



Verified Carbon Standard

BQS IMPROVED COOKSTOVES FOR BURUNDI'S SCHOOLS



Prepared by AERA Group

on behalf of Burundi Quality Stoves S.A.

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1 PROJECT DETAILS

1.1 Summary Description of the Project

Burundi Quality Stoves (BQS) is developing an improved cookstoves project for schools of Burundi. The proposed small scale CDM project activity aims at:

1. Distributing institutional improved cookstoves (IICS) in schools of Burundi to replace currently used old masonry stoves and open fire three-stone system (and traditional stoves); and
2. Switching from non-renewably logged trees to a sustainable energy supply: briquettes made of renewable biomass waste.

Compared to the currently used three-stone fires or traditional stoves, the advanced technology of IICS allows quicker heating-up, longer cooking and heat retaining with less fuel wood as well as lower combustion fumes. It results in saving wood-fuel and associated expenses.

Along with the diffusion of such a stove to replace currently inefficient cooking systems, a renewable biomass supply-chain will be set up, by sourcing unutilized biomass residues to produce renewable biomass briquettes and market it to the participating schools in replacement of their non-renewable woodfuel. Non-renewable biomass fuel consumed in schools will be switched to briquettes made of renewable biomass waste. BQS will ensure a competitive and attractive price for using briquettes together with improved cook stoves in order to give incentives to the state's communities to switch from the previous costly non-renewable woodfuel to the innovative briquettes made of renewable biomass wastes.¹ BQS will ensure through a sale agreement and robust supply strategy that no shortage of briquettes will appear. While unlikely/exceptional shortages imply residual baseline woodfuel supply by the families

The project will allow the implementation of up to 1,372 IICS². The distribution of IICS, supplied with renewable biomass briquettes, and the associated instructions will help halving these communities' fuel use³ and turning it to renewable. Thus, the project will reduce greenhouse gas emissions by reducing the use of non-renewable biomass within the country, thus slowing down deforestation.

The expected annual amount of greenhouse gas reductions thanks to the project activity averages 163,854 tCO₂ eq and the total amount of greenhouse gas emissions reductions for the chosen crediting period is 1,146,983 tCO₂ eq. The type of GHG reduced is CO₂ emissions from substitution of fossil fuel consumption by similar consumers, equivalent to the non-renewable woody biomass saved by the project activity.

1.2 Sectoral Scope and Project Type

The technology to be implemented by the Project activity falls into Sectoral Scope 1: Energy Industries (renewable sources), as it concerns the provision of briquettes made of renewable biomass waste to schools for cooking activities together with the introduction of improved cooking devices adapted to briquettes consumption. Participating schools (both day schools and boarding

¹ Thanks to IICS/re-established cook stoves, BQS expect to replace 1 stere of wood by 18kg of briquettes based on experiences done in schools (the report of test has been provided to DOE). Actually, one stere of wood is sold at about 15,000 to 20,000 FBU whereas BQS plans to sell 1 kg of briquettes at 378 FBU (indicative price); satisfying the same thermal energy need, will thus cost about two times less than in baseline situation. Calculation are further detailed in excel sheet provided to DOE.

² One stove serves more than 197 students.

³ Experiments to estimate the approximate renewable briquettes consumption per cookstove have been conducted and recorded, evidencing savings up to 90% in quantity and 50% time. Communities will save fuel and time.

schools) will be supplied with renewable biomass sources to provide thermal energy and avoid consumption of non-renewable wood fuel.

It falls into Type (I) project activities: renewable energy project activities with a maximum output capacity equivalent to up to 15 megawatts (or an appropriate equivalent). Moreover, the project falls into Category (C) project activities: thermal energy for the user. The demonstration that the project is eligible as a small-scale activity is done in section 1.3.

The project is not a grouped project.

Project type	Project category	Output capacity of renewable equipment	Equivalent output capacity of renewable equipment
Type (I): Renewable energy projects	C. Thermal energy for the user	15 MW	45 MW _{th} ⁴

1.3 Project Eligibility

As per para. 2.1.1 of the VCS Standard, V.4.2, the project is eligible under the scope of the VCS Program because the VCS Scope includes project activities involving the following elements:

Elements	Project applicability
The six Kyoto Protocol greenhouse gases	The project activity and AMS I.E V.5 aims at CO2 reduction of non-renewable biomass.
Ozone-depleting substances.	n/a
Project activities supported by a methodology approved under the VCS Program through the methodology approval process.	n/a
Project activities supported by a methodology approved under a VCS approved GHG program, unless explicitly excluded under the terms of Verra approval.	CDM methodology AMS I.E, V.5 is applied. The CDM is a VCS approved GHG program. ⁵ Any methodology developed under the United Nations Clean Development Mechanism can be used for projects and programs registering with VCS. ⁶
Jurisdictional REDD+ programs and nested REDD+ projects as set out in the VCS Program document Jurisdictional and Nested REDD+ (JNR) Requirements.	n/a

Furthermore, it cannot reasonably be assumed that the project generates GHG emissions primarily for the purpose of their subsequent reduction, removal or destruction. All schools involved in the project activity are fully independent from the project proponent.

Finally, the project is a renewable biomass activity in Burundi, which is a LDC, the project activity is not excluded by the VCS Program under the circumstances indicated in Table 1 of para. 2.1.1 of the VCS Standard, V.4.2.

⁴ As CDM Project Standard, para. 119 (a), iii

⁵ <https://verra.org/project/vcs-program/projects-and-jnr-programs/develop-a-project/>

⁶ <https://verra.org/methodologies/>.

Please also refer to VCS Program Guide V.4.0, section 7.

1.4 Project Design

Please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2). The PDD is available at:

<https://cdm.unfccc.int/filestorage/W/8/C/W8C3QPZ190UHMDVG025ALNXY7BTIRF/W8C3QPZ1.pdf?t=0Et8cmJyazlkfDCWHQkl7N-xROyTSZ-eii0X> at project webpage:
<https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1385004301.04/view>

The revised PDD⁷ following post registration change is available at:

<https://cdm.unfccc.int/UserManagement/FileStorage/D4GCTSYMUIFLJKH90A7B3EZPOX2NV5>

Eligibility Criteria

n/a, the project is not a grouped project

1.5 Project Proponent

Organization name	Burundi Quality Stoves S.A.
Contact person	M. Pascal Rwemera
Title	Director
Address	Q. Industriel, Av. Nyabisindu, B.P. 5612 Bujumbura, Burundi
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Email	info@bqs.bi

1.6 Other Entities Involved in the Project

Organization name	AERA Group
Role in the project	Carbon consultant
Contact person	Alexandre Dunod
Title	Head of Certifications
Address	28 Cours Albert 1er, 75008 Paris, France

⁷ Along with the change of type of ICS to be installed, the number of schools and students have been updated. Instead of 99 boarding schools in the former version, 284 schools (both boarding and no boarding) were now targeted by the project, hence resulting in higher Emission reductions

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1.7 Ownership

As per VCS Program Definitions version 4, the project ownership is the legal right to control and operate the project activities. As project implementer, BQS have the full ownership of the project. Furthermore, as per VCS Standard V4.2 para 3.6.1, the project description shall be accompanied by one or more of the following types of evidence establishing project ownership accorded to the project proponent(s), or program ownership accorded to the jurisdictional proponent(s), as the case may be (see the VCS Program document Program Definitions for definitions of project ownership and program ownership). The type of evidence to prove project ownership is point 5 of para 3.1.6 :“An enforceable and irrevocable agreement with the holder of the statutory, property or contractual right in the plant, equipment or process that generates GHG emission reductions and/or removals which vests project ownership in the project proponent”.

All the schools participating in this project (technology owners) sign a kitchen traceability & maintenance agreement, which contains user information, rights and commitments including relinquishing ERs ownership to BQS.

Also, BQS has entered in agreement with AERA Group, in which they cede rights to sell ERs generated by their project. Schools' agreements and agreements extract between BQS and AERA are available and are provided to VVB to prove project ownership.

1.8 Project Start Date

As per VCS standard V4.2 para 3.7 “The project start date of a non-AFOLU project tis the date on which the project began generating GHG emission reductions or removals”. Therefore, the project start date is 25 January 2016 as per first signed minutes of receipts of cookstoves by schools, contract agreement and briquettes delivery notes. Both documents are made available to VVB.

1.9 Project Crediting Period

This project activity crediting period is a renewable crediting period of 07 years 00 months x 3, total duration of 21 years. First crediting period starts from 25-January-2016 to 24-January-2023.

1.10 Project Scale and Estimated GHG Emission Reductions or Removals

Project Scale	
Project	x
Large project	

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
25-January-2016 to 31-December-2016	153,080
01-January-2017 to 31-December-2017	163,855
01-January 2018 to 31-December-2018	163,855
01-January-2019 to 31-December-2019	163,855
01-January-2020 to 31-December-2020	163,855
01-January-2021 to 31-December-2021	163,855
01-January-2022 to 31-December-2022	163,855
01-January-2023 to 24-January-2023	10,774
Total estimated ERs	1,146,983
Total number of crediting years	7
Average annual ERs	163,854

1.11 Description of the Project Activity

n/a. Please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

1.12 Project Location

Host country: The Republic of Burundi is the host country⁸.

Region/State/Province: All provinces, starting by Bujumbura province.

City/Town/Community: All schools communities' locations, starting by Bujumbura.

Physical/ Geographical location: The project is to take place in schools in Burundi, starting with Bujumbura province. As a reference, Bujumbura city centre's geo-coordinates are 3° 22'34" S and 29° 21'36" E (cf -3.3761, 29.3600). The country-wide geographical area corresponds to the area where renewable biomass will be distributed and used in replacement of the former non-renewable woodfuel in IICS (Figure 1).

⁸ Burundi has ratified the Kyoto Protocol on 18 October 2001 (UNFCCC, 2012). According to the UNFCCC secretariat, the Burundi DNA Focal Point to the UNFCCC is the Ministry of Water, Environment, Land Management and Urban Planning, in Bujumbura (UNFCCC-DNA, 2012) at time of project registration. The project participant is aware of the current DNA of Burundi, which is as shown on the UNFCCC webpage (<https://cdm.unfccc.int/DNA/view.html?CID=36>).



Figure 1: Area of implementation of the project activity.

The targeted schools are scattered throughout the country. The indicative list of schools to participate is given in Table below. More boarding schools may be added along the project life, whenever a new boarding school is created, it may join the project. Any inclusion of new boarding school will be documented and reflected in monitoring report.

Table 1: List of all participating schools (Education Ministry, September 2012)

Regions	SCHOOL	i	Region	SCHOOL	i
Bujumbura Rural	SCHOOL OF L BUHONGA	1	Kirundo	SCHOOL OF L KIRUNDO	54
	SCHOOL OF L KIVOGA	2		SCHOOL OF L MUKENKE	55
	SCHOOL OF L JENDA	3		SCHOOL OF L KINYINYA	56
	SCHOOL OF L KABEZI	4		SCHOOL OF L MARANGARA	57
	SCHOOL OF L MUTIMBUZI	5		SCHOOL OF L VUMBI	58
Bujumbura Mairie	SCHOOL OF L DE LA PAIX NGARA	6	SCHOOL OF L GASENYI	59	
	SCHOOL OF L NGARA	7	SCHOOL OF L NTEGA	60	
	SCHOOL OF L GISENYI	8	SCHOOL OF L BUBANZA	61	
	SCHOOL OF L SHEPPERS	9	SCHOOL OF L NDORA	62	
	SCHOOL OF L ND VUGIZO	10	SCHOOL OF L BUKINGA	63	
	SCHOOL OF L SAINT ESPRIT	11	SCHOOL OF L MUZINDA	64	
	SCHOOL OF L D BOSCO	12	SCHOOL OF L NDA BUKEYE	65	
	SCHOOL OF L ESPOIR	13	SCHOOL OF L MURAMVYA	66	
	SCHOOL OF L SAINT KIZITO	14	SCHOOL OF L BUKEYE	67	
	SCHOOL OF L KIROMBWE	15	SCHOOL OF L KIGANDA	68	
Bururi	SCHOOL OF L MATANA	16	SCHOOL OF L BUGARAMA	69	
	SCHOOL OF L BURURI	17	SCHOOL OF L MBUYE	70	
	SCHOOL OF L KIREMBA SUD	18	SCHOOL OF L RUTANA	71	
	SCHOOL OF L RUBANGA	19	SCHOOL OF L GIHOFI	72	
	SCHOOL OF L RUMEZA	20	SCHOOL OF L MUSONGATI	73	
	SCHOOL OF L RUMONGE	21	SCHOOL OF L SHANGA	74	
	SCHOOL OF L RUTOVU	22	SCHOOL OF L MPINGA	75	
	SCHOOL OF L TORA	23	SCHOOL OF L GIHARO	76	
	SCHOOL OF L BUTA	24	SCHOOL OF L MWARO	77	
	SCHOOL OF L BUTWE	25	SCHOOL OF L MUYEBE	78	
	SCHOOL OF L MUTANGARO	26	SCHOOL OF ENAC KIBIMBA	79	
Cankuzo	SCHOOL OF L VYANDA	27	SCHOOL OF L KIBUMBU	80	
	SCHOOL OF L MURORE	28	SCHOOL OF L GISOZI	81	
	SCHOOL OF L MUYAGA	29	SCHOOL OF L NDAVA	82	
Ruyigi	SCHOOL OF L MURORE	30	SCHOOL OF L NYAKARARO	83	
	SCHOOL OF L NYABITARE	31	SCHOOL OF L KAYANZA	84	
	SCHOOL OF L NYENKANDA	32	SCHOOL OF L MUSEMA	85	
Mwaro	SCHOOL OF L RUYIGI	33	SCHOOL OF L GATARA	86	
	SCHOOL OF L RUSENGO	34	SCHOOL OF L BANGA	87	
	Kayanza				

Gitega	SCHOOL OF L BWAGIRIZA	35
	SCHOOL OF L ST TH MUSHASHA	36
	SCHOOL OF L BUKIRA SAZI	37
	SCHOOL OF L MUGERA	38
	SCHOOL OF L NDS GITEGA	39
	SCHOOL OF L GISHUBI	40
	SCHOOL OF L MUZINZIRA	41
	SCHOOL OF L GITEGA	42
	SCHOOL OF L R PACIS	43
	SCHOOL OF E N MWEYA	44
	SCHOOL OF L GIHETA	45
	SCHOOL OF KWIBUKA	46
	SCHOOL OF L SONGA	47
	SCHOOL OF ENG GITEGA	48
Makamba	SCHOOL OF L MAKAMBA	49
	SCHOOL OF L KAGAYO	50
	SCHOOL OF L MARANDA	51
	SCHOOL OF L KAYOGORO	52
	SCHOOL OF L NYANZA LAC	53

Ngozi	SCHOOL OF L MTONGO	88
	SCHOOL OF L BUSIGA	89
	SCHOOL OF L DON BOSCO	90
	SCHOOL OF L BUYE	91
	SCHOOL OF L KIREMBA NORD	92
	SCHOOL OF L MUSENYI	93
Karusi	SCHOOL OF L GASHIKANWA	94
	SCHOOL OF L BUHIGA	95
	SCHOOL OF L GITARAMUKA	96
Muyinga	SCHOOL OF L ESP BUHIGA	97
	SCHOOL OF L RUGARI	98
	SCHOOL OF L GISANZE	99

The project proponents have identified several renewable biomass resources⁹ throughout the country. The renewable biomass is from crop residues (like bagasse and coffee husks), forest litter (like pine needles) and timber residues (like sawmill residue).

BQS currently operates three briquetting plants across the country, two in the vicinity of Bujumbura (West) and one in Bubanza (North-West). Further machines are planned to be installed in other parts of the countries such as Cankuzo (East), so as to adequately gather and process the surrounding biomass resources and supply the relevant schools with minimal transportation. The first and second plant will operate in Bujumbura and Gitega respectively with supplies comprising coffee husks, and pinus biomass residues, while the third one will operate in Rutana, supplied with sugar cane bagasse surplus from SOSUMO, the national sugar cane company.

1.13 Conditions Prior to Project Initiation

The baseline scenario is the same as the scenario existing prior to the implementation of the project activity, although according to methodology AMS-I.E version 5:

It is assumed that in the absence of the project activity, the baseline scenario would be the use of fossil fuels for meeting similar thermal energy needs.

Letter of information from Education Ministry (Education Ministry, September 2012) and one site interviews with a representative of the Education ministry have highlighted a strong prevailing practice of cooking with traditional low efficiency open stoves supplied with non-renewable woodfuel in the vast majority of schools of Burundi, resulting in severe deforestation and higher emissions than the proposed project activity. The historical baseline description for technologies and measures has been provided in section A.3 of the CDM-PDD.

1.14 Compliance with Laws, Statutes and Other Regulatory Frameworks

There are no laws and regulations governing the use of IICs in Burundi schools. The project is a voluntary effort by the project proponent.

A review is made on Burundi environmental laws and regulations as below:

- Environment Code, which was promulgated by law n° 1/010 of 30 June 2000.
- Decree-Law n° 100/241 of 31-December-1992 regulating the evacuation of wastewater in urban areas.

⁹ Renewable resource should be understood as per the definition provided in CDM-EB 23, Annex 18

- Decree n° 100/ 292 of 16-October-2007 on the creation, mission, composition, organisation and functioning of the of the National Platform for Risk Prevention and Disaster Management

- Law No. 1/07 of 15-July-2016, revising the forestry code, which regulates the use of woodlands in the private domain of the State of afforestation in the private domain of the State or the communes.

Although these texts have been promulgated, they have remained inoperative in the field of climate change for lack of implementation texts on the one hand, and for not having been sufficiently popularised and brought to the of the actors at the sectoral level on the other hand.

There is no specific concern made on IICS projects from the above laws and regulations. On the contrary, the project has received Host Country Approval on 28-February-2011 and there is a national Canteen Programme, whose Direction is under the Burundian Ministry of Education.¹⁰

1.15 Participation under Other GHG Programs

1.15.1 Projects Registered (or seeking registration) under Other GHG Program(s)

The project is registered under the Clean Development Mechanism (Project 9791) on 05-March-2014, although its GHG emission reduction will either be claimed under the VCS programme or the CDM programme, never both.

1.15.2 Projects Rejected by Other GHG Programs

The project has not been rejected by any other GHG program at the registration stage. However, the CDM-Executive Board rejected its first proposed request for issuance for monitoring period 25-January-2016 to 31-December-2018 as reported on <https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1385004301.04/iProcess/Applus1572282921.37/view>

Reason for rejection: During the request for issuance for the first monitoring period, the following comment have been raised by the CDM board:

“The submitted emission reduction sheet indicates that the monitored quantity of renewable biomass consumed during the monitoring period is much lower than the total non-renewable biomass replaced for the claimed emission reductions; for example year 2015/2016, the monitored quantity of renewable biomass consumed is 3,401 tonnes (cell A0288), whereas the amount of non-renewable biomass replaced for the claimed emission reductions for year 2015/2016 is indicated as 56,217 tonnes (cell B1288). The DOE shall substantiate the factors responsible for this difference and how it has concluded that the project activity has completely switched the use of stove fuel from non-renewable woody biomass to renewable biomass as described in page 2 of the PDD. Please refer to paragraph 14 of AMS I.E version 5, paragraph 354 of VVS for PA version 2.”

¹⁰ <http://www.presidence.gov.bi/wp-content/uploads/2017/04/decret-38-2016.pdf>

While abandoning the CDM track due to uncertainty on transition and the surge of voluntary demand, the DOE and the PP prepared the following responses to address the comments raised, by providing demonstration that:

- 1) Compared to baseline stoves with efficiency of 10%, the new ICS to be distributed had an efficiency of 44,80%, which results in an increase of 77.68%, leading to energy efficiency gains
- 2) The heat content of baseline fuel (wood) accounted at default NCC of 0.015 TJ/ton was lower compared to briquettes NCV of 0.018 TJ/ton, thus leading to improvements of around 16%.

With all these improvements leading to an 81% reduction factor.

More, some qualitative improvements (difficult to assess quantitatively) linked to:

- Longer duration of briquettes consumption as compared to wood
- Training provided to cookers, enhancing the reduction of fuel waste
- The fact that baseline wood that could be stolen or misplaced by kitchen people, could no longer take place as the briquettes could not be used in their individual stove at home.
- The time difference between briquettes delivery slips and briquettes consumptions as evidence explaining that some periods show higher calculated biomass reduction rate than others.

Furthermore, DOE has examined 3 reports from third parties showing a wood-to-briquettes ratio ranging from 8.2 to 24.3.

Although the ratio in this project was 16.52 which is lower than 24.3, CDM board finally rejected the request for Issuance by stating that

“The DOE (LGAI Tech. Center S.A.) failed to justify the displacement of the baseline non-renewable woody biomass (e.g. 56,217 tonnes in year 2015/2016) with the monitored quantity of project renewable biomass (e.g. 3,401 tonnes in year 2015/2016) in accordance with paragraph 14 of AMS I.E version 5.”

For this gap validation under VCS, PP decided to apply ex-ante a discount factor of 10% on the emissions reductions, to account for qualitative improvements that could not be assessed quantitatively. For upcoming monitoring period, the exact gap between the total biomass consumption and the quantitative factor will be used to discount the monitored ER.

1.16 Other Forms of Credit

1.16.1 Emissions Trading Programs and Other Binding Limits

The project does not reduce GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading.

1.16.2 Other Forms of Environmental Credit

The project has neither sought nor received another form of GHG-related environmental credits

1.17 Sustainable Development Contributions

In the context of the 17 sustainable development goals adopted at the UN Sustainable Development Summit in New York in September 2015, Burundi has neither stated explicitly any priority goals nor provisions for monitoring and reporting same. However, it endorsed those goals and referred to them in the National Development Plan 2018-2027.¹¹

The project helps decrease expenses for firewood (or respective working time to collect the same), and thus reduces a household's poverty. According to the statistical service in Burundi more than 60% of the population live below the national poverty threshold at around 1 USD/day (SDG target 1.1).

The project reduces and prevents diseases due to reduced health damaging air pollution (asthma, cancer, etc.). The institutional improved cookstoves employed in the project allow for less combustion fumes (since project stoves are enclosed and more efficient requiring less cooking time, which reduces air pollution in the open-air kitchen (PM and black carbon, VOCs, CO, NOx, PAHS, etc.). Furthermore, the institutional improved cookstoves of the project activity installs enclosed stoves, i.e. reduce accidents due to open fires (due to wind) significantly. The working conditions of the women in the school kitchens improve significantly (SDG target 3.9).

Instead of student's parents spending hours on looking for firewood in the forest, project participant organizes centralized supply of free biomass briquettes to all schools. (SDG target 7.1/SDG target 7.B).

Coffee, rice, timber and other agricultural crop/timber producers can earn additional income by selling their biomass waste to the project participant. (SDG target 8.3)

The project creates new long-term and short job opportunities including income generation. More than 100 permanent jobs with decent work conditions should be created in briquette drying & production (collection of raw material, drying, mixing of biomass residues, briquette production), in administration & management and in security services. More than 15 temporary jobs with decent work conditions in briquette production should be created. Further jobs will be created through use of third-party services (transport of briquettes, lawyers, etc.) (SDG target 8.5)

Educational services are enhanced since parents (and sometimes their children) do not have to collect firewood for the school kitchens anymore. Therefore, educational services become more affordable/accessible and school attendance incentivized (in particular in deforested areas) since students who do not bring firewood to the school are not allowed to attend. The project activity forms a complementary part of the World Food Programme against malnutrition of

¹¹ <http://www.presidence.gov.bi/wp-content/uploads/2018/08/PND-Burundi-2018-2027-Version-Finale.pdf>

children. While the WFP provides food to the participating school, the project participant provides efficient cook stoves and briquettes. (SDG target 13.3)

Apart from using more efficient cook stoves, the use of renewable biomass briquettes from agricultural waste instead of non-renewable biomass reduces deforestation significantly. (SDG target 15.2)

Reducing biomass consumption for cooking purposes reduces pressure on forests. Therefore, the activity protects species diversity as the habitat of these species is conserved. (SDG target 15.5)

Due to taxes paid by project participant, domestic resource mobilisation is strengthened (SDG target 17.1).

The activity promotes the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries. In particular, at least three machines of briquettes making (Jumbo) are introduced from India. Highly efficient improved cookstoves designed in the United States are introduced by the International Life Fund in Uganda and transferred to Burundi. Workers will be trained to use the briquette making machines by technology provider (Jumbo) and the technology provider (International Life Fund Uganda) will train the project participant in cook stove construction (SDG target 17.7 and SDG target 17.9)

Therefore, the project is in compliance with the national criteria for sustainable development.

1.18 Additional Information Relevant to the Project

Leakage Management

This is non AFOLU project and leakage management is not applicable.

Commercially Sensitive Information

There is no information deemed as commercially sensitive for this project activity that have been excluded from the report.

Further Information

The project participants obtained all necessary clearances; hence no legislative, economic, sectoral, social, environmental, geographic, site-specific risks are anticipated which may have impact on the eligibility of the project activity and the net GHG emission reductions.

2 SAFEGUARDS

2.1 No Net Harm

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

2.2 Local Stakeholder Consultation

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

2.3 Environmental Impact

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

2.4 Public Comments

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2)..

2.5 AFOLU-Specific Safeguards.

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

3.2 Applicability of Methodology

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

3.3 Project Boundary

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

3.4 Baseline Scenario

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

3.5 Additionality

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

3.6 Methodology Deviations

Corrections

- 1) Reasons and explanation of the outcome: To improve and correct the project description, the wording has been slightly updated, such as specification of the term “Improved Cook Stove (ICS)” by Institutional Improved Cook Stove (IICS)” (multiple sections). The changes occurred with the beginning of the crediting period.

Impacts:

i) applicability of the methodology: The corrections do neither relate nor impact the eligibility of the project under the methodology as described in section B.2 of the registered CDM-PDD.

ii) additionality: The corrections do neither relate nor impact the additionality as described in section B.5 of the registered PDD.

iii) or the appropriateness of the baseline scenario: The corrections do neither relate nor impact the baseline scenario as described in section B.4 of the registered PDD.

- 2) Reasons and explanation of the outcome: update of the average fuel consumption per capita and per day

Historical consumption of woody biomass per person dependant on the kitchen i (tonnes per person) (Mwoody_biomass_hist_pp,i)

The parameter Mwoody_biomass_hist_pp,i, was estimated at 1.28t/p/year (0.053 t/d for 241 days) at the time of the PDD registration.

The value was obtained from average historical wood fuel consumption of the boarding schools over the last three years prior to project start (2009, 2010 and 2011) giving 9.3 wood steres per day per school (0,015 stere/p/d). However, during the PRC, this value was revised to 1.13t/p/y based on more conservative value of 5 kg per student per day. The value was obtained from a study conducted in 2017¹² on boarding schools stating that firewood consumption may be conservatively stated as 5kg/student/day in the pre-project scenario instead of the value provided in the registered UNFCCC CDM PDD.

The changes are permanent changes to the registered monitoring plan and occurred with the beginning of the crediting period.

Impacts:

i) applicability of the methodology: The change does neither relate nor impact the eligibility of the project under the methodology as described in section B.2 of the registered CDM-PDD.

ii) additionality: The change does neither relate nor impact the additionality as described in section B.5 of the registered PDD.

iii) or the appropriateness of the baseline scenario: The corrections are more conservative with regard to the value in section B.4 of the registered PDD.

¹² 2017-06-28 DNCS note to lenders.pdf

Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

Reasons and explanation of the outcome: Monitoring change (update) of the school years duration and stoves operational status: School year calendar duration is estimated ex-ante at 226 days (three-year average from 2016/17 to 2018/19) instead of 241 days and to be monitored ex-post at actual.

Op_kitchen i,y : the parameter has a value of 1 if kitchen i still operates all of the installed IICS, or a prorate of the IICS found in order of operation out of the total number of IICS initially installed, or a value of 0 if none of the IICS operate.

The operating kitchen status is further discounted by the weighted duration of eventual renewable briquettes shortages (in this case they temporarily have to revert to using firewood instead). In this context, it can be assumed that schools have classes and cook the meals every single day of the school year calendar (except in case of Force Majeure closure). Student attendance is incentivized by the provision of the meals.

Streamline of the monitoring parameter table to have a biennial monitoring frequency (instead of annual), to make it consistent with the currently required and actual biennial “physical check” performed by the project implementer under current measurement procedure requirements of the PDD. Removal of “statistical average” in “source of data” of the parameter table, which is more conservative.

The changes are permanent changes to the registered monitoring plan and occurred with the beginning of the crediting period.

Impacts:

i) applicability of the methodology: The change does neither relate nor impact the eligibility of the project under the methodology as described in section B.2 of the registered CDM-PDD.

ii) additionality: The change does neither relate nor impact the additionality as described in section B.5 of the registered PDD.

iii) or the appropriateness of the baseline scenario: The corrections to do neither relate nor impact the baseline scenario as described in section B.4 of the registered PDD.

Changes to project design

Reasons and explanation of the outcome: Replacement of ex-ante indicative Turkish-manufactured cook stove by “Institutional Improved Cook Stove (IICS)” (price and design reasons) and focus on

installation of new IICS (as opposed to refurbishment of masonry stoves for briquettes consumption) for technical-economic reasons.

Furthermore, update of the school types involved and corresponding baseline woodfuel consumption: While initially envisaged in boarding schools only at project inception and initial CDM-PDD registration request, the Government's schools canteen program has been extended to further schools including primary and secondary "non-boarding" schools (day schools), due to the lenders' growing interest in supporting food programmes for children and their families through the educative institutions and local agricultural production at the same time. Both school schemes have been surveyed and show comparable cooking woodfuel consumption baseline/history, with day schools offering breakfast and lunch when boarding school serve two meals per day too, yet the non-boarding schools consumption amounting to slightly lower.

The changes occurred with the beginning of the crediting period.

Impacts:

i) applicability of the methodology: The change does neither relate nor impact the eligibility of the project under the methodology as described in section B.2 of the registered CDM-PDD.

ii) additionality: The change does neither relate nor impact the additionality as described in section B.5 of the registered PDD

iii) appropriateness of the baseline scenario: The corrections to do neither relate nor impact the baseline scenario as described in section B.4 of the registered PDD.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

4.2 Project Emissions

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

4.3 Leakage

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

4.4 Net GHG Emission Reductions and Removals

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

5 MONITORING

5.1 Data and Parameters Available at Validation

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

5.2 Data and Parameters Monitored

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).

5.3 Monitoring Plan

n/a, please see registered CDM-PDD (as per para. 3.20.5 of VCS Standard V.4.2).