

KERALA STATE ELECTRICITY REGULATORY COMMISSION
THIRUVANANTHAPURAM

Present: **Shri. S. Venugopal, Member**
Shri. K. Vikraman Nair, Member

OP No 56 / 18

In the matter of : Petition for grant of approval for inviting bids on reverse e-bidding route with e-reverse auction for procuring 200 MW solar power from solar PV power plants to be established in Kerala on IPP mode.

Petitioner : Kerala State Electricity Board Limited

Order dated 19.11.2018

1. Kerala State Electricity Board Limited (KSEB Ltd), on 17.08.2018, filed a petition before the Commission for the approval for inviting bids on reverse e-bidding route with e-reverse auction for procuring 200 MW solar power from solar PV power plants to be established in Kerala on IPP mode. The prayers of the petitioner are to grant approval for :
 - (1) *KSEBL proposal for procuring 200 MW solar power from solar PV power projects to be established within the state of Kerala, through competitive bidding on electronic mode (e-bidding with e-reverse auction) through the DEEP e-bidding portal of M/s. MSTC.*
 - (2) *The deviations made by KSEBL, as detailed under para 10 – (i) to (xiii) of the petition, from the guidelines notified by the Ministry of power on 03.08.2017 along with its subsequent amendments.*

2. The summary of the issues raised by KSEB Ltd in the petition are given below :
 - (1) As part of meeting the RPO, KSEB Ltd proposed to procure 200 MW of power from grid connected solar PV plants to be located within the State of Kerala.
 - (2) KSEB Ltd has prepared the draft bidding documents, as per the procedures specified in the 'Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Solar PV Projects' notified by the MoP, GoI, vide the Resolution No. 23/27/2017-R&R dated 3rd August 2017 and its subsequent amendment dated 14th June 2018.

- (3) The parameter for the bidding proposed is the “ fixed tariff per kWh applicable for 25 years from the scheduled commissioning date” to be quoted by such bidders as per the clause 4.3.1 of the guide lines notified by MoP.
- (4) The benchmark price fixed for bidding is Rs 3.50/unit, and the same was fixed duly considering the offer from NTPC for supplying 15MW solar plant installed by them from RGCCP Kayamkulam at the rate of Rs 3.00/unit and scarcity of large extent of contiguous land for installing solar plants.
- (5) Reverse bidding is proposed to be conducted through DEEP e-bidding portal of MoP. After finalising the lowest bidder, e-reverse auction will be conducted through the same portal to arrive the last lowest tariff. Bucket filling mode will be operated for getting the 200MW commencing from the lowest bidder onwards.
- (6) Since the process is being done for the first time in the State, an ‘investors meet’ was conducted on 6th July 2018 to gather the views of the potential investors on the bidding model proposed. About 170 persons from various firms attended the meet.
- (7) Even though, while preparing the bid documents the KSEB Ltd has followed the guidelines notified by the MoP, GOI vide the notification dated 03.08.2017 and its subsequent amendment dated 14.06.2018 , certain minor deviations from the guidelines have been adopted in the conditions in the bidding documents prepared by KSEB Ltd. The deviations proposed by the KSEB Ltd in the SBD from the provisions in the guidelines of MoP, Gol dated 03.08.2017 and its amendment dated 14.06.2018 is given in the Table below.

Sl No	Clause	Provisions in the Guidelines notified by MoP dated 03.08.2017 and its amendment dated 14.06.2018	Deviations proposed
1	2.1.1	<p><u>Minimum Bid/ project Capacity</u></p> <p>As per the clause 2.1.1 of the Guidelines, the minimum capacity to be offered from solar PV under the competitive bidding is specified <u>as 5 MW and above.</u></p>	<p><u>Minimum Bid/Project Capacity. (definition 31 of the RfS)</u></p> <p>KSEB Ltd propose to fix the minimum capacity as 1 MW instead of 5 MW.</p>

2	3.2.3 (a) (amend)	<p>Land acquisition: Within 12 (twelve) months of the execution of the PPA, the Solar Power Generator has to submit the documents/ Lease Agreement to establish possession/ right to use 100 % (hundred per cent) of the required land in the name of the Solar Power Generator or its Affiliate.</p>	<p><u>Project Land. (Clause 1.8 of the RfS)</u> KSEB Ltd propose to count the 12 (twelve) months period from the Letter of Award (LoA) instead of the date of PPA.</p>
3	4.3.1	<p><u>Tariff as the Bidding Parameter:</u> As per the clause 4.3.1 of the bidding guidelines, the tariff quoted by the bidder cannot be more than the tariff for grid-connected solar PV power plants, notified by the Appropriate Commission, if any, for the financial year in which the bids are invited.</p>	<p><u>Bid parameter (Clause 1.11 of the RfS)</u> KSEB Ltd proposes that, the tariff quoted by the bidder cannot be more than Rs 3.50/unit, instead of the SPV tariff notified by the Commission.</p>
4	5.2.1	<p>Capacity Utilisation Factor (CUF)</p> <p>As per the bidding guidelines notified by the MoP specify that, in case of procurement in power (MW) terms, the range of Capacity Utilisation Factor (CUF) will be indicated in the bidding documents.</p> <p>The Solar Power Generator will be liable to pay penalty for the shortfall in availability below such contracted CUF. The minimum penalty specified is 25% of the cost of the shortfall in energy terms calculated at PPA tariff.</p>	<p><u>Minimum CUF Limits (Article 4.2.1 of the draft PPA)</u></p> <p>KSEB Ltd proposes to introduce a review option as below. ‘Provided that after a period of 15 years from the COD of the project, the minimum CUF may be reviewed based on past performance and may be brought down upto 14% to take care of panel degradation.</p>
5	5.3.1	<p>Payment security</p> <p>The clause 5.3 of the bidding guidelines notified by the MoP stipulate that, the procurer shall provide adequate payment security in the form of</p> <p>(a) Revolving LC (b) Payment security fund and (c) State Government guarantee</p>	<p>KSEB Ltd has not included the payment security in the bidding documents.</p>

6	7.2.2(a)	<p><u>Net worth</u> As per the clause 7.2.2 (a) of the bidding guidelines notified by MoP, the net worth requirement should be at least 20% (twenty per cent) of the CERC Benchmark Capital Cost, if any, for solar PV power projects for the year in which bids are invited or the estimated project cost.</p>	<p><u>Net worth (Clause 3.4.1 of the RfS)</u> KSEB Ltd proposes the net worth requirement as Rs 75 lakh/MW.</p>
7	11.1	<p><u>Earnest Money Deposit (EMD).</u> As per the bidding guidelines, the EMD shall not be more than 2% of the SPV project cost as determined by CERC, if any, for the financial year in which the bids are invited or the estimated project cost], to be submitted in the form of a bank guarantee along with response to RfS</p>	<p><u>Earnest Money Deposit (EMD) (clause 6 (a) of the RfS)</u> KSEB Ltd proposes the EMD as Rs 1.00 lakh/MW.</p>
8	11.2	<p><u>Performance Bank Guarantee (PBG).</u> As per the bidding guidelines, the PBG for the SPV projects (the site selected by the generator) is 5% the project cost, as determined by CERC, if any, for the financial year in which the bids are invited or the estimated project cost.</p>	<p><u>Performance bank guarantee (Clause 7 of the RfS).</u> KSEB Ltd proposes to limit the PBG at Rs 15.00 lakh /MW.</p>
9	12 (amend)	<p><u>Financial closure</u> As per the clause-12 of the bidding guidelines (amendment dated 14.06.2018), the Solar Power Generator (SPG) shall attain the financial closure within 12 months from the date of execution of the PPA.</p>	<p><u>Financial closure (Article 3.1.1(3) of the draft PPA</u> KSEB Ltd proposes that, the SPG shall attain the financial closure within 12 months from the date of issuance of Letter of Acceptance , instead of the date of execution of the PPA.</p>
10	14.3 (amend)	<p><u>Commissioning Schedule:</u> As per the bidding guidelines, the SPV projects with capacity upto 250 MW shall be commissioned within a period of 21 (twenty one) months from the date of execution of the PPA.</p>	<p><u>Schedule of commissioning (definition clause 45 of the RfS)</u> KSEB Ltd proposes that, the project shall be commissioned within a period of 21 months from the date of Letter of Acceptance (LoA) instead of the date of execution of the PPA.</p>

11	16.5	<p>Metering Point:</p> <p>As per the bidding guidelines, the metering point shall be the low voltage bus bar of the STU / CTU substation.</p>	<p>Metering point shall be the injection point/ inter-connection point, which shall be (Clause 22 and 30 of the RfS)</p> <p>(a) the line isolator, if voltage transformation is not required for connecting to the KSEBL s/s / switchyard; or</p> <p>(b) the bus isolator at the voltage of injection, if voltage transformation is required before connecting to KSEBL substation/ Switchyard;</p>
12		<p><u>New clause</u> proposed for permitting the existing/ ongoing SPG to participate in the bidding process.</p>	<p><u>In the item G of the Format-4 of the (RfS)</u></p> <p>, KSEB Ltd proposes as follows. G. INCASE THE OFFER IS FROM AN EXISTING SOALR POWER STATION, documentary evidence regarding commission-ing of such solar power station and available surplus capacity equivalent to the capacity offered in the bid to be specified</p>
13		<p><u>New clause</u> on Reactive power requirement.</p>	<p><u>(Clause 1.5 of the RfS and Article 4.10 of the draft PPA)</u></p> <p>KSEB Ltd proposes to include a new clause on Reactive power requirement as follows.</p> <p>4.10.1 The SPG shall install necessary equipments in the solar PV power plant for supporting required reactive power to the system as and when required by the SLDC. In case the required reactive power is not met with, the SPG shall be liable to pay penalty as determined by KSERC from time to time.</p> <p>4.10.2. The SPG shall also install reactive power compensation devices as per Grid Code. The SPG shall not generally draw reactive power from the system of KSEBL at any point of time. If reactive power is drawn from the system, SPG shall be liable to pay penalty at the rate of Rs. 0.25 (twenty five paise) per kVARh or the rate fixed by KSERC from time to time.</p>

- (8) The clause 18 of the guidelines dated 03.08.2017, notified by the MoP stipulated that, in the case there is any deviations from the guidelines in the Standard Bidding Documents (SBD), the same shall be subject to the approval by the Appropriate Commission. The clause-18 of the guidelines dated 03.08.2017 is extracted below for ready reference.

“18. DEVIATION FROM PROCESS DEFINED IN THE GUIDELINES

In case there is any deviation from these Guidelines and/or the SBDs, the same shall be subject to approval by the Appropriate Commission. The Appropriate Commission shall approve or require modification to the bid documents within a reasonable time not exceeding 90 (ninety) days.”

3. The Commission admitted the petition as OP No. 56/2018 and conducted hearing on 23.10.2018. The list of persons participated in the hearing is attached as Annexure-1.
4. On behalf of the petitioner, Sri K G P Nampoothiri, Executive Engineer, presented the petition.
5. Sri Sivaramakrishnan, representing SOURYA Natural Energy Solutions India Ltd submitted as follows;
 - (i) The benchmark tariff based on the offer of NTPC Ltd is not correct, since no costs are incurred by NTPC towards dedicated transmission line, metering facilities or any other pooling station augmentation charges. The price discovered by SECI and other utilities are for large scale generation and hence the same also cannot be taken as the base for fixing the benchmark tariff. The recent introduction of safeguard duty for imports by Gol may result in increase the cost of electricity generation from solar plants by 10%. The price discovered through reverse auction in Gujarat @ Rs 2.98 per kWh was when the exchange rate of dollar was Rs 64.96 the present exchange rate Rs 73.75. Hence benchmark tariff may be fixed at Rs 5.00 /unit for capacities up to 2 MW, Rs 4.5 /unit for capacities from 2 MW to 5 MW and Rs 4.00/unit for above 5 MW. Keeping very low bid price will only reduce the developers participating in the bid
 - (ii) KSEB Ltd has requested the Commission to allow it to avoid payment security considering the fact that it had never defaulted payment to power purchases. However, the solar developers are small generators and any default/delay in payment by KSEB Ltd may affect the developers. Hence KSEB Ltd has to provide escrow mechanism as payment security.
 - (iii) Solar power evacuation cost shall be borne by successful bidder; however, KSEB shall take up this as a deposit work, to ease out complications on Right of way.

- (iv) CUF may be fixed at 14% considering the low level of local irradiance and weather conditions prevalent in Kerala.
6. Sri Shaji Sebastian, submitted that,
- (i) The cost per MW for a solar installation in the State is Rs 6.80 crore/MW and the cost of electricity generated from solar plants is in the range Rs 4.00/unit to Rs 4.50 per unit.
 - (ii) The deviation suggested by KSEB Ltd to count the financial closure, land acquisition etc from the date of execution of the PPA to date of LOA may be reconsidered, since it may complicate things and there is chances of non materialization of the projects.
 - (iii) Payment security may be provided as per guidelines
7. Based on the deliberations during the hearing, the Commission directed the KSEB Ltd to submit the following clarifications/ additional details, latest by 01.11.2018.
- (1) The criterion adopted for fixing the bench mark tariff @Rs 3.50/unit, with supporting documents and documentary evidences.
 - (2) The Commission observes that, the letter of award (LOA) cannot be treated as a legally valid contract. Hence, the date of LOA cannot be considered instead of the date of execution of the PPA as specified in the bidding guidelines notified by the Central Government. Since the model PPA is also uploaded as part of the bidding documents along with the notice inviting tenders, KSEB Ltd to clarify the expected reason for delay in execution of the PPA from the date of issue of LOA to the successful bidder.
 - (3) Whether MNRE has specified any degradation of solar panels over the years? If so, why KSEB Ltd deviate from the degradation rate specified by MNRE? Please clarify.
 - (4) The criterion and the capital cost adopted, for fixing the net worth, EMD and performance bank guarantee may be clarified with supporting documents.
 - (5) KSEB Ltd may provide more clarity on the additional clause proposed on metering point.
 - (6) Commission observed that, the reactive power compensation @ Rs 0.25/ kVAh for CIAL as a consumer of KSEB Ltd cannot be applied to the solar developers, who are developing the plants for supplying power to KSEB Ltd. The penalty for reactive power compensation shall be as per the

utility practices followed across the country. Hence, KSEB Ltd shall submit suitable proposal for reactive power compensation with supporting documents.

- (7) Any additional clarifications and comments, if any, on the remarks of the stakeholders.

8. In compliance of the direction of the Commission, KSEB Ltd vide letter dated 08.11.2018 has made the following clarifications:

(1) Criterion adopted for fixing the benchmark tariff @ Rs.3.50 unit.

The bench mark tariff was fixed duly considering the tariff derived through e-bidding portal by other State Power Utilities in the country and also the tariff offered by NTPC to KSEB Ltd, for supplying power from the proposed solar plant to be established by NTPC at RGCCPP Kayamkulam. The details are given below.

Sl.No.	State	Bidding Month	Discovered Tariff (Rs./kWh)
1	Rajasthan	May 2018	2.44
2	Karnataka	March 2018	2.978
3	Gujarath	March2018	2.94
4	Tamilnadu	June 2017	3.47
5	Kerala-NTPC	MoU	3.00

KSEB Ltd further submitted that, compared to other States in India, cost of land is high in Kerala due to non availability of large extent of suitable barren land for the development of solar PV projects. Hence KSEBL has accounted Rs. 25 lakhs / acre additionally towards the cost of land for the installation of solar PV projects and the same is also factored for deriving the benchmark tariff. Since land is an appreciating asset, levelisation of per unit cost based on NPV has not been attempted.

Tariff discovered in other States and that offered by NTPC, Rs./kWh	3.00
Additional cost of land in Kerala, Rs./acre	25,00,000.00
Land required for the installation of 1 MW, acre	5.00
Total cost of land for 1 MW (Additional cost for land) , Rs.	1,25,00,000.00
Energy equivalent to 1 MW @ CUF of 15% for 25 years, MU	32.85
Additional cost to be reflected in tariff due to the cost of land Rs./kWh	0.38
Approximate cost for evacuation facilities, Rs./kWh	0.11
Total tariff, Rs./kWh	3.49
Rounded to , Rs./kWh	3.50

Thus KSEBL fixed Rs. 3.50 per kWh as the benchmark tariff for the procurement of 200 MW solar power from solar PV plants within the State.

(2) **Reason for anticipated delay in execution of PPA from the date of issue of LoA to the successful bidder:**

Eventhough, the successful bidders agree terms and conditions of the draft PPA uploaded as part of the bidding documents along with the notice inviting tenders, the time period for achieving various milestones like financial closure, commissioning of power plant and furnishing performance bank guarantee etc. was fixed from the date of LOA. It may be noted that an offer, when accepted becomes an agreement, as per Indian Contract Act and an “Unconditionally Accepted LOA” by the Solar Power Generator has all the ingredients of a valid contract. From past experience, it was noticed that there was inordinate delay from the part of project developers in signing PPA as well as in fulfilling the conditions precedent which in turn, prolong the effective date of PPA. In order to rule out such an eventuality, coupled with the urgency in execution of the said projects and having regard to the fact that an unconditionally accepted LOA is akin to that of a binding contract, KSEBL chose to fix the reference date of achieving various milestones as the date of LOA, rather than the date of execution of PPA.

(3) **MNRE guidelines on degradation of Solar power plants and deviation made by KSEBL to the guidelines**

As per the Technical Manual for Banks and Financial Institutions on Grid Connected Roof Top Solar Power prepared by the Energy and Resources Institute, TERI for the Ministry of New and Renewable Energy, Solar PV modules suffer from degradation due to various reasons, over the product life, which causes the generation capacity per module to decrease over time. This decrease in generation is captured in an annual degradation rate and is usually about 0.2 to 0.5%. Hence a reduction in CUF of 2% from the lower limit of 16%, as specified in the draft PPA, appears to be reasonable for a period of 15 years. This condition was incorporated based on the opinion of the investors in the Investors’ Meet convened by KSEB Limited on 6th July 2018.

(4) **The criterion and the capital cost adopted for fixing the Net Worth, EMD and Performance Bank Guarantee:**

As per the MoP guidelines,

- (i) the requirement of Net worth shall be at least 20% of the CERC benchmark capital cost, for solar PV projects for the year in which bids are invited or the estimated project cost,
- (ii) EMD shall not be more than 2% of the solar PV project cost, as determined by CERC and
- (iii) Performance Bank Guarantee (PBG) shall not be more than 5% of the CERC cost as in the case of EMD.

Considering a project cost of Rs. 5 Cr. per MW for solar generating power plants, the requirement of Net worth, EMD and Performance Bank Guarantee shall be Rs. 100 lakhs / MW, EMD, Rs. 10 lakhs / MW and Performance Bank Guarantee, Rs. 15 lakhs / MW respectively. To ensure more bidder participation and competition, KSEBL has fixed Rs. 75 lakhs / MW, Rs. 1 lakh / MW and Rs. 15 lakhs / MW respectively as the rates of Net worth requirement, EMD and Performance Bank Guarantee. Possible reduction in the Capital Cost was also considered while fixing a lower limit.

(5) Clarification on metering Point:

For injecting power, the generator will have to be obtained a feasibility certificate from the Transmission utility and the feasibility depends up on injecting voltage and station voltage in addition to many other factors. Considering the possibility of difference in injection voltage and station voltage, KSEBL proposes metering point at two distinct locations ie at line isolator and at bus isolator and the details are explained below:

a) Metering is provided at line isolator:

If the injecting voltage and station voltage are same, power can be evacuated through a dedicated feeder or through an interconnecting line with the existing feeder. In this case , metering can be provided at the line isolator.

b) Metering is provided at the bus isolator:

If the injecting voltage and station voltage are not the same, power can be evacuated only after transforming the injecting voltage to station voltage for which transformer bay has to be constructed at the cost of the developer. In this case, metering is done at the bus Isolator at the high voltage side of the transformer, so that the transformation losses would be borne by the developer.

(6) Reactive Power Compensation @ Rs. 0.25 per kVARh for CIAL as a consumer of KSEBL cannot be applied to solar developers:

Regulation 82 of Central Electricity Authority (Technical Standards for Connectivity to the Grid) Amendment Regulations, 2013 specified as follows

For generating station getting connected on or after completion of 6 months from date of publication of these Regulations in the Official Gazette.

(1) The generating station shall be capable of supplying dynamically varying reactive power support so as to maintain power factor within the limits of 0.95 lagging to 0.95 leading.

(2) The generating units shall be capable of operating in the frequency range of 47.5 Hz to 52 Hz and shall be able to deliver rated output in the frequency range of 49.5 Hz to 50.5 Hz.

Provided that above performance shall be achieved with voltage variation of up to $\pm 5\%$ subject to availability of commensurate wind speed in case of wind generating stations and solar insolation in case of solar generating stations.

In addition to the above, a solar power generator for auxiliary consumption, reactive power is to be drawn from the grid and at night during no generation period, the Solar generating plant draws power like a consumer to meet its auxiliary power requirements, for which a reactive power compensation approved by KSERC for CIAL was proposed.

Analysis and Decision

9. The Commission has examined in detail the petition filed by KSEB Ltd, the provisions in the Electricity Act, 2003, the Tariff Policy 2016 notified by the Central Government, the Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Solar PV Power Projects, the clarifications submitted by KSEB Ltd on 08.11.2018 and other relevant documents and records.
10. KSEB Ltd vide the petition dated 17.08.2018 submitted that, as part of its concerted efforts to meet the 'Renewable Purchase Obligation', they propose to procure 200 MW of power from grid connected solar PV plants be located within the State. It is a fact that, KSEB Ltd is far short of achieving the solar RPO targets fixed by the Commission. As an obligated entity, KSEB Ltd has to meet the RPO targets either by own generation or by procuring solar power from the sources within or outside the State. Hence, KSEB Ltd can take steps to procure power from solar plants within the State or outside the State, as per the provisions of the Electricity Act, 2003, Tariff Policy 2016 and the guidelines notified by the Central Government in this regard.
11. The Section 63 of the Electricity Act 2003 permits the Distribution licensees to procure power through the transparent process of bidding in accordance with the guidelines issued by the Central Government and the Commission has to adopt such tariff determined through transparent process of bidding. The Section 63 of the Electricity Act 2003 is extracted below for ready reference.

"63. Notwithstanding anything contained in section 62, the Appropriate Commission shall adopt the tariff if such tariff has been determined through transparent process of bidding in accordance with the guidelines issued by the Central Government."

12. Further, Clause 6.4.(2) of the Tariff Policy notified by the Central Government vide the resolution No. 23/2/2005-R&R dated 28.01.2016, in compliance of the Section 3 of the Electricity Act, 2003 provides as follows.

“6.2 States shall endeavor to procure power from renewable energy sources through competitive bidding to keep the tariff low, except from the waste to energy plants. Procurement of power by Distribution Licensee from renewable energy sources from projects above the notified capacity, shall be done through competitive bidding process, from the date to be notified by the Central Government.”

13. The Central Government vide the Resolution No. 23/27/2017-R&R dated 03.08.2017 has notified the ‘Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Solar PV Projects’ and its subsequent amendment dated 14th June 2018.
14. In the petition dated 17.08.2018, KSEB Ltd submitted that, it has decided to procure 200 MW power from grid connected solar PV plants to be located within the State. KSEB Ltd has prepared the draft bidding documents including the ‘request for selection, draft power purchase agreements etc, as per the procedures envisaged in the Resolution No. 23/27/2017-R&R dated 03.08.2017 the ‘Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Solar PV Projects’ and its subsequent amendment dated 14th June 2018. KSEB Ltd further submitted that, even though the condition stipulated in the ‘standard bidding guidelines’ has been generally adopted for preparing the bidding documents, certain minor deviations from the guidelines haven been made in the draft bidding documents.
15. The clause 18 of the standard bidding guidelines notified by the Central Government vide the Resolution No. 23/27/2017-R&R dated 03.08.2017 stipulated as follows.

“18. *DEVIATION FROM PROCESS DEFINED IN THE GUIDELINES*

In case there is any deviation from these Guidelines and/or the SBDs, the same shall be subject to approval by the Appropriate Commission. The Appropriate Commission shall approve or require modification to the bid documents within a reasonable time not exceeding 90 (ninety) days.”
16. The Clause 3.1.1 of the bidding guidelines notified by the MoP specifies the ‘Bid Documentation’, which is extracted below.”

“3.1.1. Bid Documentation:

a) Prepare the bid documents in accordance with these Guidelines and Standard Bidding Documents (**SBDs**) [consisting of Model Request for Selection (**RfS**) Document, Model Power Purchase Agreement and Model Power Sale Agreement], notified by the Central Government, except as provided in sub clause (c) below.

b) Inform the Appropriate Commission about the initiation of the bidding process.

c) Seek approval of the Appropriate Commission for deviations, if any, in the draft RfS draft PPA, draft PSA (if applicable) from these Guidelines and/ or SBDs, in accordance with the process described in Clause 18 of these Guidelines.

i. However, till the time the SBDs are notified by the Central Government, for purpose of clarity, if the Procurer while preparing the draft RfS, draft

PPA, draft PSA and other Project agreements provides detailed provisions that are consistent with the Guidelines, such detailing will not be considered as deviations from these Guidelines even though such details are not provided in the Guidelines.

- ii. Further, in case of an ongoing bidding process, if the bids have already been submitted by bidders prior to the notification of these Guidelines and/or SBDs, then if there are any deviations between these Guidelines and/or the SBDs and the proposed RfS, PPA, PSA (if applicable), the RfS, PPA and the PSA shall prevail.*

17. Though the MoP, Gol has notified the guidelines for tariff based competitive bidding process for procurement of power from grid connected SPV on 03.08.2017, the Central Government is yet to notify the Standard Bidding Documents including the document of 'Request for Selection (RfS), Model PPA etc. However, the guidelines empower the procurers to prepare the RfS, draft PPA and other project documents in consistent with the guidelines.
18. The deviations from the standard bidding guidelines, proposed by KSEB Ltd while preparing the 'bidding documents' and the decisions of the Commission on each of the deviations proposed are given in the following paragraphs.

(1) Clause 2.1.1 Minimum bid capacity

As per the clause 2.1.1 of the 'standard bidding guidelines' dated 03.08.2017, the minimum bid capacity is prescribed as '5 MW'. However, KSEB Ltd proposed to reduce the minimum bid capacity to 1 MW, considering the following.

- (a) Scarcity of the availability of about 25 acres of land for installing 5 MW solar PV plants.
- (b) Cost of land is very high compared to other States in the Country.
- (c) Restrictions imposed by Forest Conservation Act 1980.
- (d) To ensure more participation of developers in the bidding process.

Decision of the Commission

The Commission had examined the proposal of KSEB Ltd and hereby approve the minimum bid capacity as 1 MW in the proposed bidding process for procuring 200 MW solar PV, from the developers in the State of Kerala.

(2) Clause 3.2.3 of the amended guidelines: Period of Land acquisition to be revised to within 12 months of date of PPA to 12 months of LoA.

As per the amendment dated 14.06.2018 to the clause 3.2.3 of the standard bidding guidelines, within 12 months from the execution of the PPA, the developer has to submit the documents of the land acquisition/ lease

agreements to establish the possession/ right to use 100% of the required land in the name of the Solar Power Generator or its affiliate.

However, KSEB Ltd proposed to count the 12 months period from the Letter of Acceptance instead of the execution of the PPA. According to KSEB Ltd, the proposed deviations is for avoiding the delay in commencement of the project activities.

The Commission noted that, the letter of award (LOA) cannot be treated as a legally valid contract. Hence, the date of LOA cannot be considered instead of the date of execution of the PPA as specified in the bidding guidelines notified by the Central Government. Since the model PPA also uploaded as part of the bidding documents along with the notice inviting tenders, the Solar Power Generators, who participated in the bidding process also aware of these facts. KSEB Ltd can specify the time limit for execution of the PPA in the LOA.

Decision of the Commission

The Commission decline the proposal of KSEB Ltd due to the reasons given in the preceding paragraph and the clause 3.2.3 of the standard bidding guidelines shall be followed as such in the bidding documents.

(3) Clause 4.3.1 Tariff as the Bidding Parameter

As per the clause 4.3.1 of the bidding guidelines, the tariff quoted by the bidder cannot be more than the tariff for grid-connected solar PV power plants, notified by the Appropriate Commission, if any, for the financial year in which the bids are invited.

However, KSEB Ltd has fixed the benchmark price at 3.50/unit duly considering the offer from NTPC for supplying 15MW solar plant installed by them from RGCCP Kayamkulam at the rate of Rs 3.00/unit and scarcity of large extent of contiguous land for installing solar plants.

KSEB Ltd vide the letter dated 08.11.2018 has submitted the criterion adopted for fixing the benchmark tariff @Rs 3.50/unit, which is extracted under paragraph 8(1) above.

Decision of the Commission

The Commission examine the proposal in detail and hereby approve the benchmark tariff @ Rs 3.50/unit, as per the clause 4.3.1 of the standard bidding guidelines, to be adopted for the proposed procurement of 200 MW solar PV within the State of Kerala.

(4) **Clause 5.2.1 Capacity utilization factor:**

As per the standard bidding guidelines, the range of capacity utilization factor (CUF) will be indicated in the bidding documents. Further, the bidding guidelines stipulate that, if the actual availability is less than the contracted CUF, the solar power generator is liable to pay penalty. The range of CUF proposed by KSEB Ltd in the draft bidding documents is between a minimum of 16% and a maximum of 19%. Further, in order to protect interest of the solar power generators, KSEB Ltd proposed a review option after 15 years as follows.

“After 15 years from the COD of the project, the minimum specified CUF may be brought down up to 14% to take care of panel degradation”.

The Commission vide the daily order dated 24.10.2018 has directed KSEB Ltd to submit the details of the degradation of the solar plants over the years as stipulated by MNRE. In compliance of the direction of the Commission, KSEB Ltd submitted that, as per the ‘Technical Manual for Banks and FIs on Grid-Connected Rooftop Solar Power prepared by TERI for MNRE’ specify as follows.

“ PV modules suffer from degradation, due to a variety of reasons, over the product life, which causes the generation capacity per module to decrease over time; this decrease in generation is captured in an annual degradation rate, usually about 0.2 to 0.5%”.

Commission also noted that, the Central Electricity Regulatory Commission while issuing order dated 23rd March, 2016 in Petition No. 17/SM/2015, for Determination of Benchmark Capital Cost Norm for Solar PV power projects and Solar Thermal power projects applicable during FY 2016-17 has considered the degradation 0.5% per annum while fixing capital cost.

Decision of the Commission

Considering these factors as explained in the preceding paragraphs, the Commission hereby approve a panel degradation @0.5% per annum over the contracted CUF specified in the bid documents. Thus the range of CUF after 15 years shall be limited to 14.8% to 17.58%.

(5) **Clause 5.3.1 Payment Security:**

The clause 5.3 of the standard bidding guidelines stipulates the payment security to be provide by the procurer to the Solar Power Generator, which includes the ‘Revolving Letter of Credit (LC), payment security fund, State Government guarantee etc.

However, as per the draft bidding documents, KSEB Ltd not provided any payment security mechanism.

Decision of the Commission

The Commission decline the proposal of KSEB Ltd and hereby direct that, KSEB Ltd shall provide at least, any one mode of payment security mechanism prescribed in the standard bidding guidelines for procurement of 200 MW solar PV.

(6) **Clause 7.2.2 (a) Net worth:**

As per the clause 7.2.2 of the standard bidding guidelines, the net worth requirement should be at least 20% of the CERC Bench Mark Cost, if any, for solar PV power projects for the year in which bids are invited or the estimated project cost.

In the bidding documents, KSEB Ltd fixed the networth limit as Rs 75 lakh/ MW. KSEB Ltd vide letter dated 08.11.2018 further submitted that it had considered a capital cost of Rs 5.00 crore / MW and also the possible reduction of capital cost while fixing the networth.

Decision of the Commission

The Commission is of the view that, by giving relaxation on financial criterion, many frivolous bidders, without adequate financial capability may participate in the bidding process. However, the Commission approve the networth criterion as proposed by KSEB Ltd.

(7) **Clause 11.1 Earnest Money Deposit:**

As per the clause 11.1 of the standard bidding guidelines, 'Earnest Money Deposit (EMD) shall not be more than 2% of the solar PV project cost, as determined by CERC, if any, for the financial year in which the bids are invited, or the estimated project cost. However, in the absence of any CERC determined project cost, KSEB Ltd fixed the EMD as Rs 1.00 Lakh/ MW.

KSEB Ltd vide letter dated 08.11.2018 further submitted that it had considered a capital cost of Rs 5.00 crore / MW, and 2% of this costs workout to Rs 10.00 Lakh/ MW. However, KSEB Ltd, in the bidding documents has proposed the EMD @Rs 1.00 lakh/ MW, i.e., just 10% of the EMD as per the standard bidding guidelines notified by the Central Government.

Decision of the Commission

The Commission is of the view that, by the reduction in EMD, many frivolous bidders without adequate financial capability may participate in the bidding process, hence the Commission hereby clarify that, any risk associated with the reduction in EMD shall fall on the shoulder of KSEB Ltd. However, the Commission grant approval to fix the EMD as proposed, solely for this bidding process for procuring 200 MW solar PV located within the State of Kerala.

(8) **Clause 11.2 Performance Bank Guarantee:**

As per the clause 11.2 of the standard bidding guidelines, the Performance Bank Guarantee (PBG) to be fixed by the procurer shall be maximum of 5% of the solar PV project cost, as determined by CERC, if any, for the financial year in which the bids are invited, or the estimated project cost at the time of signing the PPA.

However, KSEB Ltd proposed the PBG at Rs 15.00 lakh/ MW. KSEB Ltd vide the letter dated 08.11.2018 had submitted that, KSEB Ltd had adopted the benchmark capital cost @Rs 5.00 crore/MW for fixing the PBG. 5% of the bench mark capital cost, works out Rs 25 lakh/MW, however KSEB Ltd fixed the PBG at Rs 15.00 lakh/MW.

Decision of the Commission

The Commission here by grant approval to adopt the PBG as proposed by KSEB Ltd in the bidding process for procuring 200 MW solar PV from the plants located within the State of Kerala, on the condition that, any risk associated with the reduction in EMD shall fall on the shoulder of KSEB Ltd.

(9) **Clause 12 : Financial closure.**

As per the amendment dated 14.06.2018 to the clause 12 of bidding guidelines, the time period for financial closure shall be 12 months from the date of signing the PPA.

However, KSEB Ltd to propose to amend the same to date of letter of acceptance (LOA).

Decision of the Commission

The Commission decline the proposal of KSEB Ltd and direct to follow the clause-12 of the standard bidding guidelines as such in the bidding documents.

(10) **Clause 14.3 Commissioning schedule**

As per the amendment dated 14.06.2018 to the clause 14.3 of the standard bidding guidelines, the projects shall be commissioned within a period of 21 months from the date of execution of the PPA. However, KSEB Ltd proposed to count the date from the date of issuance of LOA instead of date of signing the PPA.

Decision of the Commission

The Commission decline the proposal of KSEB Ltd and it shall follow the clause-13.3 of the standard bidding guidelines as such in the bidding documents.

(11) **Clause 16.5 Metering Point:**

Clause 16.5 of the standard bidding guidelines specified the metering point, which is extracted below for ready reference.

16.5. The Metering Point, which is the point at which energy supplied to the Procurer shall be measured, shall be the low voltage bus bar of the STU / CTU substation. In case of solar parks, the metering point is the final evacuation STU / CTU substation with which the internal transmission from all the pooling substations is connected. All expenses including wheeling charges and losses between the Project and the Metering Point shall be paid by the Solar Power Generators without any reimbursement by the Procurer. All expenses including wheeling charges and losses in relation to the transmission and distribution beyond the Metering Point shall be borne by the Procurers.

However, in the bidding documents, KSEB Ltd proposed the metering point as follows;

Metering point shall be the injection point/interconnection point (definition 22 of RfS and 32 of PPA), which shall be

(a) The line isolator, if voltage transformation is not required for connecting to the KSEBL Substation/ Switchyard; or

(b) The bus isolator at the voltage of injection, if voltage transformation is required before connecting to KSEBL substation/Switchyard

KSEB Ltd vide letter dated 8.11.2018 has clarified as follows;

“ For injecting power, the generator will have to be obtained a feasibility certificate from the Transmission utility and the feasibility depends up on injecting voltage and station voltage in addition to many other factors. Considering the possibility of difference in injection voltage and station voltage, KSEBL proposes metering point at two distinct locations ie at line isolator and at bus isolator and the details are explained below:

(a) Metering is provided at line isolator:

If the injecting voltage and station voltage are same, power can be evacuated through a dedicated feeder or through an interconnecting line with the existing feeder. In this case , metering can be provided at the line isolator.

(b) Metering is provided at the bus isolator:

If the injecting voltage and station voltage are not the same, power can be evacuated only after transforming the injecting voltage to station voltage for which transformer bay has to be constructed at the cost of the developer. In this case, metering is done at the bus Isolator at the high voltage side of the transformer, so that the transformation losses would be borne by the developer.

Decision of the Commission

Since the proposal of KSEB Ltd provide more clarity on the metering point, the Commission hereby approve the same to be incorporated in the bidding documents for procuring 200 MW solar PV.

(12) **Additional clause to include existing / ongoing SPG to participate:**

The standard bidding guidelines notified by the Central Government is silent on whether the existing solar PV can participate in the bidding process initiated by the procurer. Hence, proposed to incorporate a provision in the 'request for selection (RFS)' that, the existing solar PV also can participate in the bidding process.

Decision of the Commission

The Commission approves the proposal.

(13) **Additional clause on reactive power:** KSEB Ltd proposes to add clause on reactive power support as follows;

(Clause 1.5 of the RfS and Article 4.10 of the draft PPA)

KSEB Ltd proposes to include a new clause on Reactive power requirement as follows.

4.10.1 The SPG shall install necessary equipments in the solar PV power plant for supporting required reactive power to the system as and when required by the SLDC. In case the required reactive power is not met with, the SPG shall be liable to pay penalty as determined by KSERC from time to time.

4.10.2. The SPG shall also install reactive power compensation devices as per Grid Code. The SPG shall not generally draw reactive power from the system of KSEBL at any point of time. If reactive power is drawn from the system, SPG shall be liable to pay penalty at the rate of Rs. 0.25 (twenty five paise) per kVARh or the rate fixed by KSERC from time to time.

As per notification dated 15th October 2013 of CEA (Technical Standards for Connectivity to Grid) Amendment Regulations, 2013 (B2, Part II)

“(1) The generating shall be capable of supplying dynamically varying reactive power support so as to maintain power factor within the limits of 0.95 lagging to 0.95 leading”

The Commission examined the proposal of the KSEB Ltd and also the provisions in the CEA (Technical Standards for Connectivity to Grid) Amendment Regulations, 2013. The Commission cannot accept the proposal of KSEB Ltd. However, the Commission is of the view that, all the Solar Power Generators (SPG) shall comply with the provisions in the CEA Regulations in this Regard. Any SPG not complying with the provisions of the

CEA Regulations shall liable to pay reactive power compensation, at the rate to be approved by the Commission, if the situation warrants.

Decision of the Commission

Considering the reasons given the preceding paragraphs, the Commission hereby directs KSEB Ltd to incorporate necessary provision in the bidding documents as below.

“ All the Solar Power Generators (SPG) shall comply with the provisions in the CEA (Technical Standards for Connectivity to Grid) Amendment Regulations, 2013. Any SPG not complying with the provisions of the CEA Regulations shall liable to pay reactive power compensation, at the rate to be approved by the Commission, if the situation warrants”

Order of the Commission

19. The Commission after examining the petition filed by KSEB Ltd on 17.08.2018, the deliberations of the subject matter on 23.10.2018, the additional clarifications filed by KSEB Ltd and other stakeholders, hereby orders the following.
- (1) Grant approval to KSEB Ltd for inviting bids on reverse e-bidding for procuring 200 MW solar power from solar PV plants to be established within the State of Kerala on IPP mode.
 - (2) KSEB Ltd shall adopt the deviations in the bidding documents, from the ‘Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Solar PV Projects’ notified by the MoP, GoI, vide the Resolution No. 23/27/2017-R&R dated 3rd August 2017 and its subsequent amendment dated 14th June 2018, as per the decision of the Commission detailed under paragraph 18 above.

The petition disposed off.

Sd/-
K.Vikraman Nair
Member

Sd/-
S.Venugopal
Member

Approved for issue

Santhosh Kumar K B
Secretary

Annexure 1

List of participants

1. Sri. KGP Nampoothiri, Executive Engineer, KSEB Ltd.
2. Smt. Sangeetha.S, Executive Engineer, KSEB Ltd
3. Sri. Edward P Boniface, Asst. Executive Engineer, TRAC
4. Sri. Manu Senan.V, Asst. Executive Engineer, TRAC, KSEB Ltd,
5. Smt. Vijayalakshmi. V, Asst. Executive Engineer, KSEB Ltd
6. Smt. Hema.K, Asst. Executive Engineer, KSEB Ltd
7. Smt. Shalini Cyril, Asst. Executive Engineer, KSEB Ltd
8. Sri. Manoj B, Asst Executive Engineer, ESD, Charummood
9. Sri. Subramony. H.N, Asst. Executive Engineer, KSEB Ltd, Kalamassery
10. Smt. Saheeda. K, DAO, KSEB Ltd
11. Sri. Ajith Kumar.G, SA, KSEB Ltd.
12. Sri. Sivaramakrishnan , Soura Natural Energy
13. Sri. Shaji Sebastian, KSSIA
14. Smt. Ninu Scaria, KSSIA