

KERALA STATE ELECTRICITY REGULATORY COMMISSION
THIRUVANANTHAPURAM

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

OP No 29/2020

First Hearing on	:	04.11.2020
Second hearing on	:	02.12.2020
Third hearing on	:	06.01.2020
Fourth Hearing on	:	03.03.2021

In the matter of	:	Petition filed by HINDALCO on “clarifications filed under Section 86 of the Electricity Act, 2003 that the Petitioner’s newly installed 2 MW solar power plant at Kalamassery is a separate unit and do not interfere with the existing 1 MW plant
Petitioner	:	M/s Hindalco Industries Limited Ahura Centre,1 st Floor, B Wing, Mahakali Cave Road, Andheri (East), Mumbai
Petitioner represented by	:	Mr. Sajan Poovayya, Senior Advocate Mr. Ashish Prasad, Advocate Mr. Debashish Ghosh Mr. Raksha Agarwal
Respondents	:	1. Kerala State Electricity Board Ltd., 2. ANERT 3. Electrical Inspectorate 4. State Load Dispatch Centre (SLDC)
KSEB Ltd represented by	:	Mr. V.K. Joseph, Chief Engineer (REES) Smt. Latha S.V, Asst : Executive Engineer
SLDC represented By	:	Mr. K P Pradeep, Chief Engineer Mr. S R Anand, Deputy. Chief Engineer
ANERT represented by	:	Mr. Valsaraj, Director Mr. Pramod, Scientist Mr. Premkumar, Scientist
Electrical Inspectorate	:	Mr. Tojo Jacob, Electrical Inspector

Order dated 23.03.2021

1. M/s. Hindalco Industries Ltd (hereinafter referred to as the petitioner or M/s Hindalco), on 23.09.2020, filed a petition before the Commission with the following prayers:
 - (a) Pass an Order / direction/ clarification interalia, that the petitioner's newly installed 2 MW solar power plant at Kalamassery is a separate unit and do not interfere with the existing 1 MW plant.
 - (b) Allow banking facility exclusively for the 2 MW solar power plant.
 - (c) Pass any other Order / direction as it deems fit and appropriate in the facts and circumstances of the case.

2. The summary of the petition filed by M/s. Hindalco Industries Ltd is given below:
 - (1) The petitioner M/s Hindalco Industries Ltd is having an industrial unit at Kalamassery. The petitioner is an EHT consumer of KSEB Ltd.
 - (2) The petitioner installed and commissioned 1MW Solar Plant in March 2016 at its premises in Kalamassery for self-consumption. The said plant was registered as 'Eligible Entity' for RE Generation w.e.f 29.06.2016 with National Load Despatch Center (NLDC). Further the generation from the plant is fully used for self-consumption till date. The petitioner also availed the benefit of Renewable Energy Certificate Schemes as per the provisions in Central Electricity Regulatory Commission (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 (hereinafter referred to as REC Regulations), and so far the petitioner had not availed banking facility for the 1 MW solar plant.
 - (3) The Petitioner, during the year 2020, set up another 2 MW Solar Power Plant at the same premises for self-consumption, and intended to avail banking facility as permitted under Kerala State Electricity Regulatory Commission (Renewable Energy and Net Metering) Regulations, 2020 (hereinafter referred as RE Regulations, 2020). The Petitioner approached KSEB Ltd for retaining the REC facility for the existing 1 MW Solar Power Plant and to avail banking facility for the newly installed 2 MW plant, both situated at the same premises. KSEB Ltd intimated the petitioner that availing both REC facility and banking facility in a single premise is the first of its kind and hence, status quo shall be maintained subject to the approval of the Commission. KSEB Ltd further requested the petitioner to approach the KSERC on the clarification on 'whether 1 MW and 2 MW Solar plant on the same premise can be treated as two separate Power Plants or a single unit.'

3. The respondent KSEB Ltd submitted its comments on 03.11.2020 and its summary is given below.

- (i) M/s Hindalco established two solar plants having capacity 1 MW and 2 MW at their premise and connected to the grid through same net meter.
- (ii) The petitioner wants to retain the REC facility for its 1MW plant and also wants to avail banking facility for the 2 MW plant as per KSERC (Renewable Energy & Net Metering) Regulations, 2020.
- (iii) The petitioner avails energy from multiple sources, including drawal from KSEB Ltd, open access and also captive generation from 1MW and 2 MW plants.
- (iv) The petitioner avails energy through open access, in addition to availing power from KSEB Ltd. Thus, the petitioner is having multiple sources of energy, i.e., from KSEB Ltd, through open access and through captive solar generation. The captive solar generation of 1MW is not entitled for banking as it avails REC benefit and energy from 2MW has to be banked as per KSERC (Renewable Energy and Net Metering) Regulations, 2020.
- (v) To enable separate accounting of solar energy generation from the 1MW and 2MW solar plants, separate Special Energy Meters were insisted for measuring solar energy generation from 1MW and 2MW solar plants. The petitioner is yet to install the same.
- (vi) KSEB Ltd requested before the Commission to clarify whether with the same connectivity to grid through same net meter, the 1MW and 2MW solar plants of HINDALCO located in same premises can be considered as separate plants with 1MW having REC facility and 2MW availing banking facility as per KSERC (Renewable Energy and Net Metering) Regulations, 2020.

4. The Commission admitted the petition as OP 26/2020 and hearing conducted through video conference on 04.11.2020. The summary of the deliberations during the hearing is given below.

- (i) Adv. Sajan Poovayya, counsel of the petitioner submitted the events leading to the filing of the petition. The petitioner commissioned the 1 MW solar plant during March 2016 and availing REC benefit under CERC (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010. During 2020, the petitioner installed a 2 MW solar plant in the same premise for self-consumption and energisation approval was issued by Electrical Inspector on 15.06.2020. The petitioner proposed to avail banking facility for the 2 MW plant as per the KSERC (Renewable Energy and Net Metering) Regulations 2020, and also continue to avail REC benefit for the 1 MW plant. Since both the plants are at same premise, the Hon'ble Commission may clarify 'whether the 1MW and 2 MW solar plant at the same premise can be treated as two separate power plants or as a single unit'.

The counsel also submitted that, CERC (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010, and the detailed procedure for REC accreditation approved by CERC provides for installing more than one plant in a single premise. Paragraph 3.1 of the procedure for accreditation of RE Generation projects approved by the Central Commission, provides that in case the applicant has multiple RE generation projects then separate application will have to be submitted by the Applicant for each RE generation project. Accreditation of each RE generation project shall be carried out separately.

The petitioner clarified during the hearing that, the solar power generated from both the plants is evacuated through the same net meter to the same grid, however separate solar meters are installed for both the Solar Power Plants.

- (ii) Sri. Debashish Ghosh, on behalf of the petitioner further submitted that there is no technical issue in connecting the two plants with the grid. The consumer is connected to KSEB Ltd system at 110kV level, but the solar plants are connected at 11kV level. The petitioner shall ensure that there is no power flow from 1 MW plant to grid, and for ensuring the same the petitioner is willing to provide automatic interlock facilities. The petitioner further submitted that, availing separate connections for both the plants at 11 kV may not be possible.
 - (iii) Sri. K. G. P. Nampoothiri, representing KSEB Ltd submitted that, the detailed comments on the petition has already been submitted before the Commission. KSEB Ltd further submitted that, at present the electricity generated from both the solar plants are evacuated through same net meter. To enable separate accounting of solar energy generation from the 1 MW and 2 MW plants, separate meters were insisted upon, but the petitioner yet to install the same. KSEB Ltd also raised concern about the safety of the interlocking facilities proposed by the petitioner.
 - (iv) The Commission noted that, KSEB Ltd in its written submission proposed a methodology for separate energy accounting of solar energy generated from both the 1 MW and 2 MW plants in same premise using a common net meter arrangement. Commission directed KSEB Ltd to provide a copy of the comments of KSEB Ltd to the petitioner for their comments.
5. Based on the deliberations during the hearing, the Commission vide daily order dated 11.11.2020 directed the Petitioner M/s HINDALCO and the respondent KSEB Ltd to comply the following:
- (i) The petitioner may take steps to implead SLDC, ANERT and Electrical Inspector as respondents to the petition.

- (ii) M/s Hindalco may submit a detailed report on the proposed interlocking facility, and also the procedure proposed for accounting of energy generated from both the 1 MW and 2 MW plants separately, energy availed from KSEB Ltd, energy import through open access etc.
 - (iii) Alternatively, installation of separate net meters for each of the solar units with physical separation of the lines may also be explored and a detailed report submitted
6. In compliance of the direction of the Commission, the petitioner, vide the affidavit dated 27.11.2020, submitted the following:
- (1) A report on the interlocking facility and proposal of accounting of energy.
 - (2) A study report on the effectiveness of PLC based interlock system provided for 1 MW solar plant of HINDALCO Industries by Dr. K. N. Pavithran (Prof. Rtd) and Sri. P.C Rajan Babu (Chief Electrical Inspector Rtd)

However, the petitioner has not impleaded SLDC, ANERT and Electrical Inspectorate.

7. The second hearing on the petition was conducted on 2.12.2020 through video conference. The summary of the deliberations during the hearing is given below:
- (i) Shri. Sajan Poovayya, Senior Advocate, representing the petitioner submitted that the daily order dated 11.11.2020 contained two part, first part being impleading SLDC, Electrical Inspector and ANERT and second part to submit a detailed report on the interlocking facilities and on the procedure to be adopted to account the energy generated from the 1MW and 2 MW plants separately. The petitioner submitted that, impleading the SLDC, ANERT and Electrical Inspector can be done, if found necessary, after appraising the reports submitted by the petitioner and the reports of the independent experts engaged by the petitioner, by the Hon'ble Commission.
 - (ii) The petitioner explained in detail the interlocking facilities provided by them. The petitioner as an EHT consumer, receives power at 110 kV and has two incoming lines tapped from the Kalamassery- Edayar 110 kV feeder. One of the feeders is loaded and other line is kept energised as standby. The 110kV power is stepped down to 11kV and distributed to all load centres of the factory. There are four 11kV feeders from the common 11 kV bus in the 110kV substation. One feeder is for capacitor bank and other three feeders cater to the loads at various load centres.

The solar power from the 1 MW and 2 MW plants is connected to the 11 kV bus. Special Energy Meters are installed for measuring the solar generation from 1 MW and 2 MW plants.

- (iii) The petitioner submitted that, 'the interlocking system provided by M/s Hindalco prevents the export of power from 1 MW solar plant', as brought out in the example below:

“ At an instant 1 MW plant generate 0.75MW and 2 MW plant generate 1.75 MW, the total solar generation is 2.50 MW. If the load requirement of the factory is 2 MW, then 0.5 MW will be exported to grid. If the load of the factory comes down to 0.5MW, which means that the demand is less than the generation from the 1MW plant, the interlocking mechanism will send a signal to the 1 MW plant and it will go to sleep mode. Whenever the factory demand reaches above 1MW, only then the generation from the 1MW starts again from the sleep mode. Thus, the interlocking mechanism ensures that, only if the factory demand is above 1MW, the Solar Plant with 1MW capacity generate electricity.

If the communication from the 1 MW solar generation is lost, then also the inverter will go to the sleep mode. This ensures 100 % reliability of the interlocking facility.

Further, in the event of grid failure, the solar power generation from the 1MW plant goes to sleep mode and will be back only when grid is again established. This is the generally accepted protocol for any grid connected solar plant.

There is no physical separation of energy from the two plants, once both are in operation. Both the solar plants are connected to the grid and the interlocking ensures that the power from the 1MW plant will not go into the KSEB Ltd grid. The request of the petitioner is to account energy generation from 1 MW plant on first charge basis among the two plants.

All the installations of the consumer including solar plants are approved by the Electrical Inspector'.

- (iv) The petitioner further submitted that, they had entrusted two eminent experts in the field Dr. K.N. Pavithran, Prof (Rtd) and Sri. Rajan Babu, Chief Electrical Inspector (Rtd), to study, inspect and test the Programmable Logic Controller (PLC) based interlocking system. Based on their study of the arrangement, they have certified that the PLC based interlocking system installed by the petitioner ensures that there is no export of energy from the existing 1MW solar plant, if the load is below 1MW. This arrangement is well engineered, effective and

reliable and guarantees that no export of power takes place to the grid under any circumstances.

- (v) KSEB Ltd submitted that, they are yet to receive the affidavit dated 27.11.2020 by the petitioner before the Commission. Hence, the respondent KSEB Ltd requested to allow further time to file its comments on the report submitted by the petitioner.

KSEB Ltd further submitted that, Electrical Inspectorate has to certify the safety aspects of the interlocking facilities provided by the petitioner.

- (vi) The Commission clarified during the hearing that, the directions to implead the SLDC, ANERT and Electrical Inspector is issued considering the specific roles and responsibilities and functions of these bodies. As per the provisions of the Electricity Act, 2003, the Electrical Inspectorate is the appropriate authority to certify the safety aspect of the installation and working of the interlocking facilities installed by the petitioner.

8. Subsequently, the petitioner M/s Hindalco, vide the e-mail dated 4th December 2020 submitted that, they are taking steps to implead SLDC, ANERT and Electrical Inspector as parties to the petitioner. The petitioner further requested the following.

“ (i) Permit the Petitioner to convene a meeting of all the Respondents (including those directed to be impleaded) in order to hold discussions and explain the full factual spectrum. In the meeting the Petitioner will make its earnest endeavors to get their questions / concerns addressed.

(ii) Thereafter, the Petitioner will place a copy of the minutes of such meeting for the Hon'ble Commission to consider on the next date of hearing i.e. 06.01.2021.

The petitioner further requested that, in order to enable the meeting, a formal direction may be issued to the parties to hold a formal meeting before the next date of hearing.

The Commission clarified that, if the petitioner desires to conduct a meeting with the respondents including those directed to be impleaded to appraise the interlocking facilities and other aspects of the issues raised in the petition, the same may be conducted at their convenience. It was further directed that the petitioner shall implead the parties concerned as respondents to the petition as directed.

9. Based on the deliberations during the hearing, the Commission, vide daily order dated 10.12.2020 issued the following directions for immediate compliance.
- (1) The petitioner shall implead SLDC, ANERT and Electrical Inspectorate as respondents to the petition for the next hearing of the petition.
 - (2) KSEB Ltd shall, on or before 24th December 2020, submit detailed comments on the report submitted by the petitioner dated 27.11.2020, with a copy to the petitioner.
 - (3) The petitioner M/s HINDALCO shall submit additional details, if any, latest by 30.12.2020.
10. M/s Hindalco Ltd submitted an Interlocutory Application (IA No 13/20) dated 14/12/2020 to implead SLDC, ANERT and Electrical inspectorate as respondents to the petition.
11. The petitioner M/s Hindalco Ltd, on 05.01.2021, submitted a copy of the Minutes of the Joint Virtual Meeting held on 30.12.2020 between the petitioner M/s HINDALCO, Electrical Inspectorate, SLDC and ANERT, and its summary is given below:
- (i) SLDC stated that, it has no difference of opinion on the metering & SCADA visibility provided by Hindalco. Further, comments on interlocking system and banking shall be communicated to the Regulatory Commission after detailed analysis of the scheme
 - (ii) ANERT opined that, generally renewable energy generation shall not be curtailed and hence other options without curtailment of 1 MW solar plant will have been looked into.
 - (iii) Electrical Inspector, on behalf of Chief Electrical Inspector to Government of Kerala stated that, Chief Electrical Inspector has issued scheme approvals and energisation order for the solar plants after proper scrutiny of the scheme, on -site inspection and field testing of all safety features. Further, the interlocking facility using PLC installed by M/s Hindalco Industries Limited to limit the export of power from the 1MWp Solar Power Plant in tariff related matters does not attract any of the relevant provisions of Central Electricity Authority (Measures Relating to Safety and Electric Supply) Regulations 2010. It is learned that, there is no deviation from the electric schematic diagram/ power & safety related installations approved by Electrical Inspectorate. As such, safety issues are not involved in the low voltage PLC controlled

system with interlocking facility for limiting the solar generation from 1MWp Solar Power Plant to grid.

- (iv) Dr. K N Pavithran, Professor (Retd.) – CET, has stated that, he has physically inspected and tested the interlocking system at Hindalco's Solar Plant, the design, engineering and installation of the above system is reliable, failsafe and capable of ensuring no export of energy from 1 MW Solar Power Plant.

12. Third hearing on the petition was conducted on 06.01.2021 through video conference. The summary of deliberations is given below:

- (1) Sri. Sajan Poovayya, Senior Advocate, representing the petitioner submitted that, as instructed by the Commission, they had impleaded SLDC, ANERT and Electrical Inspector as respondents to the petition. Further, a joint virtual meeting was held between the respondents on 30.12.2020 and a copy of the minutes of the meeting was submitted before the Commission vide the affidavit dated 04.01.2021.
- (2) Representatives of ANERT submitted that, on random analysis of the past energy data collected from the petitioner, it is observed that on 13th December, 2020, on three instances there is injection of solar generation while the load of the petitioner is zero. They further submitted that the schematic diagram of the installation was not made available to them.
- (3) SLDC submitted that, they had appraised the time block wise details of the energy transaction of the petitioner for a period of ten days from 01.12.2020 to 10.12.2020. During these periods, in 178 time blocks the petitioner injected energy into the grid for banking of which 138 time block was during the day time. Further, out of the 138 time blocks during which the surplus energy was injected into the grid for banking, about 45% of the time blocks, the petitioner availed power through open access. The petitioner may not be allowed to bank the energy purchased resulting from the excess as a result of purchase through open access from the grid.
- (4) Sri. Tojo Jacob, the representative of the Electrical Inspectorate submitted that, their observation and comments are recorded in the minutes of the meeting held on 30.12.2020. He further submitted that, as per the petitioner Hindalco, the PLC system will drive the 1 MW plant to stop generation under three conditions, viz, (i) when demand is less than 1MW, (ii) at the instances of grid failure (iii) at the instance of communication failure. Anti-islanding is found to be working and hence safety is ensured. There is nothing more to add on this subject matter.

- (5) KSEB Ltd submitted the following during the hearing.
- (i) The contract demand of the petitioner is 5 MVA only. The petitioner has been meeting their power requirement at the factory through three sources of power (a) supply from KSEB Ltd, (b) Self generation from the 1 MW & 2 MW Solar plant owned by the petitioner, and (c) by availing power through open access.
 - (ii) In order to explain the probability of banking the power availed through open access in the pretext of the banking of the power generated from the Solar plants, KSEB Ltd explained in detail the following '5' scenarios.

Case-1.

When the entire demand of the petitioner (up to the contract demand of 5 MVA) is being met from (a) generation from their 1MW and 2MW solar plant and the balance from KSEB Ltd. There is no possibility of gaming under this case.

Case-2.

When the petitioner met their entire demand from (a) self-generation from solar plants (upto 3 MW) and (b) also avails power through Open Access and no supply from KSEB Ltd.

In this case, KSEB Ltd pointed out a scenario when the open access drawal is, say 3 MW, and the Solar generation also 3 MW, as against the load of '5MVA'. Then the net meter shows a drawl of 2MW obtained through Open Access and also there is deemed injection of 1MW into the grid for banking. This injection is on account of availing excess power through Open Access than their load requirement. The power availed through open access is not qualified for banking as per RE Regulations.

Case-3, Case-4 and Case-5 are similar to Case-2, but with increase in quantum of OA power than their requirement after accounting the self-generation from the Solar Plant, and also with no drawl of KSEB Ltd supply.

The summary of the cases presented by KSEB Ltd is given in the Table below.

Case No	Load in MW (contract demand)	Solar 3MW	OA drawal	KSEB Ltd supply	Net meter reading	Deemed Injection on account of OA
1	5.0	3.0	0.0	2 (5-3)	2 MW drawal	
2	5.0	3.0	3.0	0	2 MW drawal (OA)	1.00MW
3	5.0	3.0	4.5	0	2 MW drawal (OA)	2.50 MW
4	5.0	3.0	5.0	0	2 MW drawal (OA)	3.00 MW
5	0.5	2.0 (1 MW switched off)	5.0	0	0 MW	6.50 W

(iii) KSEB Ltd submitted that, at present no intra state ABT mechanism is in place and no time block wise accounting is now followed. So, the entire deemed injection on account of availing Open Access (OA) will be get banked on the pretext of injection from the Solar plants. KSEB Ltd further submitted that, under case-2, case-3 and case-4, deemed injection may include the generation from 1 MW Solar plant also. Banking of deemed generation causes financial loss to KSEB Ltd, which is passed on to consumers of the State. The present RE Regulation also does not envisages banking of power availed through OA.

(iv) Fool proof working of interlocking mechanism cannot be ensured by KSEB Ltd as they are not owned and controlled by KSEB Ltd.

13. Based on the deliberations during the hearing, the Commission, vide daily order dated 12.01.2021, directed the petitioner and respondent to comply the following.

- (1) The respondent KSEB Ltd shall share their presentation with the petitioner and other respondents for their information and comments.
- (2) The petitioner HINDALCO shall submit detailed comments on the issues raised by KSEB Ltd, SLDC and ANERT during the hearing, on or before 12.01.2021.
- (3) All the respondents are also allowed offer their comments, latest by 12.01.2021 with a copy to the petitioner.
- (4) The petitioner HINDALCO is allowed time till 18.01.2021 to submit additional comments, if any, on the comments raised by the respondents after the hearing.

14. In compliance of the direction of the Commission, KSEB Ltd vide the letter dated 13.01.2021 submitted its comments and its summary is given below.

- (1) KSEB Ltd cannot ensure the reliable working of the scheme which is owned and controlled by the Petitioner. M/s ANERT during the hearing held on 06-01-2020 submitted that, on December 13th of 2020, there was export of power from 1MW plant when there was no load. This indicates that the PLC system is not always reliable. In the instant case, commercial and financial considerations are involved affecting KSEB Ltd and the consumers of the State if it fails to work. More importantly, even in case the PLC system works correctly, it is not able to detect and avoid deemed injection from the plant. Moreover, such deemed injection will result in getting the petitioner undue benefit of banking along with REC facility which is against the Regulations issued by CERC on Renewable Energy Certificate mechanism.
- (2) On the accounting system proposed by HINDALCO, KSEB Ltd submitted that,
- (i) HINDALCO avails power from different sources, including KSEB Ltd's supply, open access and also from its own solar generation. The petitioner has installed two Solar plants, first one 1MW plant with REC facility and second unit 2MW with banking facility. This makes the energy accounting complex which has to handle multiple scenarios.
 - (ii) Since HINDALCO is an open access consumer, whenever the actual drawal through open access becomes less than the scheduled open access, there will be deemed injection to the grid. This situation can occur due to reduction in the load which was not anticipated at the time of scheduling open access which is scheduled on day ahead basis or due to the increase in solar generation which is infirm. Moreover, there can also be situations of purposeful underdrawal of scheduled open access in certain time blocks and overdrawal in other time blocks to make use of market price economy. Since there is no time block wise energy accounting, the deemed injection gets banked.
 - (iii) The deemed injection includes energy from 1MW solar plant, 2MW Solar plant and the Open Access drawal as the sources cannot be segregated. Whenever the net drawal from grid is less than scheduled open access, there will be deemed injection. If this difference (Scheduled Open Access - Net drawal) goes below 1MW, it is to be considered that deemed injection occurs from 1MW solar plant also, which gets banked which is against the REC eligibility criteria envisaged in CERC Regulations.
 - (iv) Deemed injection does not gets recorded in the Net Meter. Therefore, the methodology proposed by HINDALCO for segregating 1MW export does not work here. The energy accounting methodology proposed by KSEB Ltd takes into account the actual injection as well as deemed injection and segregate them to ensure that export from 1MW does not get benefit of banking facility.

- (v) The remarks of HINDALCO that there is shortcoming in the energy accounting procedure proposed by KSEB Ltd takes only 2/3rd of the export from 2MW plant even when 1MW solar generation is not available is not correct. The formula used by KSEB Ltd for segregating 1MW energy and 2MW energy for banking purpose is as submitted below.

Energy allowed for banking = Surplus energy at the end of the billing period * $X2/(X1 + X2)$

X1: Solar meter reading 1MW

X2: Solar meter reading 2MW

When 1MW solar generation is not there: $X1=0$

Since $X1 = 0$, Full surplus energy gets banked.

Therefore, the averment of HINDALCO is not correct.

- (vii) Considering the fact that there is no intra state deviation mechanism in the State and also the fact that HINDALCO is an open access consumer and having solar generation of which 1MW solar generation is not eligible for banking, deemed injection is to be seriously considered and accounted.

- (3) KSEB Ltd further submitted that, the averments made herein and the reply of KSEB Ltd filed on 3-11-2020 may kindly be considered and the energy accounting method proposed by KSEB Ltd may be approved, in case Hon'ble Commission is inclined to allow HINDALCO to claim REC benefit for the 1MW plant in future.

15. Chief Engineer (Transmission System Operation), vide the affidavit dated 12.01.2021 submitted the comments of SLDC, Kerala and its summary is given below.

- (1) REC certification - Total energy generated from the 1MW solar plant can be admitted for REC. No banking is allowed for generation from 1MW solar plant. As per the interlocking scheme, 1MW plant will be backed down if the load is very low. Even otherwise, the energy accounting shall not consider the contribution from 1MW plant since banking is not permitted for 1MW plant.
- (2) Solar energy Banking - Surplus generation from 2MW solar plant is only eligible for banking. Net power transfer from consumer bus to KSEB Ltd grid reduced by the generation from 1MW plant, limited to the actual generation from the 2MW plant will alone be eligible for banking'.
- (3) Energy accounting of Open access and KSEB Ltd supply.

HINDALCO is an embedded open access customer. They are purchasing power through IEX Day ahead Market and Real Time Market. The energy consumed from KSEB Ltd is getting accounted as the total energy drawn by the consumer for the billing period minus the energy scheduled through open access route. On analysing the SEM

meter readings of solar plants (both 1MW & 2MW) and the interface meter at 110 kV of M/s. Hindalco for the month of December 2020, the net energy taken from KSEB Ltd was found to be negative (open access purchase more than the requirement in real time). This is in effect, export of power to KSEB Ltd by purchasing from other sources. It was observed that for the month of December 2020, purchase through open access was for 1123 time blocks, and out of this 699 time blocks were net export / deemed export blocks. In 298 time blocks export/ deemed export happened when there was open access purchase. Power is exported to the grid during day time also, when open access and solar generation coexists, ie, export/ deemed export happened for 161 time blocks out of 371 time blocks (between 06:30AM to 06:30PM). It is to be noted that during the above mentioned deemed export period, the actual net transfer of power is from KSEB Ltd grid to the consumer bus. This deemed export need not be accounted as per SLDC view.

The consumer has not so far applied for sale of power from their premises. Hence this aspect is not considered.

16. M/s Hindalco, the petitioner vide the affidavit dated 19.01.2021 submitted the following.

- (1) The system proposed by the petitioner has 'adequate check and balance' in place, ensure that the generation from the existing 1MW solar plant is completely consumed for the essential services in the plant and there is no possibility of power export at any point of time. The petitioner further submitted that, there is no intention of 'gaining'.
- (2) The petitioner submitted that, it is mandatory for all Open Access users of KSEB Ltd to install ABT compliant Special Energy Meter (SEM) which the petitioner is utilising in its system. However, KSEB Ltd is not utilising the 15minute time block wise data for billing. This is the root cause of the purported deemed injection from un-utilised excess open access power. If 15 minute time block accounting is adopted, it will resolve the purported issues of under drawal and deemed injection. Moreover, KSEB Ltd will gain the unutilised energy.

The petitioner undertakes and reiterated that, it is agreeable to forego any excess unutilised open access power.

- (3) The petitioner prepared a tabular representation of its proposed accounting method covering all scenarios, especially under drawal of Open Access power and banking eligibility of Solar Power. The details are given below.

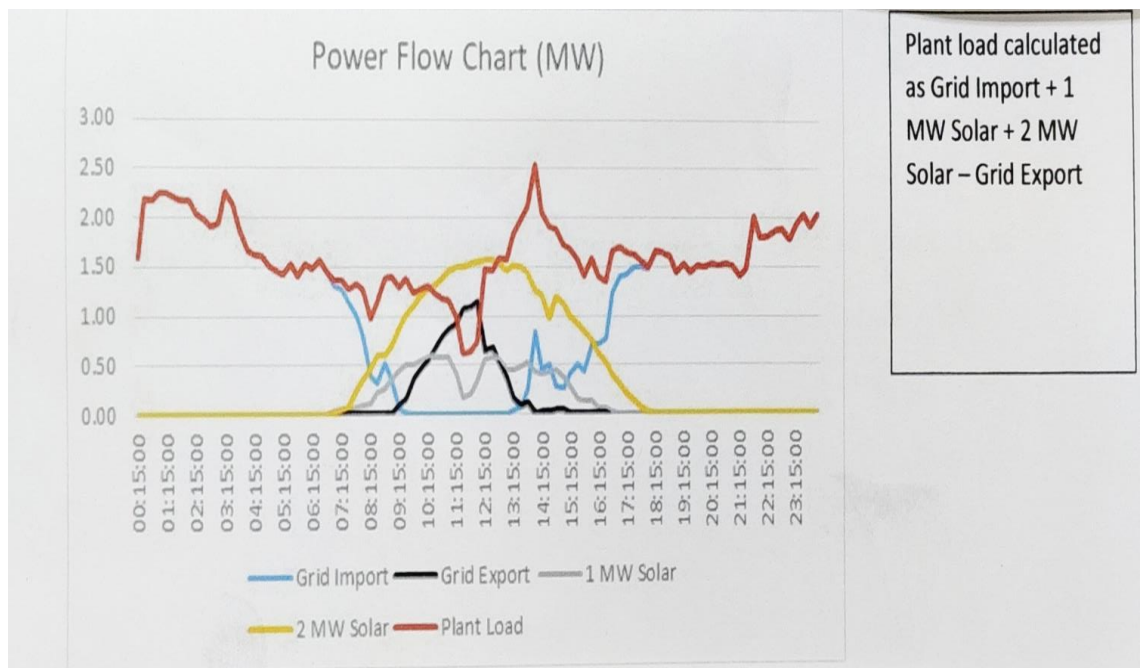
Accounting method proposed by HINDALCO (Figs in MW every 15 Mins Time Block)											
Case No	Load	1MW Solar	2 MW Solar	Solar Total MW	OA in MW	KSEB Ltd Supply MW	Net Meter reading MW	Under drawn OA power (Lapsed)	Actual Export (MW)	Lapsed Energy(1MW Solar)	Eligible Banking (2 MW Solar)
1	5	1	2	3	0	2	2	0	0	0	0
2	3	1	2	3	0	0	0	0	0	0	0
3	2	1	2	3	0	0	0	0	1	0	1
4*	0.5	1	2	3	0	0	0	0	2.5	0.5	2
5	5	1	2	3	5	0	0	3	0	0	0
6	3	1	2	3	5	0	0	5	0	0	0
7**	2	1	2	3	5	0	0	5	1	0	1
8***	0.5	1	2	3	5	0	0	5	2.5	0.5	2
Note											
Case No.4. * Generation from 1 MW allowed even when plant load is less, but banking restricted to 2 MW Generation only											
Case No.7. **No Deemed Injection/credit on OA Power											
Case No.8. ***Generation from 1 MW allowed even when plant load is less, but banking restricted to 2 MW Generation only											

- (4) The petitioner also submitted its remarks on the different case scenarios presented by KSEB Ltd during the third hearing held on 06.01.20220. The details are given below.

KSEB Ltd submission							HINDACO submission
Case No	Load in MW (contract demand)	Solar 3MW	OA drawal	KSEB Ltd supply	Net meter reading	Deemed Injection on account of OA	Eligibility for banking
1	5	3	0	2 (5-3)	2 MW draw al		0
2	5	3	3	0	2 MW draw al (OA)	1.00MW	0
3	5	3	4.5	0	2 MW draw al (OA)	2.50 MW	0
4	5	3	5	0	2 MW draw al (OA)	3.00 MW	0
5	0.5	2.0 (1 MW sw itched off)	5	0	0 MW	W 6.50	1.5 MW (Export solar)

- (5) In response to the submission of ANERT that, there was 1 MW solar generation when load was zero on 13.12.2020, the petitioner submitted the following.

- In certain instances, the SCADA (Supervisory Control and Data Acquisition) could not capture data either from any of the meters or some of the meters. In some instances the SCADA could not add up the load data to arrive at the total load. It is a possibility that, there could be similar missing data in other days also. However, this does not mean that the plant load was zero, but there was Solar Generation from both the plants. The detailed analysis of the data pertains to 13.12.2020 reveals that, there is data missing on 13.12.2020.
- The petitioner further submitted that, they do not have access to the SEM data for the main meter or Solar plants, as it is only accessible to KSEB Ltd. SLDC has shared the Main & Solar Plant SEM data in 15 minutes interval for the month of December 2020.
- The petitioner also submitted 24 hour power flow chart on 13.12.2020, as detailed below.



The petitioner claimed that, the grid export on 13.12.2020 was never more than 2 MW solar generation and the 1MW solar generation is never more than plant load.

- (6) In response to the accounting procedure proposed by KSEB Ltd, the petitioner submitted that, solar generation from the 1MW plant will happen whenever there is sunshine and even if there is no export to the grid, X1 value i.e, the generation from 1MW solar plant will not be zero. Furthermore, the petitioner intends to limit the banking to actual 2 MW solar generation only and hence there is no need to apply any ratio.

- (7) The petitioner further submitted that, as per the prevailing guidelines, there is no bar on operation of two separate plants from the same premises. The newly installed 2 MW Solar plant is a separate unit and it does not interfere with the existing.
17. The Fourth hearing on the petition is conducted on 03.03.2021 through video conference. Summary of the deliberations during the hearing is given below.
- (1) Sri. Debashish Ghosh, on behalf of the petitioner submitted the following.
- (i) Hindalco is ready to forego any credit from open access and it will be a gain to KSEB Ltd.
 - (ii) Issues raised by KSEB Ltd regarding the deemed injection can be avoided if 15 minutes accounting method is adopted for billing.
 - (iii) In any case, generation from 1 MW is allowed even when the plant load is less, the banking will be restricted to 2MW solar generation only.
 - (iv) The petitioner analysed the meter data for 13th December 2020 including the main meter data, 1MW solar generation and 2 MW solar generation. The power chart for 13th December 2020 reveals that, grid export on 13.12.2020 was never more than 2 MW solar generation.
 - (v) The 1MW generation is never more than plant load.
 - (vi) Regarding the accounting method proposed by KSEB Ltd, the petitioner submitted that, during billing period, generation from 1 MW Solar will happen whenever there is sunshine and even if there is no export to the grid, X1 value will not be zero. Further more, the petitioner intends to limit the banking to actual 2 MW Solar generation and hence there is no need to apply any ratio.
- (2) SLDC during the hearing submitted that, they are is ready for 15 minutes time block wise energy accounting for all open access consumers including the petitioner. At present, scheduling of power is being done for 96 time block for open access consumers. So, if the 15 minute time block wise energy accounting is followed, the open access drawal more than the demand of the consumers and the deemed injection by open access consumers can be avoided. Hence, the SLDC agrees with the 15 minute energy accounting proposed by KSEB Ltd.
- However, the ToD billing system may be followed on monthly/ bi-monthly basis as per the approval of the Commission.
- (3) KSEB Ltd argued that the formulae specified by them for apportioning the energy banked between 1 MW plant and 2 MW plant is correct. KSEB Ltd also agreed for the 15 minutes energy accounting proposed by the petitioner.

- (4) ANERT opined that, the petitioner cannot avail banking facility for 1MW Solar plant, since it avails the REC facility. However, being infirm power, the solar generation from the 1 MW plant may not be stopped unless grid constraints.
- (5) Sri. Tijo Jacob, representing Chief Electrical Inspector submitted that, it has no additional comments to offer.

Analysis and Decision

18. The Commission examined in detail the petition filed by M/s Hindalco Industries Limited as per the provisions of the Electricity Act, 2003 and the various Regulations notified by the State and Central Commission related to renewable energy and decided the following.
19. The basic issue raised by the petitioner is that, 'whether the 1MW Solar plant which avails the REC facility as per the CERC (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010, and the 2MW Solar Plant which intends to avail the banking facility as per the KSERC (Renewable Energy & Net Metering) Regulations, 2020, which are installed in the same premise of the petitioner can be treated as two separate units or a single unit'. If both the plants can be treated as separate units, how will energy accounting be done, especially in the present case where the petitioner also avails open access power for meeting their power demand at the factory.
20. The major issues considered for detailed examination, based on the deliberations on the subject petitions are the following:
 - (1) Whether the Programmable Logic Controller (PLC) based interlocking system installed by the petitioner stops the power injection from the 1 MW Solar Plant, when the factory consumption of the petitioner falls below 1MW or during grid failure or when the communication from the 1 MW Solar generation is lost ?
 - (2) Energy Accounting System to be followed for accounting the energy transactions of the petitioner, especially considering the issue of deemed injection while petitioner also avail open access power in addition to the solar generation from both the 1MW and 2MW solar plants and drawal of power from KSEB grid.

Issue No.1

21. The Commission appraised in detail, the deliberations regarding the interlocking system installed by the petitioner to avoid power flow from the 1MW Solar plant of the petitioner to the grid and noted the following.

- (1) M/s Hindalco Industries Ltd, the petitioner is an EHT consumer of KSEB Ltd. The petitioner installed and commissioned 1 MW Solar Plant in the year 2016 at their premises of the factory for self consumption. The petitioner also availed REC benefits as per the provisions of the Central Electricity Regulatory Commission (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010.

The Regulation 5(1)(B) of the Central Electricity Regulatory Commission (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 specifies the eligibility criteria for Registration for REC by the Captive RE generators, which is extracted below.

5. Eligibility and Registration for Certificates:

.....
[(1B) A Captive Generating Plant (CGP) based on renewable energy sources, including renewable energy generating plant not fulfilling the conditions of CGP as prescribed in the Electricity Rules, 2005 but having self-consumption, shall not be eligible for participating in the REC scheme for the energy generated from such plant to the extent of self-consumption, if such a plant:

- a) has been commissioned prior to 29th September 2010 or after 31st March 2016; or*
- b) is not registered with Central Agency under REC scheme on or before 30th June 2016.*

Provided that a CGP based on renewable energy sources, including renewable energy generating plant not fulfilling the conditions of CGP as prescribed in the Electricity Rules, 2005 but having self-consumption, and fulfilling both the following conditions:

- a) having date of commissioning between 29th September 2010 and 31st March 2016; and*
- b) registered with Central Agency under REC scheme on or before 30th June 2016*

shall be eligible for the entire energy generated from such plant for participating in the REC scheme subject to the condition that such plant does not avail or does not propose to avail any benefit in the form of concessional/promotional transmission or wheeling charges and/or banking facility benefit:

Provided further that if such plant meeting the eligibility criteria for REC, forgoes on its own, the benefits of concessional transmission or wheeling charges and/or banking facility benefit, it shall become eligible for participating in the REC scheme only after a period of three years has elapsed from the date of forgoing such benefits:

Provided also that the above mentioned condition for participating in the REC scheme shall not apply if the benefits given to such plant in the form of concessional transmission or wheeling charges and or banking facility benefit are withdrawn by the concerned State Electricity Regulatory Commission and/or the State Government:

Provided also that if any dispute arises as to whether a CGP or any other renewable energy generator has availed such concessional/promotional

benefits, the same shall be referred to the Appropriate Commission for decision.

Explanation:- For the purpose of this regulation, the expression „banking facility benefit“ shall mean only such banking facility whereby the CGP or any other renewable energy generator gets the benefit of utilizing the banked energy at any time (including peak hours) even when it has injected into grid during off-peak hours.]

As brought out above, since the 1MW plant of the petitioner was commissioned in March 2016, the plant is eligible for REC. However, if the petitioner avails banking facility for the 1MW Solar Plant, the generation from the plant shall not be eligible for REC.

- (2) In addition to the 1MW Solar plant, the petitioner has installed and commissioned another 2 MW Solar Plant in the same premises and intends to avail banking facility for the excess generation over the consumption from the plant.

The petitioner consumes electricity from the grid and also inject electricity from both the Solar plants into the grid using the same point of supply.

The petitioner wants to retain the REC facility for the 1MW plant and also want to avail banking facility for the 2MW plant.

It is also submitted during the deliberations of the subject petition that, the petitioner also avails open access power for meeting the factory requirements.

The petitioner vide the additional affidavit and also during the hearing submitted that, the petitioner shall ensure that there is no power flow from the 1 MW Solar Plant to the grid.

- (3) The petitioner submitted that, they had installed an automatic interlocking system to avoid power flow from the 1MW Solar Plant into the grid, when the factory load is less than 1MW. The interlocking facility ensures that, the 1 MW Solar Plant will generate electricity only when the factory consumption is more than 1 MW, other wise the inverter will go to the sleep mode and there will be no generation from the 1MW plant. The petitioner also submitted that, in the event of grid failure, the solar power generation from the 1MW plant goes to sleep mode and will be back only when the grid is again established,

The petitioner further submitted that, they had entrusted two eminent experts in the field, Dr. K.N. Pavithran, Prof (Rtd) and Sri. Rajan Babu, Chief Electrical Inspector (Rtd), to study, inspect and test the Programmable Logic Controller (PLC) based interlocking system, and they have certified that the PLC based interlocking system installed by the petitioner ensures that there is no export of energy from the existing 1MW solar plant. This arrangement is well engineered,

effective and reliable and guarantees that no export of power takes place to the grid under any circumstances.

- (6) During the deliberations of the subject matter, the Electrical Inspector, on behalf of Chief Electrical Inspector to Government of Kerala stated that, Chief Electrical Inspector has issued scheme approvals and energisation order for the solar plants after proper scrutiny of the scheme, onsite inspection and field testing of all safety features. Further, the interlocking facility using PLC installed by M/s Hindalco Industries Limited to limit the export of power from the 1MWp Solar Power Plant is a tariff related matter and it does not attract any of the relevant provisions of Central Electricity Authority (Measures Relating to Safety and Electric Supply) Regulations 2010. It is learned that, there is no deviation from the electric schematic diagram/ power & safety related installations approved by Electrical Inspectorate. As such, safety issues are not involved in the low voltage PLC controlled system with interlocking facility for limiting the solar generation from 1MWp Solar Power Plant to grid.

Electrical Inspector further submitted that, as per the petitioner Hindalco, the PLC system will drive the 1 MW plant to stop generation under three conditions, viz, (i) when demand is less than 1MW, (ii) at the instances of grid failure (iii) at the instance of communication failure. Anti-islanding is found to be working and hence safety is ensured.

- (7) Regarding the interlocking facility installed by the petitioner, KSEB Ltd submitted that, it cannot ensure the reliable working of the interlocking system which is owned and controlled by the petitioner.

22. The Commission examined the deliberations on interlocking facility provided by the petitioner to stop power flow from the 1 MW Solar plant when the factory consumption is less than 1 MW. The Commission noted that, two experts, Dr. K.N. Pavithran, Prof (Rtd) and Sri. Rajan Babu, Chief Electrical Inspector, have certified the effective and reliable working of the interlocking facility provided by the petitioner. The Electrical Inspector also submitted that, the anti islanding is found to be working and hence safety of the system is ensured. ***Based on the deliberations on the subject issue, the Commission is of the considered view that, the Programmable Logic Controller (PLC) based interlocking system installed by the petitioner can stop the power flow from the 1 MW Solar Plant into the grid when the factory consumption is less than 1 MW. Hence, the 1 MW plant with REC facility can be treated as a separate unit, since it has no interference with the State grid under normal circumstances.***

However, it is the responsibility of the petitioner to ensure the safe and reliable working of the PLC based interlocking facility throughout the life of the system. In order to ensure the same, a joint team of the Petitioner, Electrical Inspectorate and the licensee KSEB Ltd may periodically (at least once every year) visit the PLC based interlocking system and ascertain its reliable and safe working.

With the above directions and observations, the Commission hereby orders treating the 1 MW Solar Plant installed by the petitioner in the year 2016 for self consumption with REC facility and 2 MW Solar Plant installed by the petitioner in 2020 with banking facility as two separate plants in the same premise, subject to the following conditions.

- (1) The petitioner shall ensure the safe and reliable working of the PLC based interlocking system during the entire life of the plant, so as to avoid the power flow from the 1 MW Solar Plant into the grid under any circumstances.
- (2) The petitioner shall abide by the accounting procedure approved by the Commission in the subsequent paragraphs.

Issue No.2

23. The respondent KSEB Ltd during the deliberations of the subject petitions submitted that, the petitioner has been meeting their power requirement at the factory through three sources of power (a) supply from KSEB Ltd, (b) Self generation from the 1 MW & 2MW Solar plant owned by the petitioner, and (c) by availing power through open access. KSEB Ltd further submitted that, there is possibility of banking of open access power on the pretext of banking of power generated from the solar plants. KSEB Ltd explained the following five scenarios in this regard.

Case No	Load in MW (contract demand)	Solar 3MW	OA drawal	KSEB Ltd supply	Net meter reading	Deemed Injection on account of OA
1	5.0	3.0	0.0	2 (5-3)	2 MW draw al	
2	5.0	3.0	3.0	0	2 MW draw al (OA)	1.00MW
3	5.0	3.0	4.5	0	2 MW draw al (OA)	2.50 MW
4	5.0	3.0	5.0	0	2 MW draw al (OA)	3.00 MW
5	0.5	2.0 (1 MW sw itched off)	5.0	0	1 MW	6.51 W

KSEB Ltd submitted that, at present, block wise energy accounting is not followed by SLDC. So, the entire deemed injection due to availing Open Access (OA) will be get banked on the pretext of injection from the Solar plants. KSEB Ltd further submitted that, under case-2, case-3 and case-4, deemed injection may include the generation from 1 MW Solar plant also. Banking of deemed generation causes financial loss to KSEB Ltd, which is

passed on to consumers of the State. The present RE Regulation also does not envisages banking of power availed through OA.

KSEB Ltd further submitted that, since HINDALCO is an open access consumer, whenever the factory consumption through open access becomes less than the scheduled open access, there will be deemed injection to the grid. This situation can occur due to reduction in the factory load which was not anticipated at the time of scheduling open access which is scheduled on day ahead basis or due to the increase in solar generation which is infirm. Moreover, there can also be situations of purposeful under drawal of scheduled open access in certain time blocks and over drawal in other time blocks to make use of the market price economy. Since there is no time block wise energy accounting, the deemed injection gets banked.

24. In reply to the above issues raised by KSEB Ltd, the petitioner submitted the following.

- (1) The petitioner is not intended for any gaming as alleged by KSEB Ltd.
- (2) If 15 minute energy accounting is followed for open access consumers as in other States, it will resolve the purported issues of under drawal and deemed injection.
- (3) The petitioner also submitted its remarks on the five different scenarios on the deemed injection raised by the KSEB Ltd, as detailed below.

KSEB Ltd submission							HINDACO submission
Case No	Load in MW (contract demand)	Solar 3MW	OA drawal	KSEB Ltd supply	Net meter reading	Deemed Injection on account of OA	Eligibility for banking
1	5	3	0	2 (5-3)	2 MW drawal		0
2	5	3	3	0	2 MW drawal (OA)	1.00MW	0
3	5	3	4.5	0	2 MW drawal (OA)	2.50 MW	0
4	5	3	5	0	2 MW drawal (OA)	3.00 MW	0
5	0.5	2.0 (1 MW switched off)	5	0	0 MW	6.5 MW	1.5 MW (Export solar)

According to the petitioner, they are not eligible for banking under the first three scenarios raised by KSEB Ltd. Under case-5, they may claim banking only for the power generated from the 2MW plant and do not propose to claim banking for the open access power or for power generated from the 1MW Solar plant.

Further, as detailed under paragraph 16(3) above, the petitioner presented a tabular representation of energy accounting covering all scenarios, especially under drawal of Open Access Power and

Banking eligibility of Solar Power. The petitioner submitted that, they shall not claim banking for deemed injection, if any, due to open access drawal and also due to injection of power to the grid from the 1 MW solar plant.

25. The Commission examined the argument of the petitioner that, if 15 minute block wise energy accounting is being adopted by SLDC, the issues raised by KSEB Ltd regarding deemed injection will not be there. KSEB Ltd also submitted that, since there is no time block wise energy accounting, the deemed injection gets banked into the system. KSEB Ltd also submitted that, they have no objection in going for 15 minute block wise energy accounting.

SLDC Kerala, the agency authorised for energy accounting of intra-state open access submitted that, SLDC is capable of energy accounting of all open access consumers. Moreover, the open access consumers also giving schedule for 15 minute time blocks, i.e., for 96 time blocks during a day.

26. The Commission noted the submission of the petitioner M/s HINDALCO, respondent KSEB Ltd and SLDC in this regard. As per the KSERC (Connectivity and Intra-State Open Access) Regulations, 2013, and also as per the Detailed Procedure approved by the Commission as per Regulation 55(3) of KSERC (Connectivity and Intra-state Open Access) Regulations, 2013, SLDC is the authorised agency for the energy accounting of all open access transactions. SLDC submitted that, they are capable of accounting the 15 minute time block wise energy transactions of all open access consumers as per the KSERC (Connectivity and Intra-State Open Access) Regulations, 2013. The Commission has no objection to proceed with 15 minute time block wise energy accounting of open access consumers, if the SLDC is capable of doing so. **However, the billing of electricity charges for all the embedded HT&EHT open consumers shall be done as per the prevailing ToD tariff on monthly basis, as per the Tariff orders issued by the Commission from time to time.**

27. With the above observations, **the Commission hereby permits the SLDC for adopting 15 minute block wise energy accounting of all open access consumers including the petitioner so that the deemed injection by the open access consumers can be avoided. However, the billing of electricity charges for all the embedded HT&EHT open consumers shall be done as per the ToD tariff on monthly basis as per the Tariff Order issued by the Commission from time to time.**

28. There is an argument between the petitioner M/s HINDALCO and the respondent KSEB Ltd regarding the formulae suggested by the KSEB Ltd for accounting the energy banked at the time when surplus energy is injected into the grid from both the 1 MW and 2 MW solar plants.

The formulae suggested by KSEB Ltd is given below.

Energy allowed for banking = Surplus energy at the end of the billing period * $X2/(X1 + X2)$

X1: Solar meter reading 1MW

X2: Solar meter reading 2MW

The petitioner submitted that, there is shortcoming in the above formulae proposed by KSEB Ltd, since the formulae takes only 2/3rd of the export from the 2 MW plant even when there is no generation from the 1MW solar plant. The petitioner also submitted that, solar generation from 1 MW plant will happen whenever there is sun shine and, even if there is no export to grid, X1 value, i.e., the generation from the 1 MW plant will not be zero. Furthermore, the petitioner intends to limit the banking to actual 2 MW solar generation and hence there is no need to apply any ratio.

KSEB Ltd submitted that the argument of the petitioner is not correct. Whenever, there is no export of energy from the 1MW plant to the grid, $X1=0$, and as per the formulae, full surplus energy from the 2MW plant gets banked. The formulae suggested is to taken care of the extraordinary circumstances when the surplus energy from 1MW plant also gets injected into the grid.

Commission noted the argument of the petitioner and the respondent. As per the PLC based interlocking system installed by the petitioner, there will not be any injection of energy from the 1MW plant into the grid under normal circumstances. Further, even if, deemed injection happen from the 1MW under any circumstances, the petitioner vide their affidavit submitted that, they shall not claim banking for the energy injected into the grid from the 1MW plant. Hence, under normal circumstances, $X1=0$, as far as the banking of energy with KSEB Ltd is concerned, and hence the petitioner is also immune to the formulae suggested by KSEB Ltd for banking of power from the 2 MW plant is concerned. However, under extraordinary circumstances when the interlocking system become faulty and there is injection into the grid from both the 1MW and 2MW plants, the formulae suggested by the KSEB Ltd can be used for accounting the energy from the 2MW plant eligible for banking.

Order of the Commission

29. The Commission, after careful examination of the petition by M/s Hindalco Industries Limited, the arguments of the respondent KSEB Ltd, the remarks of the SLDC, Chief Electrical Inspectorate and ANERT, as per the provisions of the Electricity Act, 2003 and the various Regulations notified by the State and Central Commission related to renewable energy, hereby order the following.

- (1) Allow the petitioner HINDALCO Industries Ltd, to maintain the 1 MW Solar plant with REC benefits and 2 MW Solar plant with banking facilities in the same premises as two separate Solar plants, subject to the safe and reliable working of the Programmable Logic Controller (PLC) based interlocking system installed by the petitioner, and also subjected to the other conditions specified under paragraph 22 of this order.

- (2) As suggested by the petitioner HINDALCO Industries Ltd, and also as agreed by the SLDC Kerala, the SLDC shall adopt the 15minute energy accounting for the petitioner and similar open access consumers. However, the monthly bills of the petitioner and open access consumers shall be prepared for the accounted energy based on the ToD tariff on monthly basis as per the Tariff orders issued by the Commission from time to time.

The petition disposed of.

Sd/-
Adv. A J Wilson
Member (Law)

Sd/-
Preman Dinaraj
Chairman

Approved for issue

C R Satheeshchandran
Secretary(i/c)