

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
- For requests submitted by multiple countries, all the NDEs of the respective countries shall sign identical Forms before official submission to the CTCN
- NDEs have the opportunity to submit CTCN requests in collaboration with National Designated Authorities (NDAs) for the Green Climate Fund (GCF) if targeting the GCF Readiness Programme.

Requesting country or countries:	Kenya
Request title:	Please reflect the objective of the technical assistance in the title (maximum 200 characters). Framework for Industrial Energy Efficiency Regulations (IEER) in Kenya
NDE	Please add name of organization, name of individual, position, email and address. Dr. Kelvin Khisa Kenya Industrial Research and Development Institute (KIRDI) PO Box 30650 - 00100 Nairobi Kenya
Request Applicant:	Please add name of organization, contact person, position, email and address of the organization requesting assistance from the CTCN. Ministry of Energy and Petroleum (MoEP) -Kenya

Climate objective:

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

Geographical scope:

- Community level
- Sub-national
- National

Multi-country

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

Problem statement related to climate change (up to one page):

This section should answer the question “what is the problem?” Please summarize the problem related to climate change and/or the negative impacts of climate change in the country that the request aims to address.

Kenya is in a very interesting development phase, with its ambitions outlined in the vision 2030. Energy is one of the key enablers of the Vision 2030 and energy security remains a matter of national priority. The Kenya Vision 2030 envisions a middle-income economy offering decent jobs and high quality of life to its citizenry. This portends increased energy demand and consumption due to rapidly expanding, wholly energy driven manufacturing, agriculture, Information and Communications Technology (ICT) and transport sectors. In the current government “Big 4 Agenda”, manufacturing is identified among the target sectors to drive the development agenda and it is envisioned to contribute up to 20% of the national GDP against its current contribution of 9%. Access to competitive-priced, reliable, quality, safe and sustainable energy is essential for achievement of these development plans.

The current effective power generation capacity in the country is 1664 MW. The make up this capacity in MW is hydro 770, geothermal 241, thermal 622, co-generation 26, and wind 5.1. The monitored demand which is considered suppressed largely due to transmission and distribution system weaknesses, stands at about 1,357 MW while the unsuppressed demand is estimated as 1700 MW, thus depicting a shortfall of 536 MW. This demand-supply imbalance has hitherto contributed to regular power rationing, particularly during dry seasons. Current electricity demand is also projected to grow to 2,600-3600 MW by 2020. The Vision 2030 notes that currently the energy costs in Kenya are higher than those of her competitors in the face of growing energy demand. It therefore prioritizes the growth of energy generation and increased efficiency in energy consumption.

This challenge requires a very careful implementation of energy sector reforms that not only focus on increased energy generation but also on energy efficiency. In an Industrial perspective, Kenya climate change action plan notes that Improvements in the industrial processes and energy efficiency can enhance competitiveness and potentially create cost reductions. Its further noted that Cement manufacturing and improved energy efficiency in the manufacturing sector could abate 1.3 MtCO_{2e} a year by 2030. The vision 2030 also aims to remove key barriers to energy efficiency improvement in industries and ultimately to transform the market for industrial energy efficiency. This would increase competitiveness of industry by reducing its energy intensity while reducing industrial carbon emissions by increasing energy efficiency. According to Kenya Technology needs Assessment (TNA), the energy and industry sector are ranked 1st and 3rd respectively in terms of priority sectors for climate mitigation. The Kenya Nationally Determined Contribution (NDCs) also identifies enhancement of energy and resource efficiency across the different sectors as a key strategy towards a low carbon development path.

There has been ongoing effort to attain energy efficiency in the industry sector. The Kenya Energy and petroleum policy has laid out strategies towards development and implementation, awareness and sensitization of programmes on energy efficiency where among them is development of guidelines to energy auditors. However, there are major bottlenecks to fully

realize an energy efficient industry system in Kenya. Among these challenges, at the industry level, is the fact that industries do not always operate at optimal capacities and it becomes hard for them to comply with the set energy efficiency targets while operating below their capacity. This factor creates a burden to the industries in terms of compliance with regulations. Creating a legislation framework that considers all the dynamics at an industry levels can help in reducing compliance burden and build industries confidence with the legislation which could translate to better compliance hence achieving the national energy efficiency goals. However, creating such a framework does not stop at regulations and policy level, it means training and enhancing the capacity of the energy auditors and managers, who are key in the framework implementation. This technical assistance will therefore aim to create a framework of industry energy efficiency.

From the foregoing, it is easy to see that the Kenyan private sector has taken the lead in energy efficiency promotion in the country and even institutionalized the whole process, there is no non-regulatory Government institution in the country with the right mandate that is executing a complimentary role to what the private sector is currently doing.

Past and on-going efforts to address the problem (up to half a page):

This section should answer the question “what has been done or is currently being done to address the problem?” Please describe past and on-going processes, projects or initiatives implemented in the country or region to tackle the climate problem as described above.

Development of a Power Generation and Transmission Master Plan, Kenya. The documents outline the Energy Efficiency Long Term Plan –2015 – 2035. Among the recommendations is the need to improve the audit quality and communicate the details of audits in a more consistent and comprehensive manner to facilitate sharing of good practices and information management and monitoring. Auditing in this context is taken by UNIDO to mean the collection of data on all major energy-consuming processes and plant equipment; documenting technologies used in production, operation and maintenance practices as well as management systems; and identification of energy-efficiency opportunities throughout the whole plant. UNIDO states that well executed audits can help in the identification of major energy-consuming areas while indicating possible energy-saving opportunities.

The Kenya Association of Manufacturers in conjunction with the Ministry of Energy and Petroleum Development established the Centre for Energy Efficiency and Conservation (CEEC) in 2006. The Centre runs energy efficiency and conservation programs designed to help companies identify energy wastage, determine saving potential and give recommendation on measures to be implemented. It also provides professional technical services for developing, designing and implementing energy efficiency projects to suit the needs of commercial, institutional and industrial consumers. The main aim is to reduce cost and enhance competitiveness and profitability while promoting a clean and healthy environment.

The Government, in partnership with other stakeholders, has taken a number of energy efficiency and conservation initiatives to address energy wastage and check growing energy demand in the country. These initiatives include financial assistance to Centre for Energy Efficiency and Conservation (CEEC) through an agency agreement with the Kenya Association of Manufacturers (KAM) to undertake energy audits in service, industrial and SME sector. Promoting energy efficiency and conservation in public buildings by undertaking a survey of

fluorescent light fittings in government buildings, carrying out energy audits in government buildings. Implementing the first phase of an energy efficient lighting project by procuring and distributing through Kenya Power, compact fluorescent lamps to consumers free of charge.

To encourage the industries to embrace energy efficiency the KAM through the CEEC holds an annual Energy Management Award scheme to encourage industries to compete for various awards in best energy use practices. This annual event has been held since 2006.

The Copenhagen Centre on Energy Efficiency of UNEP DTU Partnership is collaborating with the Government of Kenya to develop its five-year national energy efficiency strategy.

Specific technology¹ barriers (up to one page):

This section should answer the questions “what are the technology barriers that hinder national efforts described above” and “how will the CTCN technical assistance complement these efforts?” Building upon the problem statement and taking into consideration the existing efforts described above, please describe the specific technology barriers encountered by the requesting applicant to identify, assess or deploy climate technology (is) to address the problem statement. The described barriers should be within the scope of the requested CTCN technical assistance (described in the section below).

Energy efficiency is important in order to address the issue of energy insecurity. To meet energy demand in a way that is both economically and environmentally efficient. Innovative technologies could significantly reduce energy consumption and save industry. This TA will aim at developing a harmonized framework of regulations leading to adoption and implementation of energy efficient technologies and practises in the industrial sectors. It will also set up a regulatory framework to monitor and report on activities towards compliance of the regulations under the proposed framework

Sectors:

Please indicate the main sectors related to the request:

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> Coastal zones | <input type="checkbox"/> Early Warning and Environmental Assessment | <input type="checkbox"/> Human Health | <input type="checkbox"/> Infrastructure and Urban planning |
| <input type="checkbox"/> Marine and Fisheries | <input type="checkbox"/> Water | <input type="checkbox"/> Agriculture | <input type="checkbox"/> Carbon fixation |
| <input checked="" type="checkbox"/> Energy Efficiency | <input type="checkbox"/> Forestry | <input checked="" type="checkbox"/> Industry | <input type="checkbox"/> Renewable energy |
| <input type="checkbox"/> Transport | <input type="checkbox"/> Waste management | | |

¹ “any equipment, techniques, practical knowledge and skills needed for reducing greenhouse gas emissions and adapting to climate change” (Special Report on Technology Transfer, IPCC, 2000)

Please add other relevant sectors:

Cross-sectoral enablers and approaches:

Please indicate the main cross-sectoral enablers and approaches

- | | | | |
|--|--|--|--|
| <input type="checkbox"/> Communication and awareness | <input type="checkbox"/> Economics and financial decision-making | <input type="checkbox"/> Governance and planning | <input type="checkbox"/> Community based |
| <input type="checkbox"/> Disaster risk reduction | <input type="checkbox"/> Ecosystems and biodiversity | <input type="checkbox"/> Gender | |

Technical assistance requested (up to one page):

Founded on the problem statement, past/on-going efforts and technology barriers, please describe the requested technical assistance. The technical assistance should clearly contribute to mitigation or adaptation to climate change as described in the problem statement and contribute to overcome the specific technology barriers.

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

- **Overall objective**
 1. To develop a harmonized framework of regulations leading to continual adoption and reporting thereof on implementation of energy efficient technologies and practices in industrial sectors of the economy.
 2. To suggest institutional set up under the regulatory framework to monitor and report on the activities towards the compliance of the regulations under the proposed framework.
- **Anticipated groups of activities to be performed by the technical assistance**
 1. Review existing data on a sector wise basis on energy consumption for Kenyan industries. Help in identifying existing regulations or policies that are designed to promote industrial growth by regulating energy use in all the participating industrial sectors.
 2. Develop a methodology to help identify and classify the industrial sectors and specific industries that need to come under the purview of the framework of the Industrial Energy Efficiency Regulations (IEER) - Designated Industries.
 3. Develop the framework of IEER which broadly would encompass the following:
 - Appointment of Energy Manager in the Designated Industries.
 - Manner and Interval of Time for Conduct of Energy Audit in Designated Industries, including templates for reporting data, energy audit reports and compliance reports.
 - Minimum Qualification for Energy Auditor and Manager including necessary experience in the field.
 - Certification Procedures for Energy Auditors and Energy Managers through

conduct of assessments examination, syllabus, registration etc.

- Development of training modules, model question banks and training of the trainer programme.
 - Qualifications, Criteria and Conditions Subject to Which a Person May be Accredited as An Energy Auditor and The Procedure for Such Accreditation and Maintenance of their List.
 - Form and Manner and Time for Furnishing Information regarding Energy Consumed and Action Taken on Recommendations of Accredited Energy Auditor.
4. Proposed Institutional structure and its role and responsibilities to coordinate and implement the activities under the IEER framework.
- **Anticipated products to be delivered by the technical assistance.**
 1. A framework of industrial energy efficiency regulations
 2. Training curriculum and training modules for energy auditors and managers
 3. Training of trainers in selected institutions
 4. Standard templates for energy auditing

Please note that the CTCN facilitates technical assistance and is not a project financing mechanism.

Expected timeframe:

Please indicate the expected duration period for the requested technical assistance. Please note CTCN technical assistance is limited to a maximum duration of 12 to 18 months.

Anticipated gender and other co-benefits from the technical assistance:

Please describe the activities with gender linkages as well as the anticipated gender and other co-benefits (e.g. biodiversity, economic, social, cultural, etc.) that are likely to be generated as a result of the technical assistance.

The gender gap in information, consultation and decision-making limit the capacity of women business owners to adopt energy-efficient practices. Generally, energy use may also be reduced by about 20 per cent through changes in behaviour. Women and men respond differently to policies encouraging behavioural changes. To develop the framework for energy efficiency the process will need to take into consideration the role of all gender in decision making and ensure equitable consultation and representation in the process. This framework will be designed based on a gender-differentiated understanding of opportunities and constraints to optimize their social and climate impact.

For more information you can find guidelines on the CTCN's website here:

<https://www.ctc-n.org/technologies/ctcn-gender-mainstreaming-tool-response-plan-development>

Further reading on gender can be found on the CTCN website here:

<https://www.ctc-n.org/technology-sectors/gender>

Key stakeholders:

Please list the stakeholders who will be involved in the implementation of the requested CTCN technical assistance and describe their role during the implementation (for example, government agencies and ministries, academic institutions and universities, private sector, community

organizations, civil society, etc.).

Stakeholders	Role to support the implementation of the technical assistance
National Designated Entity	The NDE will support in getting the commitment and participation of the relevant stakeholders within the process
Request Applicant; Ministry of energy and petroleum	Ministry of Energy and Petroleum is the main authority for energy matters in the countries it will take the lead on the project development as a Project Proponent. The Ministry will be responsible for Policy, guidelines and regulations review and development
Please add as many stakeholders and lines as required. Energy Regulatory Commissions Kenya Manufactures Association (KAM) Centre for Energy Efficiency and Conservation (CEEC)	The ERC is the energy regulatory agency in Kenya. It will contribute in reviewing draft regulations and energy efficiency framework and specifications KAM and CEEC are the main players in enhancing energy efficiency in Kenya and will thus be instrumental in developing the framework.

Alignment with national priorities (up to 2000 characters including spaces):

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.

Kenya NDCs targets to reduce GHG emissions by 30% by 2030 relative to the BAU scenario of 143 MtCO₂eq; and in line with its sustainable development agenda. Enhancement of Energy and resource efficiency across the different sectors is identified as a key strategy to achieve this ambition.

The TNA identified key target sector for climate change mitigation and at the top of the list was the energy sector. Industrial processes were also among the sector targeted for priority for technology transfer.

The Kenya Vision 2030 that details the economic development priority for the country, bring out manufacturing to focus. This sector go hand in hand with the energy sector and hence the energy sector is seen as an enabler of the development envisioned in the economic development blueprint. Kenya however experiences energy insecurity and enhancing energy efficiency is outlined as among the solution to this key challenge.

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.) Kenya NDCs - Page 2
Technology Needs Assessment	Technology Needs Assessment and Technology Action Plans for Climate Change Mitigation -2013 3.2 GHG Emission Status and trends of different sectors (pg. 22-24)

	3.2.1 Energy Sector 3.2.2 Industrial Processes
National Adaptation Plans	
Nationally Appropriate Mitigation Actions	
Energy Act 2006	Clause 105 Energy conservation in factories and buildings. (pg. 103)
Vision 2030	Section 3.5 on Energy and section 4.4 on manufacturing for the regional market
Development of a Power Generation and Transmission Master Plan, Kenya. Long Term Plan – Energy Efficiency 2015 - 2035	Section 8: Recommendations and Energy Efficiency Plan; Pg.54 -improve the audit quality -communicate the details of audits in a more consistent and comprehensive manner to facilitate sharing of good practices and information management and monitoring.

Development of the request (up to 2000 characters including spaces):

Please describe how the request was developed at the national level and the process used by the NDE to approve the request before submitting it (who initiated the process, who were the stakeholders involved and what were their roles?) and describe any consultations or other meetings that took place to develop and select this request, etc.

Following the presentations made by experts during the launch of the SACREEE in Windhoek, a discussion was initiated during a session on the needs to institutionalise the energy efficiency and conservation efforts in the industrial sector of the country. This was based on the technical report of EU Technical Assistance Facility for the "Sustainable Energy for All" Initiative (SE4ALL) - Eastern and Southern Africa, where in, an institutional framework for industrial energy efficiency framework was cited as one of the important pillars. The discussions during the meeting led to internal meeting between the NDE, representatives of the Ministry of Energy and other stakeholders from UN Environment on the need to establish an institutional framework. The request for CTCN was therefore framed as per the conclusion of the internal meeting.

Background documents and other information relevant for the request:

- Please list all relevant documents that will help the CTCN analyses the context of the request and national priorities. Please note that all documents listed/provided should be mentioned in this request in the relevant section(s), and that their linkages with the request should be clearly indicated. For each document, please provide web-links (if available) or attach to the submission form. Please add any other relevant information as required.
1. Technology Needs Assessment and Technology Action Plans for Climate Change Mitigation - 2013
 2. Energy Act 2006
 3. Kenya Nationally Determined Contribution (NDC)
 4. Kenya Vision 2030
 5. Development of a Power Generation and Transmission Master Plan, Kenya. Long Term Plan – Energy Efficiency 2015 – 2035
 6. Ministry of Environment and Forestry (MEF): Draft National Climate Change Action Plan 2018 - 2022

7. MoEP (2015). Ministry of Energy and Petroleum: Draft National Energy and Petroleum Policy.

- Please indicate if this request has been developed with the support of the CTCN Request Incubator.

OPTIONAL: Linkages to Green Climate Fund Readiness and Preparatory Support

The CTCN is collaborating with the GCF in order to facilitate access to environmentally sound technologies that address climate change and its effects, including through the provision of readiness and preparatory support delivered directly to countries through their GCF NDA. These actions are in line with the guidance of the GCF Board (Decision B.14/02) and the UNFCCC, particularly paragraphs 4 and 7 of 14/CP.22 that addresses Linkages between the Technology and the Financial Mechanisms².

The CTCN is therefore implementing some of its technical assistance using GCF readiness funds accessed via the country's NDA. Any application for GCF support, including the amount of support provided, is subject to the terms and conditions of the GCF and should be developed in conjunction with the NDA.

Please indicate whether this request has been identified as preliminarily eligible by the NDA to be considered for readiness support from the GCF.

Initial engagement: The GCF NDA of the requesting country has been engaged in the design of this request and the NDA will be involved in the further process leading to an official agreement for accessing GCF readiness support.

Advanced engagement (preferred): The GCF NDA of the requesting country has been directly involved in the design of this request and is a co-signer of this request, the signature indicating provisional agreement to use readiness national funds to support the implementation of the technical assistance.

NDA name: Peter O.ODHENGO

Date: 17TH. February, 2019

Signature:



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.

² Please see:

https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf

I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

Signature:

NDE name: Kenya
Industrial Research
and Development
Institute (KIRDI)

Date: February 8, 2019

Signature:



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

The CTCN is available to answer all questions and provide guidance on the application process.