Gold Standard

Gold Standard for the Global Goals
Key Project Information & VPA Design Document (PDD)

July 2017, Version 1

KEY PROJECT INFORMATION

Title of Project:	Nazava Water Filter project in Ethiopia
Title of the PoA:	International Water Purification Programme (GS POA: 2404)
Brief description of Project:	The VPA aims to provide safe drinking water in rural and urban areas of Ethiopia by installing the affordable Nazava water filters. The applied technology is a ceramic water filter that produces water of safe drinking

	water. The project activity aims to reduce around 23,615 tCO_2e of GHG emissions every year by displacing the firewood used to boil water for purification by the less emission intensive Nazava ceramic water filters. The project also contributes towards sustainable developmentas it provides safe drinking water, enhances the economy and has a positive impact on the environment.
Expected Implemetation Date: Expected duration of Project:	 15 years
Project Developer:	Nazava Trading PLC
Project Representative:	Pure Water Ltd
Project Participants and any communities involved:	Nazava Trading PLC, Pure Water Ltd
Version of PDD: Date of Version:	01 11/03/2020
Host Country / Location:	Ethiopia
Certification Pathway (Project Certificatin/Impact Statements & Products	Impact Statements & Products
Activity Requirements applied: (mark GS4GG if none relevant)	GS4GG: Community Services Activity Requirements
Methodologies applied:	AMS III.AV Small-scale Methodology: Low greenhouse gas emitting safe drinking water production systems Version 05.0
Product Requirements applied:	GS CER
Regular/Retroactive:	Reteroactive
SDG Impacts:	1 – SDG 6: Clean water and sanitation 2 – SDG 8: Decent work and economic growth 3 – SDG 13: Climate action
Estimated amount of SDG Impact Certified	SDG 13: 23,615 tCO_2e/year SDG 06: 30,000 people gain access to safe drinking water per year SDG 08: 53 jobs created

SECTION A. Description of project

A.1. Purpose and general description of project

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The project activity aims to provide safe drinking water in rural and urban areas of Ethiopia by installing the affordable Nazava water filters. The applied technology is a ceramic water filter that produces water of safe drinking water. Inadequate access to microbiologically safe drinking water continuously threatens the health and well-being of more than a billion people, primarily in developing countries. In many areas worldwide the central water infrastructure is not available at all, or not reliable, leading to unsafe water at the tap. In such cases, decentralized water treatment can be used. In Ethiopia, only 51% of the population has access to safe drinking water with 92.8% in urban and 41.6% in rural settings. One of the widely used household water treatment method as promoted by Health Extension Workers and Health Development Army is boiling of water. Majority of the households resort to non-renewable sources of energy to boil water for drinking purpose. The project activity intends to improve the access of households and communities to safe drinking water, using a low greenhouse gas emitting water purification technology. The VPA reduces the use and demand of non-renewable biomass that would have been used to boil the water as a mean of water purification in the absence of the VPA. This directly leads to reduced greenhouse gas emissions. This VPA is thus primarily designed for the long-term improvement of the living conditions in rural areas of Ethiopia.

Baseline Scenario:

Precursory to the proposed project activity, the proposed project boundary had limited access to clean drinking water. In order to make the water suitable for drinking, it is boiled using some non-renewable energy sources. Thus, the baseline scenario is the perpetuation of this technique to make the water suitable for drinking. Therefore, the scenario prior to the implementation of the project in the project boundary is the baseline scenario of the CPA.

Project Scenario:

In the project scenario, the proposed project activity will take the edge of the GHG emissions by the substitution of non-renewable biomass or fossil fuel to purify water for drinking purposes with ceramic filters. Usage of non-renewable sources for water purification is not only energy intensive but also causes significant amount of indoor air pollution which has perilous impacts on the health of the people. The project activity will result in an annual average CO_2 emission reduction of 23615 tCO_2e and 118077 tCO_2e over a 5-year crediting period.

The VPA is a voluntary initiative taken by the coordinating/managing entity (CME), Pure Water Ltd., and implemented by Nazava Trading PLC

A.2. Eligibility of the project under approved PoA

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The project is eligible under the approved PoA due to the following reasons:

No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence
1	Technology requirements	The water purification technologies include either: 1. Water filters (membrane, activated carbon, ceramic filters), solar energy powered UV disinfection devices, other solar disinfection techniques (SODIS), photocatalytic disinfection equipment, pasteurization appliances, chemical disinfection methods (chlorination), combined treatment approaches (flocculation plus disinfection) 2. A low greenhouse gas emitting technology: related ex-ante project emissions are less than 10% of the ex-ante baseline emissions calculated as per section B.4.3 of the CPA DD.	The water filters use the ceramic and activated carbon to filter out the dirt and bacteria	Yes, the CPA involves ceramic filters and activated carbon which are mentioned as low greenhouse gas emitting technologies in AMS-III.AV (version 05).
2		Water purification technologies involve point-of use (POU) or point-of-entry treatment systems for residential or institutional applications such as systems installed at a school or a community centre	Specification of water purification device and CPA implementation plan mentioning the target users and the locations of the project (see section A.)	Yes, the CPA involves point-of-use water treatment system and eligible under the applied methodology,

No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence
3		It shall be demonstrated application of the project technology/equipment achieves compliance either with: (i) at a minimum the "interim" performance target as per "Evaluating household water treatment options: Health based targets and microbiological performance specifications" (WHO, 2011); or (ii) an applicable national standard or guideline.	1. Evaluating household water treatment options: Health based targets and microbiological performance specifications (WHO, 2011) 2. National standards	Yes, the CPA involves technology that achieves compliance with WHO performance targets and national standards.
4	Applicability of the methodology	Prior to the implementation of the project activity, a public distribution network supplying safe drinking water (SDW) to the project boundary does not exist.	Interview with officials, end-users, NGOs, or local experts or published reports, maps, pictures, official documents	Yes, the CPA involves construction of water treatment stations only in areas where there is no access to public water distribution networks.
5		In cases where the life span of the water treatment technologies is shorter than the crediting period of the project activity, there shall be documented measures in place to ensure that end users have access to replacement purification systems of comparable quality.	Test report for water quality	Yes, the project implementer has provided measures to entrepreneur to ensure that the water filters are replaced regularly when required. Further, sampling purified water shall be kept and tested at laboratory on a monthly basis and at least biannual test will be sent out and tested by accredited laboratory.

6		Applicability of the methodology is foreseen in the following types of situations that shall be reassessed at the beginning of each crediting period: (a) **Case 1**: Project activities implemented in rural or urban areas[1] of countries with proportion of rural population using an improved drinking-water source equal to or less than 60% confirmed by one of the three options below: (i) Proportion of populations using an improved drinking-water source for the most recent year for which data is available from WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation shall be used (<http://www.wssinfo.org/dataestimates/table/>) for this purpose. Definition of improved and unimproved drinking water source shall be as per the information provided by JMP; (ii) Using official data such as publicly available statistical data from a government agency or an independently commissioned study by an international organization or an university. (iii) Using survey methods (use 90/10 confidence/precision for sampling); (b) **Case 2**: Project activities implemented in areas not included in case 1.	According to Drinking water and sanitation status in Ethiopia: A literature survey published during the 3rd Conference on Vaccines & Vaccination, July 2013[2]	Yes, the project qualifies for Case 2 as 61.5% of the rural population in Ethiopia has access to an improved source, which is more than the maximum 60% (see section B.1)
7	Boundary and location of the CPA	The CPA is located within one of the host countries listed in section A.3 of	The CPA project boundary is limited to	Yes, the CPA is located in Ethiopia which has been expanded into the

No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence
		the PoA DD. CPA involves only one host country.	one host country, Ethiopia	PoA's boundary since 27/02/2012. Please refer to the link: https://cdm.unfccc.int/filestorage/C/V/K/CVKTBHNS17XD3FZ5MJ4P9OYGE6AIQ2/LoA_Ethiopia_2012-02-27.pdf?t=cXZ8cTRnZGxhfDDOs-4xWWPtRHs106hRL66Z
8	Avoidance of double counting	The CPA is exclusively bound to the PoA. Confirmation that the PoA has not been and will not be registered either as a single CDM project activity or as a CPA under another POA.	The specific CPA will not be part of another single CDM project activity or CPA under another PoA	Yes, the CPA is not part of another single CDM project activity or CPA under another PoA.
9		A unique numbering or identification system for the water purification devices disseminated is applied.	Nazava database	Yes, a unique numbering system for water treatment stations will be applied.
10	Start date	The CPA start date (first appliance sold or distributed) shall be after the PoA validation start date (webhosting date, i.e. 29/07/2011). In case any deployed water purification device are found not in line with CPA start date requirement, those devices will not be counted for emission reduction calculation. The CPA crediting period shall be limited by the PoA crediting period.	The start date of the CPA will be specified in each CPA-DD and is after 29/07/2011. CPA's first crediting period is 5 years, starting from 1st May 2020, until 30th PAril 2025 The PoA crediting period is 15 years starting 16/11/2012, until 15/11/2027	Yes, the CPA start date is 1/05/2020, which is after the PoA registration date and the CPA crediting period will expire before the end of the PoA crediting period.

[1] As per the WHO/UNICEF Joint Monitoring Programme for water supply and sanitation.

[2] longdom.org/conference-abstracts-files/2157-7560-S1.018-022.pdf

11	Additionality of CPAs	The CPA shall satisfy the following additionality test below, based on the Methodological tool of Demonstration of additionality of microscale project activities (Version 08.0) as per para 10(b): The project activity is an emission reduction activity with both conditions (i) and (ii) below satisfy: (i) Each of the independent subsystems/measures in the project activity achieves an estimated annual emission reduction equal to or less than 600 tCO_2e per year; and (ii) End users of the subsystems or measures are households/communities /SMEs. For CPAs applying microscale thresholds at the unit level rather than at the aggregate level of the CPA, the term 'project activities' in paragraph– 8 - 12 and 14 of the additionality tool shall be read as 'units'. As per para 17 of Methodological tool of Demonstration of additionality of microscale project activities, If each of the units contained in the CPA satisfies the condition to qualify as a 'microscale CDM unit', then the coordinating/managing entity is not required to demonstrate compliance of the CPA with the microscale or small-scale thresholds at the aggregate level of the CPA.	Calculation showing that the CPA remains below 60ktCO2e per year. Evidence showing that each of the device achieves an annual emission reduction equal to or less than 3,000 tCO_2e per year. Evidence that the users shall be households or communities or Small and Medium Enterprises (SMEs), based on CPA implementation plan mentioning the target users or distribution records. Document: excel sheet calculation, technology specification, CPA implementation plan mentioning the target users or distribution records	Yes, the ex-ante emission reduction estimated from each water treatment station is 0.69 tCO_2e per year, which is less than 3,000 tCO_2e per year. Users will be households and SMEs. Therefore, the project is additional.

No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence
12	SSC Limit for CPAs	The annual emissions reductions of each CPA shall not go beyond the limits of 60 ktCO2e/y over the entire crediting period.	Calculation showing emission reductions (see section B.4.4.)	Yes, the ex-ante annual emission reductions of the CPA do not exceed 60 $ktCO_2e/y$ over the entire crediting period. As per the ex-ante calculation, the maximum annual emission reduction in a year is 27,783 tCO_2e.
13	Sampling requirements	The conditions related to sampling requirements for the PoA are in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys (Standard for sampling and surveys for CDM project activities and programme of activities, Version 04.0 and Guidelines for sampling and survey for CDM project activities and programme of activities and are in line with the requirements of the applied methodology AMS.III.AV, version 05.	As specified in the monitoring plan in the CPA-DD (see section B.5.3.) and according to the sampling requirements specified at PoA level.	Yes, the sampling requirements are in accordance with the applied methodology and standards for sampling.
14	De-bundling	Each water purification device reduces less than 600 tCO2e/y[3]	Calculation showing emission reductions per device per year (see section A.8.)	Yes, each water filter reduces 0.69 tCO_2e/y which is less than 600 tCO_2e/y.
15	Contractual agreement	The CPA implementer has signed a contractual agreement with the CME to participate in the PoA. Such agreement guides the transfer of the emission reduction rights to the CME.	Contract between Nazava Trading PLC and the CME	Yes, Nazava Trading PLC has signed an agreement with Pure Water Ltd. (CME) to participate in the PoA on 13/08/2019.
16	Local Stakeholder Consultation	A local stakeholder consultation has been conducted for CPA.	Local Stakeholder Consultation Report	Yes, the local stakeholder consultation was conducted on XXX

[3] According to the "Guidelines on assessment of debundling for SSC project activities, v03 (EB 54, Annex 13, par. 10) for determining the occurrence of debundling under a Programme of Activities (PoA)", if each of the independent subsystem/measures included in the CPA of a PoA is not larger than 1% of the small scale threshold defined by the methodology applied, than that CPA of PoA is exempted from performing de-bundling check, i.e. considered as being not a de-bundled component of a large scale activity.

No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence
17	Environmental Analysis	CPA is in line with the environmental host Party laws/regulations	EIA exemption or EIA report.	Yes, the CPA is in line with environmental laws and regulations in Ethiopia
18	Diversion of official development assistance	CPA should not result into the diversion of official development assistance	Declaration from CME (see section A.6.)	Yes, the CPA does not result into the diversion of official development assistance.
19	Target group	CPA shall target households or communities or Small and Medium Enterprises (SMEs)	Survey Record	Yes, the CPA targets households, communities and SMEs for providing safe drinking water to households.

A.3. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

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Implementation of the proposed project doesn't involve any activity that causes alteration of any resource; therefore acquiring any specific legal right to do so is not applicable.

A.4. Location of project

A.4.1. Host Country

>>
Ethiopia

A.4.2. Region/State/Province etc.

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The Nazava water filters will be installed throughout Ethiopia.

A.4.3. City/Town/Community etc.

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Addis Ababa, Amhara, Dese, Hawasa, Jima, Kolefe, Kombolcha, Oromia, Lideta, Southern Nations, Nationalities, and People's Region

A.4.4. Physical/Geographical location

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Ethiopia
The geographic coordinates of Ethiopia is as below:
Latitude: 8 00 N
Longitude: 38 00 E

Figure 1: Map of Ethiopia

A.5. Technologies and/or measures

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A detailed description of the Nazava Water filters is as follows:

Nazava waterfilter is a 2 x 16 litre ceramic water filter with a capacity of 7000 litres and flow speed of 1 litre per hour. The Nazava ceramic filter candle chas three main working components, functions of which are described below.

Ceramic:

The cone shaped ceramic filter has a pore size of 0.4 micron .This component of the water purifier is responsible for filtering the dirt and bacteria in the water. Tiny pores in the ceramic membrane block bacteria and most dirt particles. The filters are made of diatomaceous earth with pores of 0.4 micron (0.0004 milimeter) and remove micro-organisms: bacteria, cysts, parasites, fungi, sand, clay and other particles greater than 0.4 micron .

Nano silver:

The Nazava ceramic water filter is impregnated with nano silver particles. Once the water passing through the ceramic it reaches the nano silver component which further kills the bacteria and other microorganisms. The nano particles in the range of 1–10 nm stick to the cell membrane and drastically disturb its function, like permeability and respiration, this implies the bacteria cannot “eat” and “breath” anymore. The Silver nano particles get into the bacteria cell and cause further damage by binding with sulphur and phosphorus-containing compounds such as DNA (the molecules that store genetic information). The nano particles release silver ions which also bind to DNA make it impossible for the bacteria to replicate itself.

Activated Carbon:

The ceramic is filled with activated carbon which reduces the content of harmful chemicals such as pesticides and chlorine. It improves the taste and reduces smell.

The Nazava ceramic water filters purify your water in three steps:

1. Dirt and bacteria are filtered out by the ceramic.
2. Bacteria and other micro-organisms are killed by silver
3. Activated carbon in the filter improves taste and makes your water taste fresh

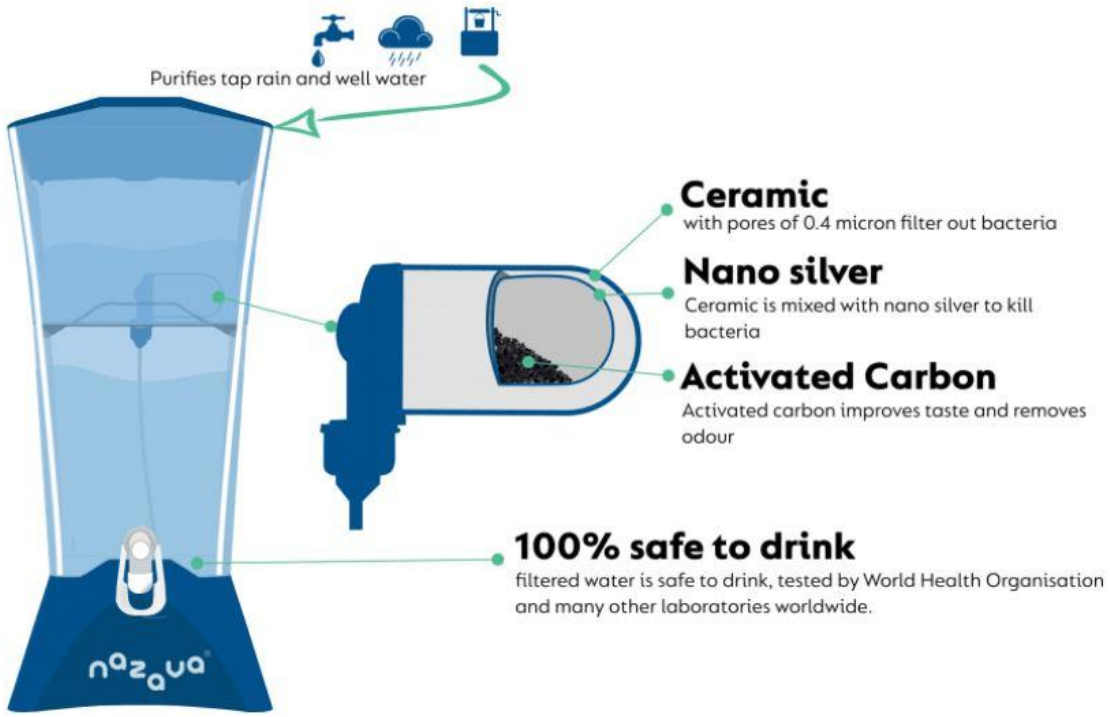

Figure 2: Nazava Water Filter

The project contributes directly in achieving the SDG 6 & 8 in addition to SDG 13 as required by Principle- 1 of GS4GG. The project will have following benefits:

- **Environmental Benefits:** Reduction in firewood consumption and emission of greenhouse gases, forest and biodiversity conservation (SDG 13).
- **Economic Benefits:** Employment creation and saving of health cost (SDG 8).
- **Social Benefits:** The project will increase the access to safe and clean drinking water to the communities (SDG 6)

A.6. Scale of the project

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According to Methodological tool "Demonstration of additionality of microscale project activities", Version 08, the project falls under the Energy Demand scope with emission reductions of 23,615 tCO_2e per annum where each unit reduces nearly 0.69 tCO_2e every year. Hence, the project falls under small scale projects.

A.7. Funding sources of project

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No public funding from parties included in Annex I to the UNFCCC, is available to the project. The project is implemented by the client. Carbon waiver has been signed by the project owner and carbon rights are available with Nazava Trading PLC.

SECTION B. Application of selected approved Gold Standard methodology

B.1. Reference of approved methodology

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AMS III.AV Small-scale Methodology: Low greenhouse gas emitting safe drinking water production systems Version 05; Reference:
https://cdm.unfccc.int/methodologies/DB/THHX1JKJ2W61SJM8GLC3R0DMOA7USZ

B.2. Applicability of methodology

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a) Prior to the implementation of the project activity, a public distribution network supplying SDW to the project boundary does not exist as the project involves construction of water treatment stations only in areas where there is no access to public water distribution networks.
b) It is demonstrated based on laboratory testing or official notifications (for example notifications from the national authority on health) that the application of the project technology/equipment achieves compliance either with an applicable national standard or guideline.
c) As the life span of the water treatment technologies is shorter than the crediting period of the project activity, in the project implementer has provided measures to entrepreneur to ensure that the water filters are replaced regularly when required.
d) Samples of purified water shall be kept and tested at laboratory on a monthly basis and at least biannual test will be sent out and tested by accredited laboratory in order to ensure that it delivers microbiologically safe drinking water.
e) Applicability of this methodology is foreseen in the following type of situations. If the renewable crediting period is chosen, these conditions shall be reassessed at the beginning of each crediting period:
(a) Case 1: Project activities implemented in rural or urban areas of countries with proportion of rural or urban population using an improved drinking-water source equal to or less than 60 per cent confirmed by one of the options below:
(i) Proportion of populations using an improved drinking-water source for the most recent year for which data is available from WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation shall be used (<http://www.wssinfo.org/data-estimates/table/>) for this purpose. Definition of improved and unimproved drinking water source shall be as per the information provided by JMP;
(ii) Using official data such as publicly available statistical data from a government agency or an independently commissioned study by an international organization or an university;
(iii) Using survey methods (use 90/10 confidence/precision for sampling);

(b) Case 2: Project activities implemented in areas not included in Case 1.
The project qualifies for Case 2 of the applicability situattionsas 61.5% of the rural population in Ethiopia has access to an improved source, which is more than the maximum 60%

B.3. Project boundary

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According to AMS III.AV Small-scale Methodology: Low greenhouse gas emitting safe drinking water production systems Version 05, "The project boundary includes the physical, geographical sites of the low greenhouse gas emitting technologies for water purification installed by the project activity and the household/institutional buildings where the consumers of safe water provided by the systems are located.

The project boundary is the physical and geographical site of water installation of theceramic water filter throughout Ethiopia. The project developer aims to install 20,000 ceramic water filters in the rural areas of Ethiopia by the end of 2020.

For the purpose of GHG mitigation/sequestration following table shall be completed (delete if not required)

Source		GHG	Included?	Justification/Explanation
Baseline	Emissions from electricity/fossil fuels utilized for obtaining safe drinking water displaced due to project activity	CO_2	Yes	Major source of emissions
		CH_4	No	Minor source of emissions
		N_2O	No	Minor source of emissions
Project activity	Emissions from fossil fuel or electricity consumed during the manufacturing of the purifiers and cleaning kits	CO_2	No	Minor source of emissions
		CH_4	No	Minor source of emissions
		N_2O	No	Minor source of emissions

B.4. Establishment and description of baseline scenario

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As already stated in section A.1, only 51% of the population In Ethiopia has access to safe drinking water. Out of this 51%, only 41.6% of the rural population is able to gain access to clean water.[4] Boiling of water using fuelwood is one of the main practices followed to make the water fit for drinking. Therefore, the baseline scenario is the consumption of fuelwood to meet the energy requirements in households for the purification of water.

The proposed project activity aims to phase out the usage of non-renewable sources of energy to purify water and replace it with the zero GHG emiting ceramic water filters. The amount of fuelwool consumed to boil the water is directly proportional to the quantity of water which is purified. Nearly 68% of the energy is derived from fuel wood in the households of Ethiopia[5]. Therefore the amount of purified water consumed by every household is as follows:

Year	Litres/year
2020	107310000
2021	160965000
2022	214620000

[4] National Drinking Water Quality Monitoring and Surveillance Strategy, Ethiopia, 2014

[5] See Table 17: http://www.fao.org/3/a-ab582e.pdf

B.5. Demonstration of additionality

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The table below is only applicable if the proposed project is deemed additional, as defined by the applied approved methodology or activity requirement or product requirement.

Specify the methodology or activity requirement or product requirement that establish deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).	According to additionality test based on the demonstration of additionality of microscale project activities (version 08.0), The project lies in the positive list of technologies and is automatically addititonal as it satisfies the following criteria: The project activity shall solely be composed of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs) and where the size[6] of each unit is no larger than 5% of the small-scale CDM thresholds;
Describe how the proposed project meets the criteria for deemed additionality.	The proposed project activity meets the above said criteria as the ex-ante emission reduction estimated from each water treatment station is 0.69 tCO_2e per year, which is less than 3,000 tCO2e per year. Users will be households and SMEs. Therefore, the project is additional.

B.6. Sustainable Development Goals (SDG) outcomes

B.6.1. Relevant target for each of the three SDGs

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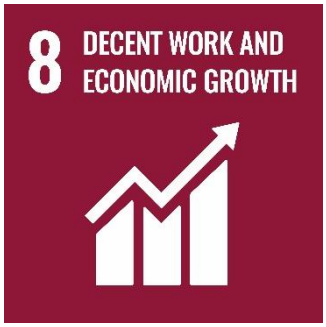
SDGs	Targets
	The project will contribute to the SDG Goal 6: Clean water and sanitation, "Ensure availability and sustainable management of water and sanitation for all" achieving the following target. Target 6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all" Project SDG Indicator: The number of persons provided safe drinking water.
	The project will contribute towards the SDG goal 8: Decent work and economic growth "Promote sustained, inclusive and sustainable economic growth, full and productive" acieving the following target. Target 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. Project SDG Indicator: The number of jobs created for local people by the project activity.

[6] That is the size of each unit under 750 kW installed capacity or under 3000 MWh of energy savings per year or 3000 tonnes of emission reductions per year.

	The project will contribute towards below SGD goal 13: Climate action " Take urgent action to combat and its impacts" achieving the following target. Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. Project SDG Indicator: GHG emissions reduced due to the installation of cereamic water filters.

B.6.2. Explanation of methodological choices/approaches for estimating the SDG outcome

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Baseline emissions:

According to AMS III.AV Small-scale Methodology: Low greenhouse gas emitting safe drinking water production systems Version 05, baseline emissions are calculated using the following equation.

$$BE_y = QPW_y \times m \times X_{boil} \times SEC \times \sum_i (BL_{fuel,i} \times f_i \times EF_{projected\_fossil\ fuel,i} \times 10^{-9}) \quad \text{Equation (1)}$$

BE_y	=	Baseline emissions during the year y in (t CO2e)
QPW_y	=	Total quantity of water purified by the project in year y (L)
m	=	Fraction of functional appliances that are providing the SDW (%). Only project appliances that (i) use technologies that meet the technology standards as per paragraph 4(b) and (ii) are operating or replaced by an equivalent in-service appliance and (iii) deliver microbiologically safe drinking water, are counted for emission reductions.
Xboil	=	Fraction of the population served by the project activity for which the common practice of water treatment is or would have been water boiling. It is determined ex ante through surveys.
SEC	=	Specific energy consumption required to boil one litre of water (kJ/L)
$BL_{fuel,i}$	=	Proportions of baseline fuel type i (NRB and/or fossil fuels) used in the absence of the project activity (fraction)
f_i	=	Fraction of non-renewable fuel type i used in the absence of the project activity in year y. For biomass, it is the fraction of woody biomass that can be established as non-renewable biomass (fNRB). If the baseline fuel is fossil fuel, the value to be applied is 1.
$EF_{projected\_fossilfuel}$	=	Emission factor of the fuel type i substituted (t CO2/TJ)

Specific energy consumption required to boil one litre of water is to be calculated as follows:

$$SEC = \left[WH \times \left(T_f - T_i\right) + 0.01 \times WHE\right] / n_{wb}$$

Where,

WH	=	Specific heat of water (kJ/L oC). Use a default value of 4.186 kJ/L oC
T_f	=	Final temperature (oC). Use a default value of 100 °C[7]

[7] Boiling point of water at standard conditions.

T_i = Initial temperature of water (°C). Use annual average ambient temperature;8 or use a default value of 20 °C

WHE = Latent heat of water evaporation (kJ/L). Use a default value of 2260 kJ/L. The latent heat required to boil one litre of water for five minutes is assumed to be equivalent to latent heat for the evaporation of 1% of the water volume (WHO recommends a minimum duration of five minutes of water boiling)9

n_{wb} = Efficiency of the water boiling systems being replaced. Use one of the options below:
(a) The efficiency of the water boiling system shall be established using representative sampling methods or based on referenced literature values (fraction), use weighted average values if more than one type of systems is encountered;
(b) 0.10 default value may be optionally used if the replaced system or the system that would have been used is a three stone fire or a conventional system for woody biomass lacking improved combustion air supply mechanism and flue gas ventilation system that is without a grate as well as a chimney; for the rest of the systems using woody biomass 0.2 default value may be optionally used;
(c) 0.5 default value may be used if the replaced system or the system that would have been used is a fossil fuel combusting system

Project emissions:
As per the AMS III.AV, Version 05.0, "If the operation of the project water purification system involves consumption of fossil fuels and/or electricity, project emissions include:

- CO2 emissions from on-site consumption of fossil fuels due to the project activity shall be calculated using the latest version of the tool "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion";
- CO2 emissions from electricity consumption by the project activity using the latest version of the tool "Tool to calculate baseline, project and/or leakage emissions from electricity consumption".

The project water filter technology does not involve consumption of fossil fuel nor electricity; therefore, the project emission is excluded:

$$PEy = 0$$

Leakage emissions:
Leakage related to the non-renewable sources saved by the project activity. To account for leakages associated to non-renewable woody biomass a fixed adjustment factor of 0.95 was applied according to the AMS-III.AV. Version 05.

B.6.3. Data and parameters fixed ex ante for monitoring contribution to each of the three SDGs

(Include a compilation of information on the data and parameters that are not monitored during the crediting period but are determined before the design certification and remain fixed throughout the crediting period like IPCC defaults and other methodology defaults. Copy this table for each piece of data and parameter.)

Relevant SDG Indicator	SDG 13
Data/parameter	X_{boil}
Unit	Fraction
Description	Fraction of the population served by the project activity for which the common practice of water treatment is or would have been water boiling. It is determined ex ante through surveys.
Source of data	Established ex-ante through survey
Value(s) applied	100%

[8] Ambient temperature data must be from globally accepted data sources, for example data published by the National Aeronautics and Space Administration (NASA) or the National Renewable Energy Laboratory (NREL). Data can be used only if they are for a location that can be demonstrated to be representative of the project location.

[9] WHO guidelines for emergency treatment of drinking water at point of the use <http://www.searo.who.int/LinkFiles/List_of_Guidelines_for_Health_Emergency_Emergency_treatment_of_drinking_water.pdf>.

Choice of data or Measurement methods and procedures	The value is fixed based on the ex ante surveys. In this case it is 100% as all the users used to boil water using the fuelwood prior to the implementation of the project activity.
Purpose of data	Baseline emission estimation
Additional comment	-

Relevant SDG Indicator	SDG 13
Data/parameter	$BL_{fuel,i}$
Unit	Fraction
Description	Proportions of baseline fuel type i (NRB and/or fossil fuels) used in the absence of the project activity (fraction)
Source of data	http://www.fao.org/3/a-ab582e.pdf (Table 17)
Value(s) applied	68%
Choice of data or Measurement methods and procedures	As per AMS-III.AV, this value represents the proportion of fuelwood used in the absence of the project activity to boil water.
Purpose of data	Baseline emission estimation
Additional comment	-

Relevant SDG Indicator	SDG 13
Data/parameter	$EF_{projected\_fossilfuel,i}$
Unit	t CO_2/TJ
Description	Emission factor of the fuel(s) type i substituted
Source of data	Default Value as per AMS-I.E.
Value(s) applied	63.7
Choice of data or Measurement methods and procedures	A value of 63.7 tCO2/TJ shall be applied when NRB is displaced as per AMS-I.E. procedures. Use the emission factor of the fossil fuel when fuel substituted is fossil fuel
Purpose of data	Conversion of energy demand for boiling water (TJ) to carbon dioxide emissions (tCO2). Required for calculation of baseline emissions.
Additional comment	-

Relevant SDG Indicator	SDG 13
Data/parameter	WH
Unit	kJ/L°C
Description	Specific Heat of Water
Source of data	Default Value from AMS-III.AV Version 05
Value(s) applied	4.186
Choice of data or Measurement methods and procedures	Default value
Purpose of data	Used for the calculation of the Specific Energy Consumption (SEC) of boiling water. Required for calculation of baseline emissions.
Additional comment	-

Relevant SDG Indicator	SDG 13
Data/parameter	T_f
Unit	°C
Description	Final Temperature
Source of data	Default Value from AMS-III.AV Version 05
Value(s) applied	100
Choice of data or Measurement methods and procedures	Default value. Boiling point of water at standard conditions.
Purpose of data	Used for the calculation of the Specific Energy Consumption (SEC) of boiling water. Required for calculation of baseline emissions.
Additional comment	-

Relevant SDG Indicator	SDG 13
Data/parameter	Ti
Unit	°C
Description	Initial Temperature
Source of data	Default Value from AMS-III.AV Version 05
Value(s) applied	20
Choice of data or Measurement methods and procedures	Default value.
Purpose of data	Used for the calculation of the Specific Energy Consumption (SEC) of boiling water. Required for calculation of baseline emissions.
Additional comment	-

Relevant SDG Indicator	SDG 13
Data/parameter	WHE
Unit	kJ/L
Description	Latent Heat of Water Evaporation
Source of data	Default Value from AMS-III.AV Version 05
Value(s) applied	2,260
Choice of data or Measurement methods and procedures	Default value. The latent heat required to boil one liter of water for five minutes is assumed to be equivalent to latent heat for the evaporation of 1% of the water volume (WHO recommends a minimum duration of five minutes of water boiling)[10]
Purpose of data	Baseline emissions.
Additional comment	-

Relevant SDG Indicator	SDG 13

[10] WHO guidelines for Emergency Treatment of drinking water at point of the use www.searo.who.int/LinkFiles/List_of_Guidelines_for_Health_Emergency_Emergency_treatment_of_drinking_water.pdf

Data/parameter	$\eta_{wb,}$
Unit	Fraction
Description	Efficiency of the water boiling systems being replaced
Source of data	Default Value from AMS-I.E
Value(s) applied	0.10
Choice of data or Measurement methods and procedures	Use one of the options below: (a) The efficiency of the water boiling system shall be established using representative sampling methods or based on referenced literature values (fraction), use weighted average values if more than one type of systems are encountered; (b) 0.10 default value may be optionally used if the replaced system or the system that would have been used is a three-stone fire or a conventional system for woody biomass lacking improved combustion air supply mechanism and flue gas ventilation system that is without a grate as well as a chimney; for the rest of the systems using woody biomass 0.2 default value may be optionally used; (c) 0.5 default value may be used if the replaced system or the system that would have been used is a fossil fuel combusting system
Purpose of data	Baseline emissions.
Additional comment	-

Relevant SDG Indicator	SDG 13
Data/parameter	L
Unit	Fraction
Description	Leakage related to Baseline emissions
Source of data	Default Value from AMS-I.E
Value(s) applied	0.95
Choice of data or Measurement methods and procedures	Default Value
Purpose of data	Baseline emissions.
Additional comment	-

B.6.4. Ex ante estimation of outcomes linked to each of the three SDGs

>>

Baseline emissions

The baseline emissions shall be calculated as follows:

$$BE_y = QPW_y \times m \times X_{boil} \times SEC \times \sum_i (BL_{fuel,i} \times f_i \times EF_{projected\_fossil\ fuel,i} \times 10^{-9}) \quad \text{Equation (1)}$$

Quantity of purified water in year y (QPWy) was determined using the following equation:

$$QPWy = P_y \times min\,(QPWpp\,;\,5.5\,) \times 365 \quad \text{Equation (3)}$$

Where,

Py 196,000

QPWpp = 3 Litres

Therefore, using the above values QPW_y= 214,620,000 litres/year.

SEC was calculated using the following equation:

$$SEC = [WH \times (T_f - T_i) + 0.01 \times WHE] / \eta_{wb}$$

Where,

WH = Specific heat of water (kJ/L oC). Use a default value of 4.186 kJ/L oC
T_f = Final temperature (oC). Use a default value of 100 °C11
T_i = Initial temperature of water (°C). Use annual average ambient temperature12 or use a default value of 20 °C
WHE = Latent heat of water evaporation (kJ/L). Use a default value of 2260 kJ/L. The latent heat required to boil one litre of water for five minutes is assumed to be equivalent to latent heat for the evaporation of 1% of the water volume (WHO recommends a minimum duration of five minutes of water boiling)13
n_{wb} Efficiency of the water boiling systems being replaced; 0.10 default value

Therefore, SEC= 3574.8 kJ/L

Further, the following values were used to arrive at baseline emissions.
m = 100%
Xboil = 100%
BLfuel,i = 68%
fi =88%
EFprojected_fossilfuel,i = 63.70

Using the above values, baseline emissions, BE_y= 29245 tCO_2e/year

The project water filter technology does not involve consumption of fossil fuel nor electricity; therefore, the project emission is excluded:

PEy = 0

Taking into account the leakages associated with the baseline emissions (BEy), a adjustment factor of 0.95 was applied.
Therefore,

ERy= BEy * 0.95

Therefore, the value of ERy = 27,783 tCO_2e

B.6.5. Summary of ex ante estimates of each SDG outcome

Year	Baseline estimate	Project estimate	Net benefit
Year 1	14,623	731	13,891
Year 2	21,934	1,097	20,837
Year 3	29,245	1,462	27,783
Year 4	29,245	1,462	27,783

[11] Boiling point of water at standard conditions

[12] Ambient temperature data must be from globally accepted data sources, for example data published by the National Aeronautics and Space Administration (NASA) or the National Renewable Energy Laboratory (NREL). Data can be used only if they are for a location that can be demonstrated to be representative of the project location

[13] WHO guidelines for emergency treatment of drinking water at point of the use.

Year 5	29,245	1,462	27,783
Total	124,292	6,215	118,077
Total number of crediting years	5		
Annual average over the crediting period	24,858	1,243	23,615

B.7. Monitoring plan

B.7.1. Data and parameters to be monitored

(Include specific information on how the data and parameters that need to be monitored in the selected methodology(ies) or proposed approaches or as per mitigation measures from safeguarding principles assessment or as per feedback from stakeholder consultations would actually be collected during monitoring. Copy this table for each piece of data and parameter.)

Relevant SDG Indicator	SDG 13
Data / Parameter	QPW_y
Unit	Litres/yr
Description	Quantity of purified water in year y (litres)
Source of data	Calculation
Value(s) applied	214,620,000
Measurement methods and procedures	The Values are calculated using the following equation: $QPWy = P_y \times min\,(QPWpp\,;\,5.5\,) \times 365$ Equation (3) Where, Py = Population who consumes the purified water serviced by the project activity in year y QPWpp = Average volume of drinking water per person per day (L/person/day) determined ex ante of the crediting period through a baseline survey
Monitoring frequency	Monthly
QA/QC procedures	Follow the QA/QC procedures of each input parameters
Purpose of data	Emission Reduction calculation
Additional comment	-

Relevant SDG Indicator	SDG 13
Data / Parameter	P_y
Unit	Number
Description	Population who consumes the purified water serviced by the project activity in year y
Source of data	Survey
Value(s) applied	196,000
Measurement methods and procedures	The average household size is assumed to be 4.9 Therefore, Py= Number of devices distributed* 4.9
Monitoring frequency	Monthly
QA/QC procedures	Follow the QA/QC procedures of each input parameters
Purpose of data	Emission Reduction calculation
Additional comment	-

Relevant SDG Indicator	SDG 13
Data / Parameter	QPW_{pp}
Unit	L/person/day
Description	Average volume of drinking water per person per day (L/person/day) determined ex ante of the crediting period through a baseline survey
Source of data	Default Value in AMS-III.AV version 05
Value(s) applied	3
Measurement methods and procedures	Default Value
Monitoring frequency	Monthly
QA/QC procedures	Follow the QA/QC procedures of each input parameters
Purpose of data	Emission Reduction calculation
Additional comment	-

Relevant SDG Indicator	SDG 13
Data / Parameter	m
Unit	Fraction
Description	fraction of functional appliances that are providing the SDW
Source of data	Surveys and microbiological testing
Value(s) applied	100%
Measurement methods and procedures	Fraction of functional appliances that are providing the SDW (%). Only project appliances that i. use technologies that meet the technology standards as per paragraph 4(b) ii. are operating or replaced by an equivalent in-service appliance iii. deliver microbiologically safe drinking water, are counted for emission reductions.
Monitoring frequency	Annually
QA/QC procedures	The sampling plan shall also include provisions to collect information for records of replacement of appliances, filters and maintenance
Purpose of data	Emission Reduction calculation
Additional comment	A statistically valid sample of the appliances can be used to determine the parameter value, as per the relevant requirements for sampling in the "Standard for sampling and surveys for CDM project activities and programme of activities". 90% confidence interval and a 10% margin of error requirement shall be achieved for the sampled parameters

Relevant SDG Indicator	SDG 6
Data / Parameter	The number of persons provided safe drinking water
Unit	Number
Description	Increase in number of persons having access to safe drinking water
Source of data	Surveys and Data
Value(s) applied	30,000
Measurement methods and procedures	Increase in number of persons having access to safe drinking water will be measure based on the sales of the Nazava water filters and the surveys and interviews conducted from time to time.
Monitoring frequency	Continously
QA/QC procedures	The sampling plan shall also include provisions to collect information for records of dropping off the product

Purpose of data	Sustainable development assessment
Additional comment	NA

Relevant SDG Indicator	SDG 8
Data / Parameter	Number of jobs created as a result of the project activity.
Unit	Number
Description	Jobs creasted as a result of the project activity in the target area
Source of data	Surveys and Data
Value(s) applied	Vendors: 42 Production Staff: 5 Sales Staff: 6 **Total: 53**
Measurement methods and procedures	Increase in the employ ment rate of the targeted area after the implementation of the project activity
Monitoring frequency	Continously
QA/QC procedures	NA
Purpose of data	Sustainable development assessment
Additional comment	NA

B.7.2. Sampling plan

>>

An annual, monitoring system will be set up for most parameters. However, for parameters which can be tracked on a biennial basis will be monitored once every two years.

Target population

The monitoring procedure is targeted to be applied on the households, local communities and SMEs with installed Nazava ceramic water filters.

Sampling method

A simple random sampling will be adopted for estimating the sample size for the monitoring surveys. Simple random sampling is suitable for homogenous populations.

Sample Size:

In accordance with the requirements set forth in the methodology, a minimum sample size of 100 is required. To evaluate the drop-off rate of usage, which requires that water filters of different age groups are assessed, monitoring should be carried out on a random sample of water filters of different ages. The minimum total sample size is 100, with at least 30 samples for water filters of each age bracket (measured in annual increments) being surveyed.

Sampling frame:

All the households with Nazava ceramic water filters within the proposed project boundary will be the sampling frame.

Data to be monitored:

The necessary data as stated in section B.5 above will be collected and monitored by the project proponent as required.

Quality Assurance/Quality Control:

A survey questionnaire will be prepared to check the operating status (yes or no) of the Nazava water filters within the project boundary. The survey will be performed by the project developer appointing a third party. In order to remove the possibilities of low response rate and answer bias, 10% oversampling will be applied.

Analysis:
The survey data will then be analysed by the project developer to derive at the working status of each ceramic water filter and consumption of non-renewable energy (if any). The analysis will form the basis of the monitoring report to be prepared by the developer.

Implementation:
Preparation and pre-testing of the survey questionnaire will be done. Field personnel will be trained to conduct the surveys so as to ensure the quality of data collected is high. The schedule for implementing the sampling effort shall be defined prior to the field activity.

B.7.3. Other elements of monitoring plan

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Data recording and archiving procedures

- The monitored data will be reported and electronic archived annually.
- All the data shall be kept for 2 years after end of the crediting period.
- Monitored data shall be sent to the project participant for cross-checking and inserting to database.

QA/QC procedures

- The total units in Project Database will be cross-checked with the sale invoices to the users.
- In case of any data missing, the project participant will seek the consultant for guidance. The missing period will be conservatively estimated base on other available data.

SECTION C. Duration and crediting period

C.1. Duration of project

C.1.1. Start date of project

>>
01/05/2020 or CPA inclusion date will consider as start date of project activity.

C.1.2. Expected operational lifetime of project

>>
Filters last for 7000 liters which translates to around 5 years life of filters and 15 years life for whole system

C.2. Crediting period of project

C.2.1. Start date of crediting period

>> 01/05/2020

C.2.2. Total length of crediting period

>>
5years

SECTION D. Safeguarding principles assessment

D.1. Analysis of social, economic and environmental impacts

>>

Safegaurding principle	Description of relevance to the project	Assessment (Yes/Potentially/No)	Mitigation Measures
SOCIAL & ECONOMIC SAFEGUARDING PRINCIPLES			
Principle 1 - Human Rights			
a) Recognises the centrality of human rights to sustainable development, poverty alleviation and ensuring fair distribution of development opportunities and benefits; and supports "universal respect for, and observance of, human rights and fundamental freedoms for all".	The project replaces the convential practice using firewood to boil water in order to purify it with ceramic water filters which release zero GHG emissions during operation.. Therefore, it provides development opportunity to all section of people proving clean and safe drinking water, better livelihood and empowering specially rural women who have to walk mile to fetch clean water. Hence, the project positively recognizes human rights to sustainable development.	No	Not Applicable
(b) Does not recognise or support Projects that contribute to violations of a state's human rights obligations and the core international human rights treaties, and seeks to support the protection and fulfilment of human rights.	The project is in accordance with constitution of Ethiopia and is bound to follow the rules and ruglation of host country. Hence, the project does violate human rights obligations adopted by the host country.	No	Not Applicable
(c) Upholds the principles of accountability and the rule of law, participation and inclusion, and equality and non-discrimination, noting that prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority.	Article 25 outlines the "Right to equality.", Article 34 of the constitution hilighghts the "Martial,Personal and Family Rights". Article 35 of the Ethiopian constituon throws light on the rights of the women. Therefore, the project being in Ethiopia upholds the principles of accountability and the rule of law, participation and inclusion, and equality and non-discrimination.	No	Not Applicable

Safegaurding principle	Description of relevance to the project	Assessment (Yes/Potentially/No)	Mitigation Measures
The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights	The constitution of Ethiopia upholds the protection of Human rights thus, the project is bound to follow the rules and ruglation of host country. In addition, Ethiopia is also one of the 48 countries who voted for the 'Universal Declaration of Human Rights', 'Convention on the Elimination of All Forms of Discrimination' against Women (1979) and 'Convention of rights of all persons with disabilities. Ethiopia has signed the 'African Charter On Human And People's Rights' and the 'Protocol on the Rights of Women in Africa (2005)'. Therefore, the project developer and the project do respect nationally and internationaly proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind.	No	Not Applicable
The Project shall not discriminate with regards to participation and inclusion.	Article 25 'Right to Equality, Article 35 'Right of Women' and Article 38 'Right to Vote and to be Elected' makes sure that there is no activity in the country which supports of causes discrimination in any form. Therefore, the project will not discriminate with regards to participation and inclusion.	No	Not Applicable
Principle 2 - Gender Equality and Women's Rights			
(i) Promotes gender equality and the empowerment of women.	Apart from being a member of the above mentioned conventions, The constitution of Ethiopia makes sure that it promotes gender equality and empowerment of women. The project positively contributes towards the vision of the constituiton.	No	Not Applicable
(ii) Does not recognise Projects that contribute to discrimination against women or reinforce gender-based	As explained above the project does not contribute to discrimination against women or reinforce gender-based	No	Not Applicable

Safegaurding principle	Description of relevance to the project	Assessment (Yes/Potentially/No)	Mitigation Measures
discrimination and/or inequalities.	discrimination and/or inequalities.		
(iii) Recognises and seeks to contribute to SDG 5, (Achieve gender equality and empower all women and girls).	Project compliance to SDG 5 is explained above.	No	Not Applicable
Mandatory requirements:			
1. The Project shall complete the following gender assessment questions			
Is there a possibility that the Project might reduce or put at risk women's access to or control of resources, entitlements and benefits?	No. The project uses ceramic water filters which in a way reduce the burden on women as nearly 62% of the households in Ethiopia adult women and school going girls in Ethiopia bear the burden of collecting drinking water.[14] Therefore, it does not put any risk to women's access or control of resources, entitlements and benefits.	No	Not Applicable
Is there a possibility that the Project can adversely affect men and women in marginalised or vulnerable communities (e.g., potential increased burden on women or social isolation of men)?	No, the project will be implemented in households where users depend on firewood to boil water in order to purify it. The project only replaces the practice of boiling water with ceramic water filters which have zer emission when in operation. Hence, the project does not affect any marginalized or vulnerable communities.	No	Not Applicable
Is there a possibility that the Project might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities (such as lack of time, child care duties, low literacy or educational levels, or societal discrimination)?	No, the project actually takes care the upliftment of women and men who otherwise spent a a lot of time to fetch water from clean water sources like community wells, which in the project case not needed, This provides more time to the users. Also ceramic water filters are clean technique of water purification and does not lead to any smoke resulting in health benefits to end users.	No	Not Applicable

[14] https://dhsprogram.com/pubs/pdf/FR255/FR255.pdf

Safegaurding principle	Description of relevance to the project	Assessment (Yes/Potentially/No)	Mitigation Measures
Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)?	Yes, the project takes care the role of women in cooking. In presence of the project activity, women who generallywho in most cases are responsible for cooking, spend less time in sourcing firewood. This time can be utilize for other productive work. Also due to clean nature of the fuel, smoke related health issues are reduced due to the project activity.	No	Not Applicable
Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities?	No, the project takes care of the role of women in cooking. Due to the project women (generally the caretaker of cooking) spend less time in fetching clean water from nearby wells and can utilize the saved time in other productive works. Also, due to less usage of fuelwood, there would be health benefits due to less smoke.	No	Not Applicable
Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits?	No, the project does not have any scope which may result to discrimination against women. The project contributes positively to uplift women in its work culture.	No	Not Applicable
Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services?	No, the project helps in protecting NRB. Thus, it does not limit women's ability to use or protecting natural resources.	No	Not Applicable
Is there a likelihood that the proposed Project would expose women and girls to further risks or hazards?	No, the project replaces conventional practice of boiling water using fuelwood to purify it with ceramic water filters which have zero emission while in operation. Also, it provides health benefits due to reduction of inddor air pollution. Hence, project does not lead to more hazaradous conditions.	No	Not Applicable

Safegaurding principle	Description of relevance to the project	Assessment (Yes/Potentially/No)	Mitigation Measures
2. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women. Specifically, this shall include (not exhaustive):			
Sexual harassment and/or any forms of violence against women - address the multiple risks of gender-based violence, including sexual exploitation or human trafficking	The project happens in individual households. It does not involve any women workforce which may lead to sexual harassment.		Not Applicable
Slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls.	No, The project happens in individual households. It does not involve any women workforce which may lead to sexual harassment.	No	Not Applicable
Restriction of women's rights or access to resources (natural or economic).	No, The project actually takes care the upliftment of women and men who otherwise spent more time in sourcing firewood which in the project case not needed, This provides more time to the users. Also biogas being clean fuel, leads to low smoke generation resulting health benefits to end users.	No	Not Applicable
Recognise women's ownership rights regardless of marital status - adopt project measures where possible to support to women's access to inherit and own land, homes, and other assets or natural resources	Yes, The project does not have any scope which needs to recognise the women's ownership rights. The project replaces conventional practice of boiling water using fuelwood to purify it with ceramic water filters which have zero emission while in operation. This helps women to have access to cleaner water purification techniques.	No	Not Applicable
3. Projects shall apply the principles of nondiscrimination, equal treatment, and equal pay for equal work, specifically			
Where appropriate for the implementation of a Project, paid, volunteer work or community contributions will be organised to provide the conditions for equitable participation of men and women in the identified tasks/activities	Yes, the project involves the installation of Nazava ceramic water filters. Trained labours are used for the same. Local people are engaged for the same. No discrimination either in gender or any other form is followed to engage local people.	No	Not Applicable
Introduce conditions that ensure the participation of women or men in Project activities and benefits based on pregnancy,	This is not applicable. The project does not have any scope of men and women participation where project developer has to ensure condition of benefits related to	No	Not Applicable

Safegaurding principle	Description of relevance to the project	Assessment (Yes/Potentially/No)	Mitigation Measures
maternity/paternity leave, or marital status	pregnancy, maternity/paternity leave, or marital status .		
Ensure that these conditions do not limit the access of women or men, as the case may be, to Project participation and benefits	Not applicable. Project happens at individual households where household people operate the biogas system as per their requirements.	No	Not Applicable
4. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks	The project does not has any scope to apply gender strategy as such. Although the project positively abides to the various articles mentioned in relationto gender equality in the constitution of Ethiopia.	No	Not Applicable
Principle 3 - Community Health, Safety and Working Conditions			
(a) Requires Projects to anticipate and avoid adverse impacts on the health and safety of affected communities during the Project's life cycle from both routine and non-routine circumstances	The project leads to safe working condition and improvement in health as it will replaces conventional practice of boiling water using fuelwood to purify it with ceramic water filters which have zero emission while in operation.	No	Not Applicable
b) Requires Projects to provide workers with safe and healthy working conditions and to prevent accidents, injuries, and disease.	The project leads to safe working condition and improvement in health as it will replace the conventional practice of boiling water using fuelwood to purify it with ceramic water filters which have zero emission while in operation. Further, periodic maintenance by implementing agency ensure prevention of any unsafe working condition.	No	Not Applicable
Principle 4 - Cultural Heritage, Indigenous Peoples, Displacement and Resettlement			
Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, or practices)?	The project area covers households which does not have any structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture. Hence, not applicable.	No	Not Applicable
Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	The project area covers households which does not require relocation of peoples; hence not applicable.	No	Not Applicable

Safegaurding principle	Description of relevance to the project	Assessment (Yes/Potentially/No)	Mitigation Measures
Does the Project require any change to land tenure arrangements and/or other rights?	No, the project does not require any change to land tenure arrangements and/or other rights?	No	Not Applicable
For Projects involving land-use tenure, are there any uncertainties with regards land tenure, access rights, usage rights or land ownership?	No, the project does not invove any land use which will have issues related to land tenure or access right.	No	Not Applicable
Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	No, the project involves replacing the conventional practice of boiling water using fuelwood to purify it with ceramic water filters which have zero emission while in operation. Therefore, it does not involve any influence towards indigenous people.	No	Not Applicable
Principle 5 – Corruption			
The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	The project benefits households with clean and safe water purification technology. Therere is no corruption provision in the project activity.	No	Not Applicable
Principle 6 - Economic Impacts			
Labour Rights: The Project Developer shall ensure that there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with obligations under international law, and consistency with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions. Where these are contradictory and a breach of one or other cannot be avoided, then guidance shall be sought from Gold Standard	The project does not require labour force for implementation of the project. Trained technicians are involved in construction and operation and maintence of plants. Therefore, no forced labour is involved in the project. No child labour is involved.	No	Not Applicable
ENVIRONMENTAL & ECOLOGICAL SAFEGUARDING PRINCIPLES			
Principle 1 - Climate and Energy			
Emissions: Will the Project increase greenhouse gas emissions	No, the project will replace the conventional practice of boiling water using fuelwood to purify	No	Not Applicable

Safegaurding principle	Description of relevance to the project	Assessment (Yes/Potentially/No)	Mitigation Measures
over the Baseline Scenario?	water with ceramic water filters which emit zero GHGs while in operation. Hence, it will reduce greenhouse gas emissions over the Baseline Scenario.		
Energy Supply: Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No, the project involdes the usage of ceramic water filters which do not require any energy.	No	Not Applicable
Principle 2 – Water			
Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity	The project will not effect the natural or pre-existing pattern of watercourses, ground-water. Infact, it will further preserve these resources as the project deals with water purification.	No	Not Applicable
Erosion and/or Water Body Instability: Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? If 'Yes' or 'Potentially' proceed to question 2.	The project only deals with purification of water using ceramic eater filters and there is no question of Erosion and/or Water Body Instability.	No	Not Applicable
Principle 3 – Environment, ecology and land use			
Landscape Modification and Soil			
Does the Project involve the use of land and soil for production of crops or other products?	No, the project does not involve any crop production.	No	Not Applicable
Vulnerability to Natural Disaster			
Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No, the project activity takes place at individual households. There is no activity which can affect adversely the natural system to cause earthquake, landslides, erosion, flooding, draught or other extreme climatic conditions.	No	Not Applicable

Safegaurding principle	Description of relevance to the project	Assessment (Yes/Potentially/No)	Mitigation Measures
Genetic Resources			
Could the Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development)?	Not applicable. The project does not involve any crop production or cultivation.	No	Not Applicable
Release of pollutants			
Could the Project potentially result in the release of pollutants to the environment?	No, the project does not release any pollutants to the environment.	No	Not Applicable
Hazardous and Non-hazardous Waste			
Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	Not applicable. The project does not invlve any production process.	No	Not Applicable
Pesticides & Fertilisers			
Will the Project involve the application of pesticides and/or fertilisers?	Not applicable. The project does not involve any crop production or cultivation.	No	Not Applicable
Harvesting of Forests			
Will the Project involve the harvesting of forests?	Not applicable. The project happens at individual households.	No	Not Applicable
Food: Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	Not applicable	No	Not Applicable
Animal husbandry: Will the Project involve animal husbandry?	No	No	Not Applicable
High Conservation Value Areas and Critical Habitats			
Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	Not Applicable	No	Not Applicable

Safegaurding principle	Description of relevance to the project	Assessment (Yes/Potentially/No)	Mitigation Measures
Endangered Species: Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)?	Not Applicable	No	Not Applicable

SECTION E. Local stakeholder consultation

E.1. Solicitation of comments from stakeholders

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Will include later

E.2. Summary of comments received

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Will include later

E.3. Report on consideration of comments received

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Will Include later

Appendix 1. Contact information of project participants

Organization name	Nazava Trading PLC
Registration number with relevant authority	EIC-IP/26319/11
Street/P.O. Box	
Building	
City	Bahir Dar
State/Region	Amhara
Postcode	
Country	Ethiopia
Telephone	+251 91 321 6735
Fax	
E-mail	joep@resiliencebv.com
Website	
Contact person	Joep van den Broek
Title	General Manager
Salutation	
Last name	Broek
Middle name	van den
First name	Joep
Department	
Mobile	
Direct fax	
Direct tel.	
Personal e-mail	

Organization name	Pure Water Ltd
Registration number with relevant authority	
Street/P.O. Box	Technoparkstrasse 1
Building	
City	Zurich
State/Region	Switzerland
Postcode	
Country	Switzerland
Telephone	
Fax	
E-mail	registration@southpole.com
Website	
Contact person	Renat Heuberger
Title	CEO
Salutation	Mr.
Last name	Heuberger
Middle name	
First name	Renat
Department	
Mobile	
Direct fax	

Direct tel.	
Personal e-mail	

Appendix 2. Summary of post registration design changes

Not Applicable