

TEMPLATE

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

PUBLICATION DATE **29.06.2023**

VERSION **v.1.5**

RELATED SUPPORT

[- TEMPLATE GUIDE Key Project Information & Project Design Document](#)

This document contains the following Sections

SECTION A. DESCRIPTION OF PROJECT

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES)
AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

SECTION C. DURATION AND CREDITING PERIOD

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE
ASSESSMENT

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

Appendix 1 - Safeguarding Principles Assessment (mandatory)

Appendix 2 - Contact information of project developer(s) (mandatory)

Appendix 3 - LUF Additional Information (project specific)

Appendix 4 - Design Changes

KEY PROJECT INFORMATION

GS ID of Project	11730
Title of Project	Chipangali Safe Water Access Project
Time of First Submission Date	05/07/2022
Date of Design Certification	N/A
Version number of the PDD	V 3.1
Completion date of version	12/09/2023
Project Developer	Offgrid Sun
Project Representative	Zeynep Pinar Ozturk
Project Participants and any communities involved	Pamodzi Ndi Ana
Host Country (ies)	Zambia
Activity Requirements applied	<input checked="" type="checkbox"/> Community Service Activity <input type="checkbox"/> Renewable Energy <input type="checkbox"/> Land-Use and Forests Activity Requirements /Risks & Capacities <input type="checkbox"/> N/A
Scale of the project activity	<input checked="" type="checkbox"/> Micro scale <input type="checkbox"/> Small Scale <input type="checkbox"/> Large Scale
Other Requirements applied	N/A
Methodology (ies) applied and version number	GS Methodology for Emissions Reduction from Safe Drinking Water Supply (v 1.0)
Product Requirements applied	<input checked="" type="checkbox"/> GHG Emissions Reduction & Sequestration <input type="checkbox"/> Renewable Energy Label <input type="checkbox"/> N/A
Project Cycle:	<input checked="" type="checkbox"/> Regular <input type="checkbox"/> Retroactive

Table 1 – Estimated Sustainable Development Contributions

SUSTAINABLE DEVELOPMENT GOALS TARGETED	SDG IMPACT (DEFINED IN B.6)	ESTIMATED ANNUAL AVERAGE	UNITS OR PRODUCTS
13 Climate Action (mandatory)	Emission reductions	10,000	tCO2e/y
15 Life on Land	Amount of firewood saved	7,256	Tonnes/y
3 Good Health and Well-being	Number of households that observed reduction in PM2.5 & carbon monoxide (CO) concentration reductions	100	Percentage
5 Gender Equality	Proportion of households who perceive saved time from collecting wood and water boiling	100	Percentage
6 Clean Water and Sanitation	<ul style="list-style-type: none"> - Amount of safe water served at the required quality by national standards. - Increased awareness due to annual Water hygiene campaigns 	<ul style="list-style-type: none"> - 44,138,400 L Minimum one campaign per year 	<ul style="list-style-type: none"> -L/y -Number
8 Decent work and economic growth	Number of temporary and permanent jobs created	8 jobs created	Number

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

OffgridSun Srl and Pamodzi Ndi Ana are implementing Safe Water Access Project in Chipangali, located in Eastern Province in Zambia. Main objective of the project is to improve the livelihoods of about 25000 people living in Chipangali District by providing sufficient, affordable and clean drinking water to targeted communities within reasonable proximity and using purification technologies that are safe for the environment thus reducing the carbon emissions.

According to the data collected by the Zambia Demographic and Health Survey (DSH 2018), only 58 % of rural household access to basic drinking water services while 42% of population rely on unimproved water sources, such as ponds, shallow wells, surface water such lakes and rivers. Moreover, 78% of Zambians living in rural areas lack access to basic sanitation services because of the lack of water and proper piped water infrastructures.

The main reasons for the limited access of rural households to safe water are related either to low availability of boreholes, or to the low efficiency of the existing boreholes due to lack of maintenance. These communities therefore either drink the unsafe water exposing themselves to water borne diseases or boil water. Limited access to safe drinking water contributes to childhood illness, malnutrition, and elevated school drop-out rates for adolescent girls, amongst other issues. Those who boil the water uses firewood and charcoal which accelerates deforestation problems and cause greenhouse gas emissions.




In order to overcome those challenges, Chipangali Safe Water Access Project will be implemented with the following approach:



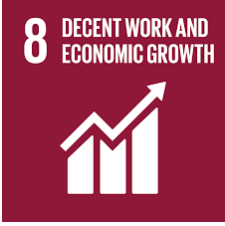
- (1) Rehabilitate the existing boreholes not functioning and with no plan of repair or maintenance for at least three months,
- (2) Improve boreholes to work in full capacity with no planned maintenance within 3 months,
- (3) Establish new hand pumped boreholes where access to boreholes is at a distance more than 1km or 30 minutes round trip,

- (4) Deliver continuous maintenance to ensure the water supplied by each borehole is safe and boreholes are operational in full working order,
- (5) Provide annual WASH trainings to raise awareness about personal hygiene issues.

The project will deploy zero-emission technology to treat and supply safe drinking water in corporation with health clinics. Automated water quality testing machines will be provided at the district level to sustain the drinking water quality.

The project will positively impact on the environment since the greenhouse gas emissions derived from boiling unsafe drinking water will be avoided by making safe water accessible to local population. Contributions to SDG targets are summarized as follows:

Environmental impacts		Access to clean water and sanitation: 42% of rural population in Zambia use water from unimproved water sources, such as ponds, shallow wells, surface water such lakes and rivers Also, 78% of rural population lack access to basic sanitation services. Through rehabilitation of existing boreholes and establishment of new hand pumped boreholes, safe and affordable drinking water will be made accessible to local population.
		Reduction of CO2 emissions: Through rehabilitation of existing boreholes and establishment of new hand pumped boreholes, safe water will be made accessible to local population. This will reduce GHGs emissions from boiling unsafe water. Also, the project will deploy zero-emission technology to treat and supply safe drinking water in accordance with the technologies available on the ground and indicated by the Government.
		Reduced deforestation: Firewood is the main source of energy for boiling the untreated water. Most of the rural households in the area depend more on the forest for their biomass fuels, causing deforestation problems. When accessing safe water, there will be no need to boil unsafe water. This will have positive impact on forest degradation and deforestation related to firewood consumption for boiling purposes in the region.

Social impacts		<p>Improved health conditions:</p> <p>Population in the project region do not have access to water within reasonable reach and the water quality does comply with drinking water quality standards. Therefore, they inevitably expose to water borne diseases.</p> <p>The project aims to reduce the incidences of water borne diseases and also will reduce the indoor air pollution due to avoided water boiling.</p>
		<p>Empowerment of women:</p> <p>With less time spent on fuel wood collection, the risk of gender-based violence will also reduce. Furthermore, women will have more time available for leisure, education or opportunities for market employment that can raise their household status.</p>
		<p>Creating jobs:</p> <p>Rehabilitation of existing boreholes and establishment of new hand pumped boreholes, and maintenance activities will create temporary and permanent job opportunities for local people. The employees will acquire new skills and knowledge through trainings provided as well.</p>

A.1.1. Eligibility of the project under Gold Standard

The project is a type of Community level Water Supply technologies (CWS) and Gold Standard approved Community Services Activity Requirements is applicable for the project. The project type is, therefore; automatically eligible as per section 4.1.3 of GS4GG Principles & Requirements.

Eligibility criteria	Justification
<p>3.1.1 (a) Types of Project: Eligible projects shall include physical action/implementation on the ground. Pre-identified eligible project types are identified in the Eligibility Principles and Requirements section.</p>	<p>The project is a type of Community level Water Supply technologies (CWS) and Gold Standard approved Community Services Activity Requirements is applicable for the project. The project type is, therefore; automatically eligible as per section 4.1.3 of GS4GG Principles & Requirements.</p>

<p>3.1.1 (b) Location of Project: Projects may be located in any part of the world.</p>	<p>Location of the project is Zambia and specified in Section A.2.</p>
<p>3.1.1 (c) Project Area, Project Boundary and Scale:</p> <p>The Project Area and Project Boundary shall be defined. Projects may be developed at any scale although certain rules, requirements and limitations may apply under specific Activity Requirements, Impact Quantification Methodologies and Products Requirements.</p> <p>In order to avoid double counting the Project shall not be included in any other voluntary or compliance standards programme unless approved by Gold Standard (for example through dual certification). Also, if the Project Area overlaps with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature, the project shall demonstrate that there is no double counting of impacts at design and performance certification (for example use of similar technology or practices through which the potential arises for double counting or misestimation of impacts amongst projects).</p>	<p>The project is located in Chipangali, located in Eastern Province in Zambia and the project boundary and scale are defined based on the GS Methodology: "Emission Reductions from Safe Drinking Water Supply".</p> <p>Project is micro scale as per 9.1.4 c Type-3 Other project activities not included in Type I or Type II that aim to achieve GHG emission reductions at a scale of no more than 20 kt CO₂e per year.</p> <p>Project also complies with Microscale Project Requirements (V1.2). The annual emission reductions are limited to 10,000 tonnes of CO₂eq in each and every year of crediting period.</p> <p>The project does not seek certification under any other voluntary or compliance standards programme.</p> <p>The host country, Zambia does not have an emission reduction cap enforced OR have the possibility to trade emissions that include the scope of the proposed project.</p>

	<p>If a risk of double counting exists, the project developer commits to retire eligible units equal to the quantity of Gold Standard VERs.</p>
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<p>3.1.1 (d) Host Country</p> <p>Requirements: Projects shall be in compliance with applicable Host Country’s legal, environmental, ecological and social regulations.</p>	<p>The project is in compliance with all related legal, environmental, ecological and social regulations. Please see safeguarding principles assessment in Appendix.1.</p> <p>Government of Republic of Zambia prioritizes investment for WASH infrastructure development and set out an ambitious target to provide 100% access to safe water supply and 90% access to basic sanitation by 2030¹.</p> <p>Other related laws and regulations are as follows:</p> <ul style="list-style-type: none"> • Water Resources Management Act 2011, Particularly on the Part x Licensing and Constructors and Drillers and Part XI Ground water and Boreholes² • Zambia Bureau of Standard, Zambian Standard (First Revision), DRINKING WATER QUALITY – for the specification for Drinking Water quality³ • Rural Water Supply and Sanitation: Framework for Provision and
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¹ https://www.sanitationandwaterforall.org/sites/default/files/migrate_default_content_files/Zambia_Country_Brief.pdf

² http://www.parliament.gov.zm/sites/default/files/documents/acts/Water_Resources_Management%2C%20Act%20No.%2021%20of%202011.pdf

³ http://www.puntofocal.gov.ar/notific_otros_miembros/zmb48_t.pdf

	<p>Regulation in Zambia. 2018. Particularly on chapter 3. Approach for Provision and Regulation⁴</p> <ul style="list-style-type: none"> • Water resources Management authority Strategic plan 2022, for general approach⁵.
<p>3.1.1 (e)</p> <p>Contact Details: As part of the Project Documentation the Project Developer shall provide (i) name and (ii) contact details of all Project Participants; AND in case of an organisation (iii) the legal registration details and (iv) documentation by the governing jurisdiction that proves that the entity is in good standing (defined as being a legal or other appropriate entity registered in or allowed to operate within the required jurisdiction and with no evidence of insolvency or legal/criminal notices placed against it or any of its Directors). Gold Standard retains the right (at its own discretion) to refuse use of the Standard where reputational concerns are highlighted.</p>	<p>Contact details can be found in Appendix.2</p>

⁴ <https://www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3328#>

⁵ <https://warma.org.zm/wp-content/uploads/2022/10/WARMA-Strategic-Plan-2022-Final.pdf>

<p>3.1.1.(f) Legal Ownership:</p> <p>Full and uncontested legal ownership of any Products that are generated under Gold Standard Certification, (for example carbon credits) shall be demonstrated. Where such ownership is transferred from project beneficiaries this must be demonstrated transparently and with full, prior and informed consent (FPIC).</p> <p>Note that for certain Project types there is a requirement for full and uncontested legal land title/tenure to be demonstrated. These are contained within specific Activity or Product Requirements. All projects shall immediately report to Gold Standard any land title/tenure disputes arising.</p>	<p>Legal ownership of the Products generated by the project will be transferred from end-users to the project owner. This is explained in detail to the stakeholders in the consultation meeting and included in the project design.</p>
<p>3.1.1 (g) Other Rights: As well as legal title and ownership, the Project Developer shall also demonstrate where required uncontested legal rights and/or permissions concerning changes in use of other resources required to service the Project (<i>for example, access rights, water rights etc.</i>). Any known disputes or contested rights must be declared immediately to Gold Standard by the Project Developer and resolved prior to further project implementation in affected areas.</p>	<p>The project will rehabilitate the existing boreholes not working. The project owner will sign an agreement with the community representatives that they are transferring rights to the VERs generated to the project developer.</p>
<p>3.1.1 (h) Official Development Assistance (ODA) Declaration: All Project Developers applying for project activities located in a country named by</p>	<p>ODA declaration has been submitted to GS registry.</p>

the OECD Development Assistance Committee's ODA recipient list and seeking Gold Standard Certification for carbon credits shall declare the Official Development Assistance (ODA) support. The Project Developer shall follow the GHG Emissions Reduction & Sequestration Product Requirements and submit the declaration at the time of Design Certification.	
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The eligibility criteria identified in Community Services Activity Requirements are met as follows:

Eligibility criteria	Justification
2.1.2 CS Projects shall lead to climate change mitigation and/or adaptation by providing or improving access to services/resources at household or community or institution level. Eligible services include electricity and energy, water and sanitation, waste management, housing, etc.	The project will decrease the wood fuel consumption in households by providing safe drinking water and eliminate the need for boiling; therefore, reduce the GHG emissions.
3.1.1 Types of project – (d) Water, sanitation and hygiene (WASH): WASH activities contributing to climate change mitigation and/or adaptation benefits	The project is a WASH that reduces energy requirements for households as compared to baseline scenario. The project will supply safe drinking water to communities by rehabilitation of existing boreholes.
3.1.2 Project Area, Boundary and Scale: Project Area and Boundary shall be defined in line with the applicable Methodologies or Product Requirements	The project is located in Chipangali, located in Eastern Province in Zambia and the project boundary and scale are

	<p>defined based on the GS Methodology: "Emission Reductions from Safe Drinking Water Supply".</p> <p>The project boundary includes the physical, geographical sites of the low- or zero-greenhouse gas emitting technologies to treat/supply safe drinking water installed by the project activity and the household, commercial and institutional buildings where the end users of safe water provided by the project are located.</p> <p>The project scale is micro as per the referred definition in 9.1.4 c Type-3 Other project activities in GHG Emission Reductions and Sequestration Product Requirements . Type-3 Other project activities not included in Type I or Type II that aim to achieve GHG emission reductions at a scale of no more than 20 kt CO₂e per year.</p> <p>Project also complies with Microscale Project Requirements (V1.2). The annual emission reductions are limited to 10,000 tonnes of CO₂eq in each and every year of crediting period.</p>
<p>3.1.3 Certain Impact Quantification methodologies allow projects to account</p>	<p>The project applies Suppressed Demand baseline as a micro-scale activity and will</p>

<p>Suppressed Demand scenario when establishing a baseline. In such cases, the application of Suppressed Demand baseline is limited to Small Scale and Microscale Projects. Where a Suppressed Demand baseline is applied, it is not possible to 'stack' Gold Standard Certified Impact Statements or Products as the definition of the baseline may be contradictory.</p>	<p>not stack GS certified impact statements or products.</p>
<p>3.1.4 (a) Projects involving the distribution of a large number of devices for services such as heating, cooking, lighting, electricity generation, water treatment technology such as water filter, etc. shall provide a clear description of the ownership of the Products that are generated under Gold Standard Certification all along the investment chain. In line with the FPIC requirement, the proofs that end-users are aware of and willing to give up their rights on Products shall be provided.</p>	<p>The end user will be informed that carbon finance is being generated by the project, and this finance is in turn used for maintenance of the project. The project owner will sign an agreement with the community representatives that they are transferring rights to the VERs generated to the project developer.</p>
<p>3.1.4 (b) The transfer of Product ownership shall be discussed during local stakeholder consultations for projects.</p>	<p>The transfer of rights of carbon credits were discussed during the explanation of how carbon finance would be used to support project implementation at the level of local stakeholder consultation.</p>

A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

The Verified Carbon Reductions (VER) generated by the project belongs to the individual end-users. Carbon Rights Transfer agreement entered between the community representatives and the project proponents includes terms transferring the ownership of VERs from the community to the project proponents. By the signature of the agreement, the end-users accept to waive the carbon rights.

A.2 Location of project

Republic of Zambia, Eastern Province, Chipangali District, Chinunda and Mafuta communities in the wards: (1)Kasenga,(2) Nthope (3) Lunkuswe

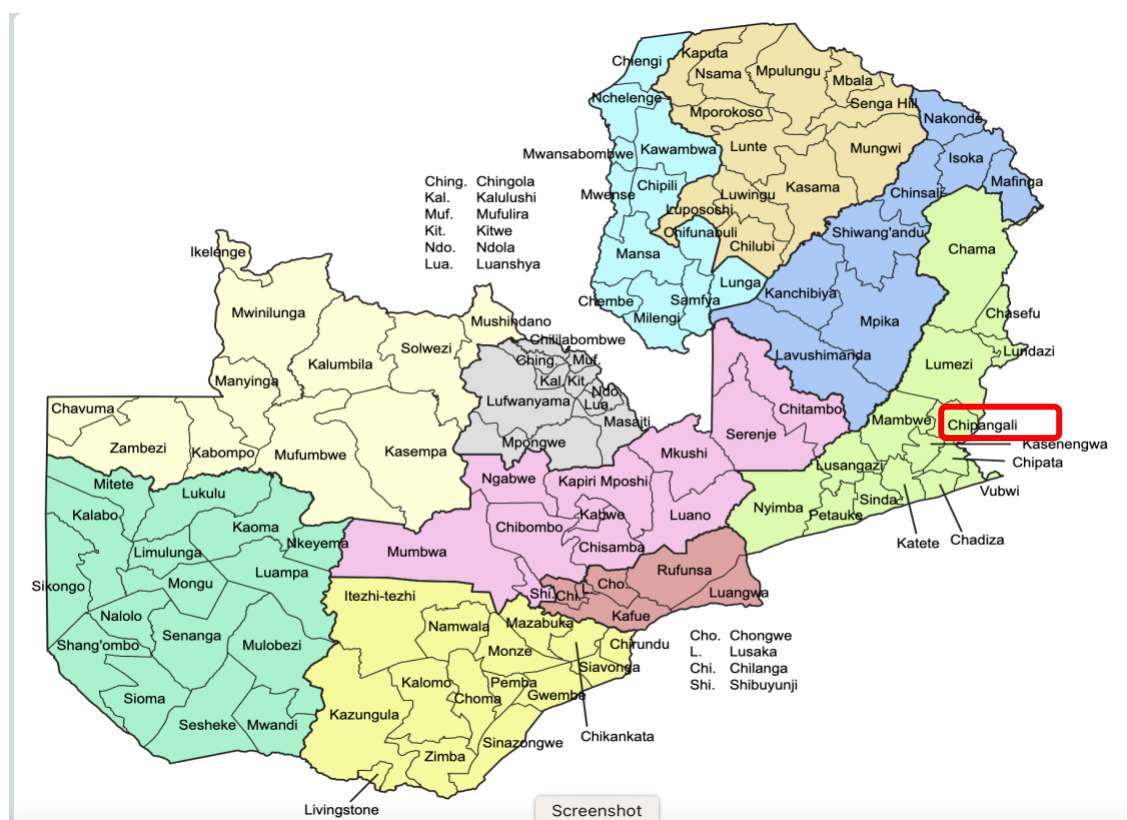


Figure 1 Chipangali District

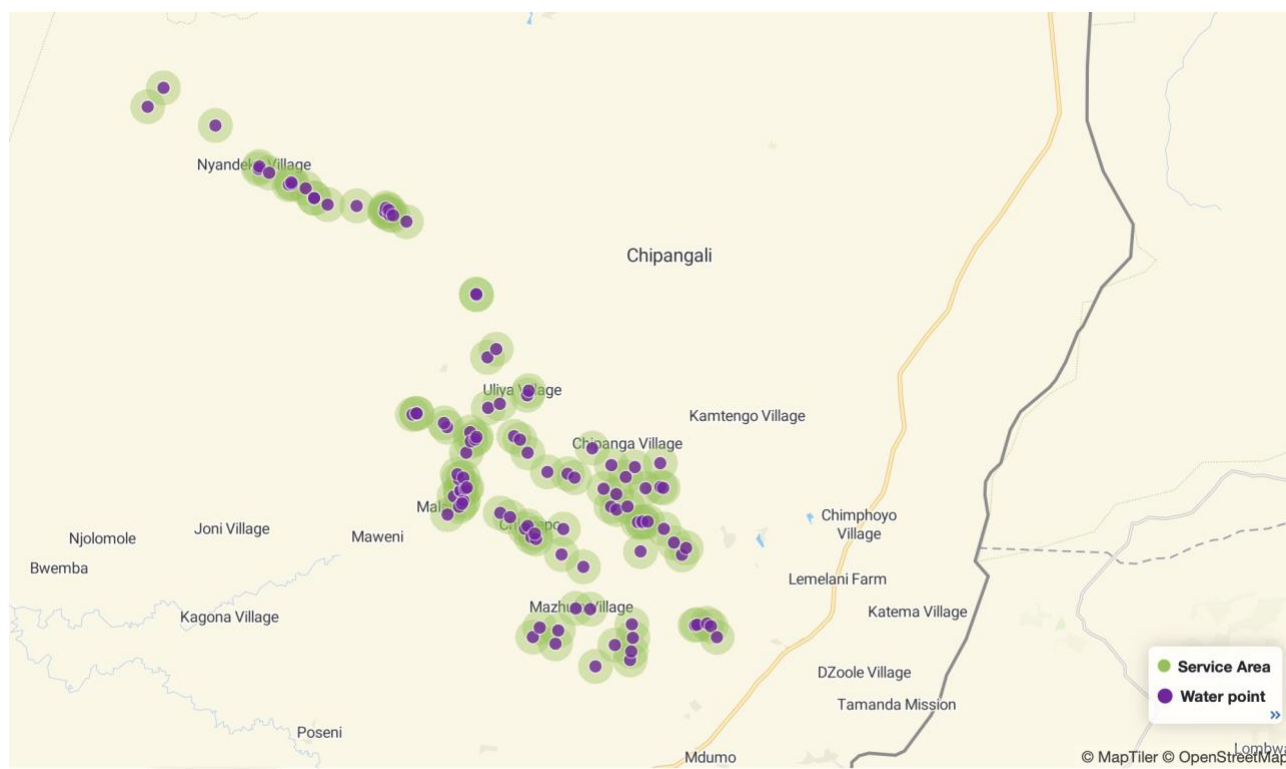


Figure 2. Water points⁶

Table 2. GPS Coordinates of Water Points⁷

No.	Ward	Construction Date	_GPS (Latitude)	_GPS I(Longitude)
1	Kasenga	Nov-15	-13.3459453	32.747121
2	Kasenga	Jul-99	-13.3455043	32.7494656
3	Kasenga	Jul-08	-13.3609166	32.7484964
4	Kasenga	Apr-15	-13.328427	32.7604166
5	Kasenga	May-15	-13.3228477	32.7406824
6	Kasenga	Dec-13	-13.3285951	32.7511817
7	Kasenga	Oct-17	-13.3177023	32.745563
8	Kasenga	Jul-16	-13.3157517	32.7589311
9	Kasenga	Dec-17	-13.3456497	32.7522655
10	Kasenga	Nov-99	-13.3279195	32.7589562
11	Kasenga	Feb-13	-13.3461577	32.7495811

⁶ Coordinates of the 106 boreholes could be accessed at:
https://share.solstice.world/v3/dashboard_link/4927f81779264677aef2fcb46e8a0560?share=e7f51016f51f46a59205367742bb37c0

⁷ There are 18 boreholes that are built between 2020-2022. They are included in the project as there is no maintenance plan for coming years. Since the project will begin in 2024, they would be already in use for 2-4 years and need repair or maintenance. The crediting will begin once they are repaired/maintained within the scope of the project and become operational again.

12	Kasenga	Apr-13	-13.3493985	32.7607696
13	Kasenga	Aug-15	-13.337929	32.7417006
14	Kasenga	Jul-99	-13.3394825	32.7359371
15	Kasenga	Jul-17	-13.3379718	32.7329644
16	Kasenga	Feb-16	-13.3316101	32.7357482
17	Kasenga	Oct-16	-13.3288523	32.7290807
18	Kasenga	Dec-17	-13.3166942	32.7331521
19	Kasenga	May-16	-13.3080916	32.7231143
20	Kasenga	Mar-99	-13.3211108	32.7100674
21	Kasenga	Apr-19	-13.3231524	32.7137275
22	Kasenga	Mar-17	-13.3201928	32.6994269
23	Kasenga	Dec-99	-13.3494413	32.7078489
24	Kasenga	May-99	-13.3625178	32.7068717
25	Kasenga	Mar-21	-13.3904788	32.721996
26	Kasenga	Jan-97	-13.4081698	32.703708
27	Kasenga	Jan-12	-13.4013773	32.7051585
28	Kasenga	Mar-15	-13.4047486	32.6917711
29	Kasenga	Oct-17	-13.399853	32.6954326
30	Kasenga	Jan-74	-13.3901007	32.7143365
31	Nthope	Jun-12	-13.2573418	32.6724405
32	Nthope	Nov-20	-13.2615111	32.6678293
33	Nthope	Oct-99	-13.2998021	32.6587305
34	Nthope	Feb-22	-13.3045914	32.6590706
35	Nthope	May-22	-13.310326	32.6567102
36	Nthope	Nov-99	-13.3411934	32.6745981
37	Nthope	May-00	-13.3433469	32.6797455
38	Nthope	Feb-19	-13.2873869	32.6681936
39	Nthope	Mar-19	-13.2852682	32.674356
40	Nthope	Dec-05	-13.2809275	32.6888034
41	Nthope	Sep-17	-13.2786015	32.6896555
42	Nthope	Nov-21	-13.3023249	32.6620815
43	Nthope	May-17	-13.3036292	32.6613866
44	Nthope	Dec-17	-13.3019635	32.6818008
45	Nthope	May-21	-13.3037186	32.6849894
46	Nthope	Dec-17	-13.3103826	32.6890571
47	Nthope	Apr-99	-13.2951526	32.6449252
48	Nthope	Jun-99	-13.2903646	32.6308002
49	Nthope	Mar-21	-13.2901901	32.6303921
50	Nthope	Jul-19	-13.2908152	32.6283583
51	Nthope	Mar-21	-13.2972698	32.6465416
52	Nthope	Nov-20	-13.1870545	32.6141065
53	Nthope	Feb-20	-13.1866319	32.6137345

54	Nthope	Sep-18	-13.1839323	32.5989563
55	Nthope	Feb-97	-13.1799782	32.5765261
56	Nthope	Jul-20	-13.1799387	32.5765266
57	Nthope	Oct-14	-13.1749165	32.5720451
58	Nthope	Jul-16	-13.1730349	32.5632188
59	Nthope	Jul-21	-13.1726508	32.5648739
60	Nthope	Oct-14	-13.1719586	32.5644921
61	Nthope	May-19	-13.1832727	32.583612
62	Nthope	Jan-65	-13.1849784	32.6143344
63	Nthope	Oct-99	-13.1860193	32.6159032
64	Nthope	Oct-19	-13.1888369	32.6181408
65	Nthope	Sep-99	-13.1885528	32.6162508
66	Nthope	Sep-99	-13.1919989	32.625157
67	Nthope	Jun-02	-13.2290921	32.6619487
68	Nthope	Oct-01	-13.2295679	32.6621604
69	Nthope	Jul-06	-13.1670294	32.5528758
70	Nthope	Aug-04	-13.1650052	32.5472162
71	Nthope	Aug-17	-13.1427337	32.5244811
72	Nthope	Oct-15	-13.1331354	32.4887992
73	Nthope	Sep-20	-13.1637518	32.5476944
74	Nthope	Feb-12	-13.1234686	32.4971206
75	Kasenga	Oct-98	-13.3564254	32.7661655
76	Kasenga	May-18	-13.3591197	32.7726007
77	Kasenga	Jun-18	-13.362678	32.7702905
83	Kasenga	Oct-17	-13.3982412	32.7439638
84	Kasenga	Jul-97	-13.4164827	32.7430046
85	Kasenga	Jun-19	-13.4120584	32.7436053
86	Kasenga	Apr-99	-13.4051697	32.7444934
87	Kasenga	Jun-21	-13.4088617	32.7349735
88	Kasenga	Nov-97	-13.4197812	32.7247713
89	Kasenga	Jun-05	-13.3688025	32.7184073
90	Kasenga	Oct-18	-13.3518267	32.6928382
91	Kasenga	May-99	-13.3536013	32.6909876
92	Kasenga	Mar-19	-13.3479086	32.6890645
93	Kasenga	May-97	-13.3494001	32.6876415
94	Kasenga	Feb-00	-13.3545539	32.6933819
95	Lunkuswe	Jun-10	-13.3288392	32.6562107
96	Lunkuswe	Sep-97	-13.3282783	32.6570669
97	Lunkuswe	Sep-15	-13.3297659	32.6537135
98	Lunkuswe	Jan-78	-13.3327624	32.6501912
99	Lunkuswe	Aug-20	-13.3349924	32.655169
100	Lunkuswe	Jan-70	-13.3364315	32.6544262

101	Lunkuswe	Apr-20	-13.3380139	32.6529188
102	Lunkuswe	Oct-19	-13.3231527	32.6551405
103	Lunkuswe	Sep-17	-13.323888	32.6527444
104	Lunkuswe	May-15	-13.3214169	32.6520117
105	Lunkuswe	May-97	-13.3420342	32.6468164
106	Lunkuswe	Jul-13	-13.3297341	32.6536102

A.3 Technologies and/or measures

The Project plans to carry out repair and maintenance work for the existing boreholes. All boreholes are owned and operated by WASH committees by the order of the District Council. As the maintenance programs are expensive and poorly managed, most of the boreholes requires either full repair or maintenance works at different scales. In total, 106 boreholes have been surveyed and 4 new borehole location identified for the purpose of serving the target communities in Chinunda and Mafuta.

The boreholes are human operated and fitted with hand pumps. For those boreholes that requires a new hand pump and for newly opened boreholes; India Mark II Pumps will be installed⁸:

- The India Mark II Pump is a robust conventional lever action handpump. It is designed for heavy-duty use, serving communities of 300 persons. The maximum recommended lift is 50 m.
- The India Mark II is a public domain pump defined by Indian Standards and RWSN specifications. The India Mark II pump is not corrosion resistant.
- It requires special skills for installation as well as for the maintenance.
- This pump has limited "Community Management Potential", but it is reliable and popular with the communities. To service the INDIA Mark II Pump skills and tools are needed which exceeds the ability of a village-level caretaker. However trained area mechanics can successfully maintain the pump.

⁸ <https://www.rural-water-supply.net/en/implementation/public-domain-handpumps/india-mark-ii>

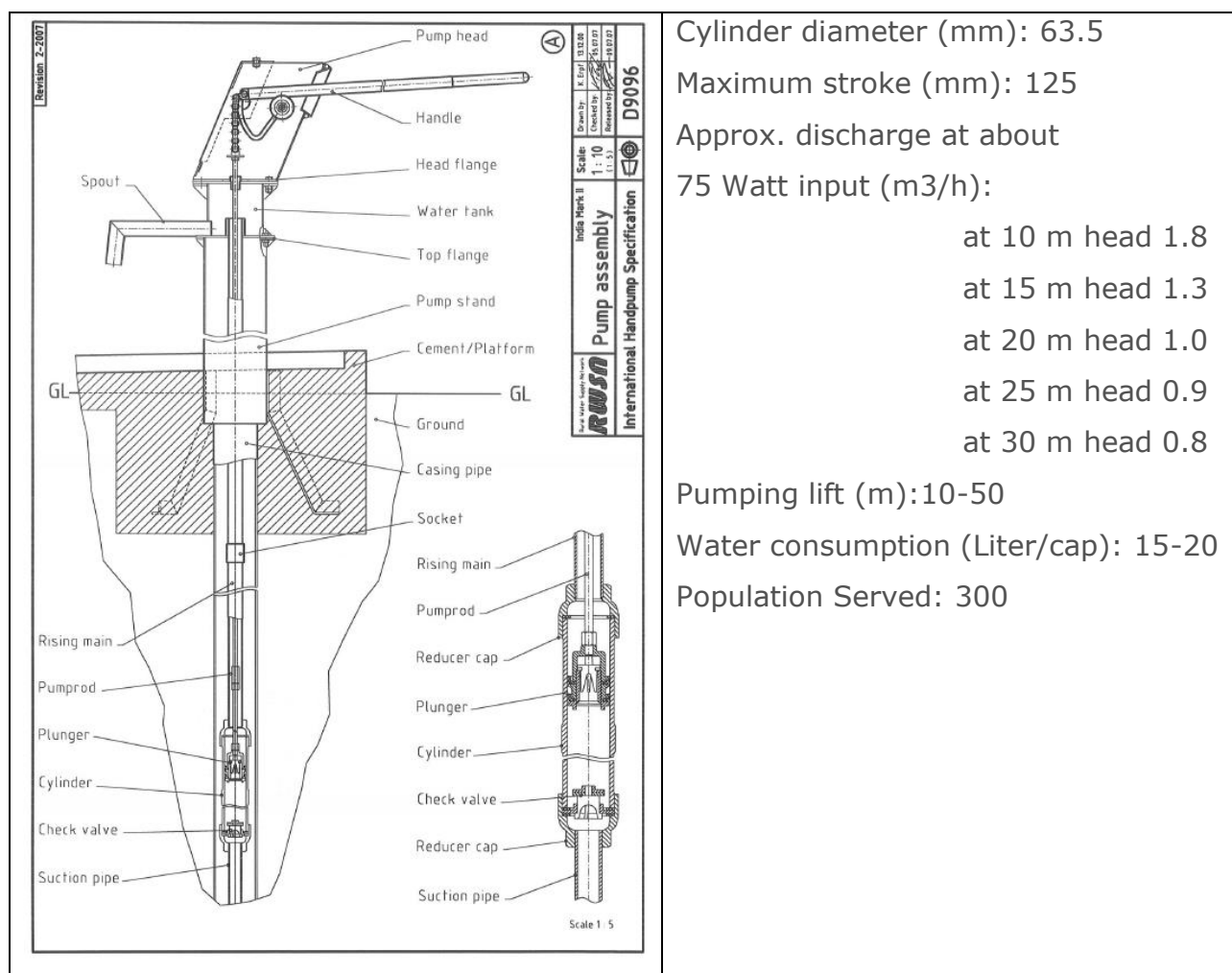


Figure 3. Project Technology

Performance and Use⁹:

The individual parts of the handpump have lifespans as follows: Chain – 4 years, Valve – 4 years, Piston seals – 5 years, Handle bearings – 5 years, Pump rod – 10 years, Riser pipes – 12 years.

⁹ <https://www.engineeringforchange.org/solutions/product/india-mark-ii-handpump/#:~:text=The%20individual%20parts%20of%20the,%2C%20Riser%20pipes%20-%2012%20years.>

The India Mark II Pump was designed to be operational for at least 1 year without maintenance. Monthly and tri-monthly checks combined with yearly replacements can extend the life of the pump.

A.4 Scale of the project

The project is micro-scale based on project scale defined under GS4GG Product Requirements. Annual emission reduction achieved will not exceed 10,000 tCO₂e.

A.5 Funding sources of project

The project will be implemented by the Project Developer, Offgridsun; in cooperation with the local partners or Project Implementers. The funding for repairs and maintenance works will be provided by Offgridsun that will be legal owner of the VERs. No public funding or Official Development Assistance is involved.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

Gold Standard Methodology: Emission reductions from safe drinking water supply Version 1.0.

Applicable GS4GG requirements are as follows:

- Community Services Activity Requirements (October 2019)
- Usage Rate Requirements (27/10/2020)

B.2. Applicability of methodology (ies)

Emission reductions from safe drinking water supply methodology defines the following applicability criteria

Applicability	Justification
a. Eligible household water treatment technologies (HWT), institutional water treatment technologies(IWT), and community level water treatment technologies (CWT) include bleach/chlorine, water filter (ceramic, sand, composite, membrane, etc.), UV disinfection, etc.	N/A
b. Eligible community water supply technologies (CWS) include new installation of new borehole hand-pumps, borehole hand-pumps rehabilitation, solar powered drinking water pumps, etc. Water pumps powered by fossil-fuel engines are not eligible, with the exception of back- up fossil-fuel engines that are used for no more than 10% of	<p>The project aims to implement Community Water Supply technologies (CWS) to provide safe water to Chipangali, Eastern Province in Zambia.</p> <p>The project will repair/maintain the existing boreholes, install/rehabilitate hand-pumps and open new boreholes.</p>

operating hours (parameter SWDS 33).	
c. All projects involving CWT and CWS technologies must also include ongoing maintenance and repair of the project technology.	Local partner, Pamodzi Ndi Ana will be responsible to establish a team for maintenance and monitoring activities.
d. Where the project involves the rehabilitation of an existing technology, the project developer shall provide evidence that the existing technology is non-operational and that there is no planned maintenance or repair for at least 3 months after the date it became non-operational (parameter SWDS 2).	Targeted boreholes are not operational due to technical problems such as missing or broken hand pumps, damaged pipes and drainage. The Project owner provided confirmation by the local authorities that the list of boreholes are not operational.
e. This methodology allows for project activities to include safe water treatment and/or supply technologies implemented for end-users in households, and/or commercial premises such as shops or institutional premises including half or full day/boarding schools, prisons, army camps & refugee camps.	Safe water will be supplied to end- users in households by the boreholes repaired/installed. Water quality will be tested at pre-identified intervals. In case of contamination, support for treatment will be provide in corporation with local health clinics.
f. In cases where the safe water is retrieved at the CWT or CWS location, the water in its improved	The service area of the each borehole will be demonstrated on map and only households within 1 km distance or a total

<p>form shall be available within a distance of 1 km or less from the end-users, as demonstrated by satellite imaging or GPS coordinates of each CWT or CWS location. Alternatively, as a proxy, a total collection time of 30 minutes or less for a round trip, including queuing, using the travel modes of walking or pedaling may be demonstrated (parameter SDWS 1).</p>	<p>collection time of 30 minutes to the boreholes will be counted as eligible.</p>
<p>g. Project technology performance level (HWT and IWT): It shall be demonstrated based on report of laboratory testing or official notification that the project technology or equipment achieves either (i) the performance target classification 3-star or 2-star level, meaning "Comprehensive Protection," as per the WHO International Scheme to Evaluate Household Water Treatment Technologies (World Health Organization, 2011) or (ii) compliance with the national standard or guideline for household drinking water treatment technology; if no national guideline or standard is available, then the project technology shall comply with the WHO International Scheme requirements as per (i) (parameter SDWS 2).</p>	<p>The project is not HWT or IWT.</p>

<p>h. Project technology performance level (CWT and CWS): For each individual CWT or CWS, it shall be demonstrated at the start of each crediting period with water quality testing reports that the water directly supplied by the project water technology/source achieves both: microbial quality in line with either</p> <p>(i) national standards or guidelines for microbial quality of drinking water, or in the absence of such requirements, (ii) the guideline values for verification of microbial quality from the Guidelines for drinking-water quality (Table 7.10, WHO, 2017); and</p> <p>ii. compliance with (i) national standards or guidelines on priority chemical contamination and physical and aesthetic aspects, or in the absence of such requirements, (ii) international standards or guidelines on priority chemical contamination and physical and aesthetic aspects. (parameter SWDS 3).</p>	<p>Water quality test will be performed in accordance with the national standard for drinking water in Zambia.</p> <p>Safe water directly supplied by the project will be assured to achieve the microbial quality and priority chemical contamination and physical and aesthetic aspects in line with national standards.</p> <p>Water quality will be tested at pre-identified intervals. In case of contamination, support for treatment will be provide in corporation with local health clinics.</p>
<p>i. The project must conduct annual water hygiene education campaigns for the end-users. (parameter SDWS 20).</p>	<p>The project staff will conduct annual water hygiene education campaigns for the end-users. The impacts of the hygiene campaign will be assessed using the WHO/UNICEF Joint Monitoring Programme Core questions for drinking water and hygiene.</p>

j. A project applying this methodology may make SDG claims if relevant monitoring parameter(s) is included in the monitoring plan to demonstrate and confirm the project's contributions to SDGs. See parameter SDWS 19.	<p>For the contribution to SDG 6:</p> <p>The project aims to achieve basic level services by providing households an improved source with water collection times of no more than 30 minutes per round trip.</p> <p>Of the three aspects of accessibility, availability and quality, the project fulfills the quality aspect by monitoring water quality.</p>
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B.3. Project boundary

The sources and gases included in the project boundary are described in the below table.

Source		GHGs Included?		Justification/Explanation
Baseline	Emissions from wood fuels utilized for obtaining safe drinking water displaced due to the project activity.	CO ₂	Yes	Major source of emissions
		CH ₄	Yes	Important source of emissions
		N ₂ O	Yes	Can be significant source of emissions for some fuels
Project	Emission from electricity or fossil fuels for operating project water supply/treatment technology	CO ₂	No	The boreholes are human operated and fitted with hand pumps.
		CH ₄	No	N/A
		N ₂ O	No	N/A

B.4. Establishment and description of baseline scenario

According to the applied methodology, baseline scenario is the existing baseline fuel and technology for boiling water by end-user group. The project will apply suppressed demand to the baseline scenario and includes the end users who would have boiled water for drinking in the absence of the project activity. The project is micro scale activity and eligible for implementing suppressed demand. The suppressed demand value is determined by a set of questions in the baseline survey by asking households how they would choose to purify drinking water if they were not subject to financial constraints or energy poverty.

Each project shall document the following pre-project conditions that define the specific baseline scenario of the end-user group(s) of the project:

a. Pre-project practices of boiling water, or drinking unsafe water

(suppressed demand): Document the drinking water sources and/or treatment technologies available and used in the project boundary.

b. Efficiency of water boiling systems: Document the baseline stove or water boiling technologies and technologies' thermal efficiency used in the project boundary.

c. Baseline fuels: Document the baseline cooking fuels used and/or fuels used for water boiling in the project boundary.

In order to document the pre-project conditions a baseline survey was carried out:

Baseline Survey of target population characteristics

A baseline survey is conducted within the project boundary by interviewing 107 residents during 07 February- 24 March 2022 from Mafuta and Chinunda communities.

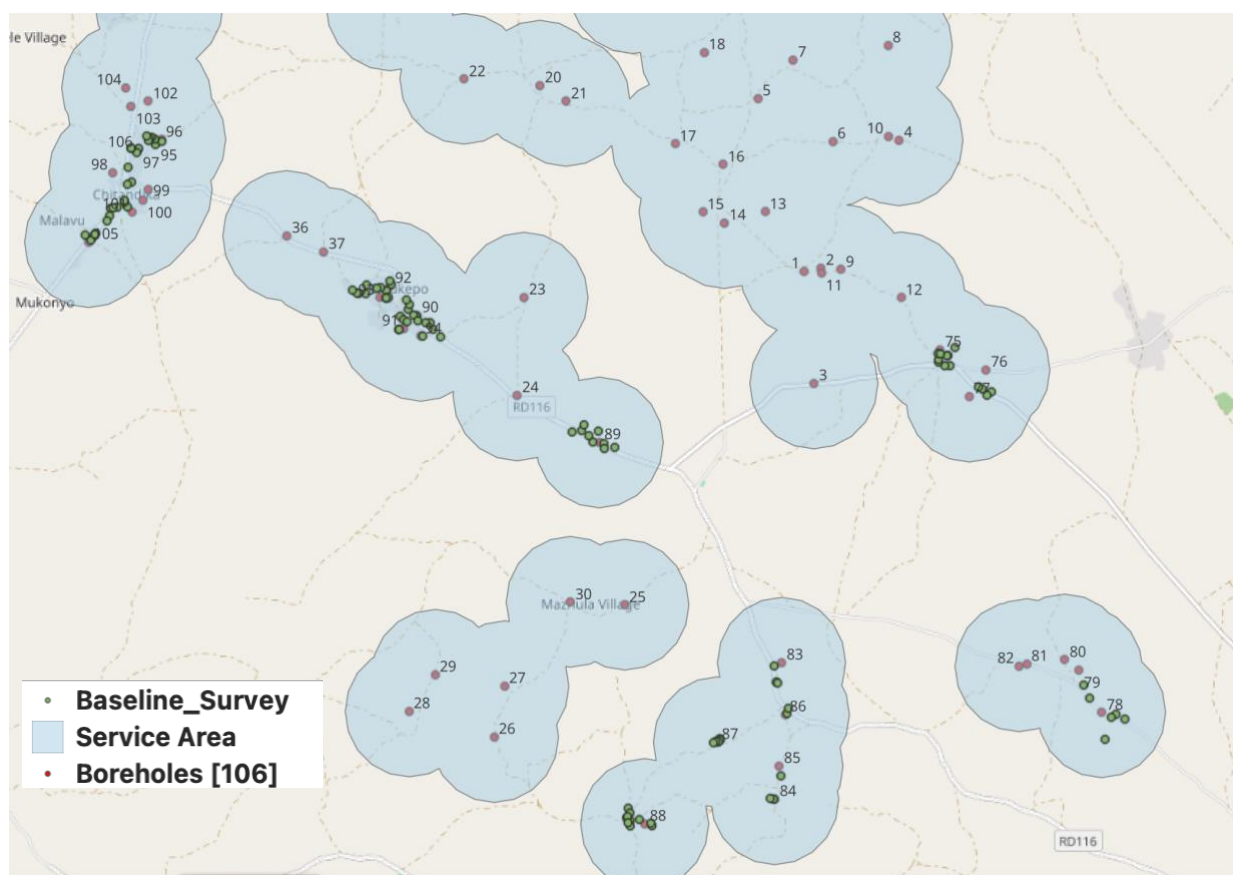


Figure 4. Selected households (green dots) for Baseline Survey.

The data collected is specific to the characteristics of each baseline scenario, and should be tailored accordingly. The following information has been gathered:

- A. Basic Information
 - 1. Name, Surname
 - 2. GPS Coordinates
 - 3. Household Size per season
- B. Source of water for drinking
 - 1. Main source of water
 - 2. Distance to source (Near/Far)
 - 3. Other water sources
 - 4. Health related issues
- C. Fetching water
 - 1. Person that fetches water in the family
 - 2. Means of transport
 - 3. Frequency of collection
 - 4. Water collection method
- D. Cookstove and fuel use
 - 1. Most used cookstove type
 - 2. Main type of fuel used with the stove
- E. Water purification
 - 1. Purifying water or not
 - 2. Method of purification preferred
 - 3. Purpose of purification
 - 4. If not purifying, the reasons
 - 5. If had a change, which method preferred for purification

The results are summarized as follows:

Source of water for drinking: The drinking water sources used in the project boundary is identified in the project boundary, and are classified as safe and unsafe water source. Only 32 respondents out of 107 were drinking water from safe sources. Most of the people depends on unsafe source (70%).

57 of the respondents said the water source is below 30 minutes for a return trip, the rest said it is above 30 minutes. Most of those who are far to the water sources (33 out of 50) said that they use a second water sources different from the nearest sources listed. The reasons for using a second source of water are:

- Boreholes nearby getting dry,
- Boreholes nearby are too crowded,
- Boreholes break down frequently and not repaired or maintained,
- Water quality deteriorates by time.

48 out of 107 respondents (45%) stated to have health problems related with water consumption such as stomach pain and diarrhea.

Water Purification and Suppressed Demand: 52% of sample group purifies water for mostly drinking, cooking and hygiene purposes. Those who purifies water mostly uses boiling (52 out of 55 respondents). 71% of those who do not purify water, if no constraints, said they would boil the water.

Fetching Water: All of the respondents said either women alone or women and children fetch water for the family. The means of transport is by foot for all respondents. 93% of the respondents fetch water daily with mostly 20 litre plastic containers.

Cookstoves and fuels used for boiling water: 92% of the respondents said they mainly use three-stone fire and 96% uses firewood. 82% of the respondents said that they collect firewood.

Fuelwood Collection: 47% of the sample group buys fuelwood whereas 36% of them fetches firewood from different sources. The rest both fetches firewood and buys occasionally. More of those who fetches firewood uses forest.

B.5. Demonstration of additionality

Specify the methodology, activity requirement or product requirement that establishes deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).

Activity Requirement for Community based technologies:

4.1.9. Projects that meet any of the following criteria are considered as deemed additional and therefore are not

required to prove Financial Additionality at the time of Design Certification:

- (a) Positive list (Annex B)
- (b) Projects located in LDC, SIDS, LLDC
- (c) Micro-scale projects

Describe how the proposed project meets the criteria for deemed additionality.	<p>The proposed project is located in the Republic of Zambia which falls under the category of a LDC and LLDC.</p> <p>The proposed project is also a micro-scale project and complies with condition (c).</p>	
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B.5.1 Prior Consideration

The project is applying under regular project cycle and demonstration of prior consideration is not required.

B.5.2 Ongoing Financial Need

N/A

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

SUSTAINABLE DEVELOPMENT GOALS TARGETED	MOST RELEVANT SDG TARGET	SDG IMPACT
		INDICATOR (PROPOSED OR SDG INDICATOR)
13 Climate Action (mandatory)	13.2. Integrate climate change measures into national policies, strategies and planning.	Emission reductions achieved by fuelwood savings at household level

15 Life on Land	15.1.By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Amount of firewood saved by the project stoves per year
3 Good health and well-being	3.9. By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Number of households that observed reduction in PM2.5 & carbon monoxide (CO) concentration reductions
5 Gender Equality	5.4. Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate	Proportion of households who perceive saved time from collecting wood and water boiling
6 Clean Water and Sanitation	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all.	<p>- Amount of safe water served at the required quality by national standards.</p> <p>Increased awareness due to annual Water hygiene campaigns.</p>
8 Decent Work and Economic Growth	8.5. By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Number of temporary and permanent jobs created

B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact

SDG 13: Climate Action

Parameter: Emission reductions achieved by fuelwood and charcoal savings at household level.

As per the applied GS methodology, The baseline emission factor shall be calculated as follows:

$$EF_b = SE_{w,b,y} * \sum_f (x_f * (EF_{b,f,CO2} * f_{NRB,f,y} + EF_{b,f,nonCO2})) \div 10^9 \quad Eq. 1$$

Where:

EF_b	= Emission factor for the use of fuel to obtain safe water in the baseline (tCO ₂ e/L)
$SE_{w,b,y}$	= Specific energy required to boil water (kJ/L), to be calculated as per the paragraph below
x_f	= Proportion of fuel f used in the baseline (fraction determined based on an energy basis)
$EF_{b,f,CO2}$	= CO ₂ emission factor from use of fuel f (tCO ₂ /TJ)
$EF_{b,f,nonCO2}$	= Non-CO ₂ emission factor arising from use of fuel f , when the baseline fuel f is biomass or charcoal (tCO ₂ e/TJ). This parameter is omitted when f is a fossil fuel.
$f_{NRB,f,y}$	= Fractional non-renewability status of woody biomass fuel during year y (fraction). For biomass, it is the fraction of woody biomass that can be established as non-renewable. This parameter is omitted when f is a fossil fuel.
f	= Index for baseline fuel types

The specific energy required to boil water using the baseline technology ($SE_{w,b,y}$) is determined as follows, by calculating the energy input required to obtain 1 L of boiling water, including boiling and vaporization losses, taking into account default or measured stove efficiency.

$$SE_{w,b,y} = 360.83/\eta_{wb} \quad Eq. 2$$

Where:

360.83	= Default amount of energy required to obtain 1 L of water after 5 minutes of boiling from a first principles approach kJ/l
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η_{wb} = Efficiency of the stoves for baseline water boiling (%).
Weighted average of baseline stove types.

The baseline emissions shall be calculated as follows:

$$BE_y = EF_b \times (1 - C_b - X_{cleanboil,y}) \times Q_y \times M_{q,y} \quad Eq. 3$$

Where:

BE_y = Baseline emissions from the use of fuel to obtain safe water in the baseline (tCO₂e)
 C_b = Proportion of project end-users who in the baseline were already using a safe water supply that did not require boiling (%)
 $X_{cleanboil,y}$ = Proportion of project end-users that boil safe water in the project year y (%)
 Q_y = Quantity of safe drinking water provided by the project in year y (L)
 $M_{q,y}$ = Modifier for the water quality in year y

The quantity of safe drinking water provided by the project is calculated using Method 1 applies to CWT and CWS;

In the case of CWT and CWS, the quantity of safe drinking water provided by the project Q_y is determined as follows:

$$Q_y = \min(Q_{m,y}, Q_{pop,y}) \quad Eq. 4$$

Where:

$Q_{m,y}$ = Monitored quantity of safe water provided by the project in year y (L).
 $Q_{pop,y}$ = Quantity of safe drinking water that could be consumed by project end-users in year y (L)

Quantity of safe drinking water shall be calculated as follows:

$$Q_{pop,y} = \sum_p HH_{p,y} \times HN_{p,y} \times QPW_p \times DO_{p,y} \quad Eq. 5$$

Where:

$HH_{p,y}$	=	Number of premises type p served by the project in year y
$HN_{p,y}$	=	Number of individuals per premises type p (e.g. household, school) in year y
QPW_p	=	Volume of drinking water per person per day for premises type p (L). Apply the default value or monitored value through water consumption field tests in the project scenario, capped at 5.5 L per person per day.
$DO_{p,y}$	=	Days the project technology is operational for end-users in premises p in year y

➤ Project emissions

Project emissions may result from the operation of new low-emission water treatment technologies. Project emissions (PE_y) shall be calculated as follows:

$$PE_y = PE_{ff,p,y} + PE_{ec,p,y} \quad \text{Eq. 8}$$

Where:

PE_y	=	Project emissions in year y (tCO ₂)
$PE_{ff,p,y}$	=	Project emissions from fossil fuel use in year y (tCO ₂)
$PE_{ec,p,y}$	=	Project emissions from electricity use in year y (tCO ₂)

There will be **no fossil fuel use** in the project therefore project emissions from fossil fuel use will be **zero**. All boreholes are human operated and will be equipped by hand pumps.

➤ Leakage emissions

The potential sources of leakage have been evaluated as per the methodology. Leakage risks deemed very low can be ignored as long as the case for their insignificance is substantiated. The leakage of the project implementation is deemed to be very low and is expected to be zero.

Members of the population who do not participate in the project, and previously used lower emitting energy sources,	In the baseline scenario, boiling with fuelwood is main method used for water purification. No renewable energy is
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instead use the non-renewable biomass saved under the project activity.	applicable. Therefore, the leakage risk is deemed to be very low and neglected.
The project significantly reduces the NRB fraction within an area where other GHG mitigation project activities account for NRB fraction in their baseline scenario.	82% of the respondents said to buy firewood. Being a micro-scale project, no impact on NRB fraction in other areas is expected. There are no other CDM or VER projects in the area.
The project population compensates for loss of the space heating effect of water boiling by adopting some other form of space heating or by retaining some baseline wood fuel-burning practices.	The space heating effect of boiling water is expected to be minimal. The cookstoves are already being used for cooking, it is highly unlikely that another technology will be used for heating.

➤ Emission reductions

The emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y \quad \text{Eq. 11}$$

Where:

ER_y	= Emission reductions in year y (tCO ₂ e/yr)
BE_y	= Baseline emissions in year y (tCO ₂ e/yr)
PE_y	= Project emissions in year y (tCO ₂ e/yr)
LE_y	= Leakage emissions in year y (tCO ₂ e/yr)

As PE_y and LE_y is zero:

$$ER_y = BE_y$$

SDG 15: Life on Land

Parameter: Amount of firewood saved by the project per year.

The total firewood and charcoal saved will be calculated based on the amount of water served by the following formula:

$$\text{Amount of fuelwood saved} = (SE_{w,b,y} * ((1 - C_b - X_{cleanboil,y}) * Q_y) / NCV_{\text{fuelwood}})$$

NCV: Net calorific value for fuelwood (0.0156 TJ/t)

SDG 3: Good health and well-being

Parameter:

Number of households that observed reduction in PM2.5 & carbon monoxide (CO) concentration reductions

The beneficiaries will be asked to evaluate any improvement in their health conditions compared to baseline situation during the household survey. Since water boiling will be eliminated, the beneficiaries are expected to expose to indoor air pollution less compared to the baseline situation.

Percentage of HH with positive response= #Positive responses/Sample size

SDG 5: Gender Equality

Parameter: Proportion of households who perceive reduced time for collecting wood and water boiling

During the household survey, questions about the perception of time spent on water boiling and fuelwood collection will be asked to women. If the response is positive, the surveyors will further explore for what kind of activities people are using their time saved.

Percentage of HH with positive response= #Positive responses/Sample size

SDG 6: Clean Water and Sanitation

Parameter: Amount of safe water served at the required quality by national standards.

Amount of safe water served by the project will be calculated by sampling basis. The baseline survey results showed that almost all users carry water with 20 litres plastic containers on daily basis. One of the two approaches will be followed by the Project:

- (1) The number of 20 lt containers will be counted on a daily basis for at least 30 boreholes sampled for 3 days, not including weekend. Then the number will be multiplied by 20 lt to find the average water served daily.
- (2) The time required for filling 20 litres plastic container will be counted and recorded for randomly sampled 30 boreholes. An average flowrate will be calculated.

Average flowrate (l/secs) = 20 Litre / average time required to fill container (sec)

Daily operational time will be recorded for the selected boreholes for 3 days, excluding weekends. The operational time will be multiplied with the average flowrate calculated.

Total amount of water served (litres/day)= Average daily operation time (hrs/day) x Average flowrate (l/sec) x 60 sec/hrs

Daily water consumption will be multiplied by the operational days in a year.

Parameter: Increased awareness due to annual Water hygiene campaigns.
Number of people reached through hygiene campaigns will be monitored.

SDG: 8: Decent work and economic growth

Parameter: Number of temporary and permanent jobs created
Number and type of jobs created will be recorded with employment status and duration. The employee records and paybills will be kept for monitoring.
B.6.2 Data and parameters fixed ex ante

SDG13

a. Related to water quality

Data/parameter	SDWS1-Number of household/institution per CWT/CWS
Unit	N/A
Description	End users premises (e.g. households, institutions) within 1 km distance of project water source
Source of data	Technical specification of the technology implemented.
Value(s) applied	6,360

Choice of data or Measurement methods and procedures	The number of users is capped at 300 per water point. The household size is 5 as per Zambia 2018 Demographic and Health Survey; which means 60 families per borehole.
Purpose of data	Determination of number of eligible households.
Additional comment	<p>The number is crosschecked by official data from Health Clinics in the region in 2019</p> <p>Mafuta- 2,536</p> <p>Chinunda- 2601</p> <p>Total hhs- 5,137</p> <p>Solstice database will also be used for crosschecking to be in line with the requirement of 1km radius of the each CWS.</p>

Data/parameter	SDWS 2- Project technology description
Unit	N/A
Description	The project applies zero emission water supply technologies.
Source of data	Project database
Value(s) applied	India Mark II Hand pumps
Choice of data or Measurement methods and procedures	<p>New boreholes:</p> <ul style="list-style-type: none"> • Technical specification provided by the manufacturer for new hand pumps • Installation date <p>Rehabilitated boreholes:</p> <ul style="list-style-type: none"> • Evidence Letter from local government for non-operational time for all boreholes and lack of maintenance or repair plans. • Original installation date for each borehole • Technical notes of rehabilitation activity undertaken for each borehole
Purpose of data	Confirmation on technology specifications and performance level
Additional comment	N/A

Data/parameter	SDWS-3 Project technology performance level (CWT or CWS)
Unit	N/A

Description	<p>The water directly supplied by the project must comply with:</p> <ul style="list-style-type: none"> ii. Microbial quality in line with (i) national standards or guideline for microbial quality of drinking water, or in their absence, (ii) the guideline values for verification of microbial quality from the Guidelines for drinking-water quality, 4th edition (Table 7.10, WHO, 2017); and iii. Chemical quality (i) national standards or guidelines on priority chemical contamination and physical and aesthetic aspects, or in the absence of such requirements, (ii) international standards or guidelines on priority chemical contamination¹⁸ and physical and aesthetic aspects <p>Once at the start of the crediting period, and microbial quality at the CWS locations must be retested following an event that could lead to contamination of the source water (e.g. flooding).</p>
Source of data	Water quality test reports
Value(s) applied	N/A
Choice of data or Measurement methods and procedures	Laboratories with quality accreditation will be used for water quality testing. The accreditation confirms adequate quality management plan in place which addresses both quality assurance and quality control test procedures.
Purpose of data	
Additional comment	N/A

Data/parameter	SDWS-4 Regulatory framework for safe water supply
Unit	N/A
Description	<p>List and provide a summary of any national, sub-national and local regulations or guidance for safe drinking water supply, operation and maintenance, including any tariff requirements.</p> <p>Describe how the project complies with the regulatory framework.</p> <p>Update at the start of each crediting period.</p>
Source of data	National, sub-national and local authorities
Value(s) applied	The project complies with the following laws and regulations related to water supply services:

	<ul style="list-style-type: none"> Water Resources Management Act 2011, Particularly on the Part X Licensing and Constructors and Drillers and Part XI Ground water and Boreholes¹⁰ Zambia Bureau of Standard, Zambian Standard (First Revision), DRINKING WATER QUALITY – for the specification for Drinking Water quality¹¹ Rural Water Supply and Sanitation: Framework for Provision and Regulation in Zambia. 2018. Particularly on chapter 3. Approach for Provision and Regulation¹² Water resources Management authority Strategic plan 2022, for general approach¹³.
Choice of data or Measurement methods and procedures	National policies and guidelines in the water sector in Zambia.
Purpose of data	Confirmation that the project does not undermine or conflict with any national, sub-national and local regulations or guidelines for safe drinking water supply, operation and maintenance, including any tariff requirements.
Additional comment	N/A

Data/parameter	SDWS-5 Water sources in the project boundary
Unit	N/A
Description	Identify the water sources in the project boundary, and identify whether they are used for drinking water, and for all that are used for drinking water, classified as improved and unimproved water source.

¹⁰http://www.parliament.gov.zm/sites/default/files/documents/acts/Water_Resources_Management%2C%20Act%20No.%2021%20of%202011.pdf

¹¹ http://www.puntofocal.gov.ar/notific_otros_miembros/zmb48_t.pdf

¹² <https://www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3328#>

¹³ <https://warma.org.zm/wp-content/uploads/2022/10/WARMA-Strategic-Plan-2022-Final.pdf>

Source of data	Baseline Survey
Value(s) applied	70% of the target population uses unimproved water sources.
Choice of data or Measurement methods and procedures	Baseline Survey was performed
Purpose of data	Identification of baseline scenario.
Additional comment	N/A

a. Related to emission reductions

Data/parameter	SDWS-6 Stove technologies used in the project boundary
Unit	N/A
Description	The proportion of different stove types used in premises in the geographical area of the project.
Source of data	Baseline Survey
Value(s) applied	<p>The following categories of stove types are identified in the project boundary:</p> <ul style="list-style-type: none"> • Three-stone fire • Charcoal stoves (a conventional system for woody biomass lacking improved combustion air supply mechanism and flue gas ventilation system) • improved cookstoves ($\geq 20\%$ thermal efficiency)
Choice of data or Measurement methods and procedures	Baseline assessment prior to validation for classification and clustering (if applicable) of baseline stove types is being conducted.
Purpose of data	Assessment of baseline scenario
Additional comment	N/A

Data/parameter	SDWS-7 Expected technical life or project technology
Unit	Time period
Description	The operation lifetime of the project technology is over 5 years as per the manufacturer specifications
Source of data	Manufacturer specifications
Value(s) applied	>5 years

Choice of data or Measurement methods and procedures	Manufacturer specifications
Purpose of data	Assessment of technical life against crediting period and if necessary (total crediting period \geq expected technical life) inclusion of appropriate replacement mechanism as part of the project design.
Additional comment	N/A

Data/parameter	SDWS-8 X_f						
Unit	Percentage						
Description	Percentage of fuel f use in target population						
Source of data	Baseline survey						
Value(s) applied	<table border="1"> <tr> <td>Fuelwood</td><td>96%</td></tr> <tr> <td>Charcoal</td><td>3%</td></tr> <tr> <td>Both</td><td>1%</td></tr> </table>	Fuelwood	96%	Charcoal	3%	Both	1%
Fuelwood	96%						
Charcoal	3%						
Both	1%						
Choice of data or Measurement methods and procedures	Questions about fuel used for water boiling were asked to the participants to the baseline survey for both seasons. Please refer to the Baseline Survey results.						
Purpose of data	Calculation of emission reductions						
Additional comment	-						

Data/parameter	SDWS-9 EF_{b,f,CO_2}
Unit	tCO ₂ e/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	Fuelwood- 112 Charcoal- 165.22
Choice of data or Measurement methods and procedures	Deemed valid by Methodology

Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/parameter	SDWS-10 $E_{b,f,non\ CO_2}$
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	$E_{b,non\ CO_2}$; calculated from IPCC defaults; Volume 2:2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2, Table 2.5 Global Warming Potential (GWP); from IPCC Fifth Assessment Report (AR5) Climate Change 2013: The Physical Science Basis
Value(s) applied	Fuelwood- 9.46 Charcoal-44.83
Choice of data or Measurement methods and procedures	Deemed valid by Methodology
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/parameter	SDWS-11 η_{wb}						
Unit	Percentage						
Description	Weighted average efficiency of the baseline water boiling devices. Calculate the weighted average of the water boiling efficiency in the project boundary using the proportion of different stove types used and the stove efficiencies.						
Source of data	Baseline survey						
Value(s) applied	11.7%						
Choice of data or Measurement methods and procedures	<p>The following default values for cookstoves are applied to calculate the weighted average of the water boiling efficiency.</p> <table border="1"> <thead> <tr> <th>Cookstove Type</th><th>Efficiency</th></tr> </thead> <tbody> <tr> <td>Three-stone fire</td><td>10%</td></tr> <tr> <td>Improved fuelwood</td><td>30%</td></tr> </tbody> </table>	Cookstove Type	Efficiency	Three-stone fire	10%	Improved fuelwood	30%
Cookstove Type	Efficiency						
Three-stone fire	10%						
Improved fuelwood	30%						
Purpose of data	Calculation of emission reductions						

Additional comment	-
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Data/parameter	SDWS-12 C_b
Unit	Percentage
Description	Proportion of project end-users who in the baseline were already using safe water, either from an improved water source, or from a water treatment method other than boiling. At the start of each crediting period.
Source of data	Baseline Survey
Value(s) applied	16.97%
Choice of data or Measurement methods and procedures	Baseline assessment prior to validation
Purpose of data	Assessment of baseline scenario
Additional comment	N/A

Data/parameter	SDWS-24 QPW_p
Unit	Liters/person/day
Description	Volume of drinking water per person per day for premises type p
Source of data	Default value in the methodology
Value(s) applied	4
Choice of data or Measurement methods and procedures	The default value 4 L/person/day determined based on WHO recommendations will be used.
Purpose of data	Calculation of emission reductions
Additional comment	-

Data/parameter	SDWS-21 $f_{NRB,f,y}$
Unit	percentage
Description	Non-renewability status of woody biomass fuel during year y in case the baseline fuel is biomass or charcoal
Source of data	Determined by: CDM TOOL30, calculation of the fraction of non-renewable biomass https://cdm.unfccc.int/DNA/fNRB/index.html

Value(s) applied	0.730
Choice of data or Measurement methods and procedures	Calculated as per Tool 30
Purpose of data	Calculation of emission reductions
Additional comment	-

B.6.3 Ex ante estimation of SDG Impact

SDG 13: Take urgent action to combat climate change and its impacts

Parameter: Emission reductions achieved by fuelwood savings at household level

Emission factors for fuelwood and charcoal are calculated by the following formula:

$$EFb = SEw,b,y * \sum(xf * (EFb,f,CO2 * fNRB,f,y + EFb,f,nonCO2)) \div 10^9$$

Parameter	Unit	Description	Data Source	Value for Dry Season
xf (Firewood)	Fraction	Proportion of fuel f used in the baseline	Baseline Survey	0.96
xf (Charcoal)				0.04
$EFb,f,CO2$ (Fuelwood)	tCO2/TJ	CO2 emission factor from use of fuel f	Default value for Firewood	112
$EFb,f,CO2$ (Charcoal)			Default value for Charcoal	165.22
$fNRB,f,y$	Fraction	Fractional non-renewability status of woody biomass fuel during year y	Calculated	0.730
$EFb,f,nonCO2$ (Fuelwood)	tCO2/TJ	Non-CO2 emission factor arising from	Default value for firewood	9.46

Parameter	Unit	Description	Data Source	Value for Dry Season
$EF_{b,f,nonCO2}$ (Charcoal)	tCO ₂ /TJ	use of fuel f, when the baseline fuel f is biomass or charcoal	Default value for firewood	44.83
EF_b fuelwood	tCO ₂ e/L	Emission factor for the use of fuel to obtain safe water in the baseline (tCO ₂ e/L)	Calculated	0.000271
EF_b charcoal			Calculated	0.000020

Specific energy required is calculated with the following formula:

$$SE_{w,b,y} = 360.83/\eta_{wb} = 360.83/11.7\% = 3,088.70 \text{ kJ/L}$$

Baseline emission is calculated as follows:

$$BE_y = EF_b \times (1 - C_b - X_{cleanboil,y}) \times Q_y \times M_{q,y}$$

Parameter	Unit	Description	Data Source	Value
C_b	Fraction	Proportion of project end-users who in the baseline were already using a safe water supply that did not require boiling	Baseline Survey	16.97%
$X_{cleanboil,y}$	Fraction	Proportion of project end-users that boil safe water in the project year y	Assumed	0%

Parameter	Unit	Description	Data Source	Value
Q_y	L	Quantity of safe drinking water provided by the project in year y	Calculated	44,138,400
$HN_{p,y}$	Number	Number of individuals per premises type p (e.g. household, school) in year y	Zambia 2018 Demographic and Health Survey	5
$HH_{p,y}$	Number	Number of premises type p served by the project in year y	Technical specifications of applied technology	6,360
QPW_p	L/pp	Volume of drinking water per person per day for premises type p	Default value	4
$M_{q,y}$	Fraction	Modifier for the water quality in year y	Assumed	1
$DO_{p,y}$	Days	Days the project technology is operational for end-users in premises p in year y	Assumed	347

When each borehole is capped at 300 users, total capacity of 106 water serving points would be 31,800. Each borehole will serv to 60 households.

Total annual BE_y avoided= 10,639 tCO₂e =ER_y to be capped at 10,000 tCO₂e.

SDG 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Parameter: Amount of firewood saved by the project per year

Amount of firewood saved will be calculated by the formula:

$$\text{Amount of fuelwood saved} = (SE_{w,b,y} * ((1 - C_b - X_{cleanboil,y}) * Q_y) / NCV_{\text{fuelwood}}$$

$$= (3,088.70 \text{ kJ/L} * (1 - 0.1697 - 0) * 44,138,400 \text{ L}) / (0.0156 \text{ TJ/t} * 10^9 \text{ kJ/TJ})$$

$$= 7,256 \text{ tonnes of firewood}$$

SDG 6. Ensure availability and sustainable management of water and sanitation for all

Amount of safe water served at the required quality by national standards will be calculated by the product of metered water with $M_{q,y}$ modifier for the water quality.

Increased awareness due to annual Water hygiene campaigns will be monitored by the number of people accessed by the campaigns.

For **SDG 3** and **SDG 5**, the results of household survey will be used, no calculation is applicable.

For **SDG 8**, the project database and training records will be used.

B.6.4 Summary of ex ante estimates of each SDG Impact

SDG 13

YEAR	BASELINE ESTIMATE	PROJECT ESTIMATE	NET BENEFIT
01/07/2024- 31/12/2024	5,320	0	5,320
2025	10,639	0	10,639
2026	10,639	0	10,639
2027	10,639	0	10,639
2028	10,639	0	10,639
01/01/2029- 30/06/2029	5,320	0	5,320
Total	53,200	0	53,200
Total number of crediting years	5 years		

Annual average over the crediting period	10,000 ¹⁴	0	10,000
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SDG 15

YEAR	BASELINE ESTIMATE	PROJECT ESTIMATE	NET BENEFIT
01/07/2024-31/12/2024	3,628	0	3,628
2025	7,256	0	7,256
2026	7,256	0	7,256
2027	7,256	0	7,256
2028	7,256	0	7,256
01/01/2029-30/06/2029	3,628	0	3,628
Total	36,280	0	36,280
Total number of crediting years	5 years		
Annual average over the crediting period	7,256	0	7,256

SDG 3

Proportion of households who experienced reduced indoor air pollution is estimated to be 100%

SDG 5

Proportion of households who perceive reduced time for collecting wood and water boiling is estimated to be 100%

SDG 6

YEAR	BASELINE ESTIMATE	PROJECT ESTIMATE	NET BENEFIT
01/06/2024-31/12/2024	0	22,069,200	22,069,200

¹⁴ Capped at micro-scale limit.

2025	0	44,138,400	44,138,400
2026	0	44,138,400	44,138,400
2027	0	44,138,400	44,138,400
2028	0	44,138,400	44,138,400
01/01/2029- 30/06/2029	0	22,069,200	22,069,200
Total	0	220,692,000	220,692,000
Total number of crediting years	5 years		
Annual average over the crediting period	0	44,138,400	44,138,400

At least one water hygiene campaign will be held annually.

SDG 8

Number of permanent jobs provided will be determined as per the number of serving points. 8 employees are foreseen to be recruited for the maintenance of the boreholes and monitoring.

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

a. Related to Water quality

SDG 13

Data / Parameter	SDWS-18 $M_{q,y}$
Unit	Fraction
Description	Ongoing water quality indicated as the fraction of the samples that pass microbial quality standard requirements specified in relevant microbial quality standard for drinking water of the host country. In case a national standard is not available, the water quality shall comply with WHO Guideline values for verification of microbial quality i.e., all water directly intended for drinking must not have detectable E.Coli in any 100 ml sample i.e., less than 1 Colony Forming Unit (CFU) of E.Coli /100 ml.

Source of data	Water quality test for samples taken from the transport containers when it reaches the end-user premises (e.g. household, institution).
Value(s) applied	1
Measurement methods and procedures	The water quality test applies the bacterial quality standard <1 cfu E.coli/100ml, and the sampling determines the proportion of pass and fail results. A minimum sample size 30 will be selected.
Monitoring frequency	Annual sampling, and the first round of testing will be conducted at least after six months from the start date.
QA/QC procedures	Laboratories used for water quality testing will be approved by local health authorities and/or have quality accreditation; and have an adequate quality management plan in place which addresses both quality assurance and quality control test procedures.
Purpose of data	Compliance with Safe Drinking Water Quality Standards
Additional comment	

SDG.6

Data / Parameter	SDWS-20 Water hygiene education campaigns
Unit	-
Description	Hygiene campaigns carried out among project safe water end-users.
Source of data	Report of annual hygiene campaign results
Value(s) applied	To be determined
Measurement methods and procedures	The impacts of the hygiene campaign shall be assessed using the WHO/UNICEF Joint Monitoring Programme Core questions for drinking water and hygiene to determine the fraction of the households and institutions where Safe water and Hygiene practices are found to fulfill "safely managed" or "basic" requirements. In-person or telephone or by messaging (e.g. text, app) based survey shall be conduct covering all the JMP core questions for drinking water and core questions for hygiene.
Monitoring frequency	Annually
QA/QC procedures	The fraction of the households where Safe water and Hygiene practices are found to fulfill "safely managed" or "basic" requirements is expected to increase over time as a result of the hygiene campaigns.
Purpose of data	

Additional comment	
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b. Related to emission reductions

SDG 13

Data / Parameter	SDWS-22 $X_{\text{cleanboil},y}$
Unit	Percentage
Description	Proportion of project end-users that boil safe (treated, or from safe supply) water after installation of project technology in year y
Source of data	Project Survey
Value(s) applied	0
Measurement methods and procedures	This survey may be performed in person, by telephone, by messaging (e.g. text, app), appropriate to the context.
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	Calculation of emission reductions
Additional comment	-

SDG 6 and SDG 13

Data / Parameter	SDWS-23 $Q_{m,y}$
Unit	Litres/year
Description	Monitored quantity of safe water provided by the CWT project in year y
Source of data	<p>At the central location of the CWT:</p> <p>Option 1: Flow meter measures water volume directly</p> <p>Option 2: Operation sensor measures directly operation time or pump stroke count, and volume is calculated as capacity (defined in Project technology description) multiplied by operation time or pump strokes, depending on the sensor type.</p> <p>This may be measured on a sampling basis, in which case follow the section 4.2 General requirements for sampling, below.</p>
Value(s) applied	44,138,400
Measurement methods and procedures	Option 2: Operation time /stroke count

	<p>This will be measured on a sampling basis. At least 30 boreholes will be sampled over 3 days, not including weekends. One of the two approaches will be followed:</p> <ol style="list-style-type: none"> (1) Counting the number of 20lt containers on a daily basis (2) Using the following formula: <p>Total amount of water served (litres/day)= Average daily operation time (hrs/day) x Average flowrate (l/sec) x 60 sec/hrs</p> <p>Daily water served will be multiplied by operational days in a year.</p>
Monitoring frequency	Continuously
QA/QC procedures	Follow manufacturer, sector, national or international standards or guidelines for calibration and maintenance of the measurement device.
Purpose of data	Calculation of emission reductions
Additional comment	-

SDG 13

Data / Parameter	SDWS-25 HN _{p,y}
Unit	Number
Description	Number of individuals per premises type p in the project boundary in year y
Source of data	Project Survey
Value(s) applied	5
Measurement methods and procedures	Direct measurement
Monitoring frequency	Annual
QA/QC procedures	The value applied shall be cross-checked against at least one other source on the list. For cross-check purposes, sources applied may be up to 5 years old. Further, cross-check with older sources may be used provided they provide conservative results.
Purpose of data	Calculation of emission reductions
Additional comment	

Data / Parameter	SDWS-26 HH _{p,y}
Unit	Number

Description	Number of premises type p served by the project in year y
Source of data	Project Survey
Value(s) applied	5,137
Measurement methods and procedures	How often the premises within 1km distance of the boreholes used the project source during a year will be checked. Premises that report at least every-two days use will be counted. A minimum 100 samples will be selected.
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	Calculation of emission reductions
Additional comment	The parameter will be used for SDG claims to predict number of households with limited services: Households using an improved source with water collection times of no more than 30 minutes per round trip are classified as having basic services, and those using improved sources with water collection times exceeding 30 minutes.

Data / Parameter	SDWS-27 DO _{p,y}
Unit	Days
Description	Days the project technology is operational for end-users in premises p in year y
Source of data	Project Survey
Value(s) applied	347
Measurement methods and procedures	In order of preference: 1. Measure directly using operation sensor, or 2. Demonstrate from log of operation and maintenance system. Logbook will be maintained for each borehole.
Monitoring frequency	Annually
QA/QC procedures	Values higher than 347 days may only be applied when option 1 is used.
Purpose of data	Calculation of emission reductions
Additional comment	

SDG 3

Data / Parameter	Number of households that observed reduction in PM2.5 & carbon monoxide (CO) concentration reductions
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Unit	Fraction
Description	Proportion of the households who experienced reduced indoor air pollution
Source of data	Project Survey
Value(s) applied	100
Measurement methods and procedures	Questions about the incidents of water borne diseases in the family will be asked.
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	Demonstration of SDG Claims
Additional comment	-

SDG 5

Data / Parameter	Perception of time savings
Unit	Fraction
Description	Proportion of the households who perceived reduced time for collecting wood and water boiling.
Source of data	Project Survey
Value(s) applied	100
Measurement methods and procedures	Questions will be asked to understand if less time is spent on fetching firewood and water boiling.
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	Demonstration of SDG Claims
Additional comment	

SDG 8

Data / Parameter	Jobs created
Unit	Number
Description	Temporary and permanent jobs created during the implementation of the project.
Source of data	Project database
Value(s) applied	8
Measurement methods and procedures	All employees will be registered and trained for implementing health and safety measures.
Monitoring frequency	Annually
QA/QC procedures	-

Purpose of data	Demonstration of SDG Claims
Additional comment	

SDG 15

Parameter ID	Amount of firewood saved by the project per year
Data / Parameter	Amount of fuelwood saved
Unit	ton
Description	Amount of fuelwood saved due to avoided water boiling for purification.
Source of data	Project database
Value(s) applied	5,861
Measurement methods and procedures	Amount of fuelwood used will be calculated by the following formula: Amount of fuelwood saved= $(SE_{w,b,y} * ((1 - C_b - X_{cleanboil,y}) * Q_y)) / NCV_{fuelwood}$
Monitoring frequency	Annually
QA/QC procedures	The total fuelwood saved will be cross- checked by questions regarding the use of fuelwood during the project survey.
Purpose of data	Calculation of project scenario
Additional comment	

B.7.2 Sampling plan

The sampling frame is the project boundaries, including the houses within 1km of the serving points. Simple random sampling will be applied for all parameters. There are two options considered to build the database of end-users:

- (1) The end users may be selected from the database of baseline survey done. Each data point house has unique GPS coordinates. To ensure a random selection of end users, random number generators shall be applied. GPS coordinates of randomly selected houses will be checked to be located within the 1km circle of the serving points.

- (2) The end-users who wish to participate to the surveys will be asked to share contact details and addresses at the serving points and/or during water hygiene campaigns. They will be called or texted for the purpose of data collection only. At least contact details of 100 end-users will be collected randomly from all serving points.

Baseline Survey:

For baseline survey, samples are randomly selected among households within 1 km of the planned serving points. When a baseline and project survey is used the following sample size guidelines should be applied, unless otherwise stated for specific parameters:

Group size	Minimum sample size
<300	30 or population size, whichever is smaller
300 to 1000	10% of group size
> 1000	100

The minimum sample size required by the methodology is 100 for population over 1000.

107 samples have been selected from the houses within the planned points of service for baseline survey. Questions related to the household size, purifying method used, cookstove type and fuel type were asked to the interviewees. The results of the survey is summarized above in Section B.4.

Water Quality Test:

A statistically valid sample can be used to determine parameter values, as per the relevant requirements for sampling in the "Methodology for Sampling and surveys for CDM project activities and programme of activities"(v9.0). Minimum 90% confidence interval and a 10% margin of error requirement shall be achieved for the sampled parameters. In any case, for proportion parameter values, a minimum sample size of 30, or the whole group size if this is lower than 30, must always be applied.

The sampling results shall satisfy at minimum the 90/10 rule, i.e. the endpoints of the 90% confidence interval lie within +/- 10% of the estimated proportion in relative unit. For a population size of 5,137 households, minimum sample size is 30 which will be taken from transport containers when it reaches to the end-users' premises. Annual sampling will be done and the first round of testing will be conducted at least after six months from the start date.

Project Surveys:

The monitoring survey investigates changes over time in the project scenario by surveying end-users who benefits from the project on an annual basis. Following parameters will be monitored:

- 1) Proportion of project end-users that boil safe water
- 2) Number of individuals per premises
- 3) Number of premises served. Premises that report at least every-two days use will be counted
- 4) WASH related questions about hygienic handling of clean water
- 5) Instances of water-borne diseases
- 6) Time savings due to omitted water boiling

B.7.3 Other elements of monitoring plan

The Monitoring Plan applied involves a number of key elements that ensure high-quality, unbiased and reliable information regarding the performance of the project in terms of implementation and outcomes, and for the purposes of calculating Verified Emission Reductions (VERs) on the basis of the amount of non-renewable biomass saved by the project activity. The key elements are the following:

- Date of installation of boreholes
- GPS Coordinates of the boreholes
- Average Daily serving capacity of all boreholes
- Days of the project technology is operational during a year
- Sample Plan for the Project Survey
- Data Quality, Consistency and Duplication Checks
- Monitoring Reporting

Project Developer will coordinate and manage Project Implementer and assist them in implementing each element of the monitoring plan.

Maintenance and Repair Plan:

The preliminary activities before the actual maintenance and repairing of the boreholes will be put in place all the necessary logistics (rent of an office, hire of local Coordinator and others HR, transport and others), soon will follow engagement meetings with each one of the Neighborhood Health Committee and each Village-Wash Committee, involved in the project.

During the community engagement meeting the water points to be rehabilitated and drilled will be confirmed by the Village-Wash Committee and after that scope of works will also be validated by the Chipangali Rural water coordinator subsequently the District WASH committee will be informed.

Given the fact that the project is in a rural and that the roads are in poor condition the rehabilitation works will then proceed covering not more than 1 or 2 boreholes a day. It is therefore foreseen that rehabilitation works will be completed in 6 months. During the same time the new boreholes will also be drilled.

The rehabilitation works will be conducted by the qualified Pump menders employed by the PNA. The pump menders will travel to the site with all necessarily tools and equipment and needed spare parts. Each pump will be removed from the borehole, and checked thoroughly and broken and worn-out parts will be substituted. Spare parts changed can include, rubbers, pump handles, bearings, and pipes, if a pump is not working the whole pump will be substituted.

Other repairs will involve the construction works, and a detailed check will be conducted on each borehole to check: the concrete apron, drainage system and soak away. Pump menders will ensure that:

The pumps are perfectly fit in the basement.

That no infiltration of water goes back to the drilled boreholes

That drainage is at least 10 mts long and in good condition.

That soak-away is clear from dribs and is in working condition.

After maintenance and repair works each borehole will have tag indications unique to the identification number of each borehole, and a water sample will be collected for testing.

Testing for water samples will be conducted in Chipanagli Health Office or Chipata depending on the availability of such testing equipment.

After the maintenance works are concluded and with the approval of the Chairperson of the WASH, Local Councilor and the Rural Water coordinator from Chipangali Council, the boreholes will start to be operative.

A notebook will be used as the operational registry and will be used to record all work done for each borehole. The operation registry will be kept in the custody of each Chairperson of the Village WASH Committee involved in the project and will be ready for inspection by the PNA personnel or any other party involve at any time. The data will be also collected with the KOBO tools app. The data in Excel files will be stored by the PNA office.

After the maintenance works are completed the maintenance plan foresees that PNA personnel will revisit the boreholes at regular intervals of 6 months. A WhatsApp group will be created to report any malfunction of the boreholes and a PNA quick response team will follow up on the maintenance works to assure continued service for each borehole.

Water hygiene education campaigns

Water, Sanitation and Hygiene (WASH) training at community level will be held annually. Small gathering around the each serving points will be organized to promote best WASH practices. A WASH report evaluating the success of the campaigns will be submitted.

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

15 December 2023 (indicative date for start of construction)

C.1.2 Expected operational lifetime of project

15 years

C.2. Crediting period of project

C.2.1 Start date of crediting period

01 July 2024 (indicative date of all boreholes becoming operational)

C.2.2 Total length of crediting period

5 years renewable twice, 15 years of total crediting period.

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in [Appendix 1](#), ongoing monitoring is summarised below.

PRINCIPLES	MITIGATION MEASURES ADDED TO THE MONITORING PLAN
Principle x.y	

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

<p>Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?</p>	<p>The project is gender sensitive and considers gender aspect in all phases. Women and young girls are responsible for water boiling for purification. The project will provide safe water available at shorter distances so that they will not have to travel long distances to fetch water. There will be no need to boil water therefore, the time for fetching firewood will be saved.</p>
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Question 2 - Explain how the project aligns with existing country policies, strategies and best practices

The first National Gender Policy for Zambia was adopted in March 2000. The overall goal of the policy was to facilitate effective and equitable participation of both men and women in the social economic development of the country. This was followed by the establishment of institutional framework that led to the creation of Ministry of Gender and Child Development in March 2012. National Gender Policy was revised on 2014 to address the gaps identified in the process of implementation and emerging gender related issues (National Gender Policy 2014¹⁵).

Traditionally, women and children especially girls collect firewood and water for the family. They have to walk long distances usually far from settlements. This makes them vulnerable to gender based violence. The project aims addresses gender issues by providing safe drinking water at accessible distances. The fuelwood saved from boiling water will also reduce the time needed for collection.

¹⁵ <http://extwprlegs1.fao.org/docs/pdf/zam152916.pdf>

<p>Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?</p>	<p>Gender issues raised by Gold Standard Safeguarding principles are all addressed under the Safeguarding Principles Assessment in Appendix.1. No risks have been foreseen by the stakeholders and project developer.</p>
<p>Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?</p>	<p>As per Stakeholder Consultation Requirements, the project developer invites all stakeholders to give feedback on the design and the implementation of the project. During the consultation process, particular importance is given to the equal participation of women. Gender related organizations who actively work in rural areas have been invited to the meeting.</p>

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

The below is a summary of the 2 step GS4GG Consultation for monitoring purposes. Please refer to the separate Stakeholder Consultation Report for a complete report on the initial consultation and stakeholder feedback round.

E.1 Summary of stakeholder mitigation measures

The stakeholders confirmed that the project will provide net SDG benefits and will not pause any risks towards safeguarding principles. Therefore, no alterations are foreseen based on the comments received.

Stakeholder feedback round was carried out between 19 Oct to 19 Dec 2022 for 60 days. No feedback was received.

E.2 Final continuous input / grievance mechanism

<p>METHOD</p>	<p>INCLUDE ALL DETAILS OF CHOSEN METHOD (S) SO THAT THEY MAY BE UNDERSTOOD AND, WHERE RELEVANT, USED BY READERS.</p>
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Continuous Input / Grievance Expression Process Book (mandatory)	The process books will be placed in the local villages chiefs' offices.
GS Contact (mandatory)	help@goldstandard.org
Other	<ul style="list-style-type: none"> A local number will be available for minor inputs and grievance that require immediate response. <p>For Zambia: 0977 419 358 For Italy: +39 3516142230</p> <ul style="list-style-type: none"> Email and internet are being used by local and international NGOs. <p>projects@offgridsun.com ccdzambia@gmail.com</p>

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into [SECTION D](#) above. Please refer to the instructions in the [Guide to Completing](#) this Form.

SOCIAL SAFEGUARDING PRINCIPLES		
Reference requirement	Question	Response
P.1 HUMAN RIGHTS		
P.1.1.1 	Does the project developer, its representatives and the Project disrespect internationally proclaimed human rights?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.1.1.1 	Is the project involved or complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.1.1.2 	Have local communities or individuals raised human rights concerns regarding the project (e.g., during the stakeholder engagement process, grievance processes, public statements)?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.1.1.3 	Is there a risk that rights-holders (e.g., Project-affected stakeholders) do not have the capacity to claim their rights?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.1.1.3 	Does this project undermine national or regional measures for the realisation of the right to development?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
<p>If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.</p> <p>Please add text here...</p>		
<p>Would the project potentially involve or lead to:</p>		
P.1.1.1 	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalised groups?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.1.1.2 	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalised or excluded individuals or groups, including persons with disabilities?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.1.1.3 	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalised individuals or groups, including persons with disabilities?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.1.1.3 	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY

		<input checked="" type="checkbox"/> NO
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Briefly describe below how the project incorporates a human rights-based approach.

For example, by describing how the project design:

- is informed by human rights analysis, including from UN human rights mechanisms (human rights treaty bodies, universal periodic review, special procedures)
- includes measures to assist the government to realise (respect, protect and fulfil) human rights under international law and to implement human rights-related standards in national law (whichever is higher)
- enhances the availability, accessibility and quality of benefits and services for potentially marginalised individuals and groups, and to increase their inclusion in decision-making processes that may impact them (consistent with the non-discrimination and equality human rights principle)
- provides reasonable accommodations to strengthen inclusivity and accessibility of project benefits and services to persons with disabilities.

Please add text here...

The Republic of Zambia is a member of the United Nations and the African Union. It has ratified many UN Human Rights Conventions and thus has made binding international commitments to adhere to the standards laid down in these universal human rights documents.¹⁶ The project will be implemented under the national laws and will not lead to violations of human rights in any kind.

There is no limitation to the participation to the project.

P.2 | GENDER EQUALITY AND WOMEN'S EMPOWERMENT

P.2.1.1 	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g., during the stakeholder engagement process, grievance processes, public statements)?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.2.1.2 	Does the project undermine the principles of non-discrimination, equal treatment, and equal pay for equal work?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.2.1.2 	Does the project prevent men and women from having equal opportunities to participate in identified tasks and activities, whether through paid work, volunteer work, or community contributions, as appropriate?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.2.1.2 	Does the project limit the participation of women or men based on pregnancy, maternity/paternity leave, or marital status?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.2.1.2 	Is information about project objectives being communicated in a way that is inappropriate for the local context and not	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

¹⁶ <http://www.claiminghumanrights.org/zambia.html>

	tailored to the methods of understanding of both women and men, which could hinder their participation?	
P.2.1.3 	Has the project assessed gender risks without referencing the country's gender strategy or equivalent national commitment?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.2.1.4 	Has expert stakeholder(s) been involved, and has their input been requested for the project design on gender equality and women's empowerment?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project potentially involve or lead to:		
P.2.1.1 	adverse impacts on gender equality and/or the situation of women and girls?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.2.1.1 	exacerbation of risks of gender-based violence? For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc.	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.2.1.2 	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.2.1.2 	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well-being.	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO

Briefly describe below how the project is addressing any identified risk to gender equality and women's empowerment.

The project provides safe drinking water to the communities. The time spending for fuel wood collection and water boiling will reduce. The women will have more time for other activities.

Both women and men will benefit from the project, no group will be excluded from participating in the project activities. Principles of equal treatment, equal pay for equal work will be strictly followed.

The Project respects the country's gender policy. The project addresses gender issues related with access to clean water.

P.3 | COMMUNITY HEALTH AND SAFETY

P.3.1.1 	Does the project involve potential risks to the health and safety of affected communities during its life cycle?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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P.3.1.2 	Does the project involve any potential risks to the workers' safety and health?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project potentially involve or lead to:

P.3.1.1 	construction and/or infrastructure development (e.g., roads, buildings, dams)?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.3.1.2 	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.3.1.2 	harm or losses due to failure of structural elements of the project (e.g., collapse of buildings or infrastructure)?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.3.1.2 	risks of water-borne or other vector-borne diseases (e.g., temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.3.1.2 	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g., explosives, fuel and other chemicals during construction and operation)?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.3.1.2 	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g., food, surface water purification, natural buffers from flooding)?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO

Briefly describe below how the project is addressing any identified risk related to community health and safety.

The project increases the rate of access to safe drinking water and supports health of communities by decreasing waterborne diseases.
 The project will follow the requirements in Occupational Health and Safety Act 2010¹⁷. The Project Implementers will provide safe workplace, machinery and equipment for the artisans.

P.4 | CULTURAL HERITAGE, INDIGENOUS PEOPLE, DISPLACEMENT AND RESETTLEMENT

P.4.1 | Sites of Cultural and Historical Heritage

¹⁷

<http://www.parliament.gov.zm/node/3409#:~:text=An%20Act%20to%20establish%20the,and%20suppliers%20of%20articles%2C%20devices%2C>

P.4.1.1	Does the project involve altering, damaging, or removing sites, objects, or structures of significant cultural heritage?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project potentially involve or lead to:

P.4.1.1	activities adjacent to or within a cultural heritage site?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.1.1	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.1.1	alterations to landscapes and natural features with cultural significance?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.1.1	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.1.2	utilisation of tangible and/or intangible forms (e.g., practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.1.2	If answer to question above is "YES" or "POTENTIALLY" - are the communities made aware of their right under the law, scope and nature of proposed development and its potential consequences?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.1.3	If answer to question above is "YES" - does the project provide equitable sharing of benefits from commercialisation of such knowledge, innovation, or practice, consistent with their customs and traditions?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.1.4	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.1.4	If answer to question above is "YES", has project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage.

P.4.2 | Forced Eviction and Displacement

<u>P.4.2.1 </u>	Does the project involve any risks related to involuntary relocation of people?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Would the project potentially involve or lead to:

<u>P.4.2.1 </u>	risk of forced evictions or involuntary relocation of people?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
<u>P.4.2.2 </u>	temporary or permanent and full or partial physical displacement (including people without legally recognisable claims to land)?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
<u>P.4.2.2 </u>	economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
<u>P.4.2.2 </u>	If answer to question above is "YES" or "POTENTIALLY", <ul style="list-style-type: none"> - has the project developed Resettlement Action Plan or Livelihood Action Plan in consultation and agreement with affected individual, group or community? - has the project integrated Resettlement Action Plan or Livelihood Action Plan into the Project design? 	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
<u>P.4.2.3 </u>	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
<u>P.4.2.3 </u>	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

The project does not require or cause the involuntary relocation of people.

P.4.3 | LAND TENURE AND OTHER RIGHTS

<u>P.4.3.1 </u>	Does the project involve any risks related to identifying and managing legitimate tenure rights that may be affected by the project?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here

Would the project potentially involve or lead to:		
P.4.3.1	impacts on or changes to land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.3.1	uncertainties with regards to land tenure, access rights, usage rights or land ownership? Examples include, but are not limited to water access rights, community-based property rights and customary rights.	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.3.2	Changes in legal arrangements, if yes, are the changes done in line with relevant laws and regulations?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.3.2	Changes in legal arrangements, if yes, are these changes agree with free, prior and informed consent of the involved stakeholders?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.3.3	Does some other entity (other than the project developer) hold uncontested land title for the entire Project Boundary?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.3.4	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.3.4	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.3.5	Have project developer in consultation with stakeholders established a functioning mechanism to receive, process, resolve, communicate and record grievances?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here...

All boreholes belong to the communities.

[P.4.4](#) | INDIGENOUS PEOPLES

P.4.4.1	Does the project involve Indigenous People within the Project area of influence who may be affected directly or indirectly by the Project?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

Would the project potentially involve or lead to:

P.4.4.1	affect areas where indigenous peoples are present (including project area of influence)	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.4.1	affect areas, land and territory claimed by indigenous peoples?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.4.1	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.4.7	If answer to above questions is "YES" or "POTENTIALLY", <ul style="list-style-type: none"> - Is it determined that the proposed project may affect the rights, lands, resources, or territories of indigenous people? - Has an "Indigenous People Plan" (IPP) or "Indigenous People Plan Framework" been elaborated and included in the project documentation? - Was the plan developed in accordance with the effective and meaningful participation of indigenous peoples and in accordance with UNDP Guidelines? 	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.4.3	risk of forcibly removing indigenous people from their lands and territories?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.4.4	utilisation and/or commercial development of natural resources on lands and territories claimed by indigenous peoples? Consider, and where appropriate ensure, consistency with the answers under Principle 4.1 above	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.4.4.5 P.4.4.6	If answer to question above is "YES" or "POTENTIALLY" <ul style="list-style-type: none"> - Did the project obtain free, prior and informed consent from indigenous people before taking their cultural, intellectual, religious, and/or spiritual property? - Does the project ensure that the indigenous people receive an equitable sharing of benefits resulting from the use of their traditional knowledge and practices? ? - Does the project ensure that the sharing of benefits resulting from the use of indigenous peoples' traditional knowledge and practices is culturally appropriate and inclusive? 	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

	- Does the project ensure that the provision of equitable sharing of benefits does not impede land rights or equal access to basic services including health services, clean water, energy, education, safe and decent working conditions, and housing?	
P.4.4.8 	Does the project lack appropriate feedback and grievance channels for Indigenous Peoples and their representatives?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.4.8 	Has a grievance mechanism not been established at the beginning of programme or project implementation with due consideration given to customary dispute settlement mechanisms among the Indigenous Peoples concerned and will it remain operational throughout the project cycle?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.4.9 	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.4.4.9 	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here...

There are no indigenous communities in the project area.
The project respects all feedbacks and concerns from core stakeholders as beneficiaries of the project.

P.5 | CORRUPTION

P.5.1.1 	Does the project involve, or is it complicit in, contributing to or reinforcing corruption or corrupt projects?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.5.1.1 	Does the project have a risk of encouraging bribery, kickbacks, or other unethical behavior?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

The project will act in line with Anti-corruption Act 2012¹⁸ of Zambia. The project participants will not be involved, complicit or contribute towards corruption.

ECONOMIC SAFEGUARDING PRINCIPLES

¹⁸ <http://www.parliament.gov.zm/node/3174>

P.6 | ECONOMIC IMPACTS

P.6.1 | LABOUR RIGHTS AND WORKING CONDITIONS

P.6.1.1 	Does the project involve, facilitate, or condone forced labor, or pose a potential risk of forced labor?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.1 	Does the project violate any labor or health and safety laws, international obligations, or ILO conventions?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.2 	Does the project violate the principles of equal opportunity and fair treatment in its employment decisions?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.3 	Does the project violate national laws, if available regarding non-discrimination in employment?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.4 P.6.1.5 	Does the project allow child labor?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.7 P.6.1.8 	Does the project have insufficient processes and measures in place to ensure the safety and health of project workers?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.9 	Does the project have insufficient measures to safeguard and support vulnerable project workers, such as women, people with disabilities, migrant workers, and young workers, and to prevent any kind of harassment, abuse, bullying, or exploitation, including gender-based violence (GBV)?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.10 	Does the project have no grievance mechanism available for workers to voice workplace concerns? Is information about this mechanism not provided to workers at the time of recruitment, or is it not easily accessible?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

Would the project potentially involve or lead to:

(NOTE: APPLIES TO BOTH PROJECT AND CONTRACTOR WORKERS)

P.6.1.1 	use of forced labour?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.1.1 	working conditions that do not meet national labour laws and international commitments?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.1.1 	working conditions that may deny freedom of association and collective bargaining?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.1.1 	absence of documented working agreements with all individual workers	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY

	<i>if such agreements do not exist, or do not address working conditions and terms of employment, the project developer shall provide reasonable working conditions and terms of employment.</i>	<input checked="" type="checkbox"/> NO
P.6.1.1 	use of migrant workers? <i>if engaged, the developer shall ensure that they are engaged substantially equivalent terms and conditions to non-migrant workers carrying out similar work.</i>	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.1.1 	having no arrangements for basic services ¹⁹ for workers? <i>the project developer shall put in place and implement policies on the quality and management of the accommodation and provision of basic services in a manner consistent with the principles of non-discrimination and equal opportunity. Workers' accommodation arrangements should not restrict workers' freedom of movement or of association</i>	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.1.2 	any form of discrimination or harassment based on factors unrelated to job requirements, such as gender, race, nationality, ethnicity, social or indigenous origin, religion or belief, disability, age, or sexual orientation?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.1.2 	any form of discrimination in any aspect of employment, such as recruitment, compensation, working conditions, training, job assignment, promotion, termination, or discipline?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.1.2 	harassment, intimidation, and/or exploitation, especially in regard to women?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.1.3 	discriminatory working conditions and/or lack of equal opportunity where national law provides provision to address non-discrimination in employment?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.1.4 	use of child labour? (including third-party engaged workers)	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.1.4 	inadequate and verifiable mechanisms for age verification?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.7 	no processes and measures in place for the safety and health of project workers?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

¹⁹ Basic services requirements refer to minimum space, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, noise, fire, and disease-carrying animals, adequate sanitary and washing facilities, ventilation, cooking and storage facilities and natural and artificial lighting, and in some cases basic medical services.

P.6.1.7 	No provision of safety and health training provisions, including on the proper use and maintenance of personal protective equipment conducted by competent persons and the maintenance of training records?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.7 	No provision to record and document accidents, diseases, incidents, and any resulting injuries, illnesses, or deaths?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.8 	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.9 	No measures to protect vulnerable project workers from harassment, exploitation, and gender-based violence (GBV)? This includes women, people with disabilities, migrant workers, and young workers.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.10 	No grievance mechanism available for workers to voice workplace concerns.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.1.11 	No measures for due diligence and the establishment of policies and procedures to manage and monitor the performance of third-party employees in the project?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

Zambia ratified the following agreements²⁰:

- ILO N°87 Freedom of Association and Protection of the Right to organize convention in 1996
- ILO N°98 Right to organise and collective bargaining convention in 1996
- ILO N°29 Forced Labour Convention in 1996.
- ILO N°182 Worst Form of Child Labour Convention in 2001 and ILO N°138 Minimum Age Convention in 1976.

The project participants will employ all workers in accordance with all applicable national laws. The project participants will not restrict any workers from establishing and joining labour organisations. All permanent workers will be provided with individual work agreements, including working hours, description of duties and tasks, remuneration, health insurance, termination of the contract, annual leave. The project participants do not engage in any form of child labour.

The project participants will provide safe working environment, machinery and appropriate equipment during the construction of water service points. Accidents and incidents will be monitored and reported.

[P.6.2 |NEGATIVE ECONOMIC CONSEQUENCES](#)

²⁰ https://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:103264

P.6.2.1	Is there a risk of project failure during implementation or after project certification due to a lack of financial resources?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.2.2	Does the project have potential negative impacts or pose a risk to the local economy?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.6.2.2	Are there any potential risks or negative impacts this project may have on vulnerable or marginalised social groups, despite the benefits it may bring?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

Would the project involve or lead to:

P.6.2.2	economic impacts (negative/detrimental) to the local economy?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.6.2.2	negative economic consequences during and after project implementation, e.g., for vulnerable and marginalised social groups in targeted communities?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here...

The project will not cause any negative economic consequences.

[P.7 | CLIMATE AND ENERGY](#)

[P.7.1 | GHG EMISSIONS](#)

P.7.1.1	Does the project have a risk of increasing greenhouse gas emissions over the Baseline Scenario?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

Would the project involve or lead to:

P.7.1.1	increase greenhouse gas emissions over the Baseline Scenario?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
-------------------------	---	--

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

The project will not lead to any increase in greenhouse gas emissions. The project will rather reduce emissions due to water boiling.

P.7.2 | ENERGY SUPPLY

**ERROR!
REFERENCE
SOURCE
NOT
FOUND.**

Does the project pose a risk to the availability and reliability of energy supply to other users?

☐ YES
☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.7.2.1 |

negative impact on the availability and reliability of energy supply to other users?

☐ YES
☐ POTENTIALLY
☒ NO

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

The project does not utilize any form of energy supply that is also being used by other users.
The project technology is human operated and does not require an additional energy source.

P.8 | WATER

P.8.1 | IMPACT ON NATURAL WATER PATTERNS/FLOWS

P.8.1.1 |

Does the project increase water usage to a level that will not allow for the maintenance of environmental flows?

☐ YES
☒ NO

P.8.1.1 |

Does the project result in the discharge of wastewater that does not meet the required standard for beneficial reuse and could therefore negatively impact the environmental flow?

☐ YES
☒ NO

P.8.1.1 |

Does the project have the potential risk to exceed the rate of recharge for the groundwater source?

☐ YES
☒ NO

P.8.1.1 |

Does the project involve any processes or activities that could contaminate the groundwater and render it unsuitable for use?

☐ YES
☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

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Would the project involve or lead to:

P.8.1.1	affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.8.1.1	Wastewater discharge of quality that does not meet the required standard for beneficial reuse?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.8.1.1	significant extraction, diversion of ground water? For example, construction of dams, reservoirs, river basin developments, groundwater extraction	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.8.1.2	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here...

The project does not negatively affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed.

The project will rehabilitate the existing boreholes or open new ones.

[P.8.2 | EROSION AND/OR WATER BODY INSTABILITY](#)

ERROR! REFERENCE SOURCE NOT FOUND.	Does the project have a risk of negatively impacting the catchment and has it been assessed and addressed?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

Would the project involve or lead to:

P.8.2.2	negatively impact on the catchment area?	
-		
P.8.2.5	If yes, Erosion prevention measures, including soil and slope protection measures, must be implemented before project commencement. These measures should involve natural terracing, infiltration strips, permanent ground cover, hedge and tree rows, and effective slope length	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO

	assessment. Regular reassessment of these measures is necessary.	
P.8.2.6 	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

The project does not directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion.

The project does not increase the erosion and/or lead to water body instability.

[P.9 | ENVIRONMENT, ECOLOGY AND LAND USE](#)

[P.9.1 | LANDSCAPE MODIFICATION AND SOIL](#)

P.9.1.1 -	Is there any risk of soil resource degradation or loss of ecosystem services provided by soils in the project?	
P.9.1.3 	If yes, the project shall maintain healthy soils by minimising negative impacts on soil health, productivity, structure, and water retention. Steps to minimise soil degradation include crop rotation, composting, using N-fixing plants, and reducing tillage and ecologically harmful substances.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.1.4 	production, harvesting, and/or management of living natural resources by small-scale landholders and/or local communities?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.1.4 	if answer to above question "yes" or "potentially", does project adopt appropriate and culturally sensitive sustainable resource management practices?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

The project implements zero emission human operated technologies. No use of land or soil is applicable.

[P.9.2 | VULNERABILITY TO NATURAL DISASTER](#)

P.9.2.1	Does the project have any risks associated with natural or man-made hazards that could result from land use changes due to the project?	<input type="checkbox"/> YES <input type="checkbox"/> NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.2.2	any potential risks that require emergency preparedness and response planning?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.2.2	if answer to above question "yes" or "potentially", did the project developer disclose appropriate information about emergency preparedness and response to affected communities?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

The project implements zero emission human operated technologies. No such risk is foreseen.

[P.9.3 | BIOSAFETY AND GENETIC RESOURCES](#)

P.9.3.1	Does the project involve the transfer, handling, and use of genetically modified organisms/living modified organisms that may result in adverse effects on biological diversity?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.3.1	the transfer, handling and use of genetically modified organisms/living modified organisms (GMOs/LMOs) that result from modern biotechnology	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.3.1	If answer to above question is "yes" has a risk assessment by a competent Expert stakeholder been carried out in accordance with Annex iii of the Cartagena protocol on biosafety to the convention on biological diversity?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.3.2	If answer to above question is "yes" has any risks identified in the risk assessment?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.3.3	Forestry (for example Afforestation/Reforestation) involving GMO planting?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

	Note - Forestry projects (for example Afforestation/ Reforestation) involving GMO planting are not eligible for Certification under Gold Standard for the Global Goals.	
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If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

Not relevant to the project type.

P.9.4 | RELEASE OF POLLUTANTS

P.9.4.1	Does the project have a risk of releasing pollutants to air, water, and land in routine, non-routine, or accidental circumstances?	<input type="checkbox"/> YES <input type="checkbox"/> NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.4.1	any potential risk of pollutant release that cannot be avoided?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.4.3	If answer to above question is "Yes" or "potentially", has the project identified all potential pollution sources that may degrade the quality of soil, air, surface, and groundwater in the project area?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.4.2	If answer to above question is "Yes" or "potentially", do the pollution prevention and control technologies and practices applied during the project life cycle align with national regulations or international best practices?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.4.3	If answer to above question is "Yes", is there a monitoring plan to ensure that mitigation measures are implemented, and resources are protected?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

The project does not involve the release of pollutants to the environment.

P.9.5 | HAZARDOUS AND NON-HAZARDOUS WASTE

P.9.5.1	Does the project involve the generation of waste materials (both hazardous and non-hazardous)?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.9.5.3	Does the project involve risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

P.9.5.5	Does the project involve the use of any chemicals or materials subject to international bans or phase-outs?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

Would the project involve or lead to:

P.9.5.1	the generation and management of waste materials?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.5.1	treatment, destruction, or disposal of waste material?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.5.1	If answer to above question is "Yes", does the project involve an environmentally friendly method that includes appropriate control of emissions and residues resulting from the handling and processing of waste material?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.5.3	risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.5.3	If answer to above question is "yes", does project has measures in place to address health risks?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.5.4	Involve manufacture, trade, and use of chemicals and hazardous materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here...

Not relevant to the project type.

[P.9.6 | PESTICIDES & FERTILISERS](#)

P.9.6.1	Does the project involve the use of chemical pesticides?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.9.6.5	Does the project involve purchase, store, manufacture, trade or use products that fall in Classes IA (extremely hazardous) and IB (highly hazardous)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.9.6.6	Does the project use fertilisers, and if so, are measures being taken to minimise their use and nutrient losses to the environment?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.6.1 	chemical pesticides use for pest management?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.6.4 	If answer to question above is "yes" or "potentially", does project has documented Chemical Pesticides Policy in place?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.6.5 	purchase, store, use, manufacture, or trade in Class II (moderately hazardous) pesticides?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.6.5 	If answer to question above is "yes" or "potentially", does project has appropriate controls on manufacture, procurement, or distribution and/or use of these chemicals?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

Not relevant to the project type.

[P.9.7 | HARVESTING OF FORESTS](#)

P.9.7.1 	Does the project have a risk of unsustainable forest management, including timber harvesting?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.9.7.1 	Does the project pose a risk of depleting biodiversity and ecosystem functionality in areas where improved forest management is undertaken?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.9.7.1 	Does the project risk not meeting requirements for environment-friendly, socially beneficial, and economically viable plantations using native species whenever possible?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

The project aims to reduce firewood consumption by eliminating the need for water boiling. This will reduce the harvest rate of forests.

[P.9.8 | FOOD SECURITY](#)

P.9.8.1 	Does the project involve the risk of negatively influencing access to and availability of food for people affected?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to the question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

Would the project involve or lead to:

P.9.8.1	modification of the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
-------------------------	--	--

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here...

Not relevant to the project type

[P.9.9 | ANIMAL WELFARE](#)

P.9.9.1	Does the project involve any risks to animal welfare? Animal welfare shall be ensured by providing access to water and food, appropriate environment, humane treatment, and staff training. Evidence of mistreatment will be treated as an immediate non-conformity.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.9.9.2	Does the project involve any potential risk of excessive or inadequate use of veterinary medicines?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.9.9.4	Does the project involve the risk of administering synthetic growth promoters, including hormones?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

Would the project involve or lead to:

P.9.9.1	animal husbandry or harvesting of fish populations or other aquatic species? ²¹	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.9.1	limiting access for animals to basic needs like drinking water, adequate food, daylight, appropriate shelter etc.?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.9.3	inadequate measures to isolate sick animals and control the spread of disease, especially zoonotic diseases?	<input type="checkbox"/> YES <input type="checkbox"/> NO

²¹ 'Involve' means if the project mechanism and/or impact(s) are achieved via changing animal husbandry practices in some way.

		<input checked="" type="checkbox"/> NA
P.9.9.5 	inadequate low-stress methods, equipment, and facilities that facilitate calm animal movement.	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.9.6 	inadequate measures to ensure that animals are exposed to the least stress possible during transportation and slaughtering?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.9.7 	inappropriate spacing per animal and stocking rates per land unit?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.9.8 	inadequate measures to address the specific needs of aquatic animals?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.9.9 P.9.9.10 	primary production of living natural resources such as animal husbandry, aquaculture, and fisheries? If the answer is yes, implement industry-standard sustainable management practices in line with to one or more relevant and credible standards and utilise available technologies.	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

Not relevant to the project type.

[P.9.10 | HIGH CONSERVATION VALUE AREAS AND CRITICAL HABITATS](#)

P.9.10.1 	Does the project have the risk of negatively impacting HCV areas and/or critical habitats?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
P.9.10.2 	Does the project in the project area or area of downstream impacts have risks to the following: native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.10.1 	identified habitats as HCV areas and or Critical habitats?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
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P.9.10.1 	If answer to above question is "yes", does the project have any risks that could negatively impact the catchment, project success, and surrounding HCV and ecological assets, as well as any measurable adverse impacts on the criteria or biodiversity values for which the critical habitat was designated, and on the ecological processes supporting that biodiversity?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
P.9.10.1 	If answer to above question is "yes", is a robust, appropriately designed, and long-term Habitats and Biodiversity Action Plan absent which will make the project unable to achieve net gains of those biodiversity values for which the critical habitat was designated?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A
P.9.10.2 	Does the project area or area of downstream impacts have native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.10.2 	If the answer to the above question is "yes", will the project have any adverse effects on these areas?	<input type="checkbox"/> YES <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
P.9.10.3 	If the answer to above question is "yes", does the project has opportunities to minimise unwarranted conversion or degradation of the habitat and to enhance the habitat as part of its development?	<input type="checkbox"/> YES <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
P.9.10.4 	Is the project applying Land Use & Forest Activity Requirements and managing a minimum 10% of the project area to protect or enhance the biological diversity of native ecosystems following HCV approach as per the given requirements?	<input type="checkbox"/> YES <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
P.9.10.5 	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here...

Implementation of the project will have a positive impact on forests; thus, to conservation of HCV ecosystems, critical habitats, landscapes, key biodiversity areas or other sites, by reducing the firewood harvesting.

[P.9.11 | ENDANGERED SPECIES](#)

P.9.11.1 	Does the project lead to the reduction or negative impact on any recognised Endangered, Vulnerable or Critically Endangered species?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

Would the project involve or lead to:

P.9.11.2 	distortion of habitats of endangered species?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NA
P.9.11.2 	If answer to the above question is "yes", does the project plan to protect and enhance them?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A
P.9.11.2 	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

There are no endangered species that would be affected by the project implementation.
The project does not impact any areas where endangered species present.

[P.9.12 | INVASIVE ALIEN SPECIES](#)

P.9.12.1 	Does project introduce any alien species (not currently established in the country or region of the project) into new environments?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.12.1 	risk of introducing any alien species with a high risk of invasive behaviour regardless of whether such introductions are permitted under the existing regulatory framework?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.12.1 	risk of potential accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbour alien species.	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO
P.9.12.2 	risk of spreading alien species into areas in which they have not already been established?	<input type="checkbox"/> YES <input type="checkbox"/> POTENTIALLY <input checked="" type="checkbox"/> NO

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

Not relevant to the project type.

APPENDIX 2 - CONTACT INFORMATION OF PROJECT DEVELOPER(S)

Organization name	Offgridsun
Registration number with relevant authority	05013960280
Street/P.O. Box	Via Verdi 45
Building	
City	Cittadella
State/Region	Padova
Postcode	35013
Country	Italy
Telephone	+39 049 7382413
E-mail	info@offgridsun.com
Website	www.offgridsun.com
Contact person	Valentina Quaranta
Title	Project Manager
Salutation	Ms
Last name	Quaranta
Middle name	n.a.
First name	Valentina
Department	International Cooperation
Mobile	+393516142230
Direct tel.	
Personal e-mail	v.quaranta@offgridsun.com

APPENDIX 3 - LUF ADDITIONAL INFORMATION

Not applicable.

APPENDIX 4 - DESIGN CHANGES

Not applicable.

Revision History

Version	Date	Remarks
1.5	29 June 2023	Editorial changes to match V2.1 of the Safeguarding Principles Requirements
1.4	21 June 2023	Editorial changes to match V2.0 of the Safeguarding Principles Requirements
1.3	14 April 2023	Integrated the design change memo as annex of the document. Editorial changes
1.2	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Inclusion criteria table added Gender sensitive requirements added Prior consideration (1 yr rule) and Ongoing Financial Need added Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on Stakeholder Consultation information required Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1.0	10 July 2017	Initial adoption