CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Technical Assistance Response Plan – Terms of Reference

Country	**Nauru**
Request ID#	2020000016
Title	Ocean Energy Technical Pre-Feasibility Study
NDE	Mr. Reagan Moses, Director for Climate Change Ministry of Commerce, Industry and Environment (DCIE) Government Office, Republic of Nauru Phone: +674 557 3133 Email: reagan.moses@gmail.com
Proponent	Mr. Midhun Ajaykumar Director of Energy Ministry of Commerce, Industry and Environment (DCIE) Government Office, Republic of Nauru Phone: +674 557 9297 Email: directorofenergycienauru@gmail.com; Midhun.Ajaykumar@naurugov.nr

Summary of the CTCN technical assistance

The pre-feasibility study for Nauru Ocean Energy will collect scientific data to identify the most suitable site for the different ocean energies (wave, tidal or thermal). Then, it will suggest the most appropriate technology to provide both electricity and water security to the island. Particular attention will be given to OTEC technology since it is expected to be the most cost-effective for the Republic of Nauru. This study will provide critical input to a more detailed feasibility study on implementing the pilot projects with the identified technologies under a supporting financial mechanism like GCF. Hence, this study is termed as pre-feasibility study.
To ensure the effective continuation of the work carried out under this technical assistance, the deliverables should be prepared in align with the requirements of the template of the GCF note.

The study under pre-feasibility study will cover following activities:
Activity 1. Technical data collection
This activity covers validation of pre- identified areas based on the existing bathymetry data from 2005 and the deployment of scientific equipment in pre-identified areas. Pressure sensors, current meters, CTD (Conductivity, Temperature, Depth) instruments will be deployed in order to capture the water column temperature and identify the most appropriate technology to develop (wave, tidal or thermal energy) as well as the most appropriate sites. The data will be used as input for the pre-feasibility study that will be finalized in consultation with the communities at the proposed site.

Activity 2. Pre-feasibility study and consultation
The data collected in Activity 1 will be technically analyzed to recommend on the feasibility of the technologies.
This activity will also cover consultations of landowners of the potential project sites as well as consultations of surrounding communities, regarding water and energy benefits of the different technologies (including OTEC) to their daily activities (fishing, agriculture, etc.). Gender issues will be addressed during these consultation processes. Under this activity, a socio-economic analysis,

weighing the socio-economic costs against the socio-economic benefits of each ocean energy technology (incl. distributive aspects) will be undertaken. It will also include a financial analysis[1], assessing the viability and profitability of each technology as well as the different financing options. This analysis will also take into consideration environmental impacts of the development of ocean energy technologies.

Activity 3. Green Climate Fund (GCF) draft concept note

Based on the results of the technical, socio-economic and financial analysis, as well as the consultation process, a Green Climate Fund concept note will be drafted in full collaboration with the NDA.

Anticipated products to be delivered by the technical assistance

i. Inception Report
ii. Draft pre-feasibility study
iii. Final pre-feasibility study
iv. GCF draft concept note

The pre-feasibility will include a technical assessment of the different ocean energies (with a specific focus on OTEC technology), an environmental and socio-economic assessment, a financial viability assessment, as well as a stakeholders' analysis.

A GCF draft concept note will be developed, based on the most suitable technology identified for the island.

Agreement:

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

National Designated Entity to the UNFCCC Technology Mechanism

Name: Mr. Reagan Moses

Title: Director for Climate Change

Date: 22/7/20

Signature:

Proponent (signature of the Proponent is optional)

Name: Mr. Midhun Ajaykumar

Title: Director of Energy

Date: 22/07/2020

Signature:

UNFCCC Climate Technology Centre and Network (CTCN)

Name: Rose Mwebaza

Title: CTCN Director

Date: 23 July 2020

Signature:

[1] For instance, by modelling the tariff rates in Power Purchase Agreements for the given technology against the interest rates of the loan and the upfront capital costs to develop a business case that can be used to bring together the development lender, the national government and the private sector companies, within the context of Nauru and its Energy regulation.

CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Technical Assistance Response Plan – Terms of Reference

1. Background and context

Nauru has nearly reached its target of having 50% of grid electricity supplied from renewable energy sources, highlighted in the Nauru Energy Road Map (NERM) 2018-2020. Along with this progress on increasing renewable energy penetration in the grid with just solar-based solutions, Nauru is ready to identify other renewable energy sources to contribute to the country energy mix.

Through ADB, NZ MFAT and European Union (EU) funding, Nauru has currently secured two solar farms of respectively 1MW and 6MW, which will provide 48% of renewable energy penetration in the grid at the horizon of 2020.

As per a study[2] conducted, Ocean Thermal Energy Conversion are found to be competitive in various markets in coastal and island countries, globally. Amongst the various markets worldwide, the Pacific Island countries are expected to be most promising pertaining to the cost of oil-fired power, the demand for desalinated water, and the social benefits of this clean energy technology.

Furthermore, the enormous potential of ocean energy in Nauru is long known as the world's first OTEC pilot plant was set up in Nauru by the Japanese Tokyo Electric Power company in 1981. It was the highest power OTEC plant ever operational and the first and last to feed power to an operating commercial grid. Due to extreme weather events, this OTEC plant is not operational anymore because of the damage made to the plant pipes. Construction techniques have now improved to become climate-proof.

To strengthen the energy mix of Nauru with increased share of renewable energy, Ocean energy would be a good additional source as the country also experiences constraints due to limited land mass to install more solar PV.

To start with, Bathymetry data of the entire island shore, gathered by SPC's Geo-Science Division under a European Union funded project in 2005 can be used to identify suitable sites. These data provide guidance and suitable area to collect data on ocean temperature, in order to identify the most suitable technology to put in place.

The Waves and Coasts in the Pacific (WACOP) project conduct by SPC in 2015 funded by European Union has quantified potential wave energy resources for Nauru and will be used as baseline data for this pre-feasibility study as well.

2. Problem statement

Climate variability already affects the Republic of Nauru with El Nino-Southern Oscillation, which tend to bring warmer, wetter conditions and La Nina events, bringing drier conditions and resulting in extended drought. Droughts in Nauru frequently place severe stress on its limited groundwater resources and on vegetation.
Longer-term climate change is projected to alter rate and distribution of rainfall, increase the

[2] *https://www.nrgexpert.com/markets-ocean-thermal-energy-conversion/*

frequency of storm surges, increase the intensity of tropical cyclones, increase average air and sea surface temperatures and increase ocean acidification[3]. Moreover, sea level rise will become an existential threat to the Nauruan population because of the very low-lying characteristics of its coastal areas.
These climate variability and change impacts are heavily affecting the health, food and water security of its communities, and will continue to do so.

The main contribution of the Republic of Nauru to climate change mitigation is the implementation of its Energy Road Map (NERM) 2014-2020 in order to reduce greenhouse gas emissions and achieve energy security by reducing reliance on imported fuel.
The specific targets of the NERM by 2020 are:

- 50% of grid electricity supplied from renewable energy sources.
- a 30% improvement in energy efficiency in the residential, commercial and government sectors.

In order to achieve these objectives, as the Republic of Nauru has limited land due to existing, intense phosphate mining, alternative renewable energy options (such as ocean energy) need to be assessed and mapped.

Since the installation of the OTEC pilot plant in 1981, there have been significant improvements in OTEC technology and design, with side benefits such as the production of large amounts of fresh water. With the very rapid drop-off beyond the reef in Nauru, there is an opportunity for OTEC energy development in the country.

However, the Republic of Nauru lacks technical and financial resources as well as in-country expertise to conduct a pre-feasibility study and assess the potential of OTEC in comparison to other ocean energy possible solutions. Therefore, Nauru is requiring external technical assistance to collect in-situ data and conduct a technical, socio-economic and financial analysis of an OTEC plant project in comparison to other ocean energy potential solutions.

This pre-feasibility study will collect data and assess the technical, socio-economic and financial potential of different ocean energy technologies (wave, tidal and thermal). A special focus will be given to ocean thermal energy conversion (OTEC) technology since it is expected to be the most viable option in the context of Nauru and may have significant water security co-benefits. Indeed, because of the absence of water supply in Nauru, the major contribution of usable water is generated using electricity powered reverse osmosis systems and is delivered by diesel powered trucks. OTEC technology could provide very valuable byproducts such as freshwater or nutrient rich cold water (improving marine life or aquaculture practices).

[3] PCCSP, 2011. Climate Change in the Pacific: Scientific Assessment and New Research, Volume 2. Country Reports: Chapter 8 – Nauru. Available at: http://www.pacificclimatechangescience.org/wp-content/uploads/2013/09/Nauru.pdf

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 only one 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**: To undertake the pre-feasibility study of the energy generation technologies from Ocean in a sustainable way*												
Outcome: Identified ocean energy generation technology for Nauru with technical potential and related social, environmental and economic impacts to undertake detailed feasibility study.												
Output 1: Development of implementation planning and communication documents												
Activity 1: *All implementers must undertake the following activities at the beginning and at the end of the CTCN technical assistance.* i) An inception meeting amongst the implementer, PP, NDE and CTCN will be held virtually to begin the project comprising the discussions on ii) to v) listed below. ii) A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organisations and detailed budget to implement the Response Plan. The detailed work plan and budget must be based directly on this Response Plan; iii) Based on the work plan, a monitoring and evaluation plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation. The monitoring and evaluation plan should apply selected indicators from the Closure and Data Collection report template and enable the lead implementer to complete the CTCN Closure and Data collection report at the end of the assignment (please refer to item iv below and section 14 in the Response Plan); iv) 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); v) A Closure and Data Collection report completed at the end of the technical assistance (a template will be provided).											
Deliverable 1: i) Inception report ii) Detailed work plan iii) Monitoring and evaluation plan iv) CTCN Impact Description v) Closure and Data Collection report												
Output 2: ***Preliminary technical preparation conducted.*** This output will undertake the deployment of scientific equipment in pre-identified areas based on the existing												

bathymetry data from 2005. Pressure sensors, current meters, CTD (Conductivity, Temperature, Depth) instruments will be deployed in order to capture the water column temperature and identify the most appropriate technology to develop (wave, tidal or thermal energy) as well as the most appropriate sites.	
Activity 2.1: Background data analysis and site selection i. The sites identified based on the bathymetry data from 2005 will be validated in consultation with the NDE and PP. The suitability of the site from the operational aspects of the technologies will also be discussed. ii. The objective of this activity is also to consider the social and environmental aspects of the proposed sites. Hence, if suggested by NDE and PP, the communities or their representatives would also be consulted for site selection. iii. Based on i and ii, a list of identified sites and ocean-based energy will be the outcome of this activity with suitable supporting reasoning. Besides technical feasibility, the selected site should also consider the sustainable operation of the proposed technology with climate-proofing to stand extreme weather events.	
Activity 2.2: Deployment of monitoring equipment, data collection and processing The objective of the data collection is to further analyze and document the suitability of the selected sites (1 or 2 sites) and the ocean energy generation technologies to undertake the prefeasibility study. i. The data set, templates for capturing raw data, data monitoring tenure and work sheet will be designed in consultation with NDE/PP or any relevant stakeholders identified by Nauru Government. ii. The data sets will be captured through the equipment like Pressure sensors, current meters, CTD (Conductivity, Temperature, Depth) that will be deployed with the logistic support from Nauru Government. The monitoring equipment and the local travelling is to be borne by the implementer.	
Deliverable 2: 2.1: A report including: i. List of sites identified with potential ocean-based energy generation technologies ii. Approaches for site selection iii. Equipment used for data collection iv. Data- Data collection process and Data sets (raw and processed data) 2.2: Working sheets including the raw data and data analysis	
Output 3: Pre-Feasibility of the identified technologies conducted The output will undertake a prefeasibility study of the selected technology and site based on technical, social, environmental and economic aspects. The approach used for undertaking the study and the outcomes will be consulted with the stakeholders comprising the communities and the Government agencies.	

Activity 3.1: Technical pre-feasibility (commissioning and operational aspects) i. The scientific data collected through the monitoring equipment will be processed and used to analyze in systemic way, the most suitable sites for the different ocean energies (wave, tidal or thermal) to provide both renewable energy-based electricity and water security to the island. Particular attention will be given to OTEC technology since it is expected to be the most cost-effective for the Republic of Nauru. ii. The pre-feasibility study will address but not limited to the following: a. Overview of technology and state of the art b. Potential size c. Performance and cost d. Challenges and barriers with references from other projects iii. Besides technical implementation to produce renewable energy, the pre-feasibility study shall also consider the following a. sustainable operation of the plant throughout the technical lifetime of the technology with climate proof ability to stand extreme weather conditions b. fresh-water production through desalination c. undertake the feasibility of the potential of Aquaculture along with the OTEC. The feasibility will be conducted in consultation with stakeholders aligning with the National Act on Coastal Fisheries and Aquaculture[4]												
Activity 3.2: Socio- Economic and financial analysis This activity will cover a socio-economic analysis, weighing the socio-economic costs against the socio-economic benefits of each ocean energy technology (incl. distributive aspects). It will also include a financial analysis[5], assessing the viability and profitability of each technology as well as the different financing options. This analysis will also take into consideration environmental impacts of the development of ocean energy technologies. i. Required data will be collected regarding the demography (focusing on the communities of the identified sites), biodiversity in the coastal areas and financial data on the identified ocean energy technologies from primary and secondary sources ii. Socio economic impact assessment be conducted using globally recognized approach but applicable to the local conditions. For example, if MCDA tool is used, it should be designed to accommodate the aspects of												

[4] Coastal Fisheries and Aquaculture Act 2020- http://ronlaw.gov.nr/nauru_lpms/files/acts/0396cd0f5de48ecbb5afb4a68ddbb361.pdf

[5] For instance, by modelling the tariff rates in Power Purchase Agreements for the given technology against the interest rates of the loan and the upfront capital costs to develop a business case that can be used to bring together the development lender, the national government and the private sector companies, within the context of Nauru and its Energy regulation.

the targeted communities on gender inclusiveness, employment, food and water security and capacity building. iii. Financial analysis will be conducted to assess the profitability of the selected ocean-based energy technologies and various financing options will be identified.	
Activity 3.3: Pre-feasibility report and stakeholder consultations (Communities and Government) i. The analysis conducted on technical aspects under 3.1 will be complemented by the socio economic and financial analysis undertaken in Activity 3.2 to package and present under the draft pre- feasibility study. ii. Tools like Multi Criteria Decision Analysis (MCDA) will be used to undertake the prefeasibility of the selected technologies. iii. The underlying tool and the draft outcomes of the report will be consulted with stakeholders comprising the communities and Government agencies. iv. The comments and feedbacks of the stakeholders will be addressed and reflect in the revised prefeasibility study. If the prevailing situation due to COVID19 are limiting face to face consultation, alternate approaches may be suggested. For example, a webinar followed by online consultation on the prefeasibility report through a structured survey to that can be filled by the communities.	
Deliverables 3: 3.1: Draft Pre-feasibility study report with worksheets on the socio-economic and financial analysis conducted 3.2: Stakeholder consultation/ Webinar with follow up online consultation survey 3.3: Final Pre-feasibility study report with worksheets on the socio-economic and financial analysis conducted	
Output 4: Draft concept note for GCF The guidelines to prepare GCF concept note are to be considered throughout all the activities (listed above) for better alignment of the deliverables with the requirements of the concept note and would help in the filling of the GCF note template under this output with best available data and information generated from this TA. Other Pacific Island countries have potential to harness ocean energy. The note should also serve as a successful case for the other countries in the region to replicate the approach.	
Activity 4.1: Concept note will be prepared based on the pre-feasibility conducted in GCF template, by following the GCF Concept note preparation guidelines, with the supporting documents listed below and as applicable: i. Map indicating the location of the project/programme ii. Diagram of the theory of change iii. Economic and financial model with key assumptions and potential stressed scenarios iv. Pre-feasibility study v. Evaluation report of previous project vi. Results of environmental and social risk screening	

Any gaps identified to fill the GCF note's template that does not fall under the purview of this Response Plan will be the responsibility of the PP/NDE/NDA of Nauru to suffice. Activity 4.2: Review and finalize the concept note
Deliverables 4: 4.1: Final GCF Concept Note 4.2: Package of supporting documents, as applicable

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. Important to note that minimum 1% of the budget should explicitly target gender specific activities related to the technical assistance (please see section 10 for further information on gender). 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 Resources** *(Title, role, estimated number of days)*	**Input: Travel** *(Purpose, national vs. international, number of days)*	**Inputs: Meetings/events** *(Meeting title, number of participants, number of days)*	**Input: Equipment/Material** *(Item, purpose, buy/rent, quantity)*	**Estimated cost** *Please accumulate the costing at Activity and Output level and provide an estimated costing range for each activity and the total Response Plan*	
					Minimum	**Maximum**
Output 1: Development of implementation planning and communication documents	***1,700-2,200***				***1,700***	***2,200***
Activity 1.1: Formulation of i) Inception meeting; ii) Detailed work plan,	*1,700-2,200* (PC-2, OES-1, EES-1)				*1,700*	*2,200*

iii) Monitoring and evaluation plan, iv) CTCN Impact Description, v) Closure and Data Collection report.						
Output 2: Preliminary technical preparation conducted.	***23,800- 32,000***	***8,000-10,000***	***3,000-4,000***	***15,000- 22,000***	***49,800***	***68,000***
Activity 2.1: Background data analysis and site selection	*3,500-4,700* (PC-2, OES-4, EES-1, GE-1)				*3,500*	*4,700*
Activity 2.2: Deployment of monitoring equipment, data collection and processing	*20,300- 27,300* (PC-15, OES-12, EES-10, LE-20, GE-1)	*8000-10,000 (Travel and DSA for 2 experts for 5 days mission)*	*3,000-4,000 (Community and Government consultation for site selection)*	*15,000- 22,000 (Please refer the description of activity 2.2 under section 3)*	*46,300*	*63,300*
Output 3: Pre-Feasibility of the identified technologies conducted	***76,100- 102,000***	***18,000-24,000***	***4,000-5,000***		***98,100***	***131,000***
Activity 3.1: Technical pre-feasibility (commissioning and operational aspects)	*33,800- 45,400* (PC-20, OES-25, EES-20, LE-25, GE-1)	*10,000- 14,000 (Travel and DSA for 2 experts for 7-10 days mission)*			*43,800*	*59,400*
Activity 3.2: Socio-Economic and financial analysis	*32,100-42,800* (PC-20, OES-15, EES-25, LE-30, GE-2)				*32,100*	*42,800*
Activity 3.3: Pre-	*10,200- 13,800*	*8,000- 10,000*	*4,000-5,000*		*22,200*	*28,800*

feasibility report and stakeholder consultations (Communities and Government)	(PC-8, OES-7, EES-3, LE-10, GE-1)	*(Travel and DSA for 2 experts for 5 days mission)*	*(Community, Government and relevant stakeholder's consultation on feasibility study)*			
Output 4: Draft concept note for GCF	***16,600***				***12,700***	***16,600***
Activity 4.1: Draft GCF concept note will be prepared	*8,800- 11500* (PC-10, OES-5, EES-4, LE-2, GE-1)				*8,800*	*11,500*
Activity 4.2: Review and finalize GCF concept note	*3900- 5100* (PC-5, OES-2, EES-1, LE-1, GE-1)				*3,900*	*5,100*
Estimated range of costing for the entire Response Plan					***162,300***	***217,800***

There are travels proposed in Activity 2.2 for deployment of monitoring equipment, Activity 3.1 for data collection and analysis and in Activity 3.3 for undertaking the consultations. The Response Plan is prepared when the world is facing the global pandemic of COVID-19. All the travels and face to face meetings will be planned and undertaken after a detailed assessment of the risks due to COVID 19 and following the related advisory by the national and local government from the country where the project is located and the country where the implementer is located. This must be assured through a letter of undertaking provided by the authority of the entity requesting for travel and meetings before it is conducted.

In the scenario of continued lockdown and travel restrictions, there are uncertainties of travelling by the international consultant. To have the minimal impact of this risk on the timeline and workplan, the situation has to be monitored closely and alternate approaches may be suggested in discussion with the Nauru Government. In case the alternate approaches are to be adopted, the budget will be revised accordingly with revised plan, and the reasonable additional activities maybe suggested with the leftover budget. The revised plan will be agreed by CTCN and NDE before being adopted for implementation.

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
Project Coordinator-PC	• Master's Degree fluid/mechanical engineering or equivalent field of specialization

(International/ National)	• A minimum 7 years of experience in leading, managing and delivering techno-commercial feasibility studies, socio economic assessments and stakeholder consultations • Experience of designing and implementing the GCF concept notes and proposals • Demonstrated knowledge and understanding of Ocean energy • Fluency in English
Ocean Energy specialist-OES (International)	• PhD/ Master's degree in the field of marine engineering/ metocean or coastal engineering or equivalent field of specialization • A minimum of 10 years of experience in the field of ocean energy with 5 years of experience in designing and implementing Ocean Thermal Energy (OTEC) and experience of coupling reverse osmosis/ desalination and aquaculture with the OTEC • Demonstrated experience of analyzing ocean data, climate modelling for coastal areas and conducting feasibility studies in the related field • Demonstrated experience of working in the Pacific Island Countries or similar geographical landscapes • Fluency in English
Energy Economics specialist-EES (International)	• Master's degree in the field of energy economics or equivalent field of specialization • A minimum of 7 years of experience of conducting energy related to socio-economic assessment for communities in remote and island areas • Demonstrated experience of conducting commercial feasibilities and recommending financing options for the technologies like ocean energy • Demonstrated experience of working in the Pacific Island Countries or similar geographical landscapes • Fluency in English
Local Expert- LE (National)	• Bachelor's degree in humanity field • A minimum of 5 years of experience working on social issues in Nauru • Proven experience of working with communities in Nauru • Fluency in local language and in English
Gender Expert-GE (International/ National)	• Master's degree in Social or Natural Sciences or another relevant discipline, preferably with a specialization in gender • A minimum of five years' practical experience in the field of gender equality and gender mainstreaming. • Understanding and demonstrated ability of gender considerations in community led energy intervention • Fluency in English

6. Intended contribution to impact over time

Please provide a brief description of the intended contribution to impact over time of the outcome and outputs provided by this technical assistance on resilience to climate change and/or carbon abatement. To the extent possible, please quantify the intended impact contribution, for example by indicated estimated number of people potentially impacted over time, GDP contribution of the focus sector, carbon emissions by the focus sector, etc. This intended contribution to impact is what will happen if the objective (as articulated in section 3) is met. Please ensure relevant complementarity with text in sections 7 to 12. (maximum 1250 characters including spaces)

- The output of the technical assistance will be used to leverage funds from financial mechanisms like GCF to conduct the bankable reports for demonstrating the pilot.
- The study will help in increasing the renewable energy share under Nauru's energy mix, placing the imported fossil fuel while also addressing the limited land constraints.
- The assistance also intended to strengthen fresh water supply through desalination technology integrated with ocean energy.

The possible quantification of intended impacts will be aimed in the impact description report under deliverable 1.

7. Relevance to NDCs and other national priorities

Nauru is currently implementing its Nauru Energy Roadmap (NERM) 2018-2020. Part of the activities included in the roadmap are pre-feasibilities studies for renewable energy sources, such as OTEC.

A clear objective of Nauru's National Sustainable Development Strategy (2005-2025) is the development of alternative renewable energy sources for the country. It is also highlighted in Nauru's Intended Nationally Determined Contribution (INDC) and its Framework for Climate Change Adaptation and Disaster Risk Reduction (RONAdapt) which advise to expand renewable energy capacity.

Finally, Nauru is on the process to include Ocean Energy as a priority in its Green Climate Fund (GCF) Country Programme.

Reference document (please include date of document)	**Extract (please include chapter, page number, etc.).**
Nationally Determined Contribution (NDC)	Nauru intended Nationally Determined Contributions (iNDCs) – 2015: "transition to untapped clean energy sources, such as renewable resources", page 2, 8 and 9.
Technology Needs Assessment	Bathymetry data from EU funded project - 2005 (SPC) Waves and Coast in the Pacific report – 2015 (SPC)
National Adaptation Plans	Republic of Nauru Framework for Climate Change Adaptation and Disaster Risk Reduction (RONAdapt) - 2015: "expand renewable energy capacity", page 7.

8. Linkages to relevant parallel on-going activities:

Please identify relevant previous and ongoing public and private sector initiatives, projects or programmes that the CTCN assistance will specifically build on and contribute to. To the extent possible, please add practical and operational details on the linkages between existing activities and the CTCN assistance. (maximum 2500 characters including spaces)
CTCN is also supporting the sustainable and transportation in Nauru through an action plan on low-emission mobility. The TA on Ocean energy will increase the renewable energy share of the electricity grid. Hence, it will help to reduced reliance of the transportation sector on imported fuel as the electric vehicles will be drawing electricity from the grid which is aimed to have higher energy share from renewable sources like Ocean energy.

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

- The GCF concept note will be submitted for GCF support for detailed feasibility and piloting the projects.
- The pre-feasibility will be conducted through a bottom up approach in consultation with communities and considering the socio- economic aspects. The case can be archived for regional demonstration for other countries to replicate.

10. Gender and co-benefits:

Imbedded in design of the activities:	*A gender mainstreaming analysis is mandatory to include for all technical assistances. A gender expert will be assigned to carry out an assessment and evaluation regarding gender mainstreaming during the implementation of the TA.* *In addition, please describe all support to gender aspects, women's equality and other co-benefits embedded into the Response Plan (please include a reference to the actual activities and outputs as described in section 3).* The consultation meetings planned under the TA will address the gender aspects of the project to ensure there is unrestricted access and participation in the project. Indeed, the pre-feasibility study will look at ways in which both men and women as well as children and the disadvantaged can contribute to and benefit from the project. As a product of the OTEC plant, both energy and fresh water will be provided. These two products will help improving communities' adaptation to times of drought and increase their resilience against food and water insecurity. Women will be primarily benefiting from this technology due to their strong involvement in the agricultural sector.
Gender and co-benefits intended as result of the activities:	*Please describe all gender aspects, women's equality and other co-benefits expected as a result of the CTCN technical assistance.* Specific activities will be looked as part of the project, such as : • Safeguards for a gender inclusive project employment • Capacity building activities including local communities on the technologies • A mechanism for project decision making, which includes women

	and targeted communities • A gender strategy to improve gender awareness throughout the whole project chain

11. Main in-country stakeholders in 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 during implementation of the assistance.

In country stakeholder	Role in implementation of the technical assistance
National Designated Entity	*Overall oversight of the TA* *Mainstream the technical feasibility study with the Nauru Energy Road Map plan*
Request Applicant	*Day to day management and coordination of the TA. Facilitate communities and landowners consultations*
Pacific Community – Geoscience division	*Technical advice and support to the NDE and Request Applicant.* *Lead in coordination and conduct of national consultations and workshops.* *Supply bathymetry data, and, support the data collection efforts and analysis* *Review the GCF concept note*
Statistics Department	*Supply of existing data as appropriate*
Other line ministries	*Participate in national consultations as appropriate*
National Designated Entity	*Overall oversight of the TA* *Mainstream the technical feasibility study with the Nauru Energy Road Map plan*

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 1-3 SDGs)
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	The technology will integrate the desalination to supply fresh water.
7	Ensure access to affordable, reliable, sustainable, and modern energy for all (consider adding targets for 7)	Ocean energy is sustainable way of generating energy especially for small island countries where other the implementation of other renewable energy faces constraints due to limited or degrading land mass due to rising level of sea.
	7.1 - By 2030, ensure 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	

	7.a - By 2030, enhance international cooperation to facilitate 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	
	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	
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	*By reducing the reliance on imported fuel, for energy generation and desalination, the TA will support in reducing the GHG emission.*
	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	
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	
	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. Decision-making tools and/or information provision	☐	☐
☐ 2. Sectoral roadmaps and strategies	☐	☐
☐ 3. Recommendations for law, policy and regulations	☐	☐
☐ 4. Financing facilitation	☐	☒
☐ 5. Private sector engagement and market creation	☐	☐
☐ 6. Research and development of technologies	☐	☐
☐ 7. Feasibility of technology options	☒	☐
☐ 8. Piloting and deployment of technologies in local conditions	☐	☐
☐ 9. Technology identification and prioritisation	☐	☐

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 the technical 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.

CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Annex 1. Guidance Note for the Response Plan template

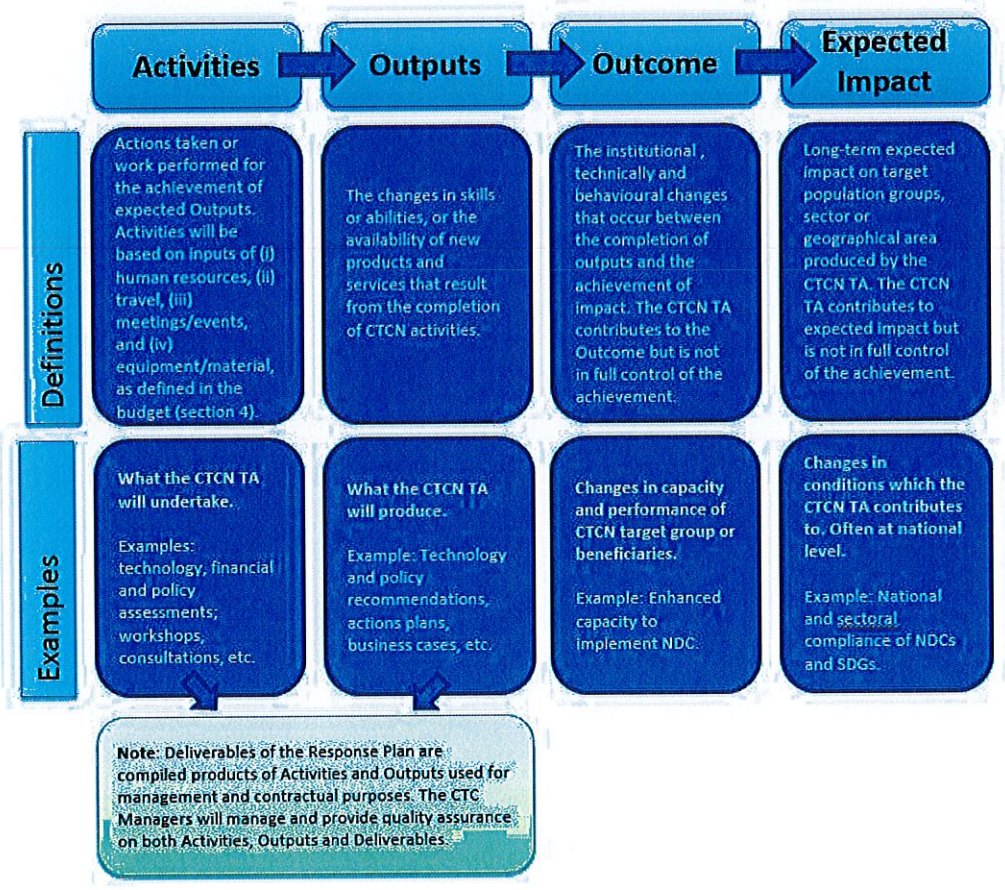
Annex 1: Guidance note for designing a Response Plan (to be deleted when submitting the Response Plan)

1. Objective of the Response Plan

The Response Plan is developed by CTCN specialists in response to a country request for technical assistance. It constitutes the Terms of Reference of the CTCN technical assistance that will be provided to the country and it provides the formulation of and subsequent basis for the monitoring and evaluation of the Response Plan implementation, as well as its expected outcomes and anticipated impacts.

2. Results chain and Logical Framework Approach to be defined in the CTCN Response Plan

The result chain is the causal sequence that stipulates the necessary flow of actions and processes to achieve desired objectives and results – beginning with inputs, moving through activities and outputs, and culminating in individual outcomes. The outcome will contribute to the desired impact in the society. The Logical Framework Approach is an analytical process used to support objectives-oriented project planning and management. It provides a set of pre-defined concepts which are used as part of an iterative process to aid structured and systematic analysis and management of the CTCN technical assistance.



3. Role of the Response Planning Design Team

The Response Planning Design Team is selected by the Climate Technology Centre (CTC). The composition of the team depends on each particular request but may include the National Designated Entity (NDE), the request Proponent, Climate Technology Manager of the CTCN, experts from the CTCN Consortium, UNIDO and UNEP experts from regional offices and other experts as needed.

The role of CTCN Consortium experts is to lead the design of the Response Plan. The NDE will provide overall guidance on national context and priorities whereas the request Proponent will provide more detailed information on the sector, barriers and requested assistance. The Climate Technology Manager of the CTCN will provide quality assurance of timeliness and appropriateness of the Response Plan.

The Response Planning Design Team will draft all sections of the Response Plan template building on the information contained in the CTCN Request, based on expertise on the given topic and potentially further data collection, as required. This will be done by the CTCN Consortium Experts in consultation with the NDE, request Proponent and relevant stakeholders. The Response Plan has to be agreed to and approved by the NDE and the CTCN Director. This Response Plan will serve as the basis to identify, select and engage an expert institution from the Climate Technology Network or Consortium to lead the implementation of the CTCN Response Plan in the requesting country.

To the extent possible, staff from UNEP and UNIDO Regional, Sub-Regional and/or National Offices should be involve in all stages of formulation of the Response Plan to maximize synergies and avoid overlap with ongoing initiatives, as well as ensure relevance to regional and national context.

4. Process for designing the Response Plan

The Response Planning process should be completed over a period of up to 60 working days (12 weeks). Indicative steps and related timelines are laid out below: