CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Instructions to lead Implementers for drafting the Technical Assistance Closure and Data Collection Report

Objective of the technical assistance (TA) Closure Report and Data Collection Report:

- To communicate publicly in one synthesis document a summary of progress made and lessons learned under the technical assistance (TA) towards the anticipated impact (main template).
- Compile TA-specific information required for internal use in donor and UN reporting (annex 1).

Steps for completing the TA Closure report:

1. The lead TA implementer drafts the report at the end of the assignment as a final deliverable /product. The TA Closure report will capture all activities conducted under the TA hence it is expected that duplication of information will occur from earlier documents. Please copy and summarise relevant material from previous TA outputs/deliverables and the Response Plan, as relevant.
2. A CTCN Manager will review and revise the report before final approval by the CTCN Director.

Important note on public and internal use of the closure report:
Once approved by the CTCN Director, the TA Closure and Data Collection Report will be a public document available on the CTCN website. Annex 1 is for internal use only and will not be publicly available.

Closure and Data Collection Report for CTCN Technical Assistance

1. Basic information

Title of response plan	Development of a Product Standard & Comparative Labelling for locally manufactured electric stoves
Country / countries	Ethiopia
NDE focal point and organisation	Ms. YamelakesiraTamene Bekele, Director Technology Transfer and Technical Support Environment, Forest and Climate Change Commission (EFCCC) (formerly Ministry of Environment, Forest and Climate Change)
Proponent focal point and organisation	Mr. Getahun Moges Kifle, Director General Ethiopian Energy Authority
Sector(s) addressed	Energy efficiency
Technologies supported	Appliance standards Energy labelling
Implementation period and total duration	2 July 2018 – 31 May 2019, 11 months
Total budget for implementation	114 700 USD
Designer of the response plan	Climate Technology Centre & Network CTCN
Implementer of response plan	Motiva Services Oy, Finland; Swan Management Plc, Ethiopia

2. Summary of all activities, outputs and products that contribute to the expected impact of the technical assistance.

Description of delivered outputs and products as well as the activities undertaken to achieve them. In doing so, review the log frame of the original response plan and refer to it as appropriate	**Output 1: Development of implementation planning and communication documents** Activity 1.1: A Detailed Work Plan A detailed work plan was produced and distributed to Ethiopian proponents, i.e. the National Designated Entity NDE, the Ethiopian Energy Authority EEA and on 6 August 2018 for review and comments. The Plan was complemented with the received comments and views and further submitted on 27 August 2018. The Detailed Work Plan was further commented by the CTCN Climate Technology Manager team on 18 October 2018, and the final Detailed Workplan was completed and submitted on 31.10.2018. The Detailed Work Plan (D1.1.) covers all activities, deliverables, outputs, deadlines and responsible persons/organizations and a detailed budget to implement the Response Plan. The Work Plan is based on the ToR, the Kick-Off meeting (teleconference) 16.7.2018, and available materials, e.g. the Project document for Locally manufactured electric stoves energy efficiency standards and labelling, Danas, January 2017. Activity 1.2: Monitoring and Evaluation Plan The Monitoring and Evaluation Plan (D1.2) was prepared by Motiva's monitoring and evaluation expert based on the Work Plan (activity 1.1). The ME Plan includes specific, measurable, achievable, relevant, and time-bound indicators for monitoring and evaluating the timeliness and appropriateness of the implementation. The Monitoring and Evaluation Plan was submitted as Annex 3 of the Detailed Work Plan. The quantitative and qualitative indicators have been chosen to facilitate the completion of the Technical Assistance Closure and Data Collection Report submitted at the end of the assignment. An emphasis has been on the various impacts of the project, lessons learned and recommendations. The monitoring and evaluation plan suggests for future ex post monitoring of the energy saving impact of the new MEPS. Activity 1.3: CTCN Impact Description A two-page Impact Description was prepared and submitted as Annex 2 to the Detailed Work Plan. The Impact Description has been updated and finalised to correspond the delivery of the project at the end of the project. The final Impact Description (D1.3) is submitted with the final report. Activity 1.4: A Closure and Data Collection Report A Closure and Data Collection Report has been prepared and completed with the data according to the monitoring and evaluation plan (see Activity 1.2.). The completed Closure and Data Collection Report (D1.4) will be submitted to CTCN team after the completion of the project. Activity 1.5: Gender Analysis Gender mainstreaming has been a quintessential component of this technical assistance project. The gender mainstreaming has been implemented throughout the project activities to ensure that gender perspectives, experiences and attention to the goal of gender equality have been integrated as a focus of the project activities. The designated gender specialist has ensured the gender mainstreaming of the project by advising the project team on gender mainstreaming throughout all activities and reviewed the produced documents accordingly. Report of the Gender Specialist Gender mainstreaming is the process of assessing the implications for

	women and men of any planned actions, including legislation, policies or programs, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres, so that women and men benefit equally and inequality is not perpetuated (*UNECOSOC, 1997).* INTRODUCTI Projects wherein gender is mainstreamed take gender considerations into account at all stages of the project activities to ensure that gender perspectives, experiences and attention to the goal of gender equality are at the heart of the project activities. Gender mainstreaming is a very important element in energy related activities particularly in relation to locally manufactured cook stoves. According to Sustainable Development Goal No. 7, people have the right to affordable and clean energy. This calls for increased level of energy efficiency and investment on clean energy sources. Energy consumption at the household level has a distinct gender dimension associated to it. This is because men and women do not have the same burden of environmental as well as health factors associated with the use of different sources of energy such as biomass and firewood. In many countries, including Ethiopia, it is the women that are responsible for the collection, transportation, processing and storing of fuel, as well as the activities of cooking, baking etc. while men's responsibility is typically that of decision making of a financial nature (Matlhotra et al, 2004). A 2018 WHO report reveals that women and children are the most affected by indoor air pollution caused by use of energy insufficient stoves. Indoor air pollution is largely caused by inefficient and poorly ventilated stoves burning biomass fuels such as wood, crop waste and dung, or coal and it is responsible for the deaths of an estimated 1.6 million people annually. More than half of these deaths occur among children under five years of age. In developing countries with high mortality rates overall, indoor air pollution ranks fourth in terms of the risk factors that contribute to disease and death (WHO, 2018). The time spent on collection in case of firewood and processing in case of other cooking technologies takes away the time they spend on income generating activities, self-care and development and family time. Women and girls are also vulnerable to different forms of abuse on the way to and from the forest in search of firewood. Environmental degradation as a result of deforestation and carbon emission is also another concern. Personal safety issues in relation to the use of inefficient cooking stoves such as overheat trip-offs and electrical shocks are also among the safety issues. Therefore, local manufacturers of cooking stoves should take gender considerations into account when producing cooking stoves. These considerations are; efficiency in terms of time and cost, affordability and aesthetics. The technical assistance documents include gender considerations at all levels and materials have been reviewed to ensure such. Efforts were made to represent women and women rights representatives at the stakeholders meeting and gender perspectives have been discussed thoroughly. Regarding awareness raising and the S&L programme, the technical assistance documents keep stressing on the need to integrate women and their interest to ensure the success of the campaign. **Output 2: A testing procedure for measuring and certifying energy**

	performance of locally manufactured electric stoves in Ethiopia Testing procedure has been developed based on existing international standards. The aim, as stated in the Terms of Reference, was to ensure that all appliances subject to the Standard and Labelling (S&L) programme were tested based on the same criteria and an internationally applied and proven method for consistent comparison. In order to implement the comparison, the project team carried out a review of existing testing procedures, and acquired the key stakeholders needs and plans through emails and discussions at the stakeholder meetings. The project team carried out an assessment of existing capacities and potential needs for necessary adjustments and produced an overview of the required administrative framework. The project team suggests the existing testing laboratory under the Ministry of Water Irrigation and Electricity as a primary option for a laboratory to carry out the recommended testing procedure for testing of locally manufactured electric stoves. <u>Activity 2.1: Review existing international testing procedures and identify those best suited to be used for this purpose in Ethiopia</u> The project team carried out a desk study combined with a comprehensive stakeholder outreach. The study produced an overview of available energy performance testing procedures internationally and in neighbouring countries to contribute to the establishment of a testing procedure for locally manufactured electric stoves in Ethiopia. The study covered the following key elements: - reflecting to the conditions under which the product is used, - accurateness, - reproducibility and comparability of results, - performance implications of different designs of the appliance, - costs, etc. A key attribute to the testing procedure was to verify all relevant information to be presented on the label (e.g. energy consumption, performance, tolerance). The review covered altogether 12 test procedures, described in more detail in D2.1 Testing procedure for electric cooking stoves and assessment of the test facilities. The review was carried out in parallel with the research on experiences and best practice with MEPS target setting and label design in Activity 3.1. <u>Activity 2.2: Assess the technical capacities of the existing testing facility with regard to the requirements to carry out the selected testing procedure</u> The assessment of the testing facility was carried out to learn whether the laboratory in its current state meets the technical requirements to facilitate appliance testing in line with the testing procedure. The assessment was carried out by the relevant experts of the project team assessing the availability and condition of the required equipment, the expertise of the technicians of the facility who will carry out the testing, and the necessary administration. An essential part of the assessment process was to ensure that the tests will be carried out in a reliable, transparent and unbiased manner. The project team considered to be important that the laboratory will be certified by an accredited body. The produced assessment report includes a checklist for operationalization of the laboratory and, provides recommendations to expand and develop the laboratory. The assessment gives an overview of the necessary attributes set for a testing laboratory, which can be either a public or private testing facility. It is left unto the local officials to decide on the course of action.

	Activity 2.3: Organize a stakeholder meeting to discuss the results of the review of available testing procedures and the laboratory First stakeholder meeting was organised in September 2018 to present the bases of the TA and give an overview of the project, the work plan, the interconnections of the different work packages. The aim was to discuss the goals of the activities with the participants to receive comments and input from key stakeholder groups to assess the readiness, potential and intent of the stakeholders to carry out the testing and standards and labelling programme for locally manufactured stoves. The second stakeholder meeting was organised in February 2019, to present the findings of the study and the recommendations for the testing procedure as well as other activities (activities 3.1 and 3.2, and 4.1 and 4.2) The Stakeholder meetings, originally planned as one 3-day event, was organised in two events (1st event as a kick-off event (25th of September, 2018) and the 2nd as the main stakeholder meeting, 5th of February, 2019) with all relevant stakeholder groups participating in a general session with discussions regarding activities 2.1, 2.2, 3.1, 3.2, 4.1 and 4.2. Altogether up to 28 participants from relevant stakeholder groups attended the meetings. The stakeholder groups invited were approved and invited by the EEA (D2.2). Activity 2.4: Draft the testing procedure and administrative framework document with recommendations The team produced, based on the analyses and consultations carried out, a document defining the recommended testing procedure for Ethiopian authorities for adaptation and implementation. (D2.3). To test the testing method and procedure, and to provide needed data for the setting of the MEPS, it was deemed necessary to try out the testing procedure in a series of pre-tests conducted by the testing laboratory on a sample of 10 stoves. The pre-test was set for December 2018 but due to unforeseen scheduling difficulties, the pre-test phase was postponed 3 three months. This affected both the assessment conclusions of the testing facility as well as the testing procedure and testing method, but also postponed the setting of the MEPS in activity 3.2. When the pre-test was finally conducted, the sample size was greatly reduced, and provided little data for activity 3.2. As for assessing the testing method and the testing facility, the pre-test – even reduced – was a good litmus test for the process: it showed the weaknesses of the testing facility as well as the testing method. The recommendations for the testing procedure were then set accordingly. The recommendation is set in two phases, with the first to be used in the beginning phases of the Standards and Labelling programme for locally manufactured stoves, and the second to be used in the future, when the programme has already affected the stoves and their energy efficiency and technical capabilities. Both recommendations are based on international standards and are adopted to fit the Ethiopian context. The testing method and procedure was developed in conjuncture with activities in Output 3. **Output 3: Benchmark of international MEPS and label design best practice** Activity 3.1: Conduct research on experiences and best practice with MEPS target setting and label design. The team produced a list of indicated performance levels relevant regional and international minimum energy performance standards and associated product labels of electric stoves (activity 3.1). The study revealed that there are only one programme running with actual MEPS and energy label in place set for a cooking appliance relevant to the electric stoves (China standards and labelling programme for induction cookers). In addition,

	there is only one MEPS programme relevant to electric stoves (EU MEPS for hobs). Other programmes were either set for biomass or gas stoves or were not relevant cooking appliances (ovens are not relevant to stoves due to very different energy use and usage patterns). A checklist of key criteria was developed for definition of the minimum performance level and an effective label for the locally manufactured stoves, based on the examples found in the study and the 2015 project document produced by the EEA and DANAS Electrical Engineering describing a detailed background assessment of an Energy Efficiency Standards and Labelling programme on the locally manufactured electric stoves. The research was carried out in parallel with Activity 2.1. <u>Activity 3.2: Presentation of research results at the stakeholder meeting of Activity 2.3</u> The research results and recommendations of Activity 3.1 were presented to the stakeholders at a stakeholder meeting (organised in activity 2.3). At the stakeholder meeting all key stakeholders had the opportunity to discuss and share their perspectives on the MEPS and label design proposals to ensure they reflect the needs of those stakeholders who deal with them daily. Compilation of research results was distributed in advance to the invitees to enable them to prepare and provide their input at the meeting (D3.2). After in-depth discussions with the Stakeholders, a final proposal for a MEPS target and label design was set. A survey was not needed, as the stakeholders present in the meeting were sufficient to reach a consensus. The MEPS was proposed to be set using thermal efficiency with the possibility to develop the MEPS and Energy labelling based on energy consumption at a later date. An energy labelling programme based on energy consumption would be the first in the world, as the only example of a running programme in China is based on calculated thermal efficiency. <u>Activity 3.3: Collate all information and write report</u> The team prepared a report consisting the researched information complemented with the stakeholder inputs collected during the meeting (see Annex 7, Stakeholder meeting report, deliverable 3.1). The checklist for the MEPS setting and the guideline for the design of performance levels and product labels was compiled, and the calculation method on the expected GHG emissions reduction resulting from the S&L standard implementation is included in detail in the report (D 3.3). **Output 4: Awareness raising and public communication strategy** As stated in the ToR, an awareness raising and public communication strategy tailored to Ethiopian needs was designed based on international experience and best practice. The developed strategy will 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. <u>Activity 4.1: Conduct research and draft a strategy framework</u> Properties and criteria of successful outreach campaigns for S&L programmes in other countries in the region and internationally were investigated. Based on the findings of the research, the team further investigated the relevant socio-economic and cultural context in Ethiopia, and produced awareness raising and communication strategy recommendations accordingly. The key components of the recommendations include - definition of clear goals and objectives, - conducting a research and needs assessment,

	- identification of target audiences and partners, - development of concrete messages and testing of response from the target audiences, and - the design of a communication plan. The recommendations also include - expected timeline and budget, - stakeholder involvement and support from campaign partners, - identification of market barriers. <u>Activity 4.2: Introduce and discuss the strategy framework at the stakeholder meeting of Activity 2.3</u> The strategy framework and communications plan were presented at the stakeholder meeting (Activity 2.3) and discussed at length at the meeting. The draft strategy was distributed in advance to key stakeholders to allow all get acquainted with the document and prepare to provide informed input and improvements in the contents of the draft strategy at the meeting. The stakeholder meeting was held in a general session for all stakeholders but divided into special dedicated sessions to discuss the topics arising from Activities 2.3, 3.2 and 4.2. (D 4.1 and 4.2). <u>Activity 4.3: Finalize the strategy based on stakeholder inputs</u> The awareness raising and communication strategy was finalised, and it comprises the results from the background research merged with the inputs from the stakeholder meeting. The final draft was distributed to the stakeholders involved in the strategy process for final review. (D4.3)
Partners organisations	- Motiva Services Oy, Finland: Ms Irmeli Mikkonen, Ms Kirsi-Maaria Forssell, Ms Lea Gynther, Mr Harri Hotulainen - Swan Management Plc, Ethiopia: Mr Mika Turpeinen, Mr Hilawe Lakew Tesema, Mr Wondwossen Sintayehu Wondemagegnehu, Ms Tsinu Amdeselassie Worku
Beneficiaries	- Ethiopian Energy Authority: Mr Getahun Moges Kifle and Mr Hailu Assefa - Environment,Forest and Climate Change Commission (EFCCC), NDE: Ms YamelakesiraTamene Bekele
Methodologies applied to produce outputs and products	Desk study; Discussions with stakeholders; Consultation of beneficiaries; Finalizing materials and producing working documents
Deviations	Activities 2.2; 2.4; To test the testing method and procedure, and to provide needed data for the setting of the MEPS it appeared essential to try out the testing procedure in a series of pre-tests conducted by the testing laboratory on a sample of 10 stoves (not in the original work plan). The Test Laboratory agreed to carry out testing of up to ten stoves. However, due to unforeseen delay of 3 months (field study period of the Lab staff and change in the lab management) of testing process, the full production of documents of Output 2 A testing procedure for measuring and certifying energy performance of locally manufactured electric stoves in Ethiopia, and Output 3 Benchmark of international MEPS and label design best practice were postponed accordingly. Draft documents were presented for stakeholder consultation at the Stakeholder meeting on 5 February 2019. Due to the deviation progress reports were not submitted as planned.
Achieved or anticipated gender benefits from the TA	- Regarding awareness raising and the S&L programme, the TA documents keep stressing on the need to integrate women and their interest to ensure the success of the campaign. - The TA documents include gender considerations at all levels and materials have been reviewed to ensure such. - Efforts were made to represent women and women rights

	representatives at the stakeholders meeting and gender perspectives were discussed thoroughly. - Availability of improved (energy efficient, safe) stoves will benefit women's health and safety during cooking. - Households using biomass fuelled stoves will benefit from a switch to improved electric stoves (within electricity access) and furthermore eliminate the need to collect firewood, a burden currently borne entirely by women - In longer term the S&L programme has the potential to increase the representation of women in technical roles in the manufacturing of household appliances and reduce female unemployment - Better opportunities for women and girls to invest time in income generating activities, self-care and development when not using time for firewood collection and cooking using elementary technology stoves.
Achieved or anticipated co-benefits from the TA	- Reduction in need for firewood will decrease environmental degradation resulting from deforestation and carbon emission - Better indoor climate in homes - Acceleration of improved technologies and energy efficiency
Anticipated follow up activities and next steps	Based on the outputs 2-4 delivered the Ethiopian beneficiaries are encouraged to pursue the following post-assistance activities: - Development of the existing testing laboratory (physically and administratively) - operationalization of the laboratory - Development of a testing procedure, conduct tests based on the already collected set of appliance samples - Organize certification of the testing laboratory by an internationally recognized and accredited entity; develop a quality assurance system of the existing testing facility (a 3-stage plan) - Defining and setting MEPS for locally manufactured stoves in Ethiopia, checklist of key criteria - Set up energy labelling programme for locally manufactured stoves; the market of cookstoves and the labelling programme should be monitored and evaluated. - Set up a market surveillance procedure - Awareness raising strategy and communication plan per target audiences <u>Second stage:</u> - Implement the 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. Contribution to expected impact of the TA: - Good supply of energy efficient electric stoves along with progressing electrification can attract bio-stove users to switch to electric stoves, which will reduce fuel wood need and thus decrease deforestation. - An indirect benefit of more efficient electric stoves is reduced strain on the electricity supply system in the country.

	Lessons learnt	**Recommendations**
Lessons learnt for this TA. Describe essential factors contributing to successful implementation, as well as specific challenges. Recommendations include considerations on what would need to be in place for	- For an international lead partner collaboration with a competent local partner was essential. Knowledge of local conditions, culture, government structure, energy policy, working culture and established relations as well as	

increasing success of similar efforts (i.e. regulatory, legal, stakeholders, communication, etc.)	stakeholder organisations and respective officials are only a few to mention, which were crucial for the implementation the services. - Involvement of the NDE and EEA, together with other key stakeholders enriched the project progress and respective deliverables. Their commitment and input to the project objectives, activities and outputs was significant. Working relations with the authorities' (e.g. NDE and EEA) representatives were effortless yet respectful, and their assistance in identifying relevant stakeholders was valuable. - Communication connections (internet, international phone lines) in Ethiopia proved to be quite unreliable and unstable, which challenged the project communication. Oral communication was restricted mainly to stakeholder meetings in Addis Ababa. That is a rather large obstacle and shall be considered in future projects. - Unforeseen delays in commencement of agreed tasks (e.g. pre-tests by the testing facility) and lack of communication thereof presented challenges, which the contractor was not prepared for.	- For international service providers bidding for TA would be more attractive if the budget would allow an adequate number of in-country visits, without compromising workdays, to enable frequent communication in countries with unreliable communication channels. - Responsible ministries / beneficiaries could improve preparedness and engagement of different authorities and stakeholders related to post-assistance activities' implementation.
Lessons learnt related to climate technology transfer Describe opportunities, challenges and barriers for the use and deployment of the technology or technologies supported by the TA. The objective is to identify specific success factors for technology transfer	A challenge for the deployment is that the direct impact on GHG emissions will be negligible because electricity production is based dominantly on hydro power both now and in the foreseeable future, if the direct climate impacts will dominate the future actions. Future ex post monitoring of the energy saving impact of the new MEPS is key to successful and consistent deployment and further development of S&L programme.	In Ethiopia's case with RES sources dominating electricity production, it might be beneficial to use also energy units for monitoring purposes to highlight the energy efficiency impacts. Carry out frequent monitoring and evaluation the market of cookstoves and the labelling programme (TA Output 3 document)

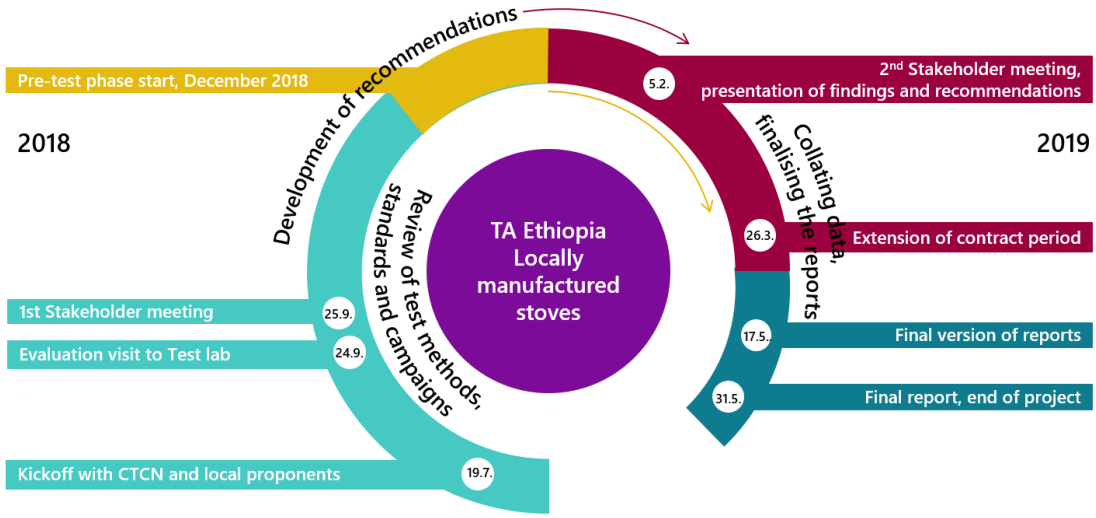
Lessons learnt related the CTCN process for TA	CTCN process provides clear objectives and process for the implementation of the TA, assistance from the CTCN technology team. CTCN process for TA is essential channel for the governments with insufficient competence and resources to carry out such processes without assistance. The CTCN process presents opportunities for future collaboration and technological transfer between target country and countries implementing TA.	

4. Illustration of the TA and photos

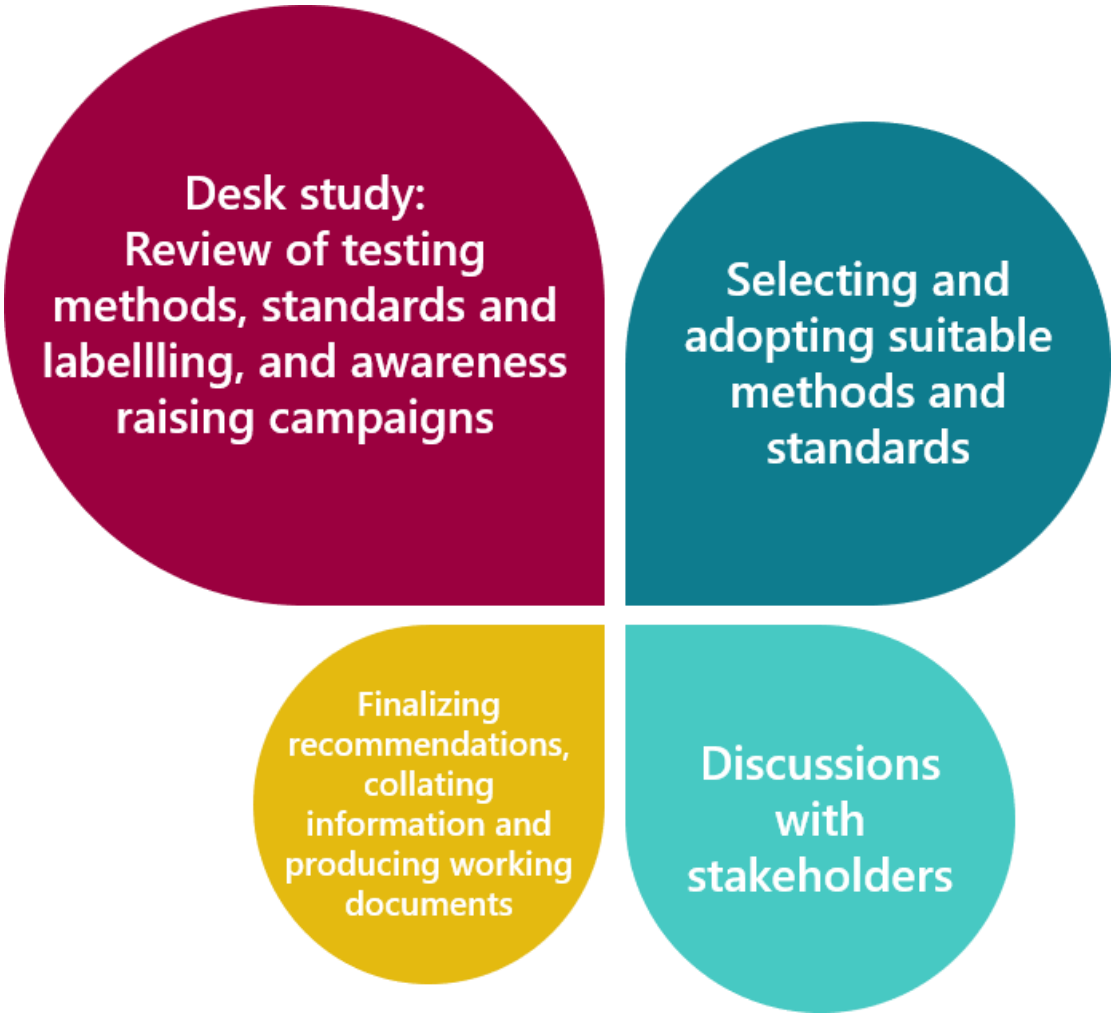
For communication purposes, please provide 2-4 Power Point slides with illustrations or charts showing the TA process, applied methodology, activities, outputs and achieved results. The illustrations must be copied into the TA Closure report but must also be delivered as power point files. Also, please provide at least five high-resolution pictures in jpg format, capturing technical assistance. The pictures should illustrate how the TA has impacted the lives of the beneficiaries in particular and the communities in general.

Illustrations of the TA:

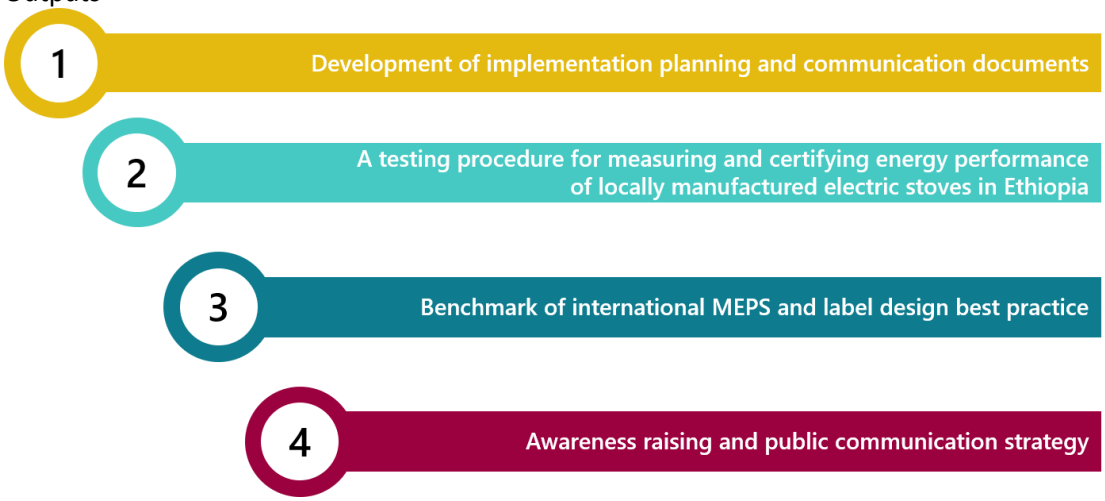
Timeline



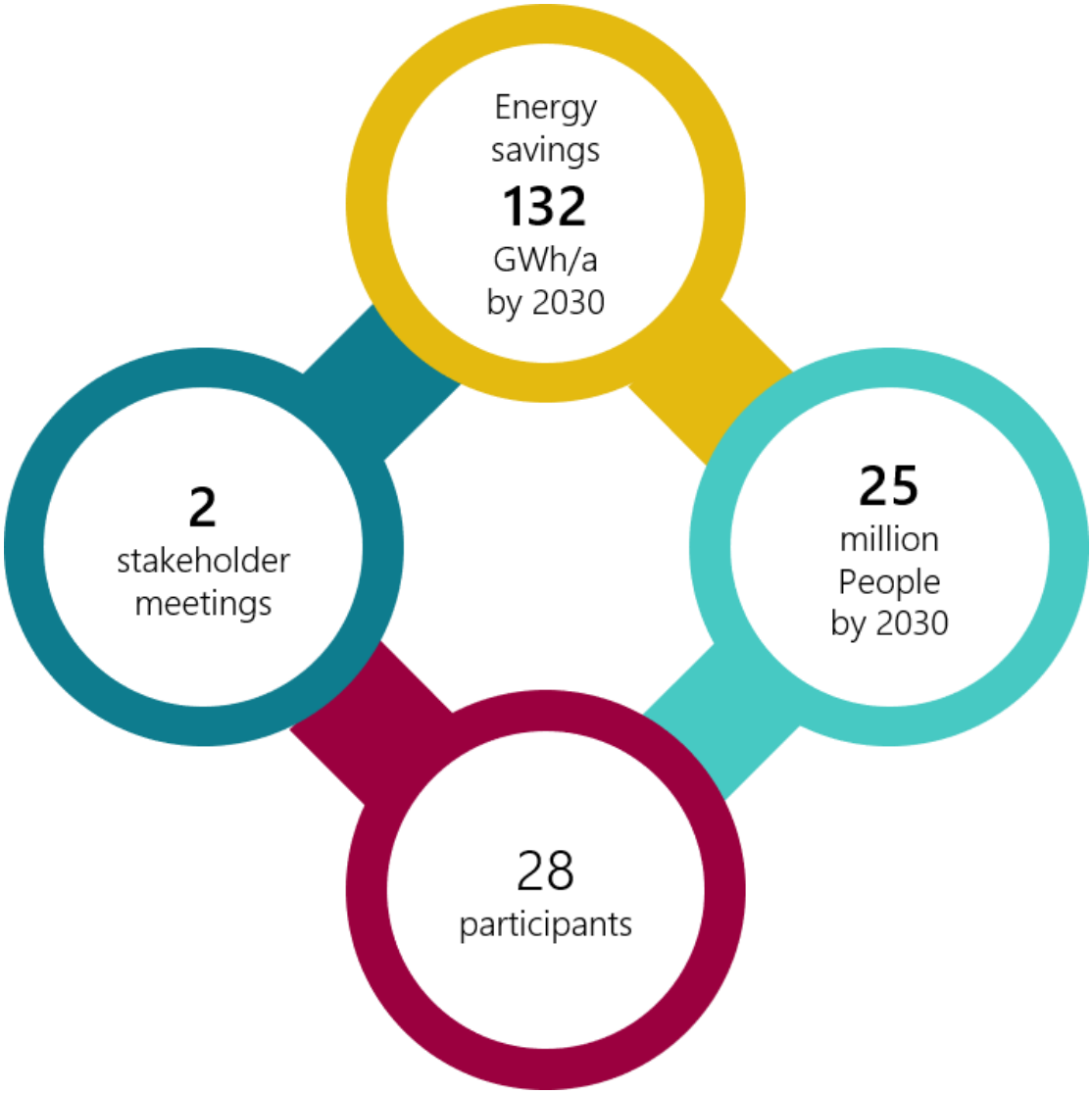
Methodology and activities



Outputs



Achieved results



5. Information for TA impact description

The information in the table below will be used to produce the CTCN TA Impact Description.
The TA Impact description is a 2-page summary document for communication purposes.
Please copy information from sections above and technical delivery reports as required.

Challenge: Approx. 500 characters with spaces	**Development of a Product Standard & Comparative Labelling for locally manufactured electric stoves** Ethiopia's electricity demand is growing. Electricity production is mainly based on hydro power which is vulnerable to the adverse effects of climate change on future water supply. Therefore, the government has developed targets to reduce energy consumption by increasing energy efficiency. Household appliances have been identified as a low hanging fruit, and locally manufactured electric stoves as a product with great improvement potential, not only regarding energy efficiency, but product design in general. Informed by experiences in other countries a standard and labelling programme has been selected as a policy approach to achieve these energy efficiency improvements.
CTCN Assistance: 2 to 4 bullet points. Approximately 450 characters with spaces	- selecting and equipping testing facilities for locally manufactured electric stoves - drafting the testing procedure proposing an administrative framework for testing - developing minimum energy performance standards (MEPS) and product standards to ensure that all equipment in the market will be energy efficient - formulating a communication strategy for transferring technology knowledge to local manufacturers and for informing the public about energy efficient stoves
Anticipated impact: 2 to 4 bullet points to summarise anticipated impact. Approximately 250 characters with spaces. As a minimum, please include one of the following: i) Quantity of greenhouse gas emissions reduced, avoided or sequestered; or ii) Number of people with increased capacity to adapt to the impacts of climate variability and change.	**Cumulative annual energy savings by 2030: 132 GWh.** o Direct impact on GHG emissions negligible as electricity production is based dominantly on hydro power both now and in future. o Efficient electric stoves + progressing electrification: enables switching from biomass to electric stoves; contributes positively to deforestation, cuts down particle emissions; reduces strain on the electricity supply system.

Linkages and contribution to NDC: 2 to 4 bullet points. Approximately 350 characters with spaces	This TA supports Ethiopia's Nationally Determined Contribution to - "Leapfrogging to modern and energy efficient technologies in transport, industry and building sectors", as stated in the national GHG Mitigation Plan - Reducing households' dependency on fuel wood and to increase energy access in rural areas thus reducing stress in the forest resources in line with the Climate Resilient Green Economy Strategy (CRGE). Energy efficient electric stoves, which forms the basis of Ethiopia's NDC, can become an attractive alternative to inefficient wood stoves creating health risks and burdening households with fuelwood gathering.
The narrative story: Approximately 1200 characters with spaces	Increasing energy efficiency in cooking by shifting to electric stoves and replacing inefficient wood stoves can make 20% contribution to Ethiopia's total potential for emission reduction annually in 2030 according to CRGE. Dependency on climate sensitive electric power supply further accentuates the need to boost energy efficiency. This TA supports the Ethiopian Energy Authority (EEA) and the National Designated Entity (NDE) of Ethiopia by providing research, instructions, bet practices and recommendations for the development of a Standards & Labelling (S&L) programme for locally manufactured electric stoves to ensure energy efficiency. This TA has developed an awareness raising and public communication strategy and communication plan to help EEA in effective campaigning to ensure effective implementation of the S&L programme.
Contribution to SDGs: Always include contribution to SDG 13, and to the extent possible, please include contribution to 2 other SDGs, describing the contribution with a few sentences for each SDGs concerned. A complete list of SDGs and their targets is available here: https://sustainabledevelopment.un.org/partnership/register/	SDG 1: End poverty in all its forms everywhere - Energy efficiency is a major contributor in the reduction of fuel poverty. SDG 7: Ensure access to affordable reliable, sustainable and modern energy for all - By 2030, double the global rate of improvement in energy efficiency: Energy efficiency will be improved in the buildings sector through energy efficient appliances.

	SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation: - The standard and labelling programme will promote product innovation among local manufacturers to improve the performance and sustainability of electric stoves. SDG 13: Take urgent action to combat climate change and its impacts - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries: The long-term impact of reduced electricity consumption mitigates dependency on climate sensitive hydro-electricity. - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning: Future awareness raising, in accordance with the strategy developed in this TA, informs consumers and manufacturers about the benefits of energy efficient appliances.

Note: Please see example of a TA Impact Description at the following link:
https://www.ctc-n.org/sites/www.ctc-n.org/files/benin_a_ag_forestry.final_.pdf

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Annex 1 (for internal use in donor and UN reporting)

A. Standardised CTCN performance indicators for donor and UN internal reporting

Please add quantitative values for indicators relevant to the particular TA in the list below. Non-relevant indicators should be left blank. Please only fill in the table for activities and outputs conducted or produced directly by the CTCN assistance.

CTCN standardised performance indicators	**Quantitative value**	**Qualitative description** *List the various elements corresponding to the quantitative value*
1. Overview		
Number of active person-days (not full duration) of technical assistance provided to counterparts or stakeholders by international experts and consultants	**91**	-OP1 Development of implementation planning and communication documents (16 pd) -OP2 A testing procedure for measuring and certifying energy performance of locally manufactured electric stoves in Ethiopia (30 pd) -OP3 Benchmark of international MEPS and label design best practice (15 pd) -OP4 Awareness raising and public communication strategy (15 pd) -Management & reporting (15 pd)
Number of active person-days (not full duration) of technical assistance provided to counterparts or stakeholders by national experts and consultants	**49**	OP1 Development of implementation planning and communication documents (12 pd) -OP2 A testing procedure for measuring and certifying energy performance of locally manufactured electric stoves in Ethiopia (17 pd) -OP3 Benchmark of international MEPS and label design best practice (5 pd) -OP4 Awareness raising and public communication strategy (13 pd) -Management & reporting (2 pd)
Number of person-days for external communication and outreach activities conducted to showcase the assistance (news release, newsletters, articles on website, etc.)	**4**	- Visual identity of the project documents - Interview and pictures for EFCCC communication purposes at 2nd stakeholder meeting on 5 Feb 2019. Published on EFCCC FB on 10 Feb 2019: https://www.facebook.com/MefEth/ - Interview of local team lead Mika Turpeinen and published article in Finnish journal Tekniikka&Talous (Technology&Economy) on 13 March 2019 related to Smart electricity grids' impact on quality of life in developing countries – Future dam nearly doubles the electricity supply for a country of 110 million inhabitants (TA on locally manufactured electric stoves mentioned as an example of cooperative actions in Ethiopia). https://www.tekniikkatalous.fi/uutiset/tuleva-pato-lahes-tuplaa-110-miljoonan-asukkaan-maan-sahkontuotannon-kehitysmaissa-alykkaiden-sahkoverkkojen-vaikutus-elamanlaatuun-on-huima/898f4529-d5b1-3770-875d-11412b47f08a - Motiva's Social Responsibility Report 2018

		(published April 2019); the TA is showcased as an example of Motiva's sustainable and socially responsible activities in international collaboration. https://www.motiva.fi/files/15774/Motiva_yhteiskuntavastuuraportti_2018.pdf - Nordic Energy Seminar on 21 June 2019 in Addis Ababa: Introduction of the TA-project to Nordic energy specialists.
2. Events (other than trainings) held as part of the assistance		
Number of international and multi-country (at regional or sub-regional level) technology and knowledge sharing events		
Number of participants in the events above	**7**	
Number of national technology and knowledge sharing events	**2**	**Stakeholder events with representation from main stakeholder groups**
Number of participants in the events above	**28**	**Representatives**
Number of men	**20**	
Number of women	**8**	
Number of public-private events related to technologies		
Number of participants in the events above		
3. Training and capacity building activities conducted during the assistance		
Number of training sessions and capacity strengthening activities		
Number of people who received the training		
Number of men		
Number of women		
Total number of organisations trained		
Number of research organisations, laboratories and universities		
Number of private companies		
Number of cities and local government		
Number of communities		
Number of ministries		
Number of specialised governmental institutions		
Number of non-profit organisations		
Level of satisfaction of participants after the training (from training feedback form). Categories include: From very satisfied, satisfied, partly not satisfied, not satisfied at all		
Percentage of participants that increased their capacities thanks to the		

training (from training feedback form). Categories include: Significantly, very, moderately, to none.		
Percentage of men		
Percentage of women		
4. Tools, technical reports and information material supported by the assistance		
Total number of tools, technical reports and information material supported by the assistance (excluding mission, progress and internal reports)	**3**	
Number of tools strengthened, revised or developed	**1**	**Test method and procedure developed to fit to Ethiopian context, based on international standard**
Number of technical reports strengthened, revised or created	**2**	**MEPS and Energy labelling programme created to fit the Ethiopian context, based on international experiences and existing standards.** **Awareness raising campaign and communications plan created to fit the Ethiopian context, based on existing international and regional programmes and campaigns.**
Number of other information materials strengthened, revised or created		
5. Policies, laws and regulations supported by the assistance		
Number of policies, strategies, and plans drafted addressing climate change adaptation		
Number of policies, strategies, and plans drafted addressing climate change mitigation		
Number of documents developed to inform other policies, strategies, and plans on climate change adaptation (sectoral strategies, national development plans, etc.)		
Number of documents developed to inform other policies, strategies, and plans on climate change mitigation (sectoral strategies, national development plans, etc.)		
Number of laws, agreements, or regulations drafted addressing climate change adaptation		
Number of laws, agreements, or regulations drafted addressing climate change mitigation		
Number of documents developed to inform laws, agreements, or regulations on climate change adaptation		
Number of documents developed to inform laws, agreements, or		

regulations on climate change mitigation		
6. Institutional strengthening supported by the assistance		
Number of institutional arrangements in place to coordinate near and long-term national adaptation plans (NAPs)		
Number of organisations with increased technical capacity to advance near and long-term national adaptation plans (NAPs) which integrate EbA		
Number of organisations with increase awareness and knowledge among countries to better own and drive national adaptation planning processes		
7. Partnerships and cooperation		
Number of private companies directly engaged in the assistance (that partnered with the proponent, the beneficiaries or the CTCN to implement the assistance)		
Number of South-South collaboration enabled during or through the assistance, when stakeholders from other countries were involved in the assistance		
Number of North-South collaboration enabled during or through the assistance, when stakeholders from other countries were involved in the assistance		
Number of Triangular collaboration enabled during or through the assistance, when stakeholders from other countries were involved in the assistance		

B. Indicators of anticipated impacts that may occur after the TA is completed

CTCN standardised performance indicators	**Quantitative value** Insert the request value and unit	**Content** List the elements included in the number provided	**Expected timeline** Indicate when the indicator and value are expected to be achieved	**Responsible institution** Indicate the institution(s) that will play leading role in enabling the indicators and anticipated values to be achieved
16. Anticipated finance mobilised				
a) Anticipated amount of public/donor investment				

	mobilised (in USD) from the beneficiary country for climate change activities as a result of the TA				
b)	Anticipated amount of public/donor investment mobilized (in USD) from international and regional sources for climate change activities as a result of the TA				
c)	Anticipated amount of private investment mobilised (in USD) from the beneficiary country for climate change activities as a result of the TA				
d)	Anticipated amount of private investment mobilised (in USD) from international and regional sources for climate change activities as a result of the TA				
17. Policies					
a)	Anticipated number of policies, strategies, plans, addressing climate change mitigation officially proposed, adopted, or implemented as a result of the TA				
	Anticipated number of policies, strategies, plans, addressing climate change adaptation officially proposed, adopted, or implemented as a result of the TA.				
b)	Anticipated number of laws, agreements, or regulations addressing climate change mitigation officially proposed, adopted, or implemented as a result of the TA.	**1 regulation**	**Regulation for the Ethiopian Standards and Labelling programme for Locally manufacture d stoves**	**By 2023**	**Ethiopian Energy Authority, EFCCC, MoWIE, Ethiopian Standards Agency**
	Anticipated number of laws, agreements, or regulations addressing climate change adaptation officially proposed, adopted, or implemented as a result of the TA.				
c)	Anticipated laws, policies, regulations, strategies and plans where climate change mitigation will be mainstreamed as a result of the TA				

Anticipated laws, policies, regulations, strategies and plans where climate change adaptation will be mainstreamed as a result of the TA				
18. Anticipated number of public-private partnerships created				
19. Anticipated twinning arrangements created as a result of the TA				
20. Anticipated number of technology projects prepared and implemented to support action on low emission and climate-resilient development				
21. Anticipated number of strengthened National Systems of Innovation and technology innovation centres in recipient country				
22. Anticipated Clean Energy Generation Capacity Clean supported by the TA that has achieved financial closure				
23. Anticipated and projected GHG reductions. Quantity of greenhouse gas (GHG) emissions, measured in metric tons of $CO_{2\text{-}e}$, anticipated to be reduced or sequestered as a result of projects supported by the TA				
24. Anticipated clean energy generation capacity supported by the TA that has achieved financial closure				
25. Anticipated and projected greenhouse gas emissions reduced or avoided through 2030, in metric tons of $CO_{2\text{-}e}$, from adopted laws, policies, regulations, or technologies related to clean energy/sustainable landscapes as a result of the TA	**132 GWh/a, cumulative energy annual energy savings from 2023 to 2030**	**Electricity generation is based on RES and is expected to do so in the future. Imports are insignificant. Therefore, using more efficient electric stoves does not reduce GHG emissions**	**2030**	**Ethiopian Energy Authority, Ethiopian Energy Utility, MoWIE, EFCCC, Ethiopian Standards Agency**

		from power generation and supply.		
26. Anticipated number of people improving their livelihood as co-benefits as a result of the TA	**25,2 million (estimate by 2030)**	**Inhabitants with access to electricity**	**2030**	**Ethiopian Energy Utility, Ethiopian Energy Authority, MoWIE, EFCCC**
27. Anticipated technology types effectively deployed in the country				
28. Anticipated UNFCCC processes implemented as a result of the TA (NAMA, NAPA, NDC, etc.)				
29. Anticipated Technology Needs Assessments (TNA) and technology Action Plans (TAP) as a result of the TA				
30. Anticipated cooperative research, development and demonstration programmes within and between developed and developing country Parties facilitated as a result of the TA				
31. Anticipated improved climate change observation systems and related information management in developing country Parties.				

Annex 2 (for internal use – to be filled in by the CTCN)

CTCN evaluation

This section will be completed by the relevant CTCN Technology Manager.

- Evaluation of the timeliness of the TA implementation as measured against the timeline included in the response plan;
- Evaluation of TA quality as defined in the response plan;
- Overall performance of the Implementers;
- Overall engagement of the NDE and Proponent;
- Lessons learned on the CTCN process and steps taken by the CTCN to improve.