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TEMPLATE

MONITORING REPORT

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VERSION **v. 1.1**

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

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KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	GS5125
Title of the project (s) covered by monitoring report	Eritrea Community Boreholes
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	Version 9
Version number of the monitoring report	4
Completion date of the monitoring report	28/03/2024
Date of project design certification	08/12/2017
Date of Last Annual Report	27/04/2021
Monitoring period number	MP3
Duration of this monitoring period	01/03/2021 - 30/08/2022
Project Representative	Chiara Martin (CO2balance)
Host Country	State of Eritrea
Activity Requirements applied	☒ Community Services Activities ☐ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Methodology (ies) applied and version number	Technologies and Practices to Displace Decentralized Thermal Energy Consumption version 2.0
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A

Table 1 - Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
3 – Good Health & Wellbeing	Reduction in household smoke	95	Percentage
5 – Gender Equality	Time saved on average per household per day	1.16	Hours
6 – Clean Water & Sanitation	Additional people gaining access to safe water	44,405	People
13 – Climate Action	Emission Reductions	119,250	tCO2e

Table 2 – Product Vintages

		Amount Achieved
Start Dates	**End Dates**	**VERs**
01/03/2021	31/12/2021	66,589
01/01/2022	30/08/2022	52,661

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

In Eritrea over 45% of the rural population do not have access to safe water and rely exclusively on unprotected wells, lakes and other open water sources that are highly susceptible to contamination. Annexed from Ethiopia in 1962, the country has experienced periodic conflict and continuing tensions in the region.

Armed conflict, mandatory military service and external migration, takes men away from their villages and means that many rural families are headed by women, often widows. Female headed households in Eritrea face many challenges. as the women bear the burden of producing food as well as providing care for their families, including travelling to collect firewood and water. As a result, they cultivate less land and have fewer assets.

Many existing boreholes in Eritrea and have fallen into disrepair because maintenance programmes have been poorly managed or proven too expensive leaving people without access to clean water. CO2balance's project partner Vita has worked to identify broken down boreholes, renovate them and supply a maintenance programme to ensure that clean, safe water is delivered as a result of this project. The boreholes included under the project are entirely human operated and fitted with hand pump models that are commonly used in the area such as Afridey, U3 Modified and India Mark II pumps.

Zoba Debub, Zoba Anseba and Zoba Maekel areas targeted are largely rural districts in which many local people typically use wood fuel on inefficient three-stone fires to purify their drinking, cleaning and washing water. This process results in the release of greenhouse gas emissions from the combustion of wood which can be avoided if a technology that does not require fuel (wood or fossil) supplies clean water desired by households. By providing safe water this project ensures that households consume less firewood during the process of water purification and therefore reduce greenhouse gas emissions from the combustion process.

120 boreholes were rehabilitated as part of these projects between the 21st September 2016 and 17th February 2018. An additional 43 boreholes were rehabilitated from 5th December 2018 and 4th June 2020 which have been included within the project during MP2.

The date of rehabilitation was confirmed by a Repair Confirmation Form which was signed by the mechanic carrying out the repair along with a village administrator from the local community. The date of rehabilitation was used as the start date of operation and crediting for each borehole; we have conservatively assumed that the first day of crediting is not counted.

The number of days each borehole credited for in this monitoring period was multiplied by the number of people using the borehole to give the total number of project

technology days for that borehole. The individual project technology days for each borehole were totalled to give the total number of project technology days for this monitoring period.

A list of the addresses and GPS of the project boreholes appears below. Coordinates of all boreholes are mapped in Figure 2 in the Zoba Debub region of Eritrea.

Borehole ID	Sub-zoba	Village	Pump Type	Latitude	Longitude	Rehab Date
ZD001	Mendefera	Adikenebet	India Mark III	14.95846°	38.80592°	21/09/2016
ZD002	Mendefera	Adigawl	India Mark II	14.9344°	38.73663°	21/09/2016
ZD003	Mendefera	Adikemene	India Mark III	14.89551°	38.77609°	22/09/2016
ZD004	Mendefera	Gezagobo	India Mark II	14.95327°	38.79260°	22/09/2016
ZD005	Mendefera	Gomero	India Mark II	14.93860°	38.73987°	22/09/2016
ZD006	Mendefera	Ginebale	India Mark III	14.95942°	38.81550°	22/09/2016
ZD007	Mendefera	Embezareb	India Mark III	14.87513°	38.86061°	23/09/2016
ZD008	Mendefera	Adigahad	India Mark III	14.84689°	38.79607°	23/09/2016
ZD009	Mendefera	Newihziban	India Mark II	14.87586°	38.93856°	24/09/2016
ZD010	Mendefera	Kudochira	India Mark III	14.91644°	38.88125°	24/09/2016
ZD011	Mendefera	Mihram ghedo	India Mark II	14.78323°	38.93407°	25/09/2016
ZD012	Mendefera	Suri	India Mark II	14.80887°	38.95410°	25/09/2016
ZD013	Mendefera	OO	India Mark III	14.76435°	38.95799°	25/09/2016
ZD014	Mendefera	Adiberak	India Mark III	14.85030°	38.79469°	29/09/2016
ZD015	Mendefera	Adi bari	India Mark III	14.88087°	38.82016°	30/09/2016
ZD016	Mendefera	Adihare	India Mark II	14.89895°	38.79633°	06/10/2016
ZD017	Dbarwa	Zwab	India Mark III	15.02199°	38.72949°	03/10/2016
ZD018	Dbarwa	Gerteti	India Mark III	15.01203°	38.7316°	04/10/2016
ZD019	Dbarwa	Semasem	India Mark III	15.00521 °	38.73927°	04/10/2016
ZD020	Dbarwa	Adibezehans-1	India Mark II	15.06190°	38.7653°	05/10/2016
ZD021	Dbarwa	Adibezehans-2	India Mark II	15.06300°	38.76763°	05/10/2016
ZD023	Dbarwa	Adikunial	India Mark II	15.06345°	38.73515°	05/10/2016
ZD024	Dbarwa	Adibelih	India Mark II	15.08926°	38.7211°	06/10/2016
ZD025	Dbarwa	Adifelesti-1	India Mark II	15.13354°	38.6978°	06/10/2016

ZD026	Dbarwa	Adifelesti-2	India Mark II	15.13391°	38.70463°	06/10/2016
ZD027	Dbarwa	Adibaro-1	India Mark II	15.13892°	38.78442°	09/10/2016
ZD028	Dbarwa	Adibaro-2	India Mark II	15.14558°	38.79181°	09/10/2016
ZD029	Dbarwa	Temajela	India Mark II	15.14184°	38.79764°	09/10/2016
ZD030	Dbarwa	Qaqbda	India Mark III	15.15652°	38.77307°	10/10/2016
ZD031	Dbarwa	Adi Tala	India Mark II	15.13893°	38.73741°	10/10/2016
ZD032	Dbarwa	Adiguari	India Mark II	15.12992°	38.77675°	12/10/2016
ZD033	Dbarwa	Adisherefeto	India Mark II	15.17150°	38.83439°	12/10/2016
ZD034	Dbarwa	Aditsunay	India Mark II	15.18861°	38.82877°	12/10/2016
ZD035	Dbarwa	Adibana	India Mark II	14.97298°	38.76791°	14/10/2016
ZD036	Dbarwa	Amadr	India Mark II	15.09892°	38.75658°	15/10/2016
ZD053	Adikeih	Adi embeyto	India Mark II	14.84922°	39.35263°	29/10/2016
ZD054	Adikeih	Adimaelewya	India Mark II	14.81727°	39.36509°	29/10/2016
ZD055	Adikeih	May-tsaeda	India Mark II	14.82083°	39.31345°	30/10/2016
ZD056	Adikeih	Tokondae	India Mark II	14.82422°	39.38910°	31/10/2016
ZD058	Adikeih	Sibiraso	India Mark II	14.88375°	39.39803°	01/11/2016
ZD059	Adikeih	Adiighila	India Mark II	14.78838°	39.42682°	01/11/2016
ZD060	Adikeih	Cambojubuti	India Mark II	14.84187°	39.37044°	02/11/2016
ZD062	Adikeih	Adi hashmele	India Mark II	14.86785°	39.37187°	03/11/2016
ZD063	Adikeih	Karibosa-Debhina	India Mark II	14.91742°	39.42044°	04/11/2016
ZD064	Adikeih	Mendefera	India Mark II	14.90230°	39.32728°	15/11/2016
ZD065	Adikeih	Sanako	India Mark II	14.76543°	39.44693°	17/11/2016
ZD066	Adikeih	Semdi	India Mark III	14.97602°	39.33442°	17/11/2016
ZD067	Segheneity	Indihish	India Mark II	14.91240°	39.28647°	17/11/2016
ZD068	Segheneity	Brkito	India Mark II	14.94416°	39.25391°	18/11/2016
ZD069	Segheneity	Adiawhilailai	India Mark III	14.98310°	39.19379°	19/11/2016
ZD070	Segheneity	Digsa	India Mark II	14.98897°	39.22661°	19/11/2016
ZD071	Segheneity	Haddishadihalai	India Mark II	15.01517°	39.30918°	20/11/2016
ZD072	Segheneity	Adihalai	India Mark II	14.99948°	39.32912°	20/11/2016
ZD073	Segheneity	Adidigralebie	India Mark II	15.02538°	39.20659°	21/11/2016
ZD074	Segheneity	Maimogdom	India Mark III	15.05489°	39.18575°	21/11/2016
ZD075	Segheneity	Akrur	India Mark II	15.08094°	39.23396°	22/11/2016
ZD076	Dekemhare	Tikul	India Mark III	15.02497°	39.02888°	25/11/2016
ZD077	Dekemhare	Adiharm	India Mark II	15.04569°	39.06461°	26/11/2016
ZD078	Dekemhare	Adifekaih	India Mark II	15.0243°	38.91315°	27/11/2016
ZD079	Dekemhare	Kilawta	India Mark II	14.99217°	39.00127°	28/11/2016
ZD080	Dekemhare	Damba 1	India Mark II	15.14852°	38.96456°	30/11/2016
ZD081	Dekemhare	Damba 2	India Mark II	15.14882°	38.96376°	30/11/2016

ZD082	Dekemhare	Dekinazo	India Mark II	15.12232°	39.01662°	01/12/2016
ZD083	Dekemhare	Adroso	India Mark II	15.17875°	39.14310°	02/12/2016
ZD084	Dekemhare	Wikirti	India Mark II	15.14277°	39.00569°	03/12/2016
ZD085	Emnihaili	Adibahalay	India Mark II	14.72337°	38.68292°	17/12/2016
ZD086	Emnihaili	Adishemkele	India Mark II	14.69768°	38.74014°	18/12/2016
ZD087	Emnihaili	Aditereke	India Mark II	14.71723°	38.73045°	18/12/2016
ZD088	Emnihaili	Adihalewat	India Mark II	14.68880°	38.72905°	19/12/2016
ZD089	Emnihaili	Adihirwaghedena	India Mark II	14.73402°	38.79483°	19/12/2016
ZD090	Emnihaili	Hidad	India Mark III	14.80916°	38.73266°	20/12/2016
ZD091	Emnihaili	Adiblad	India Mark III	14.83071°	38.74564°	20/12/2016
ZD092	Emnihaili	Adisihalab	India Mark III	14.82540°	38.74596°	20/12/2016
ZD093	Emnihaili	Adikodo	India Mark III	14.79707°	38.86354°	21/12/2016
ZD094	Emnihaili	Adiigrimekel	India Mark III	14.81651°	38.81265°	21/12/2016
ZD095	Emnihaili	Adiunabuta	India Mark III	14.72413°	38.85771°	22/12/2016
ZD096	Emnihaili	Adiwuhi	India Mark III	14.72414°	38.85713°	23/12/2016
ZD097	Emnihaili	Adiandel	India Mark III	14.70865°	38.85640°	23/12/2016
ZD098	Emnihaili	Endamariam	India Mark III	14.72058°	38.86188°	24/12/2016
ZD099	Emnihaili	Adibardi 1	India Mark II	14.81789°	38.84883°	27/12/2016
ZD100	Emnihaili	Adibardi 2	India Mark II	14.81883°	38.84775°	27/12/2016
ZD153	Mendefera	Shekuano	India Mark III	14.95847°	38.8059°	27/03/2017
ZD154	Dbarwa	Adighered 1	India Mark II	15.0828°	38.78359°	28/03/2017
ZD155	Dbarwa	Adighered 2	India Mark II	15.08276°	38.78351°	28/03/2017
ZD156	Adikeih	Asheran-adigumani	India Mark III	14.77725°	39.25689°	29/03/2017
ZD159	Areza	Zebandebri	India Mark III	14.74743°	38.54052°	05/05/2017
ZD160	Areza	Adigoned	India Mark III	14.78676°	38.53708°	06/05/2017
ZD161	Areza	Adihilae	India Mark III	14.78641°	38.53601°	07/05/2017
ZD163	Areza	Adimomesh	India Mark III	14.97571°	38.5776°	08/05/2017
ZD166	Areza	Adigulti	India Mark III	15.00143°	38.58742°	10/05/2017
ZD168	Areza	Adiembagodad	India Mark III	14.96862°	38.63345°	11/05/2017

ZD169	Areza	Aditsenfa	India Mark III	14.95088°	38.61882°	12/05/2017
ZD170	Areza	Adibeza	India Mark III	14.95214°	38.62051°	12/05/2017
ZD171	Areza	Adimaighuda	India Mark III	14.9148°	38.67809°	13/05/2017
ZD172	Areza	Adimaicuak	India Mark III	14.92417°	38.66984°	13/05/2017
ZD173	Areza	Adigherot	India Mark III	14.93025°	38.50359°	14/05/2017
ZD174	Areza	Adigandefer	India Mark III	14.90651°	38.69639°	14/05/2017
ZD175	Areza	Adiagama	India Mark III	14.95188°	38.68891°	15/05/2017
ZD177	Areza	Adisagla	India Mark III	14.86244°	38.65874°	15/05/2017
ZD179	Areza	Adimglab	India Mark III	14.86232°	38.65808°	16/05/2017
ZD181	Mendefera	Shekawedibsrat	India Mark II	14.89386°	38.76452°	05/10/2017
ZD182	Adiquala	Adidebereberhan	India Mark III	14.66628°	38.81431°	09/12/2017
ZD184	Adiquala	Adichemai	India Mark II	14.63874°	38.87478°	11/12/2017
ZD185	Adiquala	Adihaber	India Mark II	14.59824°	38.86842°	12/12/2017
ZD186	Areza	Aikebetsu	India Mark II	14.83870°	38.62535°	16/12/2017
ZD187	Mendefera	Adigaul	India Mark II	14.93045°	38.73216°	19/12/2017
ZD188	Areza	Adigaba	India Mark III	14.88051°	38.48464°	30/12/2017
ZD193	Areza	Adibohununa	India Mark II	14.77859°	38.64560°	01/01/2018
ZD194	Areza	Adijemel	India Mark III	14.80557°	38.64960°	01/01/2018
ZD195	Areza	Ilaandom	India Mark III	14.92527°	38.56415°	04/01/2018
ZD196	Adikeih	Adideraghudi	India Mark II	14.95156°	39.33902°	21/01/2018
ZD197	Senafe	Maighoduf	India Mark III	14.74524°	39.38937°	24/01/2018
ZD198	Senafe	Adiaderho	India Mark III	14.53691°	39.45740°	26/01/2018
ZD200	Senafe	Barkenaha	India Mark III	14.56308°	39.42921°	28/01/2018
ZD202	Senafe	Adimesihal	India Mark II	14.61719°	39.37820°	29/01/2018
ZD203	Senafe	Adiforto	India Mark II	14.60691°	39.36358°	30/01/2018
ZD205	Senafe	Adihiguana	India Mark III	14.64251°	39.44874°	08/02/2018
ZD206	Senafe	Adimbark	India Mark II	14.57720°	39.46685°	10/02/2018
ZD208	Senafe	Adiahiz	India Mark II	14.53712°	39.31182°	17/02/2018
ZD209	Senafe	Adirokoyto	India Mark II	14.61719°	39.37820°	29/01/2018

ZD227	Senafe	Tisha	India Mark II	14.72614°	39.44954°	02/03/2020
ZD228	Senafe	Egriabew	India Mark II	14.74965°	39.40397°	03/03/2020
ZD229	Senafe	Karibosa	India Mark III	14.72301°	39.40951°	04/03/2020
ZD230	Senafe	Adital	India Mark II	14.69526°	39.47869°	05/03/2020
ZD231	Adikeih	Hiret	India Mark II	14.81282°	39.02266°	06/03/2020
ZD232	Adikeih	Adiageb	India Mark II	14.72552°	39.44076°	07/03/2020
ZD233	Segheneity	Berkito	India Mark II	14.94973°	39.26484°	02/03/2020
ZD234	Segheneity	Astah	India Mark II	14.94287°	39.17035°	03/03/2020
ZD235	Dekemhare	Zebanageb	India Mark II	15.14°	38.985°	04/03/2020
ZD236	Emnihaili	Adizemati	India Mark II	14.71763°	38.85415°	10/03/2020
ZD237	Emnihaili	Adichelku	India Mark II	14.72514°	38.73888°	11/03/2020
ZD238	Emnihaili	Kudozebo	India Mark III	14.735°	38.87°	12/03/2020
ZD239	Mendefera	Adishimadi	India Mark II	14.67691°	38.72894°	10/03/2020
ZD240	Mendefera	Dandereghenet	India Mark II	14.8718°	38.77391°	11/03/2020
ZD241	Adiquala	Adikotoyo	India Mark III	14.61445°	38.83023°	02/03/2020
ZD242	Adiquala	Ghezakenen	India Mark II	14.5647°	38.8133°	03/03/2020
ZD243	Maiaini	Adewti	India Mark II	14.83104°	39.25385°	12/03/2020
ZD244	Maiaini	Adiarbaet	India Mark II	14.73195°	39.03443°	13/03/2020
ZD245	Maiaini	Tekelabi	India Mark II	14.8969°	39.1308°	14/03/2020
ZD246	Maiaini	Mebered	India Mark III	14.85851°	39.0596°	16/03/2020
ZD247	Maiaini	Gheniseba	India Mark II	14.83625°	39.08256°	17/03/2020
ZD248	Dbarwa	Adilogo	India Mark II	15.0969°	38.8019°	20/03/2020
ZD249	Maimine	Zerben	India Mark II	15.1231°	38.7981°	21/03/2020
ZD250	Maimine	Adiatsida	India Mark II	14.5247°	38.6275°	23/03/2020
ZD251	Tsorona	Berikhutsa	India Mark II	14.71098°	39.10346°	24/03/2020
ZD252	Tsorona	Meserar	India Mark II	14.65715°	39.20754°	25/03/2020
ZD253	Areza	Aditsanef	India Mark II	14.9509°	38.61891°	26/03/2020
ZD254	Areza	Adibal	India Mark II	14.81449°	38.45672°	02/06/2020
ZD255	Adiquala	Aditeme	India Mark II	14.65076°	38.85764°	04/06/2020
ZD212	Adikeih	Meareda	India Mark II	14.64905°	39.44918°	05/12/2018
ZD213	Senafe	Adibaekel	India Mark II	14.65016°	39.45500°	07/12/2018
ZD214	Dbarwa	Betgheriel	India Mark II	15.12129°	38.67368°	10/12/2018
ZD216	Emnihaili	Mefalso	India Mark II	14.81800°	38.83761°	05/03/2019
ZD217	Dekemhare	Gadien	India Mark II	15.18048°	39.04226°	25/03/2019
ZD218	Dbarwa	Adiwatot	India Mark II	15.06024°	38.85283°	01/04/2019
ZD219	Emnihaili	Adiabraham	India Mark II	14.75284°	38.75705°	02/04/2019
ZD220	Adiquala	Adisheretay	India Mark II	14.56879°	38.67112°	12/04/2019
ZD221	Dbarwa	Edagadehina	India Mark II	15.07924°	38.74953°	16/04/2019
ZD222	Senafe	Kesadaguruf	India Mark II	14.65023°	39.47472°	20/04/2019

ZD223	Dekemhare	Beletsodebrekeih	India Mark II	15.19030°	39.08193°	12/05/2019
ZD224	Senafe	Saloda 2	India Mark II	14.64662°	39.46494°	16/05/2019
ZD225	Dbarwa	Bambeko	India Mark III	15.18860°	38.69780°	17/05/2019
ZD226	Dbarwa	Kesaddaero	India Mark III	14.99976°	38.75026°	20/05/2019

A.2. Location of project

Below is the geographic reference to allow unique identification of the project boundary for the project. The districts Zoba Debub, Zoba Anseba and Zoba Maekel, Eritrea are marked respectively in pink, orange and blue on the Google Earth image Figure 1. The target area and the fuel collection area are defined as being contained within project boundary, with the outer limits of the project boundary being clearly defined on the Google Earth images. As the majority of beneficiaries collect their wood fuel locally in close proximity to their homesteads, the wood fuel collection area and target area are considered the same.

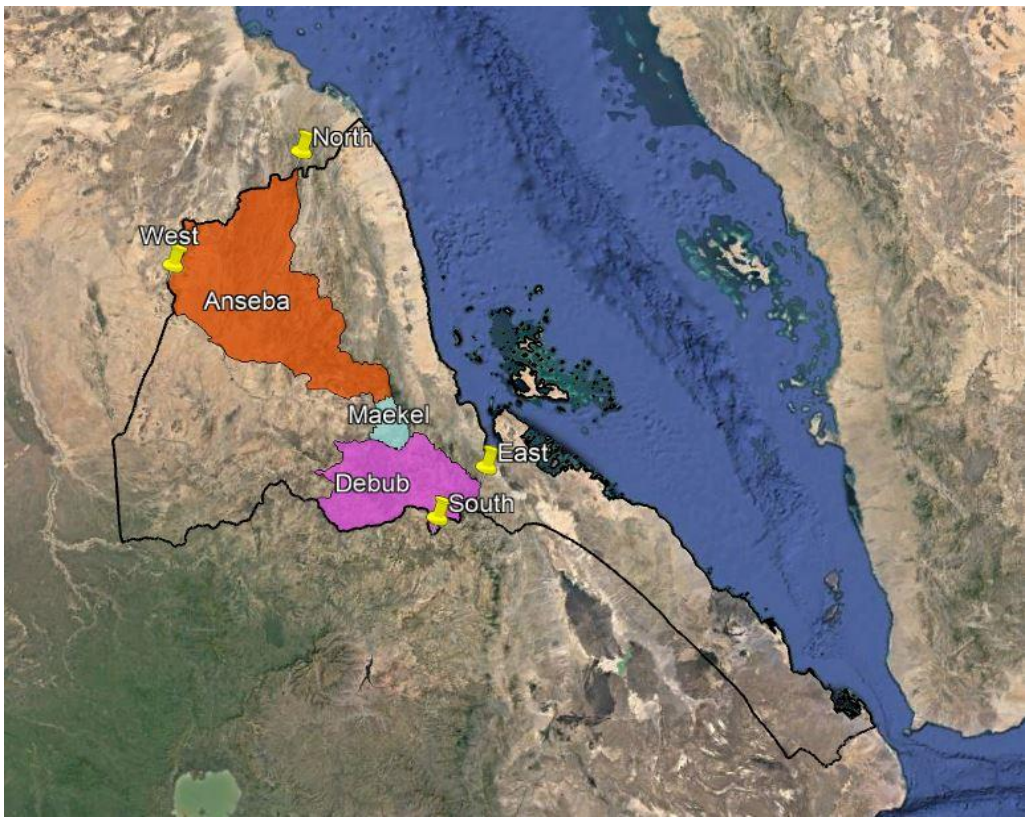

Figure 1: Eritrea Regional Map

Eritrea Project Area Coordinates		
	Latitude (N)	**Longitude (E)**
North	17.557288°	38.005585°
East	14.834779°	39.671212°
South	14.392255°	39.252548°
West	16.550414°	36.888911°

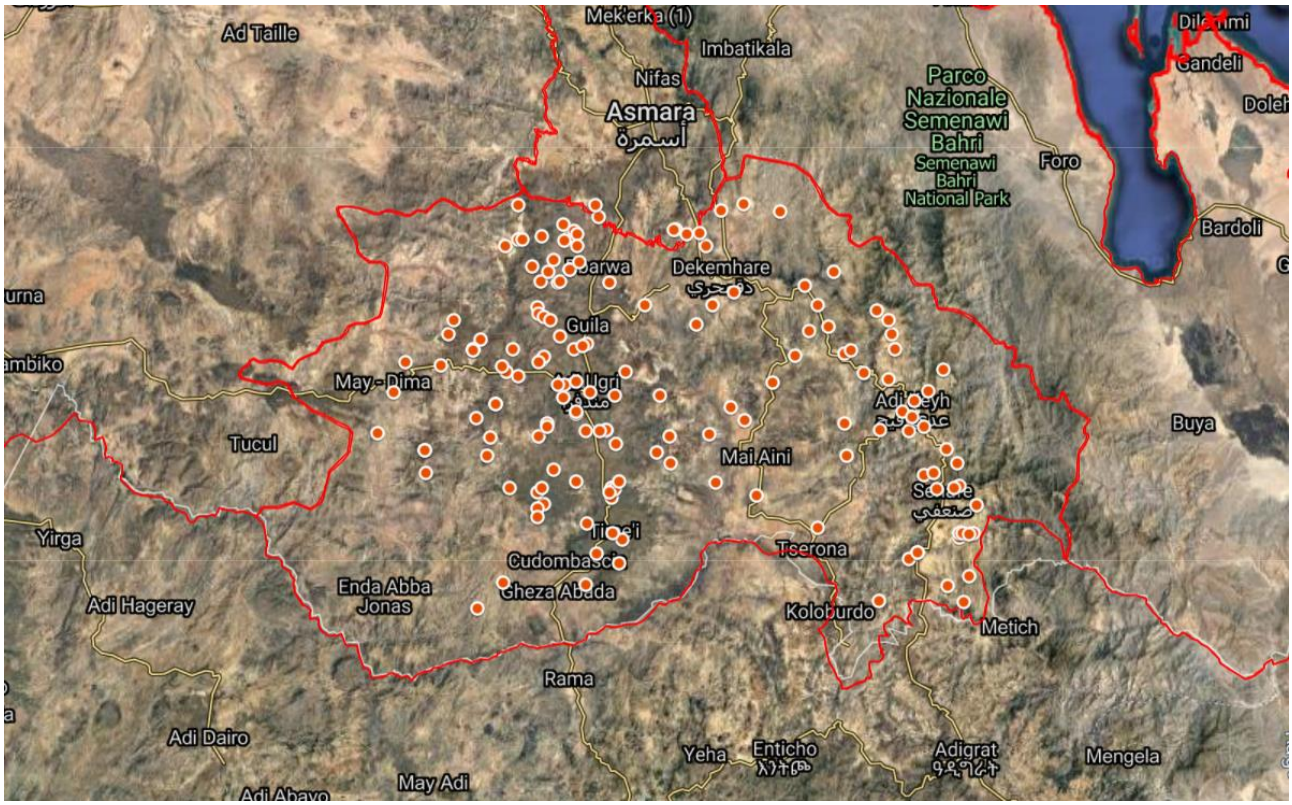

Figure 2. Boreholes distribution (Zoba Debub)

A.3. Reference of applied methodology

Technologies and Practices to Displace Decentralized Thermal Energy Consumption version 2.0

A.4. Crediting period of project

7 Year, twice renewable (21 years)

Project start date: 21/09/2016

Crediting period: 22/09/2016 – 21/09/2023

Registration date: 22/03/2018
Design Change completed on 10/12/2019

Monitoring period 1 - 22/09/2016 – 29/02/2020 (1,256 days)
Monitoring period 2 – 01/03/2020 – 28/02/2021 (365 days)
Monitoring period 3 – 01/03/2021 – 30/08/2022 (548 days)

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

Vita has rehabilitated 163 boreholes in Zoba Debub as part of this project between 21st September 2016 and 4th June 2020. The communities in the region previously suffered from limited access in clean water which resulted in high rates of water borne diseases especially among children.

All water points are in good working order and have been crediting since the beginning of their crediting period. Boreholes undergo sampled quarterly water quality testing according to the TPDDTEC v.2 methodology to ensure the water is safe for human consumption as per national water standards. The water quality is currently approved by the Ministry of Land, Water and Environment in Zoba Debub.

Furthermore, grievance expression books placed at Vita offices have not received any feedback and Vita field staff have not received any feedback during this monitoring period from the borehole users on damage or breaking of boreholes therefore it can be assumed that the project is running as planned.

Information on boreholes repaired in Zoba Anseba and Zoba Maekel will be added at the time of next verification if repairs take place in these regions.

Technology

The vast majority of pumps to be fixed are India Mark II pump as shown below. Other hand pump models that utilize the same basic design may also be included in the project. This includes but is not limited to the India Mark III, Afridey and the U3 modified pump.

The India Mark II is a public domain pump that it is reliable and popular with the communities.

Technical description

The INDIA Mark II Pump is a conventional lever action hand pump and is subject to Indian Standard IS 9301. This pump has a pump head, pump stand and a handle of galvanized steel. The down hole components exist of a brass lined cast iron cylinder with a foot valve and a plunger of brass.

	India Mark II[1]	**India Mark III**[2]
Depths for use:	between 50 - 80 m	between 10-50 m
Cylinder diameter:	63.5 mm	63.5 mm
Maximum Stroke:	125 mm	125 mm
Approx. discharge (75 watt input):	at 10 m head: 1.8 m^3/hour	at 10 m head: 1.8 m^3/hour
	at 15 m head: 1.3 m^3/hour	at 15 m head: 1.3 m^3/hour

[1] https://www.rural-water-supply.net/en/implementation/public-domain-handpumps/india-mark-ii

[2] https://www.rural-water-supply.net/en/implementation/public-domain-handpumps/india-mark-iii

	at 20 m head:1.0 m^3/hour	at 20 m head:1.0 m^3/hour
	at 25 m head: 0.9 m^3/hour	at 25 m head: 0.9 m^3/hour
	at 30 m head: 0.8 m^3/hour	at 30 m head: 0.8 m^3/hour
Pumping lift	10-50 m	10-50 m
Assumed water consumption:	15 - 20 L/per capita,	15 - 20 L/per capita
Type of well:	borehole	borehole or dug well

Figure 1: A woman collects clean water from a newly rehabilitated borehole

B.1.1 Forward Action Requests

B.2. Post-Design Certification changes

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

N/A

B.2.2. Corrections

N/A

B.2.3. Changes to start date of crediting period

N/A

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

The Wp,y value changed for the previous monitoring period and will remain as a permanent change. Prior to this change calculations used a measured baseline value obtained from the Baseline Water Boiling Test. However, as per GS SWS Grievance Review, the updates to the parameters meant a cap was introduced which has been applied to this project - considering the firewood required to boil 1 litre of water for 10 minutes using a three stone fire (0.4 kg/L).

Updates have been made to parameter EF (Non-CO2 (CH4 and N2O emission factor

arising from use of wood fuel in baseline scenario) with previous AR4 values applied to 2020 vintage, but as new rule update came into force on 01/01/2021, 2021 vintage have been calculated with the updated AR5 value in the corresponding parameter box.

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. 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.

The results of the surveys are collated in excel spreadsheets and stored on a central server in an electronic format then is 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 Eritrean office and are available scanned upon request of the UK team.

In accordance with the Gold Standard methodology Technologies and Practices to Displace Decentralized Thermal Energy Consumption, the survey samples are randomly selected from the borehole user record and are determined in accordance with the required confidence/precision. The size of the sample is dependent on the methodological requirements and variance of the parameter being monitored to ensure the parameters measured satisfy 90/30 precision (90% confidence interval and 30% margin of error). The sample is reselected for every monitoring period to ensure the selection remains random.

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

Borehole database

The borehole installation/rehabilitation record includes the following information:

- Borehole ID
- Date of installation/rehabilitation
- Quantity of boreholes rehabilitated
- The total number of people obtaining their water from each borehole
- Average distance to borehole from household

The total number of households using each borehole has been determined through the lists supplied by the community group and or district water officer responsible for that borehole. Using this method, the total number of people using each borehole has been determined and hence a figure for person days can be calculated.

Ongoing Monitoring Studies

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

- **Water consumption field test** (Equation parameters Qp,y and Qp,rawboil,y) - Completed prior to first verification and then biennially after first verification

- **Quality of the treated water** - The quality of the treated water will be assessed to ensure that it is fit for human consumption. The parameters used to assess the water quality will be in line with WHO[3] standards for potable water and all parameters will be shown to be within levels considered acceptable for domestic human consumption. Water Quality Tests (WQTs) will be conducted quarterly with a sample size using the 90/10 precision rule.

- **Usage Survey** - boreholes have been installed between 21/09/2016 – 04/06/2020 and are expected to last the lifetime of the project, minimum samples of 30 for different aged technologies will be applied. Overall the annual usage survey is conducted using a minimum sample size of 100. The results from the usage survey are used to determine the proportion of beneficiaries that use the borehole which is factored into the emission reduction calculations.

- **Project Survey** – Conducted on 100 households, surveying end users currently using project technologies to explore changes in project scenario over time. Data collected during the project surveys explores the following characteristics:

    - General information - Name, address, telephone number etc.
    - Household socio-demographic information.
    - Water use and purification characteristics.
    - Sources and availability of fuel.

- **Project Technology Days (Np,y)-** Number of persons consuming water supplied by project scenario p through year y. Sum of the total number of people using each borehole in the project multiplied by the number of crediting days each borehole earns in this monitoring period. The total number of households using each borehole will be determined through information supplied by our partner. Using this method, the total number of people using each borehole will be known, and hence a figure for person days can be calculated. All monitoring tasks will be selected at random. The following caps are applied as per GS requirements following the BAMG report:
    - 95% functionality in the monitoring period.

[3] http://whqlibdoc.who.int/publications/2011/9789241548151_eng.pdf?ua=1

- 300 user cap. Calculations to cap people served by each borehole can be found in corresponding emissions reductions calculation spreadsheets.

Cross Sampling

The project proponent has elected to cross-sample technologies per region across all its homogenous boreholes located within Zoba Debub, Zoba Maekel and Zoba Anseba. In the current monitoring period, cross-sampled technologies are from the Zoba Debub region only. The samples for the survey listed below are randomly selected from the borehole information databases using the RSG procedure previously explained in line with the minimum sample size requirements as defined by the methodology. Cross sampling will be applied to the following surveys;

- Project Surveys- Completed annually,
- Usage Surveys- Completed annually,
- Water Consumption Field Tests- Completed every two years

SECTION D. DATA AND PARAMETERS

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

Relevant SDG Indicator	SDG 13.B.1 (Climate Action), SDG 6.1.1 (Safe Water and Sanitation)
Data/parameter:	C_j
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)	Zoba Debub: 0 Zoba Maekel: 0 Zoba Anseba: 0
Choice of data or measurement methods and procedures	The portion of safe water users is determined though the baseline project survey and refers to the number of users that already use safe water from water sources such as boreholes. Deemed valid by Methodology.
Purpose of data/Parameter	Calculation of emission reductions
Additional comments	The baseline project survey revealed that all households boil water.

Relevant SDG Indicator	SDG 13.B.1 (Climate Action)
Data/parameter:	$EF_{b,co2}$
Unit	tco_2/TJ
Description	co_2 emission factor arising from use of fuels in baseline scenario
Source of data	IPCC default value
Value(s) applied)	112
Choice of data or measurement methods and procedures	Deemed valid by Methodology.
Purpose of data/parameter	Calculation of baseline emissions.
Additional comments	-

Relevant SDG Indicator	SDG 13.B.1 (Climate Action)
Data/parameter:	$EF_{b,non\ co2}$
Unit	tCO_2e/TJ
Description	Non-CO_2 (CH_4 and N_2O) emission factor arising from use of wood fuel in baseline scenario
Source of data	Default emissions factor: https://www.ipcc-nggip.iges.or.jp/public/gp/bgp/2_2_Non-CO2_Stationary_Combustion.pdf https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf Global Warming Potential: http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html#table-2-14
Value(s) applied)	9.46
Choice of data or measurement methods and procedures	Deemed valid by Methodology

Gas	Default Emissions factor (kg_gas/TJ_{NCV})	GWP of gas	Default Emissions factor (kg_CO_2e/TJ_{NCV})	Default Emissions factor (t_CO_2e/TJ_{NCV})
CH_4	300	28	8,400	8.4000
N_2O	4	265	1,060	1.060
			Total	**9.46**

Purpose of data/parameter	Calculation of emission reductions.
Additional comments	This value corresponds with updated AR5 GWP value which will be applied from 01/01/2021. AR5 - https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf

Relevant SDG Indicator	SDG 13.B.1 (Climate Action)
Data/parameter:	$EF_{p,co2}$
Unit	tCO_2/TJ
Description	CO_2 emission factor arising from use of fuels in the 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/parameter	Calculation of emission reductions.
Additional comments	-

Relevant SDG Indicator	SDG 13.B.1 (Climate Action)
Data/parameter:	$EF_{p,non\ co2}$
Unit	tCO_2e/TJ
Description	Non-CO_2 (CH_4 and N_2O) emission factor arising from use of wood fuel in baseline scenario
Source of data	Default emissions factor: https://www.ipcc-nggip.iges.or.jp/public/gp/bgp/2_2_Non-CO2_Stationary_Combustion.pdf https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf Global Warming Potential: http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html#table-2-14
Value(s) applied)	9.46

Choice of data or measurement methods and procedures	Deemed valid by Methodology

Gas	Default Emissions factor (kg_gas/TJ_{NCV})	GWP of gas	Default Emissions factor (kg_CO_2e/TJ_{NCV})	Default Emissions factor (t_CO_2e/TJ_{NCV})
CH_4	300	28	8,400	8.4000
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			Total	**9.46**

Purpose of data/parameter	Calculation of emission reductions.
Additional comments	This value corresponds with updated AR5 GWP value which will be applied from 01/01/2021. AR5 - https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf

Relevant SDG Indicator	SDG 13.B.1 (Climate Action)
Data/parameter:	NCV_b
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/parameter	Calculation of emission reductions.
Additional comments	-

Relevant SDG Indicator	SDG 13.B.1 (Climate Action)
Data/parameter:	NCV_p
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/parameter	Calculation of emission reductions.
Additional comments	-

Relevant SDG Indicator	SDG 13.B.1 (Climate Action)
Data/parameter:	$fNRB_{,i,y}$
Unit	Fractional non-renewability
Description	Non-renewability status of woody biomass fuel in scenario i during year y
Source of data	CDM Default stated in following document: https://cdm.unfccc.int/Panels/ssc_wg/meetings/035/ssc_035_an20.pdf
Value(s) applied)	0.97
Choice of data or measurement methods and procedures	Default values of fraction of non-renewable biomass as outlined by the UNFCCC CDM.
Purpose of data/parameter	Calculation of emission reductions.
Additional comments	Ratified by the DNA Source: CDM – Executive Board, EB 67 Report, Annex 22, Page 4 https://cdm.unfccc.int/Reference/Notes/meth/meth_note12.pdf

Relevant SDG Indicator	SDG 13.B.1 (Climate Action), SDG 6.1.1 (Clean Water and Sanitation), SDG 3.9.1 (Good Health and Well Being)
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	Baseline Water Boiling Test
Value(s) applied)	Zoba Debub: 0.000889 Zoba Maekel: 0.000883 Zoba Anseba: 0.000577
Choice of data or measurement methods and procedures	The baseline water boiling test is used to determine the amount of wood used to purify 1 litre of water by boiling. This data is gathered according to: *Technologies and Practices to Displace Decentralized Thermal Energy Consumption* Version 1 and 2, *Draft General Guidelines On Sampling And Surveys*; EB37 Annex 27; and *Standard For Sampling And Surveys For CDM Project Activities and Programme of Activities* (Version 02); EB65 Annex 2
Purpose of data/parameter	Calculation of emission reductions.
Additional comments	A value of 0.0004 is now applied under the BAMG changes, see table below.

Relevant SDG Indicator	SDG 13.B.1 (Climate Action), SDG 6.1.1 (Clean Water and Sanitation), SDG 3.9.1 (Good Health and Well Being)
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 p during year y
Source of data	Baseline Water Boiling Test
Value(s) applied)	Zoba Debub: 0.0004 Zoba Maekel: 0.0004 Zoba Anseba: 0.0004
Choice of data or measurement methods and procedures	The baseline water boiling test is used to determine the amount of wood used to purify 1 litre of water by boiling. This data is gathered according to: *Technologies and Practices to Displace Decentralized Thermal Energy Consumption* Version 1 and 2, *Draft General Guidelines On Sampling And Surveys*; EB37 Annex 27; and *Standard For Sampling And Surveys For CDM Project Activities and Programme of Activities* (Version 02); EB65 Annex 2
Purpose of data/parameter	Calculation of emission reductions.
Additional comments	Capped in line with GS BAMG report.

Relevant SDG Indicator	SDG 13.B.1 (Climate Action)
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)	Zoba Debub: 0% Zoba Maekel: 4% Zoba Anseba: 2%
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/parameter	Calculation of emission reductions.
Additional comments	-

Relevant SDG Indicator	SDG 13.B.1 (Climate Action), SDG 6.1.1 (Clean Water and Sanitation)
Data/parameter:	$Tb_{,y}$
Unit	Hours
Description	Baseline time spent collecting firewood per household per day
Source of data	Baseline project survey

Value(s) applied)	1.74
Choice of data or measurement methods and procedures	Established through questions in the baseline on a representative sample of the end users
Purpose of data/parameter	To measure the decrease in hours spent collecting firewood, a responsibility falling disproportionately on women, as an indicator of reduced time poverty of women.
Additional comments	-

D.2 Data and parameters monitored

Relevant SDG Indicator/Safeguarding Principle	SDG 3.9.1 (Good Health and Well-Being)
Data/parameter:	HAPR,y
Unit	Percentage
Description	Total reduction in Household Air Pollution for project activity in year y (%)
Measured/calculated/default	Calculated
Source of data	Project survey, baseline survey, BWBT and WCFT
Value(s) of monitored parameter	95%
Monitoring equipment	Assessed every year using Project Survey, baseline survey, BWBT and WCFT
Measuring/reading/recording frequency	Annual
Calculation method (if applicable)	Review the number of people using the borehole according to the household lists and multiply by the usage rate to calculate the number of people now using a safe water source in order to calculate the amount of biomass that would have been burnt to purify the water in the baseline scenario. Deduct from this any individuals that still boil water in the project scenario.
QA/QC procedures	N/A
Purpose of data/parameter	Calculation of SDG 3.9.1 contribution
Additional comments	

Relevant SDG Indicator/Safeguarding Principle	SDG 5.4.1 (Gender Equality)
Data/parameter:	TR,y
Unit	Hours
Description	Total reduction in time spent collecting firewood for project activity in year y (hours)
Measured/calculated/default	Calculated

Source of data	Project Survey and baseline survey
Value(s) of monitored parameter	1.16 hours
Monitoring equipment	Assessed every year using Project Survey and baseline survey. Calculate the average amount of time spent collecting firewood in the project scenario and compare to the pre-project scenario
Measuring/reading/recording frequency	Annual
Calculation method (if applicable)	Assessed every year using Project Survey. Calculate the average amount of time spent collecting firewood in the project scenario and compare to the pre-project scenario
QA/QC procedures	N/A
Purpose of data/parameter	To quantify whether the project has contributed to a reduction in the amount of time spent collecting firewood compared to the pre-project scenario towards SDG 5 target.
Additional comments	-

Relevant SDG Indicator/Safeguarding Principle	SDG 5.4.1 (Gender Equality)
Data/parameter:	$T_{P,y}$
Unit	Hours
Description	Project time spent collecting firewood per household per day (hours)
Measured/calculated/default	Calculated
Source of data	Project Survey
Value(s) of monitored parameter	0.58 hours
Monitoring equipment	Assessed every year using Project Survey questionnaire.
Measuring/reading/recording frequency	Annual
Calculation method (if applicable)	Assessed every year using Project Survey
QA/QC procedures	N/A
Purpose of data/parameter	To quantify whether the project has contributed to a reduction in the amount of time spent collecting firewood for SDG 5.4.1 contribution.
Additional comments	-

Relevant SDG Indicator/Safeguarding Principle	SDG 6.1.1 (Clean Water and Sanitation)
Data/parameter:	P_{access}
Unit	Number of people

Description	Number of additional persons having access to safe water in the project activity compared to the baseline scenario
Measured/calculated/default	Calculated
Source of data	Project Survey and baseline survey
Value(s) of monitored parameter	44,405
Monitoring equipment	Assessed every year using Project Survey, Usage Survey and Household list. Review the number of people using the borehole according to the household list and multiply by the usage rate to calculate the number of people now using a safe water source.
Measuring/reading/recording frequency	Annual
Calculation method (if applicable)	Assessed every year using Project Survey, Usage Survey and Household list. Review the number of people using the borehole according to the household lists for each VPA and multiply by the usage rate to calculate the number of people now using a safe water source.
QA/QC procedures	N/A
Purpose of data/parameter	Calculation of SDG 6.1.1 contribution
Additional comments	-

Relevant SDG Indicator/Safeguarding Principle	SDG 6.1.1 (Clean Water and Sanitation)
Data/parameter:	Py
Unit	Number of people
Description	Number of persons having access to safe water in the project activity
Measured/calculated/default	Measured annually using household list and usage and project survey
Source of data	Project Survey, Household list and Usage survey
Value(s) of monitored parameter	46,742
Monitoring equipment	Project Survey, Usage Survey and Household list
Measuring/reading/recording frequency	Annual
Calculation method (if applicable)	Assessed every year using Project Survey, Usage Survey and Household list
QA/QC procedures	N/A
Purpose of data/parameter	Calculation of SDG 6.1.1 contribution
Additional comments	-

Relevant SDG Indicator/Safeguarding Principle	SDG 13.B.1 (Climate Action)
Data/parameter	$N_{p,y}$
Unit	Project Technology Days
Description	Number of persons consuming water supplied by project scenario p through year y
Measured/calculated/default	Calculated
Source of data	Borehole Project Database

Value(s) of monitored parameter	24,333,885

Pump ID	Down Days			
	Total Down Days (Monitoring Period)	Total Down Days 2021	Total Down Days 2022	% Downdays
ZD001	0	0	0	0.00%
ZD002	0	0	0	0.00%
ZD003	0	0	0	0.00%
ZD004	0	0	0	0.00%
ZD005	0	0	0	0.00%
ZD006	5	0	5	0.91%
ZD007	0	0	0	0.00%
ZD008	0	0	0	0.00%
ZD009	0	0	0	0.00%
ZD010	0	0	0	0.00%
ZD011	0	0	0	0.00%
ZD012	0	0	0	0.00%
ZD013	0	0	0	0.00%
ZD014	0	0	0	0.00%
ZD015	0	0	0	0.00%
ZD016	0	0	0	0.00%
ZD017	0	0	0	0.00%
ZD018	0	0	0	0.00%
ZD019	0	0	0	0.00%
ZD020	0	0	0	0.00%
ZD021	0	0	0	0.00%
ZD023	4	0	4	0.73%
ZD024	3	0	3	0.55%
ZD025	0	0	0	0.00%
ZD026	0	0	0	0.00%
ZD027	0	0	0	0.00%
ZD028	0	0	0	0.00%
ZD029	0	0	0	0.00%
ZD030	0	0	0	0.00%
ZD031	0	0	0	0.00%
ZD032	0	0	0	0.00%
ZD033	0	0	0	0.00%
ZD034	0	0	0	0.00%
ZD035	0	0	0	0.00%
ZD036	0	0	0	0.00%
ZD053	0	0	0	0.00%

ZD054	7	7	0	1.28%
ZD055	0	0	0	0.00%
ZD056	0	0	0	0.00%
ZD058	5	0	5	0.91%
ZD059	5	0	5	0.91%
ZD060	0	0	0	0.00%
ZD062	0	0	0	0.00%
ZD063	4	0	4	0.73%
ZD064	0	0	0	0.00%
ZD065	0	0	0	0.00%
ZD066	0	0	0	0.00%
ZD067	0	0	0	0.00%
ZD068	0	0	0	0.00%
ZD069	0	0	0	0.00%
ZD070	0	0	0	0.00%
ZD071	0	0	0	0.00%
ZD072	0	0	0	0.00%
ZD073	0	0	0	0.00%
ZD074	0	0	0	0.00%
ZD075	0	0	0	0.00%
ZD076	0	0	0	0.00%
ZD077	0	0	0	0.00%
ZD078	0	0	0	0.00%
ZD079	3	0	3	0.55%
ZD080	0	0	0	0.00%
ZD081	0	0	0	0.00%
ZD082	0	0	0	0.00%
ZD083	3	0	3	0.55%
ZD084	0	0	0	0.00%
ZD085	3	0	3	0.55%
ZD086	0	0	0	0.00%
ZD087	0	0	0	0.00%
ZD088	0	0	0	0.00%
ZD089	7	4	3	1.28%
ZD090	0	0	0	0.00%
ZD091	0	0	0	0.00%
ZD092	0	0	0	0.00%
ZD093	0	0	0	0.00%
ZD094	0	0	0	0.00%
ZD095	0	0	0	0.00%
ZD096	0	0	0	0.00%
ZD097	0	0	0	0.00%
ZD098	0	0	0	0.00%
ZD099	0	0	0	0.00%

ZD100	0	0	0	0.00%
ZD153	0	0	0	0.00%
ZD154	0	0	0	0.00%
ZD155	0	0	0	0.00%
ZD156	0	0	0	0.00%
ZD159	0	0	0	0.00%
ZD160	0	0	0	0.00%
ZD161	0	0	0	0.00%
ZD163	0	0	0	0.00%
ZD166	0	0	0	0.00%
ZD168	0	0	0	0.00%
ZD169	0	0	0	0.00%
ZD170	0	0	0	0.00%
ZD171	0	0	0	0.00%
ZD172	0	0	0	0.00%
ZD173	0	0	0	0.00%
ZD174	0	0	0	0.00%
ZD175	0	0	0	0.00%
ZD177	0	0	0	0.00%
ZD179	0	0	0	0.00%
ZD181	11	3	8	2.01%
ZD182	0	0	0	0.00%
ZD184	0	0	0	0.00%
ZD185	0	0	0	0.00%
ZD186	0	0	0	0.00%
ZD187	0	0	0	0.00%
ZD188	0	0	0	0.00%
ZD193	0	0	0	0.00%
ZD194	0	0	0	0.00%
ZD195	4	4	0	0.73%
ZD196	4	4	0	0.73%
ZD197	0	0	0	0.00%
ZD198	0	0	0	0.00%
ZD200	0	0	0	0.00%
ZD202	0	0	0	0.00%
ZD203	4	4	0	0.73%
ZD205	0	0	0	0.00%
ZD206	0	0	0	0.00%
ZD208	0	0	0	0.00%
ZD209	0	0	0	0.00%
ZD227	4	4	0	0.73%
ZD228	0	0	0	0.00%
ZD229	0	0	0	0.00%
ZD230	0	0	0	0.00%

ZD231	0	0	0	0.00%
ZD232	0	0	0	0.00%
ZD233	0	0	0	0.00%
ZD234	0	0	0	0.00%
ZD235	0	0	0	0.00%
ZD236	0	0	0	0.00%
ZD237	0	0	0	0.00%
ZD238	0	0	0	0.00%
ZD239	4	4	0	0.73%
ZD240	0	0	0	0.00%
ZD241	0	0	0	0.00%
ZD242	0	0	0	0.00%
ZD243	0	0	0	0.00%
ZD244	0	0	0	0.00%
ZD245	0	0	0	0.00%
ZD246	0	0	0	0.00%
ZD247	0	0	0	0.00%
ZD248	0	0	0	0.00%
ZD249	0	0	0	0.00%
ZD250	0	0	0	0.00%
ZD251	0	0	0	0.00%
ZD252	0	0	0	0.00%
ZD253	0	0	0	0.00%
ZD254	0	0	0	0.00%
ZD255	0	0	0	0.00%
ZD212	0	0	0	0.00%
ZD213	0	0	0	0.00%
ZD214	0	0	0	0.00%
ZD216	3	0	3	0.55%
ZD217	0	0	0	0.00%
ZD218	4	0	4	0.73%
ZD219	0	0	0	0.00%
ZD220	3	3	0	0.55%
ZD221	0	0	0	0.00%
ZD222	0	0	0	0.00%
ZD223	0	0	0	0.00%
ZD224	0	0	0	0.00%
ZD225	0	0	0	0.00%
ZD226	0	0	0	0.00%

For more information please consult the Emission Reductions spreadsheet

Monitoring equipment	Continuous
Measuring/reading/recording frequency	Sum of the total number of people using each borehole in the project multiplied by the number of days crediting each borehole earns in a given monitoring period. 95% functionality cap is implemented on all BHs claiming functionality above this figure to be conservative. Where below 95% functionality is present, the true value is used to calculate the Project Technology Days. PTDs are also further capped as a result of a max 300 users cap per borehole.
Calculation method (if applicable)	N/A
QA/QC procedures	Calculation of emission reductions.
Purpose of data/parameter	-
Additional comments	

Relevant SDG Indicator/Safeguarding Principle	SDG 13.B.1 (Climate Action), SDG 6.1.1 (Safe Water and Sanitation), SDG 3.9.1 (Good Health and Well-Being)
Data/parameter	$U_{p,y}$
Unit	Percentage
Description	Usage rate in project scenario p through year y
Measured/calculated/default	Calculated
Source of data	Usage Survey
Value(s) of monitored parameter	100% (capped at 95%)
Monitoring equipment	Usage Survey
Measuring/reading/recording frequency	Annual
Calculation method (if applicable)	The usage survey has been carried out by trained local staff to meet the specific requirements of the methodology. All data presented in excel is subject to checking and cross referencing of a sample of the raw data by CO2balance UK Ltd. The usage rate is 100%, this is capped at 95%.
QA/QC procedures	N/A
Purpose of data/parameter	Calculation of usage of project technology
Additional comments	The latest usage survey carried out in the monitoring period was between 26/04/2022 and 28/04/2022. CO2balance usage rate cap of 95%.

Relevant SDG Indicator/Safeguarding Principle	SDG 13.B.1 (Climate Action), SDG 6.1.1 (Safe Water and Sanitation)
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

Measured/calculated/default	Default
Source of data	Water Consumption Field Test (WCFT)
Value(s) of monitored parameter	7
Monitoring equipment	WCFT Survey
Measuring/reading/recording frequency	Biennial
Calculation method (if applicable)	Method used similar to Kitchen Performance Test in which the volume of water consumed in each household is averaged over 3 days. Volume is capped at 7 litres per person per day as per the methodology. The WCFT is carried out by trained local staff to meet the specific requirements of the methodology. All data presented in excel is subject to checking and cross referencing of a sample of the raw data by CO2balance UK Ltd.
QA/QC procedures	N/A
Purpose of data/parameter	Calculation of emission reductions.
Additional comments	Value taken from the 2020 WCFT, under requirements of WCFT it was not required in 2021. The latest WCFT was conducted 12/10/2020 – 28/10/2020. The previous WCFTs were conducted between 05/09/2018 – 21/09/2018 and 26/09/2017 – 20/10/2017, maintaining biennial monitoring frequency.

Relevant SDG Indicator/Safeguarding Principle	SDG 13.B.1 (Climate Action), SDG 6.1.1 (Safe Water and Sanitation)
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
Measured/calculated/default	Measured
Source of data	Water Consumption Field Test (WCFT)
Value(s) of monitored parameter	0
Monitoring equipment	WCFT Survey
Measuring/reading/recording frequency	Biennial
Calculation method (if applicable)	Method used similar to Kitchen Performance Test in which the volume of water consumed in each household is averaged over 3 days. The WCFT has been carried out by trained local staff to meet the specific requirements of the methodology. All data presented in excel is subject to checking and cross referencing of a sample of the raw data by CO2balance UK Ltd.
QA/QC procedures	N/A
Purpose of data/parameter	Calculation of emission reductions.

Additional comments	Value taken from the 2020 WCFT, under requirements of WCFT it was not required in 2021. The latest WCFT was conducted 12/10/2020 – 28/10/2020. The previous WCFTs were conducted between 05/09/2018 – 21/09/2018 and 26/09/2017 – 20/10/2017, maintaining biennial monitoring frequency.

Relevant SDG Indicator/Safeguarding Principle	SDG 13.B.1 (Climate Action), SDG 6.1.1 (Safe Water and Sanitation)
Data/parameter	Qp,rawboil,y
Unit	Litres per person per day
Description	The raw or unsafe water that is still boiled after installation of the water treatment technology
Measured/calculated/default	Measured
Source of data	Water Consumption Field Test (WCFT)
Value(s) of monitored parameter	0
Monitoring equipment	WCFT Survey
Measuring/reading/recording frequency	Biennial
Calculation method (if applicable)	Method used similar to Kitchen Performance Test in which the volume of water consumed in each household is averaged over 3 days. The WCFT has been carried out by trained local staff to meet the specific requirements of the methodology. All data presented in excel is subject to checking and cross referencing of a sample of the raw data by CO2balance UK Ltd.
QA/QC procedures	N/A
Purpose of data/parameter	Calculation of emission reductions.
Additional comments	Value taken from the 2020 WCFT, under requirements of WCFT it was not required in 2021. The latest WCFT was conducted 12/10/2020 – 28/10/2020. Previous surveys were conducted during MP1 between 05/09/2018 – 21/09/2018 and 26/09/2017 – 20/10/2017 maintaining biennial monitoring frequency.

Relevant SDG Indicator/Safeguarding Principle	SDG 13.B.1 (Climate Action), SDG 6.1.1 (Safe Water and Sanitation)
Data/parameter	Quality of Treated Water
Unit	Parameters as per national standards
Description	Performance of the treatment technology
Measured/calculated/default	Measured
Source of data	Laboratory Tests

Value(s) of monitored parameter	Pass
Monitoring equipment	Laboratory equipment
Measuring/reading/recording frequency	A sample (sampling requirements employ 90/10 precision) of boreholes is tested each quarter. All boreholes are tested at least once per year.
Calculation method (if applicable)	The Water Resource Department from the Ministry of Land, Water & Environment has certified each water supply as in line with national standards.
QA/QC procedures	N/A
Purpose of data/parameter	To test water quality for safety of human consumption according to WHO Guidelines - https//apps.who.int/iris/bitstream/handle/10665/44584/9789241548151_eng.pdf;jsessionid=936A8C46CE81D193F89C70536B4EF350?sequence=1
Additional comments	-

Relevant SDG Indicator/Safeguarding Principle	SDG 13.B.1 (Climate Action)
Data/parameter	$LE_{p,y}$
Unit	tCO2e per year
Description	Leakage in project scenario p during year y
Measured/calculated/default	Calculated
Source of data	Baseline and Monitoring surveys
Value(s) of monitored parameter	0
Monitoring equipment	Desk based research
Measuring/reading/recording frequency	Biennial
Calculation method (if applicable)	Assessed every two years using baseline and monitoring survey.
QA/QC procedures	N/A
Purpose of data/parameter	Calculation of leakage.
Additional comments	-

Relevant SDG Indicator/Safeguarding Principle	SDG 6.1.1 (Safe Water and Sanitation)
Data/parameter	Hygiene campaigns
Unit	Outcome of WASH meetings
Description	Hygiene campaigns carried out among project technology users
Measured/calculated/default	Measured
Source of data	Annual hygiene campaign results

Value(s) of monitored parameter	Positive – WASH trainings were delivered by the Water Resource Department to the WASH Committees at sub-zoba level. All sub-zobas received initial training in 2016/2017 to set up water resource committees and outline the roles and responsibilities of members representing their communities. Subsequent annual meetings in 2018, 2019 and 2020 followed up with water resource committees to ensure proper operation on sanitation and hygiene, servicing and the long-term sustainable management of the boreholes for the respective communities. The annual meetings for MP3 were conducted in the month of June of 2021, please see the dates below, and visit the WASH Annual Report for more information **Village** / **Date** Dekemhare / 20/06/2021 Adikeih / 23/06/2021 Adiquala / 12/06/2021 Areza / 14/06/2021 Dbarwa / 04/06/2021 Emnihaili / 06/06/2021 Mendefera / 02/06/2021 Segheneity / 21/06/2021 Tsorona / 27/06/2021
Monitoring equipment	WASH Trainings
Measuring/reading/recording frequency	Annual
Calculation method (if applicable)	N/A
QA/QC procedures	Report produced audited by DOE
Purpose of data/parameter	In accordance with TPDDTEC v2 methodology.
Additional comments	Annual monitoring frequency has been maintained during the current monitoring period.

D.3. Comparison of monitored parameters with last monitoring period

Data/Parameter	Value obtained in this monitoring period	Value obtained last monitoring period
$HAPR_{,y}$	95%	95%
$TR_{,y}$	1.16	-1.04
$TP_{,y}$	0.58	2.78
P_{access}	44,405	44,405
Py	46,742	46,742

Np,y	24,333,885	16,137,589
$U_{p,y}$	95%	95%
$Q_{p,y}$	7	7
$Q_{p,cleanboil,y}$	0	0
$Q_{p,rawboil,y}$	0	0
Quality of Treated Water	Pass	Pass[4]
$LE_{p,y}$	0	0
Hygiene Campaigns	Positive	Positive

D.4. Implementation of sampling plan

For the surveys, households were selected at random from the household lists. First, the hand pumps were randomly selected for monitoring using 90/30 precision rule; secondly, households served by those hand pumps were randomly selected for surveying.

Sample sizes were chosen to meet the requirements set in the methodology requirements.

WATER CONSUMPTION FIELD TEST

The Water Consumption Field Test is required to be conducted every two years, as such a survey in MP3 was not required. The survey results from MP2 have been applied in the calculations. This survey was carried out on a randomly selected sample of 60

[4] Borehole ID ZD161 discounted from crediting for the period that goes from Q3 2020 (included) to Q1 2021.

households from the borehole user list. This complies with the recommended minimum sample size of 30 in the Gold Standard requirements. Furthermore, the sample confidence interval is within 10% of the mean. Field staff carried out the test over a period of four days (1-day preparation and 3 days measurement) following a similar method as the Kitchen Performance Test, and all tests were conducted between 12/10/2020 – 28/10/2020. The total litres of water consumed each day was measured and divided by the number of people consuming water in that day – this measurement was repeated over 3 consecutive days and an overall average per household was calculated. The results showed that on average 10.36 litres of non-boiled clean water used only for drinking, hand washing and food preparation (capped at 7l) and 0 litres of boiled clean water is consumed per person per day. The total amount of water credited for in this monitoring period is equal to the average amount of clean non-boiled water consumed per person per day (7l), minus the average amount of boiled clean water consumed per person per day (0).

USAGE SURVEY

The usage survey establishes the proportion of beneficiaries that use the boreholes, a key parameter in the emission reduction calculations. All boreholes are expected to last the lifetime of the project. The minimum sample size is 100, and at least 30 samples for project technologies of each age are being credited.

The usage surveys in this monitoring period were carried out on 150 households between the 26/04/2022 – 28/04/2022. The households that participated in the survey were randomly selected from the borehole user lists. The results confirmed that 100% of the respondents and their family members use the boreholes that were rehabilitated by Vita. This is capped at 95%.

PROJECT SURVEY ANALYSIS

Project surveys were conducted between 24/04/2022 – 28/04/2022 on 150 randomly selected households from across the homogenous boreholes in Zoba Debub to explore changes in the project scenario (demographics, water use and purification practices etc) over time.

Data collected during the project surveys includes the following:

- General information - Name, address, telephone number etc.
- Household socio-demographic information.
- Water use and purification characteristics.
- Sources and availability of fuel.
- SDG Project Indicators

Hygiene Campaign

A hygiene campaign is conducted annually in the format of Water, Sanitation and Hygiene (WASH) training at the Sub-Zoba level. Representatives from all villages in the Sub-Zoba with Vita boreholes are invited to attend the WASH training and to pass on the takings from the meeting to their respective communities.

The trainings act to promote the practice of well-functioning Water Resource Committees at each borehole to ensure good hygienic tendencies are adopted by the communities. WASH practices are also monitored annually as a series of questions in the Project Survey to determine the effectiveness of the trainings and to monitor the health status of the villages with regards to avoiding the spread of water borne diseases. See parameter box in Section D.2.

SECTION E. CALCULATION OF SDG IMPACTS

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

Outcomes for SDG 3 – Good Health & Wellbeing:

Calculations are as follows:

$HAPR_y = ((P_{b,y} - P_{p,y}) / P_{b,y}) * U_{p,y}$

Where:

$HAPR_y$ Total reduction in Household Air Pollution for project activity in year y (%)

$P_{b,y}$ Quantity of fuel that is consumed in the baseline scenario b during year y (kg/household-day)

$P_{p,y}$ Quantity of fuel that is consumed in the project scenario p during year y (kg/household-day)

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

$P_{b,y} = W_{b,y} * Q_{p,y}$

Where:

$W_{b,y}$ Quantity of wood fuel or fossil fuel required to boil 1 litre of water using technologies representative of baseline scenario b during year y

$Q_{p,y}$ Quantity of safe water supplied in the project scenario p during year y, using the "zero or low" emissions' clean water supply technology

<u>Pb,y = 0.0004 * 7</u>

<u>Pb,y = 0.003</u>

Outcomes for SDG 5 – Gender Equality:

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

Where:

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

$T_{b,y}$ Baseline time spent collecting firewood per household per day (hours)

$T_{p,y}$ Project time spent collecting firewood per household per day (hours)

$T_{b,y}$ = 1.74 - from baseline survey

Outcomes for SDG 6 – Safe Water & Sanitation:

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

Where:

P_{access}	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

<u>Cj = 0 – from baseline survey</u>

Outcomes for SDG 13 – Climate Action

As the baseline fuel and the project fuel are the same and the baseline emission factor and project emission factor are considered the same, the overall GHG reductions achieved by the project activity is calculated using equation 1 of the methodology and baseline emissions are not calculated separately.

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 emission reduction calculations. The baseline indicators are detailed in Section D.1 and are as follows:

Baseline Emissions:

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

125,527 = 68,134 *((0.97*112)+9.46)*0.0156

Where:

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

68,134 = (1-0) * 24,333,885 * 0.0004 * (7+0)

Where:

$N_{j,y}$ Number of person days consuming water supplied by project scenario p through year y

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. Premises with a piped water supply can be excluded from the Cj factor when it can be clearly demonstrated that the piped water supply is not a clean water source. Prior to registration, the water quality of the piped water supply should be established as unsafe by carrying out water quality testing over a representative period of time or by referring to relevant third party studies for the target area. Premises with a piped water supply that boil water or would have boiled water (suppressed demand situation) in the baseline situation are in such cases eligible and can be included in the calculation of baseline emissions from boiling water. PP shall carry out baseline surveys to demonstrate that premises do actually boil water or would indeed have boiled water to make it safe for use.

$B_{b,y}$ 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 1 litre of water using technologies representative of baseline scenario b during the project year y, as per Baseline Water Boiling Test

E.2. Calculation of project value or estimation of project situation of each SDG Impact
SDG 3 – Good Health & Wellbeing

Calculations are as follows:

$HAPR_y = ((P_{b,y} - P_{p,y}) / P_{b,y}) * U_{p,y}$

Where:

$HAPR_y$ Total reduction in Household Air Pollution for project activity in year y (%)
$P_{b,y}$ Quantity of fuel that is consumed in the baseline scenario b during year y (kg/household-day)
$P_{p,y}$ Quantity of fuel that is consumed in the project scenario p during year y (kg/household-day)
$U_{p,y}$ Usage rate in project scenario p during year y

$P_{p,y} = W_{b,y} * Q_{p,cleanboil,y}$

Where :

$W_{b,y}$ Quantity of wood fuel or fossil fuel required to boil 1 litre of water using technologies representative of baseline scenario b during year y

$Q_{p,cleanboil,y}$ Quantity of safe water boiled in the project scenario p during year y, after installation of the project technology

$HAPR_y = ((0.003 – 0) / 0.003) * 95\%$

HAPRy = 0.95

Where

Pp,y = (0.0004 * 0)

SDG 5 – Gender Equality

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

Where:

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

$T_{b,y}$ Baseline time spent collecting firewood per household per day (hours)

$T_{p,y}$ Project time spent collecting firewood per household per day (hours)

Tp,y = 0.58 – from MP3 project survey

$TR_y = 1.74 – 0.58$

TRy = 1.16 hours

SDG 6 – Safe Water & Sanitation

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

Where:

P_{access}	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

Paccess = 46,742 * (1 – 0) * 0.95

Paccess = 44,405

SDG 13 – Climate Action

As the baseline fuel and the project fuel are the same and the baseline emission factor and project emission factor are considered the same, the overall GHG reductions achieved by the project activity is calculated using equation 1 of the methodology and project emissions are not calculated separately.

CO2e emission reductions are the indicator to demonstrate that the project has raised capacity for effective climate change-related planning and management. The emissions reductions for the current monitoring period can be found in the corresponding Emission reductions excel document submitted with this monitoring report and in section E.4 below.

$$PE_{p,y} = B_{p,y} * \left(\left(NRB * EF_{p,fuel,co2}\right) + EF_{p,fuel,nonco2}\right) * NCV_{p,fuel}$$

PEp,y = 0 * ((0.97*112) + 9.46) * 0.0156

See accompanying Emissions Reductions calculations.

E.3. Calculation of leakage

Leakage Assessment - The PDD has described which sources of leakage detailed within the methodology are relevant to this project and which have been discounted.

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 three stones; these have no market value and are not a product as such. There is nothing limiting the use of three stone cooking across the country (the technology is lowest rung on the energy ladder and the price is zero), which is why this cooking method is so widespread. In any case the primary purpose of these three rocks is for cooking so they will not be replaced/displaced in their entirety as a result of this project - which means they 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 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. Therefor 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.

This project is not marketing efficient technology; it is eliminating the need for a fuel-based technology to deliver pure water. Lower emission technology substitution within households is therefore not possible and this leakage source can therefore be discounted.

Therefore, a value of 0 is applied for leakage.

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

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
SDG 3 Good Health and Well-being	Variation in household smoke	0% reduction in exposure to Household Air Pollution due to boiling water	95% reduction in exposure to Household Air Pollution due to no longer boiling water	95% additional reduction in exposure to Household Air Pollution due to no longer boiling water
SDG 5 Gender Equality	Variation of time spent on firewood collection	1.74 hours spent collecting firewood per household per day	0.58 hours spent collecting firewood per household per day	1.16 hours saved on collecting firewood per household per day
SDG 6 Clean Water and Sanitation	People gain access to safe water	0 people with access to safe water	People with access to safe water: 46,742	Additional people with access to safe water: 44,405
SDG 13 Climate Action	Emissions Reductions (tCO2e)	125,527 tCO2e	0 tCO2e	119,250 tCO2e reduced emissions

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

DG	Values estimated in ex ante calculation of approved PDD for this monitoring period[5]	Actual values[6] achieved during this monitoring period
SDG 3 Good Health and Well-being	80% reduction in exposure to Household Air Pollution due to boiling water	95% reduction in exposure to Household Air Pollution due to boiling water
SDG 5 Gender Equality	At least 0.5 hours per trip per household time saved	Time saved on collecting firewood has increased during this monitoring period to 1.16 hours
SDG 6 Clean Water and Sanitation	55,074	Additional people with access to safe water: 44,405
SDG 13 Climate Action	429,826 tCO2e	119,250 tCO2e

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

Amount estimated ex ante for this monitoring period in the PDD was based on the TPDDTEC methodology prior to the SWS Grievance raised by Gold Standard.

[5]Ex antes values refer to the approved Transition Annex (GS4GG_GS5125_Transition_Annex_v2_CLEAN)

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

Subsequently caps have had to be applied which have reduced the amount of realised ERs in this monitoring period.

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

Regarding SDG13: the achieved emission reductions are below the ex-ante estimates due to applying the GS BAMG outcomes. Positive contributions to SDG have still been made.
SDG 3 has increased from 80% to 95% due to an increase of the project Usage rate compared to the Transition Annex estimates: the estimate of Upy was 80% but the value is 95% for the monitoring period.
Regarding SDG5: the time saved on collecting firewood each day is more than the estimate of 0.5 hours in the Transition Annex estimates . Positive achievements have been achieved during this monitoring period.
The SDG 6 achievements during this Monitoring Period fall short of the estimated contributions due to the introduction of the BAMG changes. Positive contributions to SDG have still been made.

SECTION F. SAFEGUARDS REPORTING

N/A

SECTION G. STAKEHOLDER INPUTS AND LEGAL DISPUTES

N/A

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

None received.

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

N/A

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

N/A

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