Sustainable Development Verified Impact Standard

UPENERGY-SOCIAL AND CLIMATE IMPACT PROGRAMME- NIGERIA-1

Document Prepared by UpEnergy Group

Project Title	UpEnergy-Social and Climate Impact Programme- Nigeria-1
Version	2.0
Date of Issue	29/04/2022
Project Location	Nigeria
Project Proponent(s)	UpEnergy Group, 19 Cybercity, 10th Floor, Raffles Tower, Ebene Mauritius. T: +230-404-6000 E: info@upenergygroup.com W: www.upenergygroup.com
Assessor Contact	To Be Updated
Project Lifetime	01/04/2022 – 31/03/2043 ; 21-year lifetime
History of SD VISta Status	This is the first validation for the project
Other Certification Programs	The project is also applying for validation under Verified Carbon Standard concurrently.

Expected Future Assessment Schedule	To Be Updated

CONTENTS

1 SUMMARY OF SDG CONTRIBUTIONS

Table 1: Summary of Project SDG Contributions

Row number	Estimated Project Contribution by the End of Project Lifetime	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Section Reference	Claim, Asset or Label
1)	The distribution of 475,000 energy efficient stoves under the project helps in providing basic service access to household	1.4	1.4.1 Proportion of population living in households with access to basic services	Increase	3.2	Claim
2)	The distribution of energy efficient stoves reduces approximately 15,254,737 tCO_2e emission reduction over a 7-year period	13.0	13 Tonnes of greenhouse gas emissions avoided or removed	Increase	3.2	Claim
3)	Reduce indoor air pollution by shifting to Improved cook stoves (ICS) in the project	3.9	3.9.1 Mortality rate attributed to household and ambient air pollution	Decrease	3.2	Claim
4)	In the poorest communities, the burden of collecting and/or purchasing fuel, often firewood, often falls on women and children. By reducing fuel collection and cooking time, the program provides women in project households with more time to invest in other productive economic development activities	5.4	5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age, and location	Decrease	3.2	Claim

5)	The project activity involves promotion and distribution of 475,000 improved cooking stoves (ICS) in the household Nigeria	7.1	7.1.2 Proportion of population with primary reliance on clean fuels and technology	Increase	3.2	Claim
6)	The project activity generates employment for marketing / sales and distribution / technical employees	8.5	8.5.1 Proportion of informal employment in total employment, by sector and sex	Increase	3.2	Claim
7)	Reduce the consumption of non-renewable biomass in participant households by as much as 50%, depending on stove model	12.2	12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Decrease	3.2	Claim
8)	The Project will reduce the consumption of non-renewable biomass in participant households /SMEs and will contribute towards reducing deforestation	15.2	15.2.1 Progress towards sustainable forest management	Increase	3.2	Claim

2 PROJECT DESIGN

2.1 Project Objectives, Context and Long-term Viability

2.1.1 Summary of Project Sustainable Development Objective(s)

- The distribution of 475,000 energy efficient stoves under the project helps in providing basic service access to household (SDG indicator 1.4.1)
- Reduce indoor air pollution by shifting to Improved cook stoves (ICS) in the project (SDG indicator, 3.9.1)
- In the poorest communities, the burden of collecting and/or purchasing fuel, often firewood, often falls on women and children. By reducing fuel collection and cooking time, the program provides women in project households with more time to invest in other productive economic development activities (SDG indicator 5.4.1)
- The project activity involves promotion and distribution of 475,000 improved cooking stoves (ICS) in the household Nigeria (SDG indicator 7.1.2).
- The project activity generates employment for marketing / sales and distribution / technical employees (SDG indicator 8.5.1)
- Reduce the consumption of non-renewable biomass in participant households by as much as 50%, depending on stove model (SDG indicator 12.2.2)
- Reduce total non-renewable fuel in the project area to generate approximately 15,254,737 tCO_2e of emission reduction over 7-year period. (SDG 13). The Project will reduce the consumption of non-renewable biomass in participant households /SMEs and will contribute towards reducing deforestation (SDG indicator 15.2.1).

2.1.2 Description of the Project Activity

The purpose of the project is to support clean cooking interventions that moves end-user and reduce greenhouse gas (GHG) emissions from the burning of non-renewable woody biomass and/or charcoal for cooking in Nigeria.

The project is implemented by UpEnergy Group (UpEnergy/UpE) which is also the Coordinating and Managing Entity (CME). UpEnergy will implement the programme in partnership with local partners and would ensure the last-mile distribution/installation of the Improved Cook stoves to the beneficiaries.

Through this project, the distribution and installation of approximately 475,000 ICS will be undertaken for households in Nigeria. It is intended that under this project residential/institutional/commercial users with Clean cooking technologies such as energy-efficient biomass Improved Cook stoves (ICS) will be distributed with the aim to eliminate/reduce greenhouse gas (GHG) emissions from the burning of non-renewable woody biomass and/or charcoal for cooking. The ICS will burn wood more efficiently thereby improving thermal transfer to pots, hence saving fuel. Not only will this halt the rapidly progressing deforestation (In 2020, it lost 97.8 kha of natural forest, equivalent to 59.5 Mt of CO_2 of emissions[1]) in Nigeria but will also reduce health hazards from indoor smoke pollution and women and children will have to spend less time collecting firewood. The end user will be informed in advance that the use of ICS generates carbon finance which in turn is used for subsidizing the price of ICS and for recovering project implementation costs.

The contributions of proposed project activity towards sustainable development are explained with indicators viz. social, economic, environmental, technological well-being, legislative and temporal as follows:

Environmental well-being: The project activity will result in the reduction of firewood/charcoal consumption and emission of greenhouse gases and thus conserve forest and reduce GHG emission.

Social well-being: The project activity will pave the way for development and increases the social status and living conditions and the prevailing living standard in the vicinity of the project activity and thus results in empowering the nearby. Also, it will contribute to a small increase in the local employment by employing skilled and un-skilled personnel for operation and maintenance of the equipment. The project will reduce the drudgery of women, time saving and the use of saved time for other productive activities.

Economic well-being: The project has created a business opportunity during construction phase for local stakeholders such as suppliers, contractors etc. contributing to economic well-being aspects. Further, the project also influences creation of employment opportunities for local people, which would enhance their social status. Sufficiently enhance indoor air quality thereby improving health of women and children and reducing incidences of smoke and fire related injuries and therefore result in saving of health-related expenses.

[1] https://www.globalforestwatch.org/dashboards/country/NGA/?categoryhttps://www.globalforestwatch.org/dashboards/country/NGA/

Technological well-being: The proposed project activity will promote and distribute improved cook stoves that result in reduced fuel consumption and emissions due to cooking and heating water in households.

2.1.3 Implementation Schedule

Date	Milestone(s) in the Project's Development and Implementation
October 2021	Pipeline Listing (under development)
April 2022	UpEnergy as an organization will start distributing ICS in the project area
April 2022	Start first crediting period of the project
May 2022	Identify Assessor for Validation (under process)
May 2022	Baseline study and Stakeholder Consultation (under process)
August 2022	Registration of Project activity under VCS
April 2022- March 2025	Distributed project instances
April 2023 (tentative)	First monitoring & verification by assessor

2.1.4 Project Proponent

Organization Name	UpEnergy Group
Role in the Project	Project Proponent
Contact Person	Anantha Karthik Rajagopalan
Title	Director of Carbon Programme
Address	UpEnergy Group, 19 Cybercity, 10th Floor, Raffles Tower, Ebene Mauritius.
Telephone	T: +230-404-6000
Email	anantha@upenergygroup.com

2.1.5 Other Entities Involved in the Project

Currently, UpEnergy Group is the project proponent and shall involve project implementers in the project during the registration of the project activity. The contact details will be given once the selection of other entities in the project.

2.1.6 Project Type

a) Type II Energy Efficiency Improved Projects

b) The project is a **grouped** project.

SD Vista Sectoral Scopes	UN Sustainable Development Goals
2. Climate Change adaptation	13. Climate Action
4. Energy	7. Affordable and clean energy 7.1.2
7. Health	3. Good health and well-being 3.9.1
10. Livelihood	1. No poverty 1.4.1 8. Decent work and economic growth 8.5.1 12. Responsible consumption and production 12.2.2
14. Women's Empowerment	5. Gender Equality 5.4.1

2.1.7 Project Location

The project will be located within the boundary of Nigeria having the geographical coordinates 9°4'55.2 latitude and 8°40.517 longitude. It is part of Africa and the northern hemisphere.[2]

[2] https://www.geodatos.net/en/coordinates/nigeria

Figure 1: Nigeria Map

2.1.8 Baseline Scenario

Exposure to smoke inside the home, from cooking with solid fuels in Nigeria, has potentially harmful health effects. In Nigeria, 69% of households use solid fuel for cooking, with 66.9% using wood.[3] Exposure to cooking smoke is greater when cooking takes place inside the house rather than in a separate building or outdoors. In 40% of households, cooking is done in the house (48% in urban areas and 34% in rural areas)[4].Overall, only 15% of households in Nigeria use clean fuel for cooking, 27% in urban areas and 4% in rural areas[5]. 59% of households have electricity (83% of urban households and 39% of rural households[6].

[3] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[4] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[5] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[6] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

As per DHS Report Nigeria, 2.7% children were with symptoms of acute respiratory infection (ARI) by using charcoal and 3% children affected ARI by using wood as fuel in households for cooking.[7]

Reliance on biomass fuels for cooking has implications for human health, climate change, conservation of forest resources, and the general well-being of people who rely on biomass fuels. Nigeria households dedicate a significant portion of their expenditures 4.4% to lighting and cooking energy.[8]

Fuel gathering consumes 1.7 hours [9] per household daily for women and children, limiting other productive activities (e.g., income generation) and taking children away from school. In less secure environments, women and children are at risk of injury and violence during fuel gathering.

96% of the target population for this project usage traditional biomass stoves which have less thermal efficiency, emitting smoke and unhealthy environment inside the kitchen in both rural and urban segments.

The comprehensive questionnaire was designed to capture all the information of household like family members, age group, gender, address, contact number, geographical coordinates, type of fuel & consumption and cookstove, sourcing of fuel long with time, health related issues, etc.

The baseline scenario as per the applied methodology VMR0006: Installation of High Efficiency Firewood cook stoves, Version 1.1, is defined by the typical baseline fuel consumption patterns in a population that is targeted for the adoption of the project technology.

The baseline survey covered the following elements:

- Fuel Consumption Pattern.
- Available technology options used for cooking
- Classified the most promising biomass (wood, Charcoal, electricity, etc.) utilized during cooking.

[7] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[8] https://documents1.worldbank.org/curated/en/164241468178757464/pdf/98664-REVISED-WP-P146621-PUBLIC-Box393185B.pdf

[9] https://documents1.worldbank.org/curated/en/164241468178757464/pdf/98664-REVISED-WP-P146621-PUBLIC-Box393185B.pdf

- Estimated the potential wood fuel savings obtained by using improved charcoal technologies and identify the profitability of these technologies.

  The survey in person interview was conducted in various households in Nigeria. The survey is designed to provide estimates at the national level, for urban and rural areas, and for the fuel consumption pattern. According to the baseline survey the average household size in Nigeria is 5 persons[10].

  In Nigeria, 66.9% of the population from the study are using biomass for cooking out of which 61.1% of the population using fuelwood for cooking while 5.8% of the population using charcoal for cooking as the main cooking fuel. Less than 5% have access to clean cooking fuel in rural and Urban households. The penetration rate is 6% for the improved cook stove.

  This project will replace conventional inefficient stoves, with higher efficiency ICS to residential/ institutional/ commercial users by leveraging resources provided by the project activity. Therefore, it is assumed that in the absence of the project activity, the baseline scenario would be the traditional cooking technologies with use of non-renewable biomass/charcoal for meeting similar thermal energy needs share.

2.1.9 Causal Chain(s)

The flow chart is shown in below figure 2 and the description for People and their Prosperity, and Planet is depicted below

[10] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

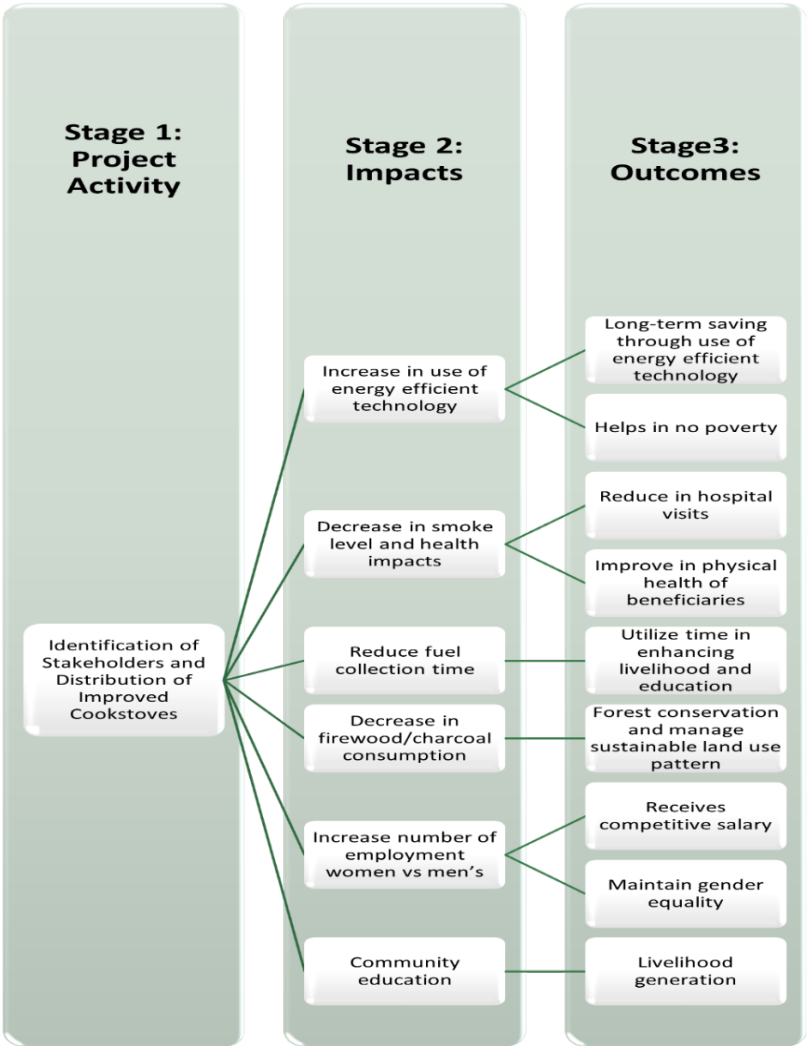

Figure 2: Casual Chain

Impacts related to People and their Prosperity, and Planet

People and their Prosperity

- Increase the use of energy efficient technology
- Reduce fuel consumption time
- Increase in number of employment (women vs man's)
- Community education

Planet

- Decrease in smoke level and health impacts

- Decrease in firewood and charcoal consumption

2.1.10 Threats to the Project

Natural Threat –

Threat: Vulnerability to natural disasters, Nigeria is prone to droughts and floods since the last few years, and this could lead to disruption in the sale and marketing of the project device arising from mass migration

Solution: The project device made available with the project activity is mobile and can be carried by the device user easily for long distance. These devices are designed to be light weight and made using locally available materials which can be sourced by the user easily in-case they have to migrate

Threat: Climate change and deforestation can lead to firewood and fuelwood scarcity. Climate change negatively affects agricultural yields, reducing reliable income streams in the local community and thus availability of funds to purchase the project device.

Solution: Although scarcity would seem to support the use of ICS technology, there can be a foreseeable future where the effort and economics behind procuring firewood could make other fuels a more sustainable option. UpEnergy will plan regular communication with the stakeholders involved with project activity and will encourage sustainable management of natural resources. The organization will continue to encourage discussion and action around the design of sustainable forest management programs in the region.

Human Induced Threat –.

Threat: Altering the stove design or neglected maintenance of the project device can lead to reduced output from the device

Solution: UpEnergy has a dedicated sales team on ground who are duly trained with handling and mechanics of the project device who will continue to assess the condition of the project device at regular intervals to avoid the above mentioned threat. Moreover, UpEnergy's sales team will also train and educate the project owner about the working and maintenance of the project device.

Threat: Slow progress in the population's perception to adopt new technology resulting in poor sales

Solution: UpEnergy's on ground team will make efforts in the project area to explain the depth of the project in participants' native language and from their cultural perspective**,** so that they can reap all the benefits available from the undertaken project.

2.1.11 Benefit Permanence

The purpose of the project activity is to change the cooking pattern of households by distributing improved cookstoves (ICS), which will enable households to reduce their fuel consumption, saves the cooking time, improve their health conditions by reducing indoor air pollution and enhance the employment opportunities available to them. Post project activity, it is ensured that the rural and urban households will continue to use improved cookstoves in future, due to the benefits associated with them, and thereby accrue significant environmental as well as socio-economic benefits. The project activity also ensures the benefits are permanent in nature and will not be reversed until the project devices are functional.

2.2 Stakeholder Engagement

2.2.1 Stakeholder Identification

Stakeholders have been identified based on the criteria outlined in Section 2.2 of the SD VISta Standard.

The stakeholders have been identified as individuals or groups that are potentially affected by the project. Stakeholders can be defined as:

Direct Stakeholders- these are group of people who are directly impacted by the project, such as end users, ICE manufacturers, training personnel, etc.

Indirect Stakeholders- group of people who are indirectly involved such as women self-help groups etc.

These stakeholders were further evaluated based on how deeply affected they may be by the Project, and those most impacted have been included in the stakeholder engagement.

The project activity involves distribution of improved cookstoves to individual households in rural/semi-urban areas of various territories in Nigeria.

Description of Local Stakeholder Consultation meeting process engagement: -

The brief process to be followed for local stakeholder consultation is as below.

The locations will be identified for baseline survey and details of local personnel, official representatives of local community, local NGOs were taken for survey. The public notice is to be placed as common places of location and Civil authority personnel of the desired region will be invited via means of physical and digital medium to consult and receive their feedback.

In the introductory speech, the representative of Upenergy (Project Proponent), will welcome the gathering and will give a brief about the climate mitigation project activities. Subsequent to the introductory speech, stakeholders will be explained about the purpose of distribution of high efficient cook stoves which will burn wood more efficiently thereby improving thermal efficiency, hence saving fuel. Project also reduce the rapidly progressing deforestation but will also reduce health hazards from indoor smoke pollution and women and children will have to spend less time collecting fuelwood contributing to reduction in GHG emissions and better health standards for women and children inside the households. The Project will also assist to the local population by providing employment opportunities to both skilled & unskilled labours.

The Minutes of meeting with stakeholder's queries, invitation letter will be submitted to the DOE/VVB.

The Project proponent plans to organize a local stakeholder consultation meeting to be held in the project territory. The Meeting components will involve an opening speech by representative of project participant. He/she will be explaining overall aspects of project to stakeholders highlighting the social, environmental & economic benefits of the project to local communities. Discussion about carbon mechanism & its requirements for the current project and the need to Implements is explained thoroughly. After the detailed discussions, the session will be open to questions from stakeholders.

The question raised by the stakeholders will be summarized in the VCS SD VISta PD and it will be ensured that stakeholders are satisfied from the overall socio-economic impacts of the project implemented by the project activity and their feedback is recorded for future reference.

As a part of on-going communication with local stakeholders, end users will be informed about grievance register. The distributors will have the responsibility to take grievances regarding the project activity and same will be conveyed to PP during operation of project activity. Thus ongoing communication of stakeholders will be followed through grievance mechanism. If any concerns received during operation of project activity, same will be addressed if relevant to project activity.

2.2.2 Stakeholder Description

Current Beneficiaries (Registered End-users): These beneficiaries are identified as any family/individuals/women who are involved in cooking in the household of the project area and interested to adopt the improved and clean technology. Beneficiary families are those living in or sharing the same family compound as project beneficiaries. During distribution of ICS, UpEnergy, gives priority to the households whose extended family has already demonstrated successful adaptation to the new technology. UpEnergy also has a strict policy against providing Improved cookstoves to family members of those who have intentionally altered or destroyed a previously installed stove. The distributed technology i.e., ICS is subsidized by the UpEnergy group to increase economic productivity and reduce the health impact due to indoor air pollution of the family.

Potential Beneficiaries (New users): UpEnergy actively seek out new beneficiaries, through some promotional events and, most importantly, word-of-mouth recommendation by current beneficiaries'/ ICS users. Current and potential beneficiaries share many similar characteristics; the primary difference is lack of awareness of our programs or financial ability to provide the co-payment for purchasing the stove. UpEnergy aims to expand its beneficiary base by publicizing and distributing the stove on subsidized price. Special attention is paid to elderly, female disabled, and otherwise vulnerable and or/marginalized individuals of this stakeholder group to ensure our project activities are not just accessible to, but also inflicting no adverse impacts on those individuals.

Local Vendors: Local vendors are those who are involved in suppling fuel wood and charcoal to the project area. UpEnergy Group influences these vendors for sustainable consumption of these products and could thus negatively affect vendor livelihoods.

Local NGO and Business: UpEnergy works with local country partner for implementation or co-operation during the project activity that may have similar sector approach.

Government Authorities: UpEnergy always involve local government in each and every stage of the project activity for providing information and receive inputs during the project implementation.

Media: UpEnergy recognizes any national & international print media/radio station who are who are interested in our project.

Academic Institutions: UpEnergy always invites the academic institutions who are interested our project for household level studies and assessment of the beneficiaries to understand the ongoing impacts during the project activity.

Others: UpEnergy always invites interest and feedback in our project activity from any interested source who have not been identified in the above stakeholder description.

2.2.3 Stakeholder Consultation

The stakeholder consultation process will be done as follows:

- A circular will be issued one month prior to the actual meeting to invite people for the stakeholder consultation
- The interactive meeting with the stakeholders will be conducted on the selected date at given address
- The interactive meeting will have the following structure: -
    - Introduction about project activity and agenda of stakeholder consultation-
    - About UpEnergy carbon programme
    - Technical description of the ICS
    - Interactive session receiving comments - Cost, Risk and benefits of projects discussed
    - Question and Answer session
    - Take inputs by distributing stakeholder feedback form.

During the Local Stakeholder Consultation, the project representative will explain the details about the Technology i.e., Improved Cookstoves to be deployed. Also provide the details aspect of the grouped project which includes objectives, all the long- & short-term benefits, and environmental and socio-economic issues. The project activity also considers that there will be not any negative impact identified due to implementation of the project activity.

2.2.4 Continued Consultation and Adaptive Management

In order to have a continuing communication and consultation between the UpEnergy group and stakeholder groups, we take Quarterly feedback and inputs from stakeholders and adapt management accordingly.

We have a dedicated sales team over the ground who oversees the day-to-day operations at the project area. The sales team has been recruited from the operational country and can be easily approached by all villagers either in person or through phone. In case of any issue faced by any community member, they can inform or discuss with the sales team which takes note of the issue and informs the senior management to act on it.

2.2.5 Anti-Discrimination

The project activity doesn't endorse any form of discrimination based on gender, sexual orientation, or other habits) or sexual harassment. ICS will be distributed to all willing customers within the project boundary. The project will have a positive impact on women considering that they will spend less time on cooking or fuel procurement and will be able to cook in cleaner environment.

2.2.6 Worker Training

The UpEnergy sales team employed by the company receives continuous learning and training sessions which is an ongoing process on maintenance and safety of handling equipment. These trainings help the employees recruited from communities to build new skills and develop their capacity and knowledge. Yearly review process also designed to understand the growth in knowledge and understanding which the employee has gain during the working period.

2.2.7 Equal Work Opportunities

The Project activity has equal opportunity for women, men, or any vulnerable/ marginalized community by taking inconsideration of the country law and regulations to contribute both in volunteer and working positions. UpEnergy Group also has a stipulated HR policy that takes into account participation by all forms of demographic. Further, the projects designed are implemented for equal participation by any gender, nationality, ethnicity, religion, and race.

2.2.8 Workers' Rights

The host country is also a member of the ILO convention. In Nigeria, the law that is regulating or guiding employees and employers' relationship is known as labour law which is clearly

stated in the section 7(3) of the 1979 constitution of the Federal Republic of Nigeria (Obisi, 2005). The constitution provides amongst others as follows:[11]

- All citizens without discrimination on any ground whatever have the opportunity for securing adequate means of livelihood as well as adequate opportunities to secure sustainable employment.
- Conditions of work are just and humane, and that there are adequate facilities for leisure and social, religious, and cultural life.
- The health, safety, and welfare of all persons in employment are safeguarded and not endangered or abused.
- There are adequate medical and health facilities for all person
- There is equal pay for equal work without discrimination on account of sex, or on any other ground whatsoever
- Children. Young persons and the aged are protected against any exploitation whatever, and against moral and material neglect and
- Provision is made for public assistance in deserving case or other conditions of need

2.2.9 Occupational Safety Assessment

The project is in compliance with all relevant local and national laws. The Project does not threaten human health or environment and does not adversely affect the health of the workers and the community.

Up Energy takes relevant mitigation measures like equipping the necessary instruments such as safety shoes, gloves, helmets, glasses etc. to protect the health and safety of the employees as per National Policy on Safety, Health and Environment at Workplace. Also, UpEnergy own dedicated safety policy which adheres to national standards. The project proponent also ensures that all workers receive regular and constant training on electrical and material safety.

2.2.10 Feedback and Grievance Redress Procedure

[11] https://www.ijbmi.org/papers/Vol(2)1/Version_3/M021100104.pdf

UpEnergy establish proper procedure in order to document/record the project activity feedback and grievance. A dedicated contact number and email Id has been provided during the project activity and the same has been also explained to the stakeholders.

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.	Justification
Continuous Input / Grievance Expression Process Book (mandatory)	The input grievance book is kept by: TBA	
Telephone Access	Contact Person: TBA Contact no:	
Internet / Email access	Customer Care: TBA Email: info@upenergygroup.com	

2.2.11 Feedback and Grievance Redress Procedure Accessibility

The contact details for the grievance redressal procedure is announced to all stakeholders during the stakeholder consultation and information is available at the local office each project activity site.

2.2.12 Stakeholder Access to Project Documentation

The printed copies of project design documentation/Project description are accessible to all stakeholders at UpEnergy regional office. On the request of stakeholders, the project document can be arranged and provided by project participant.

2.2.13 Information to Stakeholders on Assessment Process

UpEnergy informs the end-users and family members that UpEnergy distributes or sell the improved cookstove/technology at a subsidized price which is part of the carbon programme. The end-users will be demonstrated the core benefits of the cookstove such as improves health of women and children, savings in fuel and time for cooking, savings in time for collecting fuel from forest which reduce deforestation, can utilize the saved time from cooking and collecting fuel for productive application, etc.

UpEnergy also inform them the monitoring of all parameters to show them as evidence to prove the benefits of purchasing and using improved cookstove such as money spent on

wood fuel and/or time spent collecting wood fuel, among other indicators. UpEnergy will ensure the integrity of the programme as the executive shall support after the sales, monitoring from UpEnergy team, auditors few times after implementation. As the programme progresses, the main form of communication to stakeholders will be through social media, email, telephonic, and physical visits. UpEnergy will announce participation through capacity building, community sensitization, awareness programme, social media, press release, and the website.

2.3 Project Management

2.3.1 Avoidance of Corruption

UpEnergy Group always maintain highest standard of transparency and confirms that there is not any corruption involved in the project activity. We have robust and stringent internal policies that has laid provisions to prevent/identify any form of corruption, such as bribery, embezzlement, fraud, favouritism, cronyism, nepotism, extortion, and collusion.

2.3.2 Statutory and Customary Rights

UpEnergy Group operates entirely out of a private office space with installation/distribution of the ICS activities taking place in project beneficiary residence. The Sales team of UpEnergy Group enters private property only with the explicit permission of the owner. The project activity also does not require/involve any land acquisition.

2.3.3 Recognition of Property Rights

UpEnergy Sales team will distribute/install the ICS only at the property owner's invitation. After the delivery and payment, the distributed is the sole property of the owner. We will confirm that all property rights are recognized, respected, and supported.

2.3.4 Free, Prior and Informed Consent

The project activity only involves distribution of improved Cookstoves to the household. So, the activity does not require any property right or concerned land rights.

2.3.5 Restitution and/or Compensation for Affected Resources

There are no negative effects on the land or resources due to the project and hence allocation of restitution or compensation to any parties is not required.

2.3.6 Property Rights Removal/Relocation of Property Rights Holders

The project is not located on a land/territory claimed by any indigenous people, vulnerable people and the project activity does not lead to removal or relocation of property rights holders from their lands or territories, and do not force rights holders to relocate activities important to their culture or livelihood.

2.3.7 Identification of Illegal Activities

There are no illegal activities identified and associated that could affect the project's impacts and hence measures needed and designed to reduce these activities are not required.

2.3.8 Ongoing Conflicts or Disputes

This issue is not applicable to our project as the installation of ICS technology does not affect property rights or property disputes.

2.3.9 National and Local Laws and Regulations

There are no laws and regulations governing the use of improved cookstoves in Nigeria households. The project is a voluntary effort by the project proponent. A review is made on Nigeria environmental laws and regulations as below:[12]

National Environmental Standards and Regulation Enforcement Agency (NESREA) Act 2007

1. Environmental Impact Assessment (EIA) Act. Cap E12, LFN 2004
2. The Nigerian Urban and Regional Planning Act Cap N138, LFN 2004

2.3.10 Project Ownership

The project ownership is with UpEnergy Group. A voluntary and irrevocable agreement signed by the end user (cookstove user) conferring project ownership to the project proponent shall be the evidence of project ownership.

Each ICS shall have a unique serial number linking it to the project activity instance and shall be necessary to establish the fact that the ICS belongs to this VCS programme. End users will be informed at the time of ICS installation/distribution that the ICS will be discounted on account of them generating carbon credits and the fact that these credits belong to project proponent. The end user will be required to sign the carbon waiver form cum warranty card as required by the project proponent to relinquish their rights to carbon credits generated by the project.

[12] https://esrmqa.worldbank.org/program-countries/overview-environmental-legislation

2.3.11 Grouped Projects

The project is a grouped project

Eligibility Criteria

For the inclusion of new project activity instances, the project proponent shall ensure that it meets the eligibility criteria below.

No.	Criterion	How the new project activity instances to comply
1	Meet the applicability conditions set out in the methodology applied to the project	The project activity instances (ICS) will meet the applicability conditions set out in Section 3.2 where the target of the end-user is household and the ICS deployed is at least 25% of thermal efficiency.
2	Use the technologies or measures specified in the project description.	Efficient improved cook stoves (ICS) to be distributed in the project
3	Apply the technologies or measures in the same manner as specified in the project description.	Improved cook stove to be distributed in the project and it will replace traditional cook stoves in household
4	Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.	The project activity instances will take place within Nigeria only and subject to the same baseline scenario determined in Section 3.4.
5	Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area	All project activity instances will use the activity method for demonstration of additionality. **Step 1: Regulatory Surplus** There is no mandated government programme or policy in host country of this project ensuring the distribution of domestic fuel-efficient cook stoves. The project is not mandated by any law, statute, or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework. Beneficiaries may only participate voluntarily in this project. It is hereby confirmed that the proposed project is a voluntary coordinated action by UpEnergy Group. **Step 2: Positive List** 1. The project activity distributes stoves at zero revenue to the program and has no other source of revenue other than sale of GHG credits. 2. The project implemented are not part of any governmental schemes or multilateral funds

		Step 3: Project Method The distribution of stoves is not a source of net positive revenue. **Conclusion:** As the project fulfills the conditions above, it is deemed additional
5	Where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows: 1) Each project activity instance that exceeds one percent of the capacity limit shall be identified. 2) Such instances shall be divided into clusters, whereby each cluster is comprised of any system of instances such that each instance is within one kilometer of at least one other instance in the cluster. Instances that are not within one kilometer of any other instance shall not be assigned to clusters. 3) None of the clusters shall exceed the capacity limit and no further project activity instances shall be added to the project that would cause any of the clusters to exceed the capacity limit.	1) The project instances will not exceed 1% of the capacity limit i.e., 1.8 GWhth per year 2) As there are no instances exceeding 1% of capacity limit, there is no need for clustering. 3) Not Applicable

3 BENEFITS FOR PEOPLE AND PROSPERITY

3.1 Condition of Stakeholders at Project Start

Current Beneficiaries & Potential Beneficiaries: At the start of the project in Nigeria, 69% of households use solid fuel for cooking, with 66.9% using wood.[13] Exposure to cooking smoke is greater when cooking takes place inside the house rather than in a separate building or outdoors. In 40% of households, cooking is done in the house (48% in urban areas and 34% in rural areas)[14].. Overall, only 15% of households in Nigeria use clean fuel for cooking, 27% in urban areas and 4% in rural areas[15]. 59% of households have electricity (83% of urban households and 39% of rural households[16]

As per DHS Report Nigeria, 2.7% children were with symptoms of acute respiratory infection (ARI) by using charcoal and 3% children affected ARI by using wood as fuel in households for cooking.[17]

Reliance on biomass fuels for cooking has implications for human health, climate change, conservation of forest resources, and the general well-being of people who rely on biomass fuels. Nigeria households dedicate a significant portion of their expenditures 4.4% to lighting and cooking energy.[18]

Fuel gathering consumes 1.7 hours [19]per household daily for women and children, limiting other productive activities (e.g., income generation) and taking children away from school. In less secure environments, women and children are at risk of injury and violence during fuel gathering.

96% of the target population for this project usage traditional biomass stoves which have less thermal efficiency, emitting smoke and unhealthy environment inside the kitchen in both rural and urban segments.

Local Vendors: Previously, local vendors harvest the firewood from the forests by stacking trees to make dead on the land before they bring to their home. Then they carry that dead dried wood on their back or cart which have often weight of more than 150 kg to their homes.

[13] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[14] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[15] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[16] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[17] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[18] https://documents1.worldbank.org/curated/en/164241468178757464/pdf/98664-REVISED-WP-P146621-PUBLIC-Box393185B.pdf

[19] https://documents1.worldbank.org/curated/en/164241468178757464/pdf/98664-REVISED-WP-P146621-PUBLIC-Box393185B.pdf

Sometime carrying this wood from long distance and growing need of wood also increase the price of firewood. Currently local vendors interact with our current and potential beneficiaries daily to fulfil their demand. Their work is dependent on business from local community members.

Local NGO and Business: UpEnergy Group local team noticed that previously the local NGO & Business were less interested in the formal employment with local companies. They also have Lack of knowledge about benefits of improved cooking systems and access to clean cooking technology

Government Authorities: Before the implementation of the project, it was observed that the local government rarely interact with the stakeholders for providing information and receive inputs about the improved cooking technologies.

Media: At the beginning of the project the local or any national & international print media/radio station were rarely interested in publishing these types of projects.

Academic Institutions: Since the staring of the academic institutions were interested in this type of project for research on household level studies and assessment of the beneficiaries to understand the impacts during the project activity.

3.2 Expected Impacts on Stakeholders

Impact #1	Access to Improved cook stoves
Type of Impact	The Project has Positive impact and reduce the cost of fuel purchasing
Affected Stakeholder Group(s)	Beneficiaries
Resulting Change in Well-being	Less reliance on wood fuel / charcoal to meet energy needs for cooking purpose and reduce health impact due to smoke

Impact #2	Reduce Health Impact
Type of Impact	The Project has Positive impact and reduce in health risk
Affected Stakeholder Group(s)	Beneficiaries (Women & Children's)

Resulting Change in Well-being	Lower risk of developing COPD, less instance of acute lower respiratory illness, improved overall respiratory health

Impact #3	Reduce Average time saving associated with cooking and fuel collection
Type of Impact	The Project has Positive impact and reduce in fuel collection time
Affected Stakeholder Group(s)	Beneficiaries (Women & Children's)
Resulting Change in Well-being	Time saved in daily fuel collection

Impact #5	Enhancing Job opportunity
Type of Impact	The Project has Positive impact and increase employment opportunity
Affected Stakeholder Group(s)	Local Citizens (Men's & Women's)
Resulting Change in Well-being	Help in economic growth through creating more job opportunities by implementing project activity.

Impact #6	Reduction in use of non-renewable biomass
Type of Impact	The Project has Positive impact and help in responsible consumption.
Affected Stakeholder Group(s)	Local Citizens (Men's & Women's)
Resulting Change in Well-being	The project activity will reduce in use of non-renewable biomass in household through responsible consumption and production

3.3 Stakeholder Monitoring Plan

The sampling plan defines the approach for determining relevant monitoring parameters via ex-post sampling. All required monitoring and documentation will be implemented, reported, consolidated, and managed by the UpEnergy or a qualified expert partner to meet verification requirements. The target population is the total ICS population existing under the boundary of Nigeria.

Due to the large number of ICS envisaged to be distributed in the programme, it is not economically feasible to monitor each individual ICS distributed. Therefore, representative sampling may be undertaken which is designed according to the requirements of CDM Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities Version 9.0. The Sampling Standard gives guidance for sampling of individual projects, provided the homogeneity of population can be demonstrated, or differences are taken into account (stratification) in the sample size calculation and 90/10 confidence/precision will be applied.

An annual usage survey determines the drop off rates as project technologies age and users switch back to the baseline technology. The sampling will be conducted using stratified random sampling technique for ICS. For the stove efficiency and stove usage rate, the cookstoves in this programme will be stratified based on both the age of device/vintage and model of device. For quantity of woody biomass used in the project activity by traditional stove, the project technologies will be stratified based on the year of distribution.

The interviews will be conducted in person by UpEnergy staff or by hired externals who would be trained before and include expert observation by the interviewer within the kitchen in question or may be conducted via telephone by interviewers on condition that they are aware of in-kitchen observational from previous experience and analyzed such that typical circumstances are well understood by the telephone interviewers.

Along with the usage survey, Sustainable Development (SD) impacts will be monitored for SDG 1, SD3, and SDG 5 and SDG 12 which are quantifiable and monitored. Along with SDG parameters, a monitoring survey is carried out annually to assess end-user characteristics such as technology use, fuel consumption and seasonal variation. The project fuel consumption test can also be replaced with ageing test approach from second monitoring period.

The objective of the sampling plan design is to determine the following:-

a. Thermal Efficiency

b. Average Usage rate

c. Quantity of woody biomass used in the project activity by traditional stoves

d. Other related parameters

Examples of Stakeholder Monitoring Questions

The following are lines of questions that are included for stakeholder monitoring purposes and collect information on the intended direct and indirect benefits and any unidentified negative outcomes:

a. What do you like most about the stove?

b. What difficulties do you have with using the stove?

c. Do you think there is reduction in energy consumption for cooking as compared to traditional stove?

d. Do you think there is elimination of smoke after using ICS as compared to traditional three-stoned fired cook stove?

e. Do you think there is reduction in time consumed in collecting fuel/cooking time using the ICS as compared to traditional three-stoned fired stove?

f. Are you saving fuel in the project scenario?

g. Would you recommend the stove to your neighbours or friends?

3.4 Net Positive Stakeholder Well-being Impacts

Category	Indicator	Parameter	Impact
Environment	Water Quality and Quantity	Reduction in cutting tree. Less charcoal dust to pollute rivers	Positive
	Soil Condition	Less soil erosion due to reduction in cutting trees	Positive
	Other Pollutants	N/A	0
	Air Quality	Less smoke will be produced due to effective burning	Positive
Social Development	Quality of employment	Proving employment to both men and women	Positive
	Livelihood of poor	Savings in time and money for cooking and boiling improves quality	Positive

		of life and opportunity for jobs in saved time	
	Access to clean technologies	Product is affordable and clean	Positive
	Human and institutional capacity	N/A	0
Economic and technical development	Quantitative employment and income generation	Provide employment opportunities	Positive
	Technology transfer and new technological self-reliance	New technology introduced	Positive

4 BENEFITS FOR THE PLANET

4.1 Condition of Natural Capital and Ecosystem Services at Project Start

Exposure to smoke inside the home, from cooking with solid fuels in Nigeria, has potentially harmful health effects. In Nigeria, 69% of households use solid fuel for cooking, with 66.9% using wood.[20] Exposure to cooking smoke is greater when cooking takes place inside the house rather than in a separate building or outdoors. In 40% of households, cooking is done in the house (48% in urban areas and 34% in rural areas)[21].. Overall, only 15% of households in Nigeria use clean fuel for cooking, 27% in urban areas and 4% in rural areas[22]. 59% of households have electricity (83% of urban households and 39% of rural households[23]

As per DHS Report Nigeria, 2.7% children were with symptoms of acute respiratory infection (ARI) by using charcoal and 3% children affected ARI by using wood as fuel in households for cooking.[24]

Reliance on biomass fuels for cooking has implications for human health, climate change, conservation of forest resources, and the general well-being of people who rely on biomass fuels. Nigeria households dedicate a significant portion of their expenditures 4.4% to lighting and cooking energy.[25]

Fuel gathering consumes 1.7 hours [26]per household daily for women and children, limiting other productive activities (e.g., income generation) and taking children away from school. In less secure environments, women and children are at risk of injury and violence during fuel gathering.

[20] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[21] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[22] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[23] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[24] https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[25] https://documents1.worldbank.org/curated/en/164241468178757464/pdf/98664-REVISED-WP-P146621-PUBLIC-Box393185B.pdf

[26] https://documents1.worldbank.org/curated/en/164241468178757464/pdf/98664-REVISED-WP-P146621-PUBLIC-Box393185B.pdf

96% of the target population for this project usage traditional biomass stoves which have less thermal efficiency emitting smoke and unhealthy environment inside the kitchen in both rural and urban segments.

In 2010, Nigeria had 10.9 Mha of natural forest, extending over 12% of its land area. In 2020, it lost 97.8 kha of natural forest, equivalent to 59.5 Mt of CO_2 of emissions.

From 2002 to 2020, Nigeria lost 141 kha of humid primary forest, making up 14% of its total tree cover loss in the same time period. Total area of humid primary forest in Nigeria decreased by 7.4% in this time period. From 2001 to 2020, Nigeria lost 1.04 Mha of tree cover, equivalent to a 10% decrease in tree cover since 2000, and 527 Mt of CO_2e emissions. From 2001 to 2019, 14% of tree cover loss occurred in areas where the dominant drivers of loss resulted in deforestation. 4.0Mha of land has burned so far in 2021. This total is normal compared to the total for previous years going back to 2001. The most fires recorded in a year was 2005, with 12 Mha.

4.2 Expected Impacts on Natural Capital and Ecosystem Services

Sr No.	Impact	Type of Impact	Natural Capital or Ecosystem Service Affected	Change from the project activity
1.	Reduced demand for non-renewable firewood in the project area due to implementation of more efficient cookstoves	Positive and direct	Biodiversity, species richness, soil conservation, water conservation, wildlife conservation	Reduction in the household demand of woody biomass in the project area will enable slow deforestation rate which further will aid the various ecosystem services conservation.
2.	Avoided deforestation of the forested area due to wood fuel savings made possible by the project device	Positive and indirect	Biodiversity and Species Richness, Soil and Water Conservation	Reduced deforestation activities will lead to slow annual net change in the forest area and also possibly lead to increase in the forest area.

4.3 Natural Capital and Ecosystem Services Monitoring Plan

In order to determine the net ecological impact from the project, project proponent will also conduct regular monitoring in the project area. The following data will be procured from the monitoring activities:

- Survey the amount of natural fuelwood required by the project device in preparation of 3 meals a day and comparing it against the amount of fuelwood required by the baseline device. This will enable understanding the positive impacts from the project device in meeting the thermal energy requirements of the project area.
- Data from the above monitoring activity will further be used to evaluate the annual net forest area change rate. This data can be used to calculate hectares of forest area saved by undertaking the project activity.

4.4 Net Positive Natural Capital and Ecosystem Services Impacts

By replacing inefficient traditional cookstoves with ICS technology and performing energy efficiency improvements in existing biomass-fired cookstoves, the project reduces energy demand in the form of wood fuel use, thus generating net GHG reductions. The project activities generate an estimated 15,254,737 tCO2e emission reductions over the 7 years project crediting period.

5 OPTIONAL: CLIMATE MODULE

5.1 Baseline Scenario for GHG Sinks and Sources

“Not applicable. Project is applying the “deemed estimates” approach”.

5.1.1 Defensible Methodological Approach

“Not applicable. Project is applying the “deemed estimates” approach”.

5.1.2 Baseline Emissions

“Not applicable. Project is applying the “deemed estimates” approach”.

5.2 Monitoring

5.2.1 Monitoring Plan

Refer VCS Project Description, Section 5.3 i.e., Monitoring Plan

5.2.2 Dissemination of Monitoring Plan and Results

UpEnergy will publish and provide a direct link of monitoring report result to the website which involves content and key findings monitored during the project activity. The hard copy of the monitoring plan will be also available at UpEnergy regional office.

5.3 Net Emission Reductions and Removals

5.3.1 Project Emissions

Refer VCS Project Description, Section 1.10 i.e., Total Number of Years: The project will operate for a lifetime of 21 years and 0 months.[27]

Year	Estimated GHG emission reductions or removals (tCO2e)
Year 1	427,703
Year 2	1,283,109
Year 3	2,708,785
Year 4	2,708,785
Year 5	2,708,785
Year 6	2,708,785
Year 7	2,708,785
Total estimated ERs	15,254,737
Total number of crediting years	7
Average annual ERs	2,179,248

5.3.2 Leakage

Refer VCS Project Description, Section 4.3 i.e., Leakage shall be considered as default 0.95 in accordance with methodology.

5.3.3 Net GHG Emission Reductions and Removals

Refer VCS Project Description, Section 4.4

[27] 7 years, twice renewable.

APPENDIX