

REQUEST FOR QUOTATION (RFQ)



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| RFQ Reference: RFQ/UNDP/OPS/Moonshot/033/2021 – Provision of Solar PV System | Date: 21 October 2021 |
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SECTION 1: REQUEST FOR QUOTATION (RFQ)

Dear Sir / Madam:

UNDP kindly requests your quotation for the provision of goods, works, and/or services as detailed in Annex 3 of this RFQ for UNDP CO Representation in Indonesia Solar PV System.

Please take note of the following important deadlines (based on/by COB, IDN time):

1. Confirmation of participation in Site Visit: 26 October 2021
2. Site Visit: 27 October 2021 – 10:00 hours (Jakarta time)
3. Confirmation of participation in Bidders' Conference: 1 November 2021
4. Bidders' Conference: 2 November 2021 – 15:00 hours (Jakarta time)
5. Request for Clarification: 4 November 2021
6. Offer Submission: 10 November 2021

This Request for Quotation comprises the following documents:

Section 1: This request letter

Section 2: RFQ Instructions and Data

Annex 1: Schedule of Requirements

Annex 2: Quotation Submission Form

Annex 3: Technical and Financial Offer

When preparing your quotation, please be guided by the RFQ Instructions and Data. Please note that quotations must be submitted using Annex 2: Quotation Submission Form and Annex 3 Technical and Financial Offer, by the method and by the date and time indicated in Section 2. It is your responsibility to ensure that your quotation is submitted on or before the deadline. Quotations received after the submission deadline, for whatever reason, will not be considered for evaluation.

Thank you and we look forward to receiving your quotations

Issued by:

A handwritten signature in black ink, appearing to be 'MSK' with a stylized flourish at the end.

Signature: _____

Name: Martin Stephanus Kurnia

Title: Head of Procurement Unit

Date: 21st October 2021

SECTION 2: RFQ INSTRUCTIONS AND DATA

| | |
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| Introduction | <p>Bidders shall adhere to all the requirements of this RFQ, including any amendments made in writing by UNDP. This RFQ is conducted in accordance with the UNDP Programme and Operations Policies and Procedures (POPP) on Contracts and Procurement</p> <p>Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Bid by UNDP. UNDP is under no obligation to award a contract to any Bidder as a result of this RFQ.</p> <p>UNDP reserves the right to cancel the procurement process at any stage without any liability of any kind for UNDP, upon notice to the bidders or publication of cancellation notice on the UNDP website.</p> |
| Deadline for the Submission of Quotation | <p>10 November 2021 at 2300 hour (GMT+7)</p> |
| Method of Submission | <p>Quotations must be submitted as follows:</p> <p><input checked="" type="checkbox"/> Dedicated Email Address</p> <p>Bid submission address: bids.id@undp.org</p> <ul style="list-style-type: none"> ▪ File Format: .pdf format ▪ File names must be maximum of 60 characters long and must not contain any letter or special character other than from the Latin alphabet/keyboard. ▪ All files must be free of viruses and not corrupted. ▪ Max. File Size per transmission: up to 20 mb/transmission ▪ Mandatory subject of email: RFQ/UNDP/OPS/Moonshot/033/2021 – Provision of Solar PV System – Provision of Solar PV System ▪ Multiple emails must be clearly identified by indicating in the subject line “email no. X of Y”, and the final “email no. Y of Y”. ▪ It is recommended that the entire Quotation be consolidated into as few attachments as possible. ▪ The bidder should receive an email acknowledging email receipt. |
| Cost of preparation of quotation | <p>UNDP shall not be responsible for any costs associated with a Supplier’s preparation and submission of a quotation, regardless of the outcome or the manner of conducting the selection process.</p> |
| Supplier Code of Conduct, Fraud, Corruption, | <p>All prospective suppliers must read the United Nations Supplier Code of Conduct and acknowledge that it provides the minimum standards expected of suppliers to the UN. The Code of Conduct, which includes principles on labour, human rights, environment and ethical conduct may be found at: https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct</p> <p>Moreover, UNDP strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of UNDP vendors and requires all bidders/vendors to observe the highest standard of ethics during the procurement process and contract implementation. UNDP’s Anti-Fraud Policy can be found at http://www.undp.org/content/undp/en/home/operations/accountability/audit/office_of_audit_and_investigation.html#anti</p> |

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| Gifts and Hospitality | Bidders/vendors shall not offer gifts or hospitality of any kind to UNDP staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches, dinners or similar. In pursuance of this policy, UNDP: (a) Shall reject a bid if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question; (b) Shall declare a vendor ineligible, either indefinitely or for a stated period, to be awarded a contract if at any time it determines that the vendor has engaged in any corrupt or fraudulent practices in competing for, or in executing a UNDP contract. |
| Conflict of Interest | <p>UNDP Indonesia CO requires every prospective Supplier to avoid and prevent conflicts of interest, by disclosing to UNDP if you, or any of your affiliates or personnel, were involved in the preparation of the requirements, design, specifications, cost estimates, and other information used in this RFQ. Bidders shall strictly avoid conflicts with other assignments or their own interests, and act without consideration for future work. Bidders found to have a conflict of interest shall be disqualified.</p> <p>Bidders must disclose in their Bid their knowledge of the following: a) If the owners, part-owners, officers, directors, controlling shareholders, of the bidding entity or key personnel who are family members of UNDP staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving goods and/or services under this RFQ.</p> <p>The eligibility of Bidders that are wholly or partly owned by the Government shall be subject to UNDP's further evaluation and review of various factors such as being registered, operated, and managed as an independent business entity, the extent of Government ownership/share, receipt of subsidies, mandate and access to information in relation to this RFQ, among others. Conditions that may lead to undue advantage against other Bidders may result in the eventual rejection of the Bid.</p> |
| General Conditions of Contract | <p>Any Purchase Order or contract that will be issued as a result of this RFQ shall be subject to the General Conditions of Contract</p> <p>Select the applicable GTC:</p> <p><input type="checkbox"/> General Terms and Conditions / Special Conditions for Contract.</p> <p><input checked="" type="checkbox"/> General Terms and Conditions for de minimis contracts (services only, less than \$50,000)</p> <p><input type="checkbox"/> General Terms and Conditions for Works</p> <p>Applicable Terms and Conditions and other provisions are available at UNDP/How-we-buy</p> |
| Special Conditions of Contract | <p><input checked="" type="checkbox"/> Cancellation of PO/Contract if the delivery/completion is delayed by 40 days. The contractor should pay 2% of the contract value per week for up to 6 weeks.</p> <p><input type="checkbox"/> Others [pls. specify]</p> |
| Eligibility | <p>A vendor who will be engaged by UNDP may not be suspended, debarred, or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization. Vendors are therefore required to disclose to UNDP whether they are subject to any sanction or temporary suspension imposed by these organizations. Failure to do so may result in termination of any contract or PO subsequently issued to the vendor by UNDP.</p> <p>It is the Bidder's responsibility to ensure that its employees, joint venture members, sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by UNDP.</p> <p>Bidders must have the legal capacity to enter a binding contract with UNDP and to deliver in the country, or through an authorized representative.</p> |

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| Currency of Quotation | Quotations shall be quoted in Indonesian Rupiah |
| Joint Venture, Consortium or Association | <p>If the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for the Bid, they shall confirm in their Bid that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the JV, Consortium or Association jointly and severally, which shall be evidenced by a duly notarized Agreement among the legal entities, and submitted with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between UNDP and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture, Consortium or Association.</p> <p>Refer to Clauses 19 – 24 under Solicitation policy for details on the applicable provisions on Joint Ventures, Consortium or Association.</p> |
| Only one Bid | <p>The Bidder (including the Lead Entity on behalf of the individual members of any Joint Venture, Consortium or Association) shall submit only one Bid, either in its own name or, if a joint venture, Consortium or Association, as the lead entity of such Joint Venture, Consortium or Association. Bids submitted by two (2) or more Bidders shall all be rejected if they are found to have any of the following:</p> <ul style="list-style-type: none"> a) they have at least one controlling partner, director or shareholder in common; or b) any one of them receive or have received any direct or indirect subsidy from the other/s; or b) they have the same legal representative for purposes of this RFQ; or c) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about, or influence on the Bid of, another Bidder regarding this RFQ process; d) they are subcontractors to each other's Bid, or a subcontractor to one Bid also submits another Bid under its name as lead Bidder; or e) some key personnel proposed to be in the team of one Bidder participates in more than one Bid received for this RFQ process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Bid. |
| Duties and taxes | <p>Article II, Section 7, of the Convention on the Privileges and Immunities provides, inter alia, that the United Nations, including UNDP as a subsidiary organ of the General Assembly of the United Nations, is exempt from all direct taxes, except charges for public utility services, and is exempt from customs restrictions, duties, and charges of a similar nature in respect of articles imported or exported for its official use. All quotations shall be submitted net of any direct taxes and any other taxes and duties, unless otherwise specified below:</p> <p>All prices must:</p> <ul style="list-style-type: none"> <input type="checkbox"/> be inclusive of VAT and other applicable indirect taxes <input checked="" type="checkbox"/> be exclusive of VAT and other applicable indirect taxes |
| Language of quotation | <p>English</p> <p>Including documentation including catalogues, instructions and operating manuals.</p> |

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| Documents to be submitted | <p>Bidders shall include the following documents in their quotation:</p> <p><input checked="" type="checkbox"/> Annex 2: Quotation Submission Form duly completed and signed</p> <p>Please note all costs should be specified as indicated in the Quotation Submission Form. Therefore, the price of an item must not be included into another item</p> <p><input checked="" type="checkbox"/> Annex 3: Technical and Financial Offer duly completed and signed and in accordance with the Schedule of Requirements in Annex 1</p> <p><input checked="" type="checkbox"/> Company Profile.</p> <p><input checked="" type="checkbox"/> Registration certificate;</p> <p><input checked="" type="checkbox"/> List and value of projects performed for the last 3 years plus client's contact details who may be contacted for further information on those contracts;</p> <p><input checked="" type="checkbox"/> List and value of ongoing Projects with UNDP and other national/multi-national organization with contact details of clients and current completion ratio of each ongoing project;</p> <p><input checked="" type="checkbox"/> Statement of satisfactory Performance (Certificates) from the top 2 clients in terms of Contract value in similar field;</p> <p><input type="checkbox"/> Completed and signed CVs for the proposed key Personnel;</p> <p><input checked="" type="checkbox"/> Other Valid IUJPTL = Izin Usaha Jasa Penunjang Tenaga Listrik</p> |
| Quotation validity period | Quotations shall remain valid for 120 days from the deadline for the Submission of Quotation. |
| Price variation | No price variation due to escalation, inflation, fluctuation in exchange rates, or any other market factors shall be accepted at any time during the validity of the quotation after the quotation has been received. |
| Partial Quotes | <p><input checked="" type="checkbox"/> Not permitted</p> <p><input type="checkbox"/> Permitted</p> |
| Alternative Quotes | <p><input checked="" type="checkbox"/> Not permitted</p> <p><input type="checkbox"/> Permitted</p> |
| Payment Terms | <p><input type="checkbox"/> 100% within 30 days after receipt of goods, works and/or services and submission of payment documentation.</p> <p><input checked="" type="checkbox"/> Other</p> <p>Total Cost</p> <p><input checked="" type="checkbox"/> 30% upon complete delivery of goods.</p> <p><input checked="" type="checkbox"/> 60% upon complete installation and commissioning of the system</p> <p><input checked="" type="checkbox"/> 10% after the first 3 months of the total 6 months of stabilization period.</p> |

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| Conditions for Release of Payment | <input checked="" type="checkbox"/> Others <ul style="list-style-type: none"> a. 1st Installment 30% of total cost <input checked="" type="checkbox"/> Written Acceptance of Goods based on inspection and full compliance with RFQ requirements <ul style="list-style-type: none"> b. 2nd installment: 60% of total cost Upon commissioning of the system as per Section 2, section <input checked="" type="checkbox"/> Submission of Deliverables <input checked="" type="checkbox"/> Passing Inspection <input checked="" type="checkbox"/> Complete Installation <input checked="" type="checkbox"/> Passing all Testing (including UAT) <input checked="" type="checkbox"/> Completion of Training on Operation and Maintenance and online monitoring <ul style="list-style-type: none"> c. 3rd installment: 10% of total cost <input checked="" type="checkbox"/> after first 3 months of the total stabilization period |
| Contact Person for correspondence, notifications and clarifications | E-mail address: fathia.shabrina@undp.org and yusef.millah@undp.org . Attention: Quotations shall not be submitted to this address but to the address for quotation submission above. Otherwise, offer shall be disqualified. Any delay in UNDP's response shall be not used as a reason for extending the deadline for submission, unless UNDP determines that such an extension is necessary and communicates a new deadline to the Proposers. |
| Clarifications | Requests for clarification from bidders will not be accepted any later than two (2) days before the submission deadline. Responses to request for clarification will be communicated by email. |
| Evaluation method | <input checked="" type="checkbox"/> The Contract or Purchase Order will be awarded to the lowest price substantially compliant offer <input type="checkbox"/> Other Click or tap here to enter text. |
| Evaluation criteria | <input checked="" type="checkbox"/> Full compliance with all requirements as specified in Annex 1 <input checked="" type="checkbox"/> Full acceptance of the General Conditions of Contract <input checked="" type="checkbox"/> Comprehensiveness of after-sales services <input type="checkbox"/> Earliest Delivery /shortest lead time <input type="checkbox"/> Others Click or tap here to enter text. |
| Right not to accept any quotation | UNDP is not bound to accept any quotation, nor award a contract or Purchase Order |
| Right to vary requirement at time of award | At the time of award of Contract or Purchase Order, UNDP Indonesia CO reserves the right to vary (increase or decrease) the quantity of services and/or goods, by up to a maximum twenty-five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions. |
| Type of Contract to be awarded | <input type="checkbox"/> Purchase Order <input type="checkbox"/> Contract Face Sheet (Goods and-or Services) (this template is also utilised for Long-Term Agreement) and if an LTA will be signed, specify the document that will trigger the call-off. E.g., PO, etc.) <input checked="" type="checkbox"/> Contract for Works <input type="checkbox"/> Other Type/s of Contract <input checked="" type="checkbox"/> |

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| Expected date for contract award. | 35-40 days after publishing date |
| Publication of Contract Award | UNDP will publish the contract awards valued at USD 100,000 and more on the websites of the CO and the corporate UNDP Web site. |
| Policies and procedures | This RFQ is conducted in accordance with UNDP Programme and Operations Policies and Procedures |
| UNGM registration | <p>Any Contract resulting from this RFQ exercise will be subject to the supplier being registered at the appropriate level on the United Nations Global Marketplace (UNGM) website at www.ungm.org.</p> <p>The Bidder may still submit a quotation even if not registered with the UNGM, however, if the Bidder is selected for Contract award, the Bidder must register on the UNGM prior to contract signature.</p> |
| Other | <p>1. Virtual Bidder's Conference Date/Time: 2 November 2021 at 15:00 hours (GMT+7) Venue: zoom online meeting (https://undp.zoom.us/j/85668044539) Meeting ID: 856 6804 4539</p> <p>2. Site Visit: Depending on the number of participant and in order to comply with government rule and regulation on Health Protocol during COVID-19, the site visit will be divided into groups. Site Visit will be done before the bidder's conference and only bidders who had registered that will be allowed to participate. Each bidders will be notified one day before the site visit on which group they are in as well as the time of site visit.</p> <p>Date/Time: 27th October 2021 at 10:00 hours (GMT+7) Venue: UNDP Office, Menara Thamrin Building, 7th Floor, Jl. M. H. Thamrin kav. 3, Jakarta</p> |

ANNEX 1: SCHEDULE OF REQUIREMENTS

Delivery Requirements

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| Delivery date and time | Bidder shall deliver the goods five months after Contract (PO) signature. |
| Delivery Terms (INCOTERMS 2020) | DAP |
| Customs clearance (must be linked to INCOTERM) | <input type="checkbox"/> Not applicable Shall be done by: <input type="checkbox"/> UNDP (where applicable) <input checked="" type="checkbox"/> Supplier/bidder <input type="checkbox"/> Freight Forwarder |
| Exact Address(es) of Delivery Location(s) | Menara Thamrin Building 7-9th Floor Jl. MH Thamrin Kav. 3 Jakarta 10250 |
| Distribution of shipping documents (if using freight forwarder) | Bidder's quotation |
| Packing Requirements | Bidder must ensure the packing in a safe way to avoid any damage during the delivery process |
| Training on Operations and Maintenance | As defined in the Terms of Reference |
| Warranty Period | As defined in the Terms of Reference |
| After-sales service and local service support requirements | As defined in the Terms of Reference |
| Preferred Mode of Transport | As quoted by bidders |

United Nations Development Programme

Information & Technology Management

Country Office ICT Advisory Services



UNDP Indonesia Country Office



Section 3 - Terms of Reference:

Solar PV System for UNDP Indonesia CO, contributing to Create Smart UNDP Facilities Powered by Renewable Energy

Solar PV Capacity



35 kWp

Renewable
Fraction



69%

CO₂ Emissions
Savings (tons/year)



73

About

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Prepared 12/08/2020
Last Update: 01/09/2021 by

ITM Green Energy Team.

ISO 9001 *Approved for Release by*
Gerald Demeules
Global ICT Advisor

Terms of Reference: Solar PV System

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Acronyms

| | |
|----------------|--|
| AI | - Artificial Intelligence |
| COB | - Close of Business |
| GHG | - Green House Gas |
| HQ | - Head Quarters |
| ICT | - Information and Communications Technology |
| IoT | - Internet of Things |
| O&M | - Operation and Maintenance |
| ITM | - Information and Technology Management |
| PCMM | - Power Consumption Measuring and Monitoring |
| PU | - Procurement Unit |
| SDGs | - Sustainable Development Goals |

TOR - Terms of Reference

UAT - User Acceptance Test

UNDG - United Nations Development Group

UNDP – United Nations Development Programme

Terms of Reference: Solar PV System

UNDP Indonesia CO

Scope of the Document

The Terms of Reference (TOR) sets the requirements to facilitate smart and clean energy solutions to secure country office activities in **UNDP Indonesia** by supplying, installing, commissioning (including complete civil works), and after-sales services for the Solar PV System at **UNDP Indonesia CO**. An overall high-quality system is expected, as the system will be a showcase for other compounds.

Structure of the Document

The ToR include the following components:

1. Introduction
2. Project Description
3. Statement of Work
4. Price and Delivery Schedule Forms
5. Project Management and Communication Plan

All the requirements included in this ToR are numbered and boxed.

1. Introduction

The **UNDP Indonesia CO**, in cooperation with the UNDP Information & Technology Management (ITM) Green Energy Team, has taken initial steps towards implementing a solar installation in their premises. This endeavor will be comprised of **35 kWp grid-tied solar PV system**. It will be an extension to an existing 22 kWp grid-tied solar PV system.

The load has been estimated by the **UNDP Indonesia CO** colleagues. Based on the projection of the load consumption for the building, the new Solar PV system will be able to cover approximately 69% of the electricity consumption.

Switching to renewable energy implies strong environmental incentives. Going solar will save approximately 73 tonnes of CO2 emissions yearly, effectively reducing **UNDP Indonesia CO** carbon footprint and burden on the environment. This will institute the United Nations Sustainable Development Goals while being an opportunity to promote green energy solutions and inspire local economies to adopt similar solutions.

A solar installation in **Indonesia CO** will enhance business continuity and work environment, as well as reducing climate impact. All while promoting sustainable development in the region.

1.1 Sustainable Development Goals

The Sustainable Development Goals (SDGs) are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate,

environmental degradation, prosperity, and peace and justice. The Goals interconnect and in order to leave no one behind, it is important that we achieve each Goal and target by 2030.¹

As a leading agency in the fight against climate change, UNDP is committed to “walk the talk” by demonstrating that we run our operations in a resources-efficient, sustainable and accountable way.



Figure 1 - The Global Goals for Sustainable Development

Substantial progress has been achieved in making UNDP “greener,” more resilient operations both at Head Quarters and in many Country Offices (CO) and Regional Centers. Around the world, our offices are working to minimize the environmental impact associated with operations, from green building renovations and sustainable procurement practices to staff training and bicycling programs. By now, over 20 UNDP CO – out of a total of 167 - have installed or are installing photovoltaic systems to reduce Green House Gas (GHG) emissions and enhance office energy security.

Recently UNDP adopted a ‘Climate Neutrality and Sustainability Plan for Global UNDP Operations’ committing UNDP to reduce GHG emissions by 10% over 5 years and achieving climate neutrality for global operations starting effective 2014².

1.2 Smart UN Facilities

The concept of Smart UN Facilities revolves around using data insights and interconnected technologies to transform UN Country Offices and related facilities into “smart” premises; in effect, local capacity to carry out the UN’s goals is augmented.

This is rooted in two aspects, which are manifested in multiple technology systems provided by ITM:

1. Fourth Industrial Revolution – the advent of connected technologies including robotics, the Internet of Things (IoT), autonomous vehicles.
2. Smart cities – utilization of sensors for data collection, insights, analysis, and subsequent enhancement of services.

¹ About the Sustainable Development Goals

(<https://www.un.org/sustainabledevelopment/sustainabledevelopment-goals/>)

² UNDP - Greening the Blue Initiative (<http://www.greeningtheblue.org/what-the-un-is-doing/unitednationsdevelopment-programme-undp>)

In view of the benefits, it leads to make the first step in transitioning into a low-carbon and digital organization through smart integration of various equipment. As it is depicted below, **Figure 2** shows the main technologies that set and establish the Smart UN Facilities including:



Figure 2 - Smart UN Facilities Framework

- Smart Energy & Mobility
- Smart Connectivity - ICT, Business Intelligence & AI
- Smart Data & Internet of Things
- Smart Security

1.3 Seven Step Green Energy Process

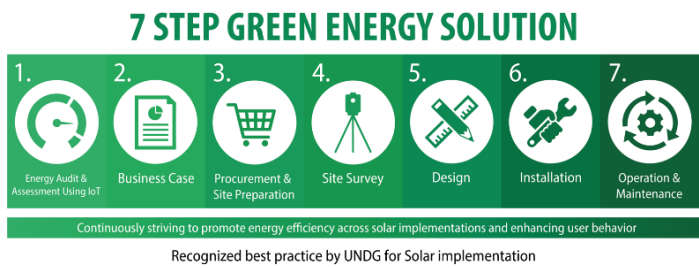


Figure 3 - Seven Step Green Energy Solution

Use of the United Nations Development Group (UNDG) recommended 7-Step process will be adopted for the project. The approach is a holistic end-to-end process with a preliminary assessment of project practicability and the post-installation operation & maintenance.

This is depicted in **Figure 3 Error! Reference source not found.** and elaborated in the subsequent text.

Step 1: Energy Audit & Assessment using IoT

- a) When possible, the CO installs IoT devices, such as the Power Consumption Measuring and Monitoring Device (PCMM).
- b) ITM might monitor the quality of the grid and the genset. The solution proposed for the Solar System should be compatible with the monitoring system.

- c) The office is required to complete the Preliminary Site Survey form which will provide information on the physical structure and more details on electrical installations.
- d) If the previous options are not applicable, a technical mission from a qualified engineer can be used to complete this step, as well as load estimation based on the information provided by the CO.

Step 2: Business Case

- a) This step serves to provide essential information and data for decision-making. With the information gathered during Step 1, ITM compiles a load profile of the energy consumption. This enables an analysis that results in the draft of a business case, presenting a potential green energy solution for the CO.

Step 3: Procurement & Site Preparation

- a) Compilation and publication of solicitation documents will be carried out in accordance to UNDP Iran CO rules as applied in such projects.
- b) Evaluation of bids/proposals will be carried out jointly between ITM and the CO.

Step 4: Site-survey – vendor

- c) Within the scope of Step 4, a kick-off meeting takes place between ITM, CO, and the awarded vendor, as an opportunity to put all stakeholders in direct contact to agree on the details of the installation.
- d) The awarded vendor carries out an on-site survey to exhaustively take into consideration all aspects that can adversely affect the implementation of the project, and information for the final costing of the project including required materials/equipment and time frames.
- e) The vendor acts as an implementer, working closely with a focal point at the CO, when necessary, and ITM exercising technical oversight and project management. Submission of the final **Site Survey Report** marks the end of this step.
- f) In the course of the project, the ITM Green Energy team will provide a document with **guidelines** for this survey and the correspondent report, with the information it should contain as a bare minimum.

Step 5: Design

- a) The selected vendor drafts the final system design, taking into consideration findings from the site survey in the previous step.
- b) As part of technical oversight, ITM must endorse the final design before the actual installation starts. Submission of the **final design** certified by the manufacturer and **implementation schedule** marks the end of this step.

Step 6: Installation

- a) The vendor carries out all the necessary installations, in the process giving regular progress updates to all stakeholders;
- b) Critical milestones are defined, at which point ITM makes the necessary assessments as part of the technical oversight
- c) Six-month stabilization period, to allow the end-user to get acquainted with the system and basic troubleshooting.
- d) Among other critical requirements, the step entails end-to-end testing, physical inspection of the installation, user training, and complete documentation of the system.
- e) This step involves carrying out User Acceptance Testing (UAT) in which all parties play a role. This test is to be developed in collaboration with ITM.
- f) A ***signed checklist*** confirming full compliance with all requirements marks the end of the step, giving way to O&M.

Step 7: Operation & Maintenance

- a) Regular ***bi-annual maintenance*** by the supplier and regular monitoring from UNDP.

Communication and Publicity

Parallel to the 7-step process of green energy solution, ITM Communications Team and the Communications Country Office Team carry out the promotions of the successful project within the country and globally through the UN network. This process involves highlighting the benefits of the installed system and spread the word about the human impact. Furthermore, this aims at motivating similar installations in other parts of the country.

2. Project Description

2.1 Project Objectives

The main goal of the Smart Solar PV System is to provide **affordable green energy** solutions for the UN smart facility as well as **smart integrated services** like security and adaptability. ITM requires **high quality** for the system as it will also serve as a showcase at a national and international scale. The following document provides requirements and guidelines for the project, but an innovative solution proposal is highly encouraged to improve the system.

2.2 Project High Level Requirements

This project seeks to enhance energy supply for the UNDP premises with renewable energy. The current energy supply for the compound is based on the national grid, 22 kWp grid-tied Solar PV system and two backup generators of **1250 kVA** and **1030 kVA** that are used during power outages, which are not regular but can happen twice a year for 5 minutes. However, the generator integration and maintenance are out of the scope of this RFQ.

The requirement is for the vendor to provide a comprehensive offer for a **Solar PV Turnkey Solution** based on the following configuration.

1. Supply of a **35 kWp grid-tied Solar PV Turnkey Solution**.
2. Installation, User Acceptance Test (UAT), and Commissioning of the final system.
3. Integration of the final solution into the facility.
4. Provision of bi-annual maintenance and after-sales by the vendor (for 3 years).
5. Training of the users on the system must also be provided to guarantee they will be able to effectively perform first-level operation and maintenance of the system.

The setup will be based on Solar PV + Grid. The Solar PV System is required to serve as the priority source of energy with the grid. In case of insufficient electricity production by the PV system, the load will be supplied by the national grid. In case of power outages from the national grid, the CO will use the available diesel generator to meet the energy requirements. Integration with the generator is not in the scope of this RFQ but the supplier will be responsible for taking any necessary appropriate measures to ensure that under no circumstance energy is feedback to the existing generator.

The Solar PV system is expected to provide around 69 % of the total electricity demand of the site. A set of energy efficiency measures (out of the scope of this RFQ) have also been suggested (sealing openings, increasing temperature set on ACs, and providing motion sensors for ACs), which means the CO can potentially reduce its current consumption in the near future and the renewable fraction will therefore be higher.

It is essential that the Solar PV system operates in a robust as well as intelligent and automated manner with regards to energy supply for the CO. The proposal of the systems shall include an intelligent energy supply and management, prioritizing PV and if more energy is required supply with either the national grid or genset if there is no grid available.

2.3 Description of Site

UNDP Indonesia CO is located at: Menara Thamrin 7-9th Floor Jl. MH Thamrin Kav. 3 Jakarta 10250, Indonesia, at the following GPS Coordinates: **6°11'15.0"S 106°49'25.0"E**

The energy system will need to cover the load of the existing office building. The pictures of the 22kWp existing Solar PV system on the roof can be seen below in **Figure 4** and **Figure 5**. The technical and schematic drawings of 22 kWp Solar PV system can be found in **Appendix II**.

In the premises of the CO a temporary storage area can be made available to place the goods during the installation.

Figure 4 – Aerial view of the UNDP Indonesia CO



Figure 5-Images of existing 22 kWp Solar PV System



2.3.1 Weather on Site

Jakarta is situated at an average height of 8 meters above sea level in the lowlands. It is surrounded by mountains in the south that receives heavy rainfall. The climate in Jakarta is hot and dry or tropical. The driest month is August that receives an average rainfall of 60mm. However, heavy rainfall occurs in January and February with an average of 350mm. September and early October are considered hot months with the temperature reaching up to 40°C. The range of annual temperature is from 25°C to 38°C.

October receives the most daily sunshine hours, with an average of 9.52 hours. While January is the month with the least daily average sunshine hours of 9.02.

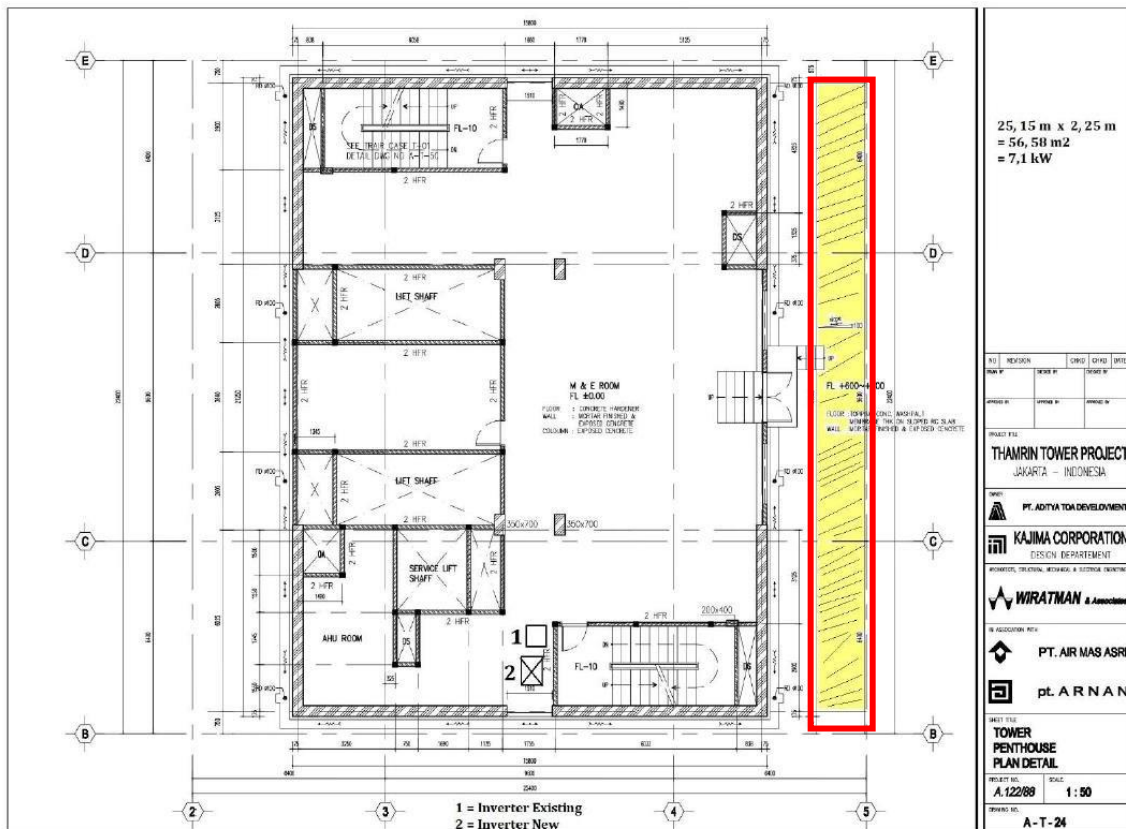
2.4 Potential Location of PV Panels

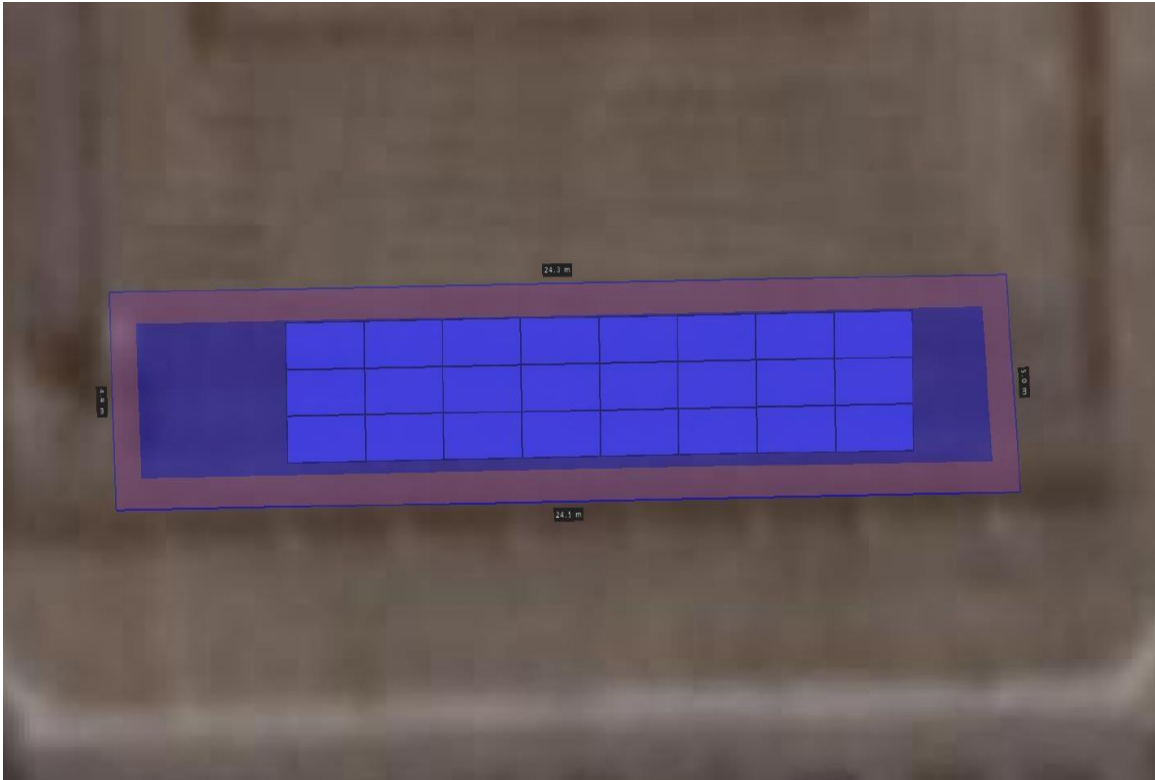
The Solar Panels are suggested to be located on two different locations: **a) Location 1:** 10kWp at the roof top of the main building (at East side), where the existing system is located between metallic structures, and **b) Location 2:** 25 kWp at the roof top of the parking building, where a metallic structure will also be needed. The suggested locations can be seen in **Figure 6**.

The inverters or electronics equipment can either be installed inside the existing technical room, or on the roof of the building as identified in **Figure 7**. A technical room is present on site at the roof top as shown in **Figure 9**.

Figure 6-Potential location (location 1 and 2) for the 35kWp Solar PV System

a. Location 1: Roof top of main building (estimated 10kWp)







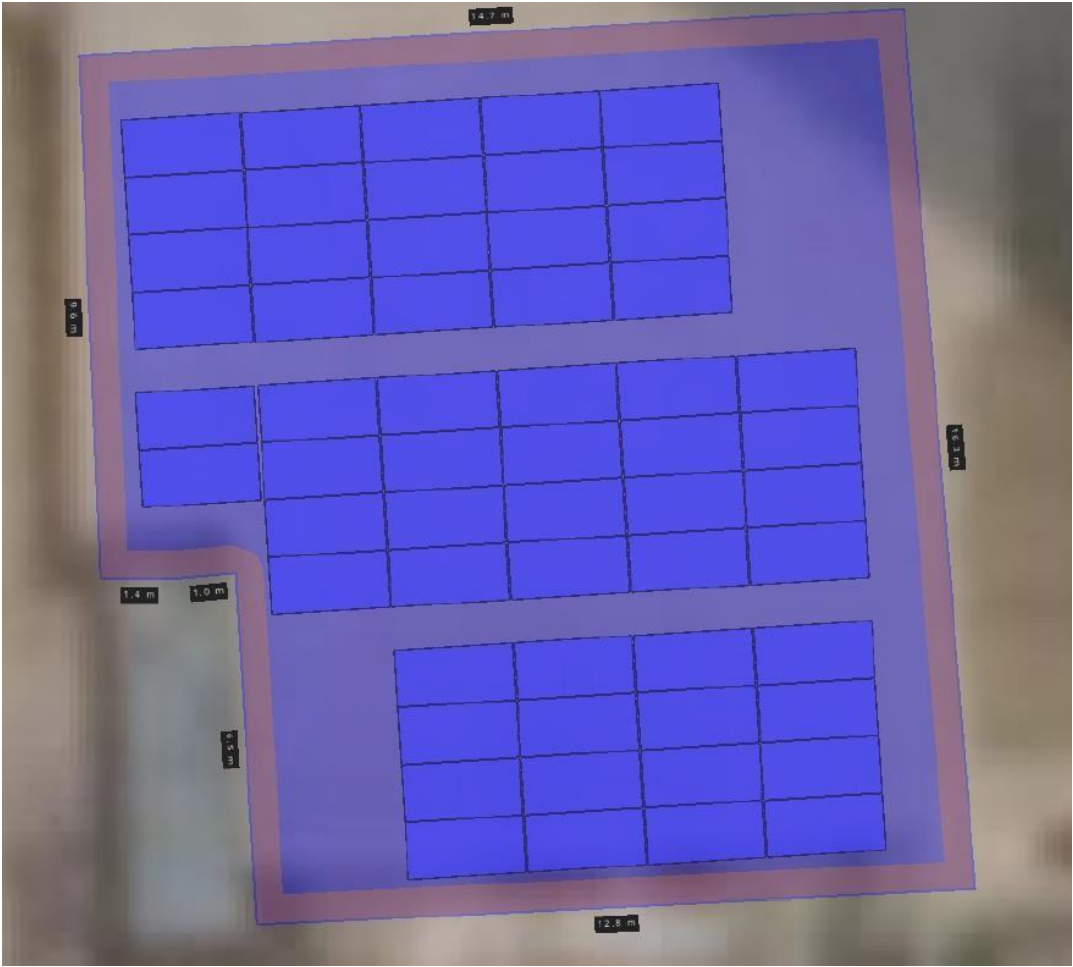


Figure 7-Suggested location for the installation of Inverters (existing place)

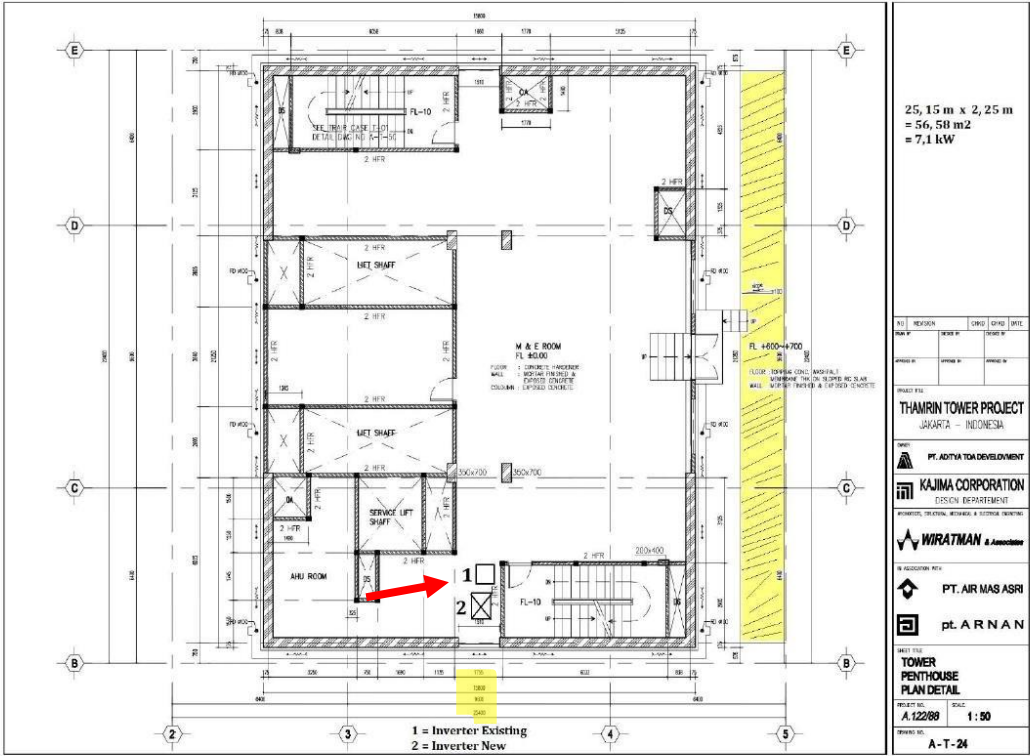


Figure 8 – Alternative suggested location for the installation of Inverter (Technical room)

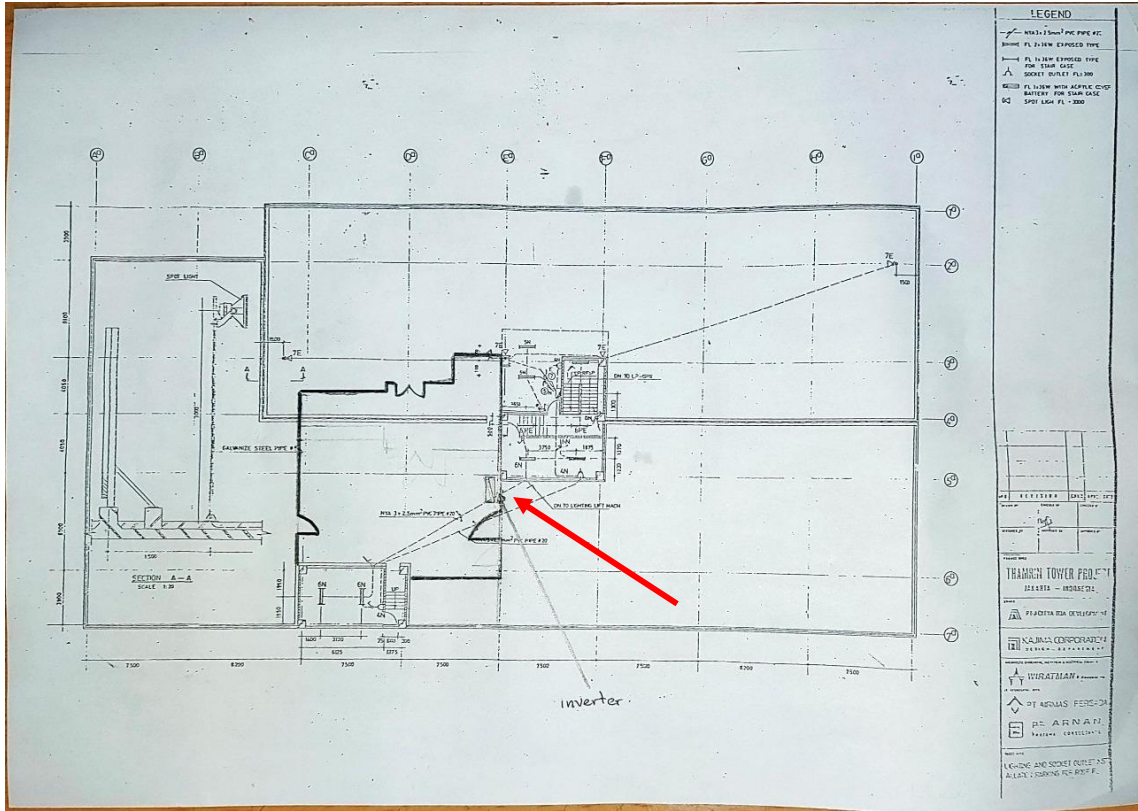


Figure 9-Technical Room – Alternative location for inverter



2.5 Estimated Load Consumption

Energy consumption data was gathered by the UNDP Indonesia CO through monthly meter reading and electricity bills of 2020. The estimated yearly consumption is 44,712.5 kWh.

2.6 Generators

Two generators (Genset 1 with 1250 KVA and Genset 2 with 1030 KVA) are used to provide electricity to the building in case of power outages, and it is estimated that it can be used for few minutes up to an hour during power outages that occurs rarely (twice a year). The integration of the generator with the solar system is not within the scope of this project.

Figure 10-Generators

Generator 1:



Generator 2:



2.7 Grid Quality

The main source of electricity supply of the building is the national grid. The grid is reliable, and the CO representation in Indonesia can experience power outages twice a year for few minutes to a maximum of one hour.

3. Statement of Work

3.1 After-sales services and response time

The vendor must be able to comply with the requirements for after-sales services and maintenance processes. In case the vendor is not located within a reasonable distance to allow for a response time within the maximum time specified in **Table 3**, it must show proof of a formal agreement with a local representative with relevant experience to perform such requirements. This agreement is designed for support in the deployment of the Solar System with regards to the site visit, installation, commissioning, training, and after-sales services and maintenance processes. This aligns with UNDP's mission of developing local capacity. In case the vendor is based within a reasonable distance from UNDP Indonesia CO and can ensure to meet the required response times, a local partner is not necessary. Please note that an exclusivity agreement with the local partner is not a requirement.

In case the vendor wishes to partner with a local representative, please include the following in the offer document:

1. The letter signed by both parties, confirming a relationship between vendor and local partner.
2. Profile of the local partner, including documentary evidence of relevant experience and services.
3. Official documentation stating that the Local Partner is a registered business in the country.
4. Plan for bi-annual maintenance by the local partner, lasting for 3 years. Include the comprehensive details for procedures to be carried out during a periodic inspection.

Both the vendor and the local partner (if applicable) need to agree to the maintenance terms discussed in **section 3.5.1.6 and must be aware of the high quality expectations for the solution, as the system will serve as a showcase at both national and international levels**. This needs to be proved through a signed document stating the mentioned points.

Note that the **vendor is responsible** for the requirements mentioned in **section 3.5.1.6**.

As the local partner may be required to go on-site during the maintenance phase for troubleshooting, it should be based in a strategic location within close proximity to the Country Office. In case of a critical incident, the local partner (or the vendor itself, if no local partner is needed) shall acknowledge the issue and perform the required activities depending on the identified incident priority.

The target resolution and response time for each Incident or Service Request depends on its Priority. Priority is determined by the Urgency and the Impact of the Incident or Service Request.

The response shall always include:

1. Acknowledge receipt of incident reporting;
2. Assess and evaluate Urgency as detailed in table 1;
3. Assess and evaluate Impact as detailed in table 2;
4. Commence the implementation of resolution actions with the timelines and modalities indicated below for each resulting priority.

The resolution shall always include:

1. Clear identification of incident;
2. Clear identification of incident causes;
3. Submission of resolution plan with clear activities and timelines;
4. Submission of request for procurement of any component's replacement;
5. Initiation of resolution plan activities

The tables and definitions describe the service agreed targets and expected response time. The Priority defined in **Table 3** results in a combination of Urgency and Impact. As depicted in **Table 1**, Urgency is defined as a measure of how long it will be until the incident has a significant impact on the business.

Table 1 - Urgency level definition

| Urgency | Description |
|-----------------|--|
| Critical | Event underway, it cannot be stopped or changed. |
| High | Event underway, time to resolution to be kept to a minimum. |
| Medium | Event scheduled or to occur, but enough time remains to respond without impacting the event. |
| Low | Event can be postponed or is far enough away in time to allow response without loss of productivity. |

Impact is defined as a measure of the effect of an incident and how the service levels will be affected.

Table 2 - Impact Level Definition

| Impact | Scope | Business | Operations |
|---------------------------------|--|--|--|
| Extensive Widespread | 80% to 100% Generation is lost. Incapacity to correctly feed the load from both direct generation and/or battery storage | The event has extensive financial implications, the longer the issue takes to be resolved. | Interferes with core business functions, loss or potential loss of electricity supply. |
| Significant Large | Affects a significant part of the hybrid system. More than 50% to 80% power loss or battery capacity loss. | Some financial impact and few business units are impacted. | Interferes with few core businesses functions and potential loss of mission-critical data. |
| Moderate Limited | Affects a minor part of the hybrid system. less than 50% power loss or battery capacity loss. | No financial impact but potential loss later if unresolved. | Interferes with non-core business functions and no loss on mission-critical data. |
| Minor Localized | Less than 10% or no power or battery capacity loss. | No financial impact and no potential loss or economic implications. | Interferes with non-major business activities and no loss on mission-critical data. |

Once Urgency and Impact are evaluated, the Priority is determined with the corresponding Response and Resolution Time.

Table 3 - Priority definition and target response time

| Impact | Urgency | Resulting Priority | Response Time Target and mandatory action | Resolution Time Target |
|------------------------|------------|--------------------|---|------------------------|
| 1-Extensive Widespread | 1-Critical | Critical | 2 hours – On site presence is required | 48 hours |
| 2-Significant Large | 1-Critical | Critical | 2 hours – On site presence is required | 48 hours |
| 1-Extensive Widespread | 2-High | Critical | 2 hours – On site presence is required | 48 hours |
| 3-Moderate Limited | 1-Critical | High | 12 hours – On site presence is required | 72 hours |
| 4-Minor Localized | 1-Critical | High | 12 hours – On site presence is required | 72 hours |
| 2-Significant Large | 2-High | High | 12 hours – On site presence is required | 72 hours |
| 1-Extensive Widespread | 3-Medium | High | 12 hours – On site presence is required | 72 hours |
| 3-Moderate Limited | 2-High | High | 12 hours – On site presence is required | 72 hours |
| 4-Minor Localized | 2-High | Medium | 24 hours – On site presence is required | 6 days |
| 2-Significant Large | 3-Medium | Medium | 24 hours – On site presence is required | 6 days |
| 3-Moderate Limited | 3-Medium | Medium | 24 hours – On site presence is required | 6 days |
| 4-Minor Localized | 3-Medium | Medium | 24 hours – On site presence is required | 6 days |
| 1-Extensive Widespread | 4-Low | Low | 48 hours | 10 days |
| 2-Significant Large | 4-Low | Low | 48 hours | 10 days |
| 3-Moderate Limited | 4-Low | Low | 48 hours | 10 days |
| 4-Minor Localized | 4-Low | Low | 48 hours | 10 days |

3.2 Site Visit

Necessary site information including photos have been provided. However, for preparation and submission of your offer, you shall engage your local partner or defined representative to conduct a Site Survey (without cost to UNDP). The data collected on the site assessment visit, together with the data included in this document are what shall be considered for the offer preparation and submission.

Site Assessment Visit is scheduled on the **27 October 2021 at 10:00 am (Jakarta time)**. The Assessment can be conducted either by the vendor's own staff, by the local partner or by a third representative. Conducting a site visit is **compulsory** for the offer to be valid.

The UNDP Indonesia CO focal contact is **Bulan Purnamasari**. Please note that it is necessary to arrange the site visit in advance. As such, if applicable please inform your local partner accordingly.

Please confirm your intention to undertake Site Assessment Visit(s) (without cost to UNDP) by **26 October 2021 COB (Indonesia Time)** by sending an email to: itm.green.energy.team@undp.org,

martin.kurnia@undp.org and bulan.purnamasari@undp.org. Kindly **provide in the email the following information** for UNDP Indonesia CO and ITM to make the necessary arrangements for assessment.

| | |
|--|---|
| Confirmation of site visit in the specified day and time | |
| Name of company/local partner undertaking site visit | |
| Name of visitor, ID and contact details | |
| Please refer to the address stated in this RfQ: | UNDP Indonesia CO Menara Thamrin 7-9th Floor Jl. MH Thamrin Kav. 3 Jakarta 10250, Indonesia GPS Coordinates: 6°11'15.0"S 106°49'25.0"E |

3.3 Bidders Conference

The purpose of a bidders' conference is to provide an open exchange between UNDP ITM and vendors, to communicate the RFQ process to vendors, answer questions about the RFQ and ultimately ensure that prospective vendors have a clear understanding of requirements. This will be conducted with interested vendors over video conference and is mandatory for the bidding process.

The bidders conference is scheduled on the **2 November 2021 at 15:00 (Jakarta time)** (time to be confirmed).

Please confirm your participation by **01 November 2021 1 November 2021 COB (Indonesia Time)** by sending an email to itm.green.energy.team@undp.org, and martin.kurnia@undp.org.

3.4 Technical Requirements

Compliance with or deviations from the specification shall be clearly stated by the vendor in the below sections (3.4.1 – 3.4.8) and submitted as part of the offer (*Please refer to **Appendix I***). The vendor shall apply good engineering practice and follow the applicable standards in the design of the Solar PV system. In addition, the vendor shall include technical and performance specifications of the equipment that will be used in the project.

The system's electricity supply is expected to operate according to the following logic/priorities shown in, **Figure 11** also further specified in section 3.4.6.1.



Figure 11-System's operation logic

3.4.1 PV Modules

Table 4 – PV Modules Technical Requirements

| | | |
|----------------|-------------------------------|--|
| 3.4.1.1 | PV Capacity | Total PV capacity of 35 kWp . The solar panels are suggested to be located at two different locations. a) 10 kWp at the roof top of the main building. b) 25 kWp at the roof top of the parking building. |
| 3.4.1.2 | Module Specifications | Solar PV Panels shall follow these technical and performance specifications: <ul style="list-style-type: none"> i. Mono- or polycrystalline silicon; CIGS thin film modules are also acceptable. ii. PV Panels with enough number of cells and energy efficiency ensuring the system offered has the capacity requested iii. Tolerance better than -0/+5% iv. Maximum weight per module 28 kg v. Frameless modules are not allowed vi. Double insulation module with cables and connectors vii. Junction box with accessible bypass diodes viii. Anti-reflective glass cover ix. Modules must be PID (potential induced degradation) proof or have passed the IEC 62804 standard test |
| 3.4.1.3 | Standards | <ul style="list-style-type: none"> i. Compliant with IEC 61215 (edition 2) or equivalent ii. Shall be qualified and be classified by class according to IEC 61730 or equivalent. |
| 3.4.1.4 | Module Efficiency | Minimum shall be 18%. |
| 3.4.1.5 | Limited Power Warranty | The modules shall be subject to a 10-year limited product warranty or longer. The performance warranty shall ensure that the modules will produce at least 90% of their nominal power after 10 years and 80% of the nominal power after 20 years. |
| 3.4.1.6 | Voltage rating | Shall be compatible with the inverter voltage. Mismatch losses to be considered. |
| 3.4.1.7 | Tilt | Shall be optimized for local condition and used technology. |
| 3.4.1.8 | Labelling | The bidder shall provide the following information at the project completion: <ul style="list-style-type: none"> i. Manufacturer, brand; model, and serial number ii. Rated power; Efficiency iii. Color temperature |

| | | |
|--|--|---|
| | | <ul style="list-style-type: none"> iv. A clear indication of the connecting inlets and outlets v. Warranty and Safety warning |
|--|--|---|

3.4.2 PV Modules mounting

Table 5 – PV modules mounting technical requirements

| | | |
|----------------|---------------------------|--|
| 3.4.2.1 | Features | <p>In this regard, vendors are requested to provide a complete appropriate solution including supply of materials; civil works, etc. as part of the UNDP Indonesia CO Solar PV Project.</p> <p>Shadowing of the PV modules from trees, buildings or any other obstacles should be minimized over the whole day and there shall be no shadows in a period of ± 4h with regard to solar noon.</p> <p>Bidders are requested to provide the solar field layout drawings of their solution coupled to a calculation of the required area (size) for Solar PV Modules in the offered system, as well as provide energy production forecast based on the orientation, tilt and shadowing effects for Solar PV Modules.</p> <p>Any changes to the preliminary design of the mounting structure may be provided after the detailed site survey and the final design shall be approved by UNDP.</p> |
| 3.4.2.2 | Mounting Structure | <p>As the proposed solution consists of an elevated Rooftop mounting structure, the following shall apply:</p> <ul style="list-style-type: none"> i. Mounting structures shall be designed and customized to withstand local weather and climate, structural loads such as solar panels, wind loads of 150 km/h, seismic loads (dependent on location), etc. ii. The foundation and structural design shall be designed and signed by a licensed engineer. The detailed drawings shall be provided, indicating total dimensions and providing minimum height of 3.0 m (Location 1) and 3.5 m (Location 2) on the lower edge of the structure. <p>Please note that the PV mounting will be installed on a flat roof with minimum mounting height of 3m (location 1) and 3.5 m (location 2). Minimum roof penetration will be allowed in location 2.</p> |

| | | |
|----------------|------------------|---|
| | | <ul style="list-style-type: none"> iii. The mounting structure shall be aesthetically pleasing, use local materials (if possible) that adhere to quality standards and materials that have low embodied energy. iv. The material of the structure shall be anodized aluminum 6005 T6 stainless steel 304 or of equivalent quality. v. Easy access to solar panels on top of the rooftop is required for regular cleaning and maintenance of the solar panels. vi. The mounting structure design and construction shall adhere to local standards and/or the International Building Code (IBC). vii. The BoM considered for the structure shall be included in the technical drawings. viii. Estimate for the foundations shall be included in the technical drawings (if applicable). |
| 3.4.2.3 | Lifespan | The mounting structure should last at least the lifespan of the project (25+ years). |
| 3.4.2.4 | Standards | <p>The design of the PV mounting structure/array should follow the guidelines specified in JIS C 8955:2011, AS/NZS 1170.2:2011 or equivalent. UNDP reserves the right to crosscheck the features.</p> <p>The design and installation should respect and meet the recommendations specified by the solar panels installation guideline.</p> |

3.4.3 Power electronics

Table 6 – Power electronics technical requirements

| | | |
|----------------|-----------------|--|
| 3.4.3.1 | Features | <p>The system must include a set of smart inverters to control the solar PV output and the external power sources (grid) three different locations.</p> <p>Two of them are for the 10kWp and 25kWp solar PV systems at the roof top of the main building and the roof top of the parking building, respectively.</p> <p>The third one is for the replacement of the existing inverter of the 22kWp solar PV system. The specific characteristics of the existing PV System shall be assessed during the site visit.</p> <p>Additionally, all power electronic and BOS devices should include protection and power quality devices.</p> |
|----------------|-----------------|--|

| | | |
|---------|--------------------------------|--|
| 3.4.3.2 | Inverter Specifications | <p>Solar PV inverters with MPPT are acceptable.</p> <p>The solution should be based on the requirements specified below:</p> <p><u>Solar inverters with:</u></p> <ul style="list-style-type: none"> i. Inclusive of at least 2 maximum power point tracker (MPPT) compatible with the PV modules' layout and total voltage rating, maximizing the PV production. ii. The inverter shall be compatible with the PV module's layout, accounting for possible local temperature variations. iii. Inverter EU efficiency: min 96% (on-grid). |
| 3.4.3.3 | General Specifications | <ul style="list-style-type: none"> i. Operating Temperature: 0-50°C ii. THD < 3% iii. 3-phase output 380V, 50 Hz. iv. DC/AC ratio shall be of at least 1.25 or of better performance |
| 3.4.3.4 | Standards | <p>Regarding quality assurance, power electronics must follow these certifications, or equivalent ones (if equivalent, specify in the Appendix I). Proof of compliance should be presented along with the technical offer, as previously specified.</p> <ul style="list-style-type: none"> i. Design: IEC 62093 or equivalent ii. CE-conformity LVD 2014/35/EC, including at least the following harmonized standards: <ul style="list-style-type: none"> a. Safety for converters: EN 62109-1 and EN 62109-2 jointly, or EN 60335-1 (in case of small power electronics), or equivalent iii. CE-conformity EMC 2014/30/EU, including at least the following harmonized standards: <ul style="list-style-type: none"> a. EN-IEC 61000-3-3 or EN-IEC 61000-3-11 b. EN-IEC 61000-3-2 or IEC 61000-3-12 iv. EMC conformity Emissions limits: Either EN 61000-6-3, 61000-6-4, or EN 55014-1 (according to the size of equipment and application) v. EMC conformity Immunity limits: Either EN 61000-6-1, 61000-6-2, or EN 55014-2 (according to the size of equipment and application) vi. For grid-tied systems: IEC 62116 - Test procedure of islanding prevention measures or equivalent <p>(if any equivalent standard, specify in the Appendix I of this ToR)</p> |
| 3.4.3.5 | Safety | <ul style="list-style-type: none"> i. Provide protection against overload and reverse polarity ii. IP protection class 54 or better |

| | | |
|----------------|-------------------|--|
| 3.4.3.6 | Warranties | The expected operating lifetime of the inverter should be more than 10 years and the warranty period of 5 years. |
|----------------|-------------------|--|

3.4.4 Technical Room

Table 7 - Technical room requirements

| | | |
|----------------|-----------------------|--|
| 3.4.4.1 | Specifications | <p>Depending on the number/ size of inverters, UNDP Indonesia has identified 2 preliminary locations to install the power electronics:</p> <ul style="list-style-type: none"> 1- Option 1: Existing Technical Room inside the main building (roof top 27th floor), along with the existing inverter 2- Option 2: Existing Technical Room inside the parking building (roof top at 9th floor) <p>Equipment should be protected with the corresponding IP rating according to where they are installed.</p> |
| 3.4.4.2 | Features | <p><u>For both locations for the technical room</u>, the following features shall be provided (in case not already present on site):</p> <ul style="list-style-type: none"> i. Smoke detection and alarm ii. Fire extinguisher iii. Climate control and protective device iv. Internal temperature shall be regulated for optimal performance of equipment <p><u>Offer to clearly reflect the cost of the added elements to the technical room including overall system cost improvement and/or increment related to this option.</u></p> |

3.4.5 Online monitoring system

Table 8 – Monitoring requirements

| | | |
|----------------|---------------------------------|---|
| 3.4.5.1 | Remote Monitoring System | <p>Internet connectivity will be available at the site.</p> <p>The online monitoring system shall be a user-friendly dashboard that shows real-time power consumption, indicating which sources are used to provide the required power (grid, solar PV).</p> <ul style="list-style-type: none"> i. Overview List of installed equipment (solar PV modules, inverter, etc.) ii. Generation Overview indicating the production of each device in the system (Solar PV, Grid) and Fault Diagnostic. iii. Earning/Saving in terms of energy (kWh), money (\$), and emissions (kgCO_{2eq}) from the solar system. |
|----------------|---------------------------------|---|

| | | |
|----------------|--|---|
| 3.4.5.2 | List of hourly basis parameters | <p>A local and remote monitoring system shall be provided to be able to track the operation of the system with real-time & historical data with at least 3 years of data storage capacity. It must include, at least, the following parameters on an hourly basis:</p> <ul style="list-style-type: none"> i. Total Electricity Consumption (from the loads). ii. Total Electricity PV Production. iii. Alarms and configuration records. iv. Grid status and energy production. |
| 3.4.5.3 | Standards | It is an advantage for the monitoring system to follow the guidelines specified by IEC 61724 -1. |

3.4.6 Smart power management

Table 9 - Smart power management requirements

| | | |
|----------------|---------------------------------|---|
| 3.4.6.1 | System's operation logic | <p>The PV energy solution shall include Smart Power Management that allows the working system to supply electricity according to the following logic/priorities:</p> <p>1st: Solar PV 2nd: Electricity grid</p> |
| 3.4.6.2 | Details | <p>The Smart Power Management should be able to provide:</p> <ul style="list-style-type: none"> i. Connection with local building electrical distribution panel. ii. Integration of all applicable power sources and load to work as one system, as long as all components are functional. iii. Intelligent monitoring and control of all power sources. iv. Dynamic intelligent management for overall PV system (energy supply solution). v. Setup and activation of Internet-based (online) monitoring of Solar PV system for Performance/Availability/Status/etc. vi. Integration of Solar PV + Grid to operate in an integrated, intelligent, and automated manner with regards to energy supply for the Iran UNDP CO. vii. Protection against power backflow to the generator due to solar production. |
| 3.4.6.3 | Changeover switch | A changeover switch shall be included to be able to bypass PV. |

| | | |
|----------------|---------------------------|---|
| 3.4.6.4 | Power requirements | The system should not vary the power factor of the load. It shall not vary the reactive power intake from the grid and it shall not increase the peak consumption from the grid. |
| 3.4.6.5 | Distribution board | A new distribution board shall be provided for the proposed 35 kWp solar PV system. The wiring, cabling and connection with the new solar PV system and the existing load shall be provided as part of the scope of this RfQ. |

3.4.7 Wiring and safety

Table 10 - Wiring and safety requirements

| | | |
|----------------|--------------------------------|---|
| 3.4.7.1 | Details | <ul style="list-style-type: none"> i. Cables need to be sized according to the required local applicable standards, or otherwise to EU applied standards. Appropriate sizing of cable lengths and dimensions shall respect a maximum of 2% voltage loss at nominal load. ii. Cables installed outdoors must be able to handle high UV radiation, high temperatures, and must be weather resistant. Alternatively, they can be installed in cable trays that ensure they have protected them from the elements. iii. For DC cabling, XLPE/XLPO insulated and sheathed UV stabilized single core cable shall be used. During sizing and selection of conductor, the voltage drop of the conductor on DC side of PV system shall not exceeded 2%. iv. For AC cabling, PVC or XLPE and PV sheathed single or multi-core copper cable shall be used. Outdoor cable must have UV stabilized outer sheath. The voltage drop of the conductor on AC side of PV system from inverter to AC distribution panel shall be within range 1- 1.5%. v. Overcurrent protection for the strings, PV generator, and inverter shall be included. vi. Overvoltage surge and lightning protection on the AC and the DC side is required vii. Protection against electric shock on the AC and DC side is also required. |
| 3.4.7.2 | Lightning and Grounding | <ul style="list-style-type: none"> i. Lightning protection system must be installed according to international and local codes ii. All components of the system must be properly grounded. iii. All work must be carried in conformance to international and local codes and electricity standards. |

| | | |
|----------------|-----------------------------|---|
| | | iv. The devices must be installed in accordance with the grounding device manufacturer's specified instructions. |
| 3.4.7.3 | Firefighter's switch | Solar arrays shall be equipped with a remotely controlled DC disconnect switch. If there's no need for this switch to be remotely controlled, the reason why shall be included, along with the proposed solution. |

3.4.8 Warranty of the system

Table 11 - Warranty requirements

| | | |
|----------------|----------------|--|
| 3.4.8.1 | Details | <p>Warranty certification/documentation for the Energy System Main Components including a summary overview of warranty arrangements (technical and logistical) shall be included in the system documentation.</p> <p>An overview of available warranty extension options for main components shall be provided.</p> <p>Any cost associated with warranty replacements during the warranty period will be borne by the supplier.</p> <p>Any cost associated with the maintenance and technical support for the energy system during the maintenance subscription will be borne by the supplier.</p> |
| 3.4.8.2 | Length | The warranty for the complete system shall be at least 18 months from date of commissioning. This means that, for 18 months after the commissioning, the vendor is responsible for resolving any functionality issues with the complete system, without any financial liability on UNDP. |

3.5 Tasks and Responsibilities

The overall tasks and responsibilities of the provider are indicated below in **Table 12**.

Table 12 – Mandatory tasks and Responsibilities

| | | |
|---------|--|--|
| 3.5.1.1 | Risk Assessment, Avoidance, and Mitigation Plan | <p>A mandatory risk assessment must be conducted and presented along with the technical offer, including as minimum features:</p> <ul style="list-style-type: none"> i. All potential risks that the project might incur, in each step of the project. ii. The probability of incurrence and severity of the identified risks (e.g.: risk matrix). iii. The risk tolerance for the identified risks. iv. Proactive and reactive responses for risks surpassing the defined threshold of severity and/or probability. v. A mitigation plan for the risks identified as most severe or likely to happen (e.g., in case the final timeline is not respected due to external factors). <p>This risk assessment must include all major phases of the project, i.e., procurement, shipment and transportation of goods, installation of the system, training of the end-users, and monitoring of the active system.</p> |
| 3.5.1.2 | Shipment of material | <p>Shipment is to be provided for all the components of the system, following all procedures and documentation specified in this document.</p> <p>It is recommended to perform check and verification of the good functioning of the System Solution, and all the equipment involved before shipping the container (ideally 2 weeks before shipment).</p> <p>A pre-shipping inspection should be planned in case UNDP chooses to inspect the equipment and products before shipment.</p> |
| 3.5.1.3 | Installation of the Solution | <ul style="list-style-type: none"> i. <u>Civil Works and Site Preparation</u>: implementation and/or technical guidance shall be provided by the vendor. ii. Earth and lightning protection. iii. All necessary components of the system must be properly grounded iv. Anti-theft protection of the whole system. v. Solar PV System mounting and installation. vi. The <u>engagement and involvement of the local or regional partner</u> in order to enhance solar PV system deployment and after-sales services (If applicable). <p>The installation should follow the guidelines of IEC 63049.</p> |

| | | |
|---------|---|--|
| 3.5.1.4 | Commissioning, UAT, and Training | <p>Training</p> <ul style="list-style-type: none"> i. Solar PV System training must be provided to UNDP Indonesia CO representative(s) by the vendor. ii. The content of the training must also include topics such as: <ul style="list-style-type: none"> a. Smart use of appliances to avoid misuse of equipment b. Energy efficiency c. Awareness of energy consumption and cost of electricity iii. Solar PV System Essentials (Basics) Maintenance and Troubleshooting Guide must be provided to Country Office in English to ensure level 1 troubleshooting can be carried on by the focal point on-site. <p>User Acceptance Testing</p> <ul style="list-style-type: none"> i. The UAT shall be developed in collaboration with ITM UNDP, following a template and guidelines that will be provided by ITM UNDP further in the process. ii. User Inspection will be performed during commissioning by ITM and the CO Focal point. <p>Commissioning</p> <ul style="list-style-type: none"> i. Complete the UNDP Commissioning checklist. ii. As-built diagrams must be provided. iii. If there have been any changes to the technical documentation, the updated documents should also be provided. iv. A representative from the supplier's own staff/ team during the commissioning of the system must be provided. |
| 3.5.1.5 | Stabilization of the System | <ul style="list-style-type: none"> i. The awarded vendor must remain at the disposal of the beneficiary for at least six months (stabilization period) after handover/commissioning to assist in answering any technical or other related questions. ii. The maintenance agreement will start after the stabilization period of six months. |
| 3.5.1.6 | Maintenance of the system | <ul style="list-style-type: none"> i. Mandatory after-sales services including: <ul style="list-style-type: none"> a. Maintenance (preventive and corrective) b. Technical support (onsite and/or remote) c. Continuous availability of the online monitoring system ii. The engagement and involvement of local or regional partner is mandatory for the Solar Energy System installation, commissioning, and after-sales services (If applicable). iii. Vendor technical support and/or helpdesk contact information and procedures of local including escalation procedures. |

| | | |
|--|--|---|
| | | <ul style="list-style-type: none">iv. Solar PV System implementation and after-sales technical support is required, inclusive of appropriate escalation measures.v. Solar PV System maintenance is required, inclusive of appropriate escalation measures.vi. Preventive maintenance shall include:<ul style="list-style-type: none">a. Periodic cleaning of the panels in order to guarantee maximum efficiency (minimum twice a year);b. Technical room visual inspection and cleaning;c. General system checks and verifications (assessment of the structure status; assessment of the technical room status; cable connections check and securing..)d. Preventive maintenance shall be done in compliance with UNDP's template checklist.vii. Corrective Maintenance shall include:<ul style="list-style-type: none">a. System troubleshooting in case of loss of production;b. Parameters adjustment and small changes in operational logic. <p>Maintenance should be performed following the guidelines of IEC 62446-2.</p> |
|--|--|---|

3.6 Timelines

3.6.1 Tasks and deliverables

The overall deliverables and their respective deadline after Purchase Order (PO) signature are indicated below in **Table 13**. The tasks are to be performed within the proposed timeline.

An overview of the general timeline including all deliverables can be found below this section, in **Figure 12**.

Table 13 - Tasks and responsibilities timeline

| No | Tasks and Deliverables | Deadline |
|----------------|--|--------------------------|
| 3.6.1.1 | Signature of the contract | PO |
| 3.6.1.2 | Site Survey Report | PO + 3 weeks |
| | Overview site details for a thorough survey. | |
| 3.6.1.3 | Final Technical Design | PO + 3-4 weeks |
| | Single line diagram | |
| 3.6.1.4 | Pre-assembled technical solution tested and ready to be shipped | PO + 3 months |
| 3.6.1.5 | Transportation and delivery | PO + 5 months |
| 3.6.1.6 | Installation of the Solution | PO + 6 months |
| | Solar PV System mounting and installation. | |
| 3.6.1.7 | Commissioning, UAT, Training | PO + 6 months and 1 week |
| | Complete UNDP Commissioning checklist. | |
| | User Acceptance Testing (UAT). Solar PV System training to UNDP country office representative(s). | |
| 3.6.1.8 | Stabilization of the system | UAT + 6 months |
| | The maintenance agreement will start after the stabilization period of six months. | |
| 3.6.1.9 | Maintenance of the system | UAT + 42 months |
| | After-sales services including maintenance (preventive and corrective). | |
| | Technical support (onsite and/or remote) including continuous online monitoring. | |

3.6.2 Documentation

After the award of contract and formalization of a purchase order (PO), the supplier shall deliver all the documents listed in **Table 14** by e-mail to UNDP ITM (itm.green.energy.team@undp.org) and copy UNDP Indonesia Procurement Team (martin.kurnia@undp.org).

An overview of the general timeline including all documentation can be found below this section, in **Figure 12**.

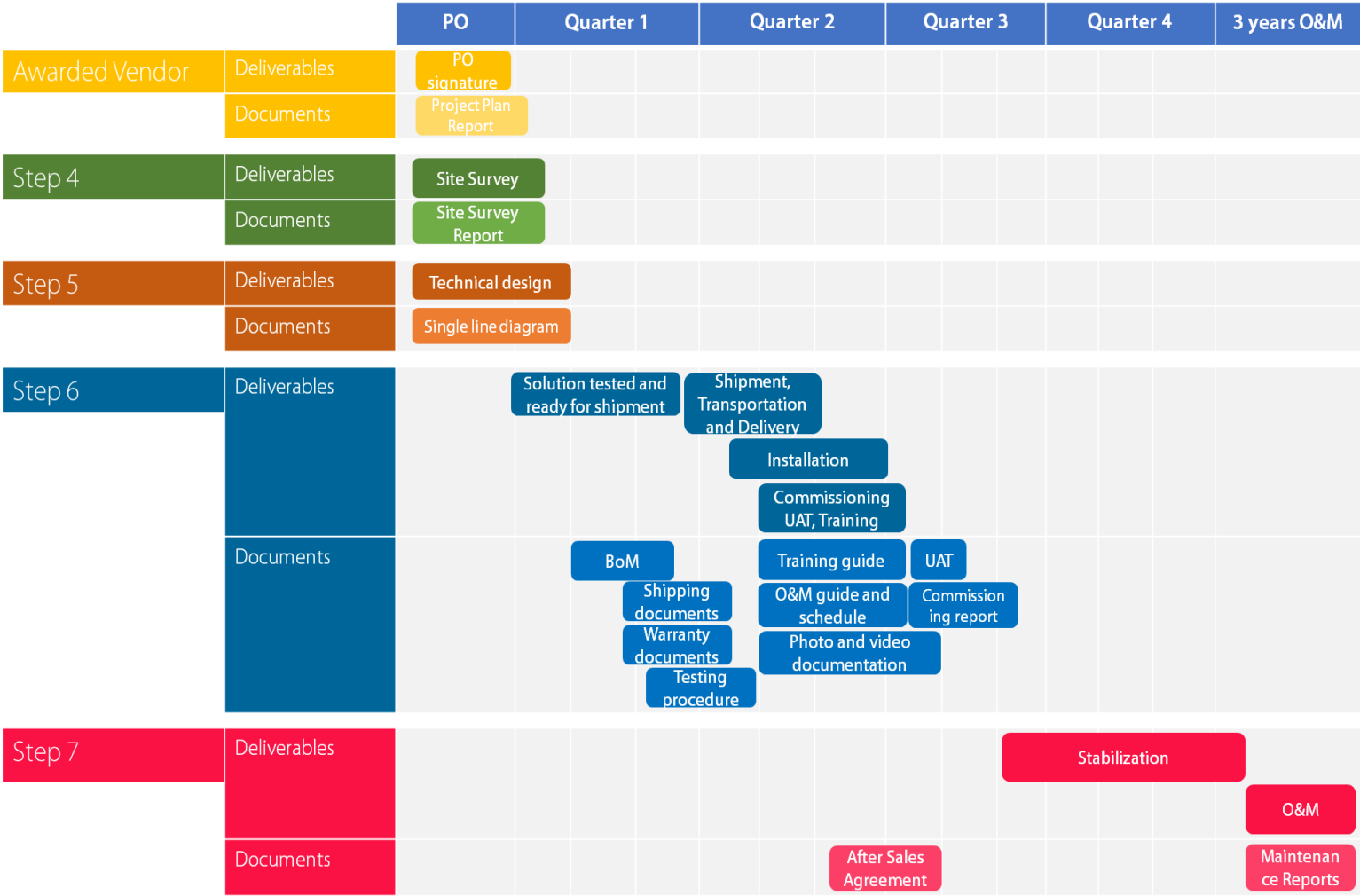
Table 14 – Documents after award of contract

| No | Document | Description | Deadline for delivery |
|---------|---|--|-----------------------|
| 3.6.2.1 | Project Plan Report | Complete report specifying all the steps that will be carried out to perform the project (from Site Survey to After-sales services) with the corresponding timeline and who will be responsible for each step (vendor, local partner, or both). | PO + 1 week |
| 3.6.2.2 | Site Survey Report | <ul style="list-style-type: none"> i. Overview of the sites' details ii. Solar PV Module installation location details (assessment, measurements; photos, etc.). iii. Consideration and assessment for suitable Solar PV Modules mounting system (so it does not compromise the integrity of the roof). iv. Diesel generator location details. v. Electric distribution panel and wiring overview details (measurements; photos etc.). vi. Assessment and documentation of any shading objects, including photos. vii. Gather current energy consumption profile provided by the client (local grid and/or diesel generator, estimate overview of daily use patterns, appliances, and load profile). viii. Assessment and confirmation of the grid quality. ix. Specific civil work requirements. | PO + 3 weeks |
| 3.6.2.3 | Design report including system design drawings | <ul style="list-style-type: none"> i. Site-specific Solar PV Solution inclusive of appropriate sizing and optimization of related components e.g. Solar PV Modules; inverter(s) inclusive of surge load capacity. ii. Appropriate sizing of cable lengths and dimensions for maximum 2% voltage loss at nominal load. iii. Energy system components and wiring diagram for the proposed solution. (Diagrammatical representation of the technical solution). iv. Offer including Bill of Material (BoM) and technical datasheets for the main components. v. Project delivery plan (including a complete summary overview of the entire project). vi. Letter certifying/proving the design from the (inverter and monitoring solution) manufacturer. | PO + 3-4 weeks |

| | | | |
|----------------|--|---|---|
| | | <p>vii. ISO9001 and ISO14001 certificates for manufacturers of main components (inverters and panels), if necessary.</p> <p>viii. Confirmation of the suitability of the solution (considering a detailed assessment of the loads).</p> <p>ix. Draft of checklists/procedures that supplier will follow for UAT and commissioning.</p> <p>Note: The design must be approved by ITM before proceeding.</p> | |
| 3.6.2.4 | Bill of materials | Complete list of materials grouped in assemblies | 2 weeks before shipment of materials |
| 3.6.2.5 | Shipping documents | <p>i. Invoice</p> <p>ii. Packing list</p> <p>iii. Bill of lading</p> <p>iv. Insurance</p> | ASAP after dispatch, minimum 3 weeks before arrival at the destination port |
| 3.6.2.6 | Warranty documents | <p>Warranty certification/documentation for the Solar PV System Main Components, including a summary overview of warranty arrangements (technical and logistical).</p> <p>i. Overview of available warranty extension options for main components.</p> <p>ii. The cost associated with warranty replacements during the warranty period will be borne by the supplier.</p> <p>iii. The cost associated with the maintenance and technical support for the installed system during the maintenance subscription will be borne by the supplier.</p> | <p>If not already sent with an original offer:</p> <p>After dispatch, a minimum of 3 weeks before arrival at the destination port</p> |
| 3.6.2.7 | Testing procedure | List of tests that will be carried out and respective pass/fail criteria | Latest 4 weeks before testing |
| 3.6.2.8 | Installation and commissioning report | <p>i. Solar PV System Commissioning Report.</p> <p>ii. Installation and commissioning activities, as-built drawings.</p> | Max. 4 weeks after testing |
| 3.6.2.9 | User acceptance testing report and proof of performance to UNDP | Results of the individual tests and system performance test as outlined in the testing procedure; sign off by vendor, UNDP ITM, and system user; any deviations and pending tasks need to be recorded. | 1 week after testing |

| | | | |
|-----------------|---|---|---|
| 3.6.2.10 | Training manual/guide | <ul style="list-style-type: none"> i. On-Site Solar PV System Training Guide. ii. Provide manuals iii. Include training videos | With training |
| 3.6.2.11 | O&M Manual and troubleshooting guide | <ul style="list-style-type: none"> i. Solar PV System Maintenance and Troubleshooting Essentials Guide for Country Office (day-to-day operations). ii. Description of correct operation and maintenance of the system. Troubleshooting in case of errors. iii. Preventive and corrective maintenance logs. | With training |
| 3.6.2.12 | O&M schedule | Schedule of preventive maintenance activities | With training |
| 3.6.2.13 | After-sales service agreement | Agreement between UNDP, vendor, and system user, defining the scope of the included maintenance (corrective and preventive) and technical support (on-site and remote). | With commissioning |
| 3.6.2.14 | Maintenance reports | Solar PV System Regular Maintenance Technical Report(s). | 1 week after a maintenance visit |
| 3.6.2.15 | Photo and video documentation | <p>Documentation of system installation, commissioning, and testing, such as:</p> <ul style="list-style-type: none"> i. Civil works during installation ii. Training of local staff iii. Overview of the installed system iv. Solar panels location | During installation, training, commissioning, and testing |

Figure 12 - Documents and Deliverables Timeline



4. Payment Terms

PAYMENT SCHEDULE

- i. 1st Installment 30% of total acquisition
 - ☑ Written Acceptance of Goods based on inspection and full compliance with RFQ requirements
- ii. 2nd installment: 60% of total acquisition
 - Upon commissioning of the system as per Section 2, section **Error! Reference source not found.**
 - ☑ Submission of Deliverables
 - ☑ Passing Inspection
 - ☑ Complete Installation
 - ☑ Passing all Testing (including UAT)
 - ☑ Completion of Training on Operation and Maintenance and online monitoring
- iii. 3rd installment: 10% of total acquisition
 - ☑ after first 3 months of the total stabilization period

ANNEX 2: QUOTATION SUBMISSION FORM

Bidders are requested to complete this form, including the Company Profile and Bidder's Declaration, sign it and return it as part of their quotation along with Annex 3: Technical and Financial Offer. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

| | | |
|-----------------|----------------------------------|-------------------------------------|
| Name of Bidder: | Click or tap here to enter text. | |
| RFQ reference: | Click or tap here to enter text. | Date: Click or tap to enter a date. |

Company Profile

| Item Description | Detail |
|--|---|
| Legal name of bidder or Lead entity for JVs | Click or tap here to enter text. |
| Legal Address, City, Country | Click or tap here to enter text. |
| Website | Click or tap here to enter text. |
| Year of Registration | Click or tap here to enter text. |
| Legal structure | Choose an item. |
| Are you a UNGM registered vendor? | <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, insert UNGM Vendor Number |
| Quality Assurance Certification (e.g. ISO 9000 or Equivalent) (If yes, provide a Copy of the valid Certificate): | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? (If yes, provide a Copy of the valid Certificate): | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Does your Company have a written Statement of its Environmental Policy? (If yes, provide a Copy) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Does your organization demonstrate significant commitment to sustainability through some other means, for example internal company | <input type="checkbox"/> Yes <input type="checkbox"/> No |

| policy documents on women empowerment, renewable energies or membership of trade institutions promoting such issues (If yes, provide a Copy) | | | | |
|--|---|----------------|--------------------|--------------------------------|
| Is your company a member of the UN Global Compact | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| Bank Information | Bank Name: Click or tap here to enter text. Bank Address: Click or tap here to enter text. IBAN: Click or tap here to enter text. SWIFT/BIC: Click or tap here to enter text. Account Currency: Click or tap here to enter text. Bank Account Number: Click or tap here to enter text. | | | |
| Previous relevant experience: 3 contracts | | | | |
| Name of previous contracts | Client & Reference Contact Details including e-mail | Contract Value | Period of activity | Types of activities undertaken |
| | | | | |
| | | | | |
| | | | | |

Bidder's Declaration

| Yes | No | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Requirements and Terms and Conditions: I/We have read and fully understand the RFQ, including the RFQ Information and Data, Schedule of Requirements, the General Conditions of Contract, and any Special Conditions of Contract. I/we confirm that the Bidder agrees to be bound by them. |
| <input type="checkbox"/> | <input type="checkbox"/> | I/We confirm that the Bidder has the necessary capacity, capability, and necessary licenses to fully meet or exceed the Requirements and will be available to deliver throughout the relevant Contract period. |
| <input type="checkbox"/> | <input type="checkbox"/> | Ethics: In submitting this Quote I/we warrant that the bidder: has not entered into any improper, illegal, collusive or anti-competitive arrangements with any Competitor; has not directly or indirectly approached any representative of the Buyer (other than the Point of Contact) to lobby or solicit information in relation to the RFQ ;has not attempted to influence, or provide any form of personal inducement, reward or benefit to any representative of the Buyer. |

| Yes | No | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | I/We confirm to undertake not to engage in proscribed practices, or any other unethical practice, with the UN or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UN and we have read the United Nations Supplier Code of Conduct https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct and acknowledge that it provides the minimum standards expected of suppliers to the UN. |
| <input type="checkbox"/> | <input type="checkbox"/> | Conflict of interest: I/We warrant that the bidder has no actual, potential, or perceived Conflict of Interest in submitting this Quote or entering a Contract to deliver the Requirements. Where a Conflict of Interest arises during the RFQ process the bidder will report it immediately to the Procuring Organisation's Point of Contact. |
| <input type="checkbox"/> | <input type="checkbox"/> | Prohibitions, Sanctions: I/We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/Consortium members or subcontractors or suppliers for any part of the contract is not under procurement prohibition by the United Nations, including but not limited to prohibitions derived from the Compendium of United Nations Security Council Sanctions Lists and have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization. |
| <input type="checkbox"/> | <input type="checkbox"/> | Bankruptcy: I/We have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against them that could impair their operations in the foreseeable future. |
| <input type="checkbox"/> | <input type="checkbox"/> | Offer Validity Period: I/We confirm that this Quote, including the price, remains open for acceptance for the Offer Validity. |
| <input type="checkbox"/> | <input type="checkbox"/> | I/We understand and recognize that you are not bound to accept any Quotation you receive, and we certify that the goods offered in our Quotation are new and unused. |
| <input type="checkbox"/> | <input type="checkbox"/> | By signing this declaration, the signatory below represents, warrants and agrees that he/she has been authorised by the Organization/s to make this declaration on its/their behalf. |

Signature:

Name: Click or tap here to enter text.

Title: Click or tap here to enter text.

Date: Click or tap to enter a date.

ANNEX 3: TECHNICAL AND FINANCIAL OFFER

Bidders are requested to complete this form, sign it and return it as part of their bid along with Annex 2: Quotation Submission Form. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

| | | |
|-----------------|----------------------------------|-------------------------------------|
| Name of Bidder: | Click or tap here to enter text. | |
| RFQ reference: | Click or tap here to enter text. | Date: Click or tap to enter a date. |

PART A.

Currency of the Quotation: Indonesian Rupiah (mandatory for Local Bidders) or USD

INCOTERMS: DPU

Provide the following:

TECHNICAL OFFER. Bidders are required to provide the following as part of the technical offer, presenting 12 separate attachments:

- *Technical description of offer, including comprehensive description and diagrammatical representation of the technical solution offered.*
- *Datasheets and certificates of the required standards of the main components.*
- *Bill of Materials (BoM).*
- *Bidder's Statement Regarding Deviations/Non-Compliance (as per template provided in Appendix I in the ToR).*
- *Topics and content to be covered during training.*
- *Plan for bi-annual maintenance by the local partner/vendor, lasting for 3 years. Include the comprehensive details for procedures to be carried out during a periodic inspection.*
- *Details on freight, logistics, and installation plan in terms of timelines, delivery time, and production time.*
- *Proposed work plan and approach criteria in relation to the requirements in the terms of reference (TORs).*
- *Risk assessment and Mitigation plan.*
- *In case of agreement with a Local Partner:*
- *Letter signed by both parties confirming relationship between the supplier and local service provider.*
- *Official documentation stating that the Local Partner is a registered business in the country.*
- *A detailed profile of the local service provider including documentary evidence of similar services performed by the company.*

| Currency of the Quotation: Indonesian Rupiah | | | | | |
|--|---|-----|-----|------------|-------------|
| INCOTERMS: DPU | | | | | |
| Item No | Description | UOM | Qty | Unit price | Total price |
| MAIN COMPONENT: with detail requirement as specified in Annex 1 | | | | | |
| 1 | Photovoltaic Module (Total) | kWp | 35 | | |
| 1.1 | PV mounting system - location 1 (flat roof 3m height) | kWp | 10 | | |

| | | | | | |
|---|--|-------|-----|--|--|
| 1.2 | PV mounting system - location 2 (flat roof 3.5m height) | kWp | 25 | | |
| 2 | Power electronics for the 2 suggested locations (DC/AC ratio should be of at least 1.25) | pc | 1 | | |
| 3. | Replacement of Inverter in existing location (10kW) | pc | 1 | | |
| 4. | Remote Monitoring System | set | 1 | | |
| BALANCE OF SYSTEM: with detail requirement as specified in Annex 1 | | | | | |
| 1. | Wiring, cabling, and accessory | Set | 1 | | |
| 2. | Combiner Box | Set | 1 | | |
| 3. | Distribution Panel for new location | Set | 1 | | |
| 4. | Lightning and grounding system | Set | 1 | | |
| SERVICES: with detail requirement as specified in Annex 1 | | | | | |
| 1. | Mobilization and Demobilization | Set | 1 | | |
| 2. | Installation | Set | 1 | | |
| 3. | Commissioning Certificate | pc | 1 | | |
| 4. | After Sales Service and Warranty | years | 1.5 | | |
| Total Price | | | | | |
| Transportation Price | | | | | |
| Insurance Price | | | | | |
| Other Charges (if any, please specify in detail) | | | | | |
| Total Final and All-inclusive Price | | | | | |

Compliance with Requirements

| | You Responses | | |
|---|--------------------------|--------------------------|---|
| | Yes, we will comply | No, we cannot comply | If you cannot comply, pls. indicate counter – offer |
| Minimum Technical Specifications based on Annex 1 | <input type="checkbox"/> | <input type="checkbox"/> | Click or tap here to enter text. |
| Delivery Term (INCOTERMS) | <input type="checkbox"/> | <input type="checkbox"/> | Click or tap here to enter text. |
| Delivery Lead Time | <input type="checkbox"/> | <input type="checkbox"/> | Click or tap here to enter text. |
| Warranty and After-Sales Requirements | <input type="checkbox"/> | <input type="checkbox"/> | Click or tap here to enter text. |
| Validity of Quotation | <input type="checkbox"/> | <input type="checkbox"/> | Click or tap here to enter text. |
| Payment terms | <input type="checkbox"/> | <input type="checkbox"/> | Click or tap here to enter text. |
| Compliance to UNDP General Terms and Conditions | <input type="checkbox"/> | <input type="checkbox"/> | Click or tap here to enter text. |

Appendix I

| | | | | | |
|--------------------------------------|--|--------------------------|------------------------------|----------|-----------|
| 5. Compliance Response Form | | Understood | Understood with reservations | Comments | |
| 5.1 Introduction | | | | | |
| 1 | Introduction | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 1.1 | Sustainable Development Goals | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 1.2 | Smart UN Facilities | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 1.3 | 7-Step Green Energy Process | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 5.2 Project Description | | | | | |
| 2 | Project Description | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 2.1 | Project Objectives | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 2.2 | Project High-Level Requirements | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 2.3 | Description of Site | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 2.3.1 | Weather on Site | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 2.4 | Potential Location of PV Panels | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 2.5 | Estimated Load Consumption | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 2.6 | Generator | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 2.7 | Grid Quality | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3 | Statement of work | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.1 | After-sales services and response time | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.2 | Site Visit | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.3 | Bidders Conference | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 5.3 Technical Requirements | | Compliant | Deviations | Comments | Reference |
| 3.4.1 PV Modules | | | | | |
| 3.4.1.1 | PV Capacity | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.1.2 | Module Specifications | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.1.3 | Standards | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.1.4 | Module Efficiency | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.1.5 | Limited Power Warranty | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.1.6 | Voltage rating | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.1.7 | Tilt | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.1.8 | Labelling | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.2 PV Modules mounting | | | | | |
| 3.4.2.1 | Features | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.2.2 | Mounting Structure | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.2.3 | Life span | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.2.4 | Standards | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.3 Power electronics | | Compliant | Deviations | Comments | Reference |
| 3.4.3.1 | Features | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.3.2 | Inverter Specifications | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.3.3 | General Specifications | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.3.4 | Standards | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.3.5 | Safety | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.3.6 | Warranties | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.4 Technical Room (If applicable) | | | | | |
| 3.4.4.1 | Specifications | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.4.2 | Features | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.5 Online monitoring system | | | | | |
| 3.4.5.1 | Monitoring and Management Overview | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.5.2 | List of hourly basis parameters | <input type="checkbox"/> | <input type="checkbox"/> | | |

| | | | | | |
|--|---|--------------------------|--------------------------|-----------------|------------------|
| 3.4.5.3 | Standards | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.6 Smart power management | | | | | |
| 3.4.6.1 | System's operation logic | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.6.2 | Details | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.6.3 | Bypass switch | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.6.4 | Reactive power requirements | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.6.5 | Distribution board | | | | |
| 3.4.7 Wiring and safety | | | | | |
| 3.4.7.1 | Details | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.7.2 | Grounding | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.7.3 | Firefighter's switch | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.8 Warranty of the system Error! Reference source not found. | | | | | |
| 3.4.8.1 | Details | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.4.8.2 | Length | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 5.4 Tasks and Responsibilities | | Compliant | Deviations | Comments | Reference |
| 3.5.1.1 | Risk Assessment, Avoidance and Mitigation Plan | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.5.1.2 | Shipment of material | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.5.1.3 | Installation of the Solution | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.5.1.4 | Commissioning, UAT and Training | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.5.1.5 | Stabilization of the System | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.5.1.6 | Maintenance of the system | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 5.5 Timelines | | | | | |
| 3.6.1Tasks and deliverables | | | | | |
| 3.6.1.1 | Signature of the contract | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.1.2 | Site Survey | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.1.3 | Final Technical Design | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.1.4 | Pre-assembled technical solution tested and ready to be shipped | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.1.5 | Transportation | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.1.6 | Installation of the Solution | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.1.7 | Commissioning, UAT, Training | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.1.8 | Stabilization of the system | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.1.9 | Maintenance of the system | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2 Documentation | | | | | |
| 3.6.2.1 | Project Plan Report | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.2 | Site survey Report | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.3 | Design report including system design drawings | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.4 | Bill of materials | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.5 | Shipping documents | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.6 | Warranty documents | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.7 | Testing procedure | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.8 | Installation and commissioning report | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.9 | User acceptance testing report and proof of performance to UNDP | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.10 | Training manual/guide | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.11 | O&M Manual and troubleshooting guide | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.12 | O&M schedule | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.13 | After sales service agreement including maintenance (corrective and preventive) and technical support (on-site and remote) | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.14 | Maintenance reports | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 3.6.2.15 | Photo and video documentation | <input type="checkbox"/> | <input type="checkbox"/> | | |

Other Information:

| | |
|---|----------------------------------|
| Estimated weight/volume/dimension of the Consignment: | Click or tap here to enter text. |
| Country/ies of Origin: (if export licence required this must be submitted if awarded the contract) | Click or tap here to enter text. |

| | |
|---|---|
| I, the undersigned, certify that I am duly authorized to sign this quotation and bind the company below in event that the quotation is accepted. | |
| <div>Exact name and address of company</div> <div>Company NameClick or tap here to enter text.</div> <div>Address: Click or tap here to enter text.</div> <div>Click or tap here to enter text.</div> <div>Phone No.: Click or tap here to enter text.</div> <div>Email Address: Click or tap here to enter text.</div> | <div>Authorized Signature:</div> <div>Date: Click or tap here to enter text.</div> <div>Name: Click or tap here to enter text.</div> <div>Functional Title of Authorised Signatory: Click or tap here to enter text.</div> <div>Email Address: Click or tap here to enter text.</div> |

Communications Management Plan

This section sets the communication framework for the life of the solar PV installation process. The overall desired outcome is to keep all parties well informed in a timely fashion to avoid disruption and possible misaligned expectations.

| | Communication Activity | Description | Frequency | Format/Channel | Deliverable | Responsible | Accountable | Consulted | Informed |
|----|---------------------------------|---|------------------------------|-------------------------|---|---------------------|----------------|----------------------|----------------------|
| 1 | Publishing RFQ | Final ToR & RfQ | As needed | e-mail | Final RFQ | CO Procurement, GET | CO Procurement | Vendors | CO |
| 2 | Site Visit Registration | Submission of list of attendees (including IDs). | As scheduled | e-mail | List of bidders | Vendors | Vendors | CO | CO Procurement , GET |
| 3 | Site Visit | Initial visit by bidders | As scheduled | e-mail | List of bidders and list of questions and answers | CO, GET | CO | Vendors | CO Procurement |
| 4 | Bidders Conference Registration | Submission of list of attendees | As scheduled | e-mail | List of bidders | Vendors | Vendors | CO Procurement , GET | CO |
| 5 | Bidders Conference | Online conference | As scheduled | e-mail, videoconference | Compiled clarification list | CO Procurement, GET | CO Procurement | Vendors | CO |
| 6 | Clarifications | Responses & questions | As needed before deadline | e-mail | List of questions and answers | CO Procurement, GET | CO Procurement | CO | Vendors |
| 7 | Receipt of bids | Update on progress | Weekly | Meeting | Status update | CO Procurement | CO Procurement | GET | CO |
| 8 | Evaluation | Technical & financial | After submission | e-mail | Final assessment results | CO Procurement, GET | GET | | CO |
| 9 | Winner Announcement | Outcome notification | After evaluation | e-mail | Informational message, PO | CO Procurement | GET | Vendors | CO |
| 10 | Installation Plan | GET shares installation plan template to all stakeholders | As needed | SharePoint | Installation Plan | Vendor, CO | Vendor, CO | GET | GET, CO Procurement |
| 11 | Kickoff Meeting | Meeting of stakeholders | Once before project start | videoconference | Minutes of the meeting | GET | GET | Vendor, CO | CO Procurement , CO |
| 12 | Site survey | Coordination of vendor visit | After project offer | e-mail | Site Survey Report | Vendor | Vendor | CO, GET | CO Procurement |
| 13 | Final System Design | Confirmation of detail | As needed | e-mail, phone | Design, a letter from manufacturers | Vendor | Vendor | GET | CO, CO Procurement |
| 14 | Shipping | Shipment of goods | As per the provided timeline | e-mail | Invoice, Packing List, Bill of lading, Insurance | Vendor | Vendor | CO, GET | CO, GET |
| 15 | Customs clearance | Clearance of good at the CO | As needed | In-person, e-mail | Clearance confirmation | CO | CO | Vendor | GET |
| 16 | Installation | General | As needed | e-mail, phone | General questions and change requests | Vendor, GET | Vendor | CO | CO Procurement |
| 17 | Onsite Assessment | Assessment of all aspects of the project | End of each installation | e-mail, In-person | | GET, Vendor | GET | Vendor | CO, CO Procurement |
| 18 | Invoice Payment | Receipting and disbursement | As per the agreed plan | e-mail, phone | Invoice, payment confirmation | GET | GET | Vendor | CO Procurement , CO |
| 20 | Commissioning | Schedule for training, UAT, etc. | End of each installation | e-mail | Signed UAT, checklist, etc. | Vendor, GET | Vendor | CO | CO Procurement |
| 21 | System Inauguration | | | | | CO, GET | CO | - | - |
| 22 | System Maintenance | Bi-annual and general support | As needed | e-mail, phone | Maintenance report | GET, Vendor | Vendor | CO | - |

Installation phase: - Please note that during the installation phase, it is requested that all stakeholders are included in all email exchanges. The GET provides assistance in the general project management, nevertheless, direct communication between the Vendor and the CO is advised. In case of delayed response time or in case of arisen problems, GET will step in to enhance communication flow.

Project Team Contact Details

| Name | Designation | E-mail |
|--------------------------|-------------------|--|
| Country Office (CO) | End user | bulan.purnamasari@undp.org , |
| ITM GET (GET) | Project Manager | itm.green.energy.team@undp.org |
| CO Procurement Team | Contract Manager | martin.kurnia@undp.org |
| <<Vendor name>> (Vendor) | Solution provider | Vendor’s email TBA |
| | | |

Communications Conduct:

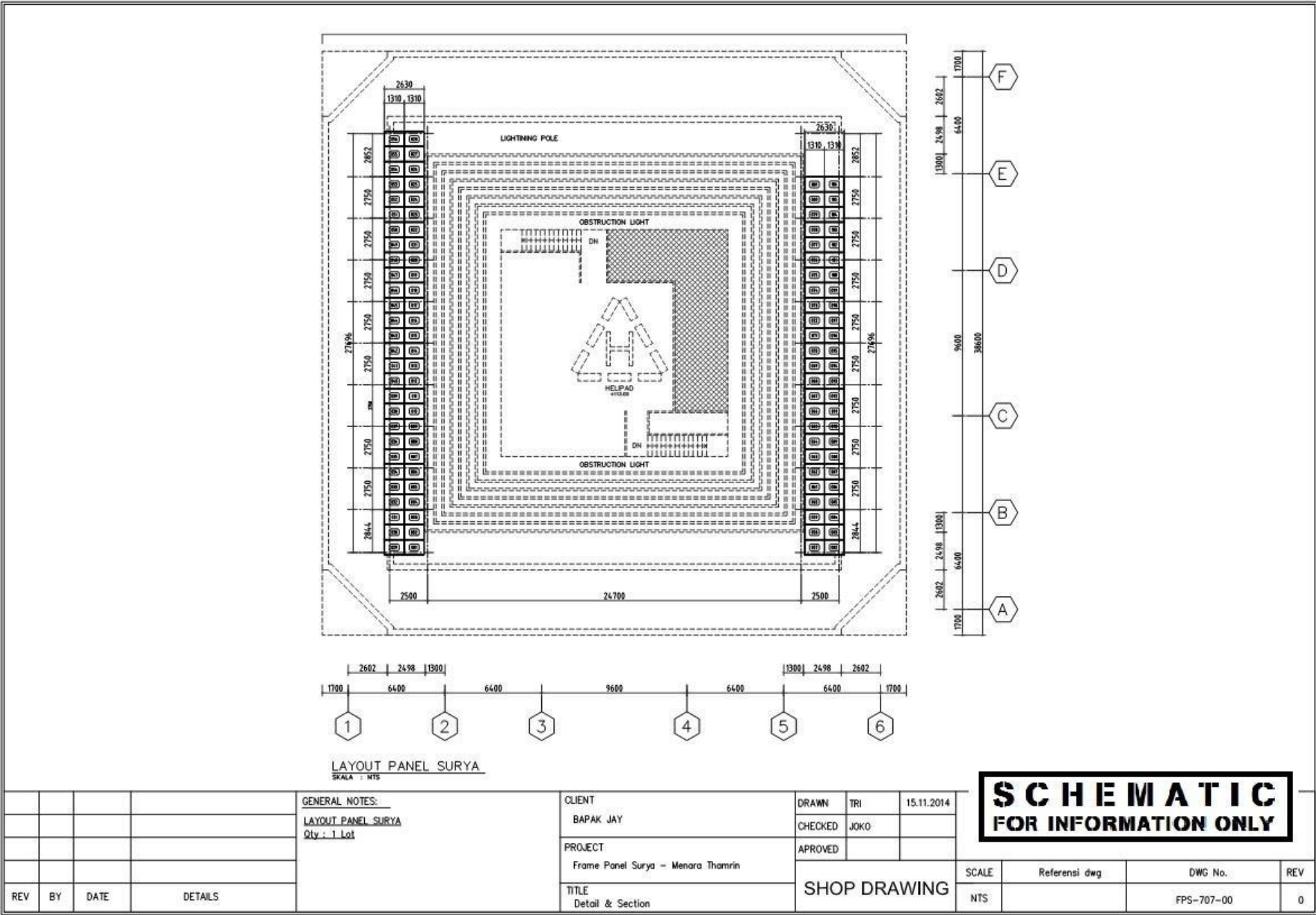
Meetings: - Ad-hoc project meetings will be convened whenever there is a need for in-depth discussions that cannot be achieved through e-mail or telephone communication. A record of the meeting proceedings will be kept, particularly action points and agreed decisions.

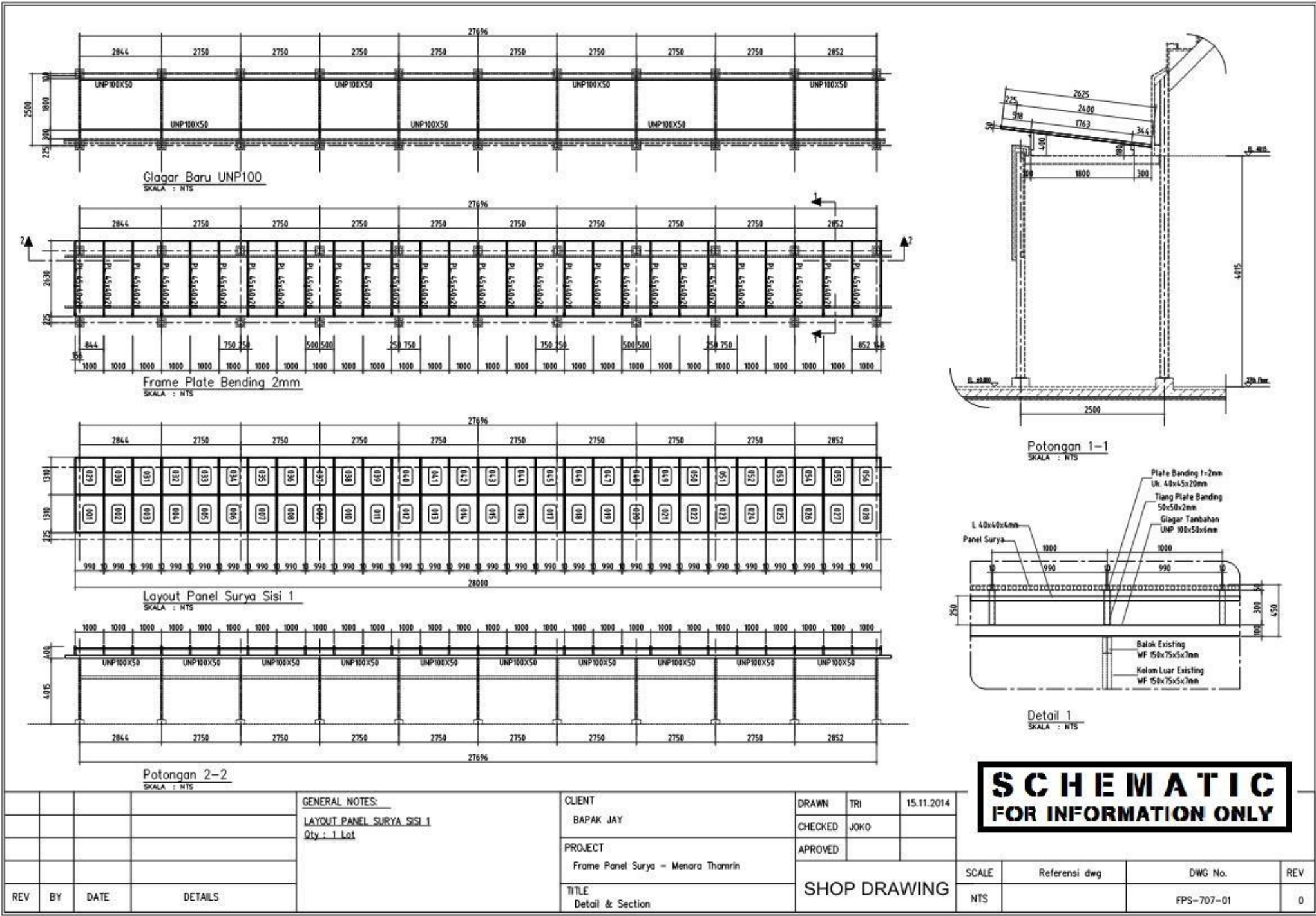
Email: - E-mail communication is considered an official record in UNDP and this applies to solar PV installation projects as well. Most issues and information with clear-cut intents will be communicated through e-mail to the relevant parties. To keep all informed and for audit trail purposes, all parties should be copied as suitable, and the same thread used as much as possible. All circumstances that may impact delivery timelines should be proactively communicated by the concerned party to allow for timely resolution.

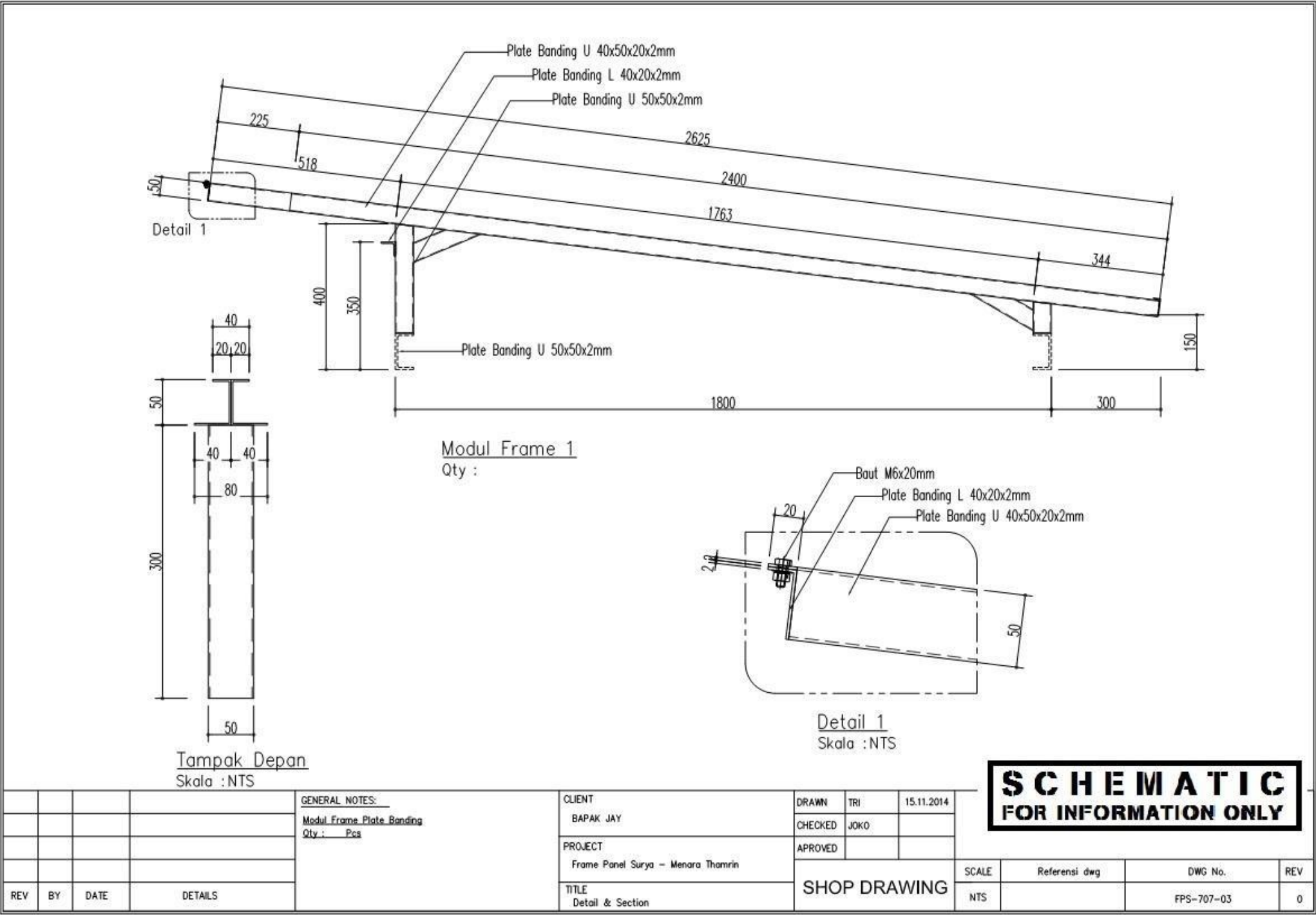
Informal Communications: - For successful and timely project implementation, informal communication is a necessary ingredient especially in solar PV projects. Given the nature of the projects, the interaction between the parties, informal communication will form a sizable chunk of overall communication in this project. However, caution needs to be exercised to avoid negative consequences at a later stage. All communication that commits either part/stakeholder should be formally documented and communicated accordingly.

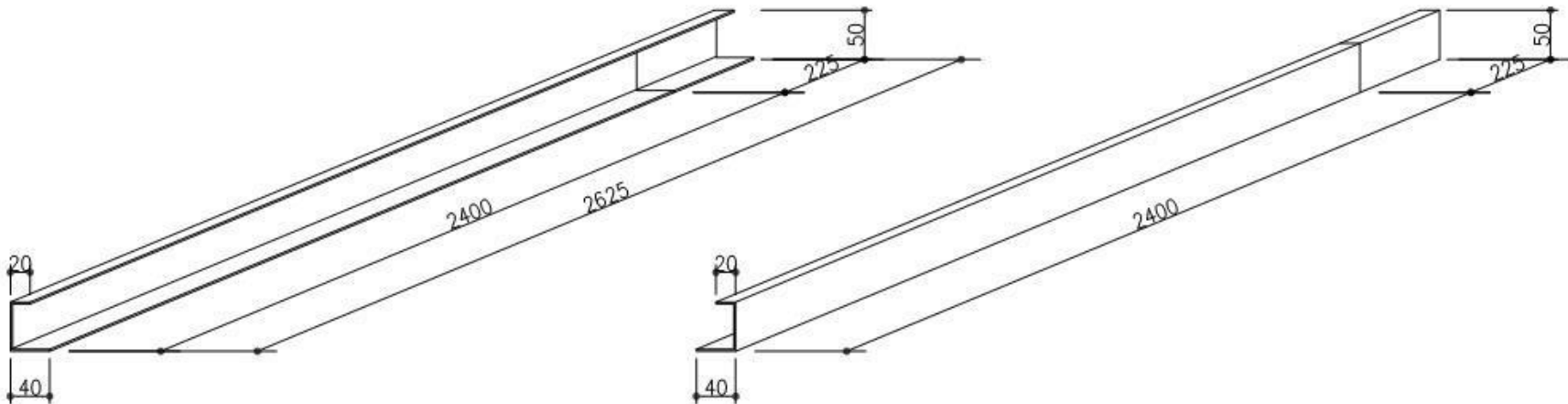
Appendix II

The technical and schematic drawings of the existing 22 kWp Solar PV system.

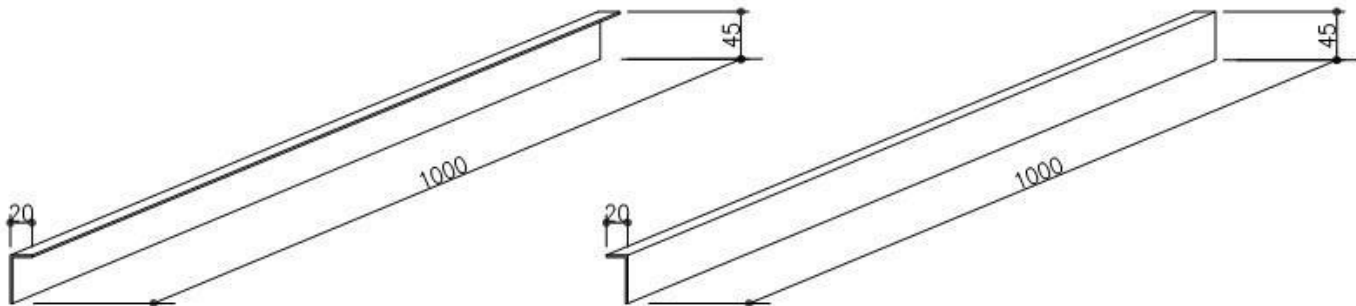






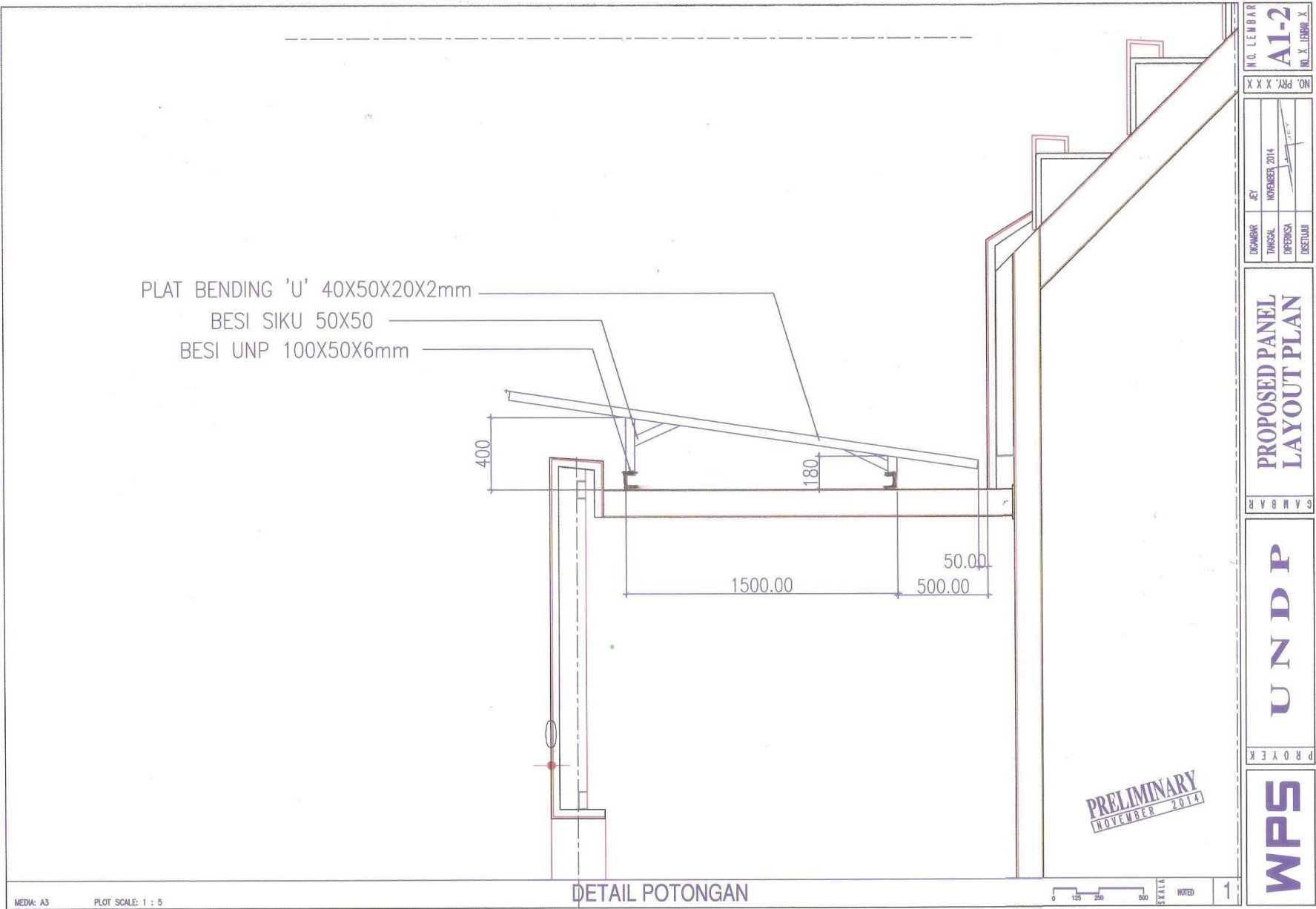


Detail Plate Banding 2mm
Qty :



Detail Plate Penutup Depan & Belakang
Qty :

| | | | | | | | | | | | | |
|-----|----|------|---------|---|---|--------------|------|------------|---|---------------|---------|-----|
| | | | | <div>GENERAL NOTES: Detail Frame Plate Banding Qty : Pcs</div> | <div>CLIENT BAPAK JAY</div> <div>PROJECT Frame Panel Surya – Menara Thamrin</div> <div>TITLE Detail & Section</div> | DRAWN | TRI | 15.11.2014 | <div>SCHEMATIC FOR INFORMATION ONLY</div> | | | |
| | | | | | | CHECKED | JOKO | | | | | |
| | | | | | | APROVED | | | | | | |
| REV | BY | DATE | DETAILS | | | SHOP DRAWING | | | SCALE | Referensi dwg | DWG No. | REV |
| | | | | | | NTS | | | | FPS-707-04 | 0 | |



Who we are

UNDP ITM/CIAS

Our Vision

Creating Smart Facilities to build local capacity and inspire a movement.

Our Mission

To support and guide Country Offices in leveraging technology for efficient delivery on the organization's mandate.

The Information and Technology Management is the leader in digital transformation, so UNDP can be agile and effective in its global delivery.

UNDP ITM is headquartered in New York and UN City Copenhagen Denmark, a smart facility which hosts 9 UN agencies and is built with a high focus on sustainability. Our combined efforts provide standardized practices for UNDP country offices to achieve the Sustainable Development Goals and incite other local and international entities to follow our lead.

To illustrate our work, in the wake of the 2014 West Africa Ebola outbreak, country offices in Guinea, Sierra Leone and Liberia could not rely on the grid to meet their energy requirements and diesel shortages restricted access to a sufficient power supply. In order to address this, UNDP ITM leveraged its experience in implementing smart facilities to roll out solar solutions in the affected countries.

Following this outbreak, UNDP ITM has aided the installation of solar panel systems in over 13 countries worldwide.

We look forward to implementing the Smart Facilities concept even further.



United Nations Development Programme

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Country Office ICT Advisory Services

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