

# **Kerala State Electricity Regulatory Commission**

## **Thiruvananthapuram**

Present : Shri T.M.Manoharan, Chairman  
Shri K.Vikraman Nair, Member  
Shri S.Venugopal, Member

### **Petition No. 03 / 2017**

**Petitioner** - Cochin International Airport Limited  
Nedumbassery

Vs

**Respondent** - Kerala State Electricity Board Limited  
Vydyuthi Bhavanam, Pattom

**In the matter of petition submitted by Cochin International Airport Limited, seeking refund of the registration fee paid and execution of banking agreement for the solar PV plants owned by it and connected to the KSEB Ltd grid.**

### **Interim Order dated 27.04.2017**

1. M/s Cochin International Airport Limited has filed a petition before the Commission with the following prayers.
  - (i) Issue appropriate instructions to the Kerala State Electricity Board Limited to refund the registration fee of Rs 1.30 crore along with interest, to the petitioner.
  - (ii) Issue appropriate instructions to the Kerala State Electricity Board Limited to execute a banking agreement wide section 15(2) of the KSERC (Renewable Energy) Regulations, 2015 with CIAL for 1 MWp and 12 MWp solar plants of CIAL connected to KSEBL grid.
  - (iii) Permit the petitioner to present the case in person and submit other details/ information as may be necessary before the Commission to enable to take a final decision on the matter.

2. The details of the petition filed by CIAL are summarized below.

(i) CIAL is an EHT consumer availing supply from KSEB Ltd at 110 kV level. As part of the green initiative taken by it, CIAL commissioned 1 MWp grid connected Solar PV plant in November 2013. Subsequently, CIAL commissioned 12 MWp solar power plant of its solar consumption. The 12 MWp plant is connected to the 11kV panels installed at the 110kV substation, which is owned and operated by CIAL. Hence both the solar plants are not connected to the KSEBL grid.

(ii) The dates of synchronisation, connectivity and commercial operation of the above two solar plants are given below.

1 MWp

Date of synchronisation : 27-11-2013

Date of connectivity : 27-11-2013

Date of commercial operation : 01-04-2014

12 MWp

Date of synchronisation : 17-08-2015

Date of connectivity : 17-08-2015

Date of commercial operation : 18-08-2015

(iii) As per the provisions of the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014 dated 10<sup>th</sup> June 2014, CIAL has paid a registration fee of Rs 10.00 lakh for 1 MWp solar power plant and Rs 1.20 crore for 12 MWp solar power plant to KSEB Ltd @Rs 1000/kW.

(iv) The Commission, vide the KSERC (Grid Interactive Distributed Solar Energy Systems) Amendment Regulation dated 15<sup>th</sup> March 2016, notified that 'the distribution licensee shall refund the eligible consumer eighty percent of the registration fee collected by it, if the eligible consumer has installed the solar energy systems within the validity of the registration'.

(v) CIAL further submitted that, the solar generating systems are connected to their sub-station, which is fully owned and operated by CIAL. Therefore, CIAL is not availing any facility on the feeders connected to the distribution transformers of KSEB Ltd. Accordingly, CIAL does not come under the purview of the above clauses and therefore CIAL is not actually required to pay any registration fees. Moreover, CIAL's solar system is a grid

interactive solar energy systems where the energy generated and injected into the grid of KSEBL is consumed by CIAL under the open access system, in the ratio specified in Regulation-26 of the KSERC (Renewable Energy) Regulations, 2015. Since the accounting and settlement of the renewable energy injected by CIAL is done under open access system, CIAL is not required to pay any registration fees for grid connectivity.

- (vi) With a view to expediting the commissioning of the solar projects, the amounts of Rs 10.00 lakh and Rs 1.20 crore were remitted to KSEB Ltd on the belief that, the same can be settled subsequently. Hence CIAL request for full refund of the registration fees of 1.30 crore paid to KSEB Ltd, considering the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014 and its amendment Regulations, 2016.
  - (vii) M/s CIAL further submitted that, CIAL is thankful to KSEB Ltd for granting banking facility to their 1 MWp and 12 MWp solar plants as per the Regulation 15 (2) of the KSERC (Renewable Energy) Regulations, 2015. The accounting and settlement of the solar energy injected in to the grid is done in accordance with the methodology and procedure as per the Regulation 26 of the Renewable Energy Regulations, 2015. However, a formal banking agreement is yet to be executed between CIAL and KSEB Ltd. Hence the petitioner requested before the Commission to direct the KSEB Ltd, to execute a banking agreement with CIAL, for 1MWp and 12 MWp solar PV plants, which has been indirectly connected to KSEB grid. CIAL also requested that, all the future additions in solar PV may be included in the agreement.
  - (viii) CIAL also submitted that, the amount of Rs 10.00 lakh and Rs 1.20 crore was paid to KSEB Ltd on 28-10-2015 and 24-7-2015 respectively. CIAL has availed loan from Federal bank @ 9.63% for borrowing fund for meeting its investment needs. Hence the CIAL requested before the Commission to direct KSEB to grant interest @ 9.63% for the registration fee of Rs 1.30 crore idling with KSEB Ltd.
3. The Commission has, vide the letter dated 15-3-2017, forwarded a copy of the petition filed by M/s CIAL to KSEB Ltd for its comments and defense. KSEB Ltd has, vide its letter dated 30-03-2017, submitted a statement explaining the detailed comments on the petition filed by M/s CIAL. The summary of the statement filed by KSEB Ltd is given below.

A. Refund of registration fee for 1 MW solar energy systems

- (i) CIAL connected a one MW captive solar system in their premises to the 11KV system of CIAL 110 kV substation and the injection from the solar plant commenced on 27-11-2013, without intimation to KSEB Ltd. It is submitted that the action of CIAL in injecting solar power to KSEB Ltd grid without following due procedures is in violation of the provisions of CEA Regulations, GRID Code and Regulations on Open Access issued by the Commission.
- (ii) In spite of this, as part of promoting solar generation and to meet the objectives set forth in the Solar Policy of the Government of Kerala and the Regulations issued by Hon'ble Commission, the installation was tested by KSEB Ltd on 9-4-2015 and the connection of solar power system to the grid of KSEB Ltd was regularized.
- (iii) The connectivity to grid for the 1MW system and below in the State are governed by the provisions of Kerala State Electricity Regulatory Commission (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014 notified vide notification No. 2096/KSERC/CT/2014 Dated, 10th June 2014. Accordingly, as per the regulation-13 of the said Regulation, 2014, KSEB Ltd has collected a registration fee of Rs 10.00 lakh at the rate of Rs 1000/kW as specified in the regulation -13 of the KSERC (Grid Interactive DistributedSolar Energy System) Regulations, 2014.
- (iv) Subsequently, the Commission has, vide the KSERC (Grid Interactive Distributed Solar Energy Systems) Amendment Regulations, 2016 dated 15<sup>th</sup> March 2016, stipulated that, the distribution licensee shall refund to the eligible consumer 80% of the registration fee collected, if the eligible consumer has installed the solar energy system within the period of validity of the registration. However there is no provision in the regulation for payment of interest for the refund. In compliance with the amended Regulation issued in 2016, KSEB Ltd has to refund to CIAL, 80% of the registration fee remitted for the 1MW system. However, CIAL is not eligible for interest on the refund.

B. Refund of registration fee for the 12 MW solar energy systems

CIAL had on 04.07.2015, submitted the application for connectivity of the 12 MWp solar plant along with application fee of Rs.1000/- and registration fee of Rs 1.20 crore, as per the provisions of the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014. The inspection & testing of the 12MW system was done by KSEB Ltd on

14.08.2015. The 12 MW solar plant was connected to grid on 18.08.2015. KSEB Ltd issued provisional approval for connectivity on 26.08.2015 subject to following conditions.

- (i) Distance protection relays are to be provided on both 110 kV Feeders.
- (ii) 11 kV Solar Meters provided in the control room shall be kept in a sealed panel.
- (iii) Grid connection Agreement has to be executed.
- (iv) SCADA visibility has to be provided at SLDC, Kalamassery

However, M/s CIAL is yet to execute the connectivity agreement.

Since the 12MW system was commissioned on 18-8-2015, i.e., before the notification of KSERC (Renewable Energy) Regulations, 2015, the application for connectivity and other related matters was processed as per the provisions of Kerala State Electricity Regulatory Commission (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014 and the registration fee of Rs 1.20 crore collected @Rs 1000/kW. However, as per the provisions of the KSERC (Grid Interactive Distributed Solar Energy Systems) Amendment Regulations, 2016 dated 15<sup>th</sup> March 2016, CIAL is eligible to get refund of the 80% of the registration fee remitted to KSEB Ltd. However, there is no provision for claiming interest for the same. KSEB Ltd also requested to clarify the regulations has to be followed for providing connectivity for the solar systems of CIAL.

### C. Banking facility for CIAL

Though the solar plants installed by the CIAL was commissioned prior to the notification of KSEC (Renewable Energy) Regulations, 2015, KSEB Ltd has been providing banking facility to CIAL as per the provisions of the said regulation. Further, as per the provisions of the KSERC (Renewable Energy) Regulations, 2015, it is not mandatory provide the 12 MW solar installation. In spite of this, as part of promoting solar generation and to meet the objectives set forth in the Solar policy of the Government of Kerala and the Regulations issued by Hon'ble Commission, K S E B Ltd. has been providing banking facility to CIAL as per the provisions in KSERC (Renewable Energy) Regualtions,2015 .

CIAL has connected the solar systems of 12 MW and further capacity addition of 8.4 MW (2.4 + 6) without executing connectivity agreement and other procedures to be mandatorily complied with. Hence the banking Agreement can be executed only on compliance of the Petitioner with the Regulations and statues for connectivity of RE generating plants.

#### D. Large reactive power drawl from KSEBL grid

KSEB Ltd submitted that, large amount of reactive power is drawn from the grid by CIAL during generation of solar power at CIAL. When solar generation increases the active power drawal becomes negative and reactive power drawal increases. KSEB Ltd also submitted 15 minutes time block data downloaded from energy meter installed at CIAL. At present the excess reactive power drawl is not accounted in the bills issued to the CIAL. KSEB Ltd submitted that, the large drawal of reactive power from KSEBL grid need to be properly compensated by CIAL through billing adjustment. KSEB Ltd requested before the Commission to issue necessary directions in this regard.

#### E. Other issues raised by KSEB Ltd

- (i) KSEB Ltd further submitted that, even though connectivity of solar system of CIAL is to the 11KV bus of CIAL Substation, there is net injection to KSEB Ltd grid from the solar system of CIAL through KLCH 1 and KLCH2 110KV feeders of KSEB Ltd. CIAL has not executed connectivity agreement with KSEB Ltd for the 12MW system. Further, CIAL continues to add more solar capacities (2.4 + 6 MW) in their system and the injection from these are also made to KSEB Ltd grid without executing any connectivity agreement with KSEB Ltd and following the due procedures approved by Hon'ble Commission. Before injecting to KSEB Ltd grid, CIAL ought to have followed the proper procedure for getting connectivity which is mandatory as per the provisions of the CEA Regulations, KSERC (Connectivity and Intrastate Open Access) Regulations, 2013 and the Detailed procedure approved by Hon'ble Commission on connectivity and open access.
- (ii) Regarding the submission of the CIAL in their petition that, CIAL's solar system is a grid interactive solar system where the energy generated and injected into the grid of K S E B Ltd. is consumed by CIAL under the 'open access system'. But K S E B Ltd. submitted that, CIAL has not availed any type of 'open access' in the K S E B Ltd. system for injecting power. K S E

B Ltd. further submitted that, as per the Regulation 6 (15) of the Kerala State Electricity Regulatory Commission (Connectivity and Intrastate Open Access) Regulations, 2013, the grant of connectivity shall not entitle an applicant to interchange any power with the state grid unless it obtains long-term open access, medium-term open access or short-term open access in accordance with the provisions of these regulations. The Regulations further stipulate that any interchange of power with the grid without any type of open access shall amount to violation of these regulations and is liable to be proceeded in accordance with section 142 of the Act.

Quote:

*“(15) The grant of connectivity shall not entitle an applicant to interchange any power with the state grid unless it obtains long-term open access, medium-term open access or short-term open access in accordance with the provisions of these regulations: Provided that any interchange of power with the grid without any type of open access shall amount to violation of these regulations and is liable to be proceeded in accordance with section 142 of the Act.”*

*Un Quote.*

- (iii) K S E B Ltd. further submitted that, CIAL has not provided remote terminal units as stipulated in the KSERC open access Regulations and detailed procedure for open access, to facilitate real time monitoring and SCADA visibility by SLDC. KSEB Ltd also brought to the attention of the Commission the Regulation 5.2(u) of Indian Grid Code, which provides for special requirements for solar/wind generators.

“5.2(u) Special requirements for solar/wind generators

System operator (SLDC/RLDC) shall make all efforts to evacuate the available solar and wind power and treat as a must-run station. However, System Operator may instruct the solar/wind generator to back down generation on consideration of grid security or safety of any equipment or personnel is endangered and solar/wind generator shall comply with the same. For this, Data Acquisition System facility shall be provided for transfer of information to concerned SLDC and RLDC.”

According to KSEB Ltd, CIAL has violated the provisions of CEA Regulations, Grid Code and open access Regulations issued by Hon’ble Commission.

## Hearing on the matter

4. The Commission has, after examination of the petition as well as the written statement of defence submitted by KSEB Ltd, decided to hear both the parties. Accordingly a notice was issued on 6.4.2017 directing the petitioner and respondent to appear before the Commission for a hearing in the matter. A copy of the written submission dated 30.03.2017 of KSEB Ltd, was also forwarded to M/s CIAL for its perusal and remarks.
5. M/s CIAL, on 17.04.2017, has submitted additional arguments on the written submission filed by KSEB Ltd against the petition filed by M/s CIAL. The summary of the additional submission filed by M/s CIAL is given below.
  - (i) Refund of registration fee for 1 MW plant  
During installation of the 1 MW plant, there was no policy / guidelines / connectivity procedures for connecting solar PV power plant to the grid. Further, the load studies of CIAL 110 kV substation indicated that the power generated from 1MWp plant does not get injected to the system at any point of time as the load demand at the side of the CIAL had been always more than 2500kW. After coming into force of KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014, all the application along with the application fee and registration fee as per the above regulation remitted to KSEB Ltd. A technical team of KSEB Ltd had inspected and tested the installation as per the CEA guidelines and issued sanction for installation. An agreement with respect to the installation of 1 MWp installation was also signed with KSEB Ltd. Subsequently, Commission amended the Solar Regulation, 2014, and as per the provisions of the amendments in the Solar Regulation, 2014, CIAL is eligible to get the refund of the 80% of the registration fee, however, KSEB Ltd had not refund the same. Hence, CIAL is eligible to get the refund of 80% of the registration fee remitted for the 1MWp solar power plant along with 12% interest.
  - (ii) Refund of registration fee for 12 MW plant  
CIAL had completed all the procedural formalities as specified in the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014, even though the regulation is applicable to the solar plant installation upto 1 MWp, since there was no other regulation/ guidelines available to follow for 12 MWp installation. An application as well as a registration fee of Rs 1.20 crore had been remitted to KSEB Ltd. Further



KSEB Ltd had conducted testing of the installation as per the CEA guidelines and certified the installation for connecting the grid.

CIAL vide its letter dated 29.03.2017, communicated its confirmation to the Chief Engineer (Transmission- System Operation), SLDC, regarding the following for providing connectivity to the 12 MWp solar plant of CIAL.

- (1) Visibility to SLDC
- (2) Protection scheme
- (3) Drawal of Reactive power
- (4) Providing HVRT and LVRT protection.

CIAL has signed a connectivity agreement with KSEB Ltd on 09.01.2017 for enhancing the contract demand from 4 MVA to 6 MVA.

CIAL has prepared a draft banking agreement and the Commission may issue appropriate direction to the respondent for signing the same.

CIAL is in the process of providing distance relays as required by KSEB Ltd and tender documents for the same is under preparation. The SCADA system is already under implementation. There had been some misunderstanding on the actual requirement of KSEB Ltd. CIAL has requested three months period for meeting the requirements of distance relays and SCADA.

(iii) Other issues submitted on connectivity of CIAL.

- (1) CIAL has already executed a connectivity agreement for a contract demand of 6 MVA with KSEB Ltd. The connectivity for the 12 MWp solar plant which is generated and not reflected directly with the grid of KSEB Ltd is not understood. CIAL is willing to sign any such agreement if provided by KSEB Ltd under the approval of the Commission.
- (2) CIAL has always followed proper procedures for getting connectivity as per the provisions and willing to regularize any issues with KSEB Ltd.
- (3) CIAL have already replaced the import type of ToD meters formerly installed to the most upto date ABT meters as per the requirements of KSEB Ltd for providing open access.
- (4) CIAL has been availing the banking facilities as per the provisions of the KSERC (Renewable Energy) Regulations, 2015.

- (5) Regarding large scale drawal of reactive power from the grid of KSEB Ltd, CIAL has already expressed the willingness to provide additional capacitor for reactive compensation to the grid if it is found taking reactive power drawal during the export of solar power.
- (iv) M/s CIAL, therefore prayed as follows:
- (a) Reimburse the registration fee as per the Kerala State Electricity Regulatory Commission (Grid Interactive Distributed Solar Energy Systems ) Amendment Regulations, 2016
  - (b) Pay interest at the rate of 12 % for the delay in refunding the registration fee from the date of promulgation of the above regulation
  - (c) Sign Banking Agreement .
6. The Commission head the petition on 17.04.2017. The petitioner represented by Smt Mini Joseph, CFO, CIAL, Sri. Satheesh Kumar Pai, CIAL and Sri. Rajan Babu, Consultant. KSEB Ltd was represented by Sri. R Suku, Chief Engineer (REES), Sri V K Joseph Chief Engineer (C&T) and Sri Bipin Sankar, Deputy CE, TRAC.
7. Sri. Satheesh Kumar Pai, briefly presented the matter on behalf of the petitioner and also answered to the queries raised by the Commission. Sri. Bipin Sankar, presented the counter reply on behalf of the respondent KSEB Ltd.
8. During the hearing, the Commission has expressed the following preliminary observations.
- (i) M/s CIAL has been availing the banking facility with KSEB Ltd for the electricity generated from the 1 MWp and 12 MWp solar plant installed by CIAL. Hence, these solar plants are connected to the grid of the KSEB Ltd.
  - (ii) The 1MWp solar plant installed by M/s CIAL has come under the purview of the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014. KSEB Ltd is agreed to refund 80% of the registration fee collected for the 1 MWp solar plant as per the provisions of the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014 as amended in 2016.
  - (iii) The 12 MWP solar plant installed by M/s CIAL will not come under the purview of the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014. KSEB Ltd agreed to refund 80% of the registration fee collected.

- (iv) M/s CIAL has to enter into a formal connectivity agreement with KSEB Ltd as per the provisions of the KSERC (Connectivity and Intra State Open Access) Regulations, 2013 for connecting the solar plants installed by them. M/s CIAL should also enter into formal agreement with KSEB Ltd for availing banking facility under regulation 15 of the KSERC (Renewable Energy) Regulations, 2015, or for availing the facility under regulation 26 of the said Regulations, to consume electricity generated from the solar plants and injected into the grid of KSEB Ltd.
- (v) M/s CIAL has to install reactive compensation devices in consultation with KSEB Ltd. Until that time, M/s CIAL has to compensate KSEB Ltd for the reactive power drawn from the grid of KSEB Ltd.
- (vi) M/s CIAL also has to provide necessary facility for SCADA visibility at SLDC Kalamassery, for the solar plants installed by them.
- (vii) M/s CIAL also has to provide necessary protection device as per the relevant statute and regulations.

9. The Commission has issued the following directions to the petitioner CIAL and the respondent KSEB Ltd for the immediate compliance, not later by 25-04-2017.

- (1) M/s CIAL shall prepare and submit the draft connectivity agreement and banking agreement to KSEB Ltd for finalization. KSEB Ltd and M/s CIAL shall finalise the same on or before 25-04-2017 and forward the same to the Commission by 25-04-2017 for approval.
- (2) KSEB Ltd shall submit necessary proposals, on or before 25-04-2017, on the following.
  - (i) Fees and other charges if any, payable by M/s CIAL for availing connectivity and banking facility, with necessary supporting documents.
  - (ii) The compensation if any payable by M/s CIAL for the drawal of reactive power from the grid of KSEB Ltd with supporting documents.
  - (iii) Any other claims with necessary supporting documents.

M/s CIAL and KSEB Ltd shall submit to the Commission all the above documents on or before 25-04-2017 with the compliance of above directions.

10. In compliance of the directions contained in the daily order dated 18.04.2017, the respondent KSEB Ltd has submitted the details vide its letter No. KSEB/TRAC/KSERC/CIAL/2017-18/3867 dated 24.4.2017. The summary of the details submitted by KSEB Ltd is given below.
- (i) CIAL has not entered the connectivity agreement with KSEB Ltd for the 12 MWp solar plants installed by them. The agreement refereed by CIAL in the additional submission was on the agreement entered for enhancing the contract demand of CIAL from 4000 kVA to 6000kVA.
  - (ii) In addition to the connectivity agreement, CIAL has to apply for open access, which in this case is 'Long Term Open Access' as CIAL requires injection to Grid for more than 12 years.
  - (iii) KSEB Ltd had discussion with CIAL on 21.04.2017 on the issues raised in the petition and reply submitted by KSEB Ltd.
  - (iv) KSEB Ltd handed over the format for connectivity agreement and open access agreement approved by the Commission in the detailed procedure on KSERC (Connectivity and intra-state open access) Regulations, 2013.
  - (v) Only pursuant to connectivity and open access, banking agreement can be executed. A draft banking agreement prepared by KSEB Ltd was also handed over to CIAL during the meeting held on 21.04.2017.
  - (vi) In the meeting held on 21.04.2017, CIAL submitted that, they will execute the connectivity, open access and banking agreement within one month. Hence, one month time may be allowed to KSEB Ltd to submit the signed connectivity, open access and banking agreement.
  - (vii) The following fees and charges are payable by CIAL for availing connectivity and banking facility.
    - (i) Connectivity fee : Rs 50,000/- for 12 MWp solar plant.
    - (ii) Application fee Rs 2000/- for long term access (Schedule 1-I(A) of the detailed procedure)
    - (iii) Banking agreement execution fee as applicable.
  - (viii) To maintain grid stability and discipline, it is required that reactive support shall be provided by solar generators. Further, as per clause 26.7 of the detailed procedure, reactive power charges shall be paid by the open access customers, who draw or inject reactive power from or to the grid as may be determined by the Commission from time to time, based on the reactive energy account issued by SLDC, within the specified time.

- (ix) As per the suggestion of SRPC and SLDC, reactive support equal to 10% of the installed capacity has to be provided by solar installations. As per the suggestions of SRPC and SLDC, the reactive power support required for 13MWp solar installation is 1.3MVAR.
- (x) Based on the price estimate of the Static Synchronous Compensator (STATCOM) having 100MVAR capacity, as estimated by PGCIL for Anantpur Solar Park in the year 2015, KSEB Ltd has estimated the reactive energy charge at Rs 0.67/kVARH. Further, KSEB Ltd has proposed to allow an additional penal rate of 20% to be levied from CIAL. Thus the reactive power compensation receivable from CIAL works out to Rs 0.80/KVARH. KSEB Ltd further requested that, the rate of Rs 0.80/kVARH may be applied for reactive power at lagging power factor upto 10% of the energy generated. For drawal of reactive power more than 10% of the net reactive energy, Rs 1.00/kVARH may be allowed for the reactive power drawal. KSEB Ltd also submitted that the details of the reactive power charges approved by some of the other SERCs.

State	Reactive energy charge rate
Karnataka	40 ps/ KVARH
Tamilnadu	25 ps/KVARH for reactive power drawal upto 10% of the net active energy generated and 50 ps/KVARH for >=10%
Madhya Pradesh	27 ps/ KVARH
Chattisgarh	27 ps/ KVARH
Gujarat	50 ps/KVARH for reactive drawal above 10% of the net active energy generated

11. CIAL has submitted the following objections on the draft grid connectivity and banking agreement for generation from large scale solar plants (greater than 1MW) provided by KSEB Ltd.

(i) *Clause 2.5 on page 3 of 9 :*

*Since the interface/ interconnection and metering point is already fixed, this clause is in fructuous and may be removed.*

(ii) *Clause 2.7 on page 3 of 9*

*As we agree to adhere CEA (Technical Standards for Connectivity of Distributed Generation Resources) Regulation 2013, further enumeration of technical standards by sl. No:s a-j are irrelevant and may be removed.*

(iii) *Clause 3.3 on page 5 of 9*

*The tenure of the agreement shall be valid for the entire life of solar plant without the restriction of time period or 25 years.*

- (iv) *Clause 7.4 on page 7 of 9 , Clause 7.10 on page 8 of 9 read along with Clause 12 on page 9 of 9*

*The solar energy generated from the solar power plant may be accounted to meet the RPO of KSEBL, provided unconditional banking facility is accorded to CIAL by KSEBL as per the KSERC (Grid Interactive Solar PV) Regulation, 2014.*

- (v) *Additional point*

*Excess energy injected into the grid in a solar settlement year may be adjusted by paying feed in tariff as decided by KSERC for the period, if energy adjustment is carried out by KSEBL according to the Clause 7.3 on page 7 of 9 on a zone to zone basis of ToD.*

*If unconditional banking is agreed by KSEBL as per the KSERC (Grid Interactive Solar PV) Regulation, 2014, this settlement can be done by paying APPC.”*

## **Analysis**

12. The regulations issued by the Commission related to the issues raised by the petitioner and the respondent are given below.
- (i) KSERC (Connectivity and Intra State Open Access) Regulation, 2013 notified vide the notification No. 1824/CT/KSERC/2012 dated 10-09-2013.
  - (ii) KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014, notified vide the notification No. 2096/KSERC/CT/2014 dated 10<sup>th</sup> June 2014.
  - (iii) KSERC (Renewable Energy) Regulations, 2015, notified vide the notification No. 442/CT/2015/KSERC dated 11<sup>th</sup> November-2015.
13. KSERC (Connectivity and Intra State Open Access) Regulation, 2013 (herein after referred as Open Access Regulations, 2013) generally deals with grant of connectivity, long term access, medium and short term open access. The Commission has also approved the Detailed Procedure as per regulation 55 (3) of KSERC (Connectivity and Intra-state Open Access) Regulations, 2013. Regulations 7 and 8 of the Open Access Regulations deal with the connectivity for a generating station to distribution system. Regulation 20 of the Open Access Regulations, 2013 deals with grant of open access to generating station connected to distribution system.
14. The Commission had, vide the notification 2096/KSERC/CT/2014 dated 10.6.2014, notified the KSERC (Grid Interactive Distributed Solar Energy

Systems), Regulations, 2014 (herein after referred as Solar Regulations, 2014). This regulation is generally applicable to the solar energy system located in the premises of the eligible consumer and connected with distribution system. The said Regulation is applicable to the solar energy system installed at the premise of the consumer the capacity of which shall not be less than 1kWp and shall not exceed 1 MWp. Hence, the 1 MWp plant installed by CIAL during the year 2013 will come under the purview of the said regulations.

15. The Solar Regulations 2014 does also deal with the following.
  - (i) Obligation of the distribution licensee to give connectivity to the high tension feeders. (Regulation-6)
  - (ii) Obligation of the distribution licensee to provide banking facility. (Regulation-7).
  - (iii) Right of the eligible consumer to use the excess solar electricity in other premises. (Regulation-12)
  - (iv) Procedure for granting connection to the solar energy systems (Regulation-13) and the application fee and registration fee to be paid by the consumer to the licensee.
  - (v) Accounting and settlement of electricity drawn and injected by an eligible consumer who is in the ToD billing system.
  
16. The Commission had, vide the notification No. 442/CT/2015/KSERC dated 11.11.2015, notified the KSERC (Renewable Energy) Regulations, 2015 (hereinafter referred to as Renewable Energy Regulations, 2015). The term 'prosumer' has been defined in the said regulations as "the consumer who produces electricity from the renewable sources of energy and consume such electricity fully or partially for his own use". This regulation generally deals with the following.
  - (i) RPO of the obligated entities.
  - (ii) Incentives for generation of RE – Renewable Energy Certificate
  - (iii) Banking facilities for the RE.
  - (iv) The open access to the transmission system of the STU and to the distribution system of the licensees in the State. (Regulation-25)
  - (v) Facility to consume the electricity generated by a prosumer using RE generating system with capacity above 1 MW and injected into the grid.

The Renewable Energy Regulations, 2015 does not contain specific provisions relating to the procedures to be followed for connectivity and availing open access.

17. The Tariff Policy, 2016, notified by Government of India contains several provisions to promote renewable energy with special reference to solar energy. The policy provides for renewable purchase obligation, renewable energy certificate, obligatory purchase of electricity generated from waste to energy plants, concession in transmission charges and transmission loss, etc. Para 6.4 of the said policy is quoted hereunder.

*“6.4 Renewable sources of energy generation including Co-generation from renewable energy sources:*

*(1) Pursuant to provisions of section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage of the total consumption of electricity in the area of a distribution licensee for purchase of energy from renewable energy sources, taking into account availability of such resources and its impact on retail tariffs. Cost of purchase of renewable energy shall be taken into account while determining tariff by SERCs. Long term growth trajectory of Renewable Purchase Obligations (RPOs) will be prescribed by the Ministry of Power in consultation with MNRE.*

*Provided that cogeneration from sources other than renewable sources shall not be excluded from the applicability of RPOs.*

- (i) Within the percentage so made applicable, to start with, the SERCs shall also reserve a minimum percentage for purchase of solar energy from the date of notification of this policy which shall be such that it reaches 8% of total consumption of energy, excluding Hydro Power, by March 2022 or as notified by the Central Government from time to time.*
- (ii) Distribution Licensee(s) shall compulsorily procure 100% power produced from all the Waste-to-Energy plants in the State, in the ratio of their procurement of power from all sources including their own, at the tariff determined by the Appropriate Commission under Section 62 of the Act.*
- (iii) It is desirable that purchase of energy from renewable sources of energy takes place more or less in the same proportion in different States. To achieve this objective in the current scenario of large availability of such resources only in certain parts of the country, an appropriate mechanism such as Renewable Energy Certificate (REC) would need to be promoted. Through such a mechanism, the*



*renewable energy based generation companies can sell the electricity to local distribution licensee at the rates for conventional power and can recover the balance cost by selling certificates to other distribution companies and obligated entities enabling the latter to meet their renewable power purchase obligations. The REC mechanism should also have a solar specific REC.*

- (iv) Appropriate Commission may also provide for a suitable regulatory framework for encouraging such other emerging renewable energy technologies by prescribing separate technology based REC multiplier (i.e. granting higher or lower number of RECs to such emerging technologies for the same level of generation). Similarly, considering the change in prices of renewable energy technologies with passage of time, the Appropriate Commission may prescribe vintage based REC multiplier (i.e. granting higher or lower number of RECs for the same level of generation based on year of commissioning of plant).*
- (2) States shall endeavor to procure power from renewable energy sources through competitive bidding to keep the tariff low, except from the waste to energy plants. Procurement of power by Distribution Licensee from renewable energy sources from projects above the notified capacity, shall be done through competitive bidding process, from the date to be notified by the Central Government.*

*However, till such notification, any such procurement of power from renewable energy sources projects, may be done under Section 62 of the Electricity Act, 2003. While determining the tariff from such sources, the Appropriate Commission shall take into account the solar radiation and wind intensity which may differ from area to area to ensure that the benefits are passed on to the consumers.*

- (3) The Central Commission should lay down guidelines for pricing intermittent power, especially from renewable energy sources, where such procurement is not through competitive bidding. The tariff stipulated by CERC shall act as a ceiling for that category.*
- (4) In order to incentivize the Distribution Companies to procure power from renewable sources of energy, the Central Government may notify, from time to time, an appropriate bid-based tariff framework for renewable energy, allowing the tariff to be increased progressively in a back-loaded or any other manner in the public interest during the period of PPA, over*

*the life cycle of such a generating plant. Correspondingly, the procurer of such bid-based renewable energy shall comply with the obligations for payment of tariff so determined.*

- (5) *In order to promote renewable energy sources, any generating company proposing to establish a coal/lignite based thermal generating station after a specified date shall be required to establish such renewable energy generating capacity or procure and supply renewable energy equivalent to such capacity, as may be prescribed by the Central Government from time to time after due consultation with stakeholders. The renewable energy produced by each generator may be bundled with its thermal generation for the purpose of sale. In case an obligated entity procures this renewable power, then the SERCs will consider the obligated entity to have met the Renewable Purchase Obligation (RPO) to the extent of power bought from such renewable energy generating stations.*

*Provided further that in case any existing coal and lignite based thermal power generating station, with the concurrence of power procurers under the existing Power Purchase Agreements, chooses to set up additional renewable energy generating capacity, the power from such plant shall be allowed to be bundled and tariff of such renewable energy shall be allowed to be pass through by the Appropriate Commission. The Obligated Entities who finally buy such power shall account towards their renewable purchase obligations.*

*Provided also that scheduling and despatch of such conventional and renewable generating plants shall be done separately.*

- (6) *In order to further encourage renewable sources of energy, no inter-State transmission charges and losses may be levied till such period as may be notified by the Central Government on transmission of the electricity generated from solar and wind sources of energy through the inter-state transmission system for sale.*
- (7) *Appropriate Commission may provide regulatory framework to facilitate generation and sale of electricity from renewable energy sources particularly from roof-top solar system by any entity including local authority, Panchayat Institution, user institution, cooperative society, Non-Governmental Organization, franchisee or by Renewable Energy Service Company. The Appropriate Government may also provide complementary policy support for this purpose.*

*Explanation: “Renewable Energy Service Company” means an energy service company which provides renewable energy to the consumers in the form of electricity.*

As per sub-para (6) of para 6.4 of the Tariff Policy, a prosumer is exempted from transmission losses and from payment of transmission charges for inter-state transmission.

18. Government of Kerala has, vide G.O (P) No. 49/2013/PD dated 25.11.2013, notified Kerala Solar Energy Policy, 2013. Clause 12 of the said policy is quoted hereunder.

*“Incentives and facilities under this policy*

*a. Evacuation facility*

*KSEB shall create necessary evacuation facility beyond the pooling station for the projects with capacity less than or equal to 10 MW. For higher capacity plants, KSEB shall construct the evacuation facility on deposit work basis.*

*b. Open access Charges*

*There shall be no open access charges for solar projects for wheeling the power within the state.*

*c. Wheeling charges and T&D losses*

*Wheeling charges and T&D losses will not be applicable for the Captive Solar generators within the state.*

*d. Exemption of electricity Duty*

*The energy generated from the plants under this policy shall be fully exempted from the Electricity duty.*

*e. Banking facility*

*Conditional Banking facility shall be available to captive generators after considering system constraints.*

*f. Facilitating for subsidies from MNRE*

*ANERT being the nodal agency for the non-conventional energy in the State, shall act as a facilitator for the developer for making available the subsidy from MNRE or any other central agency.”*

It has been stipulated in the said policy that there shall no open access charges for solar projects for wheeling the power within the State and that the wheeling charges and T&D losses will not be applicable to the captive solar generators within the State.

19. The Commission has examined the facts submitted and the issues raised by both CIAL and KSEB Ltd, in view of the provisions of the regulations and policies mentioned above.
- (1) Whether or not the 1 MWp solar plant and the 12 MWp solar plant of M/s CIAL are connected to the grid of KSEB Ltd.
  - (2) Whether or not the registration fee of Rs.10 lakh paid for the 1 MWp solar plant of M/s CIAL has to be refunded by KSEB Ltd.
  - (3) Whether or not the registration fee of Rs.1.20 crore paid for the 12 MWp solar plant of M/s CIAL has to be refunded by KSEB Ltd. with interest @ 12 %
  - (4) Whether or not agreement has to be executed, relating to the terms and conditions of connectivity and banking / use of renewable energy under regulation 15 and 26 of the KSERC (Renewable Energy) Regulations, 2015.
  - (5) Whether or not KSEB Ltd is eligible for any charge / compensation for the reactive power drawn by M/s CIAL.
20. Whether or not the 1 MWp solar plant and the 12 MWp solar plant of M/s CIAL are connected to the grid of KSEB Ltd.

KSEB Ltd submitted that, both the 1 MWp solar plant and the 12 MWp solar plant are connected to the grid of KSEB Ltd. Even though connectivity of solar plants of CIAL is to the 11kV bus of CIAL substation, there is net injection to KSEB Ltd grid from the solar system of CIAL through KLCH 1 and KLCH2 110KV feeders of KSEB Ltd. CIAL is also availing banking facilities from KSEB Ltd. Unless the solar plants are connected to the grid of KSEB Ltd, M/s CIAL cannot inject power to the grid of KSEB Ltd when the solar power generation is more than its requirement and draw power from the grid of KSEB Ltd as and when required using the facility of banking. The EHT supply agreement executed by CIAL with KSEB Ltd enhancing the contract demand from 4 MVA to 6 MVA cannot be regarded as the connectivity agreement for solar plants. Therefore it cannot be successfully contended that the impugned solar generating units of CIAL are not connected to the grid of KSEB Ltd.

21. Whether or not the registration fee of Rs.10 lakh paid for the 1 MWp solar plant of M/s CIAL has to be refunded by KSEB Ltd.

The 1 MWp solar system installed by M/s CIAL will come under the provisions of the KSERC (Grid Interactive Distributed Solar Energy Systems), Regulations,

2014. As per the provisions of the said regulations, 80% of the registration fee collected for the 1MWp solar plant installed by CIAL has to be refunded. KSEB Ltd has also agreed to this proposal.

22. Whether or not the registration fee of Rs.1.20 crore paid for the 12 MWp solar plant of M/s CIAL has to be refunded by KSEB Ltd. with interest @ 12%

The 12 MWp solar plant installed by CIAL does not come under the purview of the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014. However KSEB Ltd has collected a registration fee amounting to Rs.1.20 crore for the 12 MWp plant of CIAL. The Renewable Energy Regulations, 2015, does not provide for realization of registration fee. Therefore, KSEB Ltd has to refund the entire amount collected towards registration fee for the 12 MWp solar plant. KSEB Ltd has also expressed willingness to refund 80% of the amount collected towards the registration fee. K S E B Ltd. stated that M/s CIAL is not eligible for interest since there is no provision in the regulation for payment of interest for the refund. As already stated above, the plant is connected to the grid of KSEB Ltd. CIAL has to apply to the KSEB Ltd for connectivity for their 12 MWp, as per the Regulation -7 and 8 of the Open Access Regulation 2013, with required fee as specified in the 'Detailed procedure approved by the Commission on connectivity and intra-state open access. M/s CIAL has also submitted that it is availing open access facility from the grid of KSEB Ltd. Therefore M/s CIAL has to pay to KSEB Ltd the connectivity charges as specified by the Commission in accordance with the provisions of KSERC (Connectivity and Intra State Open Access) Regulations, 2013. The Commission has already approved the detailed procedure for giving connectivity to the grid of KSEB Ltd. KSEB Ltd has not so far submitted any specific claim for connectivity charges. Therefore, CIAL has to follow the procedure and take connectivity for their solar plant.

23. Whether or not agreement has to be executed, relating to the terms and conditions of connectivity and banking / use of renewable energy under regulation 15 and 26 of the KSERC (Renewable Energy) Regulations, 2015.

The solar plants of CIAL have to function in accordance with the provisions of KSERC (Connectivity and Intra State Open Access) Regulations, 2013 and KSERC (Renewable Energy) Regulations, 2015. The 12 MWp solar plant of CIAL is not being operated as a stand-alone power plant. The 12 MWp solar plant is connected to the grid of KSEB Ltd and CIAL is availing banking facility and drawing reactive power from the grid of KSEB Ltd. KSEB Ltd has allowed banking facility as per the Regulation-15 of the Renewable Energy Regulation,

2015. There is no dispute on this issue. However, CIAL and KSEB Ltd have not yet entered into formal agreement pertaining to connectivity and banking. M/s CIAL and KSEB Ltd, shall, decide the terms and conditions of connectivity and banking agreement and shall submit the draft agreement for approval of the Commission.

24. Whether or not KSEB Ltd is eligible for any charge / compensation for the reactive power drawn by M/s CIAL.

CIAL has been availing the benefit of banking facility from KSEB Ltd. It is well known that solar plants do not produce reactive power. Therefore CIAL has to draw reactive power from the grid of KSEB Ltd, for which KSEB Ltd is entitled to get a charge / compensation.

25. Considering the facts, the circumstance and the statutory provisions as explained above, the Commission issues the following orders.

(1) The 1 MWp solar plant and the 12 MWp solar plant of CIAL are connected to the grid of KSEB Ltd and CIAL is not seen to have entered into proper connectivity agreement with KSEB Ltd. M/s CIAL has been availing the facility from the grid of KSEB Ltd for injecting the electricity generated from the 1 MWp and 12 MWp solar plant installed by it and for using it subsequently as per the provisions of the Renewable Energy Regulations, 2015. Hence, it is found that, 1 MWp and 12 MWp solar plants installed by CIAL are connected to the grid of the KSEB Ltd, though these plants are not directly connected to the transmission grid of KSEB Ltd.

(2) The 1MWp solar plant installed by M/s CIAL will come under the purview of the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014, if it is considered as a independent individual unit. KSEB Ltd has agreed to refund 80% of the registration fee collected for the 1 MWp solar plant as per the provisions of the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014 as amended in 2016. It is ordered that, KSEB Ltd shall refund 80% of the registration fee collected for the 1MWp solar plant installed by CIAL, on or before 31.05.2017. KSEB Ltd shall, if the refund is not made on or before 31.05.2017, pay interest @12% per annum for the period of delay from 01.06.2017 to the date of payment. CIAL will not be entitled for any interest if the refund is effected on or before 31.05.2017.

- (3) The 12 MWP solar plant installed by M/s CIAL will not come under the purview of the KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014. KSEB Ltd agreed to refund 80% of the registration fee collected. It is ordered that, KSEB Ltd shall refund 80% of the registration fee collected for the 12MWp solar plant installed by CIAL, on or before 31.05.2017. KSEB Ltd shall, if the refund is not made on or before 31.05.2017, pay interest @12% per annum for the period of delay from 01.06.2017 to the date of payment. CIAL will not be entitled for any interest if the refund is effected on or before 31.05.2017.
- (4) KSEB Ltd has claimed the following amounts from CIAL,-
- (i) Connectivity fee : Rs 50,000/- for 12 MWp solar plant.
  - (ii) Application fee Rs 2000/- for long term access (Schedule 1-I (A) of the detailed procedure)
  - (iii) Banking agreement execution fee as applicable.
- CIAL shall pay to KSEB Ltd an amount of Rs.50000/- for the 12 MWp solar plant as connectivity fee. Since CIAL is consuming energy at the site of generation itself, it cannot be successfully contended that CIAL is availing open access for the use of solar energy generated by it. The regulation does not provide for realization of banking agreement execution fee as claimed by KSEB Ltd. Therefore the claims of KSEB Ltd for application fee of Rs.2000 for long term access and for banking agreement execution fee are declined.
- (5) M/s CIAL has to enter into formal connectivity agreement with KSEB Ltd, for the 1 MWp and 12 MWp solar plant installed by them, as per the Regulations 7 and 8 of the Open Access Regulations, 2013 and also as per the detailed procedure approved by the Commission as per the Regulation 55(3) of the Open Access Regulation, with required fee specified there in. CIAL and KSEB Ltd shall enter into a connectivity agreement with necessary and sufficient conditions relating to the safety, standards and operation of the grid on or before 31.05.2017. A copy of the agreement shall be submitted before the Commission for formal approval.
- (6) In view of the Kerala Solar Policy, 2013 notified by the State Government vide the G.O (P) No. 49/2013/PD dated 25.11.2013, the solar energy injected from the 1 MWp and 12 MWp solar plant installed by CIAL is completely exempted from the payment of open access charges, wheeling charges and transmission losses if any, for availing open access facility as per the provisions of the Open Access Regulations, 2013 and also for

availing banking facility as per the provisions of the Renewable Energy Regulations, 2015.

- (7) It is seen that the total capacity of the solar plant installed by CIAL is 13 MWp and therefore it is not entitled as a matter of right for banking under regulation 15 of the KSERC (Renewable Energy) Regulations, 2015. CIAL is eligible to use the solar energy generated by it and injected into the system of KSEB Ltd under regulation 26 of the KSERC (Renewable Energy) Regulations, 2015. CIAL and KSEB Ltd may discuss and decide the terms and conditions for the use of solar energy injected into the grid of KSEB Ltd in view of the said regulations and shall, on or before 31.05.2017, enter in to formal agreement, for availing the facility as per the provisions of the Renewable Energy Regulations, 2015. A copy of the agreement shall be submitted before the Commission for formal approval.
- (8) M/s CIAL shall,
- (i) Install on or before 31.12.2017, the reactive power compensation devices in consultation with KSEB Ltd.
  - (ii) compensate KSEB Ltd for the reactive power drawn from the grid of KSEB Ltd at the rate of Rs.0.25 per kVARh till the reactive power compensation devices are installed.
  - (iii) provide on or before 31.12.2017, the necessary facility for SCADA visibility at SLDC Kalamassery, for the solar plants installed by them.
  - (iv) provide on or before 31.12.2017, the necessary protection device as per the relevant statute and regulations.
- (9) CIAL may, on compliance of the above directions, approach the Commission for the decision on the balance 20% of the registration fee collected for the 12 MWp solar plant installed by them.

Dated this, the 27<sup>th</sup> day of April, 2017.

Sd/-  
**K.Vikraman Nair**  
Member

Sd/-  
**S.Venugopal**  
Member

Sd/-  
**T.M.Manoharan**  
Chairman

Approved for issue,

Santhosh Kumar.K.B



