



GROUPED PROJECTS FOR SAFE DRINKING WATER FOR SCHOOLS IN VIET NAM

(SIPCO)

Project title	Grouped Projects for Safe Drinking Water for Schools in Viet Nam
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Original date of issue	19-July-2025
Most recent date of issue	15-September-2025
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VCS Standard Version	VCS Standard version 4.7
Prepared by	Sustainability Investment Promotion and Development Joint Stock Company (SIPCO)

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The proposed grouped projects aim at improving the quality of drinking water through dissemination of zero greenhouse gas emitting safe drinking water purifier (SDWP) to provide safe drinking water for schools and institutions throughout Viet Nam. In this grouped projects, the schools include kindergartens, nurseries, primary schools, secondary schools, high schools. Institutions would cover community home, home for disabled, orphanage, nursing home, mental home. For this reason, this proposed project activity will avoid the use of thermal energy and/or low energy and associated emissions.

The grouped project activity will minimize the use of non-renewable biomass utilized for boiling water as a means purification to achieve safe drinking water quality in the absence of this project activity. This directly leads to reduced greenhouse gas emissions. Furthermore, it can be helpful to user's health.

The project activity targets schools/institutions with no previous safe drinking water access. The geographical boundary is in Viet Nam. Water purifiers are distributed free of cost to schools and institutions. Sustainability Investment Promotion and Development Joint Stock Company (SIPCO) shall finance the implementation of the project in full. SIPCO has also implemented the other projects in Viet Nam such as VCS 2923, 2557, 3836, 3835, 3244, 2548, 2581, 5122. Except for VCS 5122, the remaining projects do not have the same target population because those projects aim to distribute cookstove or water purifier to households in Viet Nam. Also, there is no GHG project developed by the other project proponent (PP) with similar project activities as VCS 3599 and 5122 which are providing clean drinking water to schools and institutions in Vietnam. These projects have been all distributed by 3 distribution partners ((Ministry of Education and Training (MEOT), Viet Nam Women Union (WU), Vietnamese Red Cross (VRC)). For VCS 5122, to determine the initial list of beneficiaries for this project, the village and commune level distribution partners conducted surveys as per the project criteria. One of the primary criteria for selecting beneficiaries is that these schools and institutions have not been involved in VCS 3599 to avoid double counting and ensure that project VCS 5122 does not overlap with project VCS 3599.

The scenario existing prior to the implementation of the project is the actual baseline scenario which is equal to the existing common practice by the schools/institutions i.e. in absence of the project activity the equivalent amount of thermal energy generated using firewood fires to meet the boiling water demand.

The first water purifier in the first project activity instance of this grouped project was distributed on 04-July-2022 in Thua Thien Hue province. The first, second and third monitoring period are from 04-July-2022 to 31-December-2023, 01-January-2024 to 30-June-2024 and 01-July-2024 to 31-December-2024, respectively. This forth monitoring period lasts from 01-January-2025 to

30-June-2025. Until the end of this monitoring period, a total of 315,000 water purifiers was installed and there are 32 project activity instances under the grouped project¹. The detail of implementation schedule is illustrated as the table below:

No	Month of installation	Number of water purifier
1	July-2022	20
2	January-2023	12,341
3	February-2023	11,170
4	March-2023	49,719
5	April-2023	78,670
6	May-2023	86,867
7	June-2023	60,324
8	July-2023	889
9	July-2024	6,402
10	August-2024	8,598
Total	10 months	315,000 WPs

Total GHG emission reductions generated in the fourth monitoring from 01-January-2025 to 30-June-2025 is 154,125 tCO₂.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	25-September-2023 (The approval date)	VCS	Carbon Check (India) Private Limited	N/A
Verification	From 04-July-2022 to 31-December-2023	VCS	EcoLance Private Limited	1.50 year
	From 01-January-2024 to 30-June-2024	VCS	EcoLance Private Limited	0.5 year
	From 01-July-2024 to 31-December-2024	VCS	EcoLance Private Limited	0.5 year
	From 01-January-2025 to 30-June-2025	VCS	EcoLance Private Limited	0.5 year

¹ The details of 32 project activity instances are mentioned in the section 3.1.

1.3 Sectoral Scope and Project Type

Sectoral scope ²	03 – Energy Demand
Project activity type	Type III - Other projects activities not included in Type I or Type II

1.4 Project Proponent

Organization name	Sustainability Investment Promotion and Development Joint Stock Company
Contact person	Ms. Nguyen Thi Hong Hanh
Title	Director
Address	6 th Floor, Hop Long Building, No.1, 59 Lang Ha Street, Ba Dinh District, Hanoi, Viet Nam
Telephone	+84 243 519 0955
Email	info@carbonvietnam.com

1.5 Other Entities Involved in the Project

Not applicable. At present, SIPCO is the sole entity involved and no other entities involved in the grouped project.

1.6 Project Start Date

Project start date	04-July-2022
Justification	As per section 3.8 of the VCS Standard version 4.7, the project start date of a non-AFOLU project is the date on which the project began generating GHG emission reductions or removals. The project activity is a non-AFOLU project and the first water purifier under the grouped project has been operating since 04-July-2022. Hence, the grouped project start date is as 04-July-2022.

² Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes: <https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes>

1.7 Project Crediting Period

Crediting period	☐ Seven years, twice renewable ☒ Ten years, fixed ☐ Other (state the selected crediting period and justify how it conforms with the VCS Program requirements)
Start and end date of first or fixed crediting period	04-July-2022 to 03-July-2032

1.8 Project Location

The grouped project is hosted by Viet Nam. The grouped project is to take place in schools/institutions, is scattered throughout the country Viet Nam between: Latitudes: 11.416700 N; Longitudes: 105.125900 E. The details of coordinates are being submitted separately in KML file.

The project activity instance 1 was distributed in Thua Thien Hue province in Viet Nam with the following geographic coordinates: 16.463713 N; 107.590866 E.

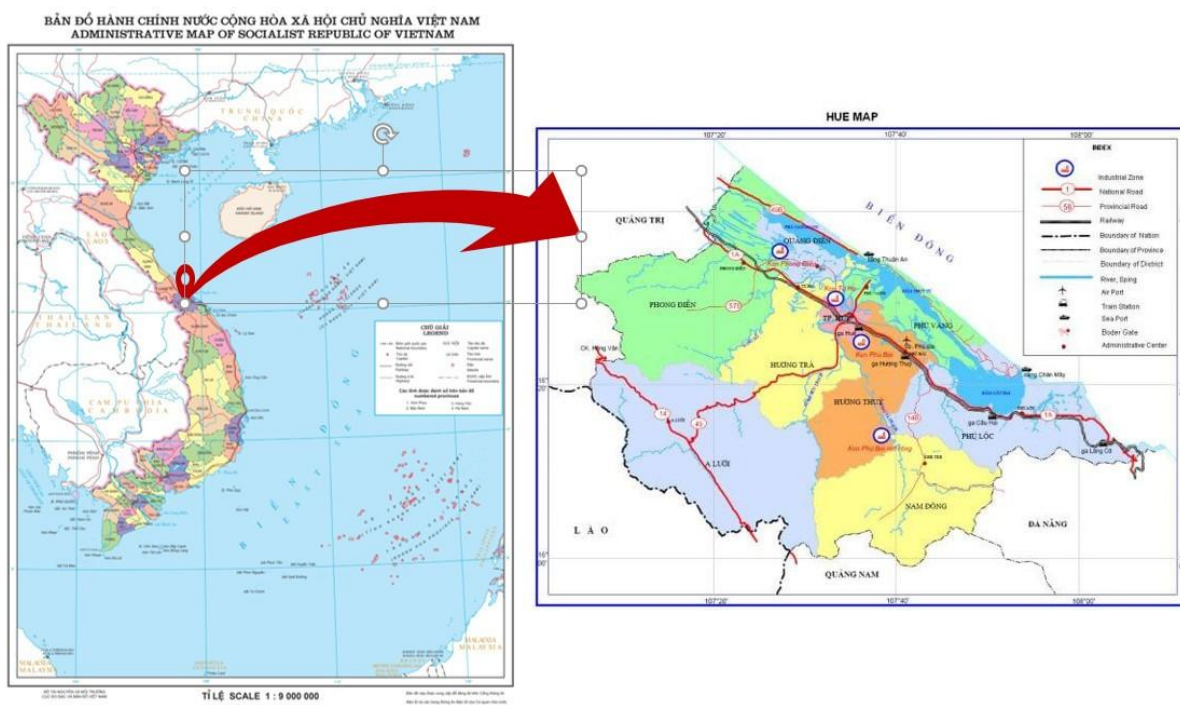


Figure 1: Map of Viet Nam and Thua Thien Hue province

32 project activity instances (PAI) during this monitoring were implemented at 35 provinces with the longitude and latitude coordinates the below:

PAI	Province	Coordinate
PA 001	Thua Thien Hue	16.463713 N; 107.590866 E https://www.google.com/maps/place/Th%E1%BB%Aba+Thi%C3%AAAn+Hu%E1%BA%BF,+Vi%E1%BB%87t+Nam/@16.3677986,106.9458518,9z/data=!3m1!4b1!4m6!3m5!1s0x31419c87726490f7:0xab1c0fc7cb84b5!8m2!3d16.467397!4d107.5905326!16zL20vMDYyNG5j?hl=vi-VN&entry=ttu
PA 002	Quang Nam	11.7386 N; 108.2326 E https://www.google.com/maps/place/Qu%E1%BA%A3ng+Na.Vi%E1%BB%87t+Nam/@11.7386511,108.2326531,9z/data=!m6!3m5!1s0x31420dd4e1353a7b:0xe49cabb166747679!82!3d15.5393538!4d108.019102!16zL20vMDRsZI9n?hl=viVN&entry=ttu
PA 003	Gia Lai	13.750 N; 108.250 E https://www.google.com/maps/place/Gia+Lai,+Vi%E1%BB%8t+Nam/@13.7987389,106.8425643,8z/data=!3m1!4b1!4m6!3m5!1s0x316c1f82022f81a3:0x8c52b5f68143b50d!8m2!3d13.8078943!4d108.109375!16zL20vMDdtMTFs?hl=viVN&entry=ttu
PA 004	Kon Tum	14.35451 N; 108.00759 E https://www.google.com/maps/place/Kon+Tum,+Vi%E1%BB%87t+Nam/@16.7350177,106.2931693,9z/data=!4m6!3m5!1s0x316be72358aad1df:0x619b11aacc88a54!8m2!3d14.661167!4d107.83885!16zL20vMDU3cTAz?hl=vi-VN&entry=ttu
PA 005	Lao Cai	22.48556 N; 103.97066 E https://www.google.com/maps/place/L%C3%A0o+Cai,+Vi%E1%BB%87t+Nam/@22.2457251,101.8332886,8z/data=!4m6!3m5!1s0x36cd3b8cbf4c0e07:0x21a2b6b9fb469068!8m2!3d22.3380865!4d104.1487055!16zL20vMDI0czE3?hl=vi-VN&entry=ttu
PA 006	Dien Bien	21.38602 N; 103.02301 E https://www.google.com/maps/place/%C4%90i%E1%BB%87n+Bi%C3%AAAn,+Vi%E1%BB%87t+Nam/@21.7174225,101.5517655,8z/data=!3m1!4b1!4m6!3m5!1s0x312d1f0ee0d1fbf3:0x48718c8562df0ef4!8m2!3d21.8042309!4d103.1076525!16zL20vMDJnajJr?hl=vi-VN&entry=ttu

PA 007	Quang Binh	17.5462658 N, 106.2576229 E https://www.google.com/maps/place/Qu%E1%BA%A3ng+B%C3%ACnh,+Vi%E1%BB%87t+Nam/@22.360025,103.4199715,9z/data=!4m6!3m5!1s0x3138b0f638296f2d:0x901f872e6223598f!8m2!3d17.6102715!4d106.3487474!16zL20vMDdsX3h2?hl=vi-VN&entry=ttu
PA 008	Quang Tri	16.7469 N; 107.194 E https://www.google.com/maps/place/Qu%E1%BA%A3ng+Tr%E1%BB%8B,+Vi%E1%BB%87t+Nam/@16.7350177,106.2931693,9z/data=!3m1!4b1!4m6!3m5!1s0x3140e4abaa1df129:0xe471fae020d54d28!8m2!3d16.7943472!4d106.963409!16zL20vMDVyd3Jq?hl=vi-VN&entry=ttu
PA 009	Dak Lak	13.2017 N; 108.4056 E https://www.google.com/maps/place/%C4%90%E1%BA%AFk+L%E1%BA%AFk,+Vi%E1%BB%87t+Nam/@13.2017527,108.4056901,9z/data=!4m6!3m5!1s0x3171f7daf7307157:0x8ef97694d9883315!8m2!3d12.7100116!4d108.2377519!16zL20vMDUzZDU3?hl=vi-VN&entry=ttu
PA 010	Ninh Thuan	11.0140 N; 106.8848 E https://www.google.com/maps/place/Ninh+Thu%E1%BA%ADn,+Vi%E1%BB%87t+Nam/@11.0140808,106.8848872,8z/data=!4m6!3m5!1s0x3170956e17fa09af:0xf8f5929e768e9e45!8m2!3d11.6738767!4d108.8629572!16zL20vMDdtMDFm?hl=vi-VN&entry=ttu
PA 011	Hau Giang	9.783 N; 105.467 E https://www.google.com/maps/place/H%E1%BA%ADu+Giang,+Vi%E1%BB%87t+Nam/@9.7884102,105.2831359,10z/data=!3m1!4b1!4m6!3m5!1s0x31a0f291eda269b3:0x79a372e92efed9e5!8m2!3d9.757898!4d105.6412527!16zL20vMDR4MX Y1?hl=vi-VN&entry=ttu
PA 012	Vinh Long	10.0861 N; 106.0169 E https://www.google.com/maps/place/V%C4%A9nh+Long,+Vi%E1%BB%87t+Nam/@10.1070814,105.6572219,10z/data=!3m1!4b1!4m6!3m5!1s0x310a9bbc21448e13:0x52c66a3e695c75a5!8m2!3d10.0861281!4d106.0169971!16zL20vMDZyem1z?hl=vi-VN&entry=ttu

PA 013	Ha Giang	22.83333 N; 104.9833294 E https://www.google.com/maps/place/H%C3%A0+Giang,+Vi%E1%BB%87t+Nam/@22.7762515,103.6351019,8z/data=!3m1!4b1!4m6!3m5!1s0x36cc79caead371b1:0x834878b09acb80a8!8m2!3d22.7662056!4d104.9388853!16zL20vMDI0bjdj?hl=vi-VN&entry=ttu
PA 014	Lang Son	21.84199 N; 106.75466 E https://www.google.com/maps/place/L%E1%BA%A1ng+S%C6%A1n,+Vi%E1%BB%87t+Nam/@21.8903596,105.4099851,8z/data=!3m1!4b1!4m6!3m5!1s0x36b5543eb745256f:0xfa3d34da85826e5a!8m2!3d21.8563705!4d106.6291304!16zL20vMDZuMnhx?hl=vi-VN&entry=ttu
PA 015	Long An	10.6851 N; 106.2051 E https://www.google.com/maps/place/Long+An,+Vi%E1%BB%87t+Nam/@10.7104628,104.8085588,8z/data=!3m1!4b1!4m6!3m5!1s0x310ab63c952a4879:0xdbeaed99cfc54123!8m2!3d10.695572!4d106.2431205!16zL20vMDdtMWJy?hl=vi-VN&entry=ttu
PA 016	Dong Thap	10.667 N; 105.667 E https://www.google.com/maps/place/%C4%90%E1%BB%93ng+Th%C3%A1p,+Vi%E1%BB%87t+Nam/@10.5537615,104.9064259,9z/data=!3m1!4b1!4m6!3m5!1s0x310a65b3d50c121f:0xdca0c95ead346e40!8m2!3d10.4937989!4d105.6881788!16zL20vMDdtMTE3?hl=vi-VN&entry=ttu
PA 017	Ben Tre	10.1081 N; 106.4405 E https://www.google.com/maps/place/B%E1%BA%BFn+Tre,+Vi%E1%BB%87t+Nam/@10.0644378,105.7633144,9z/data=!3m1!4b1!4m6!3m5!1s0x310aa85c0cbca79f:0xaa3c54e567317543!8m2!3d10.1081553!4d106.4405872!16zL20vMDNxdDYz?hl=vi-VN&entry=ttu
PA 018	Can Tho	10.0452 N; 105.7469 E https://www.google.com/maps/place/C%E1%BA%A7n+Th%C6%A1,+Ninh+Ki%E1%BB%81u,+C%E1%BA%A7n+Th%C6%A1,+Vi%E1%BB%87t+Nam/@10.0341768,105.6753407,12z/data=!3m1!4b1!4m6!3m5!1s0x31a0629f6de3edb7:0x527f09dbfb20b659!8m2!3d10.0451618!4d105.7468535!16zL20vMDNmY20z?hl=vi-VN&entry=ttu

PA 019	An Giang	10.500 N; 105.167 E https://www.google.com/maps/place/An+Giang,+Vi%E1%BB%87t+Nam/@10.5719243,104.5173664,9z/data=!3m1!4b1!4m6!3m5!1s0x310a198a4ee22a8d:0xdc1cb02c52c088ba!8m2!3d10.5215836!4d105.1258955!16zL20vMDNxNXo5?hl=vi-VN&entry=ttu
PA 020	Soc Trang	9.6025 N; 105.9739 E https://www.google.com/maps/place/Tp.+S%C3%B3c+Tr%C4%83ng,+S%C3%B3c+Tr%C4%83ng,+Vi%E1%BB%87t+Nam/@9.6096965,105.8955822,12z/data=!3m1!4b1!4m6!3m5!1s0x31a04dfdccbd1d57:0xfa68286965e71218!8m2!3d9.602521!4d105.9739049!16zL20vMDdtMjJy?hl=vi-VN&entry=ttu
PA 021	Lai Chau	22.3991 N; 103.4391 E https://www.google.com/maps/place/Lai+Ch%C3%A2u,+Vi%E1%BB%87t+Nam/@22.2457251,101.8332886,8z/data=!3m1!4b1!4m6!3m5!1s0x312d322c39d1b451:0xe229916091483c2e!8m2!3d22.3686613!4d103.3119085!16zL20vMDJ3aDIs?hl=vi-VN&entry=ttu
PA 022	Son La	21.10222 N; 103.7289 E https://www.google.com/maps/place/S%C6%A1n+La,+Vi%E1%BB%87t+Nam/@21.2992716,102.7991795,8z/data=!3m1!4b1!4m6!3m5!1s0x31325990dc3d1dd5:0x582d645a6a0f387b!8m2!3d21.1022284!4d103.7289167!16zL20vMDdtMWpj?hl=vi-VN&entry=ttu
PA 023	Nam Dinh	20.43389 N 106.17729 E https://www.google.com/maps/place/Nam+%C4%90%E1%BB%8Bnh,+Vi%E1%BB%87t+Nam/@20.2056487,105.5968329,9z/data=!3m1!4b1!4m6!3m5!1s0x31360c2151521bdf:0xc8eba2bffe25df62!8m2!3d20.2791804!4d106.2051484!16zL20vMDdtMWRq?hl=vi-VN&entry=ttu
PA 024	Vinh Phuc	21.311356 N; 105.6032944 E https://www.google.com/maps/place/V%C4%A9nh+Ph%C3%BAc,+Vi%E1%BB%87t+Nam/@21.3633228,105.228601,10z/data=!3m1!4b1!4m6!3m5!1s0x3134e54d82ea2dbb:0xc0d08e3fe11b105f!8m2!3d21.3608805!4d105.5474373!16zL20vMDdtMWtk?hl=vi-VN&entry=ttu

PA 025	Phu Yen	13.167 N; 109.167 E https://www.google.com/maps/place/Ph%C3%BA+Y%C3%AAn,+Vi%E1%BB%87t+Nam/@13.2017527,108.4056901,9z/data=!3m1!4b1!4m6!3m5!1s0x316f70bf634caeff:0xfe6ebe1c1c171a80!8m2!3d13.0881861!4d109.0928764!16zL20vMDdtMWhu?hl=vi-VN&entry=ttu
PA 026	Lam Dong	11.6937725 N, 108.152754 E https://www.google.com/maps/place/L%C3%A2m+%C4%90%E1%BB%93ng,+Vi%E1%BB%87t+Nam/@11.7649365,106.678287,8z/data=!3m1!4b1!4m6!3m5!1s0x3171132659f3db7d:0xb5ad2df5f54f56c!8m2!3d11.5752791!4d108.1428669!16zL20vMDdianox?hl=vi-VN&entry=ttu
PA 027	Ha Tinh	18.34282 N; 105.90569 E https://www.google.com/maps/place/H%C3%A0+T%C4%A9nh,+Vi%E1%BB%87t+Nam/@18.3583526,104.4847737,8z/data=!3m1!4b1!4m6!3m5!1s0x313828a1eee9c3c7:0x1ac77b26b87d106b!8m2!3d18.2943776!4d105.6745247!16zL20vMDdmc3N5?hl=vi-VN&entry=ttu
PA 028	Tuyen Quang	21.82356 N; 105.21424 E https://www.google.com/maps/place/Tuy%C3%AAn+Quang,+Vi%E1%BB%87t+Nam/@22.0971437,104.5636352,9z/data=!3m1!4b1!4m6!3m5!1s0x3134adfb5491ee1:0x7f5401719284787f!8m2!3d22.1726708!4d105.3131185!16zL20vMDdjZHMx?hl=vi-VN&entry=ttu
PA 029	Bac Kan	22.233 N; 105.566 E https://www.google.com/maps/place/B%E1%BA%AFc+K%E1%BA%A1n,+Vi%E1%BB%87t+Nam/@22.2723168,105.1793676,9z/data=!3m1!4b1!4m6!3m5!1s0x36cae0484a85eb4d:0xbf0390482b496ed0!8m2!3d22.3032923!4d105.876004!16zL20vMDNxZ21n?hl=vi-VN&entry=ttu
PA 030	Phu Tho	21.333 N; 105.167 E https://www.google.com/maps/place/Tx.+Ph%C3%BA+Th%E1%BB%8D,+Ph%C3%BA+Th%E1%BB%8D,+Vi%E1%BB%87t+Nam/@21.4156159,105.1472231,12z/data=!3m1!4b1!4m6!3m5!1s0x31349ac6c4ecd49b:0xb2a8129b203912ca!8m2!3d21.4219791!4d105.2296992!16s%2Fm%2F05pdfqtq?hl=vi-VN&entry=ttu

PA 031	Cao Bang	22.6692 N; 106.2605 E https://www.google.com/maps/place/Cao+B%E1%BA%B1ng,+Vi%E1%BB%87t+Nam/@22.7333156,104.7350403,8z/data=!3m1!4b1!4m6!3m5!1s0x36ca5cb6615867e7:0x653772f437765458!8m2!3d22.635689!4d106.2522143!16zL20vMDI0cGZo?hl=vi-VN&entry=ttu
	Nghe An	18.6796 N; 105.6813 E https://www.google.com/maps/place/Ngh%E1%BB%87+An,+Vi%E1%BB%87t+Nam/@19.2698741,103.5240546,8z/data=!3m1!4b1!4m6!3m5!1s0x3139ce640b5a1dad:0x5c61bf7cd719a519!8m2!3d19.2342489!4d104.9200365!16zL20vMGczdnR2?hl=vi-VN&entry=ttu
	Yen Bai	21.7168 N; 104.8986 E https://www.google.com/maps/place/Y%C3%AAn+B%C3%A1i,+Vi%E1%BB%87t+Nam/@22.0971437,104.5636352,9z/data=!4m6!3m5!1s0x313339f512702b19:0x500ff9f460ae2b5!8m2!3d21.6837923!4d104.4551361!16zL20vMDdtMWty?hl=vi-VN&entry=ttu
PA 032	Kien Giang	9.8249 N; 105.1259 E https://www.google.com/maps/place/Ki%C3%AAn+Giang,+Vi%E1%BB%87t+Nam/@9.8920305,101.856563,7z/data=!3m1!4b1!4m6!3m5!1s0x3109da1c921a75cd:0x87e74126335ff37a!8m2!3d9.8249587!4d105.1258955!16zL20vMDJfcGZn?hl=vi-VN&entry=ttu&g_ep=EgoyMDI1MDIxMC4wKXMDSoJLDEwMjExMjM0SAFQAw%3D%3D
	Thai Nguyen	21.5961 N; 105.8322 E https://www.google.com/maps/place/Th%C3%A1i+Nguy%C3%AAn,+Vi%E1%BB%87t+Nam/@21.6865789,105.1983193,9z/data=!3m1!4b1!4m6!3m5!1s0x3134c41872a07a77:0x57a9371069ef4f5b!8m2!3d21.5613771!4d105.876004!16zL20vMDZnX3B4?hl=vi-VN&entry=ttu&g_ep=EgoyMDI1MDIxMC4wKXMDSoJLDEwMjExMjM0SAFQAw%3D%3D

1.9 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	AMS-III.AV	Low greenhouse gas emitting safe drinking water production systems	08.0
Methodology	VMR0006	Energy Efficiency and Fuel Switch Measures in Thermal Applications	1.2
Methodology	AMS-I.E	Switch from non-renewable biomass for thermal applications by the user	13.0
Tool	30	Calculation of the fraction of non-renewable biomass	04.0
Tool	21	Demonstration of Additionality of small-scale project activities	13.1
Tool	01	Tool for the demonstration and assessment of additionality	07.0
Standard		Standard for Sampling and Surveys for CDM Project. Activities and Programme of Activities	09.0
Guideline		Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities	04.0

1.10 Double Counting and Participation under Other GHG Programs

1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes ☒ No

1.10.2 Registration in Other GHG Programs

Was the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the *VCS Program Definitions* for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the *VCS Program Definitions* for definition of GHG-related environmental credit system.

☐ Yes ☒ No

1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☒ Yes ☐ No

If yes:

Is the project proponent(s) or authorized representative a buyer or seller of the product(s) (goods or services) that are part of a supply chain?

☒ Yes ☐ No

If yes:

Has the project proponent(s) or authorized representative posted a public statement on their website saying, “Carbon credits may be issued through the Verified Carbon Standard project, title “Grouped Projects for Safe Drinking Water for Schools in Viet Nam” (VCS project ID 3599) for the greenhouse gas emission reductions or removals associated with Ecozen-25 water purifiers, manufactured by Viet Charcoal Production Company Limited in Di Su commune, My Hao District, Hung Yen province, Viet Nam, distributed by Sustainability Investment Promotion and Development Joint Stock Company (SIPCO) whose emissions footprint is changed by the project activities”

☒ Yes ☐ No

See evidence in Appendix 2 in the document.

1.12 Sustainable Development Contributions

The project activity helps in achieving following co-benefits, which contributes in sustainable development in host country.

A) Environment sustainability:

- The project helps significantly reduce greenhouse gas emissions over its lifetime.
- The project helps to reduce the use of non-renewable biomass from forests, assisting the maintenance of existing forest stock, protecting natural forest eco-systems and wildlife habitats.
- The protection of standing forests ensures the maintenance of watersheds that regulate water table levels and prevent flash flooding.

B) Economic-Socio benefits:

- The dissemination of water purifier requires a large number of people to be involved in their manufacturing, assembling, transportation, distribution, maintenance. Regardless of where the water purifier is manufactured, the project activity creates employment right along distribution and more modern level of mass production.
- Children spend a large part of their time at school. The project provides access to safe drinking water, which ensures a good environment for them to study in. In addition, media activities aimed at addressing the benefits of clean energy build the perception, motivation and behaviour for them to transfer that knowledge to their households, hence changing behaviour towards eco-friendlier.
- The dissemination of water purifier and their use by end-users positively support the sustainable development of Viet Nam, e.g., through health benefits. This project activity targets the schools/institutions of Viet Nam that use firewood for boiling drinking water purposes. Using drinking water directly from the water purifier has a positive effect institutional energy demand by drastically reducing the quantity of fuel needed to boil water. This reduction does not only reduce deforestation in the host country, but also directly reduce cost for schools and institutions, the time women and children spend collecting wood.
- Polluted indoor air due to open and uncontrolled combustion is a huge health concern. Using drinking water directly from water purifier emits less greenhouse gases solves this problem by reducing the combustion of wood/fossil fuels.
- The project alleviates the work burden for school workers (mostly women) as they have to spend less time to collect firewood and boil water. The use of the water purifier offers a viable pathway for women empowerment. The knowledge transfer provided from those using the water purifier at the schools/institutions, and the children witnessing and benefiting from it, assist in driving demand, speeding up the adoption and widespread use drinking water from the device of this project without boiling within their communities. Addressing gender issues in clean energy concerns recognises that women are key players in the role played in the health, environmental, economic and climate

change arena. Closing the gender gap assists towards an equitable and robust effort towards sustainable development in Viet Nam.

C) Technological benefit

- The water purifiers are beneficial to the environment as they contribute towards reducing CO₂ emissions when compared to traditional cooking technologies to boil drinking water, such as three-stone fires.

The proposed project delivers a long term, secure and simple contribution to sustainable development in Viet Nam that would not exist without carbon finance.

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1)	3.9	Project specific indicator: Number of schools and institutions have reported a decrease in smoke indoor by avoiding boiling drinking water.	Implement activities to increase	During the sampling monitoring, PP confirmed that the operation rate of day-boarding school, boarding school and institution are 97.87%³, 100% and 100%, respectively. Feedback from sampled end-users indicated that these water purifiers have helped reduce indoor smoke by eliminating the need to boil water. Consequently, the PP confirmed that the project has contributed to SDG 3.9, with 6,503 schools and institutions⁴ successfully reducing indoor smoke by avoiding the boiling of drinking water during the current monitoring period from 01-January-2025 to 30-June-2025.	The grouped project declines to reduction air population thereby in improved health conditions of 6,627 schools and institutions by reduced smoke indoor generated by avoiding the boiling of drinking water during the period from 04-July-2022 to 30-June-2025.

³ During the period monitoring, PP conducted a physical survey for the representative sample which calculated the EB 86, "Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities", version 04.0. Among 55 representative samples for day-boarding schools, boarding schools and institutions distributed water purifiers, one sample distributed in day-boarding school was reported to stop using the project water purifiers. The remaining samples are using the project water purifier and all conditions of use are still good. Further information is available in section 4.2 of this document.

⁴ The grouped project had already been distributed to 5,800 day-boarding schools; 804 boarding schools and 23 institutions. Based on the result of the representative during this monitoring period as stated above, total of schools and institutions calculated as $97.87\% \times 5,800 + 100\% \times 804 + 100\% \times 23 = 6,503$ (rounded down)

2)	4.a	Project specific indicator - Number of schools offering basic services, by type of service ⁵ .	Implement activities to increase	Feedback from sampled end-users indicated that these water purifiers have helped to provide safe drinking water for people in schools and institutions which they did not have access to before participating in the grouped project. Consequently, the PP confirmed that the project has contributed to SDG 4.a, with 6,503 schools and institutions ⁶ offer basic service during the current monitoring period from 01-January-2025 to 30-June-2025.	The project activity helps 6,627 schools and institutions offer base services service such as providing safe drinking water to people within these schools and institutions during the period from 04-July-2022 to 30-June-2025.
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⁵ SDG 4 aims to ensure “inclusive and equitable quality education and promote lifelong learning opportunities for all.” Target 4.a specifically calls for building and upgrading education facilities that provide “safe, non-violent, inclusive and effective learning environments for all.” Access to clean water is a fundamental aspect of a safe and healthy learning environment”. Clean drinking water reduces the risk of waterborne diseases, which are a major cause of absenteeism among students. Healthier students can attend school more regularly and concentrate better, leading to improved learning outcomes. Hence, the grouped project activity directly supports the quality education aspect of SDG 4.

3)	6.1	Project specific indicator – Number of population using safely managed drinking water service	Implement activities to increase	Feedback from sampled end-users indicated that these water purifiers have provided them with safe drinking water. Consequently, the PP confirmed that the project has contributed to SDG 6.1, with 6,503 schools and institutions ⁴ with total people of 2,045,361 successfully give access to safe drinking water by the form of clean water technology during the current monitoring period from 01-January-2025 to 30-June-2025.	The project activity aims to give access to safe drinking water by the form of clean water technology in schools/institutions with total people of 2,123,042 during the period from 04-July-2022 to 30-June-2025.
4)	8.3	Project specific indicator - Number of informal employment in total employment, by sector and sex	Implemented activities to increase	During this fourth monitoring, there are 09 employments to be created for repairmen and maintenance in the local area.	The project activity created 32 employments during the period from 04-July-2022 to 30-June-2025.
5)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	The grouped project contributes to GHG emission reductions. In this monitoring period, the emission reductions is 154,125 tCO ₂ e.	The grouped project activity has reduced 689,240 tCO ₂ e during the period from 4-July-2022 to 30-June-2025.

6)	15.1	Project specific indicator – Amount of non-renewable biomass saved	Implemented activities to increase	During this monitoring period, the grouped project activity saved 169,838 tonnes of wood fuel ⁷ .	The grouped project contributes an reduction in the removal of about 898,346 tonnes of wood fuel from forests surrounding the communities during the period from 04-July-2022 to 30-June-2025.
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⁷ Contribute an estimated reduction of deforestation of 1.638 tonnes of wood fuel per water purifier per year. Therefore, the number of wood fuel was saved by the grouped project activity is determined by multiplying the number of water purifier and 1.638 and equivalent operational year in the monitoring period. Details are in ER calculation spreadsheet.

1.13 Commercially Sensitive Information

Not applicable. The grouped projects do not have any commercially sensitive information.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Below stakeholders were identified since validation, there are no changes at verification.

Stakeholder Identification

SIPCO identifies the relevant stakeholders via 3 steps who are associated throughout the grouped project lifetime. The steps are illustrated like as:

1. Identification of the advantages and co-advantages from the grouped project activities
2. Identification of stakeholders classes based on the grouped project cycle stages
 - Project ideation
 - Project development
 - Project implementation
 - Project validation
 - Project verification
3. Make the stakeholder category and determine direct/indirect effects based on stakeholder classes.

Creating a logic framework model for the planned project is the first step in classifying activities according to the expected and unintended effects of those actions. In order to identify possible stakeholders at various phases of the project cycle, this step involves identifying benefits and co-benefits matched with the project activity.

Then, based on the stage of the grouped project to determine stakeholder classed associated. The different stages of the grouped project considered for stakeholder identification are:

	• Project ideation: Stakeholders could include academic institutions, self-help organizations, and local officials who can assist the project promoter in gaining traction in the community. • Project development: government authorities, NGOs, community development, investors would be stakeholders at this stage • Project implementation: end-user, distribution partners, water purifier manufactures, would be the stakeholders during implementation stage. • Project validation and verification: surveyors, distribution partners, ... could be some of the main stakeholders during this stage. The final list of stakeholder includes water purifier end-users, distribution partner (Ministry of Education and Training (MEOT), Viet Nam Women Union (WU), Vietnamese Red Cross (VRC)), government authorities, local NGOs and water purifier manufactures.
Legal or customary tenure/access rights	Not applicable. The grouped project only involves distribution water purifier to schools/institutions and it does not involve territories and resources.
Stakeholder diversity and changes over time	Most of stakeholders are identified at period of project activity, from starting, development, implementation and monitoring. There is insignificant change in stakeholders' diversity and therefore have no real impact on their opinion during this monitoring period. 1. The WP end-users: No change was observed in structure & functionality. 2. SIPCO's distribution partner: No change in structure and functionality or any organization values. 3. Government authorities: No change was observed in structure & functionality.

	4. Local NGOs: No change was observed in structure & functionality. 5. WP manufacturers: No change was observed in structure & functionality.
Expected changes in well-being	- Reduce deforestation and forest degradation in Viet Nam through involvement of stakeholders in discontinuing the use of firewood for boiling water - Provide safe drinking water that helps reduce costs for schools, institutions and thus reduce morbidity and mortality in children and adults related to intestinal diseases such as diarrhea - Reducing the heat generated by boiling water with a wood stove also contributes to improving people's health, especially when boiling water in hot weather - Reduce in indoor air pollutants from wood smoke and avoid smoke related health disorders
Location of stakeholders	All the stakeholders are operating and living in the area of the grouped project activity which is in the geographical boundary of Viet Nam country.
Location of resources	The grouped projects only distribute water purifiers to schools/institutions. It does not involve any territories and resources. Hence there have not change in location of territories and resources during the monitoring period.

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	The PP is maintaining ongoing communication with stakeholders through different measures. During the monitoring survey, project has taken the chance to update information to different stakeholders, and collected comments through interviews, surveys, direct observations, group discussions. The PP also conducts and reports the monitoring result from the random sampling to all stakeholders on annually basis. Staff of SIPCO and three distribution partners (Ministry of Education and Training (MEOT), Viet Nam Women Union (WU), Vietnamese Red Cross (VRC)) communicates &
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	collects end-users' comments through visits to schools and institutions at least 1 time per year. Through monitoring survey trip, the field team managers also actively organize and conduct group discussions with different stakeholders. The data from these interactions is compiled into annual reports and updated to the partner & local governmental authority. Through the ongoing communication process, all the implementation information, such as the results of monitoring, the risks, costs and benefits the project and the plan of site visit from verification body has been updated timely to the stakeholders. In addition, the PP also updates workers on relevant law and applicable regulation (if any) and conduct additional educational services as requested by the beneficiary.
Date(s) of stakeholder consultation	• 04-July-2022: Date of the initial stakeholder consultation meeting for grouped project. • 22-May-2025 to 30-May-2025⁸ for schools and 30-June-2025⁹ for institutions Dates of ongoing consultation and sampling survey. • 15-July-2025: Date of record for ongoing communication of stakeholder.
Communication of monitored results	The monitored results have been shared with 3 partners & relevant stakeholders through annual reports dated 15-July-2025 include: 1. The list of schools/institutions have been selected for survey 2. The summarize of the result of SIPCO's representative sample conduct survey.

⁸ In the 2024–2025 academic year, according to the directive of the Ministry of Education and Training (<https://thuvienphapluat.vn/van-ban/Giao-duc/Ouyet-dinh-2045-OD-BGDDT-2024-Khung-ke-hoach-thoi-gian-nam-hoc-2024-2025-giao-duc-pho-thong-619908.aspx>), schools were required to complete their summer break before 31-May-2025. Therefore, the Project Proponent conducted surveys in schools during the final week while they were still in operation within this monitoring period.

⁹ Meanwhile, the water purifiers in institutions continued to be used until the last day of the monitoring period (30/06/2025), the PP therefore conducted the survey for institutions were sampled on the last day of the monitoring period.

Consultation records	All formal consultations are logged in the consultation forms. Forms are saved for record of correspondence
Stakeholder input	During this ongoing communication, all schools/institutions participating in the plan were satisfied with the project's device and their lives have greatly improved since receiving water purifiers. There are no negative comments about the grouped projects and its devices.

2.1.3 Free, Prior, and Informed Consent

Consent	It is entirely up to individual schools/institutions in the participating to decide whether or not they choose to take part in the adoption of water purifier; this is a purely optional activity.
Outcome of FPIC	Before the installation takes place, free, prior, and informed permission is obtained from all parties involved. The grouped project activity involves distribution of water purifiers to schools/institutions and it does not involve any land, relocated people, and physical or economic displacement.

2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome				
In this monitoring period, the grouped project has not received any grievances.	The grievance register is being maintained by the project's distribution partners for submission of input/grievance (if any) related to the project activity. The queries by stakeholders are noted and documented in the grievance register. Also, the contact details of the project proponent and local representative/partner of the project proponent are also provided to the stakeholder's for sharing suggestions/queries either through call/message/email. The information of SIPCO, partners at center level and local representative of partners where can come and register the feedback as following:				
	No	Address	Phone number for call/message	Contact person	Email
	1	SIPCO's office: 6 th Floor, Hop Long Building, No.1, 59 Lang Ha Street, Ba	+84243 5190955	Mr. Pham Ngoc Nhan	info@carbonvietnam.com

	Dinh District, Hanoi, Viet Nam			
2	Viet Nam Women Union	02439719915	Ms. Pham Thi Ha	hatwhoi@yahoo.com
3	Women Union of Ha Tinh Province	0941097868	Bien Thi Thu Huyen	hoiphunu_hatinh@yahoo.com.vn
4	Women Union of Dien Bien Province	0948084112	Dinh Thi Dinh	phongtonghoppndb@gmail.com
5	Women Union of Vinh Phuc Province	0989885411	Nguyen Thi Kieu Anh	vanphongth.pnvp@gmail.com
6	Women Union of Ha Giang Province	0948206620	Tran Thi Phuong Thuy	Ttpthuy.hlhpnth@hagiang.gov.vn
7	Women Union of Son La Province	0917220648	Dinh Thi Thu Ha	Vanphongphunu.sonla@gmail.com
8	Women Union of Nam Dinh Province	0979643718	Nguyen Thi Minh Ha	Ntmha.hlhpnth@namdinh.gov.vn
9	Women Union of Bac Kan Province	0961662558	Nong Thi Le	hoiphunu@backan.gov.vn
10	Women Union of Tuyen Quang Province	0948096278	Chu Thi Mai Huong	vanphongpntq@gmail.com
11	Women Union of Yen Bai Province	0912505839	Tran The Cuong	Trungtamhtpn@gmail.com
12	Women Union of Lai Chau Province	0986679464	Hoang Thi Hien	vppnlc@gmail.com
13	Women Union of Lao Cai Province	0972710808	Dao Phuong Thuy	contact-hpn@laocai.gov.vn
14	Women Union of Quang Tri Province	0913419685	Le Thi Thanh Huyen	huyenttng@gmail.com
15	Women Union of Lam Dong Province	0979495074	Nguyen Thi Lien	hoilhpnlamdong@gmail.com

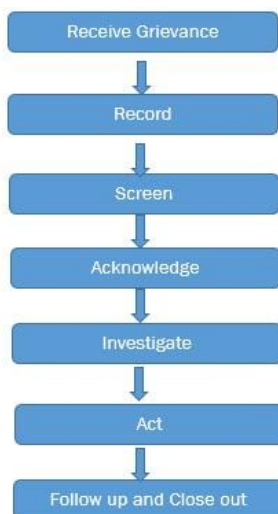
16	Women Union of Gia Lai Province	0919152210	Tran Thi Huong	vanphongpngl@yahoo.com
17	Women Union of Phu Yen Province	0903522885	Hoang Thi Thu Lan	hoilhpn.phuyen@gmail.com
18	Women Union of Dak Lak Province	0935363783	Vo Thi Ngoc	hoilienhiepphun.utinhdaklak@yahoo.com.vn
19	Women Union of Phu Tho Province	0868209888	Hoang Thao Trang	phunuphutho@yahoo.com
20	Red Cross of An Giang Province	0763852905	Tang Tieu Binh	hoictd@angiang.gov.vn
21	Red Cross of Dong Thap Province	0858463007	Tran Thi Huynh Dao	hoicdddongthap@yahoo.com.vn
22	Red Cross of Long An Province	0946290162	Nguyen Vang Thi Viet Hanh	vanphongctdlongan@gmail.com
23	Red Cross of Soc Trang Province	0907241073	Cao Tu Ngan	soctrangrc@gmail.com
24	Department of Education and Training of Ha Giang Province	0847122885	Nguyen Ngoc Huy	banbientap@hangiang.edu.vn
25	Department of Education and Training of Thua Thien Hue Province	0905106806	Nguyen Quoc Si	quantrimang@hue.edu.vn
26	Department of Education and Training of Lao Cai province	0967826589	Bui Van Hai	banbientap@lao cai.edu.vn
27	Department of Education and Training of Quang Binh Province	0921619978	Le Viet Cam	vanthu@quangbinh.edu.vn
28	Women Union of Quang Nam Province	0976105212	Dang Thi Le Thuy	hoiphunuquangnam@gmail.com

29	Women Union of Kon Tum Province	0868616027	Tran Thi Phong Lan	bantuyengiaopnkt@gmail.com
30	Women Union of Ninh Thuan Province	02593822665	Phan Thi Ngan Hanh	hoiphununinhthuan@gmail.com
31	Red Cross of Hau Giang Province	02933878867	Nguyen Chi Nghe	haugiang.rc@yahoo.com
32	Red Cross of Vinh Long Province	02703823108	Nguyen Thanh Tu	vinhlong.rc@yahoo.com
33	Women Union of Lang Son Province	02053810305	Vuong Thi Thuong	vanphongphunulangson@gmail.com
34	Red Cross of Can Tho Province	02923820963	Huynh Thanh Thao	hoichuthapdo@cantho.gov.vn
35	Red Cross of Ben Tre Province	02753822402	Vo Van Hoanh	hoichuthapdo@bentre.gov.vn
36	Women Union of Thai Nguyen Province	02083851202	Pham Thi Thu Thuy	phunuthainguyen@gmail.com

If any grievance is received, then the field staff is responsible to address the grievance within 15 days of record. If there is a major grievance which is recorded, then the technical team is responsible to handle the grievance and report to the management.

Project proponent has established a grievance mechanism in the project area which has been explained to the stakeholders during stakeholder meetings and the project implementation progress. The stakeholders affected by the project can express any complaint. Any grievances could send to SIPCO email address. Also stakeholders can voice their grievances to any officers who will then escalate using the correct process. For online form, stakeholders can complete a grievance form located on SIPCO website: www.carbonvietnam.com

The grievance mechanism process could be illustrated as below:



- **Receive Grievance**

The grievance could be received by all means, such as in person/over the phone, via email/website,

- **Record**

All formal grievances are logged in the External Grievance Register and Grievance Lodgment Forms will be saved for record of correspondence.

- **Screen**

The stakeholder contact officer is responsible for assigning a grievance owner to liaise with the external stakeholders and work on a resolution. Grievances are screened depending the level of severity in order to determine who the grievance owner is and how the grievance is approached.

- **Acknowledge**

A grievance is acknowledged, the grievance owner, within two working days of a grievance being submitted. Communication is made either verbally or in written form.

The acknowledgement of a grievance should include a summary of the grievance, method that will be taken to resolve the grievance and an estimated timeframe in which the grievance is resolved. If required, the acknowledgement provides an opportunity to ask for any additional information or to clarify any issues.

- **Investigate**

The grievance owner is responsible for investigating the grievance. The investigation may require the grievance owner to make site visits, consult employees, contact external stakeholders and complete other activities. Records of meetings, discussions and activities all need to be recorded during the investigation. Information gathered during the investigation is analysed and assist in determining how the grievance is handled and what steps need to be taken in order to resolve the grievance.

- Act

Following the investigation, the grievance owner use the findings to create an action plan outlining steps to be taken in order to resolve the grievance. The grievance owner is responsible for assigning actions, monitoring actions undertaken and making sure deadlines are adhered to. Once all actions have been completed and the grievance owner feels the grievance has been resolved, they then formally advise the external stakeholder via their preferred method of contact.

- Follow up and close out

The grievance owner makes contact with the external stakeholder/s three weeks after the grievance is resolved. When contacting the external stakeholder, the grievance owner verifies that the outcome was satisfied and also gather any feedback on the grievance process.

Minutes of the meeting are recorded and saved.

If required, the grievance owner may need to follow up with the external stakeholder on numerous occasions to confirm all parties are satisfied.

All formal grievances are recorded in summary with the PP to identify if the complaint is a project wide issue that necessitates a system change in the implementation.

2.1.5 Public Comments

Summary of comments received	Actions taken
During the public comment period, the grouped project did not receive any comments.	Not Applicable.

2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

SIPCO has many years of experiences in implementing similar project activities and engaging communities. We have policies in place to inform management and employees about the avoidance of corruption, code of conduct, and business ethics. These policies are applied by all project staff, including company management to ensure that the organization is run in accordance with all legal requirements and is held to the highest standards of operation.

2.2.2 Risk assessment

	Risk identified	Mitigation or preventative measure(s) taken
Natural and human-induced risks to stakeholders' wellbeing	No risk identified	By implementing the grouped project, biomass fuel usage can be reduced, aiding in the mitigation of deforestation and soil erosion, thereby lowering the risk of natural disasters. Also, avoiding boiling drinking water helps to reduce indoor air pollution compared to traditional methods, thereby diminishing the risk of respiratory illnesses.
Risks to stakeholder participation	No risk identified	The grouped project activities distribute water purifiers to schools/institutions. They can decide to receive water purifiers or not. If they want, they can register to 3 partners. After each partner and SIPCO check that the schools/institutions meet the criteria to participate in the project, before receiving water purifier, schools/institutions voluntarily sign the beneficiary agreement with SIPCO. There is no trade-off or any negative impact to their livelihood, land, food, etc... Hence no risk for stakeholders to participate in this project.
Working conditions	No risk identified	The grouped project activities create jobs for local people, water purifier manufacture, distribution unit. All of working condition such as working hours, working environment, physical pressure, rest hour, minimum wage, etc... as per Vietnam's Labor Law. Hence, no risk about working conditions for stakeholders to participate in this project.
Safety of women and girls	No risk identified	The project activity helps them access to sustainable and modern energy. The proposed project aims to improve quality of drinking water through dissemination of low green gas emitting safe drinking water purifier (SDWP) to provide clean drinking water for schools/institutions in Viet Nam. From there, reduce polluted indoor air due to boil drinking water. So project's water purifier is safe when using. Hence, no any risk identified relate to safety of women and girls.
Safety of minority and marginalized groups, including children	No risk identified	The project activity helps them access to sustainable and modern energy. The proposed project aims to improve quality of drinking water through dissemination of low green gas emitting

		safe drinking water purifier (SDWP) to provide clean drinking water for schools/institutions in Viet Nam. From there, reduce polluted indoor air due to boil drinking water. So project's water purifier is safe when using. Hence, no any risk identified relate to safety of minority and marginalized groups, including children.
Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers)	No risk identified	The grouped project aims at improving the quality of drinking water through dissemination of low green gas emitting safe drinking water purifier (SDWP) to provide clean drinking water for schools/institutions in Viet Nam. Moreover, by using water purifiers, schools/institutions can drink water directly instead of boiling. This reduce reduces CO ₂ emissions into the environment. Hence the grouped project brings positive benefits to the people and environments. The project activity is not any pollutant into the environment.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

	Risks identified ¹⁰	Mitigation or preventative measure(s) taken
Discrimination	No risk identified	The project targets schools and institutions that use woodfuel to boil drinking water, without any distinction based on gender, race, religion, educational background, or other aspects. SIPCO is also dedicated to the elimination of discrimination. This principle is further reinforced by government policies, under which any such discrimination is considered a punishable offence in the host country. In addition, Viet Nam is a party to the "Convention on the Elimination of All Forms of Discrimination against Women," and the project has aligned its labour policies accordingly.

¹⁰ The identified risks and commensurate mitigation or preventative measure(s) for forced labor, child labor, and human trafficking, must be inclusive of staff and contracted workers employed by third parties.

Sexual harassment	No risk identified	As part of our commitment to having a diverse and inclusive workplace, we have zero tolerance for harassment and bullying.
Gender equity in labor and work	No risk identified	SIPCO is committed to ensuring that all stakeholders, regardless of their genders, colors, faiths, educational backgrounds, or any other factors, is given an equal chance to fill all job positions. This commitment is fulfilled by providing equal access to employment opportunities. Before any full-time or part-time employees for the project are hired, the project proponent advertises applicable employment opportunities by contacting village heads and posting announcements on local notice boards seeking potential candidates for the positions. Also, the initiative encourages women, people with disabilities, and members of underrepresented groups to apply for the positions.
Forced labor	No risk identified	SIPCO does not tolerate child labor or forced, involuntary or trafficked labor in any form. To ensure this, workers have to give a job application to SIPCO. When recruiting, SIPCO checks ID card each worker to ensure that they are of working age. Besides that, workers also submit curriculum vitae verified by local authority.
Child labor	No risk identified	
Human trafficking	No risk identified	

2.3.2 Human Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	Each of our workers has a contract that states their rights and obligations. The contract details comply with Vietnam labor laws. Specific information is provided on anti-terrorism and anti-corruption efforts, including a code of conduct. Per the Core Labor Conventions of the International Labour Organization (ILO), SIPCO respects, and works in tandem with the elimination of all forms of forced or compulsory labour, the effective abolition of child labour, minimum age convention, the right to organize, and the elimination of discrimination in respect of paid positions and occupation.

2.3.3 Indigenous Peoples and Cultural Heritage

Risks identified	Mitigation(s) or preventative measure taken
No risk identified	The grouped project activities involve installing water purifier for schools and institutions and it does not involve any indigenous peoples and cultural heritage.

2.3.4 Property Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	The grouped project activity involves distribution of water purifiers to schools and institutions and only install at the informed invitation of the households and these water purifiers do not infringe or interact with property rights.

2.3.5 Benefit Sharing

Summary of the benefit sharing plan	The project activity does not impacts property rights so this section is not applicable.
Benefit sharing during the monitoring period	The project activity does not impacts property rights so this section is not applicable.

2.4 Ecosystem Health

	Risk identified	Mitigation or preventative measure(s) taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	The implementation of the grouped project does not impose any severe impacts on the ecological system in the surrounding areas. The project activities help in preventing the consumption of fuel wood by efficient fuel combustion thereby reducing deforestation and reducing indoor air pollution. The use of water purifier technology helps to avoid adverse environmental and social impacts associated with the use of non-renewable biomass for boiling water. The reduced consumption of the stated baseline fuel has sustainable benefit for all end - users included in the project activity. The implementation of the project reduce workloads involved in fuel collection, and by reducing indoor
Soil degradation and soil erosion	No risk identified	
Water consumption and stress	No risk identified	

		air pollution, reduce the risk of respiratory diseases. Safe drinking water technology of the project also contribute to environment protection by reducing biomass consumption and hence greenhouse gas emissions, mainly CO ₂ , when the combusted biomass originates from non-renewable stocks. Therefore, it has no impact to ecosystem health, so this section is not applicable.
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2.4.1 Rare, Threatened, and Endangered species

Species or habitat	Not Applicable. The grouped project activity involves distributions of water purifiers to schools and institutions only and it does not involve rare, threatened and endangered species. This was identified during validation period.
Areas needed for habitat connectivity	

	Risk identified	Mitigation or preventative measure(s) taken during the monitoring period
Habitats for rare, threatened, and endangered species	No risk identified	The grouped project activity involves distributions of water purifiers to schools and institutions only and it does not involve rare, threatened and endangered species.
Areas for habitat connectivity	No risk identified	

2.4.2 Introduction of species

Species introduced	Classification	Justification for use	Adverse effects and mitigation
Not applicable			

Existing invasive species	Mitigation measures to prevent the spread or continued existence of invasive species
Not applicable	

	Risks identified	Mitigation or preventative measure(s) taken
Invasive species	No risk identified	The grouped project activity involves distributions of water purifiers to schools and institutions only and it does not involve introduction of species.

2.4.3 Ecosystem conversion

	Risks identified	Mitigation or preventative measure(s) taken
Ecosystem conversion	No risk identified	Not applicable. The grouped project activities only distribute water purifiers to schools and institutions and do not involve any ecosystem conversion.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

Until this monitoring period of the grouped projects, total of 315,000 WPs were distributed to 6,627 schools and institutions from 04-July-2022 to 16-August-2024. Project devices were transported and gathered in district points before distribution about a week before the start distribution date. Then, SIPCO in conjunction with 3 partners (WU, MOET and VRC) organizes one or two-day mass distributions in warehouse in the district. Representations of schools/institutions on the demand registration list who have been determined to be eligible to participate in the project are invited to the distribution points to attend the communication session and receive project water purifiers.

Grouped project was registered on 25-September-2023. PA 001 was included at the project registration stage. 30 instances namely PA 002 to PA 031 were included and approved in the first monitoring period on 24-June-2024. PA 032 was included in third monitoring period and approved on 15-July-2025. Timeline of project activity instances is illustrated as the table below:

PAI	Steps				Total of WPs have been distributed as on 30-Jun-2025
	The operational period in this monitoring period	PA start date (the first equipment distributed)	Inclusion date	Implementation status as on 30-Jun-2025	
PA 001	01-July-2024 to 31-December-2024	04-July-2022	25-September-2023	- 20 WPSs were distributed to 2 day-boarding schools on 04-July-2022 - 146 and 5,834 WPs were distributed to 2 boarding schools and 212 day-boarding schools, respectively on 16-January-2023	6,000
PA 002	01-July-2024 to 31-December-2024	16-January-23	24-June-2024	- 2,581 and 3,780 WPs were distributed to 54 boarding schools and 95 day-boarding schools, respectively on 16-January-2023 - 10 WPs were distributed to a boarding school on 04-July-2023	6,371
PA 003	01-July-2024 to 31-December-2024	6-February-23	24-June-2024	- 739 and 5,261 WPs were distributed to 14 boarding schools and 162 day-boarding schools, respectively on 06-February-2023 - 42 and 7,219 WPs were distributed to a boarding schools and 122 day-boarding schools, respectively on 07-June-2023	13,261

PA 004	01-July-2024 to 31-December-2024	6-February-23	24-June-2024	- 1,352 and 3,818 WPs were distributed to 33 boarding schools and 92 day-boarding schools, respectively on 06-February-2023 - 500 WPs were distributed to 11 day-boarding schools on 08-August-2024	5,670
PA 005	01-July-2024 to 31-December-2024	6-March-23	24-June-2024	- 5,479 and 6,123 WPs were distributed to 99 boarding schools and 139 day-boarding schools, respectively on 06-March-2023 - 897 and 1,9748 WPs were distributed to 26 boarding schools and 64 day-boarding schools, respectively on 08-May-2023	14,447
PA 006	01-July-2024 to 31-December-2024	6-March-23	24-June-2024	- 4,224 and 1,275 WPs were distributed to 112 boarding schools and 50 day-boarding schools, respectively on 06-March-2023 - 482 WPs were distributed to 75 day-boarding schools on 03-July-2023	5,981
PA 007	01-July-2024 to 31-December-2024	3-April-23	24-June-2024	- 392; 4,375 and 13 WPs were distributed to 14 boarding schools, 166 day-boarding schools and an institution respectively on 03-April-2023	4,780
PA 008	01-July-2024 to 31-December-2024	6-April-23	24-June-2024	- 536 and 4,970 WPs were distributed to 12 boarding schools and 169 day-boarding schools respectively on 03-April-2023 - 1,533 WPs were distributed to 22 day-boarding schools on 08-May-2023	7,039
PA 009	01-July-2024 to 31-December-2024	3-April-23	24-June-2024	- 428 and 4,972 WPs were distributed to 9 boarding schools and 201 day-boarding schools respectively on 03-April-2023 - 131 and 8,206 WPs were distributed to 4 boarding schools and 164 day-boarding schools respectively on 08-June-2023	13,737
PA 010	01-July-2024 to 31-December-2024	6-May-23	24-June-2024	- 110 and 4,385 WPs were distributed to 4 boarding schools and 104 day-boarding schools respectively on 06-May-2023	4,495
PA 011	01-July-2024 to 31-December-2024	6-May-23	24-June-2024	- 4,089 WPs were distributed to 86 day-boarding schools on 06-May-2023	4,089

PA 012	01-July-2024 to 31-December-2024	6-May-23	24-June-2024	- 4,547 WPs were distributed to 118 day-boarding schools on 06-May-2023	4,547
PA 013	01-July-2024 to 31-December-2024	6-May-23	24-June-2024	- 3,423 and 2,077 WPs were distributed to 49 boarding schools and 50 day-boarding schools respectively on 06-May-2023 - 5,066 and 858 WPs were distributed to 95 boarding schools and 27 day-boarding schools respectively on 06-June-2023	11,424
PA 014	01-July-2024 to 31-December-2024	6-May-23	24-June-2024	- 1,094 and 3,609 WPs were distributed to 81 boarding schools and 352 day-boarding schools respectively on 06-May-2023	4,703
PA 015	01-July-2024 to 31-December-2024	15-April-23	24-June-2024	- 25,990 and 10 WPs were distributed to 395 day-boarding schools and an institution respectively from 15 to 25 April 2023	26,000
PA 016	01-July-2024 to 31-December-2024	22-April-23	24-June-2024	- 17,592 and 10 WPs were distributed to 271 day-boarding schools and an institution respectively from 22 to 28 April 2023 - 3,398 WPs were distributed to 44 day-boarding schools on 04-May-2023	21,000
PA 017	01-July-2024 to 31-December-2024	15-March-23	24-June-2024	- 13,409 WPs were distributed to 134 day-boarding schools from 15 to 24 March 2023 - 12,591 WPs were distributed to 121 day-boarding schools from 06 to 10 April 2023	26,000
PA 018	01-July-2024 to 31-December-2024	28-March-23	24-June-2024	- 19,055 and 124 WPs were distributed to 291 day-boarding schools and 4 institutions respectively from 28 to 31 March 2023 - 6,784 and 7 WPs were distributed to 79 day-boarding schools and an institutions from 24 to 28 April 2023	26,000
PA 019	01-July-2024 to 31-December-2024	18-May-23	24-June-2024	- 3,089 WPs were distributed to 115 day-boarding schools from 18 to May 2023	3,089
PA 020	01-July-2024 to 31-December-2024	17-May-23	24-June-2024	- 127; 11,873 and 417 WPs were distributed to 48 boarding schools; 85 day-boarding schools and 3 institutions respectively from 15 to 25 May 2023	12,417

PA 021	01-July-2024 to 31-December-2024	7-May-23	24-June-2024	- 3,105; 4,897 and 10 WPs were distributed to 47 boarding schools, 85 day-boarding schools and an institution respectively on 07-May-2023 - 19 and 32 WPs were distributed to a boarding school and 2 day-boarding schools, respectively on 02-July-2023 - 1,934 and 638 WPs were distributed to 47 day-boarding schools and 16 boarding schools, respectively from 21-July-2024 to 25-July-2024	10,635
PA 022	01-July-2024 to 31-December-2024	6-June-23	24-June-2024	- 1,057 and 6,651 WPs were distributed to 18 boarding schools and 167 day-boarding schools on 06-June-2023	7,708
PA 023	01-July-2024 to 31-December-2024	9-May-23	24-June-2024	- 5,088 and 37 WPs were distributed to 72 day-boarding schools and 3 institutions on 09-May-2023	5,125
PA 024	01-July-2024 to 31-December-2024	8-May-23	24-June-2024	- 30 and 14,071 WPs were distributed to 2 boarding schools and 174 day-boarding schools respectively on 08-May-2023 - 50 WPs were distributed to a boarding schools on 04-July-2023	14,151
PA 025	01-July-2024 to 31-December-2024	6-May-23	24-June-2024	- 111 and 2,473 WPs were distributed to 4 boarding schools and 105 day-boarding schools on 06-May-2023	2,584
PA 026	01-July-2024 to 31-December-2024	8-June-23	24-June-2024	- 162; 8,615 and 52 WPs were distributed to 4 boarding schools; 120 day-boarding schools and 4 institutions respectively on 08-June-2023	8,829
PA 027	01-July-2024 to 31-December-2024	7-May-23	24-June-2024	-6,442 WPs were distributed to 119 day-boarding schools on 07-May-2023 - 20 WPs were distributed on to a day-boarding schools on 05-July-2023	6,462
PA 028	01-July-2024 to 31-December-2024	8-May-23	24-June-2024	- 805 and 195 WPs were distributed to 19 boarding schools and 5 day-boarding schools respectively on 08-May-2023	1,000
PA 029	01-July-2024 to 31-December-2024	9-May-23	24-June-2024	- 629; 2345 and 13 WPs were distributed to 23 boarding schools; 119 day-boarding schools and an institution respectively on 09-May- 2023 - 30 WPs were distributed to a day-boarding school on 05-July-2023	3,017

PA 030	01-July-2024 to 31-December-2024	6-June-23	24-June-2024	- 89 and 9,626 WPs were distributed to 3 day boarding schools and 210 day-boarding schools respectively on 06-June-2023 - 1,391 WPs were distributed to 29 day-boarding schools on 20-July-2024	11,106
PA 031	01-July-2024 to 31-December-2024	6-June-23	24-June-2024	- 3,747 and 8,803 WPs were distributed to 54 boarding schools and 235 day-boarding schools from 06 to 09 June 2023 - 246 WPs were distributed to 4 day-boarding schools on 01-July-2023 - 2,439 WPs were distributed to 40 day-boarding schools from 21-July-2024 to 25-July-2024	15,235
PA 032	05-August-2024 to 31-December-2024	03-August-2024	To be included in this monitoring period	- 7,987 and 91 WPs were distributed to 172 day-boarding schools and a boarding school from 03 to 11 August 2024 - 20 WPs were distributed to an institution on 16 August 2024	8,098
Total					315,000

3.2 Deviations

3.2.1 Methodology Deviations

Not applicable. The grouped project did not apply any methodology deviations.

3.2.2 Project Description Deviations

There is a change in the sample size calculation for Parameter P_y and m in section 5.3 of the registered PD. This change has been applied and approved from the first monitoring period. The change is illustrated as following:

Parameter P_y :

Population who consumes the purified water serviced by the project activity in year y (P_y) is calculated by the number of water purifiers are distributed $\times$ the number of people serviced per water purifier. The number of operating water purifiers have been determined on a sampling basis. Therefore, this parameter of a percentage – retention rate of water purifier operational for the monitoring period. The following equation that is used:

$$n \geq \frac{1.96^2 N \times p (1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.96^2 \times p (1-p)}$$

Where:

- n : Sample size
- $N=N_y$: Pollution who consumes the purified water serviced by the project activity in year y
- p : Our expected proportion of the installed water purification systems will be in use and operating at the specified efficiency)
- 1.96 : Represents the 95 % confidence required
- 0.1 : Represents the 10 % relative precision

Substituting the values in above equation gives the value of n = [Number of users to be sampled] (rounded up).

The following assumptions are made to exemplify the sample size calculation for parameters: P_y

The project Implementer distributes 300,000 SDWPs and provides clean drinking water to schools/institutions in Viet Nam. Therefore, the population size, N is taken as 300,000.

It is expected at least 90% of SDWPs will be use drinking water from SDWPs, hence the expected proportion p for $N_{y,i,j}$ is taken as 0.9.

Based on the above assumptions, the resulting sampling size for a 95/10 confidence precision is calculated as:

$$n \geq \frac{1.96^2 \times 300,000 \times 0.9 (1-0.9)}{(300,000 - 1) \times 0.1^2 \times 0.9^2 + 1.96^2 \times 0.9 (1 - 0.9)}$$

Which comes out to be $n \geq 42.68$

$$n = 43$$

Therefore, in this case a sample size is 43.

In case the resulting sample size calculation returns a value of less than 30 samples, a minimum sample size of 30 shall be chosen when the parameter of interest is a proportion.

However, until the end of the third monitoring period, PP has distributed 315,000 water purifiers. Hence, from this monitoring period, the resulting sampling size for the parameter P_y and m are calculated as:

$$n \geq \frac{1.96^2 \times 315,000 \times 0.9 (1-0.9)}{(315,000 - 1) \times 0.1^2 \times 0.9^2 + 1.96^2 \times 0.9 (1 - 0.9)}$$

Which comes out to be $n \geq 42.68$

$$n = 43$$

Therefore, in this case a required sample size is 43.

Parameter m:

To estimate the sample size for Fraction of functional appliances that are meeting the SDWP Standard (m) which is related retention rate of water purifier operational. Therefore, PP uses the proportion value, the equation that will be used is:

$$n \geq \frac{1.96^2 N \times p (1-p)}{(N - 1) \times 0.1^2 \times p^2 + 1.96^2 \times p (1 - p)}$$

Where:

- n : Sample size
- $N=N_y$: Population where consumes the purified water serviced by the project activity in year y
- p : Our expected proportion of the installed water purification systems will be in use and operating at the specified efficiency)
- 1.96 : Represents the 95 % confidence required
- 0.1 : Represents the 10 % relative precision

Substituting the values in above equation gives the value of $n = [\text{Number of users to be sampled}]$ (rounded up).

The following assumptions are made to exemplify the sample size calculation for parameters: P_y

The project Implementer distributes 300,000 SDWPs and provides clean drinking water to schools/institutions in Viet Nam. Therefore, the population size, N is taken as 300,000.

It is expected at least 90% of schools/institutions will be use drinking water from SDWPs, hence the expected proportion p for $N_{y,i,j}$ is taken as 0.9.

Based on the above assumptions, the resulting sampling size for a 95/10 confidence precision is calculated as:

$$n \geq \frac{1.96^2 \times 300,000 \times 0.9 (1-0.9)}{(300,000 - 1) \times 0.1^2 \times 0.9^2 + 1.96^2 \times 0.9 (1 - 0.9)}$$

Which comes out to be $n \geq 42.68$

$n = 43$

Therefore, in this case a sample size is 43.

In case the resulting sample size calculation returns a value of less than 30 samples, a minimum sample size of 30 shall be chosen when the parameter of interest is a proportion.

However, until the end of the third monitoring period, PP has distributed 315,000 water purifiers. Hence, from this monitoring period, the resulting sampling size for the parameter P_y and m are calculated as:

$$n \geq \frac{1.96^2 \times 315,000 \times 0.9 (1-0.9)}{(315,000 - 1) \times 0.1^2 \times 0.9^2 + 1.96^2 \times 0.9 (1 - 0.9)}$$

Which comes out to be $n \geq 42.68$

$n = 43$

Therefore, in this case a required sample size is 43.

Also, there are the changes for the value of QPW_{pp} ; $BL_{fuel,i}$; P_{ay} that have been approved since the previous monitoring period. The baseline survey was conducted for the grouped group in May 2022. However, mass distribution was only begun in January 2023. Therefore, to ensure the effectiveness of the grouped project and the emission reduction calculation parameters are as accurate and conservative as possible, before distribution activities under each project instance take place, PP has conducted the baseline survey for each instance. From the list of

schools and institutions selected by SIPCO's distribution partner, PP calculated the sample size by establishing a 10% of error and confidence level up to 90% to determine the sample size for parameters, the following equation is used:

$$n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$$

Where:

- n : Sample size
- N : Population size (Total number of households/water purifier)
- p : Expected proportion
- 1.645 : Represents the 90% confidence required
- 0.1 : Represents the 10% relative precision

Applying the random sampling technical, the schools and institutions numbers are randomly chosen from the required sample size as calculated by the PP. To ensure the survey result is representative of the entire population, the dissimilarity chosen randomly such that each element (or unit) of the population has the same probability of being selected. The survey method has been use is face to face interview by questionnaires. The details of the calculation and selected samples are provided in the baseline surveys. The summary result of sample size for each new area as following as:

PAI	Province	Population	Calculated sample size	Actual sample size
PA 001	Thua Thien Hue	310	145	161
PA 002	Quang Nam	175	107	119
PA 003	Gia Lai	352	154	171
PA 004	Kon Tum	182	110	123
PA 005	Lao Cai	365	156	174
PA 006	Dien Bien	270	136	152
PA 007	Quang Binh	250	131	146
PA 008	Quang Tri	275	137	153
PA 009	Dak Lak	480	174	193
PA 010	Ninh Thuan	148	96	106
PA 011	Hau Giang	109	78	86
PA 012	Vinh Long	175	107	118
PA 013	Ha Giang	282	139	154
PA 014	Lang Son	500	176	195
PA 015	Long An	490	175	194
PA 016	Dong Thap	395	161	189

PA 017	Ben Tre	300	143	170
PA 018	Can Tho	430	166	185
PA 019	An Giang	140	93	115
PA 020	Soc Trang	210	119	133
PA 021	Lai Chau	270	136	152
PA 022	Son La	262	136	167
PA 023	Nam Dinh	152	98	108
PA 024	Vinh Phuc	232	126	140
PA 025	Phu Yen	145	95	105
PA 026	Lam Dong	150	93	103
PA 027	Ha Tinh	147	96	120
PA 028	Tuyen Quang	27	25	27
PA 029	Bac Kan	178	108	120
PA 030	Phu Tho	425	166	207
PA 031	Cao Bang, Nghe An, Yen Bai	400	162	180

Through surveys, the value of QPW_{pp} ; $BL_{fuel,i}$; P_{ay} were redefined as follows:

- QPW_{pp}

PAI	Day-boarding school	Boarding school	Institution
PA 001	3.3	4.5	-
PA 002	3.24	4.42	-
PA 003	3.15	4.46	-
PA 004	3.32	4.52	-
PA 005	3.31	4.53	-
PA 006	3.27	4.41	-
PA 007	3.24	4.39	5
PA 008	3.32	4.57	-
PA 009	3.3	4.51	-
PA 010	3.31	4.47	-
PA 011	3.27	-	-
PA 012	3.27	-	-
PA 013	3.28	4.58	-
PA 014	3.31	4.51	-
PA 015	3.3	-	4.69
PA 016	3.24	-	5.09
PA 017	3.26	-	-
PA 018	3.3	4.36	4.89
PA 019	3.28	-	-

PA 020	3.3	4.29	5.12
PA 021	3.27	4.53	5.04
PA 022	3.25	4.48	-
PA 023	3.31	-	4.89
PA 024	3.28	4.43	-
PA 025	3.25	4.57	-
PA 026	3.31	4.53	5.07
PA 027	3.34	-	-
PA 028	3.27	4.28	-
PA 029	3.12	4.39	5.05
PA 030	3.38	4.42	-
PA 031	3.3	4.53	-

- $BL_{fuel,i}$

PAI	Value	PAI	Value
PA 001	0.9626	PA 017	0.9765
PA 002	0.9579	PA 018	0.9729
PA 003	0.9648	PA 019	0.9565
PA 004	0.9674	PA 020	0.9623
PA 005	0.9655	PA 021	0.9540
PA 006	0.9600	PA 022	0.9820
PA 007	0.9518	PA 023	0.9444
PA 008	0.9738	PA 024	0.9714
PA 009	0.9699	PA 025	0.9619
PA 010	0.9434	PA 026	0.9417
PA 011	0.9651	PA 027	0.9667
PA 012	0.9746	PA 028	1.0000
PA 013	0.9351	PA 029	0.9583
PA 014	0.9886	PA 030	0.9952
PA 015	0.9722	PA 031	0.9833
PA 016	0.9683		

- P_{ay}

PAI	Day-boarding school	Boarding school	Institution
PA 001	194	441	-
PA 002	282	285	-
PA 003	310	315	-
PA 004	293	248	-
PA 005	281	309	-
PA 006	101	229	-
PA 007	187	171	68
PA 008	241	271	-
PA 009	255	261	-

PA 010	292	168	-
PA 011	335	-	-
PA 012	272	-	-
PA 013	269	356	-
PA 014	74	84	-
PA 015	463	-	50
PA 016	469	-	50
PA 017	716	-	-
PA 018	493	181	133
PA 019	190	-	-
PA 020	525	256	1046
PA 021	399	393	51
PA 022	281	355	-
PA 023	497	-	64
PA 024	567	92	-
PA 025	167	168	-
PA 026	505	279	77
PA 027	379	-	-
PA 028	276	257	-
PA 029	141	166	67
PA 030	323	180	-
PA 031	252	419	-

There was a change in the number of water purifiers distributed to schools and institutions during the third monitoring period compared to registered PD and this was approved by Verra. During the third monitoring period, the total of water purifiers distributed under the project activity has increased to 315,000 units.

This change occurred because more schools and institutions that were using traditional cookstoves to boil drinking water and lacked access to safe drinking water expressed interest in participating in the grouped project. As a result, they registered with distribution partners to receive project water purifiers.

Based on the registration lists provided by 3 distribution partners, PP conducted a survey to select schools and institutions that fully met the criteria to participate in the project activities. An additional 317 more schools and institutions were included in the project activity with 15,000 water purifiers distributed to them.

Due to the increase in number of SWPD distributed in this grouped, the total estimated project emission reductions was changed as below:

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
Year 1 (from 04-07-2022 to 03-07-2023)	432,495	0	21,625	410,871
Year 2 (from 04-07-2023 to 03-07-2024)	432,495	0	21,625	410,871
Year 3 (from 04-07-2024 to 03-07-2025)	432,495	0	21,625	410,871
Year 4 (from 04-07-2025 to 03-07-2026)	432,495	0	21,625	410,871
Year 5 (from 04-07-2026 to 03-07-2027)	432,495	0	21,625	410,871
Year 6 (from 04-07-2027 to 03-07-2028)	432,495	0	21,625	410,871
Year 7 (from 04-07-2028 to 03-07-2029)	432,495	0	21,625	410,871
Year 8 (from 04-07-2029 to 03-07-2030)	432,495	0	21,625	410,871
Year 9 (from 04-07-2030 to 03-07-2031)	432,495	0	21,625	410,871
Year 10 (from 04-07-2031 to 03-07-2032)	432,495	0	21,625	410,871
Total	4,324,954	0	216,248	4,108,706

During the fourth monitoring period there was a change in the parameter “Pay.”. This parameter represents the “Average number of people per school/institution” and differs from the value registered in the PD. From this monitoring period, this parameter has been included as a monitored parameter. While the registered PD did not explicitly identify P_{ay} as a parameter for monitoring, the parameter used to determine P_y is “population who consumes the purified water serviced by the project activity in year y”. P_y is a parameter that must be monitored annually, and P_{ay} may vary from

year to year. Therefore, to ensure clarity regarding its monitoring, P_{ay} has now been included in section 5.2, “Data and parameters monitored”. The description of P_{ay} as below:

Data / Parameter	P_{ay}
Data unit	People per school/institution
Description	Average of people per school/institution
Source of data	Survey
Description of measurement methods and procedures to be applied	A survey shall be conducted annually to check the number of people in the day-boarding schools, boarding schools and institutions who concern the purified water supplied by functional project appliances.
Frequency of monitoring/recording	Annual
Value applied	-
Monitoring equipment	-
QA/QC procedures to be applied	Data will be collected using standard procedures and will be kept for two years after the end of the crediting period or the last issuance of GHG Credits for this project activity, whichever occurs later.
Purpose of Data	Calculation the baseline emission
Calculation method	-
Comments	-

For this parameter “ P_{ay} ”, a survey shall be conducted annually to check the number of people in schools and institutions. This is a mean parameter.

This parameter is a mean value. Hence, the sample size is calculated as:

$$n \geq \frac{1.96^2 NV}{(N-1) \times 0.1^2 + 1.96^2 \times V}$$

$$V = \left(\frac{SD}{mean} \right)^2$$

Where:

n : Sample size

$N=N_y$: Number of SDWPs in the target population (schools/institutions).

1.96 : Represents the 95% confidence required

0.1 : Represents the 10% relative precision

Mean : Our expected mean

SD : Our expected standard deviation

For this parameter, PP has chosen a stratified random sampling approach based on the type of schools (day-boarding, boarding) and institutions. For further details, please refer to Section 4.3 of this document.

Moreover, the sampling for parameter P_y and the fraction of SWPD public distribution network has also changed compared to the registered PD. From this monitoring period onward, these parameters have been sampled according to a sampling frame based on the types of schools and institutions. The details of the sampling plan are as follows:

Parameter P_y and the fraction of SDWP public distribution network

For population who consumes the purified water serviced by the project activity in year y (P_y), the equation is used:

$$n \geq \frac{1.96^2 N \times p (1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.96^2 \times p (1-p)}$$

Where:

n : Sample size

$N=N_y$: School/institution where consumes the purified water serviced by the project activity in year y

p : Our expected proportion of the installed water purification systems will be in use and operating at the specified efficiency)

1.96 : Represents the 95 % confidence required

0.1 : Represents the 10 % relative precision

For this parameter, PP has chosen a stratified random sampling approach based on the type of schools (day-boarding, boarding) and institutions. For further details, please refer to Section 4.3 of this document.

3.3 Grouped Projects

During this fourth monitoring period, no new project activity instances were included. Hence, this section is not applicable.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes

☒ No

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	QPW _{pp}			
Data unit	Litres			
Description	Average volume of drinking water per person per day			
Source of data	Calculated based on survey records			
Value applied	PAI	Day-boarding school	Boarding school	Institution
	PA 001	3.3	4.5	-
	PA 002	3.24	4.42	-

	PA 003	3.15	4.46	-
	PA 004	3.32	4.52	-
	PA 005	3.31	4.53	-
	PA 006	3.27	4.41	-
	PA 007	3.24	4.39	5
	PA 008	3.32	4.57	-
	PA 009	3.3	4.51	-
	PA 010	3.31	4.47	-
	PA 011	3.27	-	-
	PA 012	3.27	-	-
	PA 013	3.28	4.58	-
	PA 014	3.31	4.51	-
	PA 015	3.3	-	4.69
	PA 016	3.24	-	5.09
	PA 017	3.26	-	-
	PA 018	3.3	4.36	4.89
	PA 019	3.28	-	-
	PA 020	3.3	4.29	5.12
	PA 021	3.27	4.53	5.04
	PA 022	3.25	4.48	-
	PA 023	3.31	-	4.89
	PA 024	3.28	4.43	-
	PA 025	3.25	4.57	-
	PA 026	3.31	4.53	5.07
	PA 027	3.34	-	-
	PA 028	3.27	4.28	-
	PA 029	3.12	4.39	5.05
	PA 030	3.38	4.42	-
	PA 031	3.3	4.53	-
	PA 032	3.32	4.54	4.7
Justification of choice of data or description of measurement methods and procedures applied	QPW _{pp} data based on the survey records, what is conducted by participant project.			
Purpose of data	Calculation of baseline emissions			
Comments	-			

Data / Parameter	LS
Data unit	Years
Description	Lifespan of water treatment technologies
Source of data	Manufacturer's specifications
Value applied	10
Justification of choice of data or description of	Manufacture specifications

measurement methods and procedures applied	
Purpose of Data	Check lifespan of water purifier to ensure the grouped project are maintained and claimed emission reduction during the crediting period of project activity
Comments	Lifespan of water treatment technologies shall be 10 years.

Data / Parameter	nwb
Data unit	%
Description	Efficiency of water boiling system being replaced
Source of data	Efficiency of the water boiling systems being replaced. Use one of the options below: - 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; 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; 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.
Value applied	10%
Justification of choice of data or description of measurement methods and procedures applied	This shall be determined based on option (b) detailed under the row above "Source of data" because only households who using three stone fire are taken into account for supplying safe drinking water.
Purpose of Data	Calculation of baseline emissions
Comments	The project proponents distributes the SDWPs for the households who have used wood fuel to boil drinking water

Data / Parameter	BL _{fuel,i}			
Data unit	Fraction			
Description	Proportions of baseline fuel type I (NBR and or fossil fuels)			
Source of data	Survey			
Value applied	PAI	Value	PAI	Value
	PA 001	0.9626	PA 017	0.9765
	PA 002	0.9579	PA 018	0.9729
	PA 003	0.9648	PA 019	0.9565
	PA 004	0.9674	PA 020	0.9623

	PA 005	0.9655	PA 021	0.9540
	PA 006	0.9600	PA 022	0.9820
	PA 007	0.9518	PA 023	0.9444
	PA 008	0.9738	PA 024	0.9714
	PA 009	0.9699	PA 025	0.9619
	PA 010	0.9434	PA 026	0.9417
	PA 011	0.9651	PA 027	0.9667
	PA 012	0.9746	PA 028	1.0000
	PA 013	0.9351	PA 029	0.9583
	PA 014	0.9886	PA 030	0.9952
	PA 015	0.9722	PA 031	0.9833
	PA 016	0.9683	PA 032	0.9829
	Justification of choice of data or description of measurement methods and procedures applied			
	The baseline survey data show that the major source of fuel is fire wood			
	Purpose of Data			
	Calculation of baseline emissions			
	Comments			
	The baseline scenario established through the survey shows that proportion of the people used traditional stoves using woody biomass to boil water in the absence of the project activity.			

Data / Parameter	<i>f_i</i>
Data unit	Fraction
Description	Factor to determine amount of non-renewable fuels
Source of data	Calculation
Value applied	0.6522
Justification of choice of data or description of measurement methods and procedures applied	For the wood fuel, the value established from “Calculation of the fraction of non-renewable biomass (f_{NRB}) for Viet Nam” report what was made by the Third Party Organization. This report estimates the f_{NRB} for Viet Nam using the latest guidance from the Clean Development Mechanism (CDM Tool 30 EB 115 Annex 22 v4.0 2022) “Calculation of fraction of non-renewable biomass”. With regards to the calculations, the third party organization analyzes the f_{NRB} based on satellite data availability, Geographic Information System (GIS) and data modelling which provided the most reliable measuring method. Furthermore, to ensure the most conservative figure and fair with the new Verra cookstove methodology (VMR 006 version 1.2), the project developer voluntarily decided to deduct the calculated F_{nrb} by 26%, this would result in an f_{NRB} value of 88.13% x (1 – 26%) = 65.22% For fossil fuel, the default value is 1.0
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	EF _{projected fossilfuel}
Data unit	tCO ₂ /TJ
Description	Emission factor for the substitution of non – renewable woody biomass.
Source of data	AMS – III.AV, version 08.0 IPCC, chapter 2, table 2.2
Value applied	85.7
Justification of choice of data or description of measurement methods and procedures applied	As per AMS-III.AV, Version 08.0 and IPCC, Chapter 2, table 2.2
Purpose of Data	Calculation of baseline emissions
Comments	This parameter shall remain fixed for the monitoring periods

Data / Parameter	X _{boil}
Data unit	%
Description	Fraction of the population serviced by the project activity for which the common practice of water purification is or would have been water boiling.
Source of data	Survey
Value applied	1.0
Justification of choice of data or description of measurement methods and procedures applied	X _{boil} data based on survey records
Purpose of Data	The data is used for baseline emission calculations.
Comments	-

4.2 Data and Parameters Monitored

Data / Parameter	P _{ay4}								
Data unit	People per school/institution								
Description	Average of people per school/institution								
Source of data	Survey								
Description of measurement methods and procedures to be applied	A survey shall be conducted annually to check the number of people in the day-boarding schools, boarding schools and institutions who concern the purified water supplied by functional project appliances.								
Frequency of monitoring/recording	Annual								
Value applied	<table border="1"> <thead> <tr> <th>School/institution</th><th>The value applied</th></tr> </thead> <tbody> <tr> <td>Day-boarding school</td><td>322</td></tr> <tr> <td>Boarding school</td><td>265</td></tr> <tr> <td>Institution</td><td>173</td></tr> </tbody> </table>	School/institution	The value applied	Day-boarding school	322	Boarding school	265	Institution	173
School/institution	The value applied								
Day-boarding school	322								
Boarding school	265								
Institution	173								

Monitoring equipment	-
QA/QC procedures to be applied	Data are collected using standard procedures and will be kept for two years after the end of the crediting period or the last issuance of GHG Credits for this project activity, whichever occurs later.
Purpose of Data	Calculation the baseline emission
Calculation method	-
Comments	Based on the results of this monitoring period, the average number of people per day-boarding school, boarding school, and institution during the 2024–2025 academic year is 337, 271, and 238, respectively. In comparison, the corresponding values from the baseline surveys conducted in the 2022–2023 academic year were 322, 265, and 173. This indicates that the average number of people per school/institution has increased by approximately 1% to 3.7% compared to the baseline results. Furthermore, national statistics also reflect a similar trend, showing that the total number of students and teachers increased from 24,601,575 in 2022–2023¹¹ to 25,255,251 in 2024–2025¹², representing a 2.6% rise. This confirms that the growth observed in the PP’s survey is consistent with official data sources. Nevertheless, to ensure conservativeness in the emission reduction calculations, the PP has adopted the lower values of Pay from the two surveys. Therefore, the applied Pay values are 322, 265, and 173 for day-boarding schools, boarding schools, and institutions, respectively (as determined in the baseline survey).

Data / Parameter	Py
Data unit	Number

¹¹ This value has been compiled from the references below:

Kindergarten school: <https://giaoduc.net.vn/nam-hoc-2022-2023-duoc-bo-sung-13015-chi-tieu-gvmn-nhung-chi-tuyen-duoc-4000-post243729.gd>

Primary school: <https://cadn.com.vn/ca-nuoc-co-105734-hoc-sinh-tieu-hoc-chua-hoan-thanh-chuong-trinh-post281586.html>

High school: <https://www.vietnamplus.vn/infographics-mot-so-ket-qua-giao-duc-trong-nam-hoc-2022-2023-post885446.vnp>

Teacher and staff: <https://vietnamnet.vn/ca-nuoc-thieu-hon-118-000-giao-vien-2168290.html>

¹² <https://tuoitre.vn/toan-can-h-giao-duc-viet-nam-nam-hoc-2024-2025-2024090510153954.htm>

Description	Population who consumes the purified water serviced by the project activity in year y																																																																																																																																																				
Source of data	Survey Records																																																																																																																																																				
Description of measurement methods and procedures to be applied	Water purifier distribution database and Monitoring survey records																																																																																																																																																				
Frequency of monitoring/recording	Annual																																																																																																																																																				
Value monitored	1. Day-boarding school <table border="1"> <thead> <tr> <th>PAI</th><th>Number of school</th><th>P_{ay}</th><th>Population usage proportion</th><th>P_y = Number of school* P_{ay}* population usage proportion</th></tr> </thead> <tbody> <tr><td>PA 001</td><td>214</td><td>322</td><td>0.9787</td><td>67,462</td></tr> <tr><td>PA 002</td><td>95</td><td>322</td><td>0.9787</td><td>29,948</td></tr> <tr><td>PA 003</td><td>284</td><td>322</td><td>0.9787</td><td>89,528</td></tr> <tr><td>PA 004</td><td>103</td><td>322</td><td>0.9787</td><td>32,470</td></tr> <tr><td>PA 005</td><td>203</td><td>322</td><td>0.9787</td><td>63,994</td></tr> <tr><td>PA 006</td><td>125</td><td>322</td><td>0.9787</td><td>39,405</td></tr> <tr><td>PA 007</td><td>166</td><td>322</td><td>0.9787</td><td>52,330</td></tr> <tr><td>PA 008</td><td>191</td><td>322</td><td>0.9787</td><td>60,211</td></tr> <tr><td>PA 009</td><td>365</td><td>322</td><td>0.9787</td><td>115,063</td></tr> <tr><td>PA 010</td><td>106</td><td>322</td><td>0.9787</td><td>33,416</td></tr> <tr><td>PA 011</td><td>86</td><td>322</td><td>0.9787</td><td>27,111</td></tr> <tr><td>PA 012</td><td>118</td><td>322</td><td>0.9787</td><td>37,198</td></tr> <tr><td>PA 013</td><td>77</td><td>322</td><td>0.9787</td><td>24,274</td></tr> <tr><td>PA 014</td><td>352</td><td>322</td><td>0.9787</td><td>110,965</td></tr> <tr><td>PA 015</td><td>395</td><td>322</td><td>0.9787</td><td>124,520</td></tr> <tr><td>PA 016</td><td>315</td><td>322</td><td>0.9787</td><td>99,301</td></tr> <tr><td>PA 017</td><td>255</td><td>322</td><td>0.9787</td><td>80,386</td></tr> <tr><td>PA 018</td><td>368</td><td>322</td><td>0.9787</td><td>116,009</td></tr> <tr><td>PA 019</td><td>115</td><td>322</td><td>0.9787</td><td>36,253</td></tr> <tr><td>PA 020</td><td>159</td><td>322</td><td>0.9787</td><td>50,123</td></tr> <tr><td>PA 021</td><td>134</td><td>322</td><td>0.9787</td><td>42,242</td></tr> <tr><td>PA 022</td><td>167</td><td>322</td><td>0.9787</td><td>52,645</td></tr> <tr><td>PA 023</td><td>72</td><td>322</td><td>0.9787</td><td>22,697</td></tr> <tr><td>PA 024</td><td>175</td><td>322</td><td>0.9787</td><td>55,167</td></tr> <tr><td>PA 025</td><td>105</td><td>322</td><td>0.9787</td><td>33,100</td></tr> <tr><td>PA 026</td><td>120</td><td>322</td><td>0.9787</td><td>37,829</td></tr> <tr><td>PA 027</td><td>120</td><td>322</td><td>0.9787</td><td>37,829</td></tr> <tr><td>PA 028</td><td>5</td><td>322</td><td>0.9787</td><td>1,576</td></tr> </tbody> </table>				PAI	Number of school	P _{ay}	Population usage proportion	P _y = Number of school* P _{ay} * population usage proportion	PA 001	214	322	0.9787	67,462	PA 002	95	322	0.9787	29,948	PA 003	284	322	0.9787	89,528	PA 004	103	322	0.9787	32,470	PA 005	203	322	0.9787	63,994	PA 006	125	322	0.9787	39,405	PA 007	166	322	0.9787	52,330	PA 008	191	322	0.9787	60,211	PA 009	365	322	0.9787	115,063	PA 010	106	322	0.9787	33,416	PA 011	86	322	0.9787	27,111	PA 012	118	322	0.9787	37,198	PA 013	77	322	0.9787	24,274	PA 014	352	322	0.9787	110,965	PA 015	395	322	0.9787	124,520	PA 016	315	322	0.9787	99,301	PA 017	255	322	0.9787	80,386	PA 018	368	322	0.9787	116,009	PA 019	115	322	0.9787	36,253	PA 020	159	322	0.9787	50,123	PA 021	134	322	0.9787	42,242	PA 022	167	322	0.9787	52,645	PA 023	72	322	0.9787	22,697	PA 024	175	322	0.9787	55,167	PA 025	105	322	0.9787	33,100	PA 026	120	322	0.9787	37,829	PA 027	120	322	0.9787	37,829	PA 028	5	322	0.9787	1,576
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PA 029	120	322	0.9787	37,829
PA 030	239	322	0.9787	75,343
PA 031	279	322	0.9787	87,952
PA 032	172	322	0.9787	54,221
Total	5,800			1,828,396

2. Boarding school

PAI	Number of school	P _{ay}	Population usage proportion	P _y = Number of school* P _{ay} * population usage proportion
PA 001	2	265	1	530
PA 002	55	265	1	14,570
PA 003	15	265	1	3,974
PA 004	33	265	1	8,742
PA 005	125	265	1	33,115
PA 006	112	265	1	29,671
PA 007	13	265	1	3,444
PA 008	12	265	1	3,179
PA 009	13	265	1	3,444
PA 010	4	265	1	1,060
PA 013	144	265	1	38,148
PA 014	81	265	1	21,458
PA 018	1	265	1	265
PA 020	3	265	1	795
PA 021	64	265	1	16,955
PA 022	18	265	1	4,769
PA 024	2	265	1	530
PA 025	4	265	1	1,060
PA 026	3	265	1	795
PA 028	19	265	1	5,033
PA 029	23	265	1	6,093
PA 030	3	265	1	795
PA 031	54	265	1	14,306
PA 032	1	265	1	265
Total	804			212,993

3. Institution

PAI	Number of institution	P _{ay}	Population usage proportion	P _y = Number of institution * P _{ay} * population usage proportion
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	PA 007	2	173	1	345
	PA 015	1	173	1	173
	PA 016	1	173	1	173
	PA 018	6	173	1	1036
	PA 020	2	173	1	345
	PA 021	1	173	1	173
	PA 023	3	173	1	518
	PA 026	5	173	1	864
	PA 029	1	173	1	173
	PA 032	1	173	1	173
	Total	23			3,972
Monitoring equipment	-				
QA/QC procedures to be applied	A 95 /10 confidence / margin of error is applied for the sampling parameter as per para 22 of Standard: Sampling and surveys for CDM project activities and programmes of activities, version 09.0				
Purpose of the data	Calculation the baseline emission				
Calculation method	Calculated by the number of school/institution * the average of people in school/institution * population usage proportion.				
Comments	Water purifier distribution database and Monitoring survey records				

Data / Parameter	QPWy				
Data unit	litres				
Description	Quantity of purified water in year y				
Source of data	Calculated				
Description of measurement methods and procedures to be applied	This parameter can be calculated based on equation: $QPWy = Py \times \min(QPW_{pp}; 5.5) \times \text{Number of operating days}$				
Frequency of monitoring/recording	Annual				
Value monitored	PAI	Day-boarding school	Boarding school	Institution	Total
	PA 001	26,714,757	286,110	-	27,000,867
	PA 002	11,643,730	7,728,149	-	19,371,879
	PA 003	33,841,719	2,126,751	-	35,968,470
	PA 004	12,935,965	4,741,796	-	17,677,761
	PA 005	25,418,361	18,001,088	-	43,419,449
	PA 006	15,462,556	15,701,717	-	31,164,273
	PA 007	20,345,886	1,814,255	312,587	22,472,729
	PA 008	23,988,051	1,743,364	-	25,731,415
	PA 009	45,564,890	1,863,848	-	47,428,737
	PA 010	13,272,642	568,405	-	13,841,047
	PA 011	10,638,238	-	-	10,638,238
	PA 012	14,596,653	-	-	14,596,653
	PA 013	9,554,063	20,966,141	-	30,520,203
	PA 014	44,075,188	11,613,205	-	55,688,393
	PA 015	49,309,949	-	146,603	49,456,552
	PA 016	38,608,158	-	159,107	38,767,265
	PA 017	31,447,150	-	-	31,447,150
	PA 018	45,939,395	138,604	917,130	46,995,130
	PA 019	14,269,055	-	-	14,269,055
	PA 020	19,848,815	409,137	320,089	20,578,041

	PA 021	16,575,860	9,216,557	157,544	25,949,961
	PA 022	20,531,626	2,563,546	-	23,095,172
	PA 023	9,015,379	-	458,565	9,473,945
	PA 024	21,713,779	281,659	-	21,995,438
	PA 025	12,909,106	581,121	-	13,490,228
	PA 026	15,025,632	432,026	792,408	16,250,066
	PA 027	15,161,816	-	-	15,161,816
	PA 028	618,502	2,585,163	-	3,203,665
	PA 029	14,163,134	3,209,836	157,856	17,530,827
	PA 030	30,558,928	421,535	-	30,980,464
	PA 031	34,829,053	7,776,470	-	42,605,522
	PA 032	21,601,805	144,327	146,916	21,893,048
	Total	720,179,843	114,914,810	3,568,806	838,663,459
Monitoring equipment	-				
QA/QC procedures to be applied	NA				
Purpose of the data	Calculation of baseline emissions				
Calculation method	-				
Comments	With number of operating days: - For school: according to Decision No. 2045/QĐ-BGDĐT issued on 01 August 2024, schools officially complete the program and the school semester before 31/05/2025¹³. Therefore, to be conservative, PP has selected 30 May 2025, as the official end-to-school date. Beside, during the monitoring period, students also got off on major Vietnamese holidays, details are as follow: 1 day for New Year's day 5 days for Lunar New year 1 day for Victory day 1 day for International Labor				

¹³https://thuvienphapluat.vn/van-ban/Giao-duc/Quyết-dinh-2045-QĐ-BGDĐT-2024-Khung-ke-hoach-thoi-gian-nam-hoc-2024-2025-giao-duc-pho-thong-619908.aspx?anchor=dieu_1



- 1 day for Hung King's Commemoration

There are a total of 9 days off according to the provisions of the Labor Code¹⁴.

Moreover, From the begin to the end of the crediting period, there are a total of 21 Sundays. As such, PP has determined that the number of school days for students during the monitoring period (from 01-January-2025 to 30-June-2025) is 120 days.

- For institution: Institutions include community homes, homes for the disabled, orphanages, nursing homes, and mental health centers—the water purifiers are considered to operate for 181 days .

¹⁴ <https://thuvienphapluat.vn/phap-luat/ho-tro-phap-luat/lich-ngghi-tet-duong-lich-2025-chinh-thuc-ngghi-tet-duong-lich-2025-tu-ngay-may-tet-duong-lich-2025-n-899095-188042.html>

Data / Parameter	m
Data unit	fraction
Description	Fraction of functional appliances that are providing the SDWP
Source of data	Microbiological testing certificates are conducted by the laboratory named VNTEST Institute for Quality Testing and Inspection and Viet Tin Analysis Testing Company Limited from 22nd May 2025 to 02 June 2026. The Laboratories have been assessed and confirmed to comply with the requirements of international standards ISO/IEC 17025:2017 according to the accreditation certificate of Department of Natural Resources and Environment and Technology Bureau of Accreditation (BoA)
Description of measurement methods and procedures to be applied	For determination of functional appliances that providing the SDWP, an across PA sampling based on WP vintage with the applied 95/10 confidence precision level. Total of 45 samples were microbiological testing at the Laboratory and all samples meet conditions following: - Using filtration ceramic with Natural Osmosis systems to create safe drinking water - All water purifiers are still operating in good condition as well as physical signs that are observable (e.g. wetness of the unit, water in storage receptacle, functionality of parts) 45 samples are tested by method ISO 9308 and 7899 and met the Microbiological parameters required by QCVN 06-1:2010/BYT for drinking water
Frequency of monitoring/recording	Annually
Value monitored	1 All testing results for total coliforms, E. Coli, Streptococci feacal, Pseudomonas aeruginosa and Spores of sulfite-reducing bacteria are not detected.
Monitoring equipment	-
QA/QC procedures to be applied	Microbiological testing is confirmed by third parties' institution annually. There are the third parties that conducted the test during monitoring period. The lab has been recognized by VILAS in accordance with international standards ISO/IEC 17025
Purpose of the data	Calculation of baseline emissions
Calculation method	-

Comments	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". 95% confidence interval and a 10% margin of error requirement shall be achieved for the sampled parameters
Data / Parameter	Check for SDWP public distribution network
Data unit	fraction
Description	Annual check if there is a public distribution network supplying SDWP is installed
Source of data	Before distributing, there is the confirmation letter with local authority that the schools/institutions receiving water purifier do not have access to SDWP public distribution network. Moreover, this will also be checked by questionnaire survey during monitoring period.
Description of measurement methods and procedures to be applied	1. Before distribution at new area, the distribution partners will send an official letter confirming that the WP distribution locations are places that do not have access to clean water. This confirmation has been provided to VVB for checking in supporting documents. 2. The random survey by questionnaires for schools and institutions was used to check if there is a public distribution network supplying SDW is installed. The survey conducted by interview the school/institution representatives (for example principle, teacher or workers who are authorized to be in charge of managing the project's water purifiers in the school/institution). In addition, PP also cross-checks with information of 3 distribution partners which sent to SIPCO during the monitoring period. If the school/institution accessed to safe drinking water, the emission reduction will be discarded (according to proportion) and the school/institution will be removed from the project database and will not be included in carbon reduction calculations for the entire monitoring period for conservative. Monitoring shall include annual check if there is public distribution network supplying SDW
Frequency of monitoring/recording	Annually
Value monitored	1 All samples selected for monitoring have not yet haven access to public distribution network
Monitoring equipment	-
QA/QC procedures to be applied	-

Purpose of the data	Calculation of baseline emissions
Calculation method	-
Comments	If SDWP is made available through a public distribution network during the crediting period, the emission reductions pertaining to the households/buildings supplied by the public system cannot be claimed from that point onwards. This condition should be checked annually during the crediting period.

Data / Parameter	Quality of safe drinking water
Data unit	fraction
Description	The quality of the safe drinking water
Source of data	Testing's quality of safe drinking water is conducted by the laboratory named VNTEST Institute for Quality Testing and Inspection and Viet Tin Analysis Testing Company Limited from 22nd May 2025 to 02 June 2025. The Laboratories have been assessed and confirmed to comply with the requirements of international standards ISO/IEC 17025:2017 according to the accreditation certificate of Department of Natural Resources and Environment and Technology Bureau of Accreditation (BoA)
Description of measurement methods and procedures to be applied	PP selected 11 samples to monitor for this parameter based on the Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities (Version 09.0), which refers to the Guidelines for Sampling and Surveys for CDM Project Activities and Programmes of Activities (Version 04). All samples are meet requirement of QCVN 06-1:2010/BYT for drinking water.
Frequency of monitoring/recording	Once every two years
Value applied	1 All samples selected for monitoring meet requirement of QCVN 06-1:2010/BYT for drinking water
Monitoring equipment	-
QA/QC procedures to be applied	Quality of safe drinking water is confirmed by third parties' institution annually. There are the third parties that conducted the test during monitoring period. The laboratory has been recognized by international standards ISO/IEC 17025.
Purpose of data	Calculation of baseline emission
Calculation method	-
Comments	Emission reductions cannot be claimed if project activity fails to meet SDWP standards

4.3 Monitoring Plan

The monitoring procedures and sampling plan for the grouped project is in-line with AMS- III.AV Low greenhouse gas emitting safe drinking water production systems (version 08.0) and the procedures outlined of the Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities (version 09.0), which refers to the Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities (version 04)

1. Sampling design

a. Objectives and reliability requirements

As a rule, the most appropriate confidence/precision levels required by the methodology AMS-III.AV (version 08.0) and the Sampling Standard (version 09.0) are applied whenever sampling is undertaken. According to the Sampling Standard, 95/10 reliability is to be applied whenever sampling across a group of instances, which is typically the case for this grouped project. In the case of conducting instance-specific sampling, the methodology AMS-III.AV (version 08.0) requires 90/10 confidence/precision if annual sampling is applied, or 95/10 confidence/precision if biennial (every two years) sampling is applied.

The objective of the sampling effort is meet the monitoring requirements set forth in the methodologies AMS-III.AV (Version 08.0). Monitoring are carried out on an annual basis (or biennial for specific parameters when allowed by the methodology. As the grouped project progresses and the number of instance increases, the sampling plan can apply to a group of instances. This is applicable to instance types as long as homogeneity can be demonstrated. When homogeneity cannot be demonstrated the PP may monitor instances individually. All monitoring is coordinated by the PP.

Parameter	Description of parameter	Monitoring frequency
P_y	Population who consumes the purified water serviced by the project activity in year y	At least annually
Check for SDW public distribution network	Annual check if there is a public distribution network supplying SDW is installed	At least annually
m	Fraction of functional appliances that are meeting the SDWP Standard	At least annually
Quality of safe drinking water	The quality of the safe drinking water	At least every two years
P_{ay}	Average of people per school/institution	At least annually

b. Target population

For the parameter P_{ay} ; P_y and Check for SDW public distribution network, the target population are the total schools and institutions distributed water purifiers under the project activities.

For the remaining parameters, the target population are the total water purifier served under the specific instance project activity or group of instances.

c. Sampling method

Sampling is conducted using stratified random sampling techniques, and detailed calculations are provided within the monitoring plan as per CDM guidelines “Sampling and surveys for CDM project activities and programmes of activities”. Optionally, other sampling approaches may be used in accordance with “Sampling and surveys for CDM project activities and programmes of activities” and Guideline for Sampling and Surveys for CDM Project. Activities when sampling techniques or statistical analysis necessitates it.

d. Sample size

The sample size is calculated using the EB 86, “Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities”, version 04.0.

According to the “Standard for sampling and surveys for CDM project activities and programme of activities”, if there is more than one parameter to be estimated, then a sample size calculation should be done for each of them. Then either the largest number for the sample size is chosen as sampling effort with one common survey, or separate sampling efforts and surveys are undertaken for each parameter.

Thus, there are different equations to calculate a required sample size for different situations. Different equation that will be used, depends on the type of parameter of interest, that is either:

For all of the parameters a 90% confidence is required where the margin of error in the estimate is not more than 10% and assuming annual sampling for a single instance. If sampling is done across a group of instance or biennially, parameters shall have a 95% confidence level.

Below formula assume sampling to be done across a group of instances and hence calculations are demonstrated with a 95% confidence level.

1. Parameter P_y and the fraction of SDWP public distribution network

For population who consumes the purified water serviced by the project activity in year y (P_y), the equation is used:

$$n \geq \frac{1.96^2 N \times p (1-p)}{(N -1) \times 0.1^2 \times p^2 + 1.96^2 \times p (1- p)}$$

Where:

- n : Sample size
- $N=N_y$: School/institution where consumes the purified water serviced by the project activity in year y
- p : Our expected proportion of the installed water purification systems will be in use and operating at the specified efficiency)
- 1.96 : Represents the 95 % confidence required
- 0.1 : Represents the 10 % relative precision

Based on the above assumptions, the resulting sampling size for a 95/10 confidence precision is calculated as:

Monitoring Parameter	Water purifier Operating Fraction for determination of P_y and check for SDWP public distribution network			
Sampling frame (s)	Given schools and institutions			
Sampling approach	Stratified random sampling based on type of schools and institutions			
Sampling Population (Batch)	Population size	Expected operational proportion	Calculated Sample Size	Actual Monitored sample size (n)
Day-boarding school	5,800	0.90	37.634	47
Boarding school	804	0.90	5.217	7
Institution	23	0.90	0.149	1
Sample size determination				
Estimated Operation (p)				0.90
$V_{operation} = p(1-p)/p^2$				0.111
Sample Size required (SOF)				43

Additionally, as per registered sampling plan, it's recommended that the project proponent may choose to use the same samples to monitor more than one parameter, where parameters have same units. Sampling more than one parameter within the same sample (light points) helps reduce travel needs for monitoring and the associated costs. At the same time this approach ensures the random selection of samples for every parameter. Also, oversampling is strongly encouraged, not only to compensate for any attrition, outliers or nonresponse associated with the sample, but also to prevent a situation at the analysis stage where the required reliability is not achieved and additional sampling efforts would be required. We expect the response rate from the sampled school/institution to be 80%. Thus, a total of 55 samples were selected.

2. Parameter m

For Fraction of functional appliances that are meeting the SDWP Standard (m), the equation is used:

$$1.96^2 N \times p (1-p)$$

$$n \geq \frac{1.96^2 N \times p (1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.96^2 \times p (1-p)}$$

Where:

- n : Sample size
- N=N_y : School/Institution where consumes the purified water serviced by the project activity in year y
- p : Our expected proportion of the installed water purification systems will be in use and operating at the specified efficiency)
- 1.96 : Represents the 95 % confidence required
- 0.1 : Represents the 10 % relative precision

Based on the above assumptions, the resulting sampling size for a 95/10 confidence precision is calculated as:

Monitoring Parameter		Function fraction (m)			
Sampling frame (s)		Given year of water purifier distribution			
Sampling approach		Stratified random sampling based on year of water purifier distribution			
Sampling Population (Batch)	Year of distribution	Population Size	Expected operational proportion	Calculated Sample Size	Actual Monitored sample size (n)
Ecozen-25 2022	2022	20	0.90	0.003	1
Ecozen-25 2023	2023	299,980	0.90	40.950	41
Ecozen-25 2024	2024	15,000	0.90	2.048	2
Sample size determination					
Estimated Operation (p)				0.90	
$V_{operation} = p(1-p)/p^2$				0.111	
Sample Size required (SOF)				43	

Therefore, there are 44 samples to choose for parameter m.

3. For Quality of safe drinking water

Water quality monitoring are undertaken annually or biennially on a sampling basis. This comply with relevant national standards. To ensure compliance of the water quality 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, the water quality shall be monitored on sample basis for contamination with Escherichia coli (E. coli). A test for E. coli colony forming units (CFU) in 100 ml of water or an equivalent quantitative test for E. coli CFU shall be used. The fraction of water quality measurements providing water of insufficient quality is excluded from the calculation of emission reductions:

$$n \geq \frac{1.96^2 NV}{(N-1) \times 0.1^2 + 1.96^2 \times V}$$

$$V = \left(\frac{SD}{mean} \right)^2$$

Where:

n : Sample size

N=Ny : Number of SDWPs in the target population (schools/institutions).

1.96 : Represents the 95% confidence required

0.1 : Represents the 10% relative precision

Mean : Our expected mean

SD : Our expected standard deviation

Based on the above assumptions, the sample size calculation for a 95/10 confidence/precision would be:

Monitoring Parameter	Water Quality					
Sampling approach	Stratified random sampling based on year of water purifier distribution					
Year	Year of distribution	Population Size	Expected Mean	Expected Standard Deviation	Calculated Sample Size	Actual Monitored sample size (n)
Ecozen-25 2022	2022	20	0.90	0.090	0.001	1
Ecozen-25 2023	2023	299,980	0.90	0.090	6.666	9
Ecozen-25 2024	2024	15,000	0.90	0.090	0.333	1
Sample size determination						
Mean					0.9000	
Standard Deviation (SD)					0.0900	
$V_{\text{mean}} = (SD/\text{mean})^2$					0.01000	
Minimum Sample Size required					4	
tDistribution sample size adjustment				Iteration 1	11	
				Iteration 2	5	
				Iteration 3	8	
				Iteration 4	6	
				Iteration 5	7	
				Iteration 6	6	

As the sample size calculated above is less than 30, the Student's t-distribution has been used to calculate the sample size (in accordance with paragraph 13 of standard: sampling and survey for CDM project activities and programmes of activities (version 09.0)).

The adjusted sample size obtained after applying Student's t-distribution is 7. PP expected response rat from the sampled school/institution to by 80%. Thus, we would decide to sample at 11. Furthermore, to save cost for testing parameter m, we choose 11 samples available for parameter water quality from 44 samples of parameter m.

4. Average of people per school/institution (Pay)

This parameter is a mean value. Hence, the sample size is calculated as:

$$n \geq \frac{1.96^2 NV}{(N-1) \times 0.1^2 + 1.96^2 \times V}$$

$$V = \left(\frac{SD}{\text{mean}} \right)^2$$

Where:

n : Sample size

N=Ny : Number of SDWPs in the target population (schools/institutions).

1.96 : Represents the 95% confidence required

0.1 : Represents the 10% relative precision

Mean : Our expected mean

SD : Our expected standard deviation

Based on the above assumptions, the sample size calculation for a 95/10 confidence/precision would be:

Monitoring Parameter	Pay				
Sampling approach	Stratified random sampling based on type of schools and institutions				
Sampling Population (Batch)	Population Size	Expected Mean	Expected Standard Deviation	Calculated Sample Size	Actual Monitored sample size
Day-boarding school	5,800	300	30	0.147	47
Boarding school	804	280	28	0.018	7
Institution	23	150	15	0.001	1
Sample size determination					
Mean				297.0530	
Standard Deviation (SD)				29.7251	
$V_{\text{mean}} = (SD/\text{mean})^2$				0.01001	
Minimum Sample Size required				4	
tDistribution sample size adjustment			Iteration 1	11	
			Iteration 2	5	
			Iteration 3	8	
			Iteration 4	6	
			Iteration 5	7	
			Iteration 6	6	

Since parameters Pay and Py and check for SDWP public distribution network share the same sampling units, PP may choose to have one common survey for these three parameters. So, the sample size for P_{ay} is 55 samples.

Analysis of data collected and confidence/precision achieved

Analysis of data monitored through sampling revealed the following results:

RESULT FOR POPULATION USAGE PROPORTION P_y			
Sampling Population	Sampling frame size	Monitored Sample Size	Monitored population usage proportion
Day-boarding school	5,800	47	0.98
Boarding school	804	7	1.00
Institution	23	1	1.00
Reliability Check			
Samples Monitored			55
Utilization Measured			0.9814
Standard Error of Utilization			0.00%
Relative precision (Margin of error)			0.00%
Result			Ok, reliability level met
Lower Bound confidence value			Not applicable

RESULT FOR PUBLIC WATER SUPPLY SYSTEM FRACTION			
Sampling Population	Sampling frame size	Monitored Sample Size	Monitored public water supply system fraction
Day-boarding school	5,800	47	1.00
Boarding school	804	7	1.00
Institution	23	1	1.00
Reliability Check			
Samples Monitored			55
Utilization Measured			1.00
Standard Error of Utilization			0.00%
Relative precision (Margin of error)			0.00%
Result			Ok, reliability level met
Lower Bound confidence value			Not applicable

RESULT FOR PARAMETER WATER QUALITY FRANCTION			
Sampling Population	Sampling frame size	Monitored Sample Size	Monitored microbiological quality fraction (m)
Ecozen-25 2022	20	1	1.00
Ecozen-25 2023	299,980	9	1.00
Ecozen-25 2024	15,000	1	1.00
Reliability Check			
Samples Monitored			44
Utilization Measured			1.00
Standard Error of Utilization			0.00%
Relative precision (Margin of error)			0.00%
Result			Ok, reliability level met
Lower Bound confidence value			Not applicable

RESULT FOR PARAMETER m			
Sampling Population	Sampling frame size	Monitored Sample Size	Monitored microbiological quality fraction (m)
Ecozen-25 2022	20	1	1.00
Ecozen-25 2023	299,980	42	1.00
Ecozen-25 2024	15,000	2	1.00
Reliability Check			
Samples Monitored			45
Utilization Measured			1.00
Standard Error of Utilization			0.00%
Relative precision (Margin of error)			0.00%
Result			Ok, reliability level met
Lower Bound confidence value			Not applicable

ANALYSIS FOR PARAMETER P _{ay}			
Sample Monitored	Day-boarding school	Boarding school	Institution
Sample frame	5,800	804	23
Monitored sample size	47	7	1
Mean Value	337	271	238
Standard deviation	196	204	0
Upper boundary level	393	422	238
Lower boundary level	281	120	238
Check precision	0.21%	0.65%	0.21%
Lower outlier limit	43	-35	238
Upper outlier limit	631	577	238

For detailed calculations refer ER sheet.

e. Sample Frame

The sampling frame consists of types of schools and institutions for the parameters P_{ay}, P_y, and Check for the SDW public distribution network, while the distribution years of water purifiers form the sampling frame for the parameters m and water quality .

This project is either sampled separately and independently, or grouped together under a single sampling plan across instance, in each case using strata that have unique combinations of these factors.

The total number of appliances installed under the grouped project and operated per type of technology in this monitoring period are the total sampling frame per distributed technology. Each water purifier is labelled with a unique serial number. Hence, the water purifiers were selected randomly after arranging them in chronological order of date of distribution and assigning a sampling number in each strata (each project activity instance). To ensure a random selection of WPs from the project database, samples are drawn by using the random number generator. The populations of each strata are combined together, the sample size is determined, and a single survey is undertaken across the project activities to collect data. To ensure the survey result is representative of the entire population, the dissimilarity (such as distribution year of water purifier, vintage in which they are operating) among the strata's is taken into account in the sample size calculation. The WPs of same type, distribution year in the same strata.

(f) Survey implementation schedule

The sample to be surveyed is drawn randomly with distribution year of water purifier. The survey was conducted through: physical on-site visit (face-to-face) from 22-May-2025 to 30-May-2025 for schools and 30-June-2025 for institutions. For the physical on-site visit (face-to-face interview), data is collected through hardcopy questionnaires.

Training

Before implementing survey, SIPCO conducted a training about sampling and survey for employees on 15-May-2025. Attendees included Director, manager of project coordination, manager of project consultant and employees participating in the survey. Major focus is on understanding collection of data as per the survey questionnaire.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The baseline emissions shall be calculated as follows:

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

Where:

- BE_y : Baseline emissions during the year y in (tCO₂e)
- QPW_y : Total quantity of purified water by the project in year y (litres)
- m : Fraction of functional appliances that are meeting the SDWP standards (%). 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.

- X_{boil} : Fraction of the population served by the project activity for which the common practice of water purification is or would have been water boiling. This shall be determined ex-ante through surveys.
- SEC : Specific energy consumption required to boil one litre of water(kJ/L) to be calculated according to paragraphs below.
- $BL_{fuel,i}$: 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 (f_{NRB}). If the baseline fossil fuel, the value to be applied is 1.
- $EF_{projectedfossilfuel,i}$: Emission factor of the fossil fuel substituted (tCO₂/TJ).

The grouped project completely distributed 315,000 water purifiers to schools and institutions in to 35 provinces in Viet Nam. According to the results of a random survey of end-users in each project activity, the result of the parameter P_y , QWP_{pp} , X_{boil} , $BL_{fuel,i}$ for each project activity instance:

PAI	QWP _{yy} (L/person/day)			P _y (number)			X _{boil} (fraction)	BL _{fuel,i} (fraction)
	Day-boading	Boarding	Institution	Day-boading	Boarding	Institution		
PA 001	3.3	4.5	-	70,584	286,927	-	1	0.9626
PA 002	3.24	4.42	-	31,334	7,750,219	-	1	0.9579
PA 003	3.15	4.46	-	93,672	2,132,824	-	1	0.9648
PA 004	3.32	4.52	-	33,972	4,755,338	-	1	0.9674
PA 005	3.31	4.53	-	66,955	18,052,494	-	1	0.9655
PA 006	3.27	4.41	-	41,229	15,746,557	-	1	0.9600
PA 007	3.24	4.39	5	54,752	1,819,436	476	1	0.9518
PA 008	3.32	4.57	-	62,997	1,748,342	-	1	0.9738
PA 009	3.3	4.51	-	120,388	1,869,170	-	1	0.9699
PA 010	3.31	4.47	-	34,962	570,028	-	1	0.9434
PA 011	3.27	-	-	28,365	-	-	1	0.9651
PA 012	3.27	-	-	38,920	-	-	1	0.9746
PA 013	3.28	4.58	-	25,397	21,026,014	-	1	0.9351
PA 014	3.31	4.51	-	116,100	11,646,369	-	1	0.9886
PA 015	3.3	-	4.69	130,283	-	238	1	0.9722
PA 016	3.24	-	5.09	103,896	-	238	1	0.9683
PA 017	3.26	-	-	84,107	-	-	1	0.9765
PA 018	3.3	4.36	4.89	121,377	139,000	1428	1	0.9729
PA 019	3.28	-	-	37,930	-	-	1	0.9565
PA 020	3.3	4.29	5.12	52,443	410,306	476	1	0.9623
PA 021	3.27	4.53	5.04	44,197	9,242,877	238	1	0.9540
PA 022	3.25	4.48	-	55,082	2,570,866	-	1	0.9820
PA 023	3.31	-	4.89	23,748	-	714	1	0.9444

PA 024	3.28	4.43	-	57,720	282,464	-	1	0.9714
PA 025	3.25	4.57	-	34,632	582,781	-	1	0.9619
PA 026	3.31	4.53	5.07	39,580	433,260	1,190	1	0.9417
PA 027	3.34	-	-	39,580	-	-	1	0.9667
PA 028	3.27	4.28	-	1,649	2,592,545	-	1	1.0000
PA 029	3.12	4.39	5.05	39,580	3,219,003	238	1	0.9583
PA 030	3.38	4.42	-	78,829	422,739	-	1	0.9952
PA 031	3.3	4.53	-	92,023	7,798,677	-	1	0.9833
PA 032	3.32	4.54	4.7	56,731	144,739	238	1	0.9829

The quantity of purified water in year is calculated as following:

$$QPWy = Py \times QPWpp;5.5) \times \text{Proportion active days in year}$$

- For day-boarding school: (population usage proportion = 0.9787)

Project Activity Instance	Number of school (number)	Quantity of water purifier distributed (number)	Start date of water purifier crediting (considering the start date of the monitoring vintage)	End date of water purifier crediting (considering the end date of the monitoring vintage)	Number of school days during this monitoring period (number)	Population who consumes the purified water serviced (Py) (number)	QPWy (litres)
PA 001	214	5,854	1-Jan-25	30-Jun-25	120	67,462	26,714,757
PA 002	95	3,780	1-Jan-25	30-Jun-25	120	29,948	11,643,730
PA 003	284	12,480	1-Jan-25	30-Jun-25	120	89,528	33,841,719
PA 004	103	4,318	1-Jan-25	30-Jun-25	120	32,470	12,935,965
PA 005	203	8,071	1-Jan-25	30-Jun-25	120	63,994	25,418,361
PA 006	125	1,757	1-Jan-25	30-Jun-25	120	39,405	15,462,556
PA 007	166	4,375	1-Jan-25	30-Jun-25	120	52,330	20,345,886
PA 008	191	6,503	1-Jan-25	30-Jun-25	120	60,211	23,988,051
PA 009	365	13,178	1-Jan-25	30-Jun-25	120	115,063	45,564,890
PA 010	106	4,385	1-Jan-25	30-Jun-25	120	33,416	13,272,642
PA 011	86	4,089	1-Jan-25	30-Jun-25	120	27,111	10,638,238
PA 012	118	4,547	1-Jan-25	30-Jun-25	120	37,198	14,596,653
PA 013	77	2,935	1-Jan-25	30-Jun-25	120	24,274	9,554,063
PA 014	352	3,609	1-Jan-25	30-Jun-25	120	110,965	44,075,188
PA 015	395	25,990	1-Jan-25	30-Jun-25	120	124,520	49,309,949
PA 016	315	20,990	1-Jan-25	30-Jun-25	120	99,301	38,608,158
PA 017	255	26,000	1-Jan-25	30-Jun-25	120	80,386	31,447,150
PA 018	368	25,839	1-Jan-25	30-Jun-25	120	116,009	45,939,395
PA 019	115	3,089	1-Jan-25	30-Jun-25	120	36,253	14,269,055
PA 020	159	11,873	1-Jan-25	30-Jun-25	120	50,123	19,848,815
PA 021	134	6,831	1-Jan-25	30-Jun-25	120	42,242	16,575,860
PA 022	167	6,651	1-Jan-25	30-Jun-25	120	52,645	20,531,626

PA 023	72	5,088	1-Jan-25	30-Jun-25	120	22,697	9,015,379
PA 024	175	14,071	1-Jan-25	30-Jun-25	120	55,167	21,713,779
PA 025	105	2,473	1-Jan-25	30-Jun-25	120	33,100	12,909,106
PA 026	120	8,615	1-Jan-25	30-Jun-25	120	37,829	15,025,632
PA 027	120	6,462	1-Jan-25	30-Jun-25	120	37,829	15,161,816
PA 028	5	195	1-Jan-25	30-Jun-25	120	1,576	618,502
PA 029	120	2,375	1-Jan-25	30-Jun-25	120	37,829	14,163,134
PA 030	239	11,017	1-Jan-25	30-Jun-25	120	75,343	30,558,928
PA 031	279	11,488	1-Jan-25	30-Jun-25	120	87,952	34,829,053
PA 032	172	7,987	15-Aug-24	30-Jun-25	120	54,221	21,601,805
Total	5,800	276,915				1,828,396	720,179,843

- For boarding school (population usage proportion = 1)

Project Activity Instance	Number of school (number)	Quantity of water purifier distributed (number)	Start date of water purifier crediting (considering the start date of the monitoring vintage)	End date of water purifier crediting (considering the start date of the monitoring vintage)	Number of school days during this monitoring period (number)	Population who consumes the purified water serviced (Py) (number)	QPW _y (litres)
PA 001	2	146	1-Jan-25	30-Jun-25	120	530	286,110
PA 002	55	2,591	1-Jan-25	30-Jun-25	120	14,570	7,728,149
PA 003	15	781	1-Jan-25	30-Jun-25	120	3,974	2,126,751
PA 004	33	1,352	1-Jan-25	30-Jun-25	120	8,742	4,741,796
PA 005	125	6,376	1-Jan-25	30-Jun-25	120	33,115	18,001,088
PA 006	112	4,224	1-Jan-25	30-Jun-25	120	29,671	15,701,717
PA 007	13	392	1-Jan-25	30-Jun-25	120	3,444	1,814,255
PA 008	12	536	1-Jan-25	30-Jun-25	120	3,179	1,743,364
PA 009	13	559	1-Jan-25	30-Jun-25	120	3,444	1,863,848
PA 010	4	110	1-Jan-25	30-Jun-25	120	1,060	568,405
PA 013	144	8,489	1-Jan-25	30-Jun-25	120	38,148	20,966,141
PA 014	81	1,094	1-Jan-25	30-Jun-25	120	21,458	11,613,205
PA 018	1	30	1-Jan-25	30-Jun-25	120	265	138,604
PA 020	3	127	1-Jan-25	30-Jun-25	120	795	409,137
PA 021	64	3,762	1-Jan-25	30-Jun-25	120	16,955	9,216,557
PA 022	18	1,057	1-Jan-25	30-Jun-25	120	4,769	2,563,546
PA 024	2	80	1-Jan-25	30-Jun-25	120	530	281,659
PA 025	4	111	1-Jan-25	30-Jun-25	120	1,060	581,121
PA 026	3	162	1-Jan-25	30-Jun-25	120	795	432,026
PA 028	19	805	1-Jan-25	30-Jun-25	120	5,033	2,585,163

PA 029	23	629	1-Jan-25	30-Jun-25	120	6,093	3,209,836
PA 030	3	89	1-Jan-25	30-Jun-25	120	795	421,535
PA 031	54	3,747	1-Jan-25	30-Jun-25	120	14,306	7,776,470
PA 032	1	91	6-Aug-24	30-Jun-25	120	265	144,327
Total	804	37,340				212,993	114,914,810

- For institution ((population usage proportion = 1)

Project Activity Instance	Number of school (number)	Quantity of water purifier distributed (number)	Start date of water purifier crediting (considering the start date of the monitoring vintage)	End date of water purifier crediting (considering the start date of the monitoring vintage)	Number of school days during this monitoring period (number)	Population who consumes the purified water serviced (Py) (number)	QPW _y (litres)
PA 007	2	13	1-Jan-25	30-Jun-25	181	345	312,587
PA 015	1	10	1-Jan-25	30-Jun-25	181	173	146,603
PA 016	1	10	1-Jan-25	30-Jun-25	181	173	159,107
PA 018	6	131	1-Jan-25	30-Jun-25	181	1036	917,130
PA 020	2	417	1-Jan-25	30-Jun-25	181	345	320,089
PA 021	1	42	1-Jan-25	30-Jun-25	181	173	157,544
PA 023	3	37	1-Jan-25	30-Jun-25	181	518	458,565
PA 026	5	52	1-Jan-25	30-Jun-25	181	864	792,408
PA 029	1	13	1-Jan-25	30-Jun-25	181	173	157,856
PA 032	1	20	18-Aug-24	30-Jun-25	181	173	146,916
Total	23	745				3,972	3,568,806

The baseline emissions are calculated as follows:

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

Where:

- SEC = 3574.8
- $f_i = 0.6522$
- $EF_{fossil fuel,i} = 85.7$
- $m = 1$

The following results for each project activity instance:

PAI	Day-boarding school (tCO ₂ e)	Boarding school (tCO ₂ e)	Institution (tCO ₂ e)	Total baseline emissions for each PAI (tCO ₂ e)
PA 001	5,138	55	-	5,193
PA 002	2,229	1,479	-	3,708
PA 003	6,477	410	-	6,887
PA 004	2,500	917	-	3,417
PA 005	4,904	3,473	-	8,377
PA 006	2,966	3,012	-	5,978
PA 007	3,869	345	59	4,273
PA 008	4,668	339	-	5,007
PA 009	8,830	361	-	9,191
PA 010	2,502	107	-	2,609
PA 011	2,051	-	-	2,051
PA 012	2,842	-	-	2,842
PA 013	1,785	3,917	-	5,702
PA 014	8,707	2,294	-	11,001
PA 015	9,578	-	28	9,606
PA 016	7,469	-	31	7,500
PA 017	6,136	-	-	6,136
PA 018	8,930	27	178	9,135
PA 019	2,727	-	-	2,727
PA 020	3,816	79	62	3,957
PA 021	3,160	1,757	30	4,947
PA 022	4,029	503	-	4,532
PA 023	1,701	-	87	1,788
PA 024	4,215	55	-	4,270
PA 025	2,481	112	-	2,593
PA 026	2,827	81	149	3,057
PA 027	2,928	-	-	2,928
PA 028	124	517	-	641
PA 029	2,712	615	30	3,357
PA 030	6,077	84	-	6,161
PA 031	6,843	1,528	-	8,371
PA 032	4,242	28	29	4,299
Total	139,463	22,095	683	162,241

5.2 Project Emissions

Refer to section 5.4 for the calculation of emission reductions resulting from the proposed project. There are no project emissions considered).

5.3 Leakage Emissions

Where relevant leakage relating to the non-renewable woody biomass shall be assessed as per the relevant procedures of AMS-I.E version 13.0 explained below:

Leakage emissions (LE_y) related to the non – renewable woody biomass saved by the project activity shall be assessed based on ex post surveys of users and the areas from which this woody biomass is sourced. The following potential source of leakage shall be considered: the use/diversion of non-renewable woody biomass saved under the project activity by non-project end-users that previously used renewable energy source. If this leakage assessment quantifies an increase in the use of non-renewable woody biomass used by the non-project end-users that is attributable to the project activity, then BE_y is adjusted to account for the quantified leakage increase in the use of non-renewable woody biomass used by the non-project end-users that is attributable to the project activity, then BE_y is adjusted to account for the quantified leakage. BE_y will be multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required. This is applied for the grouped project.

$$\text{Hence } LE_y = BE_y \times (1-0.95)$$

Details for each project activity instances are illustrated as following:

PAI	BE_y (tCO _{2e})	LE_y (tCO _{2e})
PA 001	5,193	260
PA 002	3,708	185
PA 003	6,887	345
PA 004	3,417	171
PA 005	8,377	419
PA 006	5,978	299
PA 007	4,273	213
PA 008	5,007	250
PA 009	9,191	460
PA 010	2,609	130
PA 011	2,051	103
PA 012	2,842	142
PA 013	5,702	285
PA 014	11,001	550
PA 015	9,606	481
PA 016	7,500	375
PA 017	6,136	307
PA 018	9,135	457
PA 019	2,727	136
PA 020	3,957	199

PA 021	4,947	248
PA 022	4,532	226
PA 023	1,788	90
PA 024	4,270	214
PA 025	2,593	130
PA 026	3,057	153
PA 027	2,928	146
PA 028	641	32
PA 029	3,357	169
PA 030	6,161	308
PA 031	8,371	418
PA 032	4,299	215
Total	162,241	8,116

5.4 GHG Emission Reductions and Carbon Dioxide Removals

The emission reduction by the grouped project activity is calculated in accordance with equation 7, of the small-scale methodology AMS-III.AV., version 08.0.

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER_y	Emission reductions in year y (tCO ₂ e)
BE_y	Baseline emission in year y (tCO ₂ e)
PE_y	Project emission in year y (tCO ₂ e)
LE_y	Leakage emission in year y (tCO ₂ e)

Details for emission reduction of each project activity instance are showed as following:

PAI	BE_y (tCO ₂ e)	LE_y (tCO ₂ e)	ER_y (tCO ₂ e)
PA 001	5,193	260	4,933
PA 002	3,708	185	3,523
PA 003	6,887	345	6,542
PA 004	3,417	171	3,246
PA 005	8,377	419	7,958
PA 006	5,978	299	5,679
PA 007	4,273	213	4,060
PA 008	5,007	250	4,757
PA 009	9,191	460	8,731
PA 010	2,609	130	2,479
PA 011	2,051	103	1,948
PA 012	2,842	142	2,700
PA 013	5,702	285	5,417
PA 014	11,001	550	10,451
PA 015	9,606	481	9,125
PA 016	7,500	375	7,125

PA 017	6,136	307	5,829
PA 018	9,135	457	8,678
PA 019	2,727	136	2,591
PA 020	3,957	199	3,758
PA 021	4,947	248	4,699
PA 022	4,532	226	4,306
PA 023	1,788	90	1,698
PA 024	4,270	214	4,056
PA 025	2,593	130	2,463
PA 026	3,057	153	2,904
PA 027	2,928	146	2,782
PA 028	641	32	609
PA 029	3,357	169	3,188
PA 030	6,161	308	5,853
PA 031	8,371	418	7,953
PA 032	4,299	215	4,084
Total	162,241	8,116	154,125

Net GHG Emission reductions achieved at project activity instance have been summarized:

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Reduction VCU (tCO ₂ e)	Removal VCU (tCO ₂ e)	Total VCUs (tCO ₂ e)
From 01-Jan-2025 to 30-Jun-2025	162,241	0	8,116	154,125	0	154,125
Total	162,241	0	8,116	154,125	0	154,125

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
From 01-Jan-2024 to 30-Jun-2024	231,480	154,125	-33.42%	- During the distribution process, there was an adjustment of the number of water purifiers to be distributed to each type of schools and institutions compared to the original plan. - Number of school days during this monitoring period have been reduced compared to the estimated number in the registered PD
Total	231,480	154,125	-33.42%	

APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

Not Applicable.

APPENDIX 2: SUPPLY CHAIN (SCOPE 3)

Public statement has been posted on SIPCO's website:

<https://carbonvietnam.com/public-announcement-on-grouped-projects-for-safe-drinking-water-for-schools-in-viet-nam-vcs-project-id-3599/>

