CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Technical AssistanceResponse Plan – Terms of Reference

The implementation of the certification scheme will contribute in overall reduction in CO_2 emission from highly energy consuming sectors and The adoption of the national certification scheme will potentially lead to market transformation in the energy efficiency and conservation sector.

The technical assistance is also aligned well with the NDC, Pakistan Vision document 2025 and other relevant national documents.

Agreement:

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

National Designated Entity to the UNFCCC Technology Mechanism
Name:Mr. Muhammad Irfan Tariq
Title: Director General (Environment)
Ministry of Climate Change

Date: 13/06/17.
Signature:

Proponent (signature of the Proponent is optional)
Name: Mr. Asad Mahmood
Title: Manager Technical-ECF
National Energy Efficiency & Conservation Authority (NEECA)

Date: 13-06-2017
Signature:

UNFCCC Climate Technology Centre and Network (CTCN)

Name: Jukka Uosukainen
Title: CTCN Director
Date: 13/06/2017
Signature: (OIC).

CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Technical AssistanceResponse Plan – Terms of Reference

1. Background and context

Please provide a brief description of the background and context for the CTCN Response Plan. Please include national and sectoral information using recognized and publicly available sources. (maximum 2500 characters including spaces).

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 has 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 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 notification of the Act, ENERCON has been transformed into NEECA and willfunctionas 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 NEECAfor 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. In this context, NEECA, as the CTCN request proponent, had requested CTCN for developing the national certification scheme for energy Auditor and Manager as well as supporting NEECA is Preparation of draft rules and regulations required for making the certification scheme effective.

Once the proposed CTCN 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 conduct stipulated activities for the purpose of ensuring the compliances of the Act".

2. Problem statement

Founded on the national and sectoral context as detailed in the section above, please include a brief problem statement clarifying the main problems and barriers for climate change mitigation and/or adaptation in terms of climate technologies that the CTCN Response Plan will address and overcome. (maximum 1250 characters including spaces).

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 has 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 and the regulations are in place , it would be difficult to carry out the energy auditing and subsequent activities in a more streamline manner.

The certification scheme once developed will help Pakistan in implementing the National Energy Efficiency and Conservation Act 2016 effectively and contribute substantially in savings through Energy conversation measures in different sectors

3. Logical Framework for the CTCN Technical Assistance:

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

	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Objective: Development of National Certification scheme for Energy Auditors, which aims at sustaining energy efficiency improvement initiatives in energy intensive industry												
Outcome: The National certification scheme will create a cadre of energy auditors and provides the basis for reducing enormous amount of GHG emissions and opening up larger investment in the energy efficiency sector in Pakistan through the identification of energy efficiency and conservation opportunities with investment potential												
Output 1:Notification of Designated Consumers												
Activity 1.1: Finalizing the methodology for defining the energy user class:A methodology for defining the energy user class for industries (based on secondary energy consumption data, economic data etc.) will be prepared by the implementer based on best practices adopted by other countries and institutions and will be finalized in consultation with the request proponent (NEECA) and other relevant national stakeholders.												
Activity 1.2: Preparation of questionnaire for survey and carry-out of actual survey: This activity will involve the preparation of a questionnaire (in English) for carrying out a survey in various energy class. Once the questionnaire is prepared by the request proponent and the energy user class is defined, the survey will be conducted by the request proponent(NEECA) through the provincial governments.												
Activity 1.3: Analysis of data obtained through questionnaire survey: The data collected through the survey will be consolidated in soft copy (in English) by the request proponent and will be made available to the implementer for further analysis. The implementer along with the request proponent will analyze the data in terms of the energy consumption, economic data etc. to identify the energy intensive entities.												
Activity 1.4: Notification of designated consumers for each user class. The designated consumers for each section of energy user class will be identified on account of their minimum annual energy consumption, their share in total energy use in Pakistan, their contribution to the national gross domestic product (GDP) etc. Once the designated consumers are identified, the process will be followed by the request proponent to notify the designated consumers.												
Deliverable1:												

D1: Methodology for defining the energy user class and questionnaire for carrying out the survey		*									
D2: Consolidated surveyed data				*							
D3: List of designated consumer to be notified						*					
Output 2:NationalCertification Scheme											
Activity 2.1:Guideline(s)for the accreditation of Energy Auditors and Managers: The guidelines for the accreditation of the energy auditors and managers will be prepared by the request implementer, including the roles and responsibilities, validity of the accreditation, rules and regulations etc. the guideline will also involve the fee structure, manner and frequency of accreditation for Energy Auditor and Energy Manager											
Activity 2.2: Guideline(s) on eligibility criteria for the energy auditors and managers The prerequisites to qualify for the energy auditor and manager certification process will be designed by the request implementer (such as the minimum education, work experience etc. to take into account the possible diversity of education and practical experience an individual may require).											
Activity 2.3: Design of Syllabus for conduct of examinations The request implementer will design the syllabus (for example: number of papers, topics and subtopics of each paper etc.) for conducting the first examination. The request proponent(NEECA) may upgrade the syllabus in subsequent years/examination and upgrading the syllabus in future is beyond the scope of this CTCN request.											
Activity 2.4: Design of course material, guide books, model question banks The course material and the guidebooks will be designed by the request implementer as per the syllabus developed in activity 2.3. Besides it, the implementer will also develop the model question banks for the examinations											
Activity 2.5 Guideline(s) for appointment of evaluators and professionals for assessment of EA/EM examinations The guideline for appointment of evaluators (such as their qualification, roles and responsibilities, remunerations, validity of appointment etc.) for assessment of Energy Auditor and Energy Manager examination will be prepared by the request implementer.											
Deliverables2:											
D4:Guidelines foraccreditation of Energy Auditors and Managers and eligibility criteria for the energy auditors and managers						*					
D5:Syllabus for conduct of examinations, course material, guide books, model question banks									*		
D6 Guideline(s) for appointment of evaluators and professionals for assessment of EA/EM examinations								*			
Output 3: Training of Relevant Professionals											
Activity 3.1: Developing relevant training material based on the course material and guide books											
Activity 3.2: Conducting a Training of the Trainer (2 to 3week programme)											

Deliverables 3:										
D7: Detailed report on Training of Trainer, containing the training materials, agenda, detailed presentations, list of resource persons, list of participants etc.									*	
Output 4: Draft Regulations to Support Implementation of Roles as defined in National Certification Scheme										
Activity 4.1: Development of draft regulations on appointment of Energy Managers by Designated Consumers										
Activity 4.2: Development of draftregulations on frequency, manner, conduct and reporting of energy audits by Designated Consumers										
Activity 4.3: Development of draft regulation on accreditation and review of Energy Audit firms										
Deliverables 4:										
D8: Draft regulations on appointment of Energy Managers by Designated Consumers										*
D9: Draft regulations on frequency, manner, conduct and reporting of energy audits by Designated Consumers										*
D10: Draft regulation on accreditation and review of Energy Audit firms										*

** Asmandatory deliverables for all CTCN Response Plans,the Lead Implementer must produce the following: i) A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organizations and detailed budget to implement the Response Plan. The detailed work plan and budget must be based directly on this Response Plan; ii) A monitoring and evaluationplan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation; iii) A two-page CTCN Impact Description formulated in the beginning of the technical assistance and update/revised once the technical assistance is fully delivered (a template will be provided). These deliverables must be included as initial items in the log frame.*

4. Resources required and itemized budget:

Please provide an indicative overview of the resources required and itemized budget required to implement the CTCN technical assistance, including for M&E-related activities, using the table below. Once the Response Plan is completed, a Response Implementation partner(s) will be selected by the Climate Technology Centre(CTC). A detailed activity-based budget for the CTCN assistance will be finalized by the CTCN and selected Implementer.

Activities and Outputs	**Input: Human**	**Input: Travel** *(Purpose, national*	**Inputs: Meetings/events** *(Meeting title, number of*	**Input:**	**Estimated cost** *Please accumulate the costing*

	Resources *(Title, role,estimated number of days)*	*vs. international, number of days)*	*participants, number of days)*	**Equipment/Material** *(Item, purpose, buy/rent, quantity)*	*at Activity and Output level and provide an estimated costing range for each activity and the total Response Plan*	
					Minimum	**Maximum**
Output 1: Notification of Designated Consumers					*$12500*	*$15200*
Activity 1.1: Finalizing the methodology for defining the energy user class for industries:	• *One mid level energy efficiency expert (International) (7 days) (@ $300 per day)* • *One senior level energy efficiency expert (International) (2 days) (@ $400 per day)*	NIL	• *National stakeholder's consultation (15-20 EE experts from relevant government departments, institutions etc.), one day ($2000)*		*$3100*	*$4000*
Activity 1.2: Preparation of questionnaire for survey and carry-out of actual survey	• *One mid level energy efficiency expert (International) (4 days) (@ $300 per day)* • *One mid level survey expert (National)(10 days)(@150 per day)* • *One senior level energy efficiency expert (International) (2 days) (@ $400 per day)*	NIL	• *Survey ($3000)*		*$6500*	*$7500*
Activity 1.3: Analysis of data obtained through questionnaire survey	• *One mid level energy efficiency expert (International) (7 days) (@ $300 per day)* • *One senior level energy efficiency expert (International)*	*NIL*			*$2900*	*$3700*

	(2 days) (@ $400 per day)					
Activity -4Notification of designated consumers for each user class	• *One senior level energy efficiency expert (International) (2 days) (@ $400 per day)*	*NIL*				
Output 2:NationalCertification Scheme					*$20400*	*$28700*
Activity 2.1 Guideline(s) for the accreditation of Energy Auditors and Managers:	• *One mid level energy efficiency expert (International) (4 days) (@ $300 per day)* • *One senior level energy efficiency expert (International) (2 days) (@ $400 per day)*	*NIL*			*$2000*	*$2400*
Activity 2.2: Guideline(s) on eligibility criteria for the energy auditors and managers	• *One mid level energy efficiency expert (International) (3 days) (@ $300 per day)* • *One senior level energy efficiency expert (International) (1 days) (@ $400 per day)*	*NIL*			*$1300*	*$1500*
Activity 2.3: Design of Syllabus for conduct of examinations	• *Two mid level energy efficiency expert (International) (5 days) (@ $300 per day)* • *Two senior level energy efficiency expert (International) (3days) (@ $400 per day)*	*NIL*			*$5400*	*$6400*
Activity 2.4: Design of	• *Two mid level energy*	*NIL*			*$10000*	*16000*

course material, guide books, model question banks	*efficiency expert (International) (10 days) (@ $300 per day)* • *Two senior level energy efficiency expert (International) (5 days) (@ $400 per day)*					
Activity 2.5 Guideline(s) for appointment of evaluators and professionals for assessment of EA/EM examinations	• *One mid level energy efficiency expert (International) (3 days) (@ $300 per day)* • *One senior level energy efficiency expert (International) (2 days) (@ $400 per day)*	*NIL*			*$1700*	*$2400*
Output 3: Training of Relevant Professionals					***$43200***	***$52000***
Activity 3.1: Developing relevant training material based on the course material and guide books	• *Two mid level energy efficiency expert (International) (10 days) (@ $300 per day)* • *Two senior level energy efficiency expert (International) (5 days) (@ $400 per day)*				*$10000*	*16000*
Activity 3.2: Conducting a Training of the Trainer (2 week programme)	• *Two mid level energy efficiency expert (International) (3 days) (@ $300 per day)* • *Two senior level energy efficiency expert (International)*	• *International Travel (2 experts) and logistic support ($10000)* • *National travel for 20-25 participants($400*	• *Logistic support ($15000)*		*$33200*	*$36000*

	(3 days) (@ $400 per day)	*0)*				
Output 4: Draft Regulations to Support Implementation Roles as defined in National Certification Scheme					***$8100***	***$10500***
Activity 4.1: Development of draft regulations on appointment of Energy Managers by Designated Consumers	• *One mid level energy efficiency expert (International)* *(5 days) (@ $300 per day)* • *One senior level energy efficiency expert (International)* *(3days) (@ $400 per day)*				*$2700*	*$3500*
Activity 4.2: Development of draft regulations on frequency, manner, conduct and reporting of energy audits by Designated Consumers	• *One mid level energy efficiency expert (International)* *(5 days) (@ $300 per day)* • *One senior level energy efficiency expert (International)* *(3days) (@ $400 per day)*				*$2700*	*$3500*
Activity 4.3: Development of draft regulation on accreditation and review of Energy Audit firms	• *One mid level energy efficiency expert (International)* *(5 days) (@ $300 per day)* • *One senior level energy efficiency expert (International)* *(3days) (@ $400 per day)*				*$2700*	*$3500*
Estimated range of costing for the entire Response Plan					**$84,200**	***$106,400***

5. Profile and experience of experts

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

Experts required	Brief description of required profile

Mid-level energy efficiency expert (International)	Advanced university degree in Engineering, Economics or Business Administration or other relevant discipline. At least seven years of relevant professional experience in the fields of auditing, energy efficiency or energy management in the industrial sector and sound understanding of and experience with the development and implementation of training schemes. Working experience in and understanding of the region is essential. Proficiency English (oral and written) is essential. Working knowledge of Urdu an asset
Senior level energy efficiency expert (International)	Advanced university degree in Engineering, Economics or Business Administration or other relevant discipline. At least 15 years of relevant professional experience in the fields of auditing, energy efficiency or energy management in the industrial sector and sound understanding of and experience with the development and implementation of training schemes. Working experience in and understanding of the region is essential. Proficiency English (oral and written) is essential. Working knowledge of Urdu an asset
Mid-level survey expert (National)	A university degree in Statistics, Engineering, Economics or Business Administration or other relevant discipline. At least five years of relevant professional experience in the fields of data collection, assessment, evaluation and communication ideally in a technical or industrial setting.Good communication skills and working experience in and understanding of the region is essential. Proficiency English and Urdu (oral and written) is essential.

6. Intended contribution to impact over time

The Technical Assistance intends to contribute to the following on long term

(A) The certification scheme once developed will help Pakistan in implementing the National Energy Efficiency and Conservation Act 2016 effectively and contribute substantially in savings through Energy conversation measures in different sectors.[As per an estimate, (source ENERCON/NEECA) energy conservation potential in Pakistan is about US $ 5 billion /year]

(B) The certification scheme along with the guidebooks and systematic training programmes will foster job creation by generating a pool of energy auditors/managers with appropriate skill sets for carrying out energy audit followed by the identification of the energy efficiency and conservation opportunities

(C) The implementation of the certification scheme will contribute in overall reduction in CO2 emission from highly energy consuming sectors [estimate shows that there is a potential of reducing 42 kTonne of CO2 per annum only from the industrial sector through energy saving and conservation measures] (source:http://energyefficiency.gov.np/uploads/14promotion_of__1449654042.pdf)

(D) In addition, the aggregated energy savings will help the country to defer the need to install additional electricity generation capacity .The adoption of the national certification scheme will potentially lead to market transformation in the energy efficiency and conservation sector.

7. Relevance to NDCs and other national priorities

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.Pakistan in its iNDC intends to reduce up to 20% of its 2030 projected GHG emissions subject to availability of international grants to meet the total abatement cost for the indicated 20 percent reduction amounting to about US$ 40 billion at current prices. The Technical Assistance will create a basis at the national level in carrying out energy audit and identify the energy saving potentials at the national scale, which if implemented, will contribute substantially in the GHG emission reduction. Further, institutional strengthening and capacity enhancement at the policy and operational levels has been identified as one of the priorities in iNDC. The technical assistancewill contribute to the capacity need of public sector for promoting, regulating and monitoring energy efficiency (as mentioned in the iNDC). Once rolled out, the national certification scheme will also contribute to the Pakistan Vision 2025 document, which proposes to address demand management issues by increasing usage of energy efficient appliances/products to 80%. The technical assistance will also contribute in meeting the target set in NAMA related to Energy Efficient Lighting in Residential, Commercial, Industrial and Outdoors Sectors.

8. Linkages to relevant parallel on-going activities:

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. CTCN Technical assistance will directly contribute to sections/clauses 7, 10 and 13 of the NEEC Act 2016.

Since 2014, JICA has been providing technical cooperation to support National Energy

Conservation Centre (ENERCON) to develop "Energy Efficiency Standards and Labeling Program" which was officially launched at the kick-off seminar in Lahore on 24 May 2016. Further, in order to address energy shortage in Pakistan in general and Industry in particular, a two year technical cooperation project "Energy Efficiency Management Project (EEMP) for Industrial Sectors in Pakistan"was implemented by JICA (since March 2015) on request and in collaboration with Small and Medium Enterprises Development Authority (SMEDA), Ministry of Industries and Private sector. The Project conducted number of energy audits, contributed adequately to reduce energy inefficiencies at SMEs' workplaces owing to Energy Efficiency Management Model by introducing Japanese Energy Conservation Tools & Methodologies and Management Practices. Besides the energy audit, the project had undertaken number of training courses for engineers covering various topics. These methodologies and training materials can be reviewed and considered(if applicable) while developing the course materials and training documents.

ADB conducted an assessment of Pakistan's energy efficiency situation. This found that Pakistan needs to integrate energy efficiency into the overall energy strategy and mainstream energy efficiency into development planning and investment. Lack of financing is a key barrier to energy efficiency. The Government needs a flexible public sector financing mechanism to deliver priority projects. These projects will result in energy savings, lower energy intensity, and increase industrial competitiveness. In this context, ADB has lunched The Energy Efficiency Investment Program (EEIP) to promote energy saving and investment in different sectors. Once the designated consumers are notified and the energy audits are conducted (during and post CTCN technical assistance) and the energy saving potentials are identified by the certified energy auditors and managers, those projects/sectors and consumers can be linked to the investment programme for actual investment to happen.

Besides this, the implementer will also interact with GIZ, USAID, UN Environment, UNDP and UNIDO to understand their ongoing energy efficiency initiatives in Pakistan and explore the possibilities of creating synergies with those programmes.

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

Once the proposed technical assistance is provided and the national certification scheme is developed, NEECA will carry out the certification examination at the national level on a regular basis. The syllabus, course modules, guidebooks, model questions etc.which would be developed under this technical assistance will be used nationally by all the eligible aspirants to qualify in the 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. The draft regulations developed under the CTCN technical assistance will also regulate the appointment of Energy Managers by Designated Consumers, manner, conduct and reporting of energy audits by Designated Consumers, accreditation and review of Energy Audit firms at the national level.

10. Gender and co-benefits:

Imbedded in design of the activities:	The CTCN will seek to engage all genders in the provision and receipt of this technical assistance. Wherever relevant, the survey will take care of the equal participation of both the genders. The guidelines, syllabus and course modules developed for the certification scheme will be applicable equally for both the genders and women would be encouraged to participate in the certification examination. Efforts will also be given to have equal participation from both the genders during the training programme conducted

	during this technical assistance.
Gender and co-benefits intended as result of the activities:	Enhanced capacity through the training and certification scheme will provide economic and job opportunities to all genders.

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

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

In country stakeholder	Role in implementation of the technical assistance
National Energy Efficiency & Conservation Authority (Main)	To develop an enabling environment for smooth working of experts to be deputed by CTCN subject to approval of this application. Conduct the survey through the provincial departments, consolidate the surveyed information and made available for further analysis
Provincial Energy Departments	To Provide Assistance to NEECA during survey and for Conduct of Certification Examination and arranging training sessions/workshops.
Pakistan Engineering Council	To Develop a new registration category for Energy Auditing Firms
Higher Education Commission	To give guidelines to Engineering Curriculum Committees for inclusion of EE technical literature and case studies as reference/main material for respective subjects

12. SDG Contributions:

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

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3SDGs)
1	End poverty in all its forms everywhere	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	
3	Ensure healthy lives and promote well-being for all at all ages	
4	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	
5	Achieve gender equality and empower all women and girls	
6	Ensure availability and sustainable management of water and sanitation for all	
7	Ensure access to affordable, reliable, sustainable, and modern energy for all(consider adding targets for 7)	
	7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services	The implementation of the Energy efficiency certification scheme will reduce the energy consumption in various sectors .The energy saved can be used for providing energy to the unserved community and contribute in universal access to affordable, reliable and modern energy services
	7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix	
	7.3 - By 2030, double the global rate of improvement in energy efficiency	The CTCN TA will directly contribute to the improvement in energy efficiency and conservation sector in Pakistan.
	7.a - By 2030, enhance international cooperation to facilitate	The energy audit and energy saving potential

	access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	Identified through introduction of newer techniques and technologies can enhance international cooperation and promote investment in energy efficiency
	7.b - By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Rolling out of national certification scheme for energy auditors and managers and subsequent use of those certificated auditors and managers for energy audits will create and help in expanding productive employment . The huge scope for energy saving potential and the mandate to follow certain regulations for the energy intensive entities will bring sustainable economic growth for the country.
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	*All TAs should indicate relevance to Goal13 and at least one target below (13.1 to 13.b).*
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	
	13.2 - Integrate climate change measures into national policies, strategies and planning	The national certification scheme and draft regulations developed under the technical assistance will support the implementation current energy efficiency and conservation Act 2016 and will be integrated into the Act .
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	The technical assistance aims to enhance national capacities to implement energy efficiency measures in designated sectors.
	13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	
	13.b - Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

13. Classification of technical assistance:

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

Please tick off the relevant boxes below	*Primary*	*Secondary*
☐ 1. Technology identification and prioritization	☐	☐
☐ 2. Research and development of new climate technologies	☐	☐
☐ 3A. Feasibility studies for specific known climate technology options	☐	☐

☐ 3B. Piloting of known technologies in local conditions	☐	☐
☐ 4A. Law, policy and regulatory reform recommendations	☐	☐
☐ 4B. Sector specific roadmap or strategy design	☒	☐
☐ 5. Finance facilitation and market creation	☐	☐

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

14. Monitoring and Evaluation process

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