

## **Clarifications Note 2 – ITB GP 600409**

1. In the scope of works (SoW) described in chapter 3.a.3. (section 3) is not clear if during the present bidding phase, is necessary to consider also: installation, commissioning, civil works and other activities which are required on site. Some of these activities are site-dependent. No information on the installation site are provided, except general ambient conditions.

**Answer:** These criteria and service requirements will be considered during secondary bidding processes and, therefore, on a case by case basis. They are not considered for this bidding exercise but suppliers must confirm that they are able to provide the services listed in the TORs.

2. Please explain the meaning of "secondary bidding process". When is this phase going to happen?

**Answer:** Once multiple LTAs are established, a secondary bidding process (secondary competition) will be conducted between the LTA holders for each call-off.

3. Are there any limits to the product origins?

**Answer:** No, but the products must comply with all requirements in the TORs including quality certification as requested in ITB.

4. For clarification reasons and final pricing, how many systems should be delivered in the first contract (one, ten or more)? Also what is the delivery time for the system? Is it within 2017 or 2018?

**Answer:** Please see **Q & A 4** in **Clarifications Note 1**

5. Referring to chapter 3.b.2.2. (Section 3) is defined that "...a containerized solution for the batteries may be requested during secondary bidding process." Is it possible to make an offer considering during the present bidding phase a containerized solution. Not all battery suppliers have an outdoor solution. We consider that a containerized solution has more benefits in terms of safety, management and installation.

**Answer:** A containerized solution may be requested during secondary bidding. Bidders are also welcome to include the containerized solution in their offer to this ITB.

6. Referring to chapter 3.b.2.3. (Section 3) please define if it is possible to replace the batteries 2 or 3 times during the 10 years of lifetime, instead of using only one package for the 10.000cycles in 10years.

**Answer:** Please refer to **Q & A 1** in **Clarifications Note 1** as well as **Addendum 2**

7. Do the capacity ranges mentioned for each Sub Lot for lot 2 and 3 refer to the installed capacity at the beginning of life or the capacity necessary at the delivery point?

**Answer:** They refer to the nominal capacity of the ESS

8. Referring to chapter 3.b.2.4. (Section 3) we understand (considering an example): For Sub Lot 2.4 with an installed capacity of 1000kWh of batteries, 40%DOD is equal to

400kWh. The most onerous C-rate for Lot 2 is 0.2C, since the C-rate is equal the ratio between power (kW) and energy (kWh), this means that with 1000kWh and 0.2C, the power will be **200kW**.

We understand that the definition of rated power is:  $P = (1000\text{kWh} \times 40\%\text{DOD}) / 12\text{h} = 33,3\text{kW}$  discharge and the 2xP should be **66,6kW**.

After these two considerations, we understand that the inverter should be elected considering that the maximum power output will be (in this case) 200kW, while during operation it will be (only for 5sec) 66,6kW.

Is this correct? Could you please clarify, maybe using a similar example?

**Answer:** Please refer to section 3.b.2.3 Technical requirements – Lot 3 of the amended ToR:

Consider the minimum current based on the C-rate for sizing the inverter. For this ITB, the inverter will have to be sized considering the following C-rate as a reference (nominal current):

- Lot 2: 0.05C discharging (considering 8h) and 0.07C charging (considering 6h)
- Lot 3: 0.1C discharging (considering 8h) and 0.13C charging (considering 6h)

Please note that the maximum discharging current should be twice the nominal current during 5 secs, thus:

- Lot 2: 0.1C discharging
- Lot 3: 0.2C discharging

In the case when higher requirements are identified for any particular site, these will be indicated in the secondary bidding process for the specific project

9. Referring to chapter 3.b.2.5. (Section 3) is mentioned that for Lot 2, the total number of **cycles should be more than 4000 cycles. Is this an error? Please clarify.**

**Answer:** No, it is not an error. Please note that 1 cycle a day is equivalent to 365 cycles/year which equals the 4,000 cycles approximately. These are cycles at 40%, thus equivalent to 1,500 cycles in 10 years (approximately).

10. Referring to chapter 3.b.2.5. (Section 3) please clarify if it is strictly necessary, otherwise the bidder is excluded, that the inverter is compatible and been used in a project.

**Answer:** Yes. The compatibility of the battery with the inverter is strictly necessary. And it should be demonstrated that the solution has been operating in the past.

11. Referring to section 7, please confirm that the *practical capacity can be defined as*: for Lot 2, 1000kWh batteries with 40%DOD = 400kWh  
Energy Throughput is:  $400\text{kWh} \times 1500\text{cycles} = 600.000\text{kWh}$   
Please confirm if the previous number should be multiply by ten (10) as stated on page 28 or on page 63.

**Answer:** Please refer to **Q & A 1 in Clarifications Note 1** as well as **Addendum 2** (corrected on page 28 of the amended ToR)

12. Is possible to have an extension of the deadline of Bid Submission of 1 month (1st of June)? Please confirm.

**Answer:** Please refer to Addendum 1

13. We would like to submit an own independent bid for the lithium-ion ESS unit. However, we may also be a pure component supplier to other bidders which offer also the PV

part. Is it acceptable in accordance with this paragraph that we are a supplier for bidders of complete solutions (Lot 1, Lot 2 and Lot 3) and individual bidder for ESS?

**Answer:** Yes, it is acceptable.

14. Is partial bidding of lots acceptable, e.g. bidding only for Sub-Lot 2.2, 2.3, 2.4?

**Answer:** Yes, it is acceptable.

15. We comply with our average annual turnover. However, an audited financial statement does not exist due to the nature of the company. Do you accept also an annual financial statements from a public accountant?

**Answer:** Yes, we accept these.

16. 3.a.3 B Lot 2 / Lot 3:

The required capacity range for each sub-lot is relatively wide, e.g. 200 – 500 kWh. We are able to supply ESS in multiple configurations, e.g. 61, 68, 76, and 84 kWh AND multiples of thereof. The tender form is not practical to include all different options. Is there a preference regarding the capacities from UNDP for this sub-lot and the other sub-lots?

**Answer:** Bidders should provide a configuration *within* each range – since pricing will be calculated based on **USD per Kwh**.

17. 3.a.4 Lot 2 / Lot 3

Lot 2:

The practical cycles during life ownership depend strongly on the actual charge-discharge profile (c-d profile). We are using a battery supplier which guarantees 4,000 cycles at 80% DoD at nominal C-rate until 80%EoL. The ETP calculation in the tender deviates strongly from the standard guarantee. Can we use the following calculation to compare with the tender requirements:

Lot 2: Daily cycle of 40% DoD is then 8,000 cycles => ETP = practical capacity x 8,000 cycles x 10 years

**Answer:** No. Please consider the number of full cycles stipulated: For Lot 2: 1,500 (equivalent to 3,650 cycles at 40% DoD) in 10 years.  
It is the energy throughput required in this case and enables us to do the calculation.

18. Lot 3: We are not aware of common lithium-ion batteries having warranties of 10,000 cycles at 90% DoD. As written above our battery supplier guarantees 4,000 cycles at 80% DoD at nominal C-rate until 80%EoL. This battery is considered as one of the high quality batteries in the market.

Can you please reconsider this requirement and adjust to market conditions?

**Answer:** Please refer to **Q & A 1 in Clarifications Note 1** as well as **Addendum 2**

19. 3.b.2.2. Lot 2:

Is the PV system AC coupled to the ESS? Or, are AC coupled or DC coupled options?

**Answer:** Both options are feasible. However, it should be noted (as indicated in section 3.b.2.3) that the PV generator is not included in this ITB. The ESS may integrate an input to connect directly the PV generator or the ESS can be connected in an AC coupling configuration to the rest of the plant components.

20. 3.b.2.3 Lot 3:

The application is understood, however based on our experience we do not see that cycling of up to 3 times a day will be a standard operation regime, unless the diesel generators are running, as a standard, daily for several hours at <30% load and no PV is available. In this case it is economically to charge batteries with the diesel generator and such cycling occur. However, then we would strongly recommend to install a smaller diesel generator. This would be more economically.

In normal operation and from an economic perspective the battery is only charged from the PV during day time when diesel off. During diesel parallel operation the battery provides frequency and ramp support, but that typically that does not lead to a lot of cycling.

Hence, it is not clear to us why the 1,000 cycles per year are an realistic requirement. Moreover, standard lithium-ion batteries do not have such warranties, unless using very expensive LiT batteries.

Could you please reconsider this application and the requested cycles? As mentioned, standard guarantees are 4,000 cycles at 80% DoD for 80%EoL.

**Answer:** Please refer to **Q & A 1 in Clarifications Note 1** as well as **Addendum 2**

21. 3.b.2.f

Why is a discharge current of 2C required? It does not fit to the inverter nom power requirements of discharging 90% in 4 hours = 0.225 C. Can you verify whether a max. discharge current of 1C is also sufficient? If 2C is indeed required, for how many seconds? Why do you require anti-islanding for an island system?

**Answer:** Please refer to section 3.b.2.3 Technical requirements – Lot 3 of the amended ToR:

Consider the minimum current based on the C-rate for sizing the inverter. For this ITB, the inverter will have to be sized considering the following C-rate as a reference (nominal current):

Lot 2: 0.05C discharging and 0.07C charging

Lot 3: 0.1C discharging and 0.13C charging

Please note that the maximum discharging current should be twice the nominal current during 5 secs, thus:

Lot 2: 0.1C discharging

Lot 3: 0.2C discharging

In the case when higher requirements are identified for any particular site, these will be indicated in the secondary bidding process for the specific project.

For Lot 3, the ESS should have the anti-islanding at the connection point with the grid/gensets grid.

22. 3.b.2.5. Autonomous inverter:

- a) Is 5 seconds power  $2 \times P_{nom}$  kW or  $2 \times P_{nom}$  kVA?
- b) Is rated voltage output single-phase or three-phase?

**Answer:**

- a) Please consider: 5 seconds  $2 P_{nom}$  kW
- b) Both are acceptable.

23. For each of the Sub Lots of lot 2 and 3 you have defined quite large storage capacity ranges. On the other hand, you do not request alternative offers.

Sub Lot 2.1 ESS PV-1: From 1 up to 25 kWh

Sub Lot 2.2 ESS PV-2: From 25 to 200kWh

Sub Lot 2.3 ESS PV-3: From 200 to 500 kWh

Sub Lot 2.4 ESS PV-4: From 500 kWh to 1MWh

Should we strictly offer only one storage capacity per Sub Lot?

Or is it welcome to offer the optimum technical sizes which we have in our portfolio, for example like 400 kWh, 600 kWh and 800 kWh?

**Answer:** Bidders should provide a (one) configuration *within* each range – since pricing will be calculated based on **USD per Kwh**.

24. The inverter power is not specified, so we suggest that we will offer one reasonably sized standard inverter per each Sub Lot which we offer. Is this what you'd like to receive?

**Answer:** Please refer to section 3.b.2.3 Technical requirements – Lot 3 of the amended ToR:

Consider the minimum current based on the C-rate for sizing the inverter. For this ITB, the inverter will have to be sized considering the following C-rate as a reference (nominal current):

- Lot 2: 0.05C discharging and 0.07C charging

- Lot 3: 0.1C discharging and 0.13C charging

Please note that the maximum discharging current should be twice the nominal current during 5 secs, thus:

- Lot 2: 0.1C discharging
- Lot 3: 0.2C discharging

In the case when higher requirements are identified for any particular site, these will be indicated in the secondary bidding process for the specific project

25. On page 21, DS No 26, C.15.1. We are quite a new company and therefore it is not (yet) possible to deliver Income Statement and a Balance sheet for the past three years. Is this a knock-out criterium?

**Answer:** For the past 2 years is sufficient.