

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:	Timor-Leste
Request title:	Capacity building in renewable energy sector, Photovoltaic Solar Cell installation and maintenance for technical level and management
NDE	State Secretary for Environment, Directorate General of Environment, National Directorate of Climate Change.
Request Applicant:	National Directorate of Climate Change. Details of Contact Person Mr. Luis dos Santos Belo, Chief Department of Ozone Unit & CTCN Focal Point E-mail address: alubelo78@gmail.com Office address: Fomento Building Venue: Dom Boaventura no. 16 Dili, Timor-Leste.

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.

Climate change is a global issue and in Timor-Leste it is already affecting some rural population who rely on natural resources to support their family (NAPA, 2010). As an LDC, Timor-Leste is experiencing lack of awareness for the potential impacts of climate change, as well as limited capacity to respond to these changes due to limited financial support, technology and human capacity.

Rapid population growth in the country also contributed to the change of climate (it is estimated the population growth rate is approximately 1.8% per year (INDC TL, 2016) is also causing increase energy demand for lighting, space cooling and refrigeration. According to the INDC, Timor-Leste, emissions from the combustion of natural gas for supplying energy in the oil and gas facility is the largest contributor (around 70%) to the overall energy sector’s emission. In addition, based on Timor-Leste’s Strategic Plan 2011-2030, Population growth and the needs of an expanding economy are likely to increase electricity consumption in Timor-Leste from around 160 GWh currently to 800 GWh by 2020. Since 2008 the Government of Timor-Leste had invest in solar panel project which was specially directed for the families that live in remote areas, where difficulties to access to the national energy network installation. The Government of Timor-Leste is planning by 2020 at least half of Timor-Leste energy needs will be met from renewable energy source (SDP 2011-2030).

Given its size, currently Timor-Leste is still facing limited capacity in term of technical and management to ensure the sustainable use of the renewable energy. In order to achieve the goal in 2020 the National Directorate of Climate Change would like to improve the technical and management skills of government professional technical staffs to have a better knowledge and skills that could be transfer to the community whom access to the solar PV.

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.

The Government of Timor-Leste had initiate the installation of solar panel in 2008 which the project was specially directed for the family that live in remote areas with difficulties to access to energy and nowadays most of municipalities, down to village level have accessed to solar panel, where two thousand one hundred and forty three families are covered in the whole territory (Government of Timor-Leste, 2010). For the acquisition of this source of energy, the chief of villages requests the solar PV and they are responsible for the establishment of a management committee. The project also provided training for the persons responsible for the

use of the technology, and afterwards ensures the technical assistance of the solar panels. In 2011, the Government signed an agreement with the chief of villages to continue to invest in solar energy for rural electrification. According to Timor-Leste's NDC, about 9,300 units of solar PV with a total capacity of around 0.465MW and biogas energy for 270 HH have been installed in Timor-Leste.

Aside from this, based on forest survey conducted by JICA reported that, in Timor-Leste the annual deforestation rate between 2013-2010 is estimated at 1.73%. Assuming this alarming trend persisted in the following decades, 17.3% of the forest in the country would have disappeared in 2021 and all forests would have disappeared by 2071. In Timor-Leste around 75% of its population living in rural areas and 70% are highly depended on agriculture and forest sectors which lead to forest and land degradation in the country due to deforestation, unsustainable agricultural practices, forest fire and overgrazing. Based on data 2010 census, about 90% of people use inefficient, open, wood fuel fires for cooking. To address this issue, the government of Timor-Leste through UNDP accessed GEF up to \$8,393,000 to promote the use of biomass energy resources for the provision of energy access and services in rural areas. The project included activities such as introduce efficient cook stoves, disseminate of 20,000 improved cook stoves and also addresses crosscutting issues such as gender inequality. Aside from this, EU also supported Timor-Leste for reforestation project and also AvansaAgricultura where the project involved the community to accelerate sustainable and economic growth of local farmers.

Specific technology¹ barriers (up to one page):

This section should answer the questions "what are the technology barriers that hinder national efforts described above" and "how will the CTCN technical assistance complement these efforts?" Building upon the problem statement and taking into consideration the existing efforts described above, please describe the specific technology barriers encountered by the requesting applicant to identify, assess or deploy climate technology(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 government of Timor-Leste is committed to full electrification and access to affordable energy for all by 2020 (SDP TL 2011-2030), ensuring the country benefits fully from its natural energy resources (both fossil and renewable sources). Current Government of Timor-Leste has identified investment in renewable energy is one of the priorities in 2019 (Government discusses top priorities for 2019). However, as an LDC Timor-Leste is facing limited financial support, technology and capacity to install the equipment appropriately and to carry out maintenance to ensure the sustainability use of renewable energy. To achieve the goals capacity building for technical and management are highly needed.

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

The State Secretary for Environment through National Directorate of Climate Change of Climate Change is currently implementing Integrated Vulnerability Assessment (IVA) at village level, based on the draft preliminary report of the IVA showed that, community in rural area whom have no accessed to electricity are highly relied on solar cell for lighting but the community acknowledge that, due to lack of knowledge on how to manage their solar cell particularly the unused batteries which are not environmental friendly product and some community recommended to have capacity building or awareness raising on this issue to minimize the risk to the environment. On the other hand, there are some communities addressed lack of technical knowledge to handle minor maintenance and their solar cell are not functioning they start to use traditional source of energy like candle wood, kerosene or candle for lighting. These can be concluded that technical knowledge is clearly underdeveloped. Therefore the government of Timor-Leste through the State Secretary for Environment is proposing technical and management assistance from the CTCN to assist in capacity building in renewable energy sector focusing in Photovoltaic Solar cell for technical level and management.

The type of technical capacity building that could be required include installation of solar PV system; establish community based utilities; awareness raising on the various applications of PV system; awareness raising of the responsible ministry to promote, ensure and sustain good environmental practices and management; training in the role that solar PV take important part in development and emission reductions, this could be included within the Clean Development Mechanism (CDM) and environmental differences between competing technologies; training to carry out environmental impact assessments for rural electrification projects; training in environmental analysis of PV projects and competing technologies; training in integrated decision-making to incorporate environmental issue; training for technicians to undertake design and maintenance of PV system;

The management skills require including: training in socio-economic and environmental impact assessments; training on developing skills to undertake awareness raising and evaluation, financial analysis, awareness raising on international resources available to support new PV business in the country; access to electrification grid. In addition, Timor-Leste NDC also clearly mentioned that it is important to consider training and comparative studies to implement climate change mitigation activities.

Sectors:

Please indicate the main sectors related to the request:

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

☐ Transport
 ☐ Waste management

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

☐ Disaster risk reduction
 ☐ Ecosystems and biodiversity
 ☒ 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.

This technical assistance request is to support the government of Timor-Leste particularly the technical professional staffs of environment, Ministry of Public Works (National Directorate of Renewable Energy) and training center Tibarto strengthen the capacity in technical and management of solar PV. This assistance will be very much responded to Timor-Leste's INDC which is capacity development in low emissions and climate resilient development and contributed to mitigation action in the country as well as a key role for Timor-Leste's development.

The technical assistance will be focusing on developing technical skills include:

- Basic skill on installation of solar PV system
- establish community based utilities
- Design awareness raising on the various applications of PV system
- Design awareness raising of the responsible ministry to promote, ensure and sustain good environmental practices and management
- Training in the role that solar PV take important part in development and emission reductions

- Training in environmental analysis of PV projects and competing technologies
- Training in integrated decision-making to incorporate environmental issue; training for technicians to undertake design and maintenance of PV system.

For management solar PV it is required

- Training in socio-economic and environmental impact assessments
- Training on developing skills to undertake awareness raising and evaluation, financial analysis
- Awareness raising on international resources available to support new PV business in the country.

This technical assistance will be involve key line ministries and this will be very important to strengthen the coordination.

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.

Activities /Months	1-3	4-6	7-9	10-12
Data/information collection				
Identification of stakeholders and assess their capacity				
Training: technical and management				
Draft report and final report submission				

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>

Given the Government of Timor-Leste is lack of experience in technical and management to ensure the sustainable use of Solar PV, the technical assistance would represent a significant step forward to achieve "at least half of Timor-Leste energy needs will be provided by renewable energy sources".

Moreover, this such support of renewable energy-related technique would also is an opportunity to involve local potential in the sustainable development and the benefits from the project would be double beneficial, as strengthening the capacity of the technical staffs and the knowledge and skills will be transferred to the community through awareness raising. The provision of this support would help build knowledge and better understanding between solar PV and sustainable environmental management and to strengthen the coordination among key line ministries

particularly in developing renewable energy project in Timor-Leste.

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
1. State Secretariat for Environment, National Directorate of Climate Change 2. Ministry of Public Works, National Directorate of Renewable Energy 3. Ministry of Public Works, National Directorate of Research and Development, EDTL 4. Training Centre Tibar	1. Will be leading the technical assistance with the key stakeholders, provide assistance required by the CTCN if needed, coordinate with the stakeholders. 2. Provide essential information or data on renewable energy in Timor-Leste, assist the NDCC and the CTCN on matters related to renewable energy. 3. Provide essential information or data on renewable energy in Timor-Leste, assist the NDCC and the CTCN on matters related to renewable energy 4. Research and development

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.

Timor-Leste has the lowest emission from any parties where its emission is less than 0,003% of global emissions but the country is highly vulnerable to climate change and it has carry out various efforts to increase its climate resilient through technology development and implementation of adaptation measures, research, education, training, public awareness, and dissemination of information (TL INDC, 2017).

In its INDC, the Government of Timor-Leste has identified a number of potential measures for mitigating climate change, one of the measure is promoting renewable energy such as solar PV, hydropower, wind and biomass as alternative source of energy to respond to the requirement of UNFCCC and to reduce fossil fuel based.

The implementation of solar PV project aim to reduce the use of kerosene as source of energy as

well to help the community in rural areas to access to energy particularly for students where lighting is very crucial for their study, including schools and clinics. Using solar PV is a solution to provide clean and efficient source of household lighting.

Reference document (please include date of document)	Extract (please include chapter, page number, etc.). <ol style="list-style-type: none"> 1. Government of Timor-Leste. (2010). <i>Renewable Energies: Timor-Leste Invests in Solar Panels</i>. Retrieved from http://timor-leste.gov.tl/?p=3952&lang=en 2. <i>Timor-Leste's Initial National Communication</i>. (2014). Retrieved from https://unfccc.int/resource/docs/natc/tlsnc1.pdf 3. <i>Timor-Leste Strategic Plan 2011-2030</i>. (n.d). Retrieved from http://timor-leste.gov.tl/wp-content/uploads/2011/07/Timor-Leste-Strategic-Plan-2011-20301.pdf 4. <i>Intended Nationally Determined Contribution</i>. (2016 November). Retrieved from https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Timor-Leste%20(East%20Timor)/1/INDC%20%20TL_Final_Scanned_copy20Feb-2017.compressed.pdf
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.). <ul style="list-style-type: none"> ➤ Timor-Leste's Initial National Communication: page 100, 101, 108-115 ➤ SDP TL 2011-2030: page 59, ➤ INDC: 8, 9, 23

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 their roles were?) and describe any consultations or other meetings that took place to develop and select this request, etc.

The National Directorate of Climate Change (NDCC) and the Focal Point for the CTCN had a discussion with the NDA for the GCF in Timor-Leste to develop a proposal to respond to mitigation issues in Timor-Leste. The NDCC initiated the process and the NDCC will be the leading institution for this technical assistance. The key stakeholders that will be involved in this process include Ministry of Public Works, National Directorate of Renewable Energy and National Directorate of Research and Development; and Training Centre Hera.

So far, the NDCC has not conducted any formal consultation with key stakeholders but the consultation will be taking place once the NDCC received the confirmation about the proposal development

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.
- Government of Timor-Leste. (2010). *Renewable Energies: Timor-Leste Invests in Solar Panels*. Retrieved from <http://timor-leste.gov.tl/?p=3952&lang=en>
- *Timor-Leste's Initial National Communication*. (2014). Retrieved from <https://unfccc.int/resource/docs/natc/tlsnc1.pdf>
- *Timor-Leste Strategic Plan 2011-2030*. (n.d). Retrieved from <http://timor-leste.gov.tl/wp-content/uploads/2011/07/Timor-Leste-Strategic-Plan-2011-20301.pdf>
- *Intended Nationally Determined Contribution*. (2016 November). Retrieved from [https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Timor-Leste%20\(East%20Timor\)/1/INDC%20%20TL_Final_Scanned_copy20Feb-2017.compressed.pdf](https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Timor-Leste%20(East%20Timor)/1/INDC%20%20TL_Final_Scanned_copy20Feb-2017.compressed.pdf)

OPTIONAL: Linkages to Green Climate Fund Readiness and Preparatory Support

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

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

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

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

☒ **Advanced engagement (preferred):** The GCF NDA of the requesting country has been directly involved in the design of this request and is a co-signer of this request, the signature

² Please see:

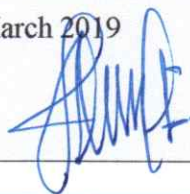
https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf

indicating provisional agreement to use readiness national funds to support the implementation of the technical assistance.

NDA name: Juliao dos Reis, Phd.

Date: 09 March 2019

Signature:



Monitoring and impact of the assistance:


By signing this request, I affirm that processes are in place in the country to monitor and evaluate the technical assistance provided by the CTCN. I understand that these processes will be explicitly identified in the CTCN Response Plan and that they will be used in the country to monitor the implementation of the technical assistance following standard CTCN procedures. 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: Luis Dos Santos Belo

Date: 9 March 2019

Signature:



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

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

Filename: CTCN Request Template
Directory: C:\Users\Notebook\AppData\Local\Temp
Template: C:\Users\Notebook\AppData\Roaming\Microsoft\Templates\Normal.do
tm
Title:
Subject:
Author: Andreas Karlsen
Keywords:
Comments:
Creation Date: 3/13/2019 6:54:00 PM
Change Number: 3
Last Saved On: 3/13/2019 6:57:00 PM
Last Saved By: Notebook
Total Editing Time: 15 Minutes
Last Printed On: 3/13/2019 6:57:00 PM
As of Last Complete Printing
Number of Pages: 10
Number of Words: 3,924 (approx.)
Number of Characters: 22,369 (approx.)