

BEFORE THE KARNATAKA ELECTRICITY REGULATORY COMMISSION
No.16 C-1, Miller Tank Bed Area, Vasanthanagar, Bengaluru-560052

Dated 27th March, 2023

Present:

Sri. P. Ravi Kumar	- Chairman
Sri. H.M. Manjunatha	- Member (Legal)
Sri. M.D. Ravi	- Member

In the Matter of Determination of Generic Tariff for Wind Power Projects for the period
FY2023-24 to FY2025-26.

Preamble:

1. The Commission vide its Order dated 05.06.2018, mandated procurement of wind power by DISCOMs only through competitive e-reverse bidding, with the Generic Tariff determined by the Commission from time to time, as the ceiling price. As such the tariff of Rs.3.26 determined vide Order dated 27.02.2019 was prescribed as the ceiling tariff for the purpose of tariff based reverse bidding for wind power projects for FY20. The above tariff was also made applicable for payment towards any banked energy purchased by the Distribution Licensees and in such other cases, as specified in the relevant orders of the Commission.
2. The tariff determined in the Order dated 27.02.2019, was in force with effect from 1st April, 2019 to 31st March, 2020. Subsequently, vide various Orders, the Commission continued the above ceiling tariff for bidding purpose and as per the latest order dated 10.02.2022 the above ceiling Tariff is continued till 31.03.2023.
3. Thus, the validity of the above ceiling tariff is upto 31.03.2023 and therefore, there is need for determining the ceiling tariff for further period. Hence, the Commission issued a discussion paper on 'Determination of Generic Tariff for Wind Power Projects for the period FY2023-24 to FY2025-26' and invited comments/ views/suggestions from interested persons. The Commission had proposed a ceiling tariff of Rs.3.19/unit. A notification



Wind Tariff Order-2023

inviting comment/views/suggestions was published in Deccan Herald, Times of India, Prajavani and Vijayavani Newspapers on 18.01.2023 and was also hosted on the Commission's website. In response to the above, several stakeholders furnished their written submissions, the list of which is enclosed as Annexure-1. Subsequently, the Commission held a public hearing in the matter on 10.03.2023, duly publishing the hearing notice in Deccan Herald, Times of India, Udaya Vani and Vijaya Vani Newspapers on 01.03.2023 and was also hosted on the Commission's website. Only BESCOM made submissions before the Commission during the Public hearing.

4. The gist of Comments/views/suggestions received and the Commission's views thereon is discussed below:

1) Capital Cost:

BESCOM:

Keeping in view the capital cost of Rs.5.25 Crores / MW considered by TNERC in its recent orders and KREDL data which varies from Rs.5.00 Crores to 6.95 Crores, BESCOM has proposed Capital cost of Rs.6.00 Crores / MW.

O2 Power/IWTMA:

The capital cost would be impacted by the following:

- i) Land acquisition: In procurement of land, developer has to register footprints of WTG well in advance with the State Nodal Agency. Wind projects have limitation related to specific wind resources assessments, which impact the costs, leading to higher cost.
- ii) Transportation Cost: Since, developers are installing higher size wind turbines with longer blades and more weight, the cost of transportation has increased substantially.
- iii) Evacuation Infrastructure: The new wind projects are in remote locations and dedicated transmission system as to be constructed by developer, which requires huge investments.



- iv) The CERC as per its Regulations, 2012 has proposed the capital cost based on indexation. That the WPI data has increased from 99.40 in FY18 to 127.10 in FY22, indicating that the Steel cost is increasing continuously.
- v) Higher CUF requires high rating turbines, which are costlier (comment by IWTMA only)

In view of the above the O2 has proposed the capital cost of Rs.9.00 Crores / MW and IWTMA at Rs.8.50/MW.

Commission's Decision:

The Commission in the discussion paper had proposed Rs.6.35 Crores / MW based on the median value of the data furnished by KREDL. The BESCOM's proposal of Rs.6.00 Crores is same as the modal value of the data. Developers have sought Rs.8.50 to 9.00 Crores/MW.

The submissions made by O2 Power at Sub-paras i) to iii) of 4(1) is not supported by data to justify the same. Further, it is noted that CERC is not determining tariff for wind projects in the recent past and therefore, the reference made to 2012, Regulations is not relevant.

The Commission notes that including the two projects which had capital cost of Rs.8.42/MW, the weighted average cost works out to Rs.6.61 Crores/MW.

Keeping in view the above and the submissions made by stakeholders, the Commission decides to adopt a capital cost of Rs.6.50 Crores/MW.

2) CUF:

PCKL

Some of the wind generators have proposed 40.78% CUF for green ammonia and green hydrogen projects in the Karnataka State. In this regard, a statement is enclosed by PCKL.

BESCOM:

BESCOM has submitted that the CUF of wind mills assigned to BESCOM varies from 16% to 28%, except in case of two-projects having CUF of 34% and 35%.



The maximum CUF in Gujarat is 26.27% and in Tamil Nadu, it varies from 18% to 30%. Hence, the proposed CUF of 33% may be reviewed.

Commission's Decision:

The Commission had proposed a CUF of 33% based on the average of data furnished by KREDL.

Regarding PCKL's suggestions, the Commission notes that the statement furnished by PCKL indicates CUF of 40.78% for wind generator for a single project which cannot be adopted while determining the generic tariff.

The CUF data submitted by BESCOM, includes old projects which had lower hub-heights. The new plants coming up have hub-heights in the range of 90 to 120 meters. As a results the CUF would be higher for new plants.

The Commission is of the view that the average CUF of 33% considering the data of 33 projects furnished by KREDL, is reasonable and decides to adopt the same.

3) O & M expenses:

PCKL has submitted that, wind projects do not require much O&M expenses, except for maintenance and salaries. Hence, Commission may consider Rs.9.6 Lakhs / MW for the base year, instead of Rs.10 Lakh / MW proposed.

BESCOM has submitted that, the O&M expenses is arrived at considering FY20 base year data of Rs.8 Lakhs / MW and escalated by 5% / annum. During FY20, FY21 & FY22, there was no inflation due to Covid-19. Excluding these years, considering inflation for FY23 at 5%, the O&M expenses would be Rs.8.80 Lakhs / MW. BESCOM has proposed O&M expenses of Rs.9 Lakhs / MW.

Commission's Decision:

The Commission notes that the statement of BESCOM that there was no inflation is not supported by any data.



The Commission while determining the generic tariff in the year-2019, had considered Rs.8.00 Lakhs / MW in the base year FY20 as the O&M expenses and had provided an escalation at 5% /annum. Considering the above inflation rate of 5%, the O & M expenses in FY24 works out to Rs.9.6 Lakhs / MW.

Hence, the Commission decides to adopt O & M expenses of Rs. 10 Lakhs/MW in FY24, with an annual escalation of 5 % Per annum.

4) Depreciation:

PCKL:

The Commission has proposed 6.50% of depreciation for balance period of ten-years. However, it works out to 2.22% for the balance period.

Commission's Decision:

Regarding PCKL's submission, the Commission notes that, 90% of the depreciable assets works out to 76.50% of the capital cost. Thus the depreciable amounts remaining at the end of 15-years would be 6.50% of the capital cost which needs to be recovered over a period of ten-years, which means 0.65% of the capital cost would be recovered each year of the balance period. Hence, PCKL contention is not correct.

The Commission decides to provide 4.67% of the capital cost as the depreciation per annum on straight-line method for the first fifteen years, to ensure debt servicing.

For the purpose of depreciation, excluding land cost, the value of depreciable assets is considered as 85% of the Capital Cost (CC). Thus, 90% of depreciable assets after considering 10% salvage value works out to 76.50% of Capital cost (0.90x.85 of CC). Since 70% of Capital cost is recovered in the first 15-years, the remaining 6.50% of depreciation is proposed to be recovered during the remaining period of the power plant life.



5) Debt tenure and Interest rate:

BESCOM has submitted that the average IREDA rate is 8.95%, PFC rate is 8.75% and SBI MCLR is 7.85%. Therefore, BESCOM has proposed 9% as the interest rate.

Commission's decision:

The Commission in the discussion paper had proposed interest rates of 9.50%, considering the rates prevailing then.

The Commission notes that, with effect from 17.06.2022, Indian Renewable Energy Development Agency (IREDA) has revised the interest rates, which varies from 8.45% to 9.45% for Wind projects based on grades, for private sector borrowers. For PSUs it varies from 8.20% to 8.95%.

Similarly, PFC has revised the monthly rate of interest from 01.03.2023, which varies from 8.70% to 9.20% for RE projects based on grades, for private sector borrowers. For PSUs it varies from 8.45% to 9.20%.

As per the latest data available for March, 2023, the MCLR of SBI is ranging between 8.50% to 8.70% for loan tenure varying from one year to three years. Considering 200 bps above MCLR, the maximum interest rate would be 10.70%.

Thus the interest rate varies from 8.45% to 10.70%, depending upon the lending agency.

In view of the increase in lending rates, the Commission for the purpose of determining the tariff considers 10.50% as the reasonable interest rate.

Hence, the Commission decides to adopt 10.50% as the interest rate for debt and debt tenure of 15 years.

6) Interest on working capital:

The BESCOM has proposed 10% as IWC, keeping in view SBI MCLR of 7.70% to 8.00% and considering additional 200 basis points.



Commission's views:

The Commission had proposed IWC as 11% considering 150 basis points above the term loan interest rate.

Hence, based on the interest rate on term loan of 10.50%, the Commission decides to adopt IWC of 12.00%.

7) Income Tax:

BESCOM has proposed that the payment of Income tax including surcharge and cess shall be lower of actual tax remitted or the tax computed on RoE. Also, any refunds or credits after assessments orders shall be reimbursed to ESCOMs.

Commission decision:

The Commission decides to allow Income Tax, surcharge & cess as a pass-through without factoring the same in the tariff computations. The amount of Income Tax, surcharge & cess shall be worked out on the amount of RoE approved by the Commission. The payment of Income tax including surcharge and cess shall be lower of actual tax remitted or the tax computed on RoE. The Income Tax at the rates [including surcharge & cess] prevailing in the relevant years shall be claimed separately from the ESCOMs, duly furnishing the necessary proof of tax payment.

8) Other Parameters:

The Commission has not received any comments on other parameters namely Debt: Equity Ratio, Debt tenure, Auxiliary consumption and RoE.

Therefore, the Commission decides to adopt the above parameters as proposed in the discussion paper.

9) Tariff:

PCKL has submitted that in the recent SECI bids, the tariff determined for wind projects is in the range of Rs.2.90 to Rs.2.95 per Unit.



BESCOM has submitted that, GVVNL has discovered lowest wind tariff of Rs.2.84 / Unit, 2.89 / Unit and 2.90 / Unit quoted by Gujarat SEC, NTPC renewable and SJVN respectively. Further, the price discovered in the latest SECI bid is 2.69 / Unit. TNERC has determined a tariff of Rs.2.86 / Unit, MERC has approved Rs.2.65 / Unit discovered through competitive bidding and RERC has allowed Rs.2.44 / Unit for extension of PPA after the expiry of PPA term. Hence, BESCOM has proposed the tariff of Rs.3.00 / Unit.

Commission's decision:

PCKL & BESCOM have not furnished any details regarding the concession provided by SECI and other States while calling the bids, to justify the same.

The gist of the parameters considered by the Commission for tariff determination is indicated below:

Parameter	Existing as per 27.02.2019 order	Approved
Debt: Equity	70:30	70:30
RoE	14%	14%
Income Tax	Pass through	Pass through
Interest on term loan	10.50%	10.50%
Depreciation	4.67% for the first 15-years, and the balance spread over the life of the project	4.67% for the first 15-years, and the balance spread over the remaining life period of the project
Interest on WC	11.50%	12.00%
Capital Cost [CC] - Rs Crs/MW	6.00	6.50
O & M as percentage of CC for base year	8 lakhs/MW in base year	10 lakhs/MW in base year
O & M annual escalation	5.00%	5.00%
PLF	31%	33%
Auxiliary	0.5%	0.5%

Considering the above parameters, the levelized tariff works out to Rs.3.34 per unit.

10) Hence, the following order. -

ORDER

- i) The Commission, hereby orders that the generic tariff for wind power projects shall be Rs.3.34 [Three Rupees and thirty-four paise only] per unit as determined in this order and shall be applicable for the period FY2023-24 to FY2025-26;
- ii) Rs.3.34/unit tariff determined in this order shall be the ceiling tariff for the purpose of calling tariff based reverse bidding for wind power projects during FY2023-24 to FY2025-26.
- iii) This Order shall be in force with effect from 1st April, 2023 to 31st March, 2026.

This Order is signed and issued by the Karnataka Electricity Regulatory Commission on this 27th day of March, 2023.


(P. Ravi Kumar)
Chairman


(H.M. MANJUNATHA)

Member (Legal)


(M.D. RAVI)

Member

Annexure-1

List of Persons who made written submissions

1. Karnataka Power Transmission Corporation Limited, Bengaluru
2. Power Company of Karnataka Ltd., Bengaluru
3. Bangalore Electricity Supply Company Ltd., Bengaluru.
4. O2 Power Pvt. Ltd., Gurugram.
5. Indian Wind Turbine Manufacturers Association, New Delhi.