Country	**Ethiopia**
Request ID#	**2015000079**
Title	**Development of a Product Standard & Comparative Labelling for locally manufactured electric stoves**
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Summary of the CTCN technical assistance

The Ethiopian economy has been growing rapidly,along with it its population and energy demand. Powered almost entirely by hydroelectric energy the country's electricity grid has to supply the increased energy demands while at the same time being highly vulnerable to the adverse effects of climate change on future water supply. In consequence the government has developed targets to reduce energy consumption by increasing energy efficiency. In this context household appliances have been identified as a low hanging fruit,and locally manufactured electric stoves as a product with great improvement potential, not only with regard to energy efficiency, but product design in general. Informed by experiences in other countries a standard and labelling (S&L) programme has been selected as a policy approach to achieve these energy efficiency improvements.

Consequently the EEA and the NDE of Ethiopia have approached the CTCN with a request for technical assistance to provide support with the development of an S&L programme for locally manufactured electric stoves. Specifically, the request addressed the lack of available knowledge about standardized testing procedures, standard setting and label design. In response the CTCN agreed to produce a testing procedure tailored to the local context, recommendations on standard setting and label design and an awareness raising and communication strategy, in collaboration with experts from the CTCN's Network and local stakeholders. This response plan outlines the intervention.

Agreement:

(If possible, please use electronic signatures in Microsoft Word file format)

National Designated Entity to the UNFCCC Technology Mechanism	**Proponent** (signature of the Proponent is optional)
Name:	Name:
Title:	Title:
Date:	Date:
Signature:	Signature:

UNFCCC Climate Technology Centre and Network (CTCN)

Name: JukkaUosukainen
Title: CTCN Director
Date:
Signature:

1. Background and context

Ethiopia's strong economic growth since the turn of the millennium has brought with it population growth and an ever increasing demand for energy, both trendsexpected to continue at a high rate. At peak times the energy demand is higher than the generation capacities. While only about a quarter of the country's population has access to electricity (92 % in urban areas and 12 % rural[1]) almost 90 % of the electricity comes from hydroelectric plants. This dependency on water resources makes the country's electricity supply highly vulnerable to the increasing risk of drought and rainfall shortages. At the same time the rural population, almost entirely without access to the grid, depends on fuel wood and other biomass for energy production decreasing their availability and creating a strain on the nation's forests. This further increases the demand for electricity access and electricity.

A 2012 study funded by the Nordic Development Fund[2] and titled "Demand Side Management for Climate Change Adaptation for the Ethiopian Power Sector" recommended labeling of appliances with low energy efficiency as a key measure to reduce energy consumption. At that time a lack of government support and a legal mandate to provide finance and technical support to innovate energy efficiency in appliances was a barrier.In 2013 the Ethiopian Energy Authority (EEA) received legal mandate to address energy efficiency challenges through Energy Proclamation No. 810/2013. Article 19 of this proclamation ("Regulating Energy Efficiency and conservation activities") outlines Minimum Energy Performance Standards (MEPS) and labeling codes as potential measures to improve energy efficiency in appliances.

Consequently this subject received high priority and locally manufactured electric stoves were identified as a target technology as they are available in almost every household, lack a product standard and have not been improved for four decades, and therefore consume a large share of the electricity in the residential and gastronomy sector.A 2015 project document produced by the EEA and DANAS Electrical Engineering lays out a detailed background assessment of an Energy Efficiency Standards and Labeling programmeon such stoves. The expected benefits of such an intervention are significant:

- Reduced overall demand will lower the risk of power outages and the need for investments in energy supply infrastructure, saving both public funds and land
- Reduce household energy bills
- Improve competition among electric stove producers
- Encourage research and innovation
- Reduce greenhouse gas emissions and meet national climate targets
- Reduce deforestation caused by fire wood consumption
- Mitigate the burden on rural women, land degradation and pollution from clay plate production

The report also includes the results of elaborate stakeholder engagement and market assessment and

[1]https://data.worldbank.org/indicator/EG.ELC.ACCS.UR.ZS?locations=ET
[2]http://www.ethioenergyauthority.gov.et/attachments/article/60/DSM%20STUDY.pdf

has for instance identified the most common technology type(open resistor electric stove with 22 cmdiameter clay plate) and its technical flaws, such as heat losses due to lack of insulation and mismatching shape and size between heat elements and cookware, lack of heat control, and open heating elements causing a risk for the user, difficult cleaning and high wear of components. In addition improper user behaviour further increases the energy consumption (details see report).

The NDE of Ethiopia has requested the CTCN for technical assistance to support the implementation of the standards and labelling programme.

2. Problem statement

As outlined aboveimproving the energy efficiency of locally manufactured electric stoves as one of the most commonly used and highly energy intensive household appliances has strong potential to mitigate a number of challenges related to energy supply and associated impacts on society and the environment.While the Standards and Labelling approach is clearly supported, the complexity of such aprogrammecarries along a number of barriers that have prevented the Ethiopian Government from independently implementing it.

The country is lacking experience with developing and implementing such an intervention, both administratively and technically. Challenges expressed in the request for Technical Assistance from the CTCN were selecting and equipping testing facilities, developing MEPS and product standards, designing improved technology and transferring technology knowledge to local manufacturers. Another challenge is accessing the funds to carry out the intervention, costs for which have been estimated at a total of over US$ 8 million by the EEA.

What makes the task particularly challenging is the complex supply-chain of locally manufactured electric stoves. Numerous suppliers, producers, vendors and customers involve a large number of employees over hundreds of separate businesses. Previous attempts to introduce new technologies to this market have failed to compete with the affordability of current models. Factory production is not affordable and furthermore in conflict with employment interests of local manufacturers.

To support the EEA with the development of the S&L programme at the most meaningful stage the CTCN will develop a test procedure for testing the minimum energy performance of locally manufactured electric stoves. This stage has been chosen, because the EEA has recently, as part of a related S&L project funded by the Korean Government and implemented with UNIDO, set up a testing facility with testing equipment. The testing procedure is the missing component to make this laboratory operational. It defines the method and thus the foundation to define the energy standard. As soon as this has been achieved the laboratory is expected to carry out a first round of appliance tests to determine the Minimum Energy Performance Standard and develop the associated labels. The outputs and activities in section 3 below outline this intervention in detail.

3. Logical Framework for the CTCN Technical Assistance:

(Guidance: Please note that multiple activities lead to one Output, and multiple Outputs lead to one Outcome. There can be several Outputs, but onlyone Outcome description capturing the CTCN technical assistance. Deliverables are the products or services to be delivered to the NDE/Proponent/CTCN based on the Activities and the Outputs.)

***Objective**:* The objective of the intervention is to develop a testing procedure and protocol for Minimum Energy Performance Standard (MEPS) testing of locally manufactured electric stoves. The assistance builds on previous work and will enable the Ethiopian Energy Authority (EEA) to independently carry out appliance testing in local laboratories. This closes a knowledge gap that has previously inhibited the country to progress with the implementation of the Standard and Labeling programme, as subsequent activities depend on the effective adoption of a testing procedure. To further guide the development of MEPS this technical assistance will also provide information on international energy efficiency benchmarks in relevant product categories, advice on alignment of local product labels with international standards and a communication strategy to promote the S&L programme.
Outcome: The anticipated outcome of the intervention is to enable the EEA to successfully implement the S&L programme sothat local electric stove manufacturers will be incentivized to innovate their products to comply with the Minimum Energy Performance Standard (MEPS) and consumers informed about the benefits of buying labelled products. This will reduce household electricity consumption and associated costs and take pressure of the climate-vulnerable hydro powered electricity grid.

	Year: 2018G.C											
	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Output 1: Development of implementation planning and communication documents												
Activity 1.1: Project planning, M&E and reporting A kick-off call among implementer, National Designated Entity, request proponent and the CTCN will be held to clarify roles and responsibilities and objectives and discuss potential questions and next steps. i) A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organisations and detailed budget to implement the Response Plan. The detailed work plan and budget must be based directly on this Response Plan; ii) Based on the work plan, a monitoring and evaluation plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation. The monitoring and evaluation plan should apply selected indicators from the Closure and Data Collection report template and enable the lead implementer to complete the CTCN Closure and Data collection report at the end of the assignment (please refer to item iv below and section 14 in the Response Plan); iii) A two-page CTCN Impact Description formulated in the beginning of the technical assistance and												

update/revised once the technical assistance is fully delivered (a template will be provided); iv) A Closure and Data Collection report completed at the end of the technical assistance (a template will be provided).												
Activity 1.2: Gender analysis and mainstreaming The contractor is expected to involve a gender expert who will advise on gender mainstreaming throughout all activities and review documents accordingly. If the contractor does not have the required expertise the CTCN will withhold the respective share of the budget to sub-contract an external gender expert.												
Deliverable1: i) Detailed work plan ii) Monitoring and evaluation plan iii) CTCN Impact Description iv) Closure and Data Collection report												
Output 2: A testing procedure for measuring and certifying energy performance of locally manufactured electric stoves in Ethiopia The procedure will be developed based on existing international standards. The aim is to ensure that all appliances subject to the S&L programme will be tested based on the same criteria and an internationally applied and proven method for consistent comparison. This requires a review of existing testing procedures, clarification of needs and plans of the key stakeholders, assessment of existing capacities and potential needs for adjustment needs, and an overview of the required administrative framework.												
Activity 2.1: Review existing international testing procedures and identify those best suited to be used for this purpose in Ethiopia. This activity is a desk study combined with comprehensive stakeholder outreach. It aims to create an overview of internationally available energy performance testing procedures to inform the establishment of such a procedure for locally manufactured electric stoves in Ethiopia.Key elements to consider are to accurately reflect the conditions under which the product is used, accurateness, reproducibility and comparability of results, performance implications of different designs of the appliance, costs, etc.The testing procedure has to verify all relevant information that will be presented on the label (e.g. energy consumption, performance, tolerance).. The review of relevant international standardization procedureswill inform the recommendation whether to fully adapt or modify an existing procedure, or to develop a new and unique one. This has to take into account both the benefits and challenges associated with international recognition and comparability (e.g. trade implications, costs), as well as local conditions, needs and capacities. The status of similar programmes in neighboring countries, especially those that use the same or similar appliances and have trade potential, has to be considered as well.												

Activity 2.2: Assess the technical capacities of the existing testing facility with regard to the requirements to carry out the selected testing procedure The assessment of the testing facility will clarify whether the laboratory in its current state meets the technical requirements to facilitate appliance testing in line with the testing procedure. It will review the availability and condition of the required equipment, the expertise of the technicians who will carry out the testing, and the needed administration. It furthermore has to be ensured that the tests will be carried out in a reliable and unbiased manner thus the laboratory has to be certified by an accredited body. A checklist for operationalization of the laboratory will be prepared and, if necessary, recommendations will be made to expand the laboratory or involve other labs nationally, in neighboring countries or from the private sector.												
Activity 2.3: Organize a stakeholder meeting to discuss the results of the review of available testing procedures and the laboratory In this meeting different options will be discussed together with experts and representatives from authorities, manufacturers, consumers and other relevant institutions to clarify the most suitable pathway. The meeting will be set up in close collaboration with the EEA and a discussion on the benefits (effective and applicable process) and drawbacks (complexity and time needed) of wide stakeholder engagement in the selection and design of the testing procedure.The outcome of the consultations shall inform the final design of the testing procedure. Furthermore it is anticipated to yield a list of committed contact persons representing each stakeholder or stakeholder group to provide further feedback throughout the intervention and potentially become part of a steering committee for further development and implementation of the S&L programme. The setup of a committee however will not be part of the CTCN technical assistance. The meeting is expected to take 3 days and have up to 20 participants in total from all relevant stakeholder groups (see also Activity 3.2 and 4.2).												
Activity 2.4: Draft the testing procedure and administrative framework document with recommendations Based on the previous analyses and consultations this activity will produce the document that defines the testing procedure ready for Ethiopian authorities to adapt and implement. The technical protocols will be outlined in a format that allows straightforward application by its users. In addition to the technical protocol for testing itself, its successful operationalization and sustainability depend on an effective administrative framework as well as availability of human and financial capacities. For this reason the document that outlines the procedure will also include recommendations on a framework to administrate appliance testing. This is key to enforce compliance, avoid fraud and sustain trust in the S&L programme, in particular the labels and the accuracy of the information they represent. The administrative framework should address subjects such as the selection procedure of samples (which ones, how many), the funding source for carrying out the tests in the laboratory, an enforcement schedule of compliance monitoring and testing (aggressive random testing vs. complaint based testing),certification of results, a process for complaints from consumer associations or manufacturers the necessary forms and												

procedures for reporting of results, a database of test results, and certification of the testing facility itself. Furthermore it will lay out in detail the necessary human capacities (technical and administrative) and an annual cost projection with experience based recommendations for long term financing.												
Deliverable 2: i) The most suitable testing standard is selected and presented through a knowledge library documenting the information accumulated throughout activities 2.1 and 2.2 including sources ii) Meeting report and participant list from stakeholder meeting iii) Draft test procedure and protocol (ready for adoption by the EEA)												
Output 3: Benchmark of international MEPS and label design best practice This output will comprise a list of indicated performance levels of six to ten relevant regional and international minimum energy performance standards and associated product labels of electric stoves. The chosen examples represent success cases that caused measurable impacts and set the benchmark for international comparison. It will furthermore provide a checklist of key criteria to consider when defining the minimum performance level and an effective label. The purpose is to guide the EEA in defining a performance level that is achievable in the local context yet demanding innovation and to design and validate a product label that is understood and supported by key stakeholder groups and achieves its purpose.												
Activity 3.1: Conduct research on experiences and best practice with MEPS target setting and label design. This activity is recommended to be carried out in parallel with Activity 2.1 and focus on performance standard setting and label design processes. For the performance standard setting this will include aspects such as defining efficiency ranges, as well as updating schedules to ensure current market conditions are reflected. Indicators to be considered are variance of energy performance of current market products, technical potentials to improve efficiency, saving potentials at national level, time estimates to adapt product design, potential technical barriers, cost effectiveness of technical improvements, etc.. For the labels it will cover general appearance, definition of efficiency categories, stakeholder engagement, etc.												
Activity 3.2: Presentation of research results at the stakeholder meeting of Activity 2.3 The aim is to give all key stakeholders the opportunity to discuss and share their perspectives on the MEPS and label design proposals to ensure they reflect the needs of those who deal with them on a daily basis. The inputs of the discussion will complement the study outcomes and provide a final proposal for a MEPS target and label design. Ideally it will be possible to come to an agreement among all stakeholders. The choice of the label design needs to be supported by manufacturers, retailers and consumers. For this reason												

respective associations or NGOs need to participate in the meeting. Conducting a survey may be useful.												
Activity 3.3: Collate all information and write report The report collates the researched information with the stakeholder inputs collected during the meeting. The checklist component of the report will be in an applicable format that helps to produce the guideline for the design of performance levels and product labels. A calculation on the expected GHG emissions reduction as a result of the S&L standard implementation will be described in details.												
Deliverable 3: - Meeting minutes that capture stakeholder feedback related to Output 3 - Report on international best practice in MEPS design and labeling (with separate checklist) - Final report containing also an estimate of GHG mitigation potential through this TA												
Output 4: Awareness raising and public communication strategy An awareness raising and public communication strategy tailored to Ethiopian needs will be designed based on international experience and best practice. The purpose of the strategy is tol guide the EEA during the development of an effective campaign to promote the benefits of the S&L programme to all stakeholders to ensure their understanding and support for the programme.												
Activity 4.1: Conductresearch and draft a strategy framework The contractor will investigate properties and criteria of successful outreach campaigns for S&L programmes in other countries in the region and internationally. The contractor will then investigate the relevant socio-economic and cultural context in Ethiopia and produce strategy recommendations accordingly. The recommendations will consider key components such as the definition of clear goals and objectives, conducting a research and needs assessment, identification of target audiences and partners, development of tangible messages and testing their reception by the audiences and the design of a communication plan. Further aspects to be included are recommendations with regard to expected timeline and budget, stakeholder inclusion and support from campaign partners and identification of market barriers. The strategy framework will guide the discussion at the stakeholder meeting.. The contractor is expected to share the draft with key stakeholders in advance of the training to allow participants to prepare and provide informed inputs during the meeting.												
Activity 4.2: Introduce and discuss the strategy framework at the stakeholder meeting of Activity 2.3 A meeting session dedicated to awareness-raising and communication will serve as a platform to discuss the strategy, collect stakeholder inputs and provide clarifications. The contractor is expected to record all inputs and prepare a meeting report to ensure everything will be captured and accurately reflected in the final strategy.												

Activity 4.3: Finalize the strategy based on stakeholder inputs This activity merges the results from the background research with the inputs from the stakeholder meeting to produce a final draft. This final draft is to be shared with the previously involved stakeholders for a final review.												
Deliverables 4: - Meeting report that captures stakeholder feedback related to Output 4 - Strategy framework developed - Awareness raising and public communication strategy document												

4. Resources required and itemized budget: **SEE ATTACHED BUDGET DRAFT IN EXCEL**

Activities and Outputs	**Input: Human Resources** *(Title, role, estimated number of days)*	**Input: Travel** *(Purpose, national vs. international, number of days)*	**Inputs: Meetings/events** *(Meeting title, number of participants, number of days)*	**Input: Equipment/Material** *(Item, purpose, buy/rent, quantity)*	**Estimated cost (USD)** *Please accumulate the costing at Activity and Output level and provide an estimated costing range for each activity and the total Response Plan*	
					Minimum	**Maximum**
Output 1: Development of implementation planning and communication documents						
Activity 1.1: Formulation of i) Detailed work plan, ii) Monitoring and evaluation plan, iii)						

CTCN Impact Description, iv) Closure and Data Collection report.						
Output 2: : *Insert title*						
Activity 2.1: *Insert title*						
Activity 2.2: *Insert title*						
Activity 2.3: *Insert title*						
Add lines as needed						
Estimated range of costing for the entire Response Plan						

5. Profile and experience of experts

Based on the required Human Resources identified in section 4 (Resources required and itemized budget) please provide a description of the required profile of all involved experts for the implementation of the CTCN Response Plan.

Experts required	Brief description of required profile
Senior Economist	- A graduate degree in economics, political science or other relevant discipline with focus on the field of energy policy - At least 10 years working experience in the field of energy efficiency policy, particularly in the household and consumer electronics sector and ideally with the development and implementation of standard and labelling programmes for household appliances - Understanding of the local socio-economic context and the interrelations among various key stakeholders and the needs and expectations of manufacturers and consumers

	- Experience with project management in developing countries, ideally in Africa - Experience with the design of communication strategies and campaigns - Understanding of the local socio-economic context and the interrelations among various key stakeholders and the needs and expectations of manufacturers and consumers - Excellent communication skills in English in speech and writing
Senior Technical Expert	- A graduate degree in mechanical or electrical engineering or similar relevant discipline - At least 10 years working experience in the field of appliance testing, quality control and/or product design including experience with relevant laboratory equipment - Experience with international testing procedures and collaboration with relevant international institutions - Experience with project management in developing countries, ideally in Africa - Understanding of the local socio-economic context and the interrelations among various key stakeholders and the needs and expectations of manufacturers and consumers - Excellent communication skills in English in speech and writing
Gender Mainstreaming Expert	- A graduate degree in social studies, psychology, economics, political science or other relevant discipline with focus on the field of gender issues in a developing country context - At least 7 years working experience with gender mainstreaming issues in a developing country context - Understanding of the local socio-economic context and the role of women in Ethiopia - Excellent communication skills in English in speech and writing
Local Expert	- A graduate degree in business, economics, engineering or similar relevant discipline - At least 7 years working experience in energy policy related to appliances, - Experience in and good understanding of the local socio-economic context, particularly concerning local manufacturing industries - Experience with data research and collection, stakeholder engagement - Experience with organizing and facilitating meetings and workshops - Excellent communication skills in English in speech and writing

6. Intended contribution to impact over time

The anticipated long term impact of successful implementation of the S&L programme is to accelerate the development, deployment and diffusion of energy efficient stoves to reduce household energy consumption and thereby the strain on the supply infrastructure. The aim of the CTCN technical assistance is to remove a key barrier to the implementation of the programme. The anticipated market transformation resulting from the S&L programme –increased supply and demand for energy efficient appliances -can take several years to appear. It is for that reason that a quantifiable impact on energy consumption, GHG emission reduction or economic competitiveness depends on the activities following this technical assistanceand the effective implementation of the results (see section 9).

Assuming success of the S&L programme the impact in the long term could be quantified as follows: The 2015 project document developed by the EEA and DANAS presents a comparison of various types of electric stoves, both locally manufactured and imported. The most common locally manufactured types are open resistor stoves calculated to operate at an average of 60 % efficiency. The most efficient imported open resister stoves reached 79 % efficiency – a 19 % efficiency gap. Accounting for additional factors that impact efficiency in terms of product design a conservative estimate on improvement potential is 22 %. It is estimated that user behavior can have a further 30 % impact on efficiency[3], which will not be accounted for here.

Ethiopia consumes around 8,300 GWh of electricity per year (2014)[4], with an approximate 10 % annual growth rate. Households are responsible for approximately 39 % of the consumption, the majority of it (ca. 84 % according to the EEA/DANAS project document)used for cooking. Hence, the saving potential of energy efficient cooking appliances is significant.

Given that the vast majority of electricity in Ethiopia is produced by hydro power and other renewable sources the direct GHG emission reductions are negligible, however, in combination with improved grid access and awareness of the benefits of the innovated stoves they can be expected to replace biomass fired stoves, reduce fuel wood need and thereby decrease deforestation.

7. Relevance to NDCs and other national priorities

This technical assistance supports the fourth pillar of Ethiopia's GHG emission mitigation plan which aims at "*Leapfrogging to modern and energy efficient technologies in transport, industry and building sectors"* The NDC states that the total GHG emissions of the country were 150 Mt CO_2e in 2010 with and expected to increase to 400 Mt CO_2e by 2030 in a business as usual scenario. The combined efforts planned in the NDC aim at a 64 % (255 Mt CO_2e) reduction, limiting emissions below the 2010 level. While the majority of the reduction potential is projected for the agriculture

[3] DANAS Electrical Engineering, EEA (2017), Draft Project document On Locally manufactured electric stoves Energy Efficiency Standards and Labeling

[4]http://www.iea.org/statistics/statisticssearch/report/?year=2015&country=ETHIOPIA&product=ElectricityandHeat

and forestry sectors (together 220 Mt CO_2e), the 5 Mt CO_2e (or 3 %) from the building sector can be significantly impacted by improving the energy efficiency of electric stoves. As outlined earlier, they are among the most common and most energy consuming appliances.

Furthermore, in combination with efforts outlined in the country's Climate Resilient Green Economy Strategy (CRGE) to improve renewable energy based electricity access, energy efficient stoves can contribute to the emission reduction in the forestry sector by reducing households' dependency on fuel wood.

8. Linkages to relevant parallel on-going activities:

The EEA recently received support from the Korean Government and the United Nations Industrial Development Organization (UNIDO) on a project that laid the foundation for the development of a S&L programme for Injeramithads, the stoves to bake traditional Ethiopian flat bread. This project developed a stove prototype and equipped the testing lab that will be relevant for this project as well.

A NAMA titled *"Ethiopian Green Energy NAMA"* financed by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and developed by Ecofys and SNV Ethiopia is currently under development. It aims to develop a rural electrification programme which can increase the outreach of energy efficient electric stoves to households that previously could not use such technologies.

9. Anticipated follow up activities after this technical assistance is completed:

As mentioned above the aim of this technical assistance is to remove barriers that hinder the Ethiopian Government from independently implementing their S&L programme for locally manufactured electric stoves. Based on the products delivered by the CTCN the Ethiopian beneficiaries are encouraged to pursue the following post-assistance activities:

<u>Short term:</u>

- Set-up the testing laboratory (physically and administratively) based on the testing procedure and associated recommendations provided by the CTCN
- Organize certification of the testing laboratory by an internationally recognized and accredited entity
- Conduct a first round of tests based on the already collected set of appliance samples and define the minimum energy performance standard
- In parallel to the above design a product label

<u>Medium term:</u>

- Implement a public awareness raising campaign to inform consumers and manufacturers on the benefits of standards and labeling;
- Train manufacturers on energy efficient and sustainable product design to accelerate the innovation process.

<u>Long term:</u>

- Reduction of GHG emissions once the standard is inserted in the national regulation

10. Gender and co-benefits:

Imbedded in design of the activities:	It will be ensured that women and women's rights representatives will be represented appropriately at the stakeholder meeting, in particular to speak on behalf of consumers and family households.The advice on awareness-raising on the S&L programme will highlight the importance addressing women and their interests to ensure success of the campaign. This will also highlight the role of women in the innovation process to ensure new and energy efficient product meet consumer needs. To ensure appropriate consideration of the role of women in the context of this technical assistance a gender expert part of the implementation team will advise the rest of the team and review the deliverables accordingly.
Gender and co-benefits intended as result of the activities:	Availability of improved stoves will benefit women's health and safety during cooking. For those household that use biomass fuelled stoves a switch to improved electric stoves will furthermore eliminate the need to collect firewood, a burden currently borne entirely by women (provided that electricity access develops as well). The S&L programme also has the potential to increase the representation of women in technical roles in the manufacturing of household appliances and reduce female unemployment.[5]

11. Main in-country stakeholdersin implementation of the technical assistance activities:

Using the table below, please list and describe the role of in-country stakeholders, participants and beneficiaries who will be involved in or directly consulted duringimplementation of the assistance.

In country stakeholder	Role in implementation of the technical assistance
Ministry of Environment, Forest and Climate Change	National Designated Entity (NDE);review and final approval of documents and activities
Ethiopian Energy Authority (EEA)	Request proponent and main counterpart; provide information to implementer, review and approval of document and activities, facilitator
Consumers associations	Participate in meetings and provide inputs
Electric stove manufacturers associations	Participate in meetings and provide inputs
Retailer associations	Participate in meetings and provide inputs
Representatives of women's rights	Participate in meetings and provide inputs
Ethiopian Electric Utility	Participate in meetings and provide inputs
Ethiopian Electric Power	Participate in meetings and provide inputs

[5] https://www.usaid.gov/sites/default/files/documents/1860/Preliminary%20Gender%20Profile%20of%20Ethiopia%20Nov%2017%20final.pdf#Preliminary%20Gender%20Profile%20of%20Ethiopia%205.indd%3A.43167%3A164

Representatives from universities and other research and development institutions	Participate in meetings and provide inputs

12. SDG Contributions:

*Instructions: Please complete the grey section below for **a maximum of three SDGs** that will be advanced through this TA. A complete list of SDGs and their targets is available here: https://sustainabledevelopment.un.org/partnership/register/.*

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3SDGs)
1	End poverty in all its forms everywhere	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	
3	Ensure healthy lives and promote well-being for all at all ages	
4	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	
5	Achieve gender equality and empower all women and girls	
6	Ensure availability and sustainable management of water and sanitation for all	
7	Ensure access to affordable, reliable, sustainable, and modern energy for all(consider adding targets for 7)	
	7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services	
	7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix	
	7.3 - By 2030, double the global rate of improvement in energy efficiency	This technical assistance removes substantial barriers to improve energy efficiency in the buildings sector through energy efficient appliances.
	7.a - By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	
	7.b - By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	The standard and labelling programme supported by this technical assistance will promote product innovation among local manufacturers to improve the performance and sustainability of electric stoves.
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	The anticipated long term impact of this technical assistance is to reduce electricity consumption to mitigate dependency on climate sensitive hydro-electricity.
	13.2 - Integrate climate change measures into national policies, strategies and planning	
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	One component of this technical assistance is an awareness raising strategy to inform consumers and manufacturers about the benefits of energy efficient appliances.
	13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	
	13.b - Promote mechanisms for raising capacity for effective	

	climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

13. Classification of technical assistance:

Please indicate primary type of technical assistance. Optional: If desired, indicate secondary type of technical assistance.

Please tick off the relevant boxes below	*Primary*	*Secondary*
☐ 1. Decision-making tools and/or information provision	☐	☒
☐ 2. Sectoral roadmaps and strategies	☐	☐
☐ 3. Recommendations for law, policy and regulations	☐	☐
☐4. Financing facilitation	☐	☐
☐5. Private sector engagement and market creation	☐	☐
☐6. Research and development of technologies	☐	☐
☐7. Feasibility of technology options	☐	☐
☐ 8. Piloting and deployment of technologies in local conditions	☒	☐
☐ 9. Technology identification and prioritisation	☐	☐

Please note that all CTCN technical assistance contributes to strengthening the capacity of in country actors.

14. Monitoring and Evaluation process

Upon contracting of the implementing partners to implement this Response Plan, the lead implementer will produce a monitoring and evaluation plan for the technical assistance. The monitoring and evaluation plan must include specific, measurable, achievable, relevant, and time-bound indicators that will be used to monitor and evaluate the timeliness and appropriateness of the implementation.The CTCN Technology Manager responsible for thetechnical assistance will monitor the timeliness and appropriateness of the Response Plan implementation.Upon completion of all activities and outputs, evaluation forms will be completed by the (i) NDE about overall satisfaction level with the technical assistance service provided; (ii) the Lead Implementer about the knowledge and learning gained through delivery of technical assistance; and (iii) the CTCN Director about timeliness and appropriateness of the delivery of the activities and output

Agreement:

(If possible, please use electronic signatures in Microsoft Word file format)

National Designated Entity to the UNFCCC Technology Mechanism
Name: Tamelakesira Tamene Bekele
Title: Technology Transfer and Technical Support Directorate Director
Date:
Signature:

Proponent (signature of the Proponent is optional)
Name: GETAHUN MOGES
Title: General Director
Date: 12/03/2018
Signature:

UNFCCC Climate Technology Centre and Network (CTCN)

Name: JukkaUosukainen
Title: CTCN Director
Date:
Signature: