CTCN Fast Technical Assistance (FTA)

Request Submission Form

Presentation of the Fast Technical Assistance The Fast Technical Assistance (FTA) is the Climate Technology Centre & Network (CTCN) short time response to requests referring to technology prioritisation, endogenous technologies assessment, policies and measures that are immediate priorities for the requesting country. FTA has duration **up to 2 months** and a total value typically **up to USD 15,000** (it may include a scoping mission, only if strictly necessary). The FTA is implemented by means of an international expert.

Guidelines:

- This Request Submission Form should be completed by the organisation requesting technical assistance from the Climate Technology Centre & Network (CTCN) in collaboration with the National Designated Entity (NDE) of the country in question
- The Form must be signed by the NDE. Please see updated contact list of NDEs here: http://unfccc.int/ttclear/support/national-designated-entity.html
- The Form can be submitted as a Word file containing a digital signature or as a signed and scanned PDF file in combination with an un-signed Word file

Requesting country:	Kenya
Fast Request title:	Please reflect the objective of the FTA in the title (maximum 200 characters). Urban Briquette Making Pilot Project
NDE	Please add name of organisation, name of individual, position, email and address. Kenya Industrial Research and Development Institute (KIRDI) Dr. Kelvin Khisa Principal Research Scientist and CTCN Focal Point Coordinator Kelvin.khisa@kirdi.go.ke / kelvinnamukhasi@gmail.com PO Box 30650 – 00100 Nairobi Kenya
Request Applicant:	Please add name of organisation, contact person, position, email and address of the organisation requesting assistance from the CTCN. Greening Kenya Initiative Trust Mr. Peter Odhengo National Coordinator odhengo@gmail.com PO Box 37898 – 00100 Nairobi Kenya

Climate objective:

- ☐ Adaptation to climate change
- ☐ X Mitigation of climate change
- ☐ Combination of adaptation and mitigation of climate change

Geographical scope:

- ☐ Community level

☒ X Sub-national

☐ National

If the request is at a sub-national level, please describe specific geographical areas (provinces, states, countries, regions, etc.).

Sectors:

Please indicate the main sectors related to the request:

☐ Coastal zones	☐ Early Warning and Environmental Assessment	☐ Human Health	☒ X Infrastructure and Urban planning
☐ Marine and Fisheries	☐ Water	☐ Agriculture	☐ Carbon fixation
☐ Energy Efficiency	☐ Forestry	☐ Industry	☒ X Renewable energy
☐ Transport	☒ X Waste management		

CONTEXT OF THE ASSIGMENT (up to half page):

This section should present the climate problem and the national context within which it takes places (i.e. efforts to tackle it, climate policies and priorities etc). It should end with an explanation of the specific questions and issue the CTCN expert would have to address.

Please list or attach relevant documents that will help the CTCN analyse the context of this request.

Waste management poses a great challenge to most urban authorities in Kenya, especially Nairobi, due to its rapidly growing middle class. Nairobi generates approximately 2,400 tons of waste per day, out of which 38% is collected while less than 10% is recycled (JICA, 2010). The remaining 62% is either dumped in illegal dumpsites in close proximity to urban settlements or openly burned in open yards causing pollution. This is particularly the case for low income residents who cannot afford waste collection services. Inadequate urban waste management infrastructure has led to unsanitary waste disposal practices which in many cases results into emission of methane and carbon diode that contribute to climate change. In addition, urban settlements are the net consumers of charcoal which culminates into deforestation thereby reducing the availability of carbon sinks, yet the opportunities for using waste as an alternative source of renewable energy largely remains untapped. As a result Urban women and youth groups as well as the private sector have the general tendency of overlooking the income generation opportunities associated with waste management that manifests itself in form of waste recovery, reuse, recycling, as well as composting. Uncollected urban waste causes severe urban health and environmental problems.

One such business opportunity worthy embracing is the manufacture of briquettes using a combination of urban organic wastes and agro residues in form of rice husks, coffee husks, bagasse, groundnut shells,

macadamia shells and sawdust derived from the peri-urban socio-economic activities of the expansive City of Nairobi. Doing this will not only help clean the environment but also create the much needed jobs and community wealth. It is a fore gone conclusion that our overreliance on the wasteful linear economic development model is no longer sustainable and should therefore be replaced with the resource efficient circular economic development model that strives to as much as possible divert wastes from the landfill for the sole aim of job and wealth creation as well as mitigating the negative impacts of climate change. The Project will utilize waste for briquette production especially charcoal dust, sawdust and organic municipal solid waste (MSW). Charcoal dust is generated from inefficient handling of charcoal from the point of production, sales and consumption. It is estimated that approximately 2-5% of the charcoal produced is wasted as charcoal dust and ends up in dumpsites. In Nairobi, there are so many timber sales workshops that could serve as a source of saw dust for fuel briquette making. They generate a lot of waste in forms of sawdust and wood chips. The waste is either burnt or ends up in the dumpsites but it can be utilized for briquette making and the same case applies to the organic MSW. The 3 waste streams provide opportunities to modernize biomass briquette for cooking without any further cutting trees for energy generation.

Such innovative interventions will help the country meet its nationally determined contribution (NDC) obligations on sustainable waste management; National Climate Change Action Plan (NCCAP 2018 – 2022, MTEP III 2018 – 2022, NAP 2015 - 2030) obligations on the adoption of low-carbon, resource efficient and climate resilient development pathways; and Green Economy Strategy and Implementation Plan (GESIP 2016 - 2030) plan on using wastes as a resource. In addition the Climate Change Act of 2016 and the National Climate Finance Policy 2018 (sessional paper No. 3 of 2017), and the Green Climate Fund National Strategy for pipeline projects development 2019 all require the introduction of innovative climate change solutions for universal access to clean energy for all.

The CTCN expert is expected to help develop a practical training manual and business plan for the briquette production using urban organic waste streams in combination with agricultural residues. The manual will be used for training of green champions who are owners of green business enterprises in urban centres. In addition the business plan will support the green business enterprises to effectively initiate and manage viable briquette production activities, marketing services, as well as promotion of sales in a predictable and sustainable manner modelled on the proven M-Pesa kiosks. The training manual should comprise of simple illustrative diagrams, pictorials, practical layouts, manufacturing guidelines, machine use instructions, operation and maintenance, as well as carbon footprint reduction approaches at production level. All these should be anchored within the Kenyan legal and regulatory framework.

The CTCN expert will be required to provide technical advice on the overall design of the briquette plants, their site layouts, governance structures, occupational health and safety requirements, modes of cost-effective environmentally friendly packaging, and requisite incentive policies that will aid resource mobilization for project acceleration and scale up among Kenya County Governments.

Alignment with national priorities :

Please describe how the technical assistance is consistent with national climate priorities such as: Nationally Determined Contribution, national development plans, poverty reduction plans, technology needs assessments, Low Emission Development Strategies, Nationally Appropriate Mitigation Actions, Technology Action Plans, National Adaptation Plans, sectorial strategies and plans, etc.

Such innovative interventions such as biomass based briquette making will help the country meet its nationally determined contribution (NDC) obligations on sustainable waste management; National Climate Change Action Plan (NCCAP) obligations on the adoption of low-carbon, resource efficient and climate resilient development pathways; and Green Economy Strategy and Implementation Plan (GESIP) plan on using wastes as a resource. The intervention will in some way contribute to the country's adoption low-carbon, resource efficient and socially inclusive development pathway.

Reference document (please include date of document)	**Extract** (please include chapter, page number, etc.).
Nationally Determined Contribution (NDC)	Direct alignment and contribution to NDC implementation is required for all CTCN technical assistances. Please include a direct reference to the INDC/NDC document (chapter, page number, etc.). Sustainable waste management systems in Kenyan Nationally Determined Contribution (INDC) of 2015.
Technology Needs Assessment	Transfer of Environmentally Sound Technologies (ESTs) to the Kenyan Waste Management Sector
National Adaptation Plans	NAP 2015 – 2030
Nationally Appropriate Mitigation Actions	Kenya NAMA, 2015 - A CIRCULAR ECONOMY SOLID WASTE MANAGEMENT APPROACH FOR URBAN AREAS IN KENYA by the Kenyan Ministry of Environment and Forestry
Add others here as relevant	NCCAP 2018 - 2022

OBJECTIVE OF THE FTA (up to 5,000 characters):

This section should present the overall objective of the assignment, including the result expected by the end of the Fast Technical Assistance

The overall objective of this FTA is to help develop a practical training manual and business plan that will guide the manufacture of biomass based briquettes from both organic municipal solid wastes as well as from agricultural residues. The project's specific objectives are:

- To develop an inventory of raw materials for use in the making of biomass briquettes;
- To present the merits and de-merits of different briquette making technologies;
- To present a detailed supply chain account of the briquette making processes in form of (site selection; construction and layout of structural buildings; sourcing, pre-processing and blending of raw material inputs; materials carbonization; drying; quality assurance/ testing; storage, packaging and final marketing of the briquette products);
- To present guidelines on the eco-friendly packaging of biomass briquettes;
- To propose suitable governance structures for such community based projects; and
- To develop a suitable business model for the roll out of such a businesses.

The following results are expected at the end of the FTA

- Inventory of raw materials that can be used for making biomass briquettes
- Merits and demerits of briquette making technologies
- Supply chain account of briquette making processes and steps
- Guidelines on eco-friendly packaging of briquettes
- Proposed governance structure
- Suitable briquette making business models

SCOPE AND ACTIVITIES OF THE PROPOSED FTA (up to one page):

The FTA should clearly contribute to mitigation or adaptation to climate change as described in the context of the assignment.

Within a clearly defined scope, the description of the FTA should be structured into the following:

- *Expected activities*

Aligning of the briquette making activities with the provisions of the Kenyan legal and regulatory framework

Development of an inventory of potential raw materials that can be used for making briquettes

Merits and demerits of biomass briquette making technologies

Green supply chain accounting of the step-by-step biomass briquette making processes

Assessment of the potential eco-friendly packaging of biomass briquettes

Proposed governance structure

An assessment of potential business models

- *Expected deliverables (following the structure of the activities)*

Report on the provisions of the Kenyam legal and regultory framework on waste value addition

Report on inventory of potential raw materials

Report on the merits and demerits of biomass briquette making technologies

Report on how to green the biomass briquette making supply chain

Report on different modalities of eco-friendly briquette packaging

Report on the most suitable governance structure

Report on the promising business models

- *Expected use of the deliverables by the requesting organisation*

Please note that the CTCN facilitates technical assistance and is not a project financing mechanism. All FTA has one mandatory activity, "Evaluation and communication".

Activity x: Evaluation and communication
The CTCN FTA Closure report will be completed at the end of the FTA (a template will be provided).
Deliverable:
FTA Closure report

GENERAL TIME SCHEDULE OF EXPERT AND ACTIVITY/DELIVERY PLAN:

The activities under this contract must be completed within a period of X months. Please note that the maximum time for the assignment is 2 months.

Monitoring and impact of the assistance:

By signing this request, I affirm that processes are in place in the country to monitor and evaluate the technical assistance provided by the CTCN. I understand that these processes will be explicitly identified in the CTCN Response Plan and that they will be used in the country to monitor the implementation of the technical assistance following standard CTCN procedures.

Signature:	
NDE name:	Dr. Kelvin Khisa
Date:	April 18, 2019
Signature:	

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UN.ORG