

Please fill in the form in the grey spaces, by following the instructions in italic.

Requesting country:	<i>Pakistan</i>
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Request title:	<i>National Certification Scheme For Energy Auditors</i>
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Contact information:		
<i>{Please fill in the table below with the requested information. The request proponent is the organization that the request originates from, if different from the National Designated Entity (NDE).}</i>		
	National Designated Entity	Request Applicant
Contact person:	<i>Mr. Muhammad Irfan Tariq Ministry of Climate Change - Pakistan</i>	<i>Mr. Asad Mahmood Manager Technical-ECF</i>
Position:	<i>Director General (Environment & Climate Change)</i>	
Organization:	<i>Ministry of Climate Change</i>	<i>National Energy Efficiency & Conservation Authority (NEECA)</i>
Phone:	<i>+92-51-9245528</i>	<i>+92-51- 2272649</i>
Fax:	<i>+92-51-9245533</i>	
Email:	<i>mirfantariq@gmail.com</i>	<i>neeca.pakistan@gmail.com asadm_46@yahoo.com</i>
Postal address:	<i>4th Floor, LG&RD Complex, Sector G-5/2, Islamabad, Pakistan</i>	

Technology Needs Assessment (TNA):
<i>{Select one of the three boxes below:}</i>
<input checked="" type="checkbox"/> <i>The requesting country has conducted a TNA in June 2016</i>
<input type="checkbox"/> <i>The requesting country is currently conducting a TNA</i>
<input type="checkbox"/> <i>The requesting country has never conducted a TNA</i>
<i>{If the requesting country has completed a TNA, please indicate what climate technology priority this request directly relates to. Please indicate reference in TNA/TAP/Project Ideas.}</i>

CTCN Request Incubator Programme:
<i>{Please indicate if this request was developed with support from the Request Incubator Programme:}</i>
<input type="checkbox"/> <i>Yes</i>
<input checked="" type="checkbox"/> <i>No</i>

Geographical focus:

{Select below the most relevant geographical level for this request:}

- Community-based
 Sub-national
 National
 Multi-country

{If the request is related to the sub-national or multi-country level, please indicate here the areas concerned (provinces, states, countries, regions, etc.)}

Theme:

{Select below the most relevant theme(s) for this request:}

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

Sectors:

{Please indicate here the main sectors related to the request. e.g. energy, industry, transport, waste, agriculture/fisheries, forestry, water, ecosystem/biodiversity, coastal zones, health, education, infrastructure/human settlement, tourism, businesses, early warning/disaster reduction, institutional design and mandates, cross-sectorial}

Energy Efficiency

Problem statement (up to one page):

{Please describe here the difficulties and specific gaps of the country in relation to climate change, for which the country is seeking support from the CTCN. Please only provide information directly relevant to this request, and that justifies the need for CTCN technical assistance.}

There is vast potential of energy conservation and efficient use of energy in Pakistan and one missing link in the efforts to achieve this objective was the absence of credible legislation; which is available in several countries as a policy instrument. The National Energy Efficiency and Conservation Act 2016 has been passed recently and subsequently notified in the gazette of Pakistan. This has provided a legal basis to enforce necessary measures for efficient use and conservation of energy in the country in all sectors of the economy, in coordination with the relevant Provincial Departments.

The issue of energy consumption has been a growing interest across all industry sectors not only because of its immediate impact on production costs but also because of its considerable impact on environmental sustainability. A diverse range of industries have already experienced improved energy and production efficiency following energy audits conducted under various programs. But apart from general training programs and capacity buildings initiatives, no professional certification exist for Energy Auditors and this has been covered now in the National Energy Efficiency and Conservation (NEEC) Act 2016. As a result of extensive field surveys, energy audits and studies, it has been ascertained that there is 20-25 % potential for energy saving in all sectors of economy and

specifically in the industrial sector.

According to the definition of the Certified Energy Auditor specified in the NEECA Act, the Authority will have to establish a certification mechanism for Energy Auditors/Managers. The energy audits would also become mandatory for designated consumers (energy intensive industries/ buildings).As the survey of energy intensive industries/buildings and other energy intensive consumers have just been initiated, **so NEECA seeks an immediate initial handholding support from CTCN for developing, institutionalizing and executing a National certification scheme for energy auditors/managers. Unless and until the scheme is established, it would be difficult to carry out the energy auditing and subsequent activities in a more streamline manner.**

Relevant extracted sections/clauses of the NEEC Act 2016 pertaining to Certified Energy Auditors are given below:

2. Definitions

i. “certified energy auditor” means any person to be certified and designated by the Authority for carrying out energy audit in accordance with the provisions of this Act

7. Powers and functions of Authority.

s. carry out energy audits either by itself or direct any person to conduct an energy audit by any certified or designated energy auditor for any facility, enterprise, factory, building or object for the purpose of identification of energy conservation issues and making recommendations for corrective measures thereof;

x. perform any other function assigned to it by the Federal Government or the Board including but not limited to-

- i. arrange, conduct and monitor the training of relevant professionals for their performance as energy auditors or managers;
- ii. facilitate, manage or designate authority for the appropriate registration of energy auditing firms or individuals and professionals;
- iii. direct, coordinate, renew and terminate the services of energy auditors, relevant trainers and energy efficiency inspectors as may be specified by regulations.

10. Powers and functions of the Federal Government to facilitate and enforce efficient use of energy and its conservation: –The Federal Government may, in consultation with the Authority a National Standard Body (Where ever applicable):-

(h) direct, having regard to quantity of energy consumed or the norms and standards of energy consumption specified under clause (a), the energy intensive industries specified to get energy audit conducted by certified energy auditor in such manner and intervals of time as may be prescribed by regulations;

(i) direct, if considered necessary for efficient use of energy and its conservation, any designated consumer to get energy audit conducted by certified energy auditor;

(k) direct any designated consumer to furnish to the designated agency, in such form and manner within such period, as may be prescribed, the information with regard to the energy consumed and action taken on the recommendation of the certified energy auditor;

(l) direct any designated consumer to designate or appoint energy manager in charge of activities for efficient use of energy and its conservation and submit a report, in the form and manner as may be prescribed, on the status of energy consumption at the end of every financial year to the designated agency;

(m) prescribe minimum qualification for energy auditors and energy managers to be designated

or appointed under clause (l);

(s) direct, any designated consumer referred to in clause (r), if considered necessary, for efficient use of energy and its conservation in his building to get energy audit conducted in respect of such building by certified energy auditor in such manner and intervals of time as may be specified by regulations;

13. Powers and functions of Provincial Governments to facilitate and enforce efficient use of energy and its conservation: – (1) The Provincial Governments may, after approval of proposals to the effect thereof from the Board and in consultation with the Authority, by notification-

(c) direct, if considered necessary for efficient use of energy and its conservation, any designated consumer referred to in clause (b) to get energy audit conducted by an accredited energy auditor in such manner and at such intervals of time as may be specified by regulations;

Past and ongoing efforts (*up to half a page*):

{Please describe here past and on-going processes, projects and initiatives implemented in the country to tackle the difficulties and gaps explained above. Explain why CTCN technical assistance is needed to complement these efforts, and how the assistance can link or build on this previous work.}

To capture the substantial economic and environmental benefits provided by conserving energy, the Government of Pakistan established the National Energy Conservation Centre (ENERCON) in 1986. ENERCON took various capacity building initiatives for promotion of Energy Audits and development of Energy Service Companies in past. The technical manuals for electrical and thermal utilities energy audits were developed. Dissemination courses were held in almost all the mainstream engineering universities. The concept of Energy Audits and Minimum Energy Performance Standards were given in Awareness sessions held in the Chambers of Commerce & Industries across Pakistan last year. Energy Audits on Cost sharing basis are currently being done in industries/buildings. Targeted technical services covering Boiler/Furnace Tune Ups & Steam System Surveys were also carried out through private service providers engaged by ENERCON. A diverse range of industries have already experienced improved energy and production efficiency following energy audits conducted under ENERCON programs. Through the implementation of its wide-ranging activities, ENERCON made significant contributions to the development of energy conservation technology and has achieved a significant energy saving potential in various sectors of economy of Pakistan resulting in pollution abatement. The impact has been both direct and indirect, quantitative and qualitative. But due to lack of EE legislation, all activities were mostly carried out under different limited time duration projects.

With the Act notification, ENERCON has transformed into **NEECA** will act as focal federal agency for initiating, catalyzing and coordinating the implementation of energy conservation activities in all sectors of the economy under the auspices of the Pakistan Energy Efficiency and Conservation Board headed by the Federal minister for Water and Power. The strategy going to be adopted by NEECA for promoting energy efficiency and conservation shall cover whole spectrum of activities starting from identification of energy efficiency and conservation opportunities and including technology demonstration, undertaking pilot projects, information and outreach, training and education, and

development of plans and policies for promoting mitigation, energy efficiency and conservation best practices.

As per the act, now NEECA is mandated to carry out energy audit either by itself or direct any person to conduct energy audit by any certified or designated energy auditor for any facility, enterprise, factory, building or object. NEECA is currently exploring the possibilities of developing the national certification scheme for energy auditors .

Assistance requested (up to one page):

{Please describe here the scope and nature of the technical assistance requested from the CTCN and how this could help address the problem stated above and add value vis-à-vis the past and on-going efforts. Please note that the CTCN facilitates technical assistance and is not a project financing mechanism.}

The technical assistance requested from CTCN are as following:

- (A) Development of national certification scheme for energy auditor and energy manager including the programme overview, application process , course curriculum and syllabus, eligibility (educational and professional) criteria etc
- (B) Development of course content and guidebooks and first set of questions banks for the energy auditor and manager examination
- (C) Organize a preparatory technical training programme on "Energy Audit " .This will cover all aspects of energy auditing, including pre-audit work, data collection procedures, equipment familiarization and utility analysis. The training will further discuss the end-use equipment and systems in detail with the primary focus being on identifying energy conservation opportunities and project prioritization using economic analyses.
- (D) Preparation of Guidelines by keeping in view the best practices in the region for correctly analyzing the energy threshold levels for designated consumers and identification.
- (E) Preparation of report on necessary rules and regulations for effectively amalgamating the national certification scheme for energy auditor and energy manager with the mandatory energy audits of designated consumers also covering the Energy Conservation Tribunals role in case of non-compliance of the provisions of the Act.
- (F) Preparation of draft rules and regulations required for making the scheme effective.

Expected benefits (up to half a page):

{Please outline here the medium and long-term impacts that will result from the CTCN technical assistance, including how the assistance will contribute to mitigate and/or adapt to climate change.}

The proposed Technical Assistance will have both short term and long term benefits

Short term benefits:

(a) The certification scheme will help in identifying the professionals having the required knowledge and experience needed to succeed in the growing field of energy auditing. So it will facilitate in creating a pool of energy auditors and managers to carry out the job and help in implementing provisions of the National **Energy Efficiency and Conservation Act 2016 effectively.**

(b) The guidebooks and systematic training programmes will raise the professional standards of those engaged in energy auditing and improve the practice of energy auditors

Long term benefits

- The energy audit followed by the identification of the energy efficiency and conservation opportunities with investment potential will open up larger investment in the energy efficiency sector in Pakistan.
- If the recommendation provided by the certified /designated energy auditor is executed appropriately, it would reduce enormous amount of GHG emissions keeping in view the business as usual scenario.

Post-technical assistance plans (up to half a page):

{Please describe here how the results of the CTCN technical assistance will be concretely used by the applicant and national stakeholders, to pursue their efforts of resolving the problems stated above after the completion of the CTCN intervention (list specific follow-up actions that will be undertaken).}

Once the proposed technical assistance is provided and the national certification scheme is developed, NEECA will carry out the certification examination. Subsequently, the selected energy auditor and managers will be certified and designated by NEECA and then these designated auditors will be appointed by the designated agencies of the respective provinces for the purpose of ensuring the compliances of the Act". The Examinations would be conducted on Annual basis and this will become a regular ongoing program of the NEECA. The Auditors will play an important role to keep the expected increase in energy demand suppressed and through various interventions the productivity of many industries will also increase.

Key stakeholders:

{Please list in the table below the main stakeholders who will be involved in the implementation of the requested CTCN technical assistance, and what their role will be in supporting the assistance (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.). Please indicate what organization(s) will be the main/lead counterpart(s) of CTCN experts at national level, in addition to the NDE.}

Stakeholder	Role to support the implementation of the assistance
National Energy Efficiency & Conservation Authority (Main)	<i>To develop an enabling environment for smooth working of experts to be deputed by CTCN subject to approval of this application</i>
Provincial Energy Departments	<i>To Provide Assistance to NEECA for Conduct of Certification Examination and arranging training sessions/workshops.</i>
Pakistan Engineering Council	<i>To Develop a new registration category for Energy Auditing Firms</i>
Higher Education Commission	<i>To give guidelines to Engineering Curriculum Committees for inclusion of EE technical literature and case studies as reference/main material for respective subjects</i>
Enlisted Energy Auditing Firms/Building Inspectors/Electrical Inspectors etc.	<i>Nominate their focal persons, get them trained for Certified Energy Auditors Examination</i>
Designated Consumers	<i>Will hire Certified Energy Managers</i>
Energy Conservation Fund	<i>Support activities to be performed in the Centre of Excellence on Energy Efficiency to be established, R&D and Universities</i>

Alignment with national priorities (up to half a page):

{Please demonstrate here that the technical assistance requested is consistent with documented national priorities (examples of relevant national priorities include: national development plans, poverty reduction plans, technology needs assessments (TNAs), LEDS, NAMAs, TAPs, NAPs, sectorial strategies and plans, etc.). For each document mentioned, please indicate where the priorities specifically relevant to this request can be found (chapter, page number, etc.)}

As per the Vision 2025 of the Government of Pakistan, one of the Pillars is Energy, Water & Food Security under which the emphasis has been given on demand management and promotion of Energy Efficiency & Conservation in Pakistan. Some key Energy Efficiency (EE) policies were promulgated by the Federal and Provincial Governments. Table below lists the key EE-related existing policies of Pakistan.

List of key EE-related existing policies of Pakistan

Year	Policy issued	Issuing institution
2005	National Environmental Policy	MOEn (now MOCC)
2006	National Energy Conservation Policy	ENERCON(now NEECA)
2012	National Climate Change Policy	MOCC
2012	National Sustainable Development Strategy (Draft)	MOCC
2013	Framework for Implementation of Climate Change Policy	MOCC
2014	Pakistan Vision 2025	MOPDR
2016	National Energy Efficiency and Conservation Act	NEECA

The National Energy Conservation Policy (NECP) published in 2006 is one of the key policies which enumerate broad guidelines to enhance end-use efficiency in various energy consuming sectors of economy. The 2006 NECP includes several policies and sectoral initiatives to be taken at various levels during the short and medium as well as long term.

Development of the request (*up to half a page*):

{Please explain here 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.)}

Pakistan submitted its 'Nationally Determined Contribution' (NDC) during the 22nd Conference of Parties (COP22) meeting held in November 2016 in Marrakech, Morocco. The Paris Agreement has also been ratified by the Government of Pakistan. As per Pakistan's Intended Nationally Determined Contribution report, energy is currently the largest contributing sector in Pakistan's emissions profile, contributing nearly 46 percent to total emissions i.e. 185.97 MT CO₂-equivalent. Keeping in view the projected rate of GDP growth and sectoral growth; and taking into consideration the proposed implementation of power generation investment plans, projected emissions for the year 2030 for energy sector have been calculated as 898 MT CO₂-equivalent. Various aspects for which assistance is being sought from CTCN in this specific case were also discussed during INDC report preparation meetings.

Mitigation typically requires technological upgrades with sophisticated technical capacity and additional costs. Long-term planning and institutional strengthening, however, remain pre-requisites for adaptation at the local level. For fully realizing the prevailing potential for both mitigation and adaptation, technical capacity at all levels needs to be enhanced and therefore capacity building is one of the priority areas specified in the INDC report as well.

Specific activities were discussed during the Consultative Meeting on Energy Efficiency Initiatives convened by NEECA and in which all Provincial relevant departments were invited in September 2016.

Expected timeframe:

{Please propose here a duration period for the assistance requested.}

6 Months.

Background documents:

{Please list here relevant documents that will help the CTCN understand the context of the request and national priorities. For each document, provide weblinks if available, to attach to the submission form while submitting the request. Please note that all documents listed/provided should be mentioned in this request in the relevant question(s), and that their linkages with the request should be clearly indicated.}

The copy of the Act, Ongoing Activities and other related reports could be found at www.enercon.gov.pk

The Asian Development Bank Report on Sustainable Energy Investment Program shows the EE potential of energy saving and investment required in different sectors

<https://www.adb.org/sites/default/files/project-document/64867/42051-PAK-TACR.pdf>

<https://www.adb.org/publications/integrated-energy-sector-recovery-report-and-plan>

The report by ADB Friends of Democratic Pakistan Integrated Energy Sector Recovery Plan which could be seen at the link below focused on how to Mainstream Energy Efficiency into Energy Policy

<https://www.adb.org/sites/default/files/publication/27488/energy-recovery-report-plan.pdf>

Monitoring and impact of the assistance:

{Read carefully and tick the boxes below.}

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

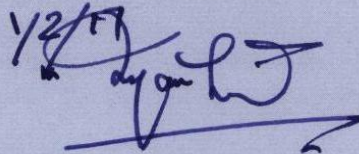
I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

Signature:

NDE name: Mr. Muhammad Irfan Tariq, Director General (Env&CC), Ministry of Climate Change, Government of Pakistan

Date:

Signature:

1/2/17


THE COMPLETED FORM SHALL BE SENT TO THE [CTCN@UNEP.ORG](mailto:ctcn@unep.org)

Need help? The CTCN team is available to answer questions and guide you through the process of submitting a request. The CTCN team welcomes suggestions to improve this form.

>>> Contact the CTCN team at ctcn@unep.org