CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

CTCN Technical Assistance
Request Submission Form

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:	Republic of Uzbekistan
Request title:	Please reflect the objective of the technical assistance in the title (maximum 200 characters). THE TECHNOLOGY NEEDS ASSESSMENT and TECHNOLOGY ACTION PLANS AND ROADMAPS FOR NDC IMPLEMENTATION FOR REPUBLIC OF UZBEKISTAN
NDE	Please add name of organisation, name of individual, position, email and address. CENTRE OF HYDROMETEOROLOGICAL SERVICE UNDER THE CABINET OF MINISTERS OF THE REPUBLIC OF UZBEKISTAN (UZHYDROMET) MR. BAKHRIDDIN NISHONOV FIRST DEPUTY DIRECTOR GENERAL OF UZHYDROMET EMAIL ADDRESS: uzhymet@meteo.uz, natalya.agaltseva@gmail.com
Request Applicant:	Please add name of organisation, contact person, position, email and address of the organisation requesting assistance from the CTCN. ORGANISATION: CENTRE OF HYDROMETEOROLOGICAL SERVICE UNDER THE CABINET OF MINISTERS OF THE REPUBLIC OF UZBEKISTAN (UZHYDROMET) CONTACT PERSON: Mr. Makhmud Khaydarov EMAIL ADDRESS: geminimh@mail.ru ADDRESS: 72, 1 st Bodomzor yuli str., Tashkent, 100052, Republic of Uzbekistan

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.

Uzbekistan has a generally dry climate and usually divided into two climatic zones of the desert and steppe climate in the western part and the temperate climate with humid winters in the eastern part. The Southern part is considered as arid and sup-tropical. The country shows a wide temperature fluctuation both seasonally and from day to day. Since the early 1950s, Uzbekistan observed annual rise in the average air temperature growth of 0.29 Celsius degrees for a decade. This is doubled rate of growth than the average global warming rates reported (INDC, 2017). On a global scale, Asia and Africa are projected to have the highest number of people affected by increased desertification and wildfire and vegetation browning has been observed in regions including Central Asia, as a result of water stress (IPCC, 2014b). The latest Special Report from the IPCC on the global warming of 1.5° C calls for an immediate action from a national level on identifying pathways to low-carbon and resilient society.

Uzbekistan is the country with developing economy and the stable annual GDP growth rate of around 8%. The country has 32.6million people and expected to reach around 37 million by 2030 with 1.7% of annual population growth rate (WB, 2018[1]). The country is suffering from a regional problem called 'the Aral Sea ecological disaster'. The Aral Sea, which had been the unique and one of the largest inland water bodies in the world, is in risk of disappearance causing irreversible damage to the local population and ecosystem with priceless diversity. This harmful impacts of the Aral Sea disaster on the environment such as water scarcity and biodiversity loss causes damages to millions of people living in 'Priaralie' throughout a number of sectors in country's economy.

Agriculture – The country has heavily dependent on agriculture, comprising around 18 percent of total gross domestic product (GDP) which is primarily based on cotton and wheat production. Due to its intensive farming practices in Central Asia, water surface area of the Aral Sea has decreased from 67,000 km^2 in 1960 to 4,000 km^2 in recent years[2].

Despite the efforts for agricultural reform conducted since 1991 to improve irrigation efficiency, Uzbekistan still faces significant challenges with desertification, water scarcity and changes in weather patterns that would shift the growing season.

Water – Given the dry weather with irregular precipitation patterns, water is one of the country's most precious resources. Uzbekistan is highly dependent on hydropower for electricity generation (13.6% of country's domestic production) and 90% of total water withdrawal is used for farm irrigation. Glacial melt dynamics and seasonal snow melt from mountainous regions provide most of fresh water resources flowing in to the Aral Sea basin. Yet, sea water salination combined with a decline in annual snow accumulation due to rising temperature is a serious issue as it reduces the amount of available drinking water. The global trend of rising temperature will affect the water availability and have cascading effects on human health (due to shortage of drinking water).

Industry – Since 1990 to 2010, industry sector was gradually modernized curving energy consumption of GDP by almost 2.5 times. The sector includes highly emission intensive processes of ferrous and non-ferrous metallurgic plants, large chemical plants and new plants

[1] WB, 2019. https://databank.worldbank.org/source/world-development-indicators
[2] US AID, 2018. https://www.climatelinks.org/sites/default/files/asset/document/Uzbekistan_CRP_Final.pdf

for car manufacture. The country prioritizes implementation of advanced technologies in these industrial processes.

Tourism – Uzbekistan is historically known of ancient 'Silk Road' trade route and four UNESCO World Heritage sites and 754 landmarks. The country is endowed with cultural and historic landscapes and ecological resources. Tourism, a critical driver of country's economy, is threatened by many climate stressors and risks such as intensive weather events and fragile condition of aquatic, forest and wetland habitats. The country is keen on maintaining the biodiversity of its resources to attract ecotourists as well as to increase resiliency of infrastructure (for both historic assets itself and supporting infrastructure) in face of extreme climate events such as heatwaves, mudslides, floods and droughts.

Ecosystem – Uzbekistan's ecosystem is home for over 700 distinct vertebrate species (including fish, amphibians, reptiles, birds and mammals), as well as 4,300 species of plants. This is the case for Usturt Plateau, Kyzylkum desert, and Aral Sea region. The forests provides various benefits towards climate change mitigation and adaptation – it gives a safe habitat for wildlife, improve the quality of water run offs as well as absorb carbon dioxide. Yet, the inflows from the Amu Darya and Syr Darya rivers is expected to reduce which will affect water availability of the tugai woodland forests. The forests which rely on the water supply from these rivers will result in increasing competition for food and water among birds and mammals.

This Technology Needs Assessment(TNA) project proposal is the first for Uzbekistan which will engage international experts with relevant experiences and specialties. This proposal kindly request the CTCN to support TNA process including identification/prioritization and training and implementation plans for priority sectors for the economy.

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.

Uzbekistan is a non-annex I Party to the United Nations Framework Convention on Climate change(UNFCCC) since1999. The country has not yet conducted any national climate action plans such as the National Adaptation Programmes of Action (NAPA). Uzbekistan initiated 'Solar energy development in Uzbekistan' as a part of National Appropriate Mitigation Action (NAMA) to support country's Roadmap for solar energy development[3]. Under the UNFCCC, all countries have a duty to report their national actions on GHG emissions and Uzbekistan has submitted its third National Communication (NC) last 2017. The NC provided information on national circumstances, greenhouse gas inventory and measures to mitigate climate change, vulnerability and adaptation to climate change and other aspects relevant for achieving the objectives of the Convention.

The government introduced energy saving technologies and put efforts for the development of renewables. Specific measures identified were: upgrading, technical and technological renewable of the fuel and energy complex and metallurgy; country wide introduction of energy saving technologies; development of chemical and light industries, as well as construction materials industry.

Uzbekistan is perceived as one of the countries who utilized the Clean Development

[3] UNFCCC, 2017. (https://unfccc.int/sites/default/files/resource/TNC%20of%20Uzbekistan%20under%20UNFCCC_english_n.pdf)

Mechanisms(CDM) to achieve tangible success in carbon reduction. As of January 2016, 15 CDM projects were registered and reported over 15.2 million ton of CER(Certified Emission Reductions, place the country at the top among CIS and Eastern Europe countries by number of registered CDM projects.

In 2016, the IBRD from World Bank and the NDA of Uzbekistan got approved of $ 68.8 million GCF funding for 'Climate Adaptation and Mitigation Program for the Aral sea basin (CAMP4ASB)' for Tajikistan and Uzbekistan[4].

Uzbekistan commits in its INDC to reduce GHG emissions per unit of GDP by 10% by 2030 from the level of 2010. For adaptation, the country promised to increase resiliency in five below aspects:

- Improvement of the climate resilience of the agriculture.
- Development of early warning systems about dangerous hydrometeorological phenomena and climate risk management;
- Creation of essential social and economic mechanisms and incentives for improvement of quality and living standards;
- Restoration of forests in mountain and piedmont areas, conservation of indigenous plant species in semi-deserts and deserts;
- Introduction of adaptation criteria into governmental investment projects for construction, modernization, O&M of infrastructure.

The government-driven initiatives and policy targets on climate change are reflected in the "Program of Measures for Reduction in Energy Consumption, Introduction energy Saving Technologies in Economy Sectors and Social Sphere for 2015-2019 (2015)" and the "Program of Actions for Environmental Protection of the Republic of Uzbekistan for 2013-2017 (2013)."

That being said, the appropriate climate technologies will serve as practical means to achieve these mid-term and long-term targets for climate resilient country.

Specific technology[5] 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).

Specific Technology Barriers encountered in Uzbekistan originate from various sectors including political, financial, institutional, technological and socio-cultural barriers.

The economy of Uzbekistan has shown rapid growth in recent years not less than 8%[6]. Whereas the large contributor for country's GHG emissions are 'energy' (82%), 'agriculture' (10.5%) and 'industrial processes' (3.8%) and 'waste' (3.8%)[7]. In fact, the government of

[4] GCF, 2019. (https://www.greenclimate.fund/countries/uzbekistan)

[5] ***"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)*

[6] Share of the 'services' sector in GDP was 54%, followed by 'industry' (24.1%) and 'agriculture' (17.2%).

Uzbekistan strived for increasing resource efficiency through binding legislative acts, however, still there is lack of incentives and tools to facilitate a country-wide dissemination of environmentally sound technologies and reduce emission intensity of energy sector associated with fuel combustion (such as oil, natural gas, coal) as well as technological leakages of methane from transportation.

There are needs for local capacity building especially in the field of climate technologies to install, adopt, maintain and adapt. The socio-cultural barriers comprise the behaviours, attitudes, beliefs and norms within the communities, which create reluctance to adopt new technologies. The TNA process engages national and local stakeholders early on to identify technology needs thereby improve the social acceptance of climate technologies introduced.

Also the country needs to strengthen capacity building for the preparation and dissemination of climate technology. There are increasing programs and trainings to promote and implement environmentally sound technologies, innovations and know-how. With these skilled personnel on the ground, the country could attract more investment from businesses in the industrialized countries on the basis of bilateral agreements and accumulate successful cases of technology transfer.

Sectors:

Please indicate the main sectors related to the request:

☒ Forestry	☒ Agriculture	☒ Water	☒ Health
☒ Restoration of degraded landscapes and ecosystems	☒ Infrastructure and urban planning	☒ Early warning systems	☒ Carbon fixation
☒ Energy Efficiency	☒ Livestock and Fisheries	☒ Industry	☒ Renewable energy
☒ Transport	☒ Waste management	☒ Disaster risk reduction	☒ Land use and Land use change

Please add other relevant sectors:

Cross-sectoral enablers and approaches:

Please indicate the main cross-sectoral enablers and approaches

☒ Communication and awareness	☒ Economics and financial decision-making	☒ Governance and planning	☒ Community based approaches
☒ Disaster risk reduction	☒ Ecosystems and biodiversity	☒ Gender	

[7] National Communications, 2017 (https://unfccc.int/sites/default/files/resource/TNC%20of%20Uzbekistan%20under%20UNFCCC_english_n.pdf)

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:

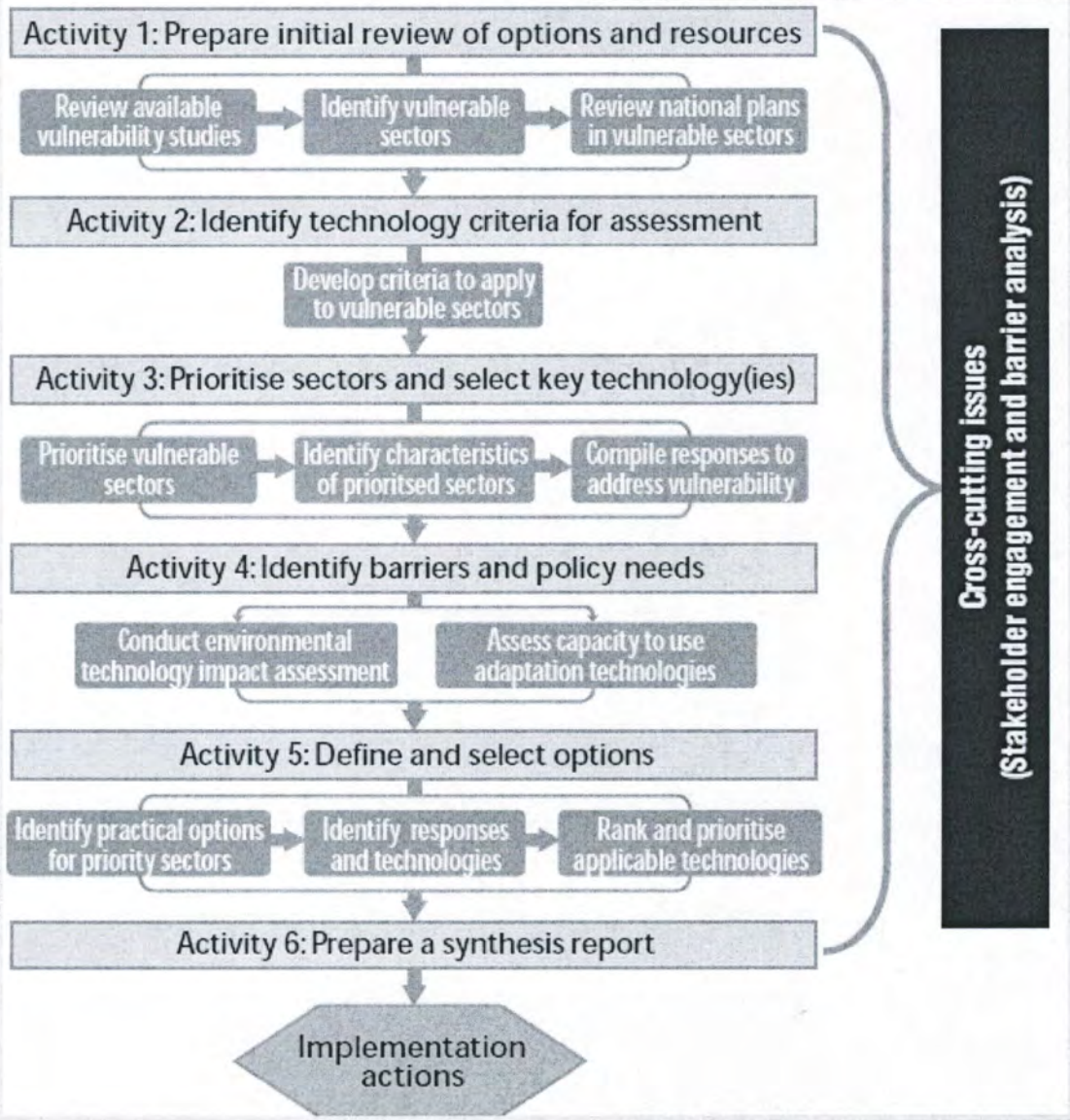
- Overall objective
- Anticipated groups of activities to be performed by the technical assistance
- Anticipated products to be delivered by the technical assistance.

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

The overall objective is to conduct Technology Needs Assessment for Climate Change Mitigation and Adaptation in Uzbekistan in most vulnerable economic sectors as identified in both the country's INC and INDC documents namely Agriculture, Water, etc. It also seeks technical guidance for the different activities required to conduct the TNA process, including training on the TNA process, methodologies and quality control, together with the engagement of Consultant.

Scope of work includes:

- Organizes all steps of technological needs assessment process;
- Conducts desk research on previously conducted similar national policies or assessments if any;
- Liaises with relevant state, non-state and private, regional and local stakeholders and organizes individual interviews or group discussions, site visits, etc. in order to conduct the study of current technological needs;
- Assesses the constraints/barriers that hinder institutions responsible for activities related to climate change in technology related aspects including collection, synthesis and analysis of existing information;
- Conducts desk study on existing state programs and plans on technology transfer and capacity building for activities related to climate change;
- Organizes the process of data collection on financial resources, technology transfer, and technical support received from bilateral and multilateral donors in field of climate change, as well as information on national resources allocated for climate change upon ratification of the UNFCCC;
- Provides periodic progress report to the Project Manager on implementation of the activities in regards to needs assessment process;
- Ensure timely and effective management of the activities according to schedule;
- Drafts the national Technology Needs Assessment report for primary sectors



Anticipated Products to be delivered by the Technical Assistance:

The output of the support will be the TNA synthesis report, which contain the following elements:

i. Objectives for the TNA in the context of national development priorities
ii. A description of the stakeholder process adopted
iii. An evaluation of sectoral needs and opportunities
iv. A statement of data gaps
v. The criteria and process for technology assessment
vi. Identification and assessment of technology options (including adaptation, if appropriate)
vii. A list of priority sectors and key technologies for preliminary action and TAPs for various sectors.
viii. A review of key barriers related to existing plans and programmes and steps to overcome them
ix. Capacity building measures, if applicable
x. Potential sources of funding
xi. A discussion of implementation plans, if relevant

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

The technical assistance will include anticipated gender benefits such as following:

1. Decision Making:
   Equal access to resources related to climate technology implementation or use
   Equal participation of men and women in decision-making
   This will include the understanding of gender roles, their involvement in planning and consultation meetings, project planning process, including in climate technology user groups and cooperatives.

2. Capacity Building
   Women with agency in technology use lead to more effective use of resources
   Women with equal opportunities for income generation activities
   Women and men benefit equitably from technical assistance and project-related training

3. Awareness Raising and Advocacy
   Active involvement of climate technology user groups, cooperatives and committees in awareness rising and advocacy in gender responsive manner.

Other anticipated co-benefits that will improve general quality of life include:

- Technology improvement and adoption of technological change,
- Capacity and skills enhancement
- Increased productivity
- Contributions to reliable energy supply
- Business creation
- Sustainable resource management
- Reduced vulnerability
- Increased resilience

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	Ensure alignment with national priorities on climate change, synergy with applicant's organisation; ensuring adequacy of application and provides endorsement. Monitor and evaluate the technical assistance provided by the CTCN.
Request Applicant	Coordinates implementation of project and ensure synergy and reporting to the UNFCCC Focal Point.
Please add as many stakeholders and lines as required.	NGO"Ecoforum", Ministry of Energy, Ministry of Water Resources, Ministry of Agriculture, State Committee for Ecology and Environmental Protection

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.

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.). This project will contribute to Uzbekistan's Nationally Determined Contribution (NDC) emission reduction target especially identified technology transfer needs on advanced energy saving technologies. International support on finance and investment, technology and capacity-building will help the country to achieve a higher and stronger intended contribution (Page).
Technology Needs Assessment	It is yet to be conducted.
National Adaptation Plans	It is yet to be conducted.
Nationally Appropriate Mitigation Actions	Solar Energy Development in Uzbekistan (NAMA)[8]
Add others here as relevant	The third National Communications (2017)

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.

[8] NAMA, 2015 (https://www4.unfccc.int/sites/PublicNAMA/_layouts/un/fccc/nama/NamaForRecognition.aspx?ID=159&viewOnly=1)

The request was initiated by the Uzhydromet, as organization responsible for implementation of the UNFCCC and Paris Agreement according to the Decision of the Government.

The project was discussed and approved by stakeholders including representatives of ministries and agencies: Ministry of Investments and Foreign Trade, Ministry of Energy, Ministry of Water Resources, Ministry of Agriculture, State Committee for Ecology and Environmental Protection, scientific departments, as well as representatives of ecological movement. Stakeholders assessed the needs in technologies for reducing GHG emissions and adaptation through consultations.

Project proposal was agreed and approved in accordance with the required rules and procedures.

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.

The Third National Communication (INC) to UNFCCC 2017
https://unfccc.int/sites/default/files/resource/TNC%20of%20Uzbekistan%20under%20UNFCCC_english_n.pdf
Intended National Determined Contribution (INDC 2017)
https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Uzbekistan/1/INDC%20Uzbekistan%2018-04-2017_Eng_20170419093154_171926.pdf

Program of Measures for Reduction in Energy Consumption, Introduction Energy Saving Technologies in Economy Sectors and Social Sphere for 2015-2019 (2015)

Program of Actions for Environmental Protection of the Republic of Uzbekistan for 2013-2017 (2013)

Program for Further Development of Agricultural Production for 2015-2019 (2015)

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[9].

The CTCN is therefore implementing some of its technical assistance using GCF readiness

[9] Please see:
https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf

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:

Mr Badriddin Abidov, Deputy Minister
MINISTRY OF INVESTMENTS AND FOREIGN TRADE OF THE REPUBLIC OF UZBEKISTAN
Email : gcfnda@mift.uz
Website: http://www.mift.uz
Address: 1 Islam Karimov str., Tashkent, 100029,Republic of Uzbekistan

Date:

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:

NDE name:

Mr. Bakhriddin Nishonov, First Deputy Director General
CENTRE OF HYDROMETEOROLOGICAL SERVICE UNDER THE CABINET OF MINISTERS OF THE REPUBLIC OF UZBEKISTAN
Email : uzhymet@meteo.uz
Website: https://www.meteo.uz
Address: 72, 1 st Bodomzor yuli str., Tashkent, 100052, Republic of Uzbekistan

Date:

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.