

SOW for the Design and Installation of Solar PV Electric system at 75, Gregory's Rod

The work consists of Designing and Installation of Solar PV Electricity System at 75, Gregory Rd, a US Embassy owned property. All the work shall be in accordance with recognized US and International Building and Construction codes, NFPA and NEC code (article 690) relevant to the PV system design and installation. Construction and Installation shall be abided by all the Embassy rules and regulations including security and safety regulations.

The methods that the contractor will use need to provide continuous progress on the job site according to the projected time line of four weeks. Any changes in construction or installation from this Scope of Work shall be approved in advance in writing by the Contracting Officer.

All work described in this Scope of Work shall be completed by the contractor. The contractor shall provide qualified supervisory, technical and labor personnel capable of meeting the embassy requirements. The labor force shall possess the Electrical, Electronic, constructional, fabrication, masonry, plumbing, fitting, painting skills for this project and sufficient staff to accomplish the work in a timely manner. The contractor shall provide all necessary material, tools, equipment, vehicles required for this work.

Contractor should ensure the minimum disturbance and no damages to the existing property of the premises and inside the building.

Work Requirement

1. Embassy will provide LG, MONOX, and Monocrystalline Modules (42 Nos) and SUNIVA OPTIMUS® SERIES MONOCRYSTALLINE SOLAR MODULES (15 Nos) enough quantities to carry out the project as per the details below. The location consumes 4200 units per month.
2. It is required to design, construct and install a Solar Photovoltaic Power system in Grid connected method at 75, Gregory's Road.
3. We recommend using micro inverter connection instead of the central inverters to improve the efficiency of the PV electric system for this project.
4. Vendor should take the design idea that will be presented to you during the site visit and as per the drawings and come out of the proposal to mount the system as a shade structure. The design should be a Simplified array.
5. Vendor is responsible to analysis the structural integrity and the stability of the metal frame works shown in the diagram and do necessary adjustment to ensure foolproof shed along the swimming pool with solar PV panels

6. Vendor need to evaluate the pros and cons of the layout and come out with the best configuration by fulfilling our requirements and the necessary installation direction according to the manufacturer's specifications.
7. Vendor should build the GI metal structure from the base level to support the weight of the panels and installation. The whole structure should be built as per the most current and safe method of steel fabrication standard followed in Sri Lanka and approved by licensed chartered civil engineers association. Structure should be not only withstand the load but also aesthetically welcome with the best possible finishing techniques. Structure should not have any safety issues, deformations, sags sections, uncovered and opened sections, poorly done joints, loose welded or poor welding joints, sharpen edges, misaligned section, worn-out parts and any none standard finishing under any circumstances.
8. The proposed system, accessories and all the installation work should be in compliance of NFPA 70. NEC 2011. ARTICLE 690.Solar Photovoltaic (PV) Systems 690.4 Installation (attached) and NEC Article 690
9. Vendor should also include the panel placement drawing together with the detailed technical brochures and description of their particular system. Placement of the panel, equipment and the accessories is a part of vendor's responsibility and it should meet the terms of manufacturer's recommendation. Any issues due to shadow, solar path, direction or angle will be solely addressed by the supplier.
10. Vendor should use sunlight and weather resistant materials for all outdoor equipment and installations. Module wiring, if visible from underneath, must be carefully concealed to keep the installation aesthetically pleasing inside the shed along the swimming pool
11. Vendor should design the system with a minimum of electrical losses due to wiring, fuses, switches, and inverters.
12. Install equipment according to manufacturer's specifications, using installation requirements and procedures from the manufacturers' specifications. It includes properly grounding the system parts to reduce the threat of shock hazards and induced surges
13. Vendor must be able to terminate and commission the PV system from the CEB supply meter to main distribution panel. If additional MCCB or isolator or any other switchgears/accessories are required, vendor should provide the figures and the details of such requirement clearly in the quotation. The vendor is responsible to evaluate the existing CEB supply, Main Switch Board and the distribution panels, method of the wiring done and accessibility, available spacing and mounting/installation requirement of the new PV system and component etc..

14. All inverters, monitoring equipment, interfacing equipment and accessories should be either US or European made product having comprehensive warranty of over five years.
15. Vendor should provide method of monitoring the system performance through a web application and the required equipment or system component should be included.
16. Vendor need to include dedicated lightening arrester or protection system that will be eventually protecting the complete PV system as per the manufacturer's recommendation. The functionality and the performance standard are sole responsibility of the vendor
17. All the installation works of the Net meter and accessories (Grid Interconnection) with the help of Ceylon Electricity Board will be done by the vendor and the necessary document for the approval and authorization will be issued for the selected supplier
18. Any other related civil, mechanical, electrical, fabrication and carpentry works shall be completed by the vendor. It is required to carry out all the installation and related works in a presentable and aesthetically acceptable way so that the finishing will not be distorted the standard living condition of the location. Embassy will only provide assistant and escort for the necessary works.
19. Selected vendor need to propose a maintenance agreement with the embassy and the cost will be separately shown as a line item. Cleaning, service and maintenance of Solar PV Panels, Inverters, panel mounting structure, cabling and monitoring systems will be covered in this agreement as per the manufacturer's recommendation.
20. Completion of the project will be accepted by the embassy only after completing the installation works and after the generated electricity from the solar PV system is fed in to the CEB through the net meter. Any adjustment, system configuration, troubleshooting or change or parameters should be done by the vendor until such output is obtained.

The Embassy reserves the right to inspect the quality of installation works and to order corrections or replacement, at no additional expense to the Embassy, of items determined as not meeting the minimum standards.

The contractor shall clean up left over materials from the site(s) prior to the project's being determined as complete. No trash or construction debris shall be left in the project area prior to acceptance by the Embassy.

The contractor shall make every reasonable effort to keep the job site clean during the duration of the project. Any defects, electrical fault, connection failure, or malfunctioning of the installed or the affected system or equipment within five years of time, shall lead the contractor doing repair or replacement free of charge to the US Embassy.