

Invitation To Bid (ITB)

Supply and Installation of Solar Panels at Ministry of Environment in Cambodia **The Additional Clarification Note to Bidder's queries**

Process 7492

Reference to the above ITB, UNDP has received the below queries from bidder and we would like to share the clarification as below:

Q1: According to our understanding of the solar regulation grid connected systems need to have zero export protection, I did not see anything specified in the bidding document.

Q1: The consumption of the building is much bigger than the capacity of the solar system (solar would replace less than 10% of total energy use), there is no need specified requirement because there will be no exceeded energy, even in weekends.

Q2: Please clearly indicated how we could fit 66kW on the roof the two areas of only 13.5 by 21.2 with required distances from the tower (before 17/21 was indicated). There would only be 11.5 by 17.7 left $\times 2 = 407\text{m}^2$ left. If all panels would be stacked together it would fit 67kw, however the design requires spacing between rows. Then after total numbers need to fit string configuration. I suggest that the system should be about 54kW. Or other areas should be identified.

A2: The PV can be installed at the two large terraces on the top floor only.

Q3: What inverter grid code should be used?

A3: Please clarify the question. If the bidder is asking about the function of inverter to synchronized into grid, please following EDC standards in "Regulations on general conditions for connecting solar generation sources to electricity supply system of national grid or to electrical system of a consumer connected to the electrical supply system of national grid".

Q4: Page 53, Motorized breakers are very expensive and made for building automation systems. For safety button for solar disconnection the shunt trip on the breaker can be used.

A4: Motor-driven circuit breaker is for the compatibility with the automatic disconnection device. Shunt trip circuit breaker could be used if the device is compatible with the system.

Q5: Please specify performance test procedure. What in case the weather is extremely cloudy during the 2 weeks testing period, the results could be sufficiently lower.

A5: The day with extreme cloudy condition (average irradiation lower than 100W/m²/hour) will not be taken into account in Performance test. Weather data from weather station will be used for excluding those days from testing period.

Q6: What is the commissioning test procedure/requirement, grounding tests, measurement of string voltage/current related to insulation, PV 150?

A6: Refer section **9.6. Mechanical completion, controls, testing.** The Contractor will perform the commissioning and full load testing by their own procedure. This procedure will be reviewed, then supervised and validated by Consultant and the Client (UNDP).

Consultant will perform Mechanical completion tests independently, to validate the installed system with approved technical proposal.

Q7: Who will do actual commissioning.

A7: Commissioning will be performed by the Contractor, with validation of the Client (UNDP/MoE).

Q8: Before construction who will approve shop drawings/method statements and risk reviews, UNDP, Client or consultant?

A8: The UNDP will approve.

Q9: Before construction who will approve shop drawings/method statements and risk reviews, UNDP, Client or consultant?

A8: Please coordinate with MoE about the installation of the screen, possibly in the guest room in ground floor. The screen will provide basic information of the system, generated power at least.

Q10. If monitoring is cloud based, do we still need to provide the laptop?

A10 : If the cloud based monitoring solution could cover all requirements, then there is no need of computer.