

**PROJECT DOCUMENT**



Empowered lives.  
Resilient nations.

**Project Title:** Global Climate Change Alliance Plus Trinidad and Tobago “Support to the Implementation of Trinidad and Tobago’s Nationally Determined Contribution”

**Project Number:**

**Implementing Partner:**

**Start Date:**

**End Date:**

**PAC Meeting date: November 12, 2019**

| Brief Description  |
|--|
| <p>The proposed project falls under the Global Climate Change Alliance+ Flagship Initiative. The beneficiary country is Trinidad and Tobago (T&amp;T), the allocated budget is 2.4 million EUR<sup>1</sup>, and the implementation will take place over 42 months<sup>2</sup>.</p> <p>The project is designed to assist T&amp;T in the achievement of its commitments to the global community under the UNFCCC/Paris Agreement as laid down in its Nationally Determined Contribution (NDC) as well as in the achievement of its national policy target of 10% of total electricity generated from renewable energy sources by 2021.</p> <p>The project (outputs under management with UNDP) aims at an increased availability and use of energy from renewable sources and at improved efficiency levels in the consumption of energy. To this end, the project will include installation of solar energy systems in public utilities and remote communities with increased capacity to maintain solar power systems; provide technical assistance for the operationalization of the new, Renewable Energy (RE)/Energy Efficiency (EE)–conducive policy, legislative and regulatory framework; and support the design and implementation of a public awareness-raising campaign on Energy Efficiency, Correct Pricing and Renewable Energy.</p> |

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|---|
| <p>Contributing Outcome (UNDAF/CPD, RPD or GPD):<br/>Policy and programmes for climate change resilience, disaster risk reduction and universal access to clean and sustainable energy.</p> <p>Indicative Output(s) with gender marker<sup>4</sup>:<br/>Output 4.4. Community Based Approaches to Enhance Climate Resilience are piloted in vulnerable communities and replicated. Gender marker 1.</p> |
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|                                   |   |               |
|-----------------------------------|---|---------------|
| <b>Total resources required:</b>  | USD 2,665,440 (Euro 2,400,000) <sup>3</sup> |               |
| <b>Total resources allocated:</b> | <b>UNDP TRAC:</b>                           |               |
|                                   | <b>Donor: European Union</b>                | USD 2,665,440 |
|                                   | <b>Government:</b>                          |               |
|                                   | <b>In-Kind:</b>                             |               |

Agreed by (signatures)<sup>5</sup>:

| Government                | UNDP           | Implementing Partner |
|---------------------------|----------------|----------------------|
|                           |                |                      |
| Print Name: JOANNE DEORAS | Print Name:    | Print Name:          |
| Date: 12-12-19            | Date: 12-12-19 | Date: 12-12-19       |

<sup>1</sup> For EU project outputs under Indirect management with UNDP

<sup>2</sup> Proposed 36 months for project implementation + 6 months for closing out, monitoring, and continued project management

<sup>3</sup> Exchange rate as at 1<sup>st</sup> November 2019: 1EUR=1.1106 (InforEuro). This rate in the month of the conversion is required to be used for UNDP-EU partnership projects.

<sup>4</sup>The Gender Marker measures how much a project invests in gender equality and women’s empowerment. Select one for each output: GEN3 (Gender equality as a principle objective); GEN2 (Gender equality as a significant objective); GEN1 (Limited contribution to gender equality); GEN0 (No contribution to gender quality)

<sup>5</sup> Note: Adjust signatures as needed

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## List of Abbreviations

|                     |   |
|---------------------|---|
| CC                  | Climate Change  |
| CO <sub>2</sub>     | Carbon Dioxide  |
| CfP                 | Call for Proposals                                    |
| CRS                 | Carbon Reduction Strategy                             |
| EDF                 | The European Development Fund                         |
| EE                  | Energy Efficiency                                     |
| ESCO                | Energy Service Companies                              |
| EU                  | European Union  |
| GCCA+               | Global Climate Change Alliance Plus                   |
| GEF                 | Global Environment Facility                           |
| GHG                 | Greenhouse Gases                                      |
| HDI                 | Human Development Index                               |
| kW                  | Kilowatt  |
| kWh                 | Kilowatt-hour   |
| NCCP                | National Climate Change Policy                        |
| NDC                 | Nationally Determined Contribution                    |
| NDS                 | National Development Strategy                         |
| M&E                 | Monitoring and Evaluation                             |
| MEAU                | Multilateral Environmental Agreements Unit            |
| MEEI                | Ministry of Energy and Energy Industries              |
| MPD                 | Ministry of Planning and Development                  |
| MRV                 | Monitoring, Reporting and Verification                |
| MtCO <sub>2</sub> e | Million tonnes of Carbon Dioxide equivalent           |
| MW                  | Megawatt  |
| RE                  | Renewable Energy                                      |
| RED                 | Renewable Energy Division                             |
| SDG                 | Sustainable Development Goal                          |
| SIDS                | Small Island Development State                        |
| SC                  | Steering Committee                                    |
| TA                  | Technical Assistance                                  |
| TC                  | Technical Committee                                   |
| THA                 | Tobago House of Assembly                              |
| tCO <sub>2</sub> e  | Tonnes of Carbon Dioxide equivalent                   |
| TOR                 | Terms of Reference                                    |
| T&T                 | Trinidad and Tobago                                   |
| T&TEC               | T&T Electricity Company                               |
| UNDP                | United Nations Development Programme                  |
| UNFCCC              | United Nations Framework Convention on Climate Change |
| UTT                 | The University of Trinidad and Tobago                 |

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## I. DEVELOPMENT CHALLENGE

The Republic of Trinidad and Tobago (T&T) is a twin-island state located in the southern part of the Lesser Antilles in the Caribbean. T&T has an estimated population of 1.37 million and is growing at a rate of 0.3% per year<sup>6</sup>. The majority (96%) of the population lives in Trinidad, which is the larger island with a land area of 4,827 square km. The total land area of T&T is 5,127 square km. T&T is one of the most prosperous countries in the Caribbean region with a Human Development Index (HDI) of 0.784 in the year 2018 (and 69th position on the HDI country ranking)<sup>7</sup>.

The T&T economy is highly dependent on the oil and natural gas sector with exports accounting for 85 per cent of total export earnings, 40 percent of government revenue and over 35 percent of GDP<sup>8</sup>. Thus, while the country benefits from rising oil and natural gas prices, it is also severely affected by the volatility of these prices which has a direct correlation to GDP growth<sup>9</sup>.

T&T has a high per capita energy consumption (6,510 kWh per capita in the year 2017)<sup>10</sup>. When compared to other regions, 43% of the households in T&T have a consumption level that is on par with the average North American household, twice the level of an average European household and three times the global average. In the year 2017, total installed power generation capacity was estimated at 2,094 MW (peak demand of 1,355 MW). T&T electricity generation is almost solely dependent on natural gas, consuming approximately 8% of total natural gas produced in the country. Renewable energy installed capacity was estimated at 4.4kW (2017). Many of the power generation plants operate on simple-cycle gas turbines and have low energy efficiency levels.

In 2015, the total greenhouse gas (GHG) emissions in Trinidad and Tobago amounted to 50.84 million tonnes of carbon dioxide equivalent (MtCO<sub>2</sub>e)<sup>11</sup>. However, even though, the country's per capita emissions amount to 37.38 tonnes of CO<sub>2</sub> (tonne CO<sub>2</sub>)<sup>12</sup> (2015), T&T contributes only 0.1% of the global annual GHG emissions.

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<sup>6</sup>World Development Indicators database

<sup>7</sup>Source: Human Development Report Office 2018.

<sup>8</sup>T&T Vision 2030- National Development Strategy (NDS)

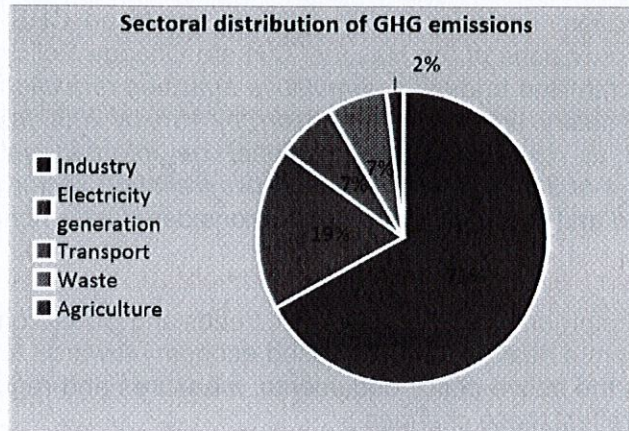
<sup>9</sup>T&T Vision 2030

<sup>10</sup>2017 Energy Report Card Trinidad and Tobago

<sup>11</sup>Emissions Database for Global Atmospheric Research, *Fossil CO<sub>2</sub> and GHG emissions of all world countries 2019 report*, <https://edgar.jrc.ec.europa.eu/>

<sup>12</sup>Emissions Database for Global Atmospheric Research, *Fossil CO<sub>2</sub> and GHG emissions of all world countries 2019 report*, <https://edgar.jrc.ec.europa.eu/>

**Figure 1: Sectoral Distribution of GHG Emissions in Trinidad and Tobago**



Source: *Second National Communication of the Republic of Trinidad and Tobago (April 2013)* and *2017 Energy Report Card Trinidad and Tobago*

As a Small Island Developing State (SIDS), T&T is particularly vulnerable to the projected impacts of climate change. This includes sea level rise, changing rainfall and storm patterns, loss of habitats, loss of property and livelihoods, and loss of agricultural land. The vulnerability is amplified by the limited ability to reap the benefits of economies of scale, and dependence on fossil fuel-based energy sources which contribute to carbon emissions. This can also have a severe impact on the stability of the economy.

Given these development challenges, the country is working towards greater energy efficiency and an optimized energy mix that includes a greater share of renewables. Part of the objective, besides reducing emissions, is to (i) advance sustainable development and (ii) decouple emissions and economic growth.

The main policy drivers leading required changes include:

- **Vision 2030- National Development Strategy (NDS) 2016 – 2030:** T&T's overarching development policy- the NDS aims to address the current challenges that the country is facing due to volatility in energy prices and – as a consequence - decreasing public revenues which threatens, T&T's real standard of living. The strategy builds on a vast consultation process that was conducted to develop Vision 2020 but "modifications were made to include relevant issues like climate change and renewable energy, thereby creating an enhanced National Vision to 2030". The NDS is also characterised by a strong alignment with the United Nations Sustainable Development Goals (UN SDGs).

The Government of T&T has set a goal of energy supply using renewables to 10 per cent by 2021 by developing & implementing appropriate policy instruments for renewable energy including feed-in tariffs<sup>13</sup>.

- **The National Climate Change Policy (NCCP) 2011:** The NCCP establishes the principles which mandate the Actions related to climate change issues in T&T. In view of operationalising the NCCP, the "Strategy for Reduction of Carbon Emissions (CRS- Carbon Reduction Strategy)" was developed and adopted in 2015. The Strategy targets the country's three main emitting sectors: electrical power generation, industry and transport, and establishes a mitigation action plan over the period 2013-2040.

<sup>13</sup> Announced by the Minister of Finance in the Budget of 2015 and 2019

- **Nationally Determined Contribution (NDC):** T&T is a Non-Annex I Party to the United Framework Convention on Climate Change (UNFCCC) and a signatory to the Paris Agreement (ratification: February 2018). NDC is based on CRS and consistent with implementing the provisions of the National Climate Change Policy. As part of its NDC, the country has committed to *overall cumulative emission reduction from the three main emitting sectors (industry, energy, and transport) by 15% by 2030 from Business as Usual (BAU) equivalent to 103 MtCO<sub>2</sub>e (conditional on international financing) and an unconditional target of 30% reduction in the public transport sector (the base year 2013) by 2030*<sup>14</sup>. Trinidad and Tobago's NDC can be considered as among the most ambitious within the region.

While the current need, (mainly driven by the economic trends and global commitments to mitigate CO<sub>2</sub> emissions) to shift from a heavy fossil fuel-based economy towards a low carbon economy is explicitly recognised in the above policy documents, measures and regulations in force have not yet been adjusted to reflect these changes.

To meet key goals as set out in the above policies (a- to meet emission reduction targets for the energy sector as committed in NDC and b- to meet 10% renewable energy by 2021), incremental interventions are required to lift the following barriers. These barriers were identified during the stakeholder consultation and were validated by the document review process:

- **Low and subsidised electricity rates.** This discourages adoption of energy efficiency measures and creates a viability gap for renewable energy generation.
- **Lack of implementation of conducive policies and legislative framework.** Gaps in current policies and regulations, including lack of appropriate incentives for renewable energy generation, prohibition for small-scale renewable energy producers to connect to the grid etc.
- **Insufficient technical expertise for solar energy generation and maintenance** in T&T relative to the expected needs of scaled-up renewable energy generation.
- **Lack of awareness** of the importance of the appropriate energy pricing, as well as economic, social and environmental advantages of renewable energy and energy efficiency.
- **Solar technology is new in the local context** and the business model for scale-up still needs to be fully established in T&T.

The project will address these barriers through an integrated set of incremental activities beyond the baseline, as described in the following section.

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<sup>14</sup> Trinidad and Tobago NDC

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## II. STRATEGY

The overall objective of this project is to support T&T in the achievement of its commitments to the global community under the UNFCCC and the Paris Agreement as laid down in the Nationally Determined Contribution (NDC). The project is expected to result in direct GHG emissions reduction through solar energy generation, and indirect GHG reduction through implementation of enabling activities for further growth in EE and RE adoption in T&T.

As per the NDC document, measures in the energy sector are expected to contribute 28.7 MtCO<sub>2e</sub> emissions reduction by 2030 (out of overall target of 103 MtCO<sub>2e</sub>). The following energy sector plan and actions are proposed in the NDC Implementation Plan of T&T.

- *Review energy pricing;*
- *Promote energy conservation and efficiency;*
- *Promote renewables and alternative energy;*
- *Promote knowledge and awareness;*
- *Review Feed in Tariff.*

The Global Climate Change Alliance Plus (GCCA+) is a European Union flagship initiative which is helping the world's most vulnerable countries to address climate change. It is one of the Flagship Initiatives under the Global Public Goods and Challenges (GPGC) programme (2014-2020). Within this overall framework, the GCCA+ adopted priorities in terms of countries, thematic areas and types of interventions.

The EU, under the GCCA+ initiative, plans to fund “*Support to the Implementation of Trinidad and Tobago’s Nationally Determined Contribution*” - ENVI/2018/041-552. The Action is designed to assist Trinidad and Tobago in (1) increasing the availability and use of energy from renewable sources; and (2) to increase the efficiency levels in the consumption of energy. These are expected to be achieved by (1) strengthening the capacity to produce electric energy through the installation and maintenance of solar energy systems (2) design of operational systems for the effective implementation of the new RE/EE–conductive policy, legislative and regulatory framework and (3) raising public awareness on energy efficiency, correct pricing of energy and on the benefits of using renewable energy. Together these will provide ample scope for reductions in GHG emissions, and hence contribute to the overall objective and its indicators directly.

The present Action or project is fully coherent with the following priorities of GCCA+: T&T is recognised as a SIDS; the foreseen support falls within the thematic area of “Support the creation and implementation of concrete adaptation and mitigation strategies”; and the proposed intervention aligns with the priority “implementation of UNFCCC commitments, including NDCs”.

The project also contributes towards the national policy target of 10% of total electricity generation from renewable sources by 2021. This implies a 130 MW equivalent reduction of fossil fuel-based electricity generation capacity. Currently, Trinidad and Tobago has an installed generation capacity of 2,094 MW (2017) with per capita consumption of 6,510 kWh (2017). The residential sector is almost fully electrified and consumes 29% of total electricity. This project is estimated to contribute a direct generation of 268,056 kWh/annum from renewable energy sources.

This programme is relevant for 2030 Agenda for Sustainable Development. It contributes primarily to the progressive achievement of the Sustainable Development Goal (SDG)13 on Climate Action, but also promotes progress towards SDG 7 on Affordable and Clean Energy, SDG 12 on Responsible Consumption and Production and SDG 9 on Industry, Innovation and Infrastructure. The proposed Action further supports the transformation towards an inclusive green economy in T&T, by creating a market for the national private sector active in the area of renewable energy, while also engaging this sector in building capacity amongst the users/beneficiaries in the proper maintenance of solar power systems.

Project implementation under the Action is divided into two main parts, wherein direct grants are given to the beneficiary for the installation of a large-scale solar panel system at Piarco International Airport and other activities outlined in the Action document are implemented through in-direct management by the UNDP. This Project Document pertains to activities managed by the UNDP under this GCCA+ action (Outputs 4.2.1.2, 4.2.2 and 4.2.3 of the Action Document<sup>15</sup>). However, in the course of implementation, possible synergies between the two projects will be explored.

The theory of change of the project is presented in Figure 2. This diagram summarises the various barriers to meet NDC and renewable energy goals; project activities and outputs designed under the project for the removal of these barriers. The diagram also shows how project outputs will lead to the achievement of targeted outcomes, and how outcomes, in turn, lead to overall impact and the achievement of the project objectives.

**Output-1 of the project (Installation of solar energy systems in public utilities<sup>16</sup> and remote communities with the increased capacity to maintain solar power systems) will contribute to building up technical expertise and improve awareness on the benefits and potential of renewable energy. It is expected to demonstrate the use of solar energy and will help in establishing a business case for scale-up.** This output is expected to demonstrate successful use of solar energy, assessment of viability gaps if any, and establish a need for appropriate measures to promote such projects. Successful implementation and associated capacity building programs will also enhance the technical capacity to install and maintain such systems. The key stakeholders will, from these pilot projects, build capacity on how to run an efficient and informed process of rolling out small-scale, grid-connected RE systems.

**The project's second Output (4.2.2. Support to the implementation of the new, RE/EE-conducive policy, legislative and regulatory framework). This Output will aim at maximizing the opportunities available to develop and implement appropriate policy measures and remove gaps in current policies.** This technical assistance (TA) Output will provide technical support for the implementation of policy measures and adapted regulations. These are currently in different stages of development and validation. This TA will provide an enabling environment for the adoption of RE and EE.

**The project's third Output (Public awareness-raising on energy efficiency, correct pricing and renewable energy) will seek to address the lack of awareness on the benefits of using renewable energy and adopting energy efficiency.** This Output aims at a change in perception related to renewable energy, energy efficiency, and need for correct energy pricing in T&T. This Output also aligns with Output 1 and Output 2 by building media campaigns around activities related to solar energy installations, TA output, and other associated activities.

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<sup>15</sup> Action Document for the project "Support to the implementation of Trinidad and Tobago's Nationally Determined Contribution"

<sup>16</sup> In the Trinidad and Tobago context, this refers to small scale systems that serve the immediate communities.



The installed solar energy systems (Output 1) will serve as demonstrations to policymakers, and the public in general and it can be realistically expected that they will be instrumental in further and faster uptake of solar power systems. Also, the other envisaged outputs of the project, notably an increased awareness on the benefits of EE and RE, a corresponding perception change (Output-3), and the operationalisation of new incentivising regulations, procedures and policy measures (Output-2), are expected to accelerate the further uptake of renewable energy systems.

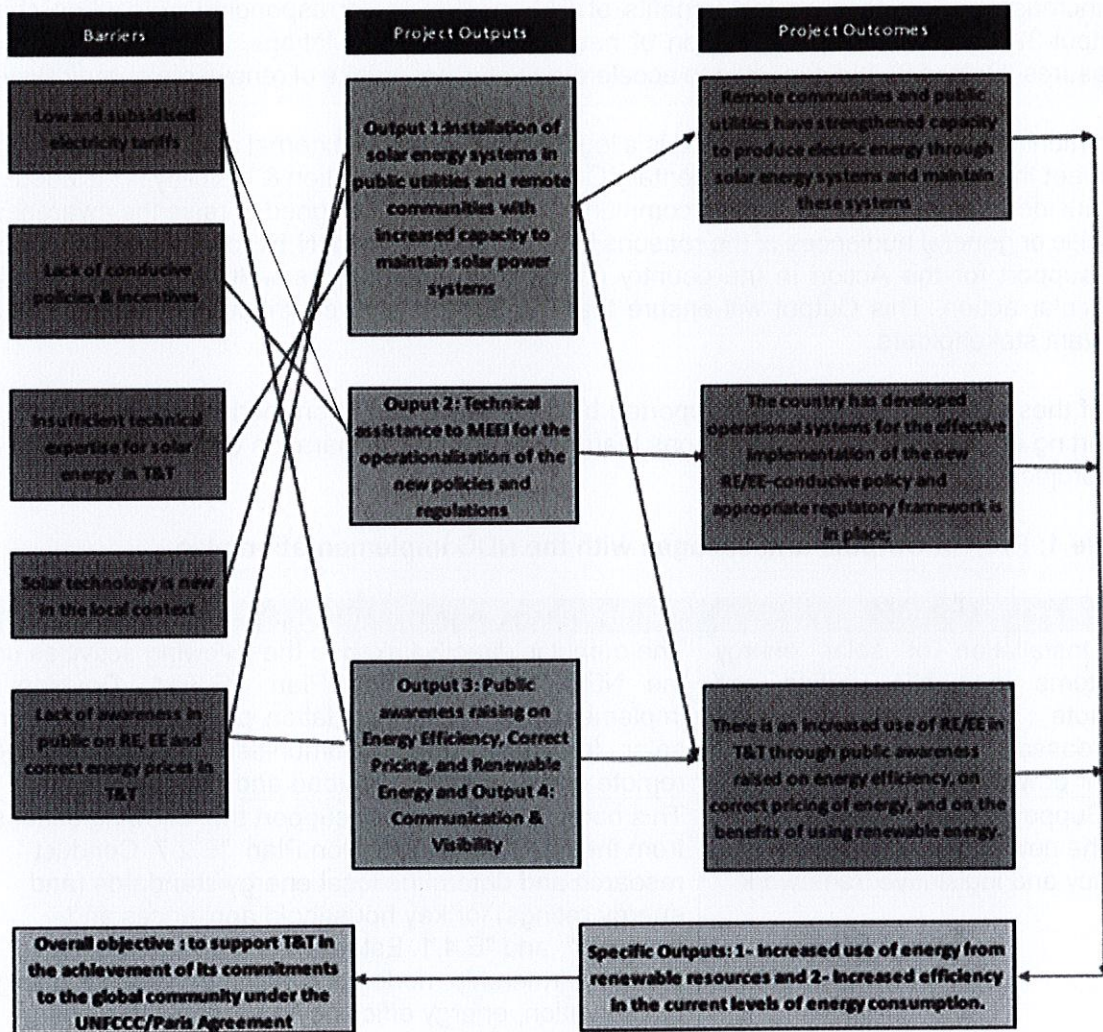
Communication and visibility of the EU is a legal obligation for all external actions funded by them. To meet this requirement, a supplementary Output 4- Communication & Visibility is included. This Output incorporates information and communication activities designed to raise the awareness of specific or general audiences of the reasons for and impact of the UN-EU cooperation and identify EU support for the Action in the country or region concerned, as well as the impact of that particular action. This Output will ensure that the EU role and contribution is visible to all the relevant stakeholders.

All of these Outputs will also be supported by a separate output on monitoring, evaluation, and reporting on project results and lessons learned, as well as preparation of the exit strategy after the project closure.

**Table 1: Project Outputs and linkages with the NDC implementation plan**

| <b>Outputs</b>  | <b>Linkage with the NDC implementation plan</b>   |
|---|---|
| 1- Installation of solar energy systems in public utilities and remote communities with the increased capacity to maintain solar power systems. | The output is directly linked to the following activities under the NDC Implementation Plan: "E.3.11. Develop and implement pilot micro-installation projects (1 MW) for PV solar for low-income communities and geographically remote communities in Trinidad and Tobago".   |
| 2- Support to the implementation of the new RE/EE-conducive policy and legislative framework.   | This output can potentially support the following actions from the NDC Implementation Plan: "E.2.7. Conduct research and determine local energy standards (and energy ratings) for key household appliances and products"; and "E.4.1. Establish an appropriate public-private partnership model for funding projects for energy conservation, energy efficiency and renewable energy and climate change issues in the industry and commercial sectors in T&T."   |
| 3- Public awareness raising on Energy Efficiency, Correct Pricing and Renewable Energy.   | The activity can potentially align with several actions from the NDC Implementation Plan. Under the energy Sector, the activity can align with E.1.2. Undertake public awareness campaigns on the envisaged adjustment (increase) of the electricity rates to better reflect the real cost; E.2.4. Design and implement a public awareness programme on energy conservation and energy efficiency; E.2.8. Design and implement a local voluntary energy rating programme (including public awareness) to promote energy efficiency in homes, businesses and products. |

Figure 2: Theory of Change



### ***Cross-cutting issues***

Environment/Climate Change: Climate Change Mitigation is the main objective of the present project. The generation of solar energy will reduce the T&T's current GHG emission levels. Also, energy efficiency will be promoted through a public awareness campaign (aiming at perception change) and through the support for the required policy measures. Project implementers will be required to ensure appropriate waste management measures to deal with hazardous waste associated with solar PV systems.

Economic Development and Job Creation: Promoting EE and the use of RE come with a significant potential for T&T to save on public expenditure. These savings can be allocated to other development-related purposes. This statement is supported by the Sustainable Energy Roadmap<sup>17</sup> which highlights the following co-benefits from a more general uptake of renewables and energy efficiency measures: (1) the opportunity cost from natural gas utilization lying between 1.6 and 3.2 billion USD by 2030 could be gradually avoided leading to huge foreign exchange gains; (2) large-scale uptake on the demand side (10% savings) can lead to savings of approximately 1 TWh; (3) the promotion of RE and EE according to the prescribed targets could lead to investments of 600 million USD and 400 million USD respectively up to 2030; and (4) the large-scale uptake of RE and EE could lead up to 10,000 direct and indirect new jobs throughout the total value chain of technologies.

Gender Mainstreaming: This GCCA+ project has no specific gender focus, but principles such as equal opportunity, access and participation will be duly taken on board and compliance will be monitored. In line with EU and United Nations gender mainstreaming policies, UNDP will pay particular attention to enable the full gender participation in various phases of the projects as users, beneficiaries, construction and maintenance workers, advisors, managers and political or community decision-makers.

Attention will be given to ensure that, to the extent possible, project committees, management and monitoring arrangements are gender-responsive and that gender balance is addressed in decision-making processes and selection processes.

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<sup>17</sup> Sustainable Energy Roadmap 2021/2030 for Trinidad and Tobago.

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### III. RESULTS AND PARTNERSHIPS

#### ***Expected Results***

The overall objective of the project is to support T&T in the achievement of its commitments to the global community under the UNFCCC/Paris Agreement as laid down in its Nationally Determined Contribution (NDC). The specific objectives of the project include 1- Increased use of energy from renewable resources and 2- Increased efficiency in the current levels of energy consumption. The project is expected to result in direct GHG reduction through solar energy generation and in-direct GHG reduction through implementation of enabling activities for further growth in EE and RE adoption in T&T. All activities defined under the project are aligned with the NDC Implementation Plan for T&T.

The project aims to achieve: (1) strengthened capacity to produce electric energy through solar energy systems and maintain these systems, (2) operational systems for the effective implementation of the new RE/EE–conducive policy legislative and regulatory framework in place; and (3) public awareness raised on energy efficiency, on appropriate pricing of energy and on the benefits of using renewable energy.

Toward fulfilling this objective, the project aims to achieve the following outcomes, namely:

- *Remote communities and public utilities (such as community centres, schools, municipal offices, disaster management centres etc.) have strengthened capacity to produce electric energy through solar energy systems and maintain these systems;*
- *The country has developed operational systems for the effective implementation of the new RE/EE–conducive policy, legislative and regulatory framework in place;*
- *There is increased acceptance of EE and RE in T&T through public awareness-raising on energy efficiency, on appropriate pricing of energy, and on the benefits of using renewable energy.*

To achieve these outcomes, GCCA+ project (under indirect implementation with UNDP) will be structured in 3 key Outputs as outlined in the Action Document.

#### ***Output 1: Installation of solar energy systems in public utilities and remote communities with the increased capacity to maintain solar power systems***

As indicated above, by the year 2021, T&T aims to generate 10% of its energy from renewable sources. Implementation, however, is slow mainly due to electricity subsidy, lack of sufficient incentives and existing legislative barriers. While the government is working on making progress to make the policy/legislative environment more conducive for the desired shift towards RE sources, this project will support the process by installing solar energy systems that will supply public utilities and/or remote and more vulnerable communities with RE. This project will fund off-grid solar installations with battery support. This will make a meaningful impact on people's lives with high potential for visibility actions and can showcase the necessary policy changes for the promotion of the RE.

The adoption of solar energy projects will also act as a catalyst to support techno-economic viability of renewable energy technology projects for productive applications in remote communities; standardize the technology packages for future applications; create awareness and capacity building activities on renewable energy systems and after-sales services network.

**Table 2: Targeted Solar energy installations and GHG reduction potential**

| Project Output   | Generation Capacity (kW)  | Annual Generation (kWh) <sup>18</sup> | Grid Emission factor <sup>19</sup> | Potential GHG reduction/annum |
|--|---|---------------------------------------|------------------------------------|-------------------------------|
| Installation of solar energy systems in public utilities and remote communities (implemented in indirect management with UNDP) | 180 kW (approximately 8-12 sites of sizes 10 to 15 kW/installation) <sup>20</sup> | 268,056                               | 533 gCO <sub>2</sub> /kWh          | 143 tCO <sub>2</sub> e/annum  |

The project will aim to install solar panels at approximately eight to twelve sites in T&T. Sizes of these installations may vary from 10 kW to 15 kW<sup>21</sup> based on the site requirements. As they are off-grid systems, all of these installations will also have battery back-up. Based on stakeholder consultation, it is also envisaged that support for infrastructure will also be required to enable solar energy generation on these sites (roof strengthening, evacuation network, electrical systems for the supply of power etc.).

The project will identify potential sites based on selection criteria (indicative list included as annex-3 will be discussed and confirmed by the Steering Committee before the start of implementation) using an open call for proposals. UNDP will launch an open request for proposals for various market players including NGOs, microenterprises, cooperatives, government and public institutions etc. to propose solar projects for funding which meet predefined criteria. Should this open request for proposal not result in the required number of feasible sites, alternative strategies to select sites will be considered.

Activities:

Activity 1.1 Identification of suitable sites

- During the open request for proposals, the Proposers/bidders will submit the site specific information in a template developed by the Consultant Engineer. This preliminary information will be assessed against predefined selection criteria to shortlist potential sites for installation of solar panels.
- Detailed site assessments will be done by the Consultant Engineer to identify the final sites for implementation and produce a feasibility report for each shortlisted site. The feasibility report will:
  - Identify suitable solar technologies for the energy demand;
  - Develop solutions for each location which includes the size of the solution; carry out basic design;
  - Carry out cost benefit analysis solution,
  - Analyse possible issues during installation,
  - Analyse potential for improving demand side energy efficiency prior to solar installations, including environmental and social impact screening;
  - Develop recommendations for deployment and operations & maintenance,

<sup>18</sup>Capacity factor 17%

<sup>19</sup>The International Energy Agency (IEA) data; Combined Margin (50:50 Build and Operating Margins)

<sup>20</sup>These are indicative targets, these will be refined based on response to the open call for proposal to set up solar panels.

<sup>21</sup>Project sizes could be outside this range as well depending on the site requirements.

- Identify and evaluate business models for implementation and scaling up of the solutions (business models can include direct investment, pay-as-you-go, RE Services Company (RESCO) model, shared infrastructure, etc);
- Develop the exit strategy after the end of the life time of the installation.
- Develop appropriate measures to deal with hazardous waste associated with solar PV systems.

All systems proposed are expected to be hurricane resistant.

The Project Steering Committee will verify the selection of projects based on predefined criteria and will endorse the list for implementation.

#### Activity 1.2 Implementation of solar energy projects

- Various implementation methods suitable to the national context will be explored by the contractor hired to install the solar panels in the locations identified such as an Engineering, Procurement, and Commissioning (EPC) model.

#### Activity 1.3 Capacity building of relevant stakeholders in public utilities and remote communities to maintain these systems

- Enhance the sustainability by (1) capacity building of the different categories of beneficiaries in proper maintenance<sup>22</sup> and necessary repair works of the solar power systems; (2) where possible, guiding the beneficiaries in the establishment of a financial system that will provide the required funds for covering future maintenance and replacement costs where necessary;(3) discuss, prepare, and initiate the exit strategy after the end of the lifetime of the project and (4) identifying local stakeholders who could provide the necessary support for the project sustainability.

#### Activity 1.4 Providing knowledge support to other outputs of the project

- Support the implementation of Outputs 2 and 3 by providing necessary inputs for policy and communication work in a timely manner.

#### Activity 1.5 Monitoring and audit

- Sites will be monitored for implementation and Operations and Maintenance (O&M) aspects by the project team as well as the contractor of the solar installations. A technical manual will be developed by the solar panel contractor to include standard operating procedures for O&M activities.

#### Output Indicators and targets:

- Indicator: Number of sites in remote communities and public utilities benefitting from renewable energy access;
  - Target: 8-12 sites
- Total power generation capacity installed in selected remote communities and public utilities (in kWh);
  - Target: 80-180 kW
- Amount of energy generated from solar panel system;
  - Target: 10 kW solar system = 15MWh annually per solar panel system  
15 kW solar system = 22 MWh annually per solar panel system

<sup>22</sup> Annex 5 – Suggested Solar photovoltaic System Operation & Maintenance requirement

- Number of inhabitants (gender disaggregated) of remote communities benefiting from solar power systems provided by the project;
  - Target: 2400(1200 women)
- Number of beneficiaries (gender disaggregated) trained in maintenance and repair.
  - Target: 36 (12 women)

***Output 2: Support to the implementation of the new, RE/EE-conducive policy and legislative framework***

Referring to the ongoing work of adjusting the current policies and regulations to make them more conducive to power generation by RE and to reduced energy consumption (EE), the MEEI requested a project output under which technical assistance could be provided for the operationalisation of the new policies and regulations by addressing barriers and challenges.

Activities:

Some indicative activities proposed for this Output are as follows:

Activity 2.1 Study Tours

At least two study tours to developing countries which have successfully expanded grid connected renewable energy and implemented successful energy efficiency programs;

Activity 2.2 Technical Papers/Reports

At least five technical papers/reports related RE and EE policy legislative and regulatory implementation gaps. Some possible areas identified include:

- Development of a baseline of RE and EE implementation which includes a legislative review of the current RE environment, with the aim to identify existing gaps;
- Options and issues related to the establishment of an incentive program for RE deployment and EE;
- Implementation Plan for the draft Feed in Tariff;
- Development of an appropriate public-private partnership model for funding projects for RE and EE;
- Development of a RE Policy for T&T.

Activity 2.3 Capacity Assessment and Building

At least three capacity assessment and capacity building programs for the development and implementation of RE and EE policy and regulation in the public sector. This can include:

- Training for relevant public sector stakeholders on RE Tariff Setting and Analysis;
- Training for relevant public sector stakeholders in the development of RE Power Purchase Agreements (PPA);
- Capacity building for public sector policy-makers on the impact of the RE Policy on their respective Policies, and harmonization of the different Policies across the public sector.

Output Indicators and targets:

Specific output indicators for the above activities will be defined during the inception phase while finalising activities. These indicators may include:

- Number of technical reports developed related to RE and EE policy and legislation;
  - Target: 5 reports
- Number of capacity building activities related to RE and EE;
  - Target: 4 trainings
- Number of Study tours conducted;
  - Target: 2 tours

### ***Output 3: Public awareness raising on Energy Efficiency, Correct Pricing, and Renewable Energy***

A public awareness campaign will be developed to address the gaps in awareness on energy conservation, to inform on the financial benefits of the efficient use of electricity, and ecological costs of energy production. Such a campaign is believed to be instrumental in initiating and in promoting the highly needed transition from an energy inefficient energy culture to a more sustainable, energy- conserving society.

The campaign will focus on the following outputs and will aim at attendant changes in perception about the appropriate pricing of energy, renewable energy, and energy efficiency. The following will be key outputs of the campaign:

- The benefits of using energy generated by renewable sources versus fossil fuel (including economic as well as global contribution to reduce climate change adverse impacts);
- The need for efficient use of energy;
- Practical ways and mechanisms to increase energy efficiency.
- The background and the need for the review of the current electricity tariffs and other key policy and regulatory changes;

#### *Indicative Activities:*

##### Activity 3.1 Contextual Analysis

Conduct a contextual analysis that will (1) assess and describe consumer perceptions and attitudes towards energy efficiency, renewable energy, and electricity subsidies (2) identify behavioural triggers that would encourage the adoption of the required behaviour and (3) establish a baseline for the performance indicators.

##### Activity 3.2 Communications and Public Awareness Raising Strategy

Develop a communications and public awareness raising strategy based on this contextual analysis which addresses approaches for the general public as well as key target populations such as opinion makers (media, key influencing people in the communities, parliamentarians, private sector). This should include take into consideration the existing communications and visibility plan of the project, objectives of current renewable energy policies and strategies, the determinants of desired behaviour change as indicated by the contextual analysis, appropriate market segmentation and communication channels, risk analysis and mitigation and monitoring and evaluation

##### Activity 3.3 Segmented Communication and Public Awareness Raising Campaign



Based on this strategy design and implement a segmented communication and public awareness raising campaign including a media plan that designs and implements tools, messaging, and other necessary outputs to meet the required communication and public awareness goals and guidelines set out by the strategy to raise public awareness. Important to this project would be messaging that revolves around:

- The benefits of using energy generated by renewable sources versus fossil fuel;
- The need for efficient use of energy;
- Practical ways and mechanisms to increase energy efficiency;
- The background and need for the review of the current electricity subsidies and other key policy and regulatory changes.

#### Activity 3.4 Monitoring

Design and implement a monitoring programme to test at regular intervals the impact of the public awareness raising plan relative to the goals and objectives set out in the strategy and recommend adjustments as required.

#### Activity 3.5 Impact Evaluation

Design and implement an end of campaign impact evaluation including an analysis of survey results for comparison of key indicators relative to the baselines established.

#### Indicative Output Indicators and targets:

- Number of contextual analysis;
  - Target: 1
- Number of communications and public awareness raising strategies;
  - Target :1
- Number of segmented communication and public awareness raising plans that specifically target benefits of renewable energy, energy efficiency measures;
  - Target: 1
- Number of monitoring programmes designed and implemented;
  - Target: At least 5
- Number of people reached with messages on the benefits of using RE and EE (gender disaggregated)
  - Target: 100,000
- Percentage of targeted population exposed to the awareness programme (measured as % of the surveyed population agreeing that renewable energy should be used at a national and community level)
  - Target: 30% of the targeted population exposed to awareness programme.

UNDP will award a contract to a Media Agency based on a Call for Proposals (CfP) procedure to execute specific tasks. A key criterion in the assessment of the submitted proposals will be their potential to effectively generate changes in perception and make a meaningful, sustainable

change. A communications and media relations consultant will also be retained to work under the overall guidance of the project manager and alongside the Media Agency towards a robust communications and media programme.

#### **Output 4: Communications and Visibility**

The Joint Visibility Guidelines for EC-UN actions in the fields<sup>23</sup> was used to establish the Communication and Visibility Plan and the appropriate contractual obligations. This plan was developed separately from Output 3.

The principal focus of the visibility plan is to publicize the EU contribution to all activities implemented by UNDP T&T within the GCCA+ set of projects. The Output aims to maximise visibility and raise awareness amongst the T&T public and international communities through public outreach campaigns including press releases, social media awareness-raising events and other audio-visual and written communication products in a coordinated manner with the European Union Delegation.

Implementation of the mandatory EU communication and visibility output will be integrated with the Call for Proposals (CfP)/contract for Output 3 (Public awareness-raising on Energy Efficiency, Correct Pricing, and Renewable Energy) as per Action Document requirements.

#### **Cost Disaggregation**

The table below provides a budget estimate.

**Table 3: Indicative budget<sup>24</sup>**

| <b>Project Outputs</b>   | <b>Budget (USD)</b> |
|--|---------------------|
| Output 1: Installation of 8-12 solar energy systems in public utilities and remote communities with the increased capacity to maintain solar power systems | 903,000             |
| Output 2: Technical assistance to MEEI for the operationalisation of the new policies and regulations  | 230,000             |
| Output 3: Public awareness raising on Energy Efficiency, Correct Pricing, and Renewable Energy   | 727,027             |
| Output 4: Communication and Visibility   | 123,000             |
| Project Management   | 379,263             |
| Monitoring & Evaluation and Audits   | 25,000              |
| <b>Contingencies (4.65%)</b>   | <b>111,040</b>      |
| <b>General Management Support (7%)</b>   | <b>167,110</b>      |
| <b>Total Project Costs</b>   | <b>2,665,440</b>    |

<sup>23</sup> <https://ec.europa.eu/europeaid/node/45481>

<sup>24</sup> Exchange rate as at 1<sup>st</sup> November 2019: 1EUR=1.1106 (InforEuro). This rate is required to be used for UNDP-EU partnership projects.

## Partnerships

The project builds on the partnership between UNDP, the EU, Renewable Energy Division (RED) of the Ministry of Energy and Energy Industries (MEEI), and the Multilateral Environmental Agreements Unit (MEAU) of the Environmental Policy and Planning Division (EPPD) of the Ministry of Planning and Development (MPD).

Increasing the use of RE technologies is one of the objectives of the MEEI. In line with this objective, the MEEI works on the adjustment of the current legislative and regulatory framework to make it more RE-friendly. The MEEI is a key national implementing partner and the primary beneficiary of the project. Outputs 1 and 2 will directly support the MEEI endeavours.

The MEAU is the designated National Focal Point for the UNFCCC and is the Government Agency in charge of coordinating all CC-related Actions in the country, including NDC implementation. The MEAU is also a direct partner to the project. The project supports Trinidad and Tobago in meeting its NDC targets through enhancing the use of Renewable Energy in Trinidad and Tobago.

Project activities carried out in Tobago will have to be coordinated with the relevant Division(s) of the Tobago House of Assembly (THA).

This project has also been designed with extensive input from numerous agencies from the public and private sector. These agencies and institutions will have some role in the project, with linkages to their own past and current activities.

**Table 4: Potential partnerships with related Initiatives**

| Related Initiatives   | Relevant activities   | Expected linkages  |
|---|---|--|
| NDC Implementation Plan was developed under the UNDP NDC Support Programme, which is the follow-up to the Low Emission Capacity Building (LECB) Programme, both funded by the EU and German Government. | The NDC Support Programme is focusing on supporting NDC implementation, particularly through the operationalization of the already designed Measuring, Reporting and Verification (MRV) system and through the development and implementation of a Financial Investment Plan as well as NDC-related Gender Action Plan.   | The GCCA+ Action can complement MRV implementation and e.g. provide the required data in the required format; secondly, the GCCA+ Action can learn from the Gender Action Plan and apply relevant elements of this Plan. |
| The EU/11 <sup>th</sup> EDF funded project (under preparation)  | The project aims to provide support to a Competitive and Innovative Economy in T&T. Under this project, the establishment is envisaged of a Centre of Excellence in Energy Efficiency (EE) and Renewable Energy (RE) with the objective of enhancing networking amongst the active players in the EE/RE sector to develop and implement innovative sustainable, low carbon solutions to current and | Possible synergies: exchange of experiences and lessons; and active participation in the foreseen networking activities.   |

|  |   |  |
|--|---|--|
|  | future energy needs in T&T.<br>Energy audits will form part of this activity. |  |
| The UNDP/GEF supported project<br>"Preparation of T&T's Third National Communication (NC) and first Biennial Update Report to the UNFCCC |   | The GCCA+ Action can provide the project with relevant data and hence contribute to the accuracy and quality of the mentioned documents. |

### Risks and Assumptions

Table 5 below presents risks that are identified during the project preparation phase and might affect the success of the project in delivering planned outputs and achieving targeted outcomes. Some key risks and assumptions of relevance are highlighted in more detail below.

A specific Project Risk Log will be developed for each output during the Project Inception Phase. As per standard UNDP requirements, the Project Manager will monitor risks quarterly and report on the status of risks to the UNDP Country Office. The UNDP Country Office will record progress in the UNDP ATLAS risk log.

**Table 5: Project Risks and Planned Mitigation Measures**

| Risks   | Date Identified | Impact and Probability | Mitigation measures   | Type       | Ownership  | Status  |
|---|-----------------|------------------------|---|------------|--|---|
| RE policy implementation gets further delayed leading to non-availability of incentives/conducive policies for RE. This will lead to increased financial risks for solar installations in terms of sustainability | Nov 2019        | P= 3<br>I= 5           | Close coordination of EU delegation, UNDP with MEEI to support the implementation of policies.<br>Output 2 will support MEEI to operationalize policy.  | Regulatory | Project Manager  | Already identified.<br>Progress to be monitored during project implementation |
| National elections lead to a shift in focus of the national partner and an accompanying fall in support for the project   | Nov 2019        | P= 2<br>I= 3           | Public awareness raising along with communications and visibility outputs to emphasise the positive impact of renewable energy to the environment. This can include special attention to informing parliamentarians and | Political  | Project manager in consultation with public awareness raising and communications and visibility contractor | To be monitored   |

|  |          |              |   |             |                 |   |
|--|----------|--------------|---|-------------|-----------------|---|
|  | Nov 2019 | P= 2<br>I= 3 | increasing their awareness.<br>The existing legislation that does not allow T&TEC to accept grid connection of RE systems is currently heavily under pressure/review. Converting the installations to off-grid systems.   | Regulatory  | Project manager | To be monitored during project implementation |
| T&TEC continues to be hampered in its ability to accept grid connection for the energy generated by the solar power systems by the existing legislation. | Nov 2019 | P= 2<br>I= 4 | Sites will be selected based on the objective list of criteria. Final list of projects will be endorsed by the Steering Committee.  | Strategic   | Project manager | To be monitored during project implementation |
| Poor solar site selection due to subjectivity in the evaluation process or undue influence from government agencies                                      | Nov 2019 | P= 2<br>I= 4 | Some of the selection criteria for shortlisting sites include- clear ownership structure for O&M, minimum level of co-investments, and anchor load requirements. It is expected that part risk will be mitigated at the time of selection by selecting site as per endorsed criteria. | Operational | Project Manager | To be monitored during project implementation |
| Solar sites are not maintained properly leading to non-performance   | Nov 2019 |              |   |             |                 |   |

|  |          |              |  |             |                    |  |
|--|----------|--------------|--|-------------|--------------------|--|
| Insufficient numbers of suitable projects are attracted by the call for proposals.   | Nov 2019 | P= 4<br>I= 4 | Should this occur the option to directly select projects through a transparent and accountable system will be pursued  | Strategic   | Steering Committee |  |
| Social and environmental risks (risk associated with solar panel disposal)   | Nov 2019 | P= 2<br>I= 3 | Disposal of solar panels in an environmentally safe manner is critical to ensure that the project doesn't lead to any significant environmental problem, exit strategy will be part of the assessment. | Operational | Project manager    | To be included in the project planning stage |
| Assumption   |          |              |  |             |                    |  |
| The political will as expressed in (draft) policies, statements and legislative proposals to adjust the current energy-related policy and regulatory framework and make it more conducive for the production and use of RE and for increasing EE, are expected to be approved at the highest levels so that it can be put into practice. |          |              |  |             |                    |  |
| There is potential national demand for renewable energy  |          |              |  |             |                    |  |
| Awareness raising is an effective way to increase buy in for renewable energy use and policy push  |          |              |  |             |                    |  |

## Stakeholder Engagement

Table 6: Key Stakeholders

| Organisation  | Expected direct roles and support to the project   | Engagement Tools/Activities   | Frequency           |
|---|--|---|---------------------|
| The Renewable Energy Division (RED) of the Ministry of Energy and Energy Industries (MEEI)  | National Implementing Partner and primary beneficiary of the project. Outputs 1 and 2 directly support MEEI.<br><br>Participant in the Steering Committee.   | Inclusion in project governance mechanisms.<br>Regular consultation and involvement in decision-making processes.   | Frequent            |
| The Multilateral Environmental Agreements Unit (MEAU) of the Environmental Policy and Planning Division (EPPD) of the Ministry of Planning and Development (MPD). | The project supports Trinidad and Tobago in meeting its NDC targets.   | Inclusion in project governance mechanisms.<br>Regular consultation and involvement in decision-making processes.   | Frequent            |
| The European Development Fund (EDF) Unit of the Ministry of Planning and Development (MPD).   | This EDF Unit is responsible for keeping oversight of all donor-funded interventions in the country and coordinates with the Ministry of Finance on financial issues related to donor funding. Participant in the Steering Committee.  |   | Frequent            |
| Trinidad and Tobago Electrical Company (T&TEC)  | The national electricity company (T&TEC) is responsible for accepting and distributing energy brought onto the grid. It is therefore critical that T&TEC be able to accept energy generated from Renewable Energy sources. However, it should be noted that T&TEC continues to be hampered in its ability to accept grid connection for the energy generated by solar power systems by the existing legislation. | Regular coordination with T&TEC along with MEEI and MEAU to ensure barriers related to grid connection of solar installations are removed.<br>Inclusion in project governance mechanisms. | Frequent            |
| Parliamentarians  | Promotion of RE and EE requires policy support and incentives. It's important that a political will is developed to take necessary actions for approval of conducive policies and incentives. In this context, members of parliament are also important stakeholders.  | Targeted awareness program under output 3   | As per project plan |



|   |  |   |                     |
|---|--|---|---------------------|
| The Tobago House of Assembly (THA)  | A few solar installations may be done in remote communities and public utilities in Tobago. Close coordination with THA will be required for site selection and implementation.  | Output 1- solar installation in remote communities and public utilities; through Public Awareness program under Output 3; Inclusion in project governance mechanisms. | Frequent            |
| T&T population.   | The population, in general, will be targeted in the public awareness activities supported by the project. Further, the population will benefit from the transition to a modern low carbon economy which will (1) be less dependent (and hence less vulnerable) on oil and gas prices set by the world market, (2) make available public funds - currently used for subsidising electricity consumption - for other more sustainable development objectives, (3) create new green jobs and markets, and (4) reduce local air pollution levels.  | Through Public Awareness program under Output 3   | As per project plan |
| Local Authorities in the locations of the projects  | To obtain necessary approvals  | Regular coordination by the project manager   | As per project plan |
| Other stakeholders, Private sector, The University of Trinidad and Tobago (UTT), Civil Society (key NGOs, key activists promoting RE), Media (key newspapers, journalists, TV channels, such as TTT, TV6 and CNC3), Media association Financial Institutions, International organizations active in promoting renewable energy Private Sector (Energy Chamber, Manufacturers Association, Industry of Commerce TTICI) | UTT has excellent expertise in conducting GHG inventories based on the more advanced international methodologies. Accordingly, UTT has been a leading collaborating partner in existing projects related to GHG inventories and reduction estimates. Media Organisations are important partners for Output 3. They are expected to provide channels of communication to reach the targeted audience. Technology supplier, implementation, and maintenance partners for solar installation; and energy efficiency equipment suppliers. Financial institutions for the financing of such projects as well as participation in financial incentive programs roll-out. | Consultation and awareness raising events.<br><br>Formal and informal networking  | Frequent            |

|  |  |  |  |
|--|--|--|--|
|  | <p>With increased awareness about energy efficiency and renewable energy, it will create new market opportunities for businesses to develop new offerings and products, resulting in increased economic output.</p> <p>International organisations, key NGOs active in RE and EE space will be regularly consulted to ensure efforts are synergised and learning are shared.</p> |  |  |
|--|--|--|--|

UNDP does not anticipate that any groups will be adversely affected by the project. Nevertheless, the project team will regularly assess and manage risks in accordance with its Risk Log and its Social and Environmental Screening Procedure Report. Social and Environmental impact screenings will be performed as a part of the feasibility study and followed in the course of the project implementation. Stakeholders will be encouraged to communicate any concerns to project staff, with an escalation of cases to UNDP management and the Steering Committee as needed. Contracting Authority (European Union Delegation) will be duly informed in such cases, due to potential reputational risks to the project and European Union, accordingly.

***Sustainability and Scaling Up***

The project seeks to bring about lasting, nationwide transformation of the energy market by promoting adoption of RE/EE and creating favourable conditions for its development. This transformation will be achieved by creating permanent enabling conditions – including the required knowledge base among service providers, exposure of stakeholders to technology and best practice, visibility and awareness creation for key stakeholders, linkages with financing, all supported by a foundation of policies, regulations, and institutional capacity among MEEI and other government agencies.

Then compilation and dissemination of success stories in the project’s third output will catalyse even wider awareness of renewable energy and energy efficiency in general. With increased awareness of RE and EE, it is expected that many households will be able and motivated to implement RE/EE measures using their own unaided expertise and financial capacity even after the EU-UNDP supported project draws to a close.

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**IV. PROJECT MANAGEMENT**

***Project Management***

The project will be implemented by UNDP following the Direct Project Modality (DIM), and office space will be provided by UNDP Trinidad and Tobago.

UNDP will assume responsibility for the day-to-day management of the implementation of the following contracts. This includes: monitoring implementation progress and quality as well as performance of the contractors, financial management (payments, accounting and reporting, budget monitoring and – if needed – revision, and organising the required external audits),

ensuring coordination with the relevant stakeholders and with similar interventions/programmes, and providing secretariat services to the project's steering committee (convening meetings, establishing agendas, writing minutes and related action plans, monitoring progress on implementation of action plans).

- The project envisages a project team consisting of a full-time Program Manager (TA as per the Action Document) and a Project Assistant for the timeline of the project. Both these positions will be filled by people with relevant experience in managing such projects and with required domain expertise. The project manager will be responsible for coordinating various activities planned under all the outputs. The Project Manager will also be responsible for reporting requirements and coordination for Steering Committee meetings. The Project Assistant will provide support to the Project Manager in executing these responsibilities. UNDP will organise a project office in Port-of-Spain where the team will operate.
- The project will hire a Consultant Engineer to provide technical assistance for the implementation of activities under output 1. The Consultant Engineer hired under this output will be responsible for the identification of sites, preparation of technical/financial dossier for the selection of feasible sites, monitoring the implementation of the supply and works contracts (supply, installation, capacity building) and the effective operation of the solar energy systems. The procurement of equipment and materials (supply contracts) and procurement of labour services for the installation (works contracts) will be carried out by UNDP in close collaboration with the Project Manager and the Consultant Engineer.
- Procurement based on UNDP's rules and procedures relating to Output-1. More specifically, it will concern the purchase of equipment, materials and labour to install the solar power systems in the locations as identified and specified by the Consultant Engineer in charge. The procurement will be carried out in close collaboration with the Consultant Engineer and the Project Manager. The details will be specified during the initial identification survey. The process will start as soon as the identified locations and technical specifications will have been validated by the project's steering committee
- For activities under output 2, International/National Consultants will be hired to provide appropriate technical assistance as envisaged under this output.
- For activities under output 3, a national Communication Expert will be hired. Implementation of the mandatory EU communication and visibility output under output 4 will also be integrated into this contract.
- The Project Result Framework requires the monitoring of various indicators. For a few performance indicators, surveys will be done to set a baseline and also to assess progress towards desired changes. It is expected that for certain indicators an external agency may be hired to conduct surveys.

|                     |  |
|---------------------|--|
| Project Manager     | Experience in managing UNDP or similar long-term programs   Experience in renewable energy projects<br>Responsible for overall project implementation, reporting, coordination with various stakeholders   |
| Project Assistant   | Experience in supporting management of similar programs<br>Support to Project Manager for overall project implementation, reporting, coordination with various stakeholders  |
| Consultant Engineer | Experience in solar site assessment, technology & vendor selection, implementation, and audits. Responsible for the identification of sites based on criteria approved by the Steering Committee, preparation of technical/financial dossier for the selection of feasible sites, monitoring the |

|                          |  |
|--------------------------|--|
|                          | implementation of the supply and works contracts (supply, installation, capacity building) and the effective operation of the solar energy systems. The Consultant Engineer will also provide inputs to the Project Manager (TA as per the Action Document). |
| Communication specialist | Experience in designing and implementing communication programs  |
| Technical Consultants    | With specific experience in delivering TA under Output 2 and to support specific technical work under Output 2   |
| Agency                   | For Outputs 3 and 4   Experience in developing and implementing awareness programs   Surveys to define the baseline and to assess the impact of awareness programs   |
| Evaluator and Auditors   | For mid-term and final evaluation as well as solar plant audits  |

### ***Cost Efficiency and Effectiveness***

UN will carry out cost-efficient, transparent and timely procurement as required. All procurement activities will be directly implemented by UNDP for this project in full consultation with the Steering Committee. Coordination with other activities will be pursued where relevant and as needed.

UNDP's Procurement and Financial Rules and regulations will be utilised during project implementation.

The project will ensure cost-effectiveness by working in strong partnership with the ongoing work of the Government of T&T for the installation of solar energy projects and energy efficiency improvement, thereby tapping into existing momentum and know-how.

## V. RESULTS FRAMEWORK

| <b>Intended Outcome as stated in the MSDF Programme Results and Resources Framework:</b> Policies and programmes for climate change resilience, disaster risk reduction and universal access to clean and sustainable energy   |   |   |          |      |   |        |        |                                      |  |
|--|---|---|----------|------|---|--------|--------|--------------------------------------|--|
| <b>Outcome indicators as stated in the Country Programme Results and Resources Framework, including baseline and targets:</b> Output 4.4. Community Based Approaches to Enhance Climate Resilience are piloted in vulnerable communities and replicated. Number of pilot and demonstration projects initiated or scaled up by national partners, including women's organizations; Baseline: 1; Target: 2 |   |   |          |      |   |        |        |                                      |  |
| <b>Applicable Output(s) from the UNDP Strategic Plan 2018-2021:</b> Output 1.5 1. Solutions adopted to achieve universal access to clean, affordable and sustainable energy  |   |   |          |      |   |        |        |                                      |  |
| <b>Project title and Atlas Project Number:</b> TBD   |   |   |          |      |   |        |        |                                      |  |
| Result Chain   | OUTPUT INDICATORS   | DATA SOURCE                             | BASELINE |      | TARGETS (by the frequency of data collection) |        |        | ASSUMPTIONS/ DATA COLLECTION METHODS |  |
|  |   |   | Value    | Year | Year 1  | Year 2 | Year 3 |                                      | Final  |
| <i>Outcome 1: Remote communities and public utilities have strengthened capacity to produce electric energy through solar energy systems and maintain these systems</i>  |   |   |          |      |   |        |        |                                      |  |
| <b>Output 1:</b><br>Installation of solar energy systems in public utilities and remote communities with the increased capacity to maintain solar power systems  | 1.1 Number of sites in remote communities and public utilities benefiting from renewable energy access (cumulative)                                   | Site visit reports                      | 0        | 2019 | -   | 4      | 12     | 12                                   | The project is able to identify suitable sites and projects through alignment with various government programs.<br><br>These are indicative targets for the number of sites, these will be refined based on response to the open call for proposal to set up solar panels.<br><br>Data collection method: site visit |
|  |   |   | 0        | 2019 | -   | 90     | 180    | 180                                  |  |
|  | 1.2 Total power generation capacity installed from Renewable Energy sources in selected remote communities and public utilities (in kWh) (cumulative) | Specification of solar panels installed | 0        | 2019 | -   | 90     | 180    | 180                                  | These are indicative targets for the total power generation capacity, these will be refined based on response to the open  |



|   |   |                             |   |      |           |                        |                         |                         |  |
|---|---|-----------------------------|---|------|-----------|------------------------|-------------------------|-------------------------|--|
|   | 1.5 Number of beneficiaries (sex-disaggregated) trained in maintenance and repair- (cumulative)           | Training records            | 0 | 2019 | -         | 12 (including 4 women) | 36 (including 12 women) | 36 (including 12 women) | At least 3 people in each site including at least 1 woman.<br>Key assumption is that locations where solar installations are planned have required manpower available to be trained on maintenance and repair.<br><br>Data collection method: training records |
| <i>Outcome 2: The country has developed operational systems for the effective implementation of the new RE/EE-conducive policy and appropriate legislative and regulatory framework is in place</i> |   |                             |   |      |           |                        |                         |                         |  |
| Output 2: Technical assistance to MEEI for the operationalisation of the new policies and regulations   | 2.1 Number of technical papers to support the operationalization of policies and regulations (cumulative) | Technical papers delivered  | 0 | 2019 | 1 Reports | 3 Reports              | 5 Reports <sup>25</sup> | -                       | Government remains committed to enforcing required policies and regulations to promote renewable energy and energy efficiency in the country.  |
|   | 2.2 Number of Capacity Building Activities related to RE and EE (cumulative)                              | Training/work shops records | 0 | 2019 | 1         | 3                      | 4                       | -                       | These are indicative targets for capacity building/training sessions. For selected concepts for support a training need will be assessed for planning such sessions.<br><br>Data collection method: training/workshops records                                 |

<sup>25</sup> During the stakeholder consultation process, a few concepts were discussed. During the inception and execution phases, concepts will be identified and confirmed by the Steering Committee. Currently a tentative target of five (5) is included. It may be revised based on need assessment.

|   |  |   |   |      |   |        |         |         |  |
|---|--|---|---|------|---|--------|---------|---------|--|
|   | <p><b>2.3</b> Study tours to developing countries to learn from successful experience of promoting RE/EE (cumulative)</p>  | Study tour reports                                    | 0 | 2019 | 1 | 2      | 2       | -       | <p>Government remains committed to enforcing required policies and regulations to promote renewable energy and energy efficiency in the country.</p> <p>Data collection method: review of study tours reports</p>  |
| <p><i>Outcome 3: There is increased use of RE/EE in T&amp;T through public awareness raised on energy efficiency, on correct pricing of energy and on the benefits of using renewable energy.</i></p> |  |   |   |      |   |        |         |         |  |
| <p><b>Output 3: Public awareness raising on Energy Efficiency, Correct Pricing, and Renewable Energy</b></p>  | <p><b>3.1</b> Number of contextual analysis completed (cumulative)</p>   | Contextual analysis report                            | 0 | 2019 | 1 | 1      | 1       | 1       | <p>Data collection method: Contextual analysis report</p>  |
|   | <p><b>3.2</b> Number of communications and public awareness raising strategies (cumulative)</p>  | Communications and Public awareness strategy document | 0 | 2019 | 1 | 1      | 1       | 1       | <p>Communication may include mass media coverage, e-bulletins, mailings, social media and other direct outreach to recipients.</p>   |
|   | <p><b>3.3</b> Number of segmented communications and public awareness raising campaigns that specifically target benefits of renewable energy implemented (cumulative)</p> | Public Awareness campaign report                      | 0 | 2019 | - | 1      | 1       | 1       | <p>Messages conveyed during the awareness raising campaigns are sufficiently convincing and result in perception change regarding energy efficiency, renewable energy, and need for correct pricing of energy.</p> |
|   | <p><b>3.4</b> Number of monitoring programmes designed and implemented (cumulative)</p>  | Media monitoring report                               | 0 | 2019 | - | 3      | 6       | 6       | <p>Data collection method: surveys</p>   |
|   | <p><b>3.5</b> Number of people reached with messages on the benefits of using RE and EE (gender disaggregated)<sup>26</sup> (cumulative)</p>                               | Survey  | 0 | 2019 | - | 55,000 | 100,000 | 100,000 |  |

<sup>26</sup> Intermediary and final targets will be defined at the start of the awareness program by the contracted agency



|  |  |        |     |      |   |   |   |   |  |
|--|--|--------|-----|------|---|---|---|---|--|
|  | <p><b>3.6</b> Percentage of targeted population exposed to the awareness programme (gender disaggregated (cumulative))</p> | Survey | TBD | 2019 | - | 15% of the targeted population agrees that RE should be used at a national and committee level. | 30% of the targeted population agrees that RE should be used at a national and committee level. | 30% of the targeted population agrees that RE should be used at a national and committee level. |  |
|--|--|--------|-----|------|---|---|---|---|--|

*Outcome 4: Communication and visibility*

|  |  |   |   |      |    |    |    |    |   |
|--|--|---|---|------|----|----|----|----|---|
| <p><b>Output 4: Communication and visibility</b></p> | <p>Press Releases (cumulative)</p>                     | <p>Project Reports and Media Tracking</p> | 0 | 2018 | 1  | 5  | 9  | 10 | <p>Output 4 will be integrated with Output 3 on awareness creation.<br/>The indicators under this Output will be elaborated, planned, and delivered by the contracted agency for Output 3.<br/><br/>Data collection method: review of products developed and event invitee and attendee lists</p> |
|  | <p>Media Visits (cumulative)</p>                       |   | 0 | 2018 | -  | 2  | 5  | 5  |   |
|  | <p>Publications (cumulative)</p>                       |   | 0 | 2018 | 1  | 5  | 9  | 10 |   |
|  | <p>Social Media posts (twice a month) (cumulative)</p> |   | 0 | 2018 | 24 | 48 | 72 | 72 |   |
|  | <p>Video<sup>27</sup></p>                              |   | 0 | 2018 | -  | 1  | 1  | 1  |   |
|  | <p>Events- roundtables (cumulative)</p>                |   | 0 | 2018 | 0  | 1  | 2  | 3  |   |
|  |  |   |   |      |    |    |    |    |   |

and approved by the Steering Committee.

<sup>27</sup> To be produced under Output3 public awareness raising

## VI. MONITORING AND EVALUATION

UNDP will be guided by follow the following monitoring plan to track progress on the Outputs under its implementation. The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure that project effectively achieves these results.

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy. While these UNDP requirements are not outlined in this project document, the UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high-quality standards.

### Monitoring Activities Plan

| Monitoring Activity     | Purpose  | Frequency         | Expected Action   | Partners (if joint) | Cost (if any) |
|-------------------------|--|-------------------|---|---------------------|---------------|
| Track results progress  | To track progress internally by the UNDP, progress data against the results indicators in the RRF will be collected and analysed to assess the progress of the project in achieving the agreed outputs.  | Ongoing           | Slower than expected progress will be addressed by project management.  |                     |               |
| Monitor and Manage Risk | Identify specific risks that may threaten the achievement of intended results. Identify and monitor risk management actions using a risk log. This includes monitoring measures and plans that may have been required as per UNDP's Social and Environmental Standards. Audits will be conducted in accordance with UNDP's audit policy to manage financial risk. Therefore, the project shall be subject to the internal and external auditing procedures laid down in the Financial Regulations, Rules and directives of UNDP. | Ongoing           | Risks are identified by project management and actions are taken to manage risk. The risk log is actively maintained to keep track of identified risks and actions taken. |                     |               |
| Learn                   | Knowledge, good practices and lessons will be captured regularly. They will also be actively sourced from other  | At least annually | Relevant lessons are captured by the project team and used to inform  | MEEI, MEAU, EU      |               |

|  |   |   |   |  |  |
|--|---|---|---|--|--|
|  | projects and partners and integrated back into the project.   |   | management decisions.   |  |  |
| <b>Annual Project Quality Assurance</b>    | The quality of the project will be assessed against UNDP's quality standards to identify project strengths and weaknesses and to inform management decision making to improve the project.  | Annually  | Areas of strength and weakness will be reviewed by project management and used to inform decisions to improve project performance.                                  |  |  |
| <b>Review and Make Course Corrections</b>  | An internal review of data and evidence from all monitoring actions to inform decision making.  | At least annually   | Performance data, risks, lessons and quality will be discussed by the Steering Committee and used to make course corrections.                                       |  |  |
| <b>Project Report</b>                      | A progress report will be presented to the Steering Committee and key stakeholders, consisting of progress data showing the results achieved against pre-defined annual targets at the output level, the annual project quality rating summary, an updated risk log with mitigation measures, and any evaluation or review reports prepared over the period.                                      | Annually, and at the end of the project (final report)                                  |   |  |  |
| <b>Project Review (Steering Committee)</b> | The project's governance mechanism (i.e., Steering Committee) will hold regular project reviews to assess the performance of the project and review the Multi-Year Work Plan to ensure realistic budgeting over the life of the project. In the project's final year, the Steering Committee shall hold an end-of-project review to capture lessons learned and discuss opportunities for scaling | Programme and Steering Committee at designated decision points, at least once per year. | Any quality concerns or slower than expected progress should be discussed by the Steering Committee and management actions agreed to address the issues identified. |  |  |

|                               |  |  |   |  |            |
|-------------------------------|--|--|---|--|------------|
|                               | up and socializing project results and lessons learned with relevant audiences.  |  |   |  |            |
| <b>Evaluation &amp; Audit</b> | UNDP will conduct a final evaluation for the project. An external evaluator will be hired for conducting any evaluations or audits as required. Any audits to be done will be conducted in accordance with UNDP's audit policy. Therefore, the project shall be subject to the internal and external auditing procedures laid down in the Financial Regulations, Rules and directives of UNDP. | Evaluation once, audit once during project | Evaluation findings will be shared with relevant stakeholders and course correction if required will be done in consultation with the Steering Committee. |  | USD 25,000 |

***Performance monitoring and reporting***

For performance monitoring and reporting, UNDP shall establish a permanent internal, technical and financial monitoring system for the project and elaborate regular progress reports (not less than annual) and final reports. Every report shall provide an accurate account of implementation of the project, difficulties encountered, changes introduced, as well as the degree of achievement of its results (outputs and direct outcomes) as measured by corresponding indicators. The report shall be laid out in such a way as to allow monitoring of the means envisaged and employed, and of the budget details for the project. The final report, narrative and financial, will cover the entire period of the project implementation.

Reporting requirements specific to the European Union Delegation are included in the table below. Standard reports are included in the section IV. Monitoring & Evaluation.

**Table 7: Reporting Requirements specific to the European Union Delegation**

| <b>Report</b>    | <b>Purpose</b>   | <b>Frequency</b> |
|------------------|--|------------------|
| Inception Report | Inception report will include annual work plan, implementation and reporting structure   | Q1               |
| Annual Report    | A progress report consisting of Annual Report will include, progress data showing the results achieved against pre-defined annual targets at the output level, financial performance, an updated risk log with | Annual           |

|              |   |                      |
|--------------|---|----------------------|
|              | mitigation measures, and any evaluation or review reports prepared over the period. This report will also reflect any changes in the scope as required and will be linked to the log frame. |                      |
| Final Report | Final report will capture output and impact indicators over the entire duration of implementation, success stories, performance against budget and timelines, good practices and lessons.   | Post project closure |

The European Union Delegation may undertake additional project monitoring visits both through its own staff and through independent consultants recruited directly by the European Union Delegation for independent monitoring reviews.



## VII. MULTI-YEAR WORK PLAN<sup>28</sup>

### GCCA+ PROJECT'S MULTI YEAR BUDGET (USD)

Exchange rate as at 1<sup>st</sup> November 2019: 1 EURO = 1.1106USD

| EXPECTED OUTPUTS  | PLANNED ACTIVITIES  | Planned Budget by Year (USD) |         |         |        | RESPONSIBLE PARTY | PLANNED BUDGET (USD) |  |         | BUDGET NOTES |
|---|---|------------------------------|---------|---------|--------|-------------------|----------------------|--|---------|--------------|
|   |   | Y1                           | Y2      | Y3      | Y4     |                   | Funding Source       | Budget Description                       | Amount  |              |
| <b>Output 1:</b> Installation of solar energy systems in public utilities and remote communities with the increased capacity to maintain solar power systems<br><br>Gender Marker: None | 1.1 Identification of suitable sites  | 42,000                       | 23,000  | 0       | 0      | UNDP              | EU                   | International/<br>National<br>Consultant | 50,000  | 1            |
|   |   |                              |         |         |        |                   |                      | Travel                                   | 15,000  | 3            |
|   | 1.2 Implementation of solar projects  | 0                            | 315,000 | 375,000 | 0      | UNDP              | EU                   | International/<br>National<br>Consultant | 34,746  | 1            |
|   |   |                              |         |         |        |                   |                      | Contractual<br>Services-<br>Companies    | 655,254 | 2            |
|   | 1.3 Capacity building of relevant stakeholders in public utilities and remote communities to maintain these systems | 11,000                       | 18,000  | 31,000  | 11,500 | UNDP              | EU                   | International/<br>National<br>Consultant | 30,000  | 1            |
|   |   |                              |         |         |        |                   |                      | Travel                                   | 10,500  | 3            |
|   |   |                              |         |         |        |                   |                      | Training,<br>Workshops,<br>Conferences   | 31,000  | 4            |
|   | 1.4 Providing knowledge support to other outputs of the project   | 5,000                        | 5,000   | 5,000   | 5,000  | UNDP              | EU                   | International/<br>National<br>Consultant | 20,000  | 1            |

<sup>28</sup> Cost definitions and classifications for programme and development effectiveness costs to be charged to the project are defined in the Executive Board decision DP/2010/32

<sup>28</sup> Changes to a project budget affecting the scope (outputs), completion date, or total estimated project costs require a formal budget revision that must be signed by the Steering Committee. In other cases, the UNDP programme manager alone may sign the revision provided the other signatories have no objection. This procedure may be applied for example when the purpose of the revision is only to re-phase activities among years.

|  |  |               |                |                |               |      |    |   |                |   |
|--|--|---------------|----------------|----------------|---------------|------|----|---|----------------|---|
|  | Monitoring   |               |                |                |               |      |    | International/<br>National<br>Consultant  | 40,000         | 1 |
|  |  | 0             | 16,000         | 26,000         | 14,500        | UNDP | EU | Travel                                    | 16,500         | 3 |
|  | <b>Sub-Total for Output 1</b>  | <b>58,000</b> | <b>377,000</b> | <b>437,000</b> | <b>31,000</b> |      |    |   | <b>903,000</b> |   |
| <b>Output 2: Technical assistance to MEEI for the operationalisation of the new policies and regulations</b> | 2.1 Study Tours  | 20,000        | 20,000         | 0              | 0             | UNDP | EU | International/<br>National<br>Consultant  | 10,000         | 5 |
| Gender Marker: None  |  |               |                |                |               |      |    | Study Tours,<br>Workshops,<br>Conferences | 30,000         | 6 |
|  | 2.2 Technical Assessments and knowledge paper development                | 50,000        | 50,000         | 55,000         | 0             | UNDP | EU | International/<br>National<br>Consultant  | 155,000        | 5 |
|  |  |               |                |                |               |      |    | Study Tours,<br>Workshops,<br>Conferences | 0              | 6 |
|  | 2.3 Capacity assessment and capacity building programs                   | 10,000        | 15,000         | 10,000         | 0             | UNDP | EU | International/<br>National<br>Consultant  | 15,000         | 5 |
|  |  |               |                |                |               |      |    | Study Tours,<br>Workshops,<br>Conferences | 20,000         | 6 |
|  | Monitoring   | 0             | 0              | 0              | 0             | UNDP | EU |   |                |   |
|  | <b>Sub-Total for Output 2</b>  | <b>80,000</b> | <b>85,000</b>  | <b>65,000</b>  | <b>0</b>      |      |    |   | <b>230,000</b> |   |
| <b>Output 3: Public awareness raising on Energy Efficiency, Correct Pricing, and Renewable Energy</b>        | 3.1 Contextual assessment  | 19,000        | 0              | 0              | 0             | UNDP | EU | Contractual<br>Services-<br>Individual    | 9,000          | 7 |
| Gender Marker: 1   |  |               |                |                |               |      |    | Contractual<br>Services-<br>Companies     | 10,000         | 9 |
|  | 3.2 Development of a communication and public awareness raising strategy | 29,000        | 0              | 0              | 0             | UNDP | EU | Contractual<br>Services-<br>Individual    | 9,000          | 7 |
|  |  |               |                |                |               |      |    | Contractual<br>Services-<br>Companies     | 20,000         | 8 |
|  | 3.3 Design and implement a segmented media campaign                      | 29,473        | 292,277        | 292,277        | 0             | UNDP | EU | Contractual<br>Services-<br>Companies     | 614,027        | 8 |
|  | Monitoring   | 10,000        | 18,000         | 18,000         | 19,000        | UNDP | EU | Contractual<br>Services-<br>Individual    | 45,000         | 7 |



|  |   |                |                  |                  |                |      |    |                                     |                  |                |
|--|---|----------------|------------------|------------------|----------------|------|----|-------------------------------------|------------------|----------------|
|  |   |                |                  |                  |                |      |    | Contractual Services-Companies      | 20,000           | 9              |
|  | <b>Sub-Total for Output 3</b>           | <b>87,473</b>  | <b>310,277</b>   | <b>310,277</b>   | <b>19,000</b>  |      |    |                                     | <b>727,027</b>   |                |
| <b>Output 4: Communications and Visibility</b> | 4.1 Development of detailed media plan  | 4,000          | 0                | 0                | 0              | UNDP | EU | Contractual Services-Individual     | 4,000            | 7              |
| Gender Marker: 1                               | 4.2 Implementation of media plan        | 28,500         | 38,500           | 38,000           | 14,000         | UNDP | EU | Contractual Services-Individual     | 38,000           | 7              |
|  |   |                |                  |                  |                |      |    | Contractual Services-Companies      | 81,000           | 8              |
|  | <b>Sub-Total for Output 4</b>           | <b>32,500</b>  | <b>38,500</b>    | <b>38,000</b>    | <b>14,000</b>  |      |    |                                     | <b>123,000</b>   |                |
| <b>Project Management</b>                      |   |                |                  |                  |                |      |    | Contractual Services-Individual     | 222,120          | 10             |
|  |   | 108,361        | 108,361          | 108,361          | 54,180         | UNDP | EU | Contractual Services-Individual     | 100,853          | 11             |
|  |   |                |                  |                  |                |      |    | Coordination travel                 | 3,780            | 12             |
|  |   |                |                  |                  |                |      |    | Project team equipment and supplies | 21,262           | 13             |
|  |   |                |                  |                  |                |      |    | Project team office space           | 31,248           | 14             |
|  | <b>Sub-Total for Project Management</b> |                |                  |                  |                |      |    | <b>108,361</b>                      | <b>108,361</b>   | <b>108,361</b> |
| <b>Evaluation &amp; Audit</b>                  | Evaluation & Audit                      |                |                  |                  |                |      |    | International/ National Consultant  | 15,000           | 15             |
|  |   | 0              | 0                | 0                | 25,000         | UNDP | EU | International/ National Consultant  | 10,000           | 16             |
| <b>Sub-total</b>                               |   | <b>366,334</b> | <b>919,138</b>   | <b>958,638</b>   | <b>143,180</b> |      |    |                                     | <b>2,387,290</b> |                |
| <b>UNDP GMS (7%)</b>                           |   | 25,643         | 64,340           | 67,104           | 10,023         | UNDP | EU | GMS                                 | 167,110          |                |
| <b>Sub-total (Include UNDP GMS)</b>            |   | <b>391,977</b> | <b>983,478</b>   | <b>1,025,742</b> | <b>153,203</b> |      |    |                                     | <b>2,554,400</b> |                |
| <b>Contingencies (4.65%)</b>                   |   | 17,039         | 42,752           | 44,589           | 6,660          | UNDP | EU | Contingency fund                    | 111,040          |                |
| <b>TOTAL</b>                                   |   | <b>409,016</b> | <b>1,026,230</b> | <b>1,070,331</b> | <b>159,863</b> |      |    |                                     | <b>2,665,440</b> |                |

## GCCA+ PROJECT'S MULTI YEAR BUDGET (EUR)

Exchange rate as at 1<sup>st</sup> November 2019: 1 EURO = 1.1106 USD

| EXPECTED OUTPUTS  | PLANNED ACTIVITIES  | Planned Budget by Year (EUR) |                |                |               | RESPONSIBLE PARTY | PLANNED BUDGET (EUR) |                                     |                | BUDGET NOTES |
|---|---|------------------------------|----------------|----------------|---------------|-------------------|----------------------|-------------------------------------|----------------|--------------|
|   |   | Y1                           | Y2             | Y3             | Y4            |                   | Funding Source       | Budget Description                  | Amount         |              |
| <b>Output 1:</b> Installation of solar energy systems in public utilities and remote communities with the increased capacity to maintain solar power systems<br><br>Gender Marker: None | 1.1 Identification of suitable sites  | 37,817                       | 20,710         | 0              | 0             | UNDP              | EU                   | International/National Consultant   | 45,021         | 1            |
|   |   |                              |                |                |               |                   |                      | Travel                              | 13,506         | 3            |
|   | 1.2 Implementation of solar projects  | 0                            | 283,630        | 337,655        | 0             | UNDP              | EU                   | International/National Consultant   | 31,286         | 1            |
|   |   |                              |                |                |               |                   |                      | Contractual Services-Companies      | 590,000        | 2            |
|   | 1.3 Capacity building of relevant stakeholders in public utilities and remote communities to maintain these systems | 9,905                        | 16,207         | 27,913         | 10,355        | UNDP              | EU                   | International /National Consultant  | 27,012         | 1            |
|   |   |                              |                |                |               |                   |                      | Travel                              | 9,454          | 3            |
|   |   |                              |                |                |               |                   |                      | Training, Workshops, Conferences    | 27,913         | 4            |
|   | 1.4 Providing knowledge support to other outputs of the project   | 4,502                        | 4,502          | 4,502          | 4,502         | UNDP              | EU                   | International/National Consultant   | 18,008         | 1            |
|   | Monitoring  | 0                            | 14,407         | 23,411         | 13,056        | UNDP              | EU                   | International/National Consultant   | 36,017         | 1            |
|   |   |                              |                |                |               |                   |                      | Travel                              | 14,857         | 3            |
| <b>Sub-Total for Output 1</b>   |   | <b>52,224</b>                | <b>339,456</b> | <b>393,481</b> | <b>27,913</b> |                   |                      |                                     | <b>813,074</b> |              |
| <b>Output 2:</b> Technical assistance to MEEI for the operationalisation of the new policies and regulations<br><br>Gender Marker: None   | 2.1 Study Tours   | 18,008                       | 18,008         | 0              | 0             | UNDP              | EU                   | International/National Consultant   | 9,004          | 5            |
|   |   |                              |                |                |               |                   |                      | Study Tours, Workshops, Conferences | 27,012         | 6            |
|   | 2.2 Technical Assessments and knowledge paper development   | 45,021                       | 45,021         | 49,523         | 0             | UNDP              | EU                   | International/National Consultant   | 139,564        | 5            |
|   |   |                              |                |                |               |                   |                      | Study Tours, Workshops, Conferences | 0              | 6            |
|   |   | 9,004                        | 13,506         | 9,004          | 0             | UNDP              | EU                   | International/National Consultant   | 13,506         | 5            |

|   |  |   |                |                |               |               |    |                                     |                |                |
|---|--|---|----------------|----------------|---------------|---------------|----|-------------------------------------|----------------|----------------|
|   | 2.3 Capacity assessment and capacity building programs |   |                |                |               |               |    | Study Tours, Workshops, Conferences | 18,008         | 6              |
|   | Monitoring   | 0                                       | 0              | 0              | 0             | UNDP          | EU |                                     |                |                |
|   | <b>Sub-Total for output 2</b>                          | <b>72,033</b>                           | <b>76,535</b>  | <b>58,527</b>  | <b>0</b>      |               |    |                                     | <b>207,095</b> |                |
| <b>Output 3: Public awareness raising on Energy Efficiency, Correct Pricing, and Renewable Energy</b><br><br>Gender Marker: 1<br><br><ul style="list-style-type: none"> <li>Number of women reached with messages on the benefits of using RE and EE: 50% of the targeted population</li> <li>Acceptance level of need for renewable energy: 30%</li> </ul> | 3.1 Contextual assessment                              | 17,108                                  | 0              | 0              | 0             | UNDP          | EU | Contractual Services-Individual     | 8,104          | 7              |
|   |  |   |                |                |               |               |    | Contractual Services-Companies      | 9,004          | 9              |
|   | 3.2 Development of detailed media plan                 | 26,112                                  | 0              | 0              | 0             | UNDP          | EU | Contractual Services-Individual     | 8,104          | 7              |
|   |  |   |                |                |               |               |    | Contractual Services-Companies      | 18,008         | 8              |
|   | 3.3 Implementation of media plan                       | 26,538                                  | 263,170        | 263,170        | 0             | UNDP          | EU | Contractual Services-Companies      | 552,878        | 8              |
|   | Monitoring   | 9,004                                   | 16,207         | 16,207         | 17,108        | UNDP          | EU | Contractual Services-Individual     | 40,519         | 7              |
|   |  |   |                |                |               |               |    | Contractual Services-Companies      | 18,008         | 9              |
|   | <b>Sub-Total for output 3</b>                          | <b>78,762</b>                           | <b>279,377</b> | <b>279,377</b> | <b>17,108</b> |               |    |                                     | <b>654,625</b> |                |
| <b>Output 4: Communications and Visibility</b><br><br>Gender Marker: 1  | 4.1 Development of detailed media plan                 | 3,602                                   | 0              | 0              | 0             | UNDP          | EU | Contractual Services-Individual     | 3,602          | 7              |
|   |  |   |                |                |               |               |    | Contractual Services-Individual     | 34,216         | 7              |
|   | 4.2 Implementation of media plan                       | 25,662                                  | 34,666         | 34,215         | 12,606        | UNDP          | EU | Contractual Services-Companies      | 72,934         | 8              |
|   |  |   |                |                |               |               |    |                                     |                |                |
|   | <b>Sub-Total for output 4</b>                          | <b>29,264</b>                           | <b>34,666</b>  | <b>34,215</b>  | <b>12,606</b> |               |    |                                     | <b>110,751</b> |                |
| <b>Project Management</b>   |  |   |                |                |               |               |    | Contractual Services-Individual     | 200,000        | 10             |
|   |  |   |                |                |               |               |    | Contractual Services-Individual     | 90,810         | 11             |
|   |  | 97,570                                  | 97,570         | 97,570         | 48,785        | UNDP          | EU | Coordination travel                 | 3,404          | 12             |
|   |  |   |                |                |               |               |    | Project team equipment and supplies | 19,145         | 13             |
|   |  |   |                |                |               |               |    | Project team office space           | 28,136         | 14             |
|   |  | <b>Sub-Total for Project Management</b> | <b>97,570</b>  | <b>97,570</b>  | <b>97,570</b> | <b>48,785</b> |    |                                     |                | <b>341,494</b> |

|                                     |                    |                |                |                |                |      |    |                                       |                  |    |
|-------------------------------------|--------------------|----------------|----------------|----------------|----------------|------|----|---------------------------------------|------------------|----|
| Evaluation & Audit                  | Evaluation & Audit | 0              | 0              | 0              | 22,510         | UNDP | EU | International/<br>National Consultant | 13,506           | 15 |
|                                     |                    |                |                |                |                |      |    | International/<br>National Consultant | 9,004            | 16 |
| <b>Sub-total</b>                    |                    | <b>329,853</b> | <b>827,604</b> | <b>863,171</b> | <b>128,922</b> |      |    |                                       | <b>2,149,550</b> |    |
| <b>UNDP GMS (7%)</b>                |                    | 23,090         | 57,932         | 60,422         | 9,024          | UNDP | EU | GMS                                   | 150,468          |    |
| <b>Sub-total (Include UNDP GMS)</b> |                    | <b>352,943</b> | <b>885,536</b> | <b>923,593</b> | <b>137,946</b> |      |    |                                       | <b>2,300,018</b> |    |
| <b>Contingencies (4.65%)</b>        |                    | 15,342         | 38,494         | 40,149         | 5,997          | UNDP | EU | Contingency fund                      | 99,982           |    |
| <b>TOTAL</b>                        |                    | <b>368,285</b> | <b>924,030</b> | <b>963,742</b> | <b>143,943</b> |      |    |                                       | <b>2,400,000</b> |    |

**Budget Notes:**

| Note   | Description of the cost item   |
|--|--|
| <b>Output 1: Installation of solar energy systems in public utilities and remote communities with the increased capacity to maintain solar power systems</b> |  |
| 1.   | Technical consultant engineer to support site feasibility assessment, technical audits, support during capacity building, and preparation of a technical manual for O&M. Partner support will be limited as projects will be selected through open call. |
| 2.   | Procurement of services and equipment for solar installation; to include site work, implementation, O&M, performance audits, capacity building, final closing out reviews and support  |
| 3.   | Travel required for site selection, implementation supervision, capacity building, and project audits  |
| 4.   | Workshops and conferences to dissemination knowledge of solar installation, O&M  |
| <b>Output 2: Technical assistance to MEEI for the operationalisation of the new policies and regulations</b>   |  |
| 5.   | Technical Assistants for delivering of output-2. As there may be specific knowledge requirements related to policies international consultants may be hired.   |
| 6.   | Training related to capacity building, travel dissemination of knowledge related to TA   |
| <b>Output 3: Public awareness raising on Energy Efficiency, Correct Pricing, and Renewable Energy and</b>  |  |
| <b>Output 4: Communication and Visibility</b>  |  |
| 7.   | Communication specialist responsible for supervision of output-3 (60% cost allocation) and Communication & Visibility (40% cost allocation), and general communication & monitoring assistance for the project.  |
| 8.   | Contractual services for an agency for managing public awareness and communication & visibility programs   |
| 9.   | Survey to set the baseline and to assess the effectiveness of public awareness programs  |
| <b>Project Management</b>  |  |

|                                  |  |
|----------------------------------|--|
| 10.                              | Project manager (full-time position) will be responsible for coordinating various activities planned under all the outputs. Project Manager will also be responsible for reporting requirements and coordination for Steering Committee. |
| 11.                              | Project Assistant (full-time position) to support Project Manager; for 42 months   |
| 12.                              | Travel related to site work, project management. Conducting Steering Committee and other misc. expenses  |
| 13.                              | Purchase of mobile phones, equipment and supplies for project team   |
| 14.                              | Provision of dedicated office space for project team   |
| <b>Monitoring and Evaluation</b> |  |
| 15.                              | International or national consultant for mid-term review and final evaluation  |
| 16.                              | International or national consultant for solar installations audit (some sample projects will be audited to ensure quality of work and alignment with Output 1)  |



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## VIII. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

This project will be implemented by UNDP in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

In line with the Financial and Administrative Framework Agreement between the EU and UN, financial transactions and financial statements shall be subject to the internal and external auditing procedures laid down in the financial regulations, rules and directives of UNDP.

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## IX. RISK MANAGEMENT

- I. UNDP as the Implementing Partner will comply with the policies, procedures and practices of the United Nations Security Management System (UNSMS.)
- II. UNDP as the Implementing Partner will undertake all reasonable efforts to ensure that none of the project funds <sup>29</sup> are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via [http://www.un.org/sc/committees/1267/aq\\_sanctions\\_list.shtml](http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml). This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.
- III. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (<http://www.undp.org/ses>) and related Accountability Mechanism (<http://www.undp.org/secu-srm>).
- IV. UNDP as the Implementing Partner will: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.
- V. In the implementation of the activities under this Project Document, UNDP as the Implementing Partner will handle any sexual exploitation and abuse ("SEA") and sexual harassment ("SH") allegations in accordance with its regulations, rules, policies and procedures.
- VI. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social

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<sup>29</sup> To be used where the UN, a UN fund/programme or a specialized agency is the Implementing Partner

and Environmental Standards. This includes providing access to project sites, relevant personnel, information and documentation.

VII. UNDP as the Implementing Partner will ensure that the following obligations are binding on each responsible party, subcontractor and sub-recipient:

- Consistent with the Article III of the *Supplemental Provisions to the Project Document*, the responsibility for the safety and security of each responsible party, subcontractor and sub-recipient and its personnel and property, and of UNDP's property in such responsible party's, subcontractor's and sub-recipient's custody, rests with such responsible party, subcontractor and sub-recipient. To this end, each responsible party, subcontractor and sub-recipient shall:
  - i. put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
  - ii. assume all risks and liabilities related to such responsible party's, subcontractor's and sub-recipient's security, and the full implementation of the security plan.
- UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the responsible party's, subcontractor's and sub-recipient's obligations under this Project Document.
- In the performance of the activities under this Project, UNDP as the Implementing Partner shall ensure, with respect to the activities of any of its responsible parties, sub-recipients and other entities engaged under the Project, either as contractors or subcontractors, their personnel and any individuals performing services for them, that those entities have in place adequate and proper procedures, processes and policies to prevent and/or address SEA and SH.
- Each responsible party, subcontractor and sub-recipient will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, subcontractors and sub-recipients in implementing the project or programme or using the UNDP funds. It will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

VIII. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to each responsible party, subcontractor and sub-recipient: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. Each responsible party, subcontractor and sub-recipient agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at [www.undp.org](http://www.undp.org).

IX. In the event that an investigation is required, UNDP will conduct investigations relating to any aspect of UNDP programmes and projects. Each responsible party, subcontractor and sub-recipient will provide its full cooperation, including making available personnel, relevant documentation, and granting access to its (and its consultants', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with it to find a solution.



- X. Each responsible party, subcontractor and sub-recipient will promptly inform UNDP as the Implementing Partner in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.
- i. Where it becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, each responsible party, subcontractor and sub-recipient will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). It will provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.
  - ii. Each responsible party, subcontractor or sub-recipient agrees that, where applicable, donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities which are the subject of the Project Document, may seek recourse to such responsible party, subcontractor or sub-recipient for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.
  - iii. Where such funds have not been refunded to UNDP, the responsible party, subcontractor or sub-recipient agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to such responsible party, subcontractor or sub-recipient for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.
  - iv. *Note:* The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.
  - v. Each contract issued by the responsible party, subcontractor or sub-recipient in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from it shall cooperate with any and all investigations and post-payment audits.
- XI. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project or programme, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.
- XII. Each responsible party, subcontractor and sub-recipient shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to its

subcontractors and sub-recipients and that all the clauses under this section entitled "Risk Management Standard Clauses" are adequately reflected, *mutatis mutandis*, in all its sub-contracts or sub-agreements entered into further to this Project Document.

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### **XIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS**

The management arrangements of the project are governed by the UNDP rules and regulations. These are specifically designed to take into account the requirements of this project and have been successfully applied by the UNDP Trinidad and Tobago Country Office in its partnership projects in the region thus far.

UNDP will assume responsibility for the day-to-day management of the implementation of the project. This includes: monitoring implementation progress and quality as well as performance of the contractors, financial management (payments, accounting and reporting, budget monitoring and – if needed – revision, and organising the required external audits), ensuring coordination with the relevant stakeholders and with similar interventions/programmes, and providing secretariat services to the project's Steering Committee (convening meetings, establishing agendas, writing minutes and related action plans, monitoring progress on implementation of action plans). UNDP will organise a project office in Port-of-Spain, and the team will operate from this office.

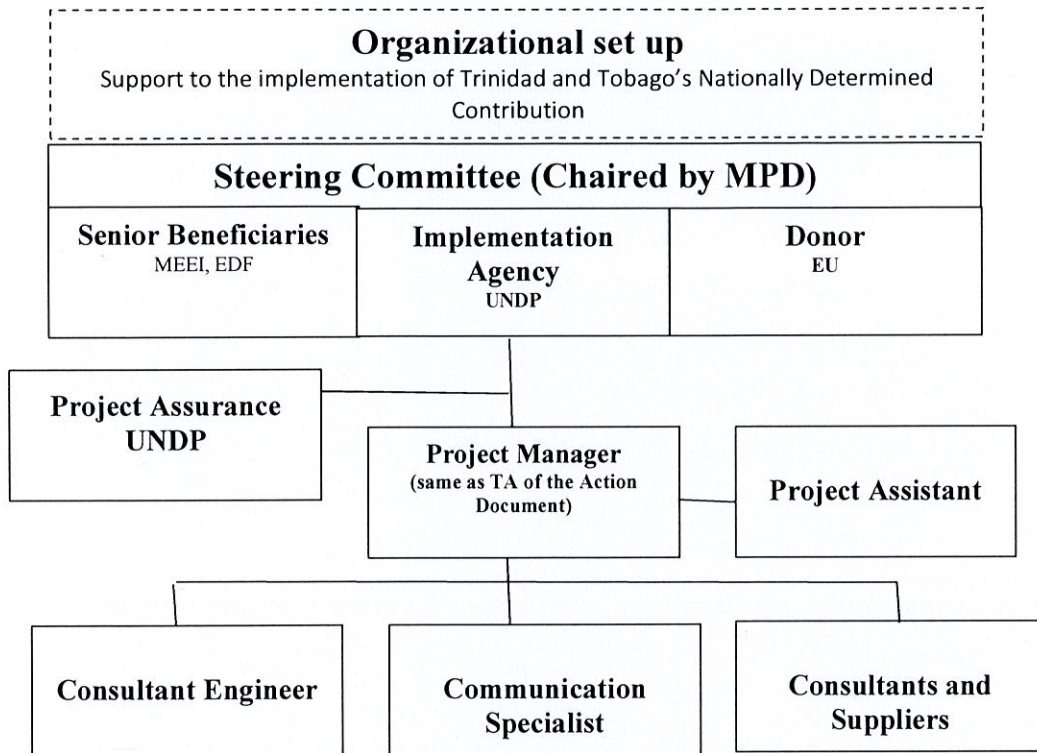
A Steering Committee<sup>30</sup> will be established to oversee and to provide overall guidance to the implementation of the Action. The role of the Steering Committee is to provide strategic guidance to the project to ensure completion of project goals and to coordinate with the project manager to ensure tasks are completed in an appropriate sequence. They will also provide advisory services to the project.

MPD will Chair the Steering Committee. The Steering Committee will be comprised of representatives of the EUD, the MPD/EDF unit and MEA Units), and the MEEI- Renewable Energy Division (RED). Other representatives of relevant bodies may be asked to attend as needed. UNDP will provide secretariat services to the Steering Committee and convene meetings quarterly.

The proposed project governance arrangements are illustrated below:

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<sup>30</sup> The Steering Committee refers to Project Board under UNDP's Rules and Regulations.



For performance monitoring and reporting, UNDP shall establish a permanent internal, technical and financial monitoring system for the project and elaborate regular progress reports (not less than annual) and final reports. Every report shall provide an accurate account of implementation of the project, difficulties encountered, changes introduced, as well as the degree of achievement of its results (outputs and direct outcomes) as measured by corresponding indicators. The report shall be laid out in such a way as to allow monitoring of the means envisaged and employed and of the budget details for the project. The final report, narrative and financial, will cover the entire period of the project implementation.



**XIV. THE INDICATIVE PROJECT IMPLEMENTATION PLAN**

| OUTPUT/ACTIVITIES   | 2020 |   |   |    |   |   |    |   |   |    |    |    | 2021 |   |   |    |   |   |    |   |   |    |    |    | 2022 |   |    |   |   |   |   |   |   |    |    |    | 2023 |   |   |   |   |   |  |  |  |  |
|---|------|---|---|----|---|---|----|---|---|----|----|----|------|---|---|----|---|---|----|---|---|----|----|----|------|---|----|---|---|---|---|---|---|----|----|----|------|---|---|---|---|---|--|--|--|--|
|   | Q1   |   |   | Q2 |   |   | Q3 |   |   | Q4 |    |    | Q1   |   |   | Q2 |   |   | Q3 |   |   | Q4 |    |    | Q1   |   | Q2 |   |   |   |   |   |   |    |    |    |      |   |   |   |   |   |  |  |  |  |
|   | 1    | 2 | 3 | 4  | 5 | 6 | 7  | 8 | 9 | 10 | 11 | 12 | 1    | 2 | 3 | 4  | 5 | 6 | 7  | 8 | 9 | 10 | 11 | 12 | 1    | 2 | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1    | 2 | 3 | 4 | 5 | 6 |  |  |  |  |
| <b>Output: 1</b>  |      |   |   |    |   |   |    |   |   |    |    |    |      |   |   |    |   |   |    |   |   |    |    |    |      |   |    |   |   |   |   |   |   |    |    |    |      |   |   |   |   |   |  |  |  |  |
| Hiring of project team  | ■    |   |   |    |   |   |    |   |   |    |    |    |      |   |   |    |   |   |    |   |   |    |    |    |      |   |    |   |   |   |   |   |   |    |    |    |      |   |   |   |   |   |  |  |  |  |
| Finalization of site selection criteria   |      |   | ■ |    |   |   |    |   |   |    |    |    |      |   |   |    |   |   |    |   |   |    |    |    |      |   |    |   |   |   |   |   |   |    |    |    |      |   |   |   |   |   |  |  |  |  |
| Development of ToR for open call for proposal, launch of open call for proposal                     |      |   | ■ |    |   |   |    |   |   |    |    |    |      |   |   |    |   |   |    |   |   |    |    |    |      |   |    |   |   |   |   |   |   |    |    |    |      |   |   |   |   |   |  |  |  |  |
| Submission of proposals & shortlisting sites  |      |   |   |    | ■ |   |    |   |   |    |    |    |      |   |   |    |   |   |    |   |   |    |    |    |      |   |    |   |   |   |   |   |   |    |    |    |      |   |   |   |   |   |  |  |  |  |
| Detailed Feasibility Study of Shortlisted Sites and site selection                                  |      |   |   |    |   |   | ■  |   |   |    |    |    |      |   |   |    |   |   |    |   |   |    |    |    |      |   |    |   |   |   |   |   |   |    |    |    |      |   |   |   |   |   |  |  |  |  |
| Approval for site selection   |      |   |   |    |   |   |    |   |   |    | ■  |    |      |   |   |    |   |   |    |   |   |    |    |    |      |   |    |   |   |   |   |   |   |    |    |    |      |   |   |   |   |   |  |  |  |  |
| Development of RFP for contractor   |      |   |   |    |   |   |    |   |   |    |    |    | ■    |   |   |    |   |   |    |   |   |    |    |    |      |   |    |   |   |   |   |   |   |    |    |    |      |   |   |   |   |   |  |  |  |  |
| Submission of proposal and contracting of agencies for implementation of solar installation project |      |   |   |    |   |   |    |   |   |    |    |    |      |   | ■ |    |   |   |    |   |   |    |    |    |      |   |    |   |   |   |   |   |   |    |    |    |      |   |   |   |   |   |  |  |  |  |









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## XV. Annexes

Annex 1: Social and Environmental Risk Assessment Checklist

Annex 2: Terms of Reference for key project staff (indicative)

Annex 3: Checklist for solar site technical feasibility assessment (Indicative)

Annex 4: Communication and Visibility plan (indicative)

Annex 5: Suggested Solar Photovoltaic System Operation & Maintenance Requirement

## Annex 1: Social and Environmental Risk Screening Checklist

| <b>Checklist Potential Social and Environmental Risks</b>  |   |
|--|---|
| <b>Principles 1: Human Rights</b>  | <b>Answer (Yes/No)</b>  |
| 1. Could the Project lead to adverse impacts on the enjoyment of human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?                                 | No  |
| 2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? <sup>31</sup> | No  |
| 3. Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?   | No  |
| 4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular, marginalized groups, from fully participating in decisions that may affect them?                                     | No  |
| 5. Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?  | No  |
| 6. Is there a risk that rights-holders do not have the capacity to claim their rights?   | No  |
| 7. Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?   | No  |
| 8. Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?  | No  |
| <b>Principle 2: Gender Equality and Women's Empowerment</b>  |   |
| 1. Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?  | No  |
| 2. Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?                                 | Appropriate actions will be taken to include women in the design and implementation of all outputs. |
| 3. Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?              | No  |
| 4. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles  | No  |

<sup>31</sup> Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinions, national or social or geographical origin, property, birth or another status including as an indigenous person or as a member of a minority. References to "women and men" or similar are understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

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| <p>and positions of women and men in accessing environmental goods and services?</p> <p><i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i></p>   |    |
| <p><b>Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below</b></p>  |    |
| <p><b>Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management</b></p>  |    |
| <p>1.1 Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?</p> <p><i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i></p>   | No |
| <p>1.2 Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?</p>   | No |
| <p>1.3 Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)</p>  | No |
| <p>1.4 Would Project activities pose risks to endangered species?</p>  | No |
| <p>1.5 Would the Project pose a risk of introducing invasive alien species?</p>  | No |
| <p>1.6 Does the Project involve harvesting of natural forests, plantation development, or reforestation?</p>   | No |
| <p>1.7 Does the Project involve the production and/or harvesting of fish populations or other aquatic species?</p>   | No |
| <p>1.8 Does the Project involve significant extraction, diversion or containment of surface or groundwater?</p> <p><i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i></p>  | No |
| <p>1.9 Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)</p>  | No |
| <p>1.10 Would the Project generate potential adverse transboundary or global environmental concerns?</p>   | No |
| <p>1.11 Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area?</p> <p><i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts</i></p> | No |

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|--|---|---|
|  | <i>that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i>  |   |
| <b>Standard 2: Climate Change Mitigation and Adaptation</b>        |   |   |
| 2.1  | Will the proposed Project result in significant <sup>32</sup> greenhouse gas emissions or may exacerbate climate change?  | No  |
| 2.2  | Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?  | No  |
| 2.3  | Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)?<br><i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i> | No  |
| <b>Standard 3: Community Health, Safety and Working Conditions</b> |   |   |
| 3.1  | Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?   | Yes. Proper disposal of discarded solar panels will be included in the project plan.  |
| 3.2  | Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?   | No  |
| 3.3  | Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?  | No  |
| 3.4  | Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)   | Proper technical assessment of building will be carried out to ensure solar plant has no negative impact on building or infrastructure. |
| 3.5  | Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?   | No  |
| 3.6  | Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?  | No  |
| 3.7  | Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical,  | No  |

<sup>32</sup> In regards to CO<sub>2</sub>, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

|  |   |    |
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|  | biological, and radiological hazards during Project construction, operation, or decommissioning?  |    |
| 3.8  | Does the Project involve support for employment or livelihoods that may fail to comply with national and international labour standards (i.e. principles and standards of ILO fundamental conventions)?   | No |
| 3.9  | Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?   | No |
| <b>Standard 4: Cultural Heritage</b>             |   |    |
| 4.1  | Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)   | No |
| 4.2  | Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?  | No |
| <b>Standard 5: Displacement and Resettlement</b> |   |    |
| 5.1  | Would the Project potentially involve temporary or permanent and full or partial physical displacement?   | No |
| 5.2  | Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?  | No |
| 5.3  | Is there a risk that the Project would lead to forced evictions? <sup>33</sup>  | No |
| 5.4  | Would the proposed Project possibly affect land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?  | No |
| <b>Standard 6: Indigenous Peoples</b>            |   |    |
| 6.1  | Are indigenous people present in the Project area (including Project area of influence)?  | No |
| 6.2  | Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?  | No |
| 6.3  | Would the proposed Project potentially affect human rights, lands, natural resources, territories, and traditional livelihoods of indigenous people (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous people by the country in question)?<br><br><i>If the answer to the screening question 6.3 is “yes” the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.</i> | No |

<sup>33</sup>Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from the homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

|   |  |   |
|---|--|---|
| 6.4   | Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous people concerned?  | No  |
| 6.5   | Does the proposed Project involves the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?  | No  |
| 6.6   | Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?  | No  |
| 6.7   | Would the Project adversely affect the development priorities of indigenous peoples as defined by them?  | No  |
| 6.8   | Would the Project potentially affect the physical and cultural survival of indigenous peoples?   | No  |
| 6.9   | Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?   | No  |
| <b>Standard 7: Pollution Prevention and Resource Efficiency</b> |  |   |
| 7.1   | The Project could potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?   | No  |
| 7.2   | Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?   | Yes (appropriate disposal of discarded solar panels and electrical components will be included in the project plan) |
| 7.3   | Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose the use of chemicals or materials subject to international bans or phase-outs?<br><i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Convention on Persistent Organic Pollutants or the Montreal Protocol</i> | No  |
| 7.4   | Will the proposed project involve the application of pesticides that may have a negative effect on the environment or human health?  | No  |
| 7.5   | Does the Project include activities that require significant consumption of raw materials, energy, and/or water?   | No  |

## **Annex 2: Terms of Reference for Key Project Staff**

Following is tentative structure for TOR for key project staff. This will be finalised by the Steering Committee.

### **Project Manager (Technical Assistant as per the Action Document)**

The Project Manager (PM), will be locally recruited following UNDP procedure, with input to the selection process from the Project partners. The position will be appointed by UNDP and funded entirely from the Project. The PM will be responsible for the overall management of the Project, including the mobilisation of all project inputs, supervision over project staff, consultants and subcontractors. The PM will report to the assigned UNDP Programme Manager for all of the Project's substantive and administrative issues. From the strategic point of view of the Project, the PM will report on a periodic basis to the Steering Committee. The PM will perform a liaison role with the government, UNDP, EU, and other relevant stakeholders.

### **Duties and Responsibilities**

- Plan the activities of the project and monitor progress against the approved work-plan.
- Supervise and coordinate the production of project outputs, as per the project document in a timely and high quality fashion.
- Coordinate all project inputs and ensure that they adhere to UNDP procedures for nationally executed projects.
- Supervise and coordinate the work of all project staff, consultants and sub-contractors ensuring timing and quality of outputs.
- Coordinate the recruitment and selection of project personnel, consultants and sub-contracts, including drafting terms of reference and work specifications and overseeing all contractors' work.
- Manage requests for the provision of financial resources by UNDP, through advance of funds, direct payments, or reimbursement using the UNDP provided format.
- Prepare, revise and submit project work and financial plans, as required by Steering Committee (SC) and UNDP.
- Monitor financial resources and accounting to ensure accuracy and reliability of financial reports, submitted on a quarterly basis.
- Manage and monitor the project risks initially identified and submit new risks to the Steering Committee for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log.
- Liaise with UNDP, Steering Committee, relevant government agencies, and all project partners, including donor organisations for effective coordination of all project activities.
- Facilitate administrative support to subcontractors and training activities supported by the Project.
- Oversee and ensure timely submission of the Inception Report, Project Implementation Report, Technical reports, quarterly financial reports, and other reports as may be required by UNDP, EU and other oversight agencies.
- Disseminate project reports and respond to queries from concerned stakeholders.
- Report progress of project to the Steering Committee, and ensure the fulfilment of Steering Committee directives.

- Oversee the exchange and sharing of experiences and lessons learned with relevant community based integrated conservation and development projects nationally and internationally.
- Assist staff, students and others with the development of essential skills through training workshops and on the job training thereby increasing their institutional capabilities.
- Encourage staff, partners and consultants such that strategic, intentional and demonstrable efforts are made to actively include women in the project, including activity design and planning, budgeting, staff and consultant hiring, subcontracting, purchasing, formal community governance and advocacy, outreach to social organisations, training, participation in meetings; and access to program benefits.
- Assists and advises those responsible for activity implementation in the target sites.
- Carries out regular, announced and unannounced inspections of all sites

### **Required skills and expertise**

- A university degree in a subject related to electrical engineering, energy economics, electrical and mechanical engineering, economics, finance, related subjects
- A postgraduate degree in public administration, business administration, or project management would be an advantage.
- At least 5 years of work experience in relation to energy efficiency and renewable energy issues
- Experience in the preparation of Terms of Reference, and related procurement processes
- Experience in the monitoring, implementation, oversight of EU or other donor funded projects would be an asset
- Experience in working in multi-stakeholder contexts, and with public/private institutions concerned with energy management
- Demonstrated interpersonal, negotiation and teamwork skills, networking aptitude,
- Knowledge of UNDP project implementation procedures, including procurement, disbursements, and reporting and monitoring would be an advantage
- IT literate i.e. be able to use MS Office Outlook, Word, Excel, and PowerPoint as a minimum

### **Competencies**

- Strong leadership, managerial and coordination skills, with a demonstrated ability to effectively coordinate the implementation of large multi-stakeholder projects, including financial and technical aspects.
- Ability to effectively manage technical and administrative teams, work with a wide range of stakeholders across various sectors and at all levels, to develop durable partnerships with collaborating agencies.
- Ability to administer budgets, train and work effectively with counterpart staff at all levels and with all groups involved in the project.
- Ability to coordinate and supervise multiple Project sites in their implementation of technical activities in partnership with a variety of subnational stakeholder groups, including community and government.
- Strong drafting, presentation and reporting skills, strong communication skills, especially in timely and accurate responses to emails. Excellent command of English.



- Strong computer skills, in particular mastery of all applications of the MS Office package and internet search.

### **Project Assistant**

The Project Assistant will be locally recruited based on an open competitive process. S/he will be responsible for the overall administration of the project. The Project Assistant will report to the Project Manager. Generally, the Project Assistant will be responsible for supporting the PM in meeting government obligations under the project.

### **Duties and Responsibilities**

- Collect, register and maintain all information on project activities;
- Contribute to the preparation and implementation of progress and monitoring reports;
- Monitor project activities, budgets and financial expenditures;
- Advise all project counterparts on applicable administrative procedures and ensures their proper implementation;
- Maintain project correspondence and communication;
- Support the preparations of project work-plans and operational and financial planning processes;
- Assist in procurement and recruitment processes;
- Assist in the preparation of payment requests for operational expenses, salaries, insurance, etc. against project budgets and work plans;
- Follow-up on timely disbursements by UNDP;
- Receive, screen and distribute correspondence and attach necessary background information;
- Prepare routine correspondence and memoranda for Project Manager's signature;
- Assist in logistical organisation of meetings, training and workshops;
- Prepare agendas and arrange field visits, appointments and meetings both internal and external related to the project activities and write minutes from the meetings;
- Maintain project filing system;
- Maintain records over project equipment inventory; and
- Perform any other duties relevant to the assignment.

### **Consultant Engineer**

Consultant Engineer hired under this output will be responsible to provide technical support in planning, designing, and implementing solar energy projects. The procurement of equipment and materials (supply contracts) and procurement of labour services for the installation (works contracts) will be carried out by UNDP in close collaboration with the Consultant Engineer.

### **Duties and Responsibilities**

- Planning and design
  - Development and finalisation of site selection checklist
  - Conduct engineering site visits to assess and document site dimensions, electrical systems, PV array location, load data, and utility interconnection options for use in design of solar systems
  - Development of techno-commercial feasibility reports for each site
  - Create plans for solar energy system development, monitoring, and evaluation activities.
- Implementation
  - Develop design specifications for solar energy systems or components
  - Development of Request for Proposal (RfP) guidelines for procurement of equipment and services
  - Monitoring the implementation of the supply and works contracts (supply, installation, capacity building)
  - Support for producing standard operation procedures and quality or safety standards for solar installation work consistent with existing international standards
  - Assist with creating checklists for review or inspection of completed solar installation projects.
  - Assist with the design and implementation of capacity building/training programs for selected sites

### **Required skills and expertise**

- Minimum five (5) years of work experience in the field of solar energy or specialized degree in Solar Energy Engineering combined with a minimum of ten (10) years of work experience in the engineering sector;
- Demonstrated knowledge of the key characteristics of implementing solar PV installations, including grid-connected, off-grid, and hybrid installations with and without battery storage;
- Experience in developing techno-commercial feasibility reports for solar energy projects;
- Experience in implementation of solar energy installations (engineering, procurement, and commissioning, solar plant audits, project management)

## **Communication and Monitoring Consultant**

A communication and monitoring consultant will be hired to manage activities under Output-Communication & Visibility, and to provide general monitoring and communication support. The communication specialist will report to the project manager. He/She will maintain close interaction with stakeholders targeted under various Outputs. The Communication Specialist will also ensure that communications strategies, media relations and outreach efforts are aligned with EUD and UNDP policies and procedures.

### **Duties and Responsibilities**

- Support the development of a communication plan
- Discuss the communication plan in the Steering Committee for approval. Develop annual work-plans and budgets for the approved communication plan;
- Finalise Communication & Visibility plan in consultation with the Project Manager, UNDP and EU Delegation;
- Lead the engagement and supervision of media agencies and other outsourcing communication specialists for execution of communication plan. Supervise various activities executed by the media agency and conduct required review meetings;
- Undertake the development and dissemination of advocacy materials in collaboration with the media agency including briefing materials, press releases, and articles and coordinate its dissemination through effective channel;
- Manage media relations in coordination with the media agency: Respond to media inquiries and to a variety of inquiries and information requests; prepare related correspondence; identify topics, background information, news-related development and coverage of interest;
- Ensure communication and monitoring support for other activities in the project;
- Monitoring and evaluation: Conduct timely and accurate monitoring and evaluation activities to ensure the communications objectives are met and the strategy is effective. Undertake lessons learned review of successful and unsuccessful communication experiences and share observations/findings with the project.

### **Required skills and expertise**

- Master's degree or equivalent in communications, journalism, public relations or related fields;
- At least 3 years of experience in managing communication and public relation works including practical experience in developing, implementation and monitoring of communications plans;
- Strong understanding and experience of digital campaigns;
- Experience writing persuasive copy for a range of audiences, including press releases, articles, blogs, newsletters;
- Demonstrated capacity to collect and analyze data and translate technical information into language that can be understood by external audience;
- Experience working with UN system, and especially UNDP, and familiarity with UN editorial guidelines and templates, is an asset;
- Fluency in written and spoken English.

### Annex 3: Indicative criteria for solar sites selection

The solar project sites will be identified based on the following criteria (this is an indicative list, this needs to be discussed and confirmed by the Steering Committee before the start of implementation):

| Criteria for PV Solar Panel Installation |  | Description  | Result                    |
|--|--|--|---------------------------|
| 1  | Site security  | Site should provide evidence of sufficient security for the system to be installed.  | Yes/No                    |
| 2  | Average project size   | the project should be in 10-15 kW range  | Yes/No                    |
| 3  | Orientation of existing roof                                   | The basic parameter for roof orientation is ideally South with a roof pitch of 0-10 degrees from horizontal of the photovoltaic (PV) modules in the array<br><b>Note:</b> roofs with greater than 10 degrees will be considered, but will place lower in the selection order)  | Yes/No                    |
| 4  | Condition and strength of the existing roof                    | Roof strength must be adequate to support the additional weight load from the solar PV arrays.   | Excellent<br>Good<br>Poor |
| 5  | Shading of existing trees or other buildings                   | Roofs must be clear of shading from trees and tall buildings.  | Yes/No                    |
| 6  | Availability of space to install the electrical service system | Space allocation for inverter, meters, disconnect switch, and other electrical equipment that is free from adverse weather conditions.   | Yes/No                    |
| 7  | Battery storage area   | Space that is free from adverse weather conditions.  | Yes/No                    |
| 8  | Ease of removal of PV panels during disasters                  | There must be easy access to the roof for quick and easy removal.  | Yes/No                    |
| 9  | Is there enough space to accommodate the solar cell capacity   | Roofs come in many different shapes and sizes. Make sure the roof has enough space for the solar panels.   | Yes/No                    |
| 10                                       | A Public Utility Building                                      | Projects with anchor load >50% will be preferred (such as energy supply to hospitals, schools, community centres, disaster recovery centres, and government offices etc.);   | Yes/No                    |
| 11                                       | Remote Community   | Off grid areas, or locations with high cost of electricity generation (e.g., through diesel gensets); or areas with unreliable grid availability (including inadequate power).<br><br>Target areas should have a reasonable population density or level of usage of proposed facility to indicate highest potential benefit and visibility potential | Excellent<br>Good<br>Poor |

|    |               |   |   |
|----|---------------|---|---|
|    |               | Projects with the combination of households, social services and economic activities (since this is expected to strongly increase economic stability and feasibility).  |   |
| 12 | Type of roof  | <p><b>Asphalt shingle, tile, and standing metal</b> roofing are great for solar panels and involves a simple installation process. The roof type that is most compatible with solar panels is the standing metal roof because it allows for easier and cheaper installation without drilling into the roof.</p> <p><b>Wood and slate</b> roofing materials are not ideal for solar. These roofing materials are brittle and makes for a more difficult and more expensive installation process because solar panel installers can't just walk around on the roof as they normally could. Another concern with installing solar on a wooden shingle roof is that it can present a fire hazard.</p> | <p>Metal- Excellent</p> <p>Shingle/Tile- Good</p> <p>Wood/Slate- Poor</p> |
| 13 | Technology    | <p>End use: electricity generation, solar lighting, solar heating or cooling</p> <p>In case grid connectivity is not possible for back-up power, then installation should include a backup of battery pack.</p>   | Yes/No  |
| 14 | Additionality | Project should be unlikely to have taken place without the intervention of the project e.g. those projects already targeted by a national programme of work.  | Yes/No  |
| 15 | Inclusivity   | <p>Project should not exclude any potentially affected stakeholders, in particular, marginalized groups, from fully participating in decisions that may affect them</p> <p>As such women driven organisations and women entrepreneurs will be encouraged to participate.</p>  | Yes/No  |

Possible criteria to be included based on Steering Committee decision:

- Financing:
  - The project will fund maximum 90% of the project cost, the rest should be obtained through other investors;
  - Proposed project should demonstrate ability to generate savings from the reduced use of electricity from the grid.
- Ownership:
  - Proposed project should have a clear structure including capability to co-invest (or arrange part-financing), ability to own assets, resources to operate and maintain installation over its lifetime.

## Annex 4: Communication and Visibility plan (indicative)

Project Title: Global Climate Change Alliance, CRIS# CRIS ENV/2019/413-335

### Objective

The overall communication objective for the External Communication and Visibility Plan is to outline the Global Climate Change Alliance Plus (GCCA+) Trinidad and Tobago communications goals. These are to ensure appropriate project visibility and accurately communicate the project's objectives progress and results to key project stakeholders and general public when relevant, highlighting the project's funding received from the European Union. The visibility plan will also ensure that the beneficiary population is aware of the roles of the EU and UNDP in the action, as well as the GCCA+ flagship initiative in general.

### Target groups

For the purpose of this project, the target groups for the External Communication and Visibility Plan have been broadly categorized as follows:

- I. *Key Stakeholders* (National and International), to be informed of key results and the impact of the EU funding together with the successes and best practices emanating from the project; and
- II. *Opinion Makers* (Media, Key influencing people in the communities, Parliamentarians, CSOs), with the objective of being informed of the context, result areas and activities for the project, as well as EU funding;
- III. *End Beneficiaries*, with the objective of being informed of the main objectives, progress and outcomes of the project, as well as the EU support;

### Communication Activities

The main set of activities proposed to be carried out under the External Communication and Visibility Plan are:

- **Press releases:** In support of key activities and milestones of the project, i.e. launches and signing ceremonies, the project will issue press releases to mainstream media outlets. These may also be released on UNDP's website and social media pages. This set of activities will reach a wide-ranging group of people, in and outside Trinidad and Tobago.
- **Media visits:** In addition to press releases and conferences, the media fraternity may be invited to participate in events and site visits with the goal of reporting the project's outcomes and impacts. The media visits are expected to provide opportunity for sharing project experiences with all stakeholders, opinion makers and policy makers.
- **Website and social media:** Achievements and events will be shared through UNDP in Trinidad and Tobago's, GCCA+ and EU Delegation websites and social media sites. UNDP T&T Facebook Page has about 3100 followers while UNDP T&T twitter account has more than 1400 followers. These sites, together with UNDP T&T's other social media accounts will be used to highlight the project's successes and funding from the EU. In addition to press releases, the project will undertake production and dissemination of stories and success stories of project's beneficiaries through the social media outlets and to be published in the GCCA+ website. This particular set of activities will serve international target audiences, including the development community and donors. All the posts will tag the EU Delegation, to enable easy retagging.

- **Publications:** The project will produce feature articles and brochures to be disseminated. These will be published in electronic and printed form. It will inform the target audiences on major project developments, results, activities, initiatives and events. In this respect, the themes addressed in the publications will be of immediate interest to state institutions, regional project partners and other donors. The publications will also include pictures, which illustrate the outcomes of the project outputs.
- **Events:** The project will conduct a number of events for different audiences; official meetings; training seminars and policy talks, information about Climate Action, necessary changes and the project activities and results. Some events will include relevant press components: releases and press information/briefing events as possible and required and other mechanisms.

## Implementation Modalities

The project will produce a communication calendar, focusing on key milestones and outlining in detail communication activities and timelines (Gantt chart). This plan will be shared and agreed in due time with the EU Delegation. During the course of the implementation of activities, UNDP will implement communication and visibility activities in coordination with the EU Delegation.

The Joint Visibility Guidelines for EC-UN actions in the fields<sup>34</sup> will be used to establish detailed implementation plan and the appropriate contractual obligations. The Communication Specialist will be responsible for planning and implementation aspects of the visibility plan including media relationships, while production of graphic content, events, videos and publications will be performed by a contractor. In addition, GCCA+ visibility guidelines will guide project work (as long as they are not in conflict with Joint Visibility Guidelines for EC-UN actions provisions)<sup>35</sup>.

The external communication and visibility will be closely linked with key stages in project intervention so that project activities and initiatives are regularly feeding into its contents and material development. Though communication and visibility measures under this plan are developed separately from the Output 3 of the action, however, implementation of these outputs will be aligned wherever possible to derive efficiencies. Activities planned under the Output 3 to create awareness (events, case studies etc.) will incorporate the EU and UNDP visibility aspects appropriately.

High-resolution imagery, including at least one high quality video, will be taken throughout the course of the project. This is expected to be delivered under Output 3

## LOGO/Visual Identity

The use of EU logo will be in line with article 8 of the general condition for contribution agreements. The EU, UNDP and GCCA+ logo will be used for events, brochures and other external communications as necessary.

<sup>34</sup> <https://ec.europa.eu/europeaid/node/45481>

<sup>35</sup> <http://gccca.eu/sites/default/files/documents/2019-04/manual%20GCCA%20ENG%202019%20H.pdf>

**Budget and Project Plan**

| SN | Activity   | Output  | Key Audiences   | Timeline  |
|----|--|---|---|---|
| 1  | Media relations and Management, Advertising calls for proposals              | <ul style="list-style-type: none"> <li>• Press releases (at least 10) Invitations to events/press conferences</li> <li>• Management of press at the events and conferences Media project visits Media clippings</li> <li>• Any other media relations necessary for visibility</li> <li>• Advertising Calls for proposals</li> </ul> | <ul style="list-style-type: none"> <li>• Local and international media</li> </ul>   | Entire project duration   |
| 2  | Publications   | Program Brochure Feature articles   | <ul style="list-style-type: none"> <li>• Journalist, local and international media</li> <li>• Politicians and decision makers in T&amp;T</li> </ul>   | Approximately three brochures and 4 case studies (one from each geographical area including Tobago) |
| 3  | Video  | To cover period of implementation   | Public  | Project implementation once sites are selected  |
| 4  | Events   | <ul style="list-style-type: none"> <li>• Project launch event, Roundtables and meetings with relevant stakeholders to promote Climate Action, Global Climate Change Alliance to showcase work done by the project</li> </ul>  | <ul style="list-style-type: none"> <li>• Politicians and decision makers in T&amp;T</li> <li>• Recipient communities (to allow for knowledge exchange as well as comms and visibility)</li> </ul> | Once a year. This allows time for project to show concrete results                                  |
| 5  | Branding of various activities including use of EU visual element guidelines | <ul style="list-style-type: none"> <li>• For meeting/training programs/publications/events: backdrops, stationery, posters, giveaways etc.</li> </ul>   | <ul style="list-style-type: none"> <li>• Local and international media</li> <li>• Politicians and decision makers in T&amp;T</li> </ul>   | Project duration  |



|   |                          |   |  |                  |
|---|--------------------------|---|--|------------------|
| 6 | Communication specialist | <p>A communication specialist will manage, monitor and report on implementation of the Communications and Visibility Plan as well as Output 3,</p> <p>The consultant hired for the awareness program (output 3) will be expected to contribute to this output as per the Action Document</p> <p>Social media management (Regular updating of social media pages with information about the project (Facebook, Twitter, relevant websites and discussion forums)</p> <p>This includes background information on the project, case studies developed, news articles and project updates</p> |  | Project duration |
|---|--------------------------|---|--|------------------|

## Annex 5: Suggested Solar Photovoltaic System Operation & Maintenance Requirement

| Component                     | Description  | O&M Requirement   | Weighting Criteria |
|-------------------------------|--|---|--------------------|
| Photovoltaic Arrays           | This is the core of the system, composed of several solar modules which are in turn composed of solar cells.   | <ul style="list-style-type: none"> <li>• Keep solar panels clean so they operate efficiently and safely</li> <li>• Check all panels for cracks or chips in the glass, discolouration or other obvious defects.</li> <li>• Ensure the panel frames are firmly secured and free from debris.</li> <li>• Cut back trees and remove structures that cause shading of the panels.</li> <li>• Inspect wires, plastic wire-ties, or grommets/bushings exposed to sunlight and animals for signs of degradation.</li> </ul> | High               |
| Battery Bank                  | To store the surplus generation in order to use it when needed, e.g. during the night.   | <ul style="list-style-type: none"> <li>• Keep battery terminals corrosion-free.</li> <li>• Ensure batteries are kept cool and dry.</li> <li>• Ensure charge controller performs as designed.</li> </ul>   | Med                |
| Power-Conditioning Unit (PCU) | <p>This part of the system has three main functions:</p> <ul style="list-style-type: none"> <li>• Provides protection against electric faults such as short circuits or line-to-ground faults.</li> <li>• Converts the DC output of the PV Array and convert it to AC. The conversion from DC to AC is carried out with an <b>inverter</b>.</li> <li>• Controls energy input and output for the battery bank, by means of a <b>charge controller</b>.</li> </ul> | <ul style="list-style-type: none"> <li>• Make sure that the fittings and cables at the PCU remain securely attached.</li> <li>• Review the PCU display panel for any recorded faults and perform resets.</li> <li>• Make sure that the cooling vents of the PCU are clear of debris and the air filters cleaned.</li> </ul>   | High               |
| DC/AC Disconnect switch       | For safety reasons, electric systems must be equipped with a manual disconnection device. The manual disconnection switch allows any user to interrupt the   | <ul style="list-style-type: none"> <li>• Ensure access to the isolator switches is not impeded</li> </ul>   | Low                |

|                |  |  |      |
|----------------|--|--|------|
|                | circuit if there is an emergency.  |  |      |
| Main Panel     | Once the output from the PV system has been converted to AC power of the adequate frequency, it can be connected to the main panel to provide energy to designated outlets and lighting facilities.                              | <ul style="list-style-type: none"> <li>• Make sure that the fittings and cables at the panel remain securely attached</li> </ul>   | Low  |
| Electric meter | The meter measures several performance indicators such as the energy consumption. Indicators account for changes in weather, force majeure, and anticipated degradation and also allows the system owner to compare kWh savings. | <p>Report on Performance Indicators:</p> <ul style="list-style-type: none"> <li>• Availability or uptime.</li> <li>• Energy Availability.</li> <li>• Energy Performance Index.</li> <li>• Energy Delivery.</li> </ul>  | Med  |
| Rooftop        | A "roof system" includes membrane, cover-board, insulation, air and vapour barriers, and the roof deck.  | <ul style="list-style-type: none"> <li>• Check for leaks and obvious signs of damage.</li> <li>• Ensure supporting frames are firmly secured to the rooftop.</li> <li>• The position of PV rack and supporting materials must be arranged so that they do not disrupt drainage or result in accumulation of small debris.</li> </ul> | High |

**Additional notes**

PV Operations includes the following five areas:

1. **Administration of Operations:** Ensures effective implementation and control of O&M services including curation of as-built drawings, equipment inventories, owners and operating manuals, and warranties. Curation involves not only keeping an archive but selecting what to keep, pursuing missing documents, preserving documents, keeping them up to date, and finally, archiving documents. Administration includes keeping records of performance and O&M measures, preparing scopes of work and selection criteria for service providers, contracting with suppliers and service providers, paying invoices, preparing budget, and securing funding and contingency plans for O&M services. Administration includes compliance with regulations by the government or authorities having jurisdiction, as well as mandatory guidelines issued by utilities.
2. **Conducting Operations:** Ensures efficient, safe, and reliable process operations including making decisions about maintenance actions based on cost/benefit analysis. This includes serving as a point of contact for personnel regarding operation of the PV system; coordinating with others regarding system operation; power and energy forecasts; scheduling maintenance operations; spare parts inventory (either in-stock on-site or in suppliers' consignment stock); and inspecting work and approving invoices. Meanwhile, operations include any day-to-day operation of the system to maximize power delivery; performance assessment and trends; operation of grid interface; manage curtailments; or adjust settings such as power factor or other ancillary services.

3. **Directions for the Performance of Work:** Specifies the rules and provisions to ensure that maintenance is performed safely and efficiently, including the formalization and enforcement of: safety policy (including training for DC and AC safety, rooftop safety, minimum staffing requirements, arc flash, and lock-out tag-out); work hours; site access, laydown areas, and parking; and any other stipulations under which work is performed. This includes confirming and enforcing qualifications of service providers, as well as compliance with any environmental or facility-level policies regarding the handling of controlled materials (e.g., solvents, weed killer, insecticide).
4. **Monitoring:** Maintains monitoring system and analysis of resulting data to remain informed on system status; metering for revenue; alarms; diagnostics; and security monitoring. Includes comparing results of system monitoring to benchmark expectation and providing reports to facility stakeholders. This includes periodically preparing reports as required by O&M contract or as required by the system owner including reports of plant performance; key performance indicators; problems and alarms, and maintenance services performed. Site security is performed both locally and with remote monitoring (cameras, intruder alarms) to protect against theft and vandalism.
5. **Operator Knowledge, Protocols, Documentation:** Ensures that operator knowledge, training, and performance will support safe and reliable plant operation. Information such as electrical drawings, part specifications, manuals, performance information, and records must be deliberately maintained and properly filed/catalogued.

PV Maintenance includes the following four types of maintenance procedures:

1. **Administration of Maintenance:** This overlaps with "Administration of Operations" and ensures effective implementation, control, and documentation of maintenance services and results. Administration includes: establishing budgets and securing funds for preventive maintenance; establishing reserves or lines of credit for corrective maintenance; planning services to avoid conflict with system operation or operations at the customer site; correspondence with customers, selection and contracting with service suppliers and equipment manufacturers; record keeping, enforcement of warranties; providing feedback to designers of new systems; and reporting on system performance and the efficacy of the O&M program.
2. **Preventive Maintenance:** Scheduling and frequency of preventive maintenance is set by the operations function and is influenced by a number of factors, such as equipment type, environmental conditions at the site (e.g., marine, snow, pollen, humidity, dust, wildlife), and warranty terms. Scheduled maintenance is often carried out at intervals to conform to the manufacturer's' recommendations as required by the equipment warranties.
3. **Corrective Maintenance:** Required to repair damage or replace failed components. It is possible to perform some corrective maintenance such as inverter resets or communications resets remotely. Also, less urgent corrective maintenance tasks can be combined with scheduled, preventive maintenance tasks.
4. **Condition-Based Maintenance:** Condition-based maintenance is the practice of using real-time information from data loggers to schedule preventive measures such as cleaning, or to head off corrective maintenance problems by anticipating failures or catching them early. Because the measures triggered by condition are the same as preventive and corrective measures, they are not listed separately. Rather, condition-based maintenance affects when these measures occur, with the promise of lowering the frequency of preventive measures and reducing the impacts and costs of corrective measures.