



**ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION**  
**4<sup>th</sup> Floor, Singareni Bhavan, Red Hills, Hyderabad 500 004**

**FRIDAY, THE 7TH DAY OF JULY**  
**TWO THOUSAND TWENTY THREE**

**PRESENT**

**Justice C.V. Nagarjuna Reddy, Chairman**  
**Sri Thakur Rama Singh, Member**  
**Sri P.V.R.Reddy, Memeber**

**IN THE MATTER OF**

**Approval of Tariff for wind power plants of the Petitioner from 11th year to**  
**20th year from COD**

**Original Petition Nos. 7 and 8 of 2023**

**Between**

**New & Renewable Energy Development Corporation**  
**of Andhra Pradesh Limited (NREDCAP)**

**... Petitioner**

**And**

**Southern Power Distribution Company of AP Ltd. (APSPDCL)**

**... Respondent**

These two Original Petitions (O.Ps) have come up for final hearing on 28.06.2023 in the presence of Sri Deepak Chowdary, counsel representing Sri Challa Gunaranjan, learned counsel for the Petitioner; and Sri P. Shiva Rao, learned Standing Counsel for the Respondent; that upon carefully considering the material available on record and after hearing the arguments of both parties, the Commission passed the following:

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**COMMON ORDER**

1. Since the relief sought in both of these petitions is identical, they have been heard and disposed of together.
2. The case of the Petitioner, in brief, is as follows:
  - A. The Petitioner owns two wind power plants, one with a capacity of 5.95 MW located in Rekulakunta village of Anantapur district (O.P.No.7), and another with a capacity of 1.6 MW located in Thummalapenta village of Kurnool district (O.P.No.8). In the order dated 01.05.2009 in O.P. Nos. 6 and 7 of 2009, the Commission initially determined a levelized tariff of Rs. 3.43 per unit for a period of 20 years for wind power plants. However, recognizing the urgent need to harness the available potential, the Commission subsequently redetermined the tariff for the first 10 years at Rs. 3.50 per unit. The Commission also decided that the tariff for the 11th to the 20th year from the COD (Commercial Operation Date) would be revisited after the completion of the initial 10 years of operation.
  - B. Pursuant to the order dated 01.05.2009 by the Commission, the Petitioner entered into PPAs (Power Purchase Agreements) with the then Central Power Distribution Company of Andhra Pradesh Limited (now APSPDCL) to establish wind power plants in the districts of Anantapur and Kurnool, located in the state of Andhra Pradesh.
  - C. The Petitioner's wind power plants completed 10 years of operation on 27.03.2022 (5.95 MW) and 29.03.2022 (1.6 MW). However, due to the ongoing Covid-19 pandemic and internal approval processes, the Petitioner was unable to approach the Commission before the expiration of the 10-year period to seek an extension of the tariff. To address this, the Petitioner sent a letter dated 05.01.2023 to the Commission, requesting approval of the existing tariff of Rs. 3.50 per unit. In response,

the Commission issued a letter dated 23.01.2023, instructing the Petitioner to file petitions for the determination of the tariff from the 11th year onwards. Consequently, the Petitioner filed the present petitions seeking tariff determination.

- D. Public notices regarding these petitions were published by the Petitioner in one Telugu newspaper in Telugu and one English newspaper in English in the Andhra Pradesh editions on 19.04.2023. Despite the publication of these notices, no objections, suggestions, or comments have been received in response to the public notices.
3. The Petitioner sought approval of the levelized tariff at Rs.3.43 per unit or higher on the following grounds:
    - A. The Commission, taking into account various factors such as the prevailing wind regime in the region and the expected useful life cycle of the projects established between 2009 and 2014, has already determined a levelized tariff of Rs. 3.43 per unit. Subsequently, the wind generators, including the Petitioner, entered into PPAs with the DISCOMs based on this tariff determination.
    - B. As renewable energy offers inherent benefits to the public at large, its generation must be promoted and encouraged. Changing or reducing the levelized tariff of Rs. 3.43 per unit, which has already been determined and levelized for a 20-year period, would introduce uncertainty and discourage potential investors. Additionally, such a change would render the wind power plants financially unviable. Therefore, to maintain consistency and enable the Petitioner to continue power generation, service its debts, and earn a reasonable return on investment, the Commission may consider continuing the already approved levelized tariff of Rs. 3.43 per unit, as determined in the Order dated 01.05.2009, or even higher for the remaining 10-year period.

- C. In the order dated 06.09.2014 in O.P. Nos.14 to 18 of 2006, the Commission expressed its view that it would be unfavourable to review and implement a new methodology or approach for tariff determination midway, particularly after the completion of 10 years. Furthermore, the Commission stated in the aforementioned order that the tariff of Rs. 3.37/- per unit, which was initially applied to the wind power plants for the first 10-year period, would be continued until the PPAs expire.
- D. The provision for a 10-year validity of the tariff should be understood in the context that the tariff, once determined, was levelized for a period of 20 years by the Commission. The validity of the tariff for 10 years should not be interpreted as an indication of a tariff reduction after the 10-year period. On the contrary, it suggests either maintaining the same tariff for the next 10 years, considering its levelization for 20 years, or potentially increasing it further to incentivize renewable energy generation. The intention behind conducting a midway review is solely to promote electricity generation from renewable sources, in line with the mandate of the Act.
- E. Taking into account the aforementioned reasons and considering the statutory authority granted to the Commission under Section 86(l)(e) of the Act to promote and encourage the utilization of renewable energy, it is necessary to ensure fairness and balance the interests of all stakeholders, including consumers, procurers, and generators. Therefore, it is requested that the Commission approves a tariff of at least Rs. 3.43 per unit or higher for the sale of wind power by the Petitioner to the Respondent from the 11th year onwards. It is important to note that the Petitioner has already made substantial investments in the development of its wind power plants.

4. The Respondent submitted the following in its counter affidavits:
- A. Since the tariff was front-loaded, i.e., it was set higher during the first 10 years, it is necessary to reduce the tariff for the second 10 years.
  - B. During the determination of the levelized tariff at Rs. 3.50 per unit by the Commission in the order dated 01.05.2009, the useful life of the projects was considered as 20 years, allowing for the spreading of returns on the capital investment. However, based on past experience, it is evident that wind projects typically have a life span of 25 to 30 years, as seen in the cases of Weizmann Power Ltd. and Nile Company. The CERC(Central Electricity Regulatory Commission) has also stated in its existing regulations that the project cost for wind power projects should be considered for 25 years, aligning with the useful life of the project. Therefore, the Commission may consider the life of the wind projects as 30 years, taking into account the longer operational period. Furthermore, it is important to consider the fact that the Petitioner will retain land to the extent of 5 acres per MW even after the useful life of the projects, recognizing that land is a scarce commodity in India.
  - C. It is crucial to take into account the hidden cost liability on DISCOMs regarding the integration of VRE(Variable Renewable Energy). This liability encompasses three aspects: adequacy cost, balancing cost, and grid integration cost. The Central Electricity Authority has acknowledged this additional liability in their report dated 01.01.2018. According to the DISCOMs' study, this liability amounts to more than Rs. 2/- per unit.
  - D. In 2009, the tariff for wind power plants was determined by the Commission using a cost-plus approach, taking into account specific factors that were relevant at that time. However, this tariff cannot be directly applied now, as the Commission later adopted a different cost-plus indexation mechanism for tariff determination for wind power

plants, as per Regulation 1 of 2015.

- E. The DISCOMs are currently facing significant financial burdens due to the high cost of power procurement from wind and solar plants, which have a must-run status. As a result, the DISCOMs have incurred substantial financial losses, estimated at approximately Rs. 12,000 Crores. In an attempt to address this issue, the DISCOMs filed W.P. No. 17 of 2019 seeking a reduction in tariffs. However, the Hon'ble High Court quashed the petition through an order dated 15.03.2022. Subsequently, the DISCOMs filed SLPs (Special Leave Petition) before the Apex Court to challenge the aforementioned order. The Apex Court has directed the issuance of notices to the opposing parties, and the matter is tentatively scheduled for a hearing on 02.05.2023.
- F. Throughout the history of the Commission, starting from 1995 when the first wind power projects were established in the combined state of Andhra Pradesh, a consistent approach of determining a single-part tariff was adopted by the Commission without conducting a parametric analysis of the projects. This generalist stance was maintained in various tariff determinations. In the order dated 06.09.2014 in O.P.Nos. 14 to 18 of 2006, specifically regarding the petitions for tariff determination from the 11th year for five projects that achieved COD in 1995 and completed 10 years of operation by 2005, the Commission stated in paragraph 90 (i) and (ii) the following:

*"The commission has never undertaken a parametric-wise analysis of wind projects to determine tariffs. Starting from the original rate of Rs.2.25 per unit, with a 5% escalation, the Commission has continued its generalist stance for the determination of tariff for wind generators. As a part of this approach, these projects were awarded tariffs of Rs.3.37 per unit for two successive 5 year periods, i.e., from 01.04.2004 to 31.03.2009 and 01.04.2009 to 31.03.2014."*

G. The cost-plus approach was incorporated only in O.P.Nos.6 & 7 of 2009, wherein certain key elements that influence the tariff determination were considered for the first time, analysed therein considering the objection/suggestions of various stakeholders and the final conclusion was arrived at as follows:

*“The tariff stream with the above key element has been worked out by the commission, for arriving at levelised cost using the discount rate at a weighted average cost of capital i.e., 13.05% which works out to the fixed tariff for 20 years at Rs.3.43 per unit. However, in view of the urgent need to exploit the available potential of about 2100 MW, out of which only about 100MW has been harnessed as of date, the commission has decided to fix the single part tariff for the first 10 years at Rs.3.5 per unit and the tariff for the next 10 year period will be decided thereafter.”*

As per para 8(ii) of the order in O.P.Nos. 6 & 7 of 2009, *“the tariff for the first 10 years shall be firm at Rs.3.5 per unit from the COD and the tariff for the next 10 years will be determined thereafter.”*

H. The Petitioner's interpretation of the validity of the tariff for the first 10 years, suggesting either its maintenance or an increase for providing impetus to the generator, is based on a misconception. If that were the case, the Commission would not have allowed the review of the tariff after the initial 10-year period and would have instead applied the levelized tariff for a continuous 20-year duration.

I. The Respondent has put forth a proposed levelized tariff of Rs. 2.046 per unit for the period spanning the 11th to the 20th year of the PPAs.

#### **Commission's analysis and decision**

5. The Commission, in its order dated 06.02.2023 in O.P.Nos. 27 of 2021 and batch, thoroughly examined all the issues raised in the present O.P.s among others and determined a generic levelised tariff of Rs. 2.64 per unit for the 11th to 20th year of operation of wind power plants that are similarly placed to the plants covered in the present O.Ps. The learned Counsel for the Petitioner could not bring out any features in the present cases, which



distinguish the cases on hand with O.P.Nos. 27 of 2021 and batch. Therefore, the principles adopted and the levelised tariff of Rs. 2.64 per unit determined in O.P.Nos. 27 and batch squarely apply to the wind power plants covered in the present O.Ps. The detailed breakdown of the components comprising the levelised tariff of Rs. 2.64 per unit is indicated in the Annexure.

6. The levelized tariff determined above is subject to the following terms and conditions:

A) The levelised tariff of Rs. 2.64/-per unit determined in this order shall be applicable from the 11th year to the 20th year of the COD for the wind power plants covered in the present O.Ps.

B) The Respondent shall have the first right of refusal on Power Purchase if these wind power plants continue to operate beyond the 20th year of operation from the COD. The tariff for the period beyond the 20th year shall be as mutually agreed to by both parties and consented to by the Commission.

C) The Petitioner is entitled to dispatch 100% of the available capacity from the plants without reference to the Merit Order Dispatch subject, however, to any system constraints.

D) The Petitioner shall abide by the Orders, Rules, Regulations and Terms and Conditions as approved by the Commission from time to time.

E) The benefits of CDM (Clean Development Mechanism) shall be shared between the Petitioner and the Respondent in a ratio of 90:10.

F) Any energy injected from the Petitioner's plants that exceeds the Cumulative Utilization Factor (CUF) of 23.50% in a given financial year shall be considered inadvertent and shall not be eligible for payment.

**Sd/-**  
**P.V.R.Reddy**  
**Member**

**Sd/-**  
**Justice C.V. Nagarjuna Reddy**  
**Chairman**

**Sd/-**  
**Thakur Rama Singh**  
**Member**



**ANNEXURE****Tariff Calculation of Wind Power Plants from 11 th year to 20th year****Components considered for Tariff determination**

Description	Value	Units
Capacity	1	MW
Capital Cost	4.7	Rs.Crores
Debt( 70 %)	3.29	Rs.Crores
Equity( 30% )	1.41	Rs.Crores
CUF	23.5	%
O&M Cost Base (1.25% of Capital Cost)	0.059	Rs.Crores
O&M escalation per annum	3.84	%
O & M Cost for the 10th year	0.0911	Rs.Crores
ROE	15.5	%
Depreciation per annum	4.67	%
Depreciation for the first 10 yrs	2.115	Rs.Crores
Residual Value (10% of Cost)	0.47	Rs.Crores
Balance depreciable amount	2.115	Rs.Crores
Depreciation p.a for 11-15 yrs	0.235	in Rs Crs at 5%
Depreciation p.a for 16-25 yrs	0.094	in Rs Crs at 2%
Interest on Debt	9.23	%
Discount Rate	9.17	%

S.No	Components	Units	Year of Operation									
			11	12	13	14	15	16	17	18	19	20
1	Generation	MU	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06
	<b>Tariff Components</b>											
2	O&M	Rs.Crores	0.0946	0.0982	0.1020	0.1059	0.1100	0.1142	0.1186	0.1232	0.1279	0.1328
3	Depreciation	Rs.Crores	0.2350	0.2350	0.2350	0.2350	0.2350	0.0940	0.0940	0.0940	0.0940	0.0940
4	ROE	Rs.Crores	0.2186	0.2186	0.2186	0.2186	0.2186	0.2186	0.2186	0.2186	0.2186	0.2186
5	Outstanding Loan	Rs.Crores	1.1750	0.9400	0.7050	0.4700	0.2350	0.0000	0.0000	0.0000	0.0000	0.0000
6	Interest on Loan	Rs.Crores	0.0976	0.0759	0.0542	0.0325	0.0108	0.0000	0.0000	0.0000	0.0000	0.0000
7	<b>Total (2+3+4+6)</b>	Rs.Crores	<b>0.6458</b>	<b>0.6277</b>	<b>0.6098</b>	<b>0.5920</b>	<b>0.5744</b>	<b>0.4268</b>	<b>0.4311</b>	<b>0.4357</b>	<b>0.4404</b>	<b>0.4453</b>
8	Cost per kWh (7/1*10)	Rs.Crores	3.14	3.05	2.96	2.88	2.79	2.07	2.09	2.12	2.14	2.16
9	Year		1	2	3	4	5	6	7	8	9	10
10	Present Value Factor		1.00	0.92	0.84	0.77	0.70	0.64	0.59	0.54	0.50	0.45
11	Discounted Cost (8*10)	Rs/kWh	3.14	2.79	2.49	2.21	1.96	1.34	1.24	1.14	1.06	0.98
12	<b>Levelised Tariff for 11- 20 yrs (Rs/kWh)</b>		<b>2.64</b>									