

**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.

<b>Requesting country or countries:</b>	Pakistan
<b>Request title:</b>	Technologies Framework for Implementation of Nationally Determined Contributions for Pakistan
<b>NDE</b>	Dr. Saima Shafique Director, Ministry of Climate Change 4th Floor, Local Government Complex, G-5/2, Islamabad, 44000, Pakistan <a href="mailto:saimashafique76@hotmail.com">saimashafique76@hotmail.com</a>
<b>Request Applicant:</b>	Ministry of Climate Change Pakistan

**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 summarise the problem related to climate change and/or the negative impacts of climate change in the country that the request aims to address.*

The significance of technology in the implementation of absolutely any policy on climate change is inevitable. The United Nations Framework Convention on Climate Change (UNFCCC) also acknowledges the role of technology in combatting climate change through mitigation and adaptation. The Technology Needs Assessment (TNA) is yet another intervention designed especially for the developing countries to assess the needs for relevant technologies and technology gaps, to combat climate change as per need of the country. The TNA process has a strong linkage to NDCs, especially when it comes to identifying appropriate technologies, their required enabling framework conditions and preparing implementation plans for their transfer and diffusion.

Developing countries can maximize the potential of their TNAs by further developing them to explicitly analyze what is needed to implement existing NDCs, including by better aligning their focus, scope and up-to-dateness with the priority sectors included in the NDCs. In addition, extensively analysing and implementing the Technology Needs Assessment (TNA), can further aid the developing countries in gauging international assistance, through technology transfer.

As a signatory to the Paris agreement, Pakistan need to keep a track of structure and the level of detail of the information provided on technology aspects that can vary significantly. Such details may include qualitative information, while some also include quantitative information, as well as detailed information on the required scope of technologies and their estimated costs. The technology framework around NDCs for Pakistan is required to encompass areas such as technology needs; specific technologies to be deployed; technology innovation and research and development; policy, regulatory and legal aspects; and support to be provided to other Parties for technology development and transfer. Similarly, it may also include financing, enabling environments, and stakeholder engagement and coordination, in particular areas related to agriculture, energy efficiency, renewable energy, climate observation and early warning, infrastructure and urban planning, transportation, water and industry. The analysis of linkages between policy and implementation in the context of technology and NDCs found that strong linkages are needed for the effective uptake of climate technologies. In addition, fostering linkages between the technology-related aspects of the NDC and the NAP processes can benefit both processes greatly, avoiding duplication of work and accelerating implementation. Hence, for the development of an effective technology framework on NDCs for Pakistan, the country should focus on the technology solutions driven by governments, the private sector and communities, and showcase different approaches to overcoming the technical, financial, institutional and social challenges that arise in taking up technologies. These approaches may include innovative policies and business models, gender-responsive approaches and effective stakeholder engagement techniques and methodologies.

The uptake of technologies under NDCs should include the importance of recognizing the crucial role stakeholders play in technology planning and implementation to ensure that technology solutions are technically, economically, institutionally and socially viable. Creating local champions to showcase the successful uptake of technology solutions can play an important role in securing the economic, institutional and social support needed for scaling up the technology in a country.

Pakistan requires various elements of technology for effective implementation of its NDCs. These

include but are not limited to support for technology; research, development and innovation; technology needs; finance needs for tech; removal of non-financial barriers; technology needs assessment process, amongst others.

Pakistan submits a request for CTCN technical assistance to develop a detailed Technology Framework and Roadmap for key NDC adaptation and mitigation sectors to enable an effective implementation of underlying priority technologies. This will also play a critical role in providing the right enabling environment for effective incorporation of technology in its NDC implementation and improvement process.

**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.*

As a signatory to the Paris agreement, Pakistan has submitted its’ first Nationally Determined Contribution to the UNFCCC in 2016. Based on the 2016 NDC, Pakistan has conducted Technology Needs Assessments, the analysis of barriers and enabling environment, as well as the development of Technology Action Plans for Mitigation and Adaptation published in 2016/17. Mitigation sectors included Energy and Waste, Agriculture and LULUCF, as well as Transportation and adaptation sectors included Agriculture and Water.

In 2021, Pakistan has developed updated NDCs with the following priorities in mitigation and adaptation:

**Mitigation sectors and objectives:**

- Energy: ensure efficient, affordable and renewable energy supply
- Agriculture: Promote climate smart inputs and management practices in agriculture and livestock management
- Industries: Promote energy efficient practices in industries
- Forestry: Promote conservation and sustainable management of area under cover
- Waste management: Promote 3Rs and improve waste management practices

**Adaptation sectors and objectives:**

- Agriculture: Promote climate smart inputs and management practices in agriculture
- Water: Improve irrigation and water management
- Biodiversity: To build resilience through nature-based solutions and protection of ecosystems and biodiversity
- Early warning: Mitigate impacts of extreme events through preparedness and capacity building.
- Human health: Incorporate health and environment in climate and disaster risk reduction

related policies and vice versa.

- WASH: Improve climate resilience of communities through improved development outcomes in WASH sector

A technology assessment under the updated NDCs is yet to be worked on and this project will be a key step in that direction.

**Specific technology<sup>1</sup> 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(ies) in an effort to address the problem statement. The described barriers should be within the scope of the requested CTCN technical assistance (described in the section below).*

The development of the Technology Framework and Roadmap based on the updated NDC from 2021 is a complex process requiring expert knowledge across mitigation and adaptation sectors and continuous stakeholder engagement of the public and private sector. Pakistan is especially facing challenges in terms of institutional and financial capacities in order to conduct this process which could jeopardize the effectiveness and unanimous commitment to the Technology Framework and Roadmap.

Pakistan also has a high degree of provincial autonomy for some subject areas and hence implementation is often a provincial subject while planning and target setting is done at a national level. This project will help bridge that gap and ensure effective communication and cooperation in the implementation of NDCs.

**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 checked="" type="checkbox"/> Water                           | <input checked="" type="checkbox"/> Agriculture | <input type="checkbox"/> Carbon fixation                   |
| <input checked="" type="checkbox"/> Energy Efficiency | <input checked="" type="checkbox"/> Forestry                        | <input type="checkbox"/> Industry               | <input checked="" type="checkbox"/> Renewable energy       |
| <input checked="" type="checkbox"/> Transport         | <input checked="" type="checkbox"/> Waste management                |   |  |

Please add other relevant sectors:

<sup>1</sup> “**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)

Cross-cutting

**Cross-sectoral enablers and approaches:**

Please indicate the main cross-sectoral enablers and approaches

- |   |   |   |  |
|---|---|---|--|
| <input checked="" type="checkbox"/> Communication and awareness | <input checked="" type="checkbox"/> Economics and financial decision-making | <input checked="" 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
- Anticipated groups of activities to be performed by the technical assistance
- Anticipated products to be delivered by the technical assistance.

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

The overall objective of this technical assistance is to develop a Technology Roadmap for priority sectors and technologies for the implementation of the updated NDCs of Pakistan. The outputs and activities are detailed below:

**Output 1: Identification of multiple technologies for intervention in high impact sectors**

- Activity 1.1: Selection of sectors (maximum of 2 mitigation sectors and 2 adaptation sectors) based on the NDCs as well as challenges and needs
- Activity 1.2: Identification of technologies based on preliminary evaluation of mitigation and/or adaptation potential

**Output 2: Assessment of identified technologies**

- Activity 2.1: Evaluation of barriers, best practices, and technical/environmental feasibility of prioritized technologies
- Activity 2.2: Climate impact analysis of identified technologies

**Output 3: Development of Technology Roadmap and Financial Plans**

- Activity 3.1: Development of actionable Technology Roadmap for the implementation of validated sectors and technologies
- Activity 3.2: Preparation of an M&E framework and Communication Plan

- Activity 3.3: Development of a financial mobilization plan (business models, etc.) and market creation strategy

Anticipated products to be delivered:

1. Sector and Technology Prioritization Report
2. Technology assessment and climate impact analysis
3. Technology Roadmaps
4. M&E framework and communication plan
5. Financial Mobilization plan and Market Creation Strategy

**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 months.

12 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.*

*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>

Throughout the implementation of the CTCN technical assistance, gender and youth aspects will be integrated across all activities. Gender-responsive, inclusive, participatory and equitable processes and approaches will be fostered to the uptake of climate technologies that take into account the needs, priorities, knowledge and capacities of all technology stakeholders; awareness of technology benefits will be generated in particular for women and youth.

**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 (Ministry of Climate Change)	Technical assistance coordination, stakeholder engagement, standards shaping and development
Ministry of Finance, Revenue and Economic Affairs	Technical assistance coordination, stakeholder engagement, data and research input, standards shaping and development, action planning and operationalization of standards

<b>Other ministries</b> <ul style="list-style-type: none"> <li>• Ministry of Industries and Production</li> <li>• Ministry of Planning, Development and Reform</li> <li>• Ministry of Science and Technology</li> <li>• Ministry of Housing and Works</li> </ul>	Data and research input, standards shaping and development
Universities and research institutions	Data and research input, stakeholder engagement
Media	Communication and knowledge distribution
Private Sector	Assisting in the identification of market needs and exploring new economic opportunities and technologies, input into financial measures and market instruments
Commercial, Development and International Banks	Private sector mobilization and stakeholder input, input into financial measures and market instruments

**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.

<b>Reference document</b> (please include date of document)	<b>Extract</b> (please include chapter, page number, etc.).
Nationally Determined Contribution (2021)	<p>In 2021, Pakistan has submitted its' updated Nationally Determined Contribution which will be used as a key document for this technical assistance. Pakistan mentions the high financial needs requiring more international climate finance and investments from the private sector in order to achieve NDC targets. Pakistan also mentions the need of detailed and effective implementation frameworks for NDC implementation.</p> <p><a href="https://policy.asiapacificenergy.org/sites/default/files/Pakistan%27s%20Updated%20Nationally%20Determined%20Contribution%202021.pdf">https://policy.asiapacificenergy.org/sites/default/files/Pakistan%27s%20Updated%20Nationally%20Determined%20Contribution%202021.pdf</a></p>
Technology Needs Assessments, Technology Action Plans (2016/17)	<p>In 2016/17, Pakistan has conducted Technology Needs Assessments and developed Technology Action Plans for mitigation and adaptation sectors, on the basis of the first NDCs submitted to the UNFCCC in 2016 as well as other documents and through a consultative process.</p> <p><a href="https://tech-action.unepdtu.org/country/pakistan/">https://tech-action.unepdtu.org/country/pakistan/</a></p>
Add others here as relevant	

**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.

The Government of Pakistan has expressed the need for the development of a national Technology Framework and Roadmap to the CTCN. The request for technical assistance was jointly developed in consultation with above mentioned key stakeholders. Opinions and input has been sought periodically by all relevant stakeholders and the MOCC will serve as the NDE for this crucial project.

**Background documents and other information relevant for the request:**

- Please list all relevant documents that will help the CTCN analyse 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.
- Please indicate if this request has been developed with the support of the CTCN Request Incubator.

- <https://policy.asiapacificenergy.org/sites/default/files/Pakistan%27s%20Updated%20National%20Determined%20Contribution%202021.pdf>
- <https://tech-action.unepdtu.org/country/pakistan/>

**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 Mechanisms<sup>2</sup>.

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.

<sup>2</sup> Please see:

[https://unfccc.int/files/meetings/marrakech\\_nov\\_2016/application/pdf/auv\\_cop22\\_i8b\\_tm\\_fm.pdf](https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf)



**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: Dr. Saima Shafique

Date: 24-06-2022

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.

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:**

NDA name: Dr. Saima Shafique

Date: 24-06-2022

Signature:



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

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