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Bhutan Trust Fund

for Environmental Conservation

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Terms of Reference (ToR) for Annual Maintenance Contract (AMC) for Solar Panel System

1. Introduction

This Terms of Reference (ToR) outlines the scope of work, responsibilities, and deliverables for the AMC of the solar panel system. The contract entails regular inspections, maintenance, and cleaning services to ensure the optimal performance, efficiency, and longevity of the system.

2. Scope of Services

Under this AMC, the service provider shall conduct four (4) scheduled maintenance visits annually (quarterly). The scope of work includes, but is not limited to, the following services:

2.1 Routine Maintenance Services

- Two (2) scheduled routine services once before heating season and before cooling season.
- Immediate response to breakdown calls.

2.1 General Maintenance Services

- Cleaning of solar panels and verification of secure array frames.
- Inspection of all wiring from the solar panels to the inverter.
- Examination and securing of all cable ties and fixings.
- Assessment of roof isolators for any signs of water ingress or heat stress.
- Inspection of roof penetrations for indications of damage or deterioration.
- Checking and tightening all electrical connections between the inverter, regulator, and solar panel isolators, with special attention to signs of heat stress.
- Downloading and analyzing data from the inverter.
- Testing and recording cell voltages.
- Identification of potential safety issues and necessary corrective actions.
- Submission of a brief maintenance report to the Purchaser detailing the findings and outcomes of each visit.
- Repair of faulty devices, where possible. In cases where repairs are not feasible, replacement of defective equipment shall be required, with the cost of replacement borne by the Purchaser.

2.2 Cleaning and Preventive Maintenance

- Cleaning of solar panels using non-chemical methods to remove dirt, mold, or scum.
- Checking the sturdiness and integrity of the array frame.
- Removal of debris from around the frames.
- Inspection of isolators and cables for deterioration, damage, or any signs of water penetration or condensation.



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3. Deliverables

The service provider shall provide the following deliverables:

- Completion of two (2) scheduled maintenance visits per year.
- Maintenance reports after each visit, detailing the inspection findings, issues identified, and corrective actions taken.
- Recommendations for any necessary repairs or replacements.
- Immediate notification to the Purchaser in case of critical system failures or urgent repair requirements.

4. Responsibilities

4.1 Responsibilities of the Service Provider

- Ensure that all maintenance activities are conducted professionally and in compliance with industry best practices.
- Provide qualified personnel with expertise in solar panel maintenance.
- Use appropriate tools and equipment for servicing the system.
- Maintain proper documentation of all maintenance activities and submit reports to the Purchaser in a timely manner.

4.2 Responsibilities of the Purchaser

- Provide access to the site for scheduled maintenance visits.
- Ensure that the solar panel system is free from obstructions that may hinder maintenance activities.
- Bear the cost of any equipment or components that require replacement due to irreparable damage.

5. Duration of the Contract

The contract shall be valid for a period of one (1) year from the date of commencement, with the possibility of renewal based on performance and mutual agreement.

6. Compliance and Safety Standards

The service provider shall adhere to all relevant safety regulations and guidelines while performing maintenance activities. Any safety concerns identified during the inspections must be promptly reported to the Purchaser.

7. Termination Clause

Either party may terminate the contract with prior written notice of at least 15 days, subject to justification and mutual agreement. In the event of contract termination, any pending maintenance visits or required repairs must be addressed as per agreed terms.