	2022 - 8,218,598 2023 - 12,710,012 2024 - 3,746,503 Total for MP2 - 24,675,113
Measurement methods and procedures	Sum of the total number of people using each project technology multiplied by the number of days crediting each project technology earns in this monitoring period
Monitoring frequency	Continuous
QA/QC procedures	Calculations are double-checked
Purpose of data	Emission reduction calculations
Additional comment	Household lists of users including details for the main contact from the household

Data / Parameter	$U_{p,y}$
Unit	Percentage
Description	Usage rate in project scenario p through year y
Source of data	Annual Monitoring Survey 2022 Annual Monitoring Survey 2024
Value(s) applied	2022- 70.90% 2023- 80.22% 2024- 80.22%
Measurement methods and procedures	Calculation of the frequency of use of GivePower water
Monitoring frequency	Annual
QA/QC procedures	Clear guidance is provided to field staff and results are spot checked against the original copy of the surveys.
Purpose of data	Emission reduction calculations
Additional comment	Questions are asked in a face-to-face survey and designed to establish whether a household can be considered a regular user. See DEV_664 for accepted deviation for annual monitoring in 2023.

Data / Parameter	$Q_{p,y}$
Unit	Litres per person per day
Description	Quantity of safe water supplied in the project scenario p during the year y using the zero or low emissions clean water supply technology
Source of data	Default value
Value(s) applied	4
Measurement methods and procedures	Default value
Monitoring frequency	N/A
QA/QC procedures	
Purpose of data	Emission reduction calculations

Additional comment	-
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D.3. Comparison of monitored parameters with last monitoring period

Data/Parameter	Value obtained in this monitoring period 2022	Value obtained last monitoring period
P _y	2022-40,578 2023-52,796 2024- 63,339	21,459
T _{p,y}	2022-0.25 2023-0.17 2024-0.17	No Data
Q _{p,cleanboil,y}	2022-0 2023-0.1258 2024-0.1258	0
Q _{p,rawboil, y}	0 for all vintages	0
Quality of Treated Water	of 2022- 94.21% 2023- 81.58% 2024- 86.13%	Pass
Hygiene campaigns	WASH evidence provided	No Data
LE _{p,y}	5% for all vintages	5%
N _{p,y} [Wood]	2022- 2,739,533 2023- 4,236,671 2024- 1,248,834 Total- 8,225,038	1,606,570
N _{p,y} [Charcoal]	2022- 8,218,598 2023- 12,710,012 2024- 3,746,503 Total- 24,675,113	4,819,709
U _{p,y}	2022- 70.90% 2023- 80.22% 2024- 80.22%	90%
Q _{p,y}	4 for all vintages	4

D.4. Implementation of sampling plan

The solar desalination plants included in the project rely on water resellers to reach communities. For example, roughly 10-15 jerrycans per day are sold to customers who visit the solar desalination plants directly. The resellers are independent entrepreneurs who are not GivePower Foundation employees. The project cannot and should not enforce the collection of user lists on water resellers. In addition, directly recording information from customers at their homes could cause harm to the reputation of GivePower Foundation. As per the approved Deviation Request DEV_663, user lists were not collected in this monitoring period. Sampling of end-users for the monitoring surveys were done through randomly asking end-users who purchased GivePower water at the site, or randomly selecting purchasers along GivePower delivery routes.

Monitored parameters and their inputs that were successfully monitored during this monitoring period are detailed below.

Installation Record

A comprehensive installation record details the following information:

- Date of installation
- GPS location of the technology
- Quantity of plants installed
- The total volume of water being sold by each plant
- Mode of use: commercial/domestic

The installation record will be backed up electronically, with original documentation being stored in a centralised location.

Project Database

The project database will be derived from the Installation Record, with project technologies differentiated by different project scenarios (if required).

All data collected in relation to the project will be held in the local office and/or on the Project Database for the entire life cycle of the project and a period of 2 years afterwards. The data may be archived during the project in order to maintain clarity and security.

Water Consumption Field Test

The project has opted to use default values for parameters monitored by the WCFT.

Quality of the treated water

All technologies included in the project have provided quarterly water quality test results in line with the national water quality test standard. As a result, the average failure rate from the project has been applied to the quarter in order to conservatively account for the missing test. Both project technology specifications and staff monitoring procedures ensure a consistent supply of safe water so this approach is justifiable. Kenyan standards for potable water are provided by the Kenya Bureau of Standards (KEBS)³.

Ongoing Monitoring Studies

Annual Monitoring (Up,y)

The usage survey establishes the proportion of beneficiaries that use the sites, a key parameter in the emission reduction calculations. The usage survey has been conducted using a sample size of 83 end-users in 2022 surveys and 159 end-users in 2024. Data was collected using mobile data collection applications, and sent to CO2balance in secure excel sheets. This data was then analysed by CO2balance, with queries and clarifications sent to the in-country partner if required.

The sample size and proportional result of the survey have been entered into the "Guideline: Sampling and surveys for CDM project activities and programmes of activities Version 03.1" tool for sampling and surveys for CDM project activities and programmes of activities V03.1.

2022:

Calculator to check if the precision has been met or not after a sampling survey is conducted		
Input	Value	Notes
Actual sample size	83	
Sample proportion	0,7090	
Standard error of the proportion	0,0498	
Precision associated with a proportion	0,0819	
Relative precision	11,6%	

DEV_664 was approved granting exemption of meeting the annual monitoring sampling requirements for this monitoring period.

2024:

Calculator to check if the precision has been met or not after a sampling survey is conducted

Input	Value	Notes
Actual sample size	159	
Sample proportion	0,8022	
Standard error of the proportion	0,0316	
Precision associated with a proportion	0,0519	
Relative precision	6,5%	

The first usage surveys in this monitoring period were carried out by field staff between the 16/12/2022 – 09/01/2023 on 83 households. The second round of annual monitoring surveys, relevant for the stated monitoring period, was sampled between the 18/03/2024 and 27/03/2024 on 159 end-users. For both rounds the surveys were conducted at the respective GivePower sites, ensuring selected respondents were exclusively users of GivePower water. The interviews were held by the responsible “site leads” for each GivePower site, as well as supported by “site-hands”. The results confirmed that 70.90% in 2022 and 80.22% in 2024 of the respondents and their family members use the GivePower sites.

The project survey provided the source of data to determine parameters $T_{p,y}$ and $Q_{p,cleanboil,y}$. Here results found in 2022 for $T_{p,y}$ were 0.25 and in 2024 $T_{p,y}$ was 0.17. For $Q_{p,cleanboil,y}$ 2022 data showed 0 L/p/day and in 2024 it was found to be 0.1258 L/p/day.

SECTION E. CALCULATION OF SDG IMPACTS

E.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact

SDG 3 (Good Health and Wellbeing)

The outcome for SDG 3 is quantified as the additional number of persons consuming safe water in the project activity compared to the baseline scenario (P_{safe}). The number of persons using safe water is calculated via the sales record. The percentage of users who were already consuming safe water in the baseline without boiling it (C_j) is determined through the baseline survey and deducted. Additionally, the percentage of users who consumed safe water by boiling it in the baseline ($P_{\text{b,boil}}$) is deducted. Calculations are as follows:

$$P_{\text{safe}} = P_y * (1 - C_j) * (1 - p_{\text{b,boil}})$$

Where:

P_{safe}	Number of additional persons having access to safe water in the project activity compared to the baseline scenario.
P_y	Number of persons having access to safe water in the project activity.
C_j	Expressed as a percentage, the portion of users of the project technology j who in the baseline were already consuming safe water without boiling it.
$P_{\text{b,boil}}$	Percentage of persons boiling water for purification in the baseline scenario.

SDG 5 (Gender Equality)

Women and girls perform the majority of unpaid domestic work⁴. This leaves them with less time to rest, study and realise their economic potential, leaving them in time poverty. Regarding time, women are poorer than men as unpaid domestic duties, such as collecting firewood and water, must be added to their market productive work, making time much scarcer⁵. Women are widely recognised as being principally responsible for natural resource collection⁶

These trends demonstrate that reducing the amount of time spent collecting water required by households has the potential to reduce the time poverty of women, because the time burden of collecting water, which falls disproportionately on women, will be reduced. The decrease per household in time spent gathering water will be taken as a proxy contribution towards the SDG target.

The overall reduction in time spent collecting water by the project activity are then calculated as follows:

$$TR_y = T_{b,y} - T_{p,y}$$

Where:

TR_y	Total reduction time spent collecting water for project activity in year y (hours)
$T_{b,y}$	Time spent collecting water per household per day prior to project (hours)
$T_{p,y}$	Time spent collecting water per household per day in project (hours)

4 UN (2017) 'Progress towards the Sustainable Development Goals (E/2017/66)'. Available at <https://unstats.un.org/sdgs/files/report/2017/secretary-general-sdg-report-2017--EN.pdf>

5 Charmes, J 'A Review of Empirical Evidence on Time Use in Africa from UN-Sponsored Surveys', in World Bank (2006) 'Gender, Times Use, and Poverty in Sub-Saharan Africa'. World Bank Working Paper No. 73

6 Nankhuni (2004) 'Environmental Degradation, Resource Scarcity and Children's Welfare in Malawi: School Attendance, School Progress, and Children's Health

SDG 6 (Clean Water and Sanitation)

The outcome for SDG 6 is quantified as the additional number of persons having access to safe water in the project activity compared to the baseline scenario (P_{access}). The number of persons using each solar desalination plant is determined in the sensitization process during the installation. The percentage of users who already had access to a safe water source will be determined through the baseline survey. Calculations are as follows (parameters from sections B.6.3 and B.7.1 of the VPA-DD will be applied):

$$P_{\text{access}} = P_y * (1 - C_j) * U_{p,y}$$

Where:

P_{access} Number of additional persons having basic access to safe water in the project activity compared to the baseline scenario.

P_y Number of persons having access to safe water in the project activity.

C_j Expressed as a percentage, the portion of users of the project technology j who in the baseline were already consuming safe water without boiling it.

U_{p,y} Usage rate in project scenario p during year y

SDG 13 (Climate Action)

CO2 emission reductions are the indicator to demonstrate that the project has raised capacity for effective climate change-related planning and management. This outcome is measured using the VPA's emission reductions calculations.

Baseline Emissions (BE_{b,y})

Wood:

$$BE_{b,y,wood} = B_{b,y,wood} * ((fNRB_y * EF_{b,fuel,co2,wood}) + EF_{b,fuel,nonco2,wood}) * NCV_{b,fuel,wood}$$

Charcoal:

TEMPLATE-

$$BE_{b,y, \text{charcoal}} = B_{b,y, \text{charcoal}} * 4 * ((fNRB_y * EF_{b, \text{fuel}, \text{co2}, \text{Wood}}) + EF_{b, \text{fuel}, \text{nonco2}, \text{Wood}}) * NCV_{b, \text{fuel}, \text{wood}}$$

Where:

- $BE_{b,y}$ Emissions for baseline scenario b during the year y in tCO₂e
- $B_{b,y}$ Quantity of fuel consumed in baseline scenario b during year y, in tons, as per by-default factors
- $fNRB_y$ Fraction of biomass used during year y for the considered scenario that can be established as non-renewable biomass
- $NCV_{b, \text{fuel}}$ Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/ton)
- $EF_{b, \text{fuel}, \text{co2}}$ CO₂ emission factor of the fuel that is substituted or reduced. 112 tCO₂/TJ for Wood/Wood Waste
- $EF_{b, \text{fuel}, \text{nonco2}}$ Non-CO₂ emission factor of the fuel that is substituted or reduced
- "4" "4" represents the production ratio of 4:1, which is applied to calculate the emissions of charcoal to an equivalent quantity of wood. https://icvcm.org/wp-content/uploads/2025/03/GS_TPDDTEC_v4_2025.pdf

Where:

$$B_{b,y} = (1 - X_{\text{boil}}) * (1 - C_j) * N_{j,y} * W_{b,y} * (Q_{p,y} + Q_{p, \text{rawboil}, y})$$

Where:

- $N_{j,y}$ Number of person days consuming water supplied by the project scenario p through year y
- X_{boil} Proportion of users that would use other non-GHG emitting technologies in absence of project activities
- C_j Expressed as a percentage, this is the portion of users of the project technology j who in the baseline were already consuming safe water without boiling it

TEMPLATE-

$B_{b,y}$	Quantity of fuel consumed in baseline scenario b during the year y in tons
$Q_{p,y}$	Quantity of safe water in litres consumed in the project scenario p and supplied by project technology per person per day
$Q_{p,rawboil,y}$	Quantity of raw water boiled in the project scenario p per person per day
$W_{b,y}$	quantity of fuel in tons required to treat water using technologies representative of baseline scenario b during project year y, as per Baseline Water boiling Test

Wood:

2022

$$7,153 = 4,076 * ((0.92 * 112) + 9.46) * 0.00156$$

Where:

$$4,076 = (1 - 0.07) * 2,739,533 * 0.0004 * (4 + 0)$$

2023

$$11,063 = 6,304 * ((0.92 * 112) + 9.46) * 0.00156$$

Where:

$$6,304 = (1 - 0.07) * 4,236,671 * 0.0004 * (4 + 0)$$

2024-

$$3,260 = 1,858 * ((0.92 * 112) + 9.46) * 0.00156$$

Where:

$$1,858 = (1 - 0.07) * 1,248,834 * 0.0004 * (4 + 0)$$

Wood Total

$$\text{Total} = 2022 + 2023 + 2024$$

$$21,476 = 7,153 + 11,063 + 3,260$$

Charcoal:

2022

$$21,460 = 3,057 * 4 * ((0.92 * 112) + 9.46) * 0.0156$$

Where:

$$3,057 = (1 - 0.07) * 8,218,598 * 0.0001 * (4 + 0)$$

2023

$$33,190 = 4,728 * 4 * ((0.92 * 112) + 9.46) * 0.0156$$

Where:

$$4,728 = (1 - 0.07) * 12,710,012 * 0.0001 * (4 + 0)$$

2024

$$9,778 = 1,393 * 4 * ((0.92 * 112) + 9.46) * 0.0156$$

Where:

$$1,393 = (1 - 0.07) * 3,746,503 * 0.0001 * (4 + 0)$$

Charcoal Total

$$\text{Total} = 2022 + 2023 + 2024$$

$$64,428 = 21,460 + 33,190 + 9,778$$

Total Baseline Emissions= Charcoal total +Wood total

$$85,904 = 64,428 + 21,476$$

E.2. Calculation of project value or estimation of project situation of each SDG Impact

Details of equations used to calculate project value for SDG outcomes appear below. Calculation is provided in the corresponding Emission Reductions calculations in the 'SDG Calculations' Sheet.

Outcomes for SDG 3 (Good Health and Wellbeing)

The outcome for SDG 3 is quantified as the additional number of persons consuming safe water in the project activity compared to the baseline scenario (P_{safe}). The number of persons using each project technology is determined from the sales database and default values for litres of water used per day. The percentage of users who were already consuming safe water in the baseline without boiling it (C_j) is determined through the baseline survey and deducted. Additionally, the percentage of users who consumed safe water by boiling it in the baseline ($P_{b,boil}$) is deducted.

Calculations are as follows:

$$P_{safe} = P_y * (1 - C_j) * (1 - P_{b,boil})$$

2022

$$28,454 = 40,578 * (1 - 0.07) * (1 - 0.246)$$

2023

$$37,022 = 52,796 * (1 - 0.07) * (1 - 0.246)$$

2024

$$44,415 = 63,339 * (1 - 0.07) * (1 - 0.246)$$

Where:

P_{safe} Number of additional persons having access to safe water in the project activity compared to the baseline scenario.

P_y Number of persons having access to safe water in the project activity.

C_j Expressed as a percentage, the portion of users of the project technology j who in the baseline were already consuming safe water without boiling it.

$P_{b, boil}$ Percentage of persons boiling water for purification in the baseline scenario.

Outcomes for SDG 5 (Gender Equality) are calculated as follows:

$$TR_y = T_{b,y} - T_{p,y}$$

2022

$$2.15 = 2.40 - 0.25$$

2023

$$2.23 = 2.40 - 0.17$$

2024

$$2.23 = 2.40 - 0.17$$

Where:

TR_y Total reduction time spent collecting water for project activity in year y (hours)

$T_{b,y}$ Time spent collecting water per household per day prior to project (hours)

$T_{p,y}$ Time spent collecting water per household per day in project (hours)

Outcomes for SDG 6 (Clean Water and Sanitation) are calculated as follows:

The outcome for SDG 6 is quantified as the additional number of persons having access to safe water in the project activity compared to the baseline scenario (Paccess). The number of persons using each solar desalination plant is determined using the sales database for the project and default values for litres per person per day supplied by the methodology. The percentage of users who already had access to a safe water source will be determined through the baseline survey. Calculations are as follows (parameters from sections B.6.3 and B.7.1 of the VPA-DD will be applied):

$$P_{access} = P_y * (1 - C_j) * U_{p,y}$$

2022

$$26,756 = 40,578 * (1 - 0.07) * 0.709$$

2023

$$39,388 = 52,796 * (1 - 0.07) * 0.8022$$

2024

$$47,254 = 63,339 * (1 - 0.07) * 0.8022$$

Where:

Paccess Number of additional persons having access to safe water in the project activity compared to the baseline scenario.

P_y Number of persons having access to safe water in the project activity.

C_j Expressed as a percentage, the portion of users of the project technology j who in the baseline were already consuming safe water without boiling it.

U_{p,y} Usage rate in project scenario p during year y

Outcomes for SDG 13 (Climate Action) are calculated as follows:

CO2e emission reductions are the indicator to demonstrate that the project has raised capacity for effective climate change-related planning and management contributing to SDG 13. The overall reduction in CO2 emission reductions is calculated as follows:

Project emissions:

Wood:

$$PE_{p,y, wood} = B_{p,y, wood} * ((fNRB_y * EF_{p,fuel,co2,wood}) + EF_{p,fuel,nonco2, wood}) * NCV_{p,fuel, wood}$$

Charcoal:

$$PE_{p,y,charcoal} = B_{p,y,charcoal} * 4 * ((fNRB_y * EF_{p,fuel,co2,wood}) + EF_{p,fuel,nonco2,wood}) * NCV_{p,fuel, wood}$$

Where:

$$B_{p,y} = (1 - C_j) * N_{p,y} * W_{b,y} * (Q_{p,rawboil,y} + Q_{p,cleanboil,y})$$

Wood:

2022

$$0 = 0 * ((0.92 * 112) + 9.46) * 0.0156$$

Where:

$$0 = (1 - 0.07) * 2,739,533 * 0.0004 * (0 + 0)$$

2023

$$347 = 198 * ((0.92 * 112) + 9.46) * 0.0156$$

Where:

$$198 = (1 - 0.07) * 4,236,671 * 0.0004 * (0 + 0.1258)$$

2024

$$102 = 58 * ((0.92 * 112) + 9.46) * 0.0156$$

Where:

$$58 = (1 - 0.07) * 1,248,834 * 0.0004 * (0 + 0.1258)$$

Charcoal

2022

$$0 = 0 * 4 * ((0.92 * 112) + 9.46) * 0.0156$$

Where:

$$0 = (1 - 0.07) * 8,218,598 * 0.0001 * (0 + 0)$$

2023

$$1,039 = 148 * 4 * ((0.92 * 112) + 9.46) * 0.0156$$

Where:

$$148 = (1 - 0.07) * 12,710,012 * 0.0001 * (0 + 0.1258)$$

2024

$$302 = 43 * 4 * ((0.92 * 112) + 9.46) * 0.0156$$

Where:

$$43 = (1 - 0.07) * 3,746,503 * 0.0001 * (0 + 0.1258)$$

Emission Reductions:

$$ER_y = ((BE_{b,y} - PE_{p,y}) * Up,y - LE_{p,y}) * (1 - X_{boil})$$

Where:

$$BE_{b,y} = B_{b,y} * ((fNRB_y * EF_{b,fuel,co2}) + EF_{b,fuel,nonco2}) * NCV_{b,fuel}$$

And:

$$B_{b,y} = (1 - C_j) * N_{p,y} * W_{b,y} * (Q_{p,y} + Q_{p,rawboil,y})$$

Where:

$$PE_{p,y} = B_{p,y} * ((fNRB_y * EF_{p,fuel,co2}) + EF_{p,fuel,nonco2}) * NCV_{p,fuel}$$

And:

$$B_{p,y} = (1 - C_j) * N_{p,y} * W_{p,y} * (Q_{p,rawboil,y} + Q_{p,cleanboil,y})$$

Wood:

2022

$$3,978 = ((7,153 - 0) * 0.709 * (1 - 0.05) * (1 - 0.174))$$

2023

$$6,745 = ((11,063 - 347) * 0.8022 * (1 - 0.05) * (1 - 0.174))$$

2024

$$1,987 = ((3,260 - 102) * 0.8022 * (1 - 0.05) * (1 - 0.174))$$

$$\text{Wood Total} = 2022 + 2023 + 2024$$

$$12,710 = 3,978 + 6,745 + 1,987$$

Charcoal:

2022

$$11,939 = ((21,460 - 0) * 0.709 * (1 - 0.05) * (1 - 0.174))$$

2023

$$20,237 = ((33,190 - 1,039) * 0.8022 * (1 - 0.05) * (1 - 0.174))$$

2024

$$5,964 = ((9,778 - 302) * 0.8022 * (1 - 0.05) * (1 - 0.174))$$

Charcoal Total = 2022 + 2023 + 2024

$$11,939 + 20,237 + 5,964 = 38,140$$

Total emission reductions

$$12,710 + 38,140 = 50,850$$

Wood Emissions Reductions:

Wood Emission Reductions - 01/01/2022 - 31/12/2022			
2022 Emission Reductions - Wood			
Emissions Reductions			
Baseline emissions per year	BEb,y	tCO2/y	7,153
Project emissions per year	PEp,y	tCO2/y	0
Usage rate	Up,y	fraction	0.71
Leakage	LEp,y	tCO2/y	5%
Emission Reductions	ERy	tCO2/y	4,817
Suppressed Demand Assessment			
Percentage of non -suppressed demand users	Xboil	Percentage	17.40%
Emission Reductions	ERy	tCO2/y	3,978
Capped ERs			
Capped Emission Reductions	ERy	tCO2/y	3,978
Wood Emission Reductions - 01/01/2023 - 31/12/2023			
2023 Emission Reductions - Wood			
Emissions Reductions			
Baseline emissions per year	BEb,y	tCO2/y	11,063
Project emissions per year	PEp,y	tCO2/y	347
Usage rate	Up,y	fraction	0.80
Leakage	LEp,y	tCO2/y	5%
Emission Reductions	ERy	tCO2/y	8,166
Suppressed Demand Assessment			
Percentage of non -suppressed demand users	Xboil	Percentage	17.40%
Emission Reductions	ERy	tCO2/y	6,745
Capped ERs			
Capped Emission Reductions	ERy	tCO2/y	6,745
Wood Emission Reductions - 01/01/2024 - 31/03/2024			
2024 Emission Reductions - Wood			
Emissions Reductions			
Baseline emissions per year	BEb,y	tCO2/y	3,260
Project emissions per year	PEp,y	tCO2/y	102
Usage rate	Up,y	fraction	0.80
Leakage	LEp,y	tCO2/y	5%
Emission Reductions	ERy	tCO2/y	2406
Suppressed Demand Assessment			
Percentage of non -suppressed demand users	Xboil	Percentage	17.40%
Emission Reductions	ERy	tCO2/y	1,987
Capped ERs			
Capped Emission Reductions	ERy	tCO2/y	1,987
Wood Total Capped ERs for Monitoring Period 2			
Emissions Reductions			
2022			3,978
2023			6,745
2024			1,987
Total ERs for MP2			12,710

Charcoal Emissions Reductions:

Charcoal Emission Reductions - 01/01/2022 - 31/12/2022			
2022 Emission Reductions - Charcoal			
Emissions Reductions			
Baseline emissions per year	BEb,y	tCO2/y	21,460
Project emissions per year	PEp,y	tCO2/y	0
Usage rate	Up,y	fraction	0.71
Leakage	LEp,y	tCO2/y	5%
Emission Reductions	Ery	tCO2/y	14,454
Suppressed Demand Assessment			
Percentage of non-suppressed demand users	Xboil	Percentage	17.40%
Emission Reductions	ERy	tCO2/y	11,939
Capped ERs			
Capped Emission Reductions	ERy	tCO2/y	11,939
Charcoal Emission Reductions - 01/01/2023 - 31/12/2023			
2023 Emission Reductions - Charcoal			
Emissions Reductions			
Baseline emissions per year	BEb,y	tCO2/y	33,190
Project emissions per year	PEp,y	tCO2/y	1,039
Usage rate	Up,y	fraction	0.80
Leakage	LEp,y	tCO2/y	5%
Emission Reductions	Ery	tCO2/y	24,501
Suppressed Demand Assessment			
Percentage of non-suppressed demand users	Xboil	Percentage	17.40%
Emission Reductions	ERy	tCO2/y	20,237
Capped ERs			
Capped Emission Reductions	ERy	tCO2/y	20,237
Charcoal Emission Reductions - 01/01/2024 - 31/03/2024			
2024 Emission Reductions - Charcoal			
Emissions Reductions			
Baseline emissions per year	BEb,y	tCO2/y	9,778
Project emissions per year	PEp,y	tCO2/y	302
Usage rate	Up,y	fraction	0.80
Leakage	LEp,y	tCO2/y	5%
Emission Reductions	Ery	tCO2/y	7,221
Suppressed Demand Assessment			
Percentage of non-suppressed demand users	Xboil	Percentage	17.40%
Emission Reductions	ERy	tCO2/y	5,964
Capped ERs			
Capped Emission Reductions	ERy	tCO2/y	5,964
Charcoal Total Capped ERs for Monitoring Period 2			
Emissions Reductions			
2022			11,939
2023			20,237
2024			5,964
Total ERs for MP2			38,140

Total Emission Reductions

Total Capped ERs for Monitoring Period 2	
Emissions Reductions	
2022	15,917
2023	26,982
2024	7,951
Total ERs for MP2	50,850

E.3. Calculation of leakage

The potential sources of leakage listed in the methodology have been investigated, and addressed below:

a) The displaced baseline technologies are reused outside the project boundary in place of lower emitting technology or in a manner suggesting more usage than would have occurred in the absence of the project.

In all cases the baseline technologies displaced are traditional technologies; these have little to no market value. Their distribution throughout Kenya as a whole is already established - which means the potential for displacement is minimal as traditional baseline technologies will not be reused outside the project boundary. This leakage source can therefore be discounted.

b) The non-renewable biomass or fossil fuels saved under the project activity are used by non-project users who previously used lower emitting energy sources.

There is no evidence to suggest significant (if any) use of renewable energy for purifying water in the project region as found in the Baseline Water Surveys. As solar purification devices are not used, renewable energy used for purifying water would likely be animal dung or crop residues which will be used due to ease of availability/proximity to the home rather than due to a shortage of wood fuel, therefore it is an independent factor. This leakage source can therefore be discounted.

c) The project significantly impacts the NRB fraction within an area where other CDM or VER project activities account for NRB fraction in their baseline scenario.

As the majority of participants collect wood or buy charcoal from within the project boundary, it is not expected that the NRB in other areas will be affected.

d) The project population compensates for loss of the space heating effect of inefficient technology by adopting some other form of heating or by retaining some use of inefficient technology.

The space heating effect of boiling water for purification purposes will be minimal, as the predominant use of baseline technology is for cooking. Therefore, it is highly unlikely that another technology will be used for heating when users no longer boil water.

e) By virtue of promotion and marketing of new technology with high efficiency, the project stimulates substitution within households who commonly used a technology

with relatively lower emissions, in cases where such a trend is not eligible as an evolving baseline.

The project removes the need to boil water to purify. Therefore, the point regarding efficiency is null and this leakage source can be discounted. It was found 3.14% of Annual Monitoring 2024 respondents boil GivePower water. As such, this has been accounted for in the leakage applied to the project.

Following assessment of the Annual Monitoring Surveys 2022 and 2024, a conservative value of 5% leakage has been applied.

The project has the option of a back-up diesel generator on some of the “older” project sites to ensure consistent functionality of the system. Rigorous data analysis of the generator’s usage rate has concluded that only two sites have recorded its usage in this monitoring period (Likoni and Kitengela). During the monitoring period Kitengela recorded a generator usage of 30.03 mWh and Likoni 11.80 mWh. After applying an emission factor of 0.6 tCO₂e per mWh (Climate Change Compass, 2018) to the total mWh usage per site, an overall generator usage rate of 25 tCO₂e throughout the monitoring period was calculated. This has been deemed insignificant in regard to the total scale of the project. Leakage risk is considered low and a conservative value of 5% leakage is deemed appropriate.

E.4. Calculation of net benefits or direct calculation for each SDG Impact

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
13	Emission reductions	2022 - 0	2022 - 15,917	2022 - 15,917
		2023 - 0	2023 - 26,982	2023 - 26,982
		2024 - 0	2024 - 7,951	2024 - 7,951
3	Number of additional persons having access to safe water in the project activity compared to the baseline scenario	2022 - 12,124	2022 - 40,578	2022 - 28,454
		2023 - 15,774	2023 - 52,796	2023 - 37,022
		2024 - 18,924	2024 - 63,339	2024 - 44,415
5	Reduction in time spent collecting firewood per day	2022 - 2.40	2022 - 0.25	2022 - 2.15
		2023 - 2.40	2023 - 0.17	2023 - 2.23
		2024 - 2.40	2024 - 0.17	2024 - 2.23
6	Number of additional persons having access to safe water in the project activity compared to the baseline scenario	2022 - 13,822	2022 - 40,578	2022 - 26,756
		2023 - 13,408	2023 - 52,796	2023 - 39,388
		2024 - 16,085	2024 - 63,339	2024 - 47,254

E.5. Comparison of actual SDG Impacts with estimates in approved PDD

SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values ⁷ achieved during this monitoring period
13	<p>Ex-ante Emission Reductions per VPA:</p> <p>2022=60,000 tCO₂e</p> <p>2023=60,000 tCO₂e</p> <p>2024=15,000 tCO₂e</p>	<p>Actual Emission Reductions of:</p> <p>2022=15,917 tCO₂e</p> <p>2023=26,982 tCO₂e</p> <p>2024=7,951 tCO₂e</p>
3	<p>Number of additional persons having access to safe water in the project activity compared to the baseline scenario:</p> <p>2022=62,775</p> <p>2023=62,775</p> <p>2024=62,775</p>	<p>Number of additional persons having access to safe water in the project activity compared to the baseline scenario:</p> <p>2022=28,454</p> <p>2023=37,022</p> <p>2024=44,415</p>
5	<p>Reduction in time spent collecting firewood per day:</p> <p>2022=0.5</p> <p>2023=0.5</p> <p>2024=0.5</p>	<p>Reduction in time spent collecting firewood per day:</p> <p>2022=2.15</p> <p>2023=2.23</p> <p>2024=2.23</p>
6	<p>Number of additional persons having access to safe water in the project</p>	<p>Number of additional persons having access to safe water in the project</p>

⁷ Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

activity compared to the baseline scenario:	activity compared to the baseline scenario:
2022=75,330	2022=26,756
2023=75,330	2023=39,388
2024=75,330	2024=47,254

E.5.1. Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period

SDG 3: Good Health and Well-Being

In ex ante calculations, user numbers are based on estimations regarding the number of technologies included in a VPA and the number of users per technology. The remaining parameters, C_j and $P_{b,boil}$, in the calculation use baseline project survey data and are fixed ex ante, as found in Section D.1. of the MR.

SDG 5: Gender Equality

The parameter $T_{b,y}$ is estimated using the baseline project survey and is fixed ex ante (Section D.1. of the MR). In order to estimate the reduction in time spent collection water (TR_y), the ex-ante calculations assumed a 0.5 hour reduction for $T_{p,y}$. This parameter is planned to be monitored annually in the project survey.

SDG 6: Clean Water and Sanitation

In ex ante calculations, user numbers are based on estimations regarding the number of technologies included in a VPA and the number of users per technology. A 90% usage rate is assumed ahead of monitoring surveys taking place. The remaining parameter, C_j , is fixed ex ante, as found in Section D.1. of the MR.

SDG 13: Climate Action

The ex ante calculations for SDG 13 use a mix of baseline monitored parameters, methodology caps and figures assumed ahead of data collection. The Usage rate is estimated at 90% in the ex antes and ER calculations. Functionality days were estimated to be 95% in the ex antes. For the project we are using the sales database to inform the number of days non-operational.

E.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD

For SDG 3, in the project scenario there was an additional 28,454 people in 2022, 37,022 in 2023 & 44,415 in 2024, consuming safe water. This is due to the project providing safe water sources as determined by quarterly water quality tests. The ex-antes estimated an additional 62,775 people however, the project has not reached full scale in MP2. Each project technology impacts positively towards SDG 3 good health and wellbeing.

For SDG 5, reduction in time spent collecting water was higher in the project scenario than in the estimated ex-antes. This means that SDG 5 impact of reducing time spent collecting firewood was greater. The ex-ante calculations assumed a value of 0.5 hours, however following annual monitoring results, the impact was a reduction of 2.15 hours in 2022 & 2.23 hours in 2023 & 2024.

In ex ante calculations, 75,330 people are calculated as having additional access to safe water in the project scenario. However, this value is based on a full VPA. 26,756 people in 2022, 39,388 in 2023 & 47,254 in 2024 are calculated to have additional access to safe water compared to the baseline scenario. The difference is solely due to the number of technologies assumed in ex antes and realised in the project scenario. Positive contributions to SDG 6 are achieved, nonetheless.

For SDG 13, the ex-ante estimation was 60,000 emission reductions per year per VPA. This value assumed the VPA was filled to capacity with project technologies. 15,917 emission reductions were calculated in 2022, 26,982 in 2023 & 7,951 in 2024. The number of technologies was not enough to fill the VPA, hence lower values of emission reductions are claimed each year.

SECTION F. SAFEGUARDS REPORTING

1. Corruption

Water pricing is transparently communicated with local users and no issues have arisen in relation to this.

Continuous grievance mechanisms are in place for people to voice concerns relating to corruption, among other issues. Each technology has contact information for the project present and GivePower conduct a regular community engagement programme where stakeholders can voice concerns. No grievances have been reported during the monitoring period.

2. Land Tenure

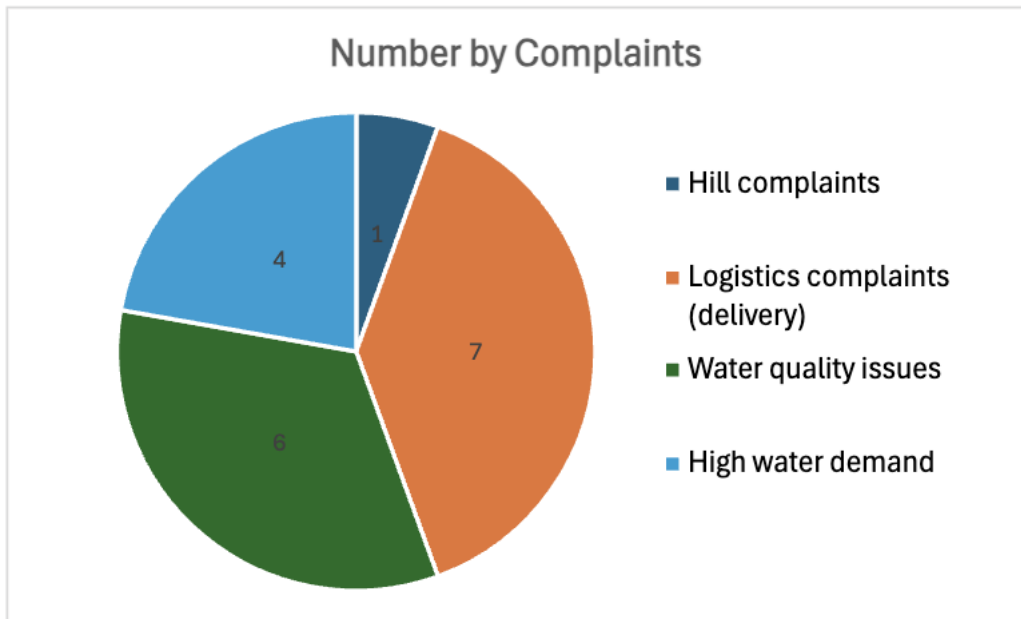
All project technologies have secured land tenure rights in advance of their installation.

SECTION G. STAKEHOLDER INPUTS AND LEGAL DISPUTES

G.1. List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations.

Names and contact details have been removed for privacy. Below is the full list and summary of comments received.

S/No.	SITE	FEEDBACK
1	Likoni	Hill complaints
2	Likoni	Logistics complaints (delivery)
3	Likoni	Water quality issues
4	Likoni	Logistics complaints (delivery)
5	Wote	High water demand
6	Wote	High water demand
7	Bamburi	Water quality issues
8	Mtongwe	Water quality issues
9	Mtongwe	Water quality issues
10	Mtongwe	Logistics complaints (delivery)
11	Kitengela	Water quality issues
12	Kitengela	Water quality issues
13	Kitengela	Logistics complaints (delivery)
14	Mkokowe	High water demand
15	Mkokowe	Logistics complaints (delivery)
16	Mwingi	Logistics complaints (delivery)
17	Mwingi	Logistics complaints (delivery)
18	Mwingi	High water demand



Responses/ mitigations are presented for each group:

Hill complaints: The partner instructed the site guard to help customers in pushing their carts and bikes up the hill to the main road. They would get paid on a weekly basis for the service.

Logistics complaints: The partner has e-bikes available on sites which they support loyal customers with. Bowser deliver was delayed in one case at 'Mtongwe site', the team reached out to the customer and updated them on maintenance progress and ensured water delivery.

Water quality issues: complaints often stem from consumers utilising dirty jerry cans and tanks. Therefore, the partners first point of action is checking the containers and if found dirty the site hand would assist them in cleaning, whilst advising to ensure containers are frequently cleaned. Additionally, if other water quality issues present themselves, the partner visits the customers and takes a household water quality sample to assess problem. In the reported cases the results came back and passed Kenyan water quality standards.

High water demand: customers raised issues around not receiving enough water to meet their demands. However, sites are working at capacity when considering factors like sunlight and aquifer capacity.

G.2. Report on any stakeholder mitigations that were agreed to be monitored.

No stakeholder mitigations were agreed to be monitored.

G.3. Provide details of any legal contest that has arisen with the project during the monitoring period

No legal contest or dispute has arisen with the project.

Revision History

Version	Date	Remarks
1.1	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Section for POA monitoring Forward action request section Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on safeguard reporting Clarity on design changes Leakage section added for VER/CER projects Addition of Comparison of monitored parameters with last monitoring period Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.0	10 July 2017	Initial adoption