

**KERALA STATE ELECTRICITY REGULATORY COMMISSION**  
**THIRUVANANTHAPURAM**

**Present: Shri. Preman Dinaraj, Chairman**  
**Shri. S. Venugopal, Member**

**Petition No. OP No. 07/2020**

In the matter of : Petition for approval of continuation of the provisional Generic Tariff determined by the Commission; vide order No. OP 27/2013 and OP No.24/2012 on 01.11.2014, for the balance period of the Power Purchase / Sale Agreement between the petitioner and the respondent Utility M/s.Kerala State Electricity Board Ltd in respect of 15MW Karikkayam SHP

Petitioner : M/s Ayyappa Hydro Power Ltd

Respondent : Kerala State Electricity Board Limited

Petitioner represented by : Sri. Toby Antony  
Sri Bipin Sankar, Consultant

Respondent represented by : Shri. Suresh, EE, TRAC,  
Smt. Sangeetha S, EE, Commercial  
Shri. G. Manoj, AEE, TRAC  
Smt. Salini Cyril, AEE, Commercial

**Order dated 13.03.2020**

1. M/s. Ayyappa Hydro Power Ltd, on 18.12.2019, filed a petition before the Commission with the following prayers.  
“ (1) *The Tariff determined by Hon Commission by the order dated 01.11.2014 for the Karikkayam power plant owned by the petitioner at the Generic Tariff of Rs. 4.16 per unit be allowed to be realized for entire period of 30 years from the date of commercial operation of the project (May 2017).*  
(2) *The power purchase agreement entered into between the Petitioner and the respondent utility be amended and extended for the complete period of supply of thirty years from the date of COD (May 2017) as mandated in the implementation agreement.”*
2. The background of the petition is given below.

- (i) The petitioner M/s Ayyappa Hydro Power Ltd, own and operate the Karikkayam SHP with a total capacity of 15 MW. The petitioner on 14.07.2014, entered into a PPA with KSEB Ltd for supplying power from the project for the entire BOOT period of 30 years under the implementation agreement at the tariff determined by the Commission. The part capacity of the plant, 10.5 MW out of 15MW was commissioned In July 2014 and full capacity 15 MW commissioned in May 2017.
- (ii) The Commission vide order dated 1.11.2014 in OP No. 27/2013 and OP No. 24/2012, approved the tariff of the project as extracted below:
- (1) *KSEB Ltd shall enter into PPA for a period of four years with M/s. Ayyappa Hydro Power Ltd for purchase of power at the provisional rate of Rs 4.16/unit.*
  - (2) *If after completion of four years, KSEB Ltd or M/s. Ayyappa Hydro Power Ltd applies for a project specific tariff to be determined, such tariff shall be determined by the Commission based on the average CUF for the period of four years of actual operation of the project and the actual project cost as approved by the Commission.*
  - (3) *If project specific tariff is determined after a period of four years from the date of CoD on petition from KSEB Ltd or M/s. Ayyappa Hydro Power Ltd, the same shall be made applicable with retrospective effect from the date of CoD and adjustment of any excess / deficit payments shall be allowed in the subsequent bills of M/s. Ayyappa Hydro Power Ltd.*
  - (4) *For the remaining nine years, the tariff applicable shall be the generic tariff of Rs.4.16/unit or the project specific tariff as decided by the commission and PPA shall be executed accordingly.*
- (iii) The Commission vide the notification, KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulation, 2013 dated 01.01.2013, has determined the generic tariff for Small Hydro Projects having installed capacities between 5 MW to 25MW @ Rs 4.16/unit. Along with other technical parameters and financial norms, the Commission determined the generic tariff with the normative Capacity Utilization Factor of 30%. The generic tariff so determined is applicable to all SHPs, having capacity between 5MW to 25MW, declared CoD on or after 01.01.2013.

- (iv) During the process of the approval of the power purchase agreement for the sale of power from the Karikkayam Small Hydro project vide the Petition No. OP 24/2012, the respondent KSEB Ltd filed a petition OP No. 27/2013, to determine the project specific tariff for the sale of energy generated from the project. The prayers of the KSEB in the petition OP No. 27/2013 are,
- (1) *The tariff of Karikkayam Small Hydro Electric Project may be determined by adopting the capacity utilization factor as 50.6% considering the controlled release benefit of Sabarigiri Project. The other financial parameters of the project may be adopted as per KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013.*
  - (2) *The developer may be directed to enter into PPA with KSEB Ltd for supplying the power at the tariff determined by the Commission for the entire "BOOT PERIOD" of 30 years instead of "tariff period of 13 years" prescribed in KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013.*
- (v) However, the Commission vide the order dated 01.11.2014 had taken the considered decision that, the actual CUF of a Small Hydro Project can be ascertained only after appraising the actual generation from the SHP for a period of 3 to 4 years from the date of COD. Accordingly, the Commission vide the order dated 01.01.2014 ordered as extracted under paragraph 2(ii) above.
- (vi) The petitioner in this petition submitted that the actual CUF is not substantially higher than normative CUF of 30% considered by the Commission for approving Generic Tariff of Rs. 4.16/unit. The actual CUF as computed by the petitioner is given in Table below:

Year	Plant Capacity (MW)	No of Hours	Generation (kWh)	CUF	Remarks
2013-14	10.5 (= 3 x 3.5)	5832	17188300	28.07%	From 28.08.2013
2014-15	10.5 (= 3 x 3.5)	8760	28132670	30.59%	
2015-16	10.5 (= 3 x 3.5)	8760	27302610	29.68%	
2016-17	10.5 (= 3 x 3.5)	8760	21924500	23.84%	
2017-18	15.0 (= 3 x 5)	8760	37588550	28.61%	
2018-19	15.0 (= 3 x 5)	8760	47104970	35.85%	Floods in Kerala
2019-20	15.0 (= 3 x 5)	8760	21013220	31.90%	Till 30.09.2019

Hence the petitioner submitted that, there will be no loss or additional gain to either party by continuing the generic tariff of Rs. 4.16/unit for the balance years of the user life of project. Petitioner further submitted

that KSEB Ltd vide letter dated 17.10.2019 agreed to continue the PPA for remaining years at generic tariff of Rs. 4.16/unit fixed by KSERC with the approval of the Commission. Accordingly, the Petitioner has filed this present petition.

3. The Commission admitted the petition as OP No. 07/2020. The hearing on the petition conducted on 04.03.2020. During the hearing Sri. Toby Antony, presented the petition on behalf of the petitioner and Sri. G. Manoi, AEE, presented the comments of KSEB Ltd. The summary of the deliberations during the hearing are given below.
  - (1) The petitioner submitted that, the actual CUF of the Karikkayam SHP based on the actual generation is only in the range of 30%. Hence there will be no gain or loss in continuing the generic tariff of Rs 4.16/unit, which was determined with the normative CUF of 30%.
  - (2) The representative of the KSEB Ltd submitted that, it had communicated its willingness to continue the PPA for the remaining years at the generic tariff of Rs 4.16/unit fixed by KSERC.

#### **Analysis and Decision**

4. The Commission, examined the petition filed by M/s Ayyappa Hydro Power Ltd as per the provisions of the Electricity Act, 2003, KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013, and other rules and Regulations in force.
5. The petitioner M/s Ayyappa Hydro Power Ltd, filed the instant petition with the following prayers.
  - “(1) The Tariff determined by Hon Commission by the order dated 01.11.2014 for the Karikkayam power plant owned by the petitioner at the Generic Tariff of Rs. 4.16 per unit be allowed to be realized for entire period of 30 years from the date of commercial operation of the project (May 2017).*
  - “(2) The power purchase agreement entered into between the Petitioner and the respondent utility be amended and extended for the complete period of supply of thirty years from the date of COD (May 2017) as mandated in the implementation agreement.”*
6. The Commission examined the prayers of the petitioner with reference to the following.
  - (i) KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013.

- (ii) Common Order of the Commission dated 01.11.2014 in OP No. 24/2012 and OP No. 27/2013.
  - (iii) The petition filed by the petitioner M/s Ayyappa Hydro Power Ltd dated 12.12.2019 and comments of KSEB Ltd on the subject petition.
7. The Commission vide the notification No. 442/CT/2012/KSERC dated 01.01.2013, notified the KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013. As per the Regulation 6(2) of the said Regulations, the generic tariff approved for Small Hydel Projects having installed capacity between 5 MW to 25 MW @Rs 4.16/unit, for the projects commissioned / synchronized on or after 01.01.2013. The said Regulation also specify that the SHPs having installed capacity between 5 MW to 25 MW shall enter into PPA with the distribution licensee for a period of 13 years. It is also specified therein that, 'the generic tariff shall be applicable for all the projects developed during the Control Period and the Developers need not obtain approval from the Commission for the tariff applicable for their individual projects'. The Commission determined the generic tariff of the project at the normative CUF of 30%, capital cost of Rs 5.5 Crore/MW, debt : equity ratio of 70:30, weighted average RoE @22.86%, interest rate 12.30% etc.

As per the details submitted before the Commission, the first two units (3.5 MW each) commissioned on 29.08.2013 and the 3<sup>rd</sup> unit (3.5MW) on 02.09.2013. Hence the year of the Commissioning of the project is in the financial year 2013-14. As per the KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013, the generic tariff applicable for the electricity generated from the project to supply to KSEB Ltd is @ Rs 4.16/unit.

8. M/s Ayyappa Hydro Power Ltd, vide the petition OP No.24/2012 prayed before the Commission to direct the respondent KSEB Ltd to enter into PPA at the generic tariff of Rs 4.16/unit. In the mean time respondent KSEB Ltd filed another petition, OP No. 27/2013 with the prayer to determine the project specific tariff of Karikkayam SHP by adopting the CUF of 50.6% considering the controlled release benefit of its Sabarigiri Project. KSEB further requested that, while determining the project specific tariff, other financial parameters as per KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013 may be adopted. In this matter, the Commission vide the common order dated 01.11.2014 in OP No. 24/2012 and OP No. 27/2013 decided as follows.

*"29. Since the actual CUF of SHP can be realistically ascertained only after appraising the actual generation from the SHP for a period of 3 to 4 years from date of CoD Commission decides that the generic tariff of Rs 4.16*

*/Unit may be adopted provisionally for a period of four years from the date of CoD and PPA may be executed for a period of four years on condition that project specific tariff shall be determined after the period of four years if either KSEB Ltd or M/s Ayyappa Hydro Power Ltd applies for such a tariff after ascertaining the CUF based on the actual data for four years from the date of CoD and actual project cost. If project specific tariff is determined after a period of four years from the date of CoD on a petition from either KSEB Ltd or M/s Ayyappa Hydro Power Ltd the same may be made applicable with retrospective effect from the date of CoD and adjustment of any excess /deficit payments shall be allowed in the subsequent bills of M/s Ayyappa Hydro Power Ltd. For the remaining nine years the tariff applicable shall be the generic tariff of Rs 4.16/Unit or the project specific tariff as decided by the commission as the case may be.*

### **Orders of the Commission**

*30. After analyzing the arguments and averments made by KSEB Ltd and M/s Ayyappa Hydro Power Ltd in petitions (1) OP No 24/2012, (2) OP No. 27/2013 (3) Petition dated 14 -05-2014 of M/s Ayyappa Hydro Power Ltd and (4) Letter of KSEB Ltd No KSEB/TRAC/Karikkayam/2014-15/1313 dated 19-05-2014 Commission issues the following orders, disposing of these petitions and requests.*

- (i) KSEB Ltd shall enter into PPA for a period of four years with M/s Ayyappa Hydro Power Ltd for purchase of power at the provisional rate of Rs 4.16/Unit.*
- (ii) If after completion of four years, if KSEB Ltd or M/s Ayyappa Hydro Power Ltd applies for a project specific tariff to be determined, such tariff shall be determined by the Commission based on the average CUF for the period of four years of actual operation of the project and the actual project cost as approved by the Commission.*
- (iii) If project specific tariff is determined after a period of four years from the date of CoD on petition from KSEB Ltd or M/s Ayyappa Hydro Power Ltd, the same shall be made applicable with retrospective effect from the date of CoD and adjustment of any excess/deficit payments shall be allowed in the subsequent bills of M/s Ayyappa Hydro Power Ltd.*
- (iv) For the remaining nine years, the tariff applicable shall be the generic tariff of Rs 4.16/Unit or the project specific tariff as decided by the commission and PPA shall be executed accordingly."*

As extracted above, as per the order of the Commission dated 01.11.2014, the Commission had approved the generic tariff of Rs 4.16/unit, provisionally for a period of 4 years from CoD. After the completion of four years of operation of the project from the CoD, there is an option for the parties to the PPA, i.e., KSEB Ltd or M/s Ayyappa Hydro Power Ltd, if they desires so, to

apply for determining project specific tariff, in such case the Commission shall determine the project specific tariff based on the following.

- (a) Average CUF for the period of four years of actual operation of the project from the CoD, and,
- (b) Actual project cost as approved by the Commission.

9. The petitioner, M/s Ayyappa Hydro Power Ltd, vide the petition dated 18.12.2019, submitted that, the actual CUF during the last four years of operation from the CoD is about 30%, as detailed below.

Year	Plant Capacity (MW)	No of Hours	Generation (kWh)	CUF	Remarks
2013-14	10.5 (= 3 x 3.5)	5832	17188300	28.07%	From 28.08.2013
2014-15	10.5 (= 3 x 3.5)	8760	28132670	30.59%	
2015-16	10.5 (= 3 x 3.5)	8760	27302610	29.68%	
2016-17	10.5 (= 3 x 3.5)	8760	21924500	23.84%	
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2019-20	15.0 (= 3 x 5)	8760	21013220	31.90%	Till 30.09.2019

The petitioner further submitted that, there will be no loss or additional gain to either party by continuing the generic tariff of Rs. 4.16/unit for the balance years of the user life of project.

The respondent KSEB Ltd, has not disputed the actual details of generation and CUF of the project claimed by the petitioner since the year 2013-14. The Commission has also noted that, KSEB Ltd vide the letter No. KSEB/TRAC/KSERC/ Karikkayam/ 2019-20 dated 17.10.2019, had communicated its willingness to continue the PPA for the remaining years of the BOOT period at the generic tariff of Rs 4.16/unit fixed by KSERC. KSEB Ltd further requested the generator M/s Ayyappa Hydro Power Ltd to file a petition before the Commission to issue appropriate orders on continuing with the generic tariff of Rs 4.16/unit for the remaining years of the project.

10. The Commission noted that, as per the details submitted before the Commission, the actual CUF of the Karikkayam Small Hydro Project since the commissioning of the project in the year 2013-14 is about 30% only. The Commission, vide the KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013, had determined the generic levelized tariff for the Small Hydro Projects having installed capacity between 5 MW to 25 MW, commissioned/ synchronised on after 01.01.2013 @Rs 4.16/unit.

11. Both the petitioner M/s Ayyappa Hydro Power Ltd and the respondent KSEBL, during the deliberations of this petition dated 18.12.2019, communicated their willingness to continue with the generic tariff of Rs 4.16/unit w.e.f 14.07.2014 for the entire period of 30 years from CoD. Considering these facts, the Commission has decided to approve the levelized tariff @Rs 4.16/unit for the electricity generated and supplied from the Karikkayam Small Hydro Project of the petitioner to KSEB Ltd, from the CoD for the entire term of the PPA. Both the petitioner and respondent shall modify the Power Purchase Agreement accordingly.

### **Orders of the Commission**

12. The Commission, after examining the petition filed by M/s Ayyappa Hydro Power Ltd, and the arguments of KSEB Ltd as per the provisions of the Electricity Act, 2003 and also as per the provisions of the KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013, and other rules and Regulations in force, hereby orders the following.

- (1) The levelized tariff for the electricity generated from the Karikkayam Small Hydro Project of the petitioner M/s Ayyappa Hydro Power Ltd shall be at Rs 4.16/unit, the levelized generic tariff as per the KSERC (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013.
- (2) In partial modification to the Commission's order dated 01.11.2014 in OP No. 27/2013 and OP No. 24/2012 and the PPA executed into between the petitioner and KSEB Ltd, the validity of the PPA is extended for the complete period of supply of supply of 30 years w.e.f 14.07.2014.
- (3) The petitioner M/s Ayyappa Hydro Power Ltd and the respondent KSEB Ltd shall modify the existing Power Purchase Agreement as above and the petitioner shall submit a copy of the modified PPA to the Commission for information and record.

Petition disposed as above.

Sd/-  
**S.Venugopal**  
Member

Sd/-  
**Preman Dinaraj**  
Chairman

Approved for issue

C.R Satheesh Chandran  
Administrative Officer  
(In Charge of Secretary)