

## RFP22-3712

# Supply and delivery of a 60kWp solar PV grid connected system with battery energy storage system to Yap, Federated States of Micronesia.

### Supplementary Information – 1

<b>Pre-Bid Meeting</b>	08 <sup>th</sup> July 2022
<b>Start</b>	11.00am (Fj Time)
<b>End</b>	12.30am (Fiji Time)
<b>Attendees</b>	<ul style="list-style-type: none"> <li>➤ CBS Power Solutions –Amith Singh, Shalvin Chand , Shivneel Narayan</li> <li>➤ Intermepro – Veronica, Camila Luoni, Ignacio Fochtman, Santiago Sevala, Nicolas Mussi</li> <li>➤ Vergnet – Theo Dumanchin</li> <li>➤ SPC and YSPSC Team – Frank Vukikomoala, Vincent Bouet , John Chieng ,Leola Primo , Estelle Grazi , Nanise Taufa , Jese Loga &amp; Heilala Erenavula</li> </ul>

### Questions regarding the PV MODULES:

1. We want to confirm if it is possible to offer higher power solar panels. Since today the minimum power used is greater than 500Wp and has better characteristics and efficiency.

RFP states:

*"Monocrystalline or Polycrystalline Photovoltaic Module Designed for off-grid applications with following specifications **or substantially equivalent:***

*Ideally 200 Watts, 24 Volts but see Wp CAPACITY AND CELL CONFIGURATION below*

*...Resistance: 227g steel ball dropped from 1m high and 60 m/s wind...*

*– or PV modules substantially equivalent with same or greater resistance to wind load and to flying objects impact.*

#### *Wp CAPACITY AND CELL CONFIGURATION*

*Bidder will determine and propose the Wp capacity and cell configuration of the individual panels that provides the lowest overall cost for the mounted array while retaining the mechanical strength needed to meet the wind loading specification and the electrical requirements of the array. "*

Thus it is possible to offer higher power solar panels: greater than 200 Watts only if they retain the mechanical strength needed for 60 m/s wind load and "Resistance: 227g steel ball dropped from 1m high"

2. Could you please clarify if PV modules with a higher power rating Wp can also be offered as long as they have the same or greater resistance to wind load and to flying objects impact?

Yes, see above answer



3. Could you please specify if the resistance requirement for the PV module of a 227g steel ball dropped from 1m high is referring to a specific certification or just a declaration from the manufacturer?

It is a declaration from the manufacturer: hail resistance or allowable hail. Although Yap does not encounter hailstorms, PV panels can be subjected to flying objects impact during typhoon and we wish a minimum of damages in this case. Hail resistance is often stated in the manufacturer specifications besides wind load.

#### Questions regarding the PV MODULES SUPPORT STRUCTURES:

4. Could you please specify if the ground mounted structure for the PV module must strictly be made of aluminum or if steel with suitable corrosion resistance can also be supplied?

*"The arrays shall be mounted on a reinforced concrete structure built by YSPSC and very similar to how it is illustrated in Part E10-Diagrams and Photos on photo1, diagrams 1 & 2"*

*"The supplier / bidder shall provide all the metallic (aluminum) structure and hardware (i.e. mounting rails, U beams, brackets, nuts, bolts, washers, foundation bolts, bracings if necessary, etc. and clear mounting instructions and diagrams of such structure."*

Aluminum and stainless steel are accepted for the metallic structure.

Suitable galvanized steel anchor bolts / foundation bolts are accepted to mount the metallic structure on the concrete structure built by YSPSC.

Bracings may be made of suitable galvanized steel if more appropriate to offer best resistance against maximum wind load (typhonic winds). The thickness of galvanization must be sufficient to avoid corrosion :

#### *"WEATHER RESISTANCE*

*All structures must be able to resist at least 20 years of outdoor exposure in the location's harsh tropical marine environment without any appreciable corrosion or structural fatigue."*

#### Questions regarding the POWER INVERTERS:

5. The requested solution is designed with discontinued Schneider equipment. Today these devices are no longer distributed and it is not possible to comply exactly with the solution. The new models of inverters are the XWPro 6848, and the maximum allowed coupling is 6 units. Is possible to offer these inverters? This will imply different configuration of clusters and battery banks.

RFP states:

*"Inverters will be configured for three phase output 120V/ 208V, 60 Hz pure sine wave power and will operate on a DC input of a nominal 48V that may vary from 42V to 60V without causing any reduction in AC power quality. **The rating of the inverters system shall not be less than 61.2kW Continuous output power at 25°C.***

The Battery Inverters could be arranged as follows:

Solution 1: Nine inverters 6800W Continuous output power at 25°C

or

solution 2: Six inverters 12000W Cont. output power at 25°C

or

Any other reliable solutions i.e. a failure of one component of the system will not stop the entire system which will be able to provide a derated power on the 3 phases until the component is replaced.



"The new models of inverters are the XWPro 6848, and the maximum allowed coupling is 6 units." Such system does not seem to reach **61.2kW Continuous output power at 25°C.**

**Please consider Solution 2 and Any other reliable solutions i.e. a failure of one component of the system will not stop the entire system...**

6. Is possible to offer a solution with a central hybrid inverter? This system will comply with the power and energy required, and will be more efficient, including lithium batteries.

"Any other reliable solutions i.e. a failure of one component of the system will not stop the entire system which will be able to provide a derated power on the 3 phases until the component is replaced."  
are accepted. A central hybrid inverter if selected will need to comply with the above to be accepted and replacement of the failed component should be possible by the local crew on a remote island.

**Note :**

Lithium ion batteries are not compliant with these technical specifications : the type of batteries requested is as follows :  
"Industrial Batteries type **OPzS** (O Ortsfest / **stationary** Pz PanZerplatte / **tubular plate** S Flüssig / **flooded**) designed for reliable energy storage for renewable energy systems, network power and for critical systems requiring uninterrupted power supply.

The application is Off-grid Renewable Solar.

The technology must be well proven for decades in medium and large power applications. Main characteristics are robustness, long design life, operational safety, ideally suitable for use in solar power stations, power distribution companies, and safety equipment power supplies, in harsh environments:

- Optimized design for renewable energy applications with highest cycling ability and long life
- large electrolyte reserve – very long topping up intervals "

The main reason for this: the batteries shall last 12 years in Ulithi Falalop atoll harsh warm weather conditions without significant performance degradation and no risk can be taken in this regard by selecting other type of batteries.

**Other questions:**

7. Could you please confirm that the Automatic Generator Start (AGS) can be supply as part of the Inverter control system through its auxiliary relay (two-wire generator start)?

Yes, it is accepted

8. Could you please confirm the location of the grid connection point?

The grid connection point is the Low voltage side of the YSPSC 3phase 208V/120V - 4.16kV step up transformer bank on pole.

Please refer to the "Ulithi Falalop Arrays Layout project.kmz" file:

The location of this transformer is shown as a small red rectangle next to the diesel power plant.



The center of the diesel power plant building can also be considered as the grid connection point location (i.e. end for the AC 3 phase cable represented in red).

9. Can you please send the link to the Google Earth KMZ file as the link can't be found below photo 2 in section E10?

File is available in the RFP site – <https://prdrse4all.spc.int/node/7268>

10. Is there a possibility of an extension to deadline?

Please note that key dates for this RFP have been extended.

This time table is intended as a guide only and while SPC does not intend to depart from the timetable, it reserves the right to do so at any stage.

STAGE	DATE
<b>Deadline for seeking clarification</b>	22/07/2022
<b>RFP Closing Date</b>	05/08/2022
<b>Award of Contract</b>	31/09/2022
<b>Commencement of Contract</b>	31/09/2002
<b>Conclusion of Contract</b>	30/06/2023