

KERALA STATE ELECTRICITY REGULATORY COMMISSION
THIRUVANANTHAPURAM

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

OP No. 34/2022

In the matter of : Petition filed under Regulation 66 of the KSERC (Renewable Energy and Net Metering) Regulations, 2020 seeking modification of the KSERC (Renewable Energy and Net Metering Regulations), 2020.

Petitioner : Kerala State Electricity Board Ltd.

Petitioner represented by : Sri M P Rajan, Deputy Chief Engineer, TRAC.
Smt Latha S V, AEE, TRAC.

Date of hearing : 03.06.2022, 11 AM
(e-hearing through Video Conferencing)

Order dated 16. 07. 2022

1. The petitioner Kerala State Electricity Board Ltd. filed a petition before the Commission on 07.05.2022, seeking modification of KSERC (RE) Regulations, 2020 with the following prayers:
 - a. *Gross metering scheme' and 'Net Billing' scheme as envisaged in "The Electricity (Rights of Consumers) Rules, 2020 notified on 31-12-2020 and the Electricity (Rights of Consumers) Amendment Rules,2021 notified on 28-6-2021 may kindly be introduced in the State as early as possible by suitably amending the KSERC (Renewable Energy and Net Metering) Regulations,2020.*
 - b. *to approve Rs.2.44/unit for settling the excess energy banked for the settlement period starting from 1st October 2021 to 30th September 2022.*
2. The summary of the petition is as follows:
 - (1) The petitioner has submitted that the Commission has notified the KSERC (Renewable Energy and Net Metering) Regulations, 2020 on 7-2-2020 applicable to all the existing and new, Grid Interactive Renewable Energy Systems, consumers, prosumers, captive consumers, captive generating plants, generating companies, distribution licensees and obligated entities, in the matter of Determination of Tariff of Renewable Energy, Renewable

Purchase Obligation, Net Metering, Banking, Generation Based Incentives and related matters which came into effect from 5th of June 2020.

(2) KSEB Ltd submitted that Regulations for energy accounting under the RE Regulations is as per net metering as stipulated in the various Regulations as follows:

- 13(2) - General Conditions - RE systems of not less than one kW and not exceeding 1000 kW.
- 20 - Banking facility for prosumers.
- 21 - Net metering, Energy Accounting, Banking and Settlement.
- 26 - General Conditions and charges applicable for the use of the transmission and distribution system by a prosumer, having a Renewable Energy System with capacity more than 1 MW at the same premise for his own use.
- 27 - General Conditions and charges applicable, for the use of the transmission and distribution system by a Captive Consumer.

3. KSEB Ltd has mainly raised the following two issues:

- (i) Introduction of Gross Metering /Net Billing schemes in the State
- (ii) Settlement of excess energy at Average Pooled Power Purchase Cost

Issue 1: Introduction of ‘Gross Metering/Net Billing Schemes in the State.

4. KSEB Ltd in their petition submitted that Net Metering was introduced to promote solar generation in the State which was in the nascent stage. However, now solar technology has achieved grid parity and continuing ‘net metering’ methodology is creating heavy financial burden on the DISCOMs. KSEB Ltd has further submitted that,

- (i) This is mainly due to factors like variation in price at peak and non-peak hours, low demand during non-peak hours leading to surrender of power and payment of fixed charges. Further, KSEB Ltd is expecting substantial capacity addition through various programs for renewable energy like the Soura scheme.
- (ii) The cumulative solar capacity expected for the next five years considering solar addition is as given in table below:

Expected solar capacity (MW) during next five years			
Year	Capacity addition expected		Total cumulative capacity
	Prosumer	under Soura scheme	

Cumulative capacity till Dec 21			226.61
2021-22 (till Mar 22)		66.23	292.84
2022-23	73.62	150(domestic)	516.46
2023-24	102.49	100(domestic)	718.95
2024-25	143.24	100(domestic)	962.19
2025-26	195.08		1157.27
2026-27	258.02		1415.29

- (iii) The solar energy generation due to the expected capacity addition @ CUF 0.19 is as detailed in the table above given below:

Energy addition expected (MU)					
	2022-23	2023-24	2024-25	2025-26	2026-27
Total	859.60	1196.62	1601.47	1926.16	2355.61

- (iv) KSEB Ltd has further submitted that this huge addition in solar capacity will lead to corresponding reduction in energy sales in the coming years. However, with rapidly declining solar tariff and the revenue loss to the DISCOMs with 'Net Metering', the Ministry of Power has notified the 'Gross Metering' and 'Net Billing Schemes' through "The Electricity (Rights of Consumers) Rules, 2020 notified on 31-12-2020 and the Electricity (Rights of Consumers) Amendment Rules, 2021 notified on 28.06.2021. In line with the above, many states have adopted 'Gross Metering' and 'Net Billing' method and have taken a different methodology for settling the excess energy injection by prosumers and captive consumers. The relevant pages of the Regulations are submitted by KSEB Ltd.
- (v) KSEB Ltd has requested that 'Gross Metering Scheme' and 'Net Billing' Scheme as envisaged in "The Electricity (Rights of Consumers) Rules,2020 notified on 31-12-2020 and the Electricity (Rights of Consumers) Amendment Rules,2021 notified on 28-6-2021 may be introduced in the State as early as possible by suitably amending the KSERC (Renewable Energy and Net Metering) Regulations, 2020.

Issue No.2: Settlement of excess energy at Average Pooled Power Purchase Cost

5. As per KSERC (Renewable Energy and Net Metering Regulations), 2020, the distribution licensee shall at the end of the settlement period pay for the excess energy banked by the prosumers and captive consumers at the Average Pooled Power purchase Cost (APPC) of the licensee as approved by Commission from time to time. KSEB Ltd further submitted that,
 - (i) The APPC approved by the Commission for the FY 2021-22 is Rs.3.22/unit. This rate is significantly high compared to the prevailing rate of solar power.
 - (ii) It is further submitted that since the APPC rate is high compared to the prevailing solar tariff, many States have modified the settlement rates to be in line with the prevailing solar tariff. KSEB Ltd has attached the details.
 - (iii) The petitioner has submitted that the lowest rate for procurement of solar energy in recent contracts entered by KSEB Ltd is Rs.2.44/unit (PPA with SECI for 300MW Solar power, PSA with TP Sourya for 110MW Solar power). Hence, KSEB Ltd has requested for approving Rs.2.44/unit for settling the excess energy banked for the settlement period starting from 1st October 2021 to 30th September 2022.
6. The Commission admitted the petition as OP 34/2022. The Public hearing on the petition was conducted through video conferencing on 03.06.2022. The list of participants is given as Annexure 1. The summary of the deliberations during the hearing is given below
 - (i) During the public hearing as mentioned above, KSEB Ltd submitted the following;
 - (1) As per the provisions in KSERC RE Regulations, 2020, Regulation 21(3), Prosumer having connected load ≤ 20 kW under net metering arrangements is permitted to import and bank energy without any restriction. As per Regulation 21(4), for prosumer having connected load above 20 kW; time zone wise adjustments for the three time zones i.e., day, evening peak and night off peak at the ratio of 80:100:120 is applicable. As per Regulation 26 and 27, Net metering is available for prosumers above 1 MW with time zone wise adjustment at the ratio of 80:100:120 along with 5% grid support charges and 5% banking charges. Captive consumers have to bear the wheeling /transmission charges and losses in addition to the

above. As such, the net metering is available to all the renewable energy system within the State.

(2) KSEB Ltd further submitted that they were seeking modification on the account of The Electricity (Rights of Consumers) Rules, 2020 notified on 31-12-2020, Electricity (Rights of Consumers) Amendment Rules, 2021 notified on 28.6.2021 and present trend of solar penetration.

(3) As per the Provisions in Electricity (Rights of Consumers) Rules, *“gross-metering” means a mechanism whereby the total solar energy generated from Grid Interactive rooftop Solar Photovoltaic system of a Prosumer and the total energy consumed by the Prosumer are accounted separately through appropriate metering arrangements and for the billing purpose, the total energy consumed by the Prosumer is accounted at the applicable retail tariff and total solar power generated is accounted for at feed-in tariff determined by the Commission;’;*

“net-billing or net feed-in” means a single bidirectional energy meter used for net-billing or net feeding at the point of supply wherein the energy imported from the Grid and energy exported from Grid Interactive rooftop Solar photovoltaic system of a Prosumer are valued at two different tariffs, where (i) the monetary value of the imported energy is based on the applicable retail tariff; (ii) the monetary value of the exported solar energy is based on feed-in tariff determined by the Commission; (iii) the monetary value of the exported energy is deducted from the monetary value of the imported energy to arrive at the net amount to be billed (or credited / carried-over).

(4) As per the Provisions in Electricity (Rights of Consumers) Rules *“ the arrangements for net-metering, gross-metering, net-billing or net feed-in shall be in accordance with the regulations made by the State Commission, from time to time:*

Provided that where the regulations does not provide for net-metering, net-billing or net feed-in, the Commission may allow net metering to the Prosumer for loads up to five hundred Kilowatt or upto the sanctioned load, whichever is lower and net-billing or net feed-in for other loads:

Provided further that in the case of Prosumers availing net-billing or net feed-in, the Commissions may introduce time-of-the-day tariffs whereby Prosumers are incentivised to install energy storage for utilization of stored solar energy by them or feeding into the grid during peak hours thus helping the grid by participating in demand response of the Discoms:

Provided also that in case of net-metering or net-billing or net feed-in, the distribution licensee may install a solar energy meter to measure the gross solar energy generated from the Grid Interactive rooftop Solar Photovoltaic system for the purpose of renewable energy purchase obligation credit, if any:

Provided also that the Commission may permit gross-metering for Prosumers who would like to sell all the generated solar energy to the distribution licensee instead of availing the net-metering, net-billing or net feed-in facility and the Commission shall decide for this purpose the generic tariff for gross-metering as per tariff regulations:’

- (5) KSEB Ltd in their submission stated that Net metering was introduced to promote solar generation when it was in the nascent stage. Now, significant addition in solar generation is being integrated to the grid and hence price of solar power has drastically come down. It was pointed out that continuing the ‘net metering’ methodology shall create heavy financial burden on the DISCOMs. The Banking facility is also causing huge financial loss to KSEB Ltd. KSEB Ltd has to surrender contracted power during normal hours. KSEB Ltd further submitted that the demand during peak hours varies from that of the normal hours by 400MW to 800MW.
- (6) In order to meet the peak demand, the costliest power in the Merit Order need to be scheduled. They pointed out that the Average Market Clearing Price during day time is below ₹3.50/unit, whereas during peak hours the Market Clearing Price range from ₹4.50/unit to ₹6.00/unit and can go even upto ₹ 9-12/unit in extreme summer months. Hence, the DISCOM was forced to provide costlier peak power to prosumers at zero cost, which results in a huge financial liability for the DISCOM, especially with increasing RE penetration.
- (7) KSEB Ltd also submitted that MoP has come out with ‘Gross Metering’ and ‘Net Billing’ schemes considering the rapidly declining solar tariff and the revenue loss to the DISCOMs. In line with the above Regulations, the following states have come up with these schemes. Tamilnadu (Gross Metering and Net Billing), Karnataka (Gross Metering), Gujarat (Banking is allowed only within one billing cycle, Peak charges are applicable for peak hour consumption of the banked energy, Draft Regulations on Gross Metering published), Madhya Pradesh (Gross Metering), Rajasthan (Gross Metering and Net Billing), Punjab (Net Billing), Haryana (Gross Metering), Uttar Pradesh (Gross Metering), Orissa (Gross Metering), Maharashtra (Net Billing).

- (8) KSEB further submitted that the settlement of excess energy as per Regulation 26(5), 27(7) is an additional incentive over and above the net metering & banking facility provided to the prosumers for the full accounting year. The APPC approved by the Commission for the FY 2021-22 is ₹3.22/unit which is significantly high compared to the prevailing rate of solar. It was pointed out that many states have modified the settlement rate to be in line with the existing tariff. The lowest rate for procurement of solar energy in recent contracts entered by KSEB Ltd is RS.2.44/unit (PPA with SECI for 300MW Solar power, PSA with TP Sourya for 110MW Solar power). Hence, they requested that 'Gross Metering Scheme' and 'Net Billing' Scheme as envisaged in "The Electricity (Rights of Consumers) Rules,2020 notified on 31-12-2020 and the Electricity (Rights of Consumers) Amendment Rules,2021 notified on 28-6-2021 may be introduced in the State as early as possible by suitably amending the KSERC (Renewable Energy and Net Metering) Regulations, 2020. They also made a request to approve Rs.2.44/unit as the price for settling the excess energy banked for the settlement period starting from 1st October 2021 to 30th September 2022.

It was clarified that the RPO prescribed for KSEB Ltd by the Commission for the FY 21-22 for non-solar is 10.25% and solar is 6.75% out of that 9.38% is achieved for non-solar and 4.07% for solar. KSEB Ltd submitted that shortfall is due to non-materializing of certain RE contracts and KSEB Ltd is expected to achieve excess RPO by 2023-24.

7. Thereafter, the RE prosumers and stakeholders in this field expressed their concerns and difficulties which they were facing and is likely to face if KSEB Ltd suggestions are agreed to.
- (i) Shri Sajad submitted that the new modifications proposed by KSEB Ltd will have adverse impact on solar penetration within the State. He was of the opinion that the solar penetration into the grid was not as pointed by KSEB Ltd. Infact KSEB Ltd has not even been able to achieve the reduced RPOs which were set by the Commission for the respective years. Under such circumstances, he stated that the petition of KSEB Ltd is not correct and the facility of net metering shall be permitted for consumers up to 1 MW as is the case now.
- (ii) Shri Wilson Thomas submitted that KSEB Ltd has benefited immensely due to the solar penetration. Further, MoP and MNRE have been actively offering incentives to encourage the production and penetration of renewable energy in the grid. KSEB Ltd too should take steps to encourage solar penetration instead of discouraging it by introduction of gross metering.

- (iii) Shri Jacob Cheriyan, Malayala Manorama, submitted that, there is lack of clarity on the petition. For instance, the petition is silent about whether the proposed modifications are applicable to all existing consumers or only for new consumers. He pointed out that many consumers and prosumers have made huge investment in solar projects within the State based on the existing Regulations. The proposal of KSEB Ltd amounts to change in the Regulations which will adversely effect the investors who have already installed solar energy system in the State. Further, any such change as proposed by KSEB Ltd is a breach of contract with the consumers / prosumers. Introduction of gross metering will bring about huge loss to captive consumers who will not be able to get a return on their investment even after 20 years.
- (iv) Shri Shaji Sebastian stated that the petition was misconceived and the Commission must reject it especially since KSEB Ltd is still to achieve even their reduced RPO targets set by the State Commission. He was of the view that an in-person hearing should be conducted before taking any final decision on the modification proposed by KSEB Ltd.
- (v) Shri Saji Mathew, MRF submitted that KSEB Ltd is betraying all the prosumers and captive consumers, especially the domestic consumers who have invested and installed roof top grid interactive solar systems. He pointed out that KSEB Ltd has not specified any details regarding the group of prosumers they want to include under Gross Metering and Net Billing Schemes. He also mentioned that Rule 11 (4) of The Electricity (Rights of Consumers) Amendment Rules, 2021, provided as follows:

Provided that where the regulations does not provide for net-metering, net-billing or net feed-in, the Commission may allow net metering to the Prosumer for loads up to five hundred Kilowatt or upto the sanctioned load, whichever is lower and net-billing or net feed-in for other loads:

Hence, he argued that the petitioner was making an unethical attempt to denounce the rights of the consumer. He submitted that as per his calculations the loss to consumers due to the introduction of gross metering is as high as 761%. It is paradoxical that KSEB Ltd has not made any investment in the solar plants in spite of the subsidy and other incentives introduced by Gol.

- (vi) Shri Rameshan Nair submitted that the global Government policy was to go for green energy. But, KSEB Ltd using such tactics is trying to sabotage it with the proposed modifications. If KSEB Ltd continue in this manner, there

will not be any more investments in solar generation in the State. If KSEB Ltd intention is to reduce expenditure, then the first step that they should take is to effect reduction on their employee cost, rather than trying to punish solar prosumers / consumers.

- (vii) Shri Renjith Jacob requested the Commission to reject the petition as the petition was devoid of any merit and is ambiguous. He submitted that while the Govt is promoting green energy and has set a target of 100% Renewable energy by 2050, KSEB Ltd on the other hand is trying its best to discourage the installation of solar energy systems through the proposed modifications. Further, he mentioned that as per the Electricity (Rights of Consumers) Rules, 2020, in net metering, the net energy import or export is billed or credited or carried-over by the distribution licensee on the basis of the ***applicable retail tariff, but KSEB Ltd is doing it at the APPC rate***. This is a very serious deviation and the Commission should not encourage such practices at the cost of solar generators. He also mentioned that Rules and its amendments are just guidelines issued by Ministry of Power and there is no mandatory requirement for States to implement these Rules. The State Commissions are fully empowered to issue Regulations based on their assessment of technical, economic and social conditions prevailing in the State.
- (viii) Shri Pradeep M, M/s Hindalco, Kalamassery submitted that they have invested around Rs 18 Cr in the solar power plants at the Kalamassery unit. He also agreed that the current modification proposed by KSEB Ltd is ambiguous. For example, the Govt Rules do not stipulate that gross metering shall be implemented. KSEB Ltd has picked up a few convenient points from that and is trying to take undue advantage out of it at the cost of the consumers. He reminded the audience that the investors in the State have made their investments based on the existing solar policy and it cannot be modified to their disadvantage at a later point of time. It is also a fact that the Union Govt is planning to curtail the coal mining by 2030 and support solar generation. The existing arrangement in major installation is such that the solar generated power is fed to the internal power bus which is at a different voltage than the incoming supply. The energy generated by the solar system is first consumed by the industry and only when the solar generation is more than the plant load, due do the excess energy gets exported. Hence, M/s Hindalco contended that it is practically difficult to implement the new modifications suggested by KSEB Ltd., and requested the Commission to reject this petition as it was against the State solar policy. In case the Commission finds any merit in the modifications suggested by KSEB Ltd, he requested that the Commission must take steps to protect the financial

interest of those who have already invested in solar energy systems in the State of Kerala by allowing the status-quo to continue in their cases.

- (ix) Sri Narendra Nath Veluri, CEO, ANERT submitted that, the proposed change is unfair to consumers who have opted for renewable energy schemes, attracted by the benefits of the existing method and hence shall not be allowed. The Urja Kerala Mission by State Govt is in the process of generating 1000 MW of which 500 MW will be from roof top solar. Kerala being densely populated, roof tops are preferred but KSEB Ltd instead of promoting it, is trying to kill the project at its nascent stage. The Gol is aiming 300 GW of green energy by 2030.
- (x) Dr. Varghese Thomas, Calicut requested the Commission to reconsider net metering in case of Solar with grid connectivity. He pointed out that KSEB Ltd has initially lured the customers through print and online media to install roof top solar by assuring them of net metering facility. The consumers invested in the roof top solar plants believing that their electricity bills can be brought down and entered into an agreement with KSEB Ltd. At this point of time if KSEB Ltd unilaterally change the metering system, it will account to breach of trust. It was further submitted that all domestic customers who have installed on grid solar plants and have already entered into agreement with KSEB Ltd shall be allowed to continue with the net metering system as agreed upon. The proposal of KSEB Ltd to reduce the buyback tariff will in turn have an adverse impact on the current incentives and hence will damage the consumer trust on KSEB Ltd. Hence, it was requested that the above-mentioned modifications shall not be made applicable to existing consumers.
- (xi) Shri. Rajumon PC, CIAL submitted that Gross Metering system shall make “solar plants of megawatt scale” non-viable for prosumers. The solar plants of CIAL have a capacity of 38.8 MWp and has incurred an expenditure of around Rs. 200 crores (excluding land cost) which is funded by huge bank loans. Gross metering will affect loan repayments resulting in bankruptcy of energy division. It was also pointed out that this amendment will halt all developments by prosumers in the renewable energy sector in the State of Kerala. It was submitted that the financial impact due to gross metering will weigh heavily on CIAL. The extra cash flow will account to around Rs 72 lakhs and the additional loss as % of Generation for the month of April 2022 will be 6.3 %. Hence, it was requested to quash the petition filed by KSEB Ltd seeking gross metering and net billing for solar prosumers, as it is gross injustice to prosumers who have invested hugely on solar plants as well as the request to KSEB Ltd to approve Rs. 2.44/unit as APPC for settling the

excess energy banked for the settlement period starting from 1st October 2021 to 30th September 2022.

(xii) Shri Sarath R, HT and EHT Association submitted a detailed presentation on the subject matter and submitted the following:

- (1) The petition lacks clarity regarding the affected parties, relevance of the amendment, method of billing, etc., KSEB Ltd is trying to betray all prosumers especially the domestic consumers who have invested & installed roof top grid interactive solar systems believing the advertisements published by KSEB Ltd through print and social medias. It was further submitted that the proposal by KSEB Ltd prima facie seems to be a scheme devised to penalize all existing prosumers in the state who have invested in Grid Interactive Solar Generation. It will also prevent further investment in solar power projects as this proposal is totally against National and State Solar Policies for promoting grid interactive solar system and hence reduce Carbon Footprint and Green House Gas emission.
- (2) The Rule and its amendment are just the guidelines issued by Ministry of Power and there is no mandatory requirement that States shall implement these rules. State Commissions may issue Regulation based on the technical, economic and social conditions prevailing in the State. The petition to implement Gross metering is a clear violation of Clause -7 of State Solar Policy. As per the policy feed in tariff is applicable for offsite commercial installation and Net metering is applicable to all grid interactive solar installation. It was also asserted that The Electricity (Rights of Consumers) Rules, 2020 has many new guidelines for providing benefits to consumers, but there has been no initiative from the part of KSEB Ltd to implement these consumer-friendly proposals like the Compensation Mechanism.
- (3) It was also pointed out that as per the Electricity (Rights of Consumers) Rules, 2020, in net metering, the net energy import or export is billed or credited or carried-over by the distribution licensee on the basis of the applicable retail tariff. The adaptation of these rules to State regulation will attract more investors. It was also pointed out that KSEB Ltd has not specified any details regarding the group of prosumers they want to include under Gross metering **and net billing schemes even though as per Rule 11 (4) of The Electricity (Rights of Consumers) Amendment Rules, 2021, the Commission may allow net metering to the Prosumer for loads up to five hundred Kilowatt or upto the sanctioned load, whichever is lower and net-billing or net feed-in for other loads.**

- (4) It was submitted that the total installed capacity of solar prosumers in Kerala till December 2022 is 226.61MW only which is just 0.6% of total GISS installed capacity in India. Kerala's installed capacity is on 18th position considering the installations done by other States as per the annual report by MNRE 2020-2021.
- (5) KSEB Ltd has claimed in its petition that growing solar power capacity and generation is impacting its financial performance. But this claim is contrary to the actual facts. It was apprised that as a result of Solar Energy Generation by prosumers, KSEB Ltd is indeed benefited as there is scope to reduce procurement of high-cost power from outside sources which will in turn reduce Transmission Charges, Wheeling Charges, etc. due to procurement of power from outside the state. There is also scope to reduce Average Power Purchase Cost by effective management of Hydro Generating Stations to meet peak demand. Apart from that KSEB Ltd is also getting free energy from Solar Prosumers who are banking energy by means of Grid Support Charges and Banking Charges. It was also suggested that increased number of solar prosumers benefits KSEB Ltd by reduction in transmission and distribution losses as the solar energy is consumed within vicinity of generation points, reduction in expenses towards RPO obligation, total installed capacity of Kerala is increased without any capital expenditure, maintenance cost, etc., from the side of KSEB Ltd, improvement in system voltage due to reduction in line losses.
- (6) It was further submitted that, KSEB Ltd has requested to reduce the APPC for excess energy banked by the prosumers from 3.22/kWh to 2.44/kWh which is unjustifiable due to following reasons.
1. *Per unit cost of Mega Watt scale projects will be lesser than that of smaller projects like roof top solar plants.*
 2. *Capacity Utilization Factor of Mega Watt scale projects will also be higher compared to that of smaller projects. Hence the average generation per kilowatt will be more for bigger plants.*
 3. *Investment per kilowatt of Mega Watt scale projects will also be much lesser than that of smaller projects.*

Hence it was submitted that the proposal to reduce APPC to Rs 2.44/kWh based on the power purchase rates from larger plants shall increase the breakeven period for investors and prevents further investments in solar power sector.

The HT&EHT Association requested before the Commission to reject KSEB Ltd.'s proposal to amend the KSERC (Renewable Energy and Net Metering) Regulations, 2020, considering the existing low installed capacity (0.6% of National Installed Capacity) and slow growth rate of Solar Power projects in Kerala compared to neighbouring States. It was also requested to increase the Average Power Purchase Cost for settlement of excess energy injected, in line with the definition of Net Metering mentioned in Electricity (Rights of Consumers) Amendment Rules, 2021 notified on 28-6-2021 by Ministry of Power.

- (xiii) Shri Hareesh submitted that KSEB Ltd has not achieved the RPO target till date which shows that there is no sufficient RE penetration within the State. It was also suggested that KSEB Ltd rather than surrendering the power at off peak hours shall sell it to industries at low cost. It was also pointed out that KSEB Ltd has lured the consumers through print and online media to install roof top solar by assuring them of net metering facility and contracts were signed on good faith but KSEB Ltd is now breaching the trust of consumers through the modifications suggested which is providing a clear message to MNC's about the lack of investor friendly laws in the State.
- (xiv) M/s Cochin Port trust submitted that KSEB Ltd is not allowing grid connectivity and net metering to Cochin Port Trust for renewable energy system as CoPT is a small licensee. CoPT further submitted that, they are also eligible for grid connectivity to the solar power system as per the provisions of the KSERC (Renewable Energy & Net Metering) Regulations, 2020, since they are purchasing power from KSEB Ltd as a bulk consumer at the BST approved by the Commission. Hence, CoPT requested to address the issue in the Regulation.
- (xv) Shri N. Prahladan, Trivandrum submitted that KSEB Ltd is providing around Rs 3.26/kWh as buy back charges to Roof Top Consumers which is the average cost of power purchase of KSEB Ltd. Hence, it contradicts the claim of KSEB Ltd that they incur huge loss due to procuring power at high rates. It was also pointed out that coal-based power was sold in other states at much lower rates. It was further submitted that even after settlement of the solar accounts by KSEB Ltd in September 30th every year there is a delay in remitting the excess amount to the consumers, through which KSEB Ltd is reaping profits. Hence, it was requested that the solar accounts of KSEB Ltd shall be settled on monthly basis. It was also requested that the modifications in Regulation shall not be made applicable to existing domestic consumers.

- (xvi) Shri. Mohanan Pillai, Trivandrum submitted that he has installed a rooftop solar with 4kW capacity at an expense of around Rs 2.5 lakh to save electricity charges. The new proposal of KSEB Ltd to switchover to gross metering has come as a shock. This is against the policy of Govt to green energy and hence, it was requested to reject the petition.
- (xvii) Dr. RVG Menon in his e mail pointed out that the KSEB Ltd seems unaware of the fact that the country is going through an Energy Revolution and it is only a question of time before we can switch over to a fully renewable energy regime. KSEB Ltd cannot continue to purchase electricity from outside the State forever. Roof top solar systems have a vital role to play in this context. Instead of promoting it KSEB Ltd is bent upon alienating and dissuading the potential and existing roof top solar prosumers through unfriendly power purchase policies. It was requested to reject the petition.
- (xviii) Gopakumar Govind Pillai submitted that he is an existing roof top consumer and requested the commission to reject the petition. KSEB Ltd cannot expect to make profits from solar plants without investing a single penny.

Analysis and Decision of the Commission:

- 8. The Commission has carefully examined the petition filed by M/s KSEB Ltd, the deliberations during the hearing held on 03.06.2022, the objections made by the stakeholders and other prosumer who have or intend to install solar energy systems with the provisions of the Electricity Act, 2003, and other Rules and Regulations notified by the Commission, and arrived at the following conclusions:
- 9. The main prayers raised by the petitioner KSEB Ltd in the petition are the following:
 - (i) to introduce 'Gross Metering Scheme' and 'Net Billing' Scheme as envisaged in "The Electricity (Rights of Consumers) Rules, 2020 notified on 31-12-2020 and the Electricity (Rights of Consumers) Amendment Rules, 2021 notified on 28-6-2021 in the State as early as possible by suitably amending the KSERC (Renewable Energy and Net Metering) Regulations, 2020.
 - (ii) to approve Rs.2.44/unit for settling the excess energy banked for the settlement period starting from 1st October 2021 to 30th September 2022.
- 10. The Commission examined the prayers of KSEB Ltd in detail. The analysis and the decisions of the Commission on each prayer of the petitioner is detailed in the following paragraphs.

Issue 1: To introduce Gross Metering Scheme' and 'Net Billing' Scheme in the State.

11. The first prayer of KSEB Ltd in this petition is to introduce Gross Metering Scheme' and 'Net Billing' Scheme as envisaged in "The Electricity (Rights of Consumers) Rules, 2020 notified on 31-12-2020 and the Electricity (Rights of Consumers) Amendment Rules,2021 notified on 28-6-2021 in the State as early as possible by suitably amending the KSERC (Renewable Energy and Net Metering) Regulations, 2020.
12. The Commission noted that, the Ministry of Power, Gol vide the notification dated 28th June 2021, the Electricity (Rights of Consumers) Amendments Rules, 2021 had notified the concept of 'gross metering' and 'Net-billing or net feed-in" as follows.

"Gross-metering" means a mechanism whereby the total solar energy generated from Grid Interactive rooftop Solar Photovoltaic system of a Prosumer and the total energy consumed by the Prosumer are accounted separately through appropriate metering arrangements and for the billing purpose, the total energy consumed by the Prosumer is accounted at the applicable retail tariff and total solar power generated is accounted for at feed-in tariff determined by the Commission;";

"Net-billing or net feed-in" means a single bidirectional energy meter used for net-billing or net feeding at the point of supply wherein the energy imported from the Grid and energy exported from Grid Interactive rooftop Solar photovoltaic system of a Prosumer are valued at two different tariffs, where

- (i) the monetary value of the imported energy is based on the applicable retail tariff;*
- (ii) the monetary value of the exported solar energy is based on feed-in tariff determined by the Commission;*
- (iii) (iii) the monetary value of the exported energy is deducted from the monetary value of the imported energy to arrive at the net amount to be billed (or credited / carried-over).*

As per the Provisions in Electricity (Rights of Consumers) Rules the arrangements for net-metering, gross-metering, net-billing or net feed-in shall be in accordance with the regulations made by the State Commission, from time to time:

Provided that where the regulations does not provide for net-metering, net-billing or net feed-in, the Commission may allow net metering to the Prosumer for loads up to five hundred Kilowatt or upto the

sanctioned load, whichever is lower and net-billing or net feed-in for other loads:

Provided further that in the case of Prosumers availing net-billing or net feed-in, the Commissions may introduce time-of-the-day tariffs whereby Prosumers are incentivised to install energy storage for utilization of stored solar energy by them or feeding into the grid during peak hours thus helping the grid by participating in demand response of the Discoms: Provided also that in case of net-metering or net-billing or net feed-in, the distribution licensee may install a solar energy meter to measure the gross solar energy generated from the Grid Interactive rooftop Solar Photovoltaic system for the purpose of renewable energy purchase obligation credit, if any:

Provided also that the Commission may permit gross-metering for Prosumers who would like to sell all the generated solar energy to the distribution licensee instead of availing the net-metering, net-billing or net feed-in facility and the Commission shall decide for this purpose the generic tariff for gross-metering as per tariff regulations:’

13. The Commission has examined in detail the provisions of the Electricity (Rights of Consumers) Amendments Rules, 2021. The said Rules clearly provide that, it is applicable only in the States where the Regulations notified by the State Commission do not provide for net metering, net billing or net-feed-in. In such cases, the State Commission may at its discretion allow net metering, net billing or net-feed-in, if required. A simple reading of this Rule makes its intend very clear. First of all the Rule mentioned that in State where Regulations do not provide for net metering, net billing or net feed-in-tariff, in such states the State Commission can allow net metering to prosumers upto 500 kilowatt or their connected load whichever is lower. From this it is very clear that the MoP has included this provision as an incentive to prosumers in those State where at present there is no provision for net billing.
14. A provision to incentivise the installation of solar generation cannot be misinterpreted to restrict an already existing provision in a State Regulation. The Commission is well aware that in the State of Kerala, this Commission itself had vide notification dated 7th February 2020, notified the KSERC (Renewable Energy and Net metering) Regulations, 2020. Chapter III, of the said Regulations provide for net-metering for prosumers having RE capacity upto 1MW. Further, the accounting and settlement of RE generation installed by the prosumers with capacity above 1MW, accounting and settlement of RE systems installed by Captive consumers etc., are provided for in Chapter IV of this Regulations.

The Commission also noted that as per the decision of various Courts in the country, the Rules notified by the Ministry of Power, Gol is not binding on the State

Commission. Instead, such Rules are meant to serve as a guidance tool for the State Commission while notifying their Regulations.

15. The Commission further noted that the incumbent licensee KSEB Ltd is yet to achieve even the reduced RPO targets specified by the Commission vide the KSERC (Renewable Energy and Net metering) Regulations, 2020. The Commission is of the considered view that, introduction of 'net-billing or net feed-in' and 'gross metering' at this stage will be counter productive and actually disincentives those prosumers / consumers who may intend to invest in renewable energy systems in the State.
16. The Commission also noted that as far as renewable energy sources are concerned, except for roof top solar and wind turbines in certain places, there is very little scope for KSEB Ltd to achieve the targets set by the Ministry in fulfilment of the Countries obligations as per the Paris Agreement. It is also a fact that the MNRE has taken up the issue of prescribing lower RPO targets by the State Commission and requested for making it in line with the National targets. The States mentioned by KSEB Ltd in their petition are those who have in almost all cases not only achieved their targets but have also gone beyond it. Hence, in such States there is a requirement to introduce the concept of net-billing, gross metering, etc. This however not the case as far as KSEB Ltd is concerned.
17. The Commission also took due note of the concerns expressed by the stake holders and prosumers who had invested huge sums of money to install renewable energy systems. As pointed out by such investors, these installations were done based on the Government policies and incentives offered by the Central / State Government. The decision to install such renewable energy system by such prosumers / investors were taken based on certain financial economic considerations and shifting the goal post a few years later would totally jeopardise their investment and may even drive them to bankruptcy. In fact, the Commission of the firm view that the principles of policy stability and continuity is essential especially in a State like Kerala where it is very difficult to attract investments. Therefore, the plea of KSEB Ltd to introduce gross metering and net billing at this stage and to extend it retrospectively to the existing prosumers / investors is a retrograde step which the Commission cannot agree with.

Under such circumstances, the Commission is of the considered view that once KSEB Ltd achieve the RPO targets as approved by this Commission, they can file a petition with all supporting details for introduction of these new billing methods. The Commission shall after due verification consider the petition on its merits and take an appropriate decision on introducing "Gross-metering" and "net-billing or net feed-in" as the case may be, after public consultation including public hearing. ***With the above observations the Commission hereby rejects the prayer of the KSEB Ltd to introduce "Gross metering / net-billing or net-feed-in" schemes in the State.***

Issue 2: To approve Rs.2.44/unit for settling the excess energy banked for the settlement period starting from 1st October 2021 to 30th September 2022.

18. The next prayer of the KSEB Ltd is to approve Rs.2.44/unit for settling the excess energy banked for the settlement period starting from 1st October 2021 to 30th September 2022. The Commission has duly examined the prayer of the KSEB Ltd in detail in accordance with the Regulations and the comments and remarks made during the public hearing.
19. The Commission notes that the KSERC (Renewable and Energy and Net Metering) Regulations, 2020 clearly provides that the excess energy injected into State grid by the prosumers shall after the settlement period be paid at the “average pooled power purchase cost (APPC)” of the concerned previous year. The Commission had notified this Regulation after pre-publication, public consultation including public hearing and once notified, it has become the guiding law in these matters. Since the due process has already been complied with by the Commission, it cannot deviate from the provisions of the KSERC (Renewable and Energy and Net Metering) Regulations, 2020, in this matter except through an amendment and after following the due process.
20. The Commission further noted that, the rate of Rs.2.44/unit quoted by KSEB Ltd is the rate derived by the SECI in one of their competitive bidding rounds and that to for the procurement of large scale solar power in the range of around 2000 MW. It is a commonly understood fact that in economics the principle of ‘scale of quantity’ applies i.e., more the quantity, lesser the price. Further, this rate was obtained for the installation of solar generating units in locations in North India having better developed infra structural facilities. It is also to be noted that the solar radiation in North India is much higher than its intensity in a lush green foliage intense state like Kerala. In fact, even the KSEB Ltd prescribed norms in competitive tenders in Kerala have an annual CUF ranging between 16 to 19 percentage only whereas the projects located in North India have annual CUF starting at a minimum of 23 percent onwards. It is a well recognised truth that the annual CUF is an important parameter in deciding the tariff of a project. Higher the annual CUF, generally the tariff tends to show a declining trend.
21. The Commission would also like to place on record that the price obtained in one competitive bid cannot be compared with the bid which precedes or succeeds that tender. Further as per the law of contracts, each tender is a stand alone bid. It is also a recognised fact that even in the same competitive bid, the prices obtained vary considerably. Hence, to adopt the lowest price at which KSEB Ltd has entered into a power purchase agreement with SECI cannot be the criteria for deciding the average pooled power purchase cost (APPC).
22. Adoption of such a parameter is fraught with immense danger and would completely jeopardise the entire tender validity and its legality. If for instance in the next succeeding tender within the same year if the price obtained by KSEB Ltd

is say Rs.3.50, then would KSEB Ltd willing to adopt this rate as the APPC. And in instances wherein multiple competitive bid are floated within the same financial year and if different prices are obtained, such a situation would lead to tremendous uncertainty and any APPC determined on such bids would not sustain legal challenge.

23. Under such circumstances, it is neither logical nor correct to compare the rate of Rs.2.44/unit obtained in one of the SECI tenders with a Regulation defined term such as APPC. At this stage it is important to reproduce the definition of APPC as defined in the KSERC (Terms and Conditions for Determination of Tariff) Regulations, 2021

“Average Power Purchase Cost” or “APPC” during a year means the weighted average cost of power purchased by the distribution licensee including the cost of self generation by the Licensee, for the previous year as approved by the Commission;

The above definition clearly delineates the methodology of working out the APPC by the Commission. Further, as per Regulation 85(10) of the KSERC (Terms and Conditions for Determination of Tariff) Regulations, 2021, the power to determine the APPC for any settlement period solemnly with the State Commission and based on the methodology mentioned above. Any deviation from this prescribed norms would be in violation of the Regulation and shall not stand any legal scrutiny. Hence the proposal of KSEB Ltd to adopt the low price obtained in one tender cannot be accepted by the Commission as the APPC for settling the accounts of banking prosumers who have a net surplus in their energy account. ***Therefore, the Commission hereby rejects the prayer of KSEB Ltd to approve Rs.2.44/unit as the APPC for 2020-21 instead of the Commission determined rate of Rs.3.22/ unit which has been done after following all the due legal processes.***

Order of the Commission

24. The Commission after examining the petition filed by KSEB Ltd for seeking modifications of the KSERC (Renewable and Energy and Net Metering) Regulations, 2020, the objections and comments of the various stakeholders, as per the provisions of the Electricity Act, 2003, the Electricity (right of consumers) Amendment Rules 2021, hereby order the following.,
- (1) The first prayer of the KSEB Ltd to introduce “Gross-metering scheme” and “net-billing or net-feed-in” scheme as envisaged in the Electricity (Right of Consumers) Amendment Rules, 2021, notified on 28.06.2021 is hereby rejected, due to the reasons specified in para 11 to 17 of this order.
 - (2) The second prayer of the KSEB Ltd to approve Rs.2.44/unit for settling the excess energy banked for the settlement period starting from 1st October

2021 to 30th September 2022, is also rejected as brought out in paragraph 18 to 23 due to reasons explained in this order.

- (3) KSEB Ltd may, if it considers necessary, file a petition before the Commission after the fulfilment of RPO targets approved by the Commission, for introducing “Gross-metering scheme” and “net-billing or net-feed-in” scheme in the State. The Commission may after due examination, verification and after following the due process take appropriate decision on the matter.

The petition disposed off. Ordered accordingly.

Sd/-

Adv. A J Wilson

Member (Law)

Sd/-

Preman Dinaraj

Chairman

Approved for issue

C.R Satheesh Chandran
Secretary

List of stakeholders participated in the public hearing held on 03.06.2022

1. Sri M P Rajan, Deputy Chief Engineer, TRAC.
2. Smt Latha S V, AEE, TRAC.
3. Shri Sajad, Consumer.
4. Shri Wilson Thomas, Consumer.
5. Shri Jacob Cheriyan, Malayala Manorama.
6. Shri Shaji Sebastin, Electrical Consultant.
7. Shri Saji Mathew, MRF Ltd.
8. Shri Rameshan Nair, Consumer.
9. Shri Renjith Jacob.
10. Shri Pradeep M, M/s Hindalco, Kalamassery.
11. Sri. Narendra Nath Veluri, IFS, CEO, ANERT.
12. Dr. Varghese Thomas, Calicut.
13. Shri Rajumon PC, CIAL.
14. Shri Sarath R, FACT.
15. Shri Hareesh.
16. M/s Cochin Port trust.