

**KERALA STATE ELECTRICITY REGULATORY COMMISSION
THIRUVANANTHAPURAM**

Present: **Shri. Preman Dinaraj, Chairman**
Adv. A.J Wilson, Member (Law)

OP No: 07/2022

In the matter of : Determining the upper ceiling tariff for procurement of solar power from the 6MW solar plant proposed at Moongilmada, Palakkad as part of implementation of Component-C of Pradhan Mantri -Kisan Urja Suraksha evam Utthan Mahabhiyan (PM KUSUM)' Scheme.

Petitioner : Kerala State Electricity Board Limited

Petitioner represented by : Sri.Sasankan Nair C.S, Chief Engineer
Smt.Asha, V, Dy CE, REES
Smt Latha S V, AEE, TRAC

Date of Hearing : 15.02.2022

Order dated 15.03.2022

1. KSEB Ltd, filed a petition on 31.01.2022 with the prayer to '*determine the upper ceiling tariff for procurement of solar power from the 6MW solar plant proposed at Moongilmada, Palakkad considering maximum CFA of Rs.1.05 Cr/MW and including lease rent for 25 years to Water Authority for providing land for the project, as part of implementation of Component-C of Pradhan Mantri -Kisan Urja Suraksha evam Utthan Mahabhiyan (PM KUSUM)' Scheme.*'
2. The summary of the petition filed by KSEB Ltd is given below.
 - (1) The Ministry of New and Renewable Energy (MNRE) Government of India (Gol), has launched the new scheme for farmers named '**Pradhan Mantri -Kisan Urja Suraksha Evam Utthan Mahabhiyan (PM KUSUM)**' Scheme on 22.07.2019. In continuation of the PM- KUSUM Scheme, MNRE, Gol, vide the Office Memorandum dated 04.12.2020 has notified the guidelines for implementation of feeder level solarization as part of solarization of grid connected agricultural pumps under Component-C of PM-KUSUM Scheme.
 - (2) KSEB Ltd is the state implementing agency for feeder level solarization under Component -C of the Scheme. MNRE vide the Order dated

17.03.2021 had allocated 2000 existing agricultural pumps for solarization of the agricultural feeders under the scheme.

- (3) Under the Scheme, wherever the agriculture feeders have already been separated, the feeders may be solarized under the Scheme. This will lead to lower cost both in terms of lower capital cost and in the cost of power. Feeders having major load for agriculture may also be considered for solarization under the Scheme. The requirement of total annual power for an agriculture feeder will be assessed and a solar power plant of capacity that can cater to its requirement of annual power for that agriculture feeder can be installed either through CAPEX mode or RESCO mode, which will supply solar power to that feeder.
- (4) Feeder level solar power plant may be installed to cater to the requirement of power for a single feeder or for multiple agriculture feeders emanating from a distribution sub-station (DSS) to feed power at 11 kV or at the higher voltage level side of the DSS depending upon on factors like availability of land, technical feasibility, etc. Further, there is no cap of the capacity of solar power plant for feeder level solarization. The DISCOMs may identify land near the DSS, get ownership of land or its lease rights, provide connectivity to the DSS and lay the sub-transmission line between DSS and solar power plant.
- (5) The Central Financial Assistance (CFA) of 30% of the benchmark cost or the tender cost, whichever is lower will be provided by Government of India. For the purpose of calculating CFA, the cost of installation of solar power plant has been estimated as Rs. 3.50 Cr/MW. Under the Scheme solarization of pumps of any capacity is allowed, however, in case of pumps of capacity above 7.5 HP, the CFA will be limited to solar capacity for 7.5 HP pumps.
- (6) Implementation models proposed in the guidelines:
 - A. **Implementation under CAPEX Model:** For installation of feeder level solar plant, CFA of 30% will be provided by Central Government and the balance has to be provisioned by KSEB Ltd. KSEB Ltd has invited tenders for the installation of 5.995MWp solar plants in the own properties as part of the Scheme.
 - B. **Implementation under RESCO Model:** For implementation through RESCO model, the developers will be selected on the basis of lowest tariff offered for supply of solar power for a period of 25 years. The developer will get CFA @30% of the estimated cost of installation of solar plant i.e., maximum of Rs.1.05 Cr/MW (30% OF Rs.3.5 Cr/MW). CFA will be released to the RESCO

developer through KSEB Ltd on successful commissioning of solar power plant.

- (7) As per the guidelines, the farmers are incentivized for saving water for conserving ground water level which can be treated as surplus power injected by farmers and they will be paid by DISCOMs against this saved power at a pre-determined tariff for enhancing their income.
- (8) To implement feeder level solarization utilizing 30% CFA, the institutional land of Kerala Water Authority at Moongilmada, Palakkad was identified by KSEB Ltd for installing ground mounted solar project in 36 Acres. KSEB Ltd assessed that a solar plant of capacity 6MW can be installed at the land. The power evacuation is through 33KV Vannamada substation which is approximately 3.5km away from the proposed site.

The lease rent to the Water Authority shall be on mutually agreed terms and conditions with the developer.

- (9) KSEB Ltd has decided to implement this Scheme in the above proposed site through Tariff Based Competitive Bidding by inviting developers for installing and supplying 6MW ground mounted solar project at Moongilmada, Palakkad in the 36 acres of land owned by Kerala Water Authority. The tariff for the procurement of power so discovered along with the lease rent payable to KWA shall be submitted to the Commission under Section 63 of the Act.
- (10) KSEB Ltd, has now requested the Commission to fix an upper ceiling tariff for procurement of solar power from the 6MW solar plant proposed at Moongilmada, Palakkad. KSEB Ltd, duly considering maximum CFA of Rs.1.05 Cr/MW and also duly considering the lease rent for 25 years to Kerala Water Authority for providing land for the project.

Hearing on the petition:

3. The Commission admitted the petition as OP No: 7/2022. The hearing of the petition was held on 15.02.2022 through video conference. Sri.Sasankan Nair Chief Engineer, Commercial and Tariff, Smt. Asha V Deputy Chief Engineer Renewable Energy and Energy Savings, Smt. Latha S V Assistant Executive Engineer, TRAC presented the petition on behalf of KSEB Ltd. The summary of the deliberations during the hearing is given below.

- (1) KSEB Ltd submitted that Ministry of New and Renewable Energy (MNRE), GoI, vide the Office Memorandum dated 22.07.2019 notified the guideline for implementation of PM KUSUM Scheme. Subsequently MNRE vide the Office Memorandum dated 04th December 2020 has

notified the guidelines for implementation of feeder level solarization under component -C of PM KUSUM Scheme. Further, MNRE vide the Order dated 17th March 2021 has allotted solarization of 2000 numbers of agriculture pumps to KSEB Ltd under Component -C of the PM KUSUM Scheme for the Financial Year 2020-21.

- (2) The DISCOMS/ Power Department is the implementing agency under the Scheme. In the State of Kerala, KSEB Ltd is the State Implementing Agency for feeder level solarization of agricultural pumps under Component -C of the Scheme.
- (3) KSEB Ltd further submitted that they have envisaged two implementation models, viz CAPEX Mode and RESCO Mode to implement the Scheme. As per the guidelines, the DISCOM can identify land near the distribution substation (DSS) of the agricultural feeders, get ownership of the land transferred or take it on lease, provide connectivity at the Distribution Substation and draw the evacuation system between the distribution substation and the solar panel. The MNRE provides a subsidy of 30 % of the benchmark capital cost of ₹ 3.5 Cr per MW or the tendered cost whichever is lower under the scheme.
- (4) To implement the Scheme in the State of Kerala, KSEB Ltd identified 36 Acres of land owned by Kerala Water Authority (KWA) at Moongilmada Palakkad on lease basis for 25 years. The lease rent payable to the KWA for the land will be decided on mutually agreed terms and conditions.
- (5) The power evacuation from the proposed solar plant up to nearest distribution substation is through 33 kV Vannamada Substation which is approximately 3.5 kms from the proposed solar plant site.
- (6) KSEB Ltd has decided to implement the scheme at the proposed site through tariff based Competitive bidding. KSEB Ltd requested before the Commission to determine the ceiling Tariff.
- (7) On a query by the Commission, during the hearing KSEB Ltd clarified that the lease rent payable to the KWA is yet to be finalized. KSEB Ltd also clarified that the cost estimate for constructing the power evacuation scheme from the proposed solar plant up to the nearest substation of KSEB Ltd is under finalization.
- (8) The Commission during the hearing clarified that without the details of the lease rent payable to the land owned by KWA, the Commission cannot determine the tariff for the electricity generated from the solar plant. The Commission also clarified that it is not worthwhile to factor the cost of the power evacuation scheme as part of the capital cost of the Scheme while determining the tariff of the project, since the power

evacuation scheme is being constructed by the SBU-T of the KSEB Ltd the State Transmission Utility. Instead, it could be included in the Capital Projects for the particular year under SBU-T ARR & ERC

Analysis and Decision of the Commission:

4. The Commission has examined in detail the petition filed by KSEB Ltd, the deliberations and clarifications during the hearing of this petition on 15.02.2022 and other relevant details and documents for determining the upper ceiling tariff for inviting bid for the implementation of 6 MW Solar Plant at Moongilmada Palakkad under the Component –C of PM KUSUM Scheme, as per the provisions of the Electricity Act 2003. The guidelines for implementing feeder level Solarization under Component -C of PM KUSUM Scheme notified by the MNRE, GoI and other rules and regulations in force have also been examined and based on these, decides as follows.
5. The Commission vide the Order dated 04/10/2021 in OP No: 43/2021 had already granted approval to KSEB Ltd for the implementation of Component A of PM KUSUM Scheme in the State of Kerala.
6. In this matter the Commission noted the following.
 - (1) The Central Government vide the Office Memorandum dated 04.12.2020 has issued detailed guidelines for implementation of feeder level solarization of under the Component C of PM KUSUM Scheme.
 - (2) KSEB is the implementing agency in the State of Kerala under the Scheme. KSEB Ltd in this petition submitted that the MNRE, Government of India vide Order dated 17th March 2021 sanctioned 2000 numbers of agricultural pumps for solarization under the scheme in the State of Kerala. As per the guidelines the Solar Plant can be installed at the land near to the 'distribution substation' where the agricultural feeders are emanating duly considering the factors like availability of land, technical feasibility etc. KSEB Ltd further submitted that they had already invited tender for installation of 5.995 MWp solar plants under **PM KUSUM** scheme under CAPEX MODEL and the same was filed before the Commission as part of the petition filed for the approval capital investment for the period from 2022-23 to 2026-27.
 - (3) The Commission also noted that the Central Financial Assistance of 30% of the ceiling Capital Cost of ₹ 3.5 Cr/MW or the tendered cost whichever is lower will be available for the project, under the Scheme.
 - (4) KSEB Ltd has identified 36 Acres of land presently owned by KWA at Moongilmada Palakkad for implementing 6 MW plant under Component -C of PM KUSUM Scheme under RESCO mode. The land is proposed

to be leased from KWA for 25 years for implementing the project. KSEB Ltd further submitted that the power evacuation is through 33 kV Vannamada Substation which is approximately 3.5 km from the proposed site.

- (5) KSEB Ltd further submitted that they have decided to implement the Scheme through tariff based competitive bidding by inviting developers through RESCO mode. KSEB Ltd requested before the Commission to determine the upper ceiling rate for procurement of power from the 6 MW Solar Plant, including the lease rent for 25 years payable to the Kerala Water Authority.
7. The Commission has examined carefully the details submitted by KSEB Ltd. The lease rent payable to the Kerala Water Authority for the land from KWA for implementing the 6 MW Solar Plant is one of the major cost components affecting the tariff of the electricity generated from the 6 MW Solar plant at Moongilmada, Palakkad. However, KSEB Ltd and KWA are yet to reach a consensus and agreement on the lease rent payable for the land of KWA. Without the confirmation of lease rent payable for the land of KWA, the Commission cannot make any attempt to determine the ceiling tariff for procuring the power from the Project.
8. The Commission also noted that the power evacuation of the scheme involves 3.5 km of 33 kV line from the Solar Plant up to 33 kV Substation at Vannamada of KSEB Ltd. The Commission is of the considered opinion that since the scheme is being implemented by KSEB Ltd under Component C of the PM KUSUM Scheme and the power evacuation system is being developed by SBU-T of KSEB Ltd, the Commission may consider the power evacuation cost of the scheme as part of the asset of the SBU-T while determining the ARR and ERC while approving KSEB Ltd.'s truing up petition. Hence, the cost of the power evacuation as part of implementing the Solar Plant need not be factored in the tariff of the electricity generation from the project.
9. The Commission has also noted that the MNRE, Government of India vide the letter dated 05/March/2020 in FNo: 283/29/2018- Grid solar, communicated its decision to "not to prescribe "cap" or "upper ceiling tariff" in future bids' for procurement of power from Solar and Wind plants.
10. Considering all these aspects in detail, the Commission is also of the considered view that, KSEB Ltd may invite Expression of interest/ bid for implementing the 6 MW solar plant at Moongilmada Palakkad without fixing an upper ceiling tariff. KSEB Ltd shall clearly mention in the Expression of Interest/ bid that the lease rent shall be payable separately as per the Agreement reached between KSEB Ltd and Kerala Water Authority for the 36 Acres of land lease out by KWA and the same would be permitted as one of the components while determining the final tariff of this project. Hence KSEB Ltd may proceed

with the scheme without losing the CFA available for the solarization of the agricultural feeders available under Component-C of the PM-KUSUM scheme.

Order of the Commission

11. The Commission, after examining the petition filed by KSEB Ltd dated 24.01.2022, the deliberations during the hearing held on 15.02.2022 and other documents and details produced, as per the provisions of the Electricity Act 2003, other relevant guidelines, Rules and Regulations, hereby orders the following.

- (1) KSEB Ltd can begin the preliminary actions required for establishment of the 6 MW Solar plant at Moongilmada Palakkad at the 36 Acres of land of Kerala Water Authority on RESCO basis.
- (2) KSEB Ltd may invite Expression of Interest/ bid from developers for implementing the Scheme without fixing any upper ceiling tariff.
- (3) KSEB Ltd shall reach an Agreement on the lease rent payable to Kerala Water Authority for the 36 Acres of land provided by KWA for implementing the scheme expeditiously and communicate the same to the Commission.
- (4) The lease rent payable to KWA shall form one of the components of tariff, apart from the discovered lowest tariff through KSEB Ltd.'s EoI/bid.
- (5) Once the developer is selected by KSEB Ltd for implementing the Solar Plant, and the lease agreement with KWA including the lease rent payable signed, KSEB Ltd shall file a separate petition under Section 63 of the Electricity Act 2003 for adoption of tariff for procuring power from the scheme.

The petition is disposed off. Ordered accordingly.

Sd/-
Adv A J Wilson
Member (Law)

Sd/-
Preman Dinaraj
Chairman

Approved for issue

C R Satheeshchandran
Secretary