



**TELANGANA STATE ELECTRICITY REGULATORY COMMISSION
HYDERABAD.**

5th Floor, Singareni Bhavan Lakdikapul Hyderabad 500004

O. P. No. 87 of 2015

&

I. A. No. 30 of 2015

Dated: 08.01.2019

Present

Sri. Ismail Ali Khan, Chairman

Between:

1. M/s. Wind Independent Power producers Association,
DLF Corporate Park, Tower 4A, 6th Floor, MG Road,
Gurgaon – 122 002 Petitioner.
2. M/s. Hero Wind Energy Private Limited,
Regd. Office at Unit No. 89 / 1101 A,
Hemkunt Chambers, Nehru Place,
New Delhi – 110 019. .. Proposed Petitioner.

AND

1. Southern Power Distribution Company of Telangana Ltd.,
6-1-50, Mint Compound, Hyderabad, Telangana – 500063
2. Northern Power Distribution Company of Telangana Ltd.,
H.No. 2-5-31/2, Corporate Office, Vidyut Bhavan,
Nakkalgutta, Warangal – 506001 Respondents.

This petition came up for hearing on 03.07.2015, 03.08.2015, 25.08.2015, 02.11.2015, 12.06.2017, 23.10.2017 and 04.08.2018. The appearance of the parties on each date is shown in the table below.

Date	Representation for the	Representation for the
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	petitioner	respondents
03.07.2015	Sri. Tushar Nagar, Advocate alongwith Sri Ankit Chhabra, Representative of the petitioner	Sri. J. Ashvini Kumar, Advocate representing Sri. Y. Rama Rao, Standing Counsel
03.08.2015	Sri. Tushar Nagar, Counsel for the petitioner and Sri. Ankit Chhabra, Representative of the petitioner	Sri. Y. Rama Rao, Standing Counsel
25.08.2015	Sri. Tushar Nagar, Counsel for the petitioner and Sri. Ankit Chhabra, Representative of the petitioner	Sri. Y. Rama Rao, Standing Counsel
02.11.2015	Sri. Tushar Nagar, Counsel and Sri. Ankit Chhabra, Representative for the petitioner	Sri. Y. Rama Rao, Standing Counsel along with Sri. J. Ashwini Kumar, Advocate
12.06.2017	Sri. P. Vikram, Advocate for the petitioners alongwith Sri. Kunal Kaistha, Chief Manager of the 2 nd petitioner's company	Sri. B. Vijaya Bhaskar, Advocate representing Sri. Y. Rama Rao, Standing Counsel
23.10.2017	Sri. M. Abhinay, Advocate representing Sri P. Vikram, Advocate	Sri. Y. Rama Rao, Standing Counsel along with Ms. M. Pravalika, Advocate
04.08.2018	Sri. P. Soma Sekhara Naidu, Advocate representing Sri. P. Vikram, Advocate	Sri. Y. Rama Rao, Standing Counsel along with Ms. M. Pravalika, Advocate.

This petition having stood over for consideration to this day, the Commission passed the following:

ORDER

M/s. Wind Independent Power Producers Association (petitioner) has filed a petition under sec 61 read with sec 86 (1) (e) of the Electricity Act, 2003 (Act, 2003 seeking determination of tariff for wind energy projects beyond 31.03.2015 for enabling the wind generators to enter into power purchase agreement (PPA) with the respective Distribution Licensee (DISCOM).

2. The petitioner stated that it is a national level registered body having association of more than 30 independent power producers that have significant investment on ground or in pipeline in wind energy sector across the country. The copy of Memorandum of Association of WIPPA is annexed to the petition and it is filing the petition on behalf of its members.

3. The petitioner stated that as per Sections 61(h) and 86(1) (e) of Act, 2003 the state electricity regulatory commissions (SERCs) are empowered to take necessary measures for promotion of renewable energy based generation in the state.

4. The petitioner stated that the undivided. Andhra Pradesh Electricity Regulatory Commission (APERC) had notified Regulation No. 3 of 2014 (Reorganisation) Regulation, 2014 on 26.05.2014, wherein clause 3 stipulates that, "All the notified regulations as well as their supplementary regulations / amendments, rules, orders, proceedings, guidelines, memos, notifications, other instruments issued immediately before 02.06.2014 by the APERC for conduct of business and other matters shall fully and completely apply to the whole of the states of Telangana and Andhra Pradesh and shall similarly apply in relation to all matters falling within the jurisdiction of the Commission until they are altered, repealed or amended by the respective SERC."

5. The petitioner stated that later on the Commission has notified its first Regulation No. 1 of 2014 on 10.12.2014 viz., Telangana State Electricity Regulatory Commission (Adoption of previously subsisting Regulations, Decisions, Directions or Orders, Licenses and Practice of Directions) Regulation of 2014, wherein clause 2 stipulates that "All regulations, decisions, directions or orders along with all the licences and practice direction issued by the erstwhile Andhra Pradesh Electricity Regulatory Commission (Regulatory Commission for state of Andhra Pradesh and Telangana) in existence as on the date of the constitution of the Telangana State Electricity Regulatory Commission and in force, shall mutatis – mutandis apply in relation to the stakeholders in electricity in the state of Telangana including the Commission and shall continue to have effect they are until duly altered, repealed or amended by any of the Regulation by the Commission with effect from the date of notification as per notification issued by the Government of Telangana in G. O. Ms. No. 3 Energy (Budget) Department, dated 26.07.2014 constituting the Commission." As such, all the regulations framed by erstwhile Commission will continue to apply for the state of Telangana.

6. The petitioner stated that as regards, the same the erstwhile APERC had determined wind power generation tariff in O. P. No. 13 of 2012, on 15.11.2012 in

exercise of the powers conferred under section 61 (h) read with section 86 (1) (e) of the Act, 2003 and in the matter of petition filed by Indian Wind Energy Association.

7. The petitioner stated that the then APERC in the said wind tariff order had computed a levelised tariff of Rs. 4.70 /KWH, applicable to all wind projects for which PPA is executed with DISCOM till 31.03.2015. The same tariff is currently being adopted by the Commission. With the control period of the aforesaid tariff order coming to an end, it is of urgent need to determine wind tariff applicable to wind projects which execute PPAs after 31.03.2015 in the state of Telangana. Any delay in announcing wind tariff will hamper investments planned for the upcoming wind season in the state.

8. The petitioner stated that in view of the changed market conditions, the existing parameters specified by the APERC in its order dated 15.11.2012, are no longer viable for new projects coming up in the state of Telangana due to considerable increase in project cost and difference in wind power density in Telangana and Andhra Pradesh. Increase in wind project cost during the last 3 – 4 years is mainly due to the substantial increase in raw material cost like cement, steel and copper cost which in turn has increased the equipment cost of wind energy generators has necessitated a positive intervention by the Commission and determine wind tariff for control period beyond FY 2015-16 based on norms as per CERC (Terms and Conditions for tariff determination from Renewable Energy Sources) Regulations, 2012 (CERC RE Tariff Regulation 2012).

9. The petitioner stated that it would like to submit that the assumptions considered for key parameters of tariff for wind projects viz. capital cost, financing cost etc. have changed significantly, subsequent to issuance of the said order in 2012, due to change in market conditions and therefore there is need to redetermine wind tariff based on existing market conditions.

10. The petitioner stated that Telangana is bestowed with good wind power potential to the tune of 2-3 GW out of total 14.5 GW wind potential estimated by CWET for the erstwhile Andhra Pradesh. However, despite such enormous potential, there are no wind projects installed in the state of Telangana. One of the key bottlenecks has remained in-adequate wind FIT and urgently calls for re-assessment

of FIT norms. The table shown in the petition highlights the lack of wind capacity addition in the erstwhile undivided Andhra Pradesh in spite fairly good wind potential, as compared to other states.

11. The petitioner stated that renewable energy in general and wind energy in particular is not only cheaper and faster to implement it also offer solutions to various social and economic difficulties facing Telangana, including energy access to remote areas, employment generation, promotion of domestic manufacturing etc. Hence, it is essential to ensure a conducive tariff regime exists in the state of Telangana, to ensure that wind capacity addition takes place and is not discouraged due to factors beyond the control of wind developers.

12. The petitioner stated that in order to attract wind sector investments in the state of Telangana, there is an urgent need to determine new wind generation tariff for future wind projects executing PPA beyond 31.03.2015, as envisaged under Sec 61(h) of the Act, 2003 and para 6.4 of the National Tariff Policy (NTP).

13. The petitioner has raised the following grounds in the petition.

14. The petitioner stated that Act, 2003 vide sections 61(h) and 86 (1) (e) of the Act, 2003 empower the SERCs to take necessary measures for promotion of renewable energy based generation in the state. National Electricity Policy (NEP) issued by Government of India (GoI) dated 12.02.2005 has been a guiding benchmark for various orders issued by the Commission for the promotion of renewable energy sources. NEP provides that the renewable energy potential should be exploited fully to create additional power capacity and private participation should be encouraged by providing necessary promotional measures. Further, the NTP notified by the central government in pursuance of the Sec 3 of the Act, 2003 has stipulated that appropriate Commission to determine preferential tariffs for procurement of power by DISCOMs from non-conventional energy sources. The relevant extract of clause 6.4 of the NTP is shown in the petition.

15. The petitioner stated that the Commission, in terms of Sec 61(a) of Act, 2003, shall be guided by existing CERC RE Tariff Regulations 2012 while determining tariff on cost-plus basis for wind projects. The Central Electricity Regulatory Commission (CERC) carried out a detailed and comprehensive exercise to examine and study

various parameters involved in renewable energy generation in order to evolve guiding principles for tariff determination from renewable energy source. These principles were result of an elaborate consultative process involving inputs from all the stakeholders at central and state level, which was notified as the CERC RE Tariff Regulations.

16. The petitioner stated that with the tariff to be determined for new control period beyond 31.03.2015, the underlying assumptions including capital cost, interest cost etc. should reflect costs prevalent beyond 31.03.2015. Hence they request the Commission to undertake determination of new wind tariff for next control period as per parameters considered by CERC in its RE Tariff Regulations 2012.

Principles for determination of Preferential Tariff on Cost-Plus basis:

17. The petitioner stated that it is evident from provisions of NTP that preferential tariff for renewable energy is to be determined by the Commission in accordance with Sect 61 of the Act, 2003. While determining tariff it is necessary to ascertain benchmark costs and underlying assumptions thereof. In this section, the petitioner has given its views on key assumptions that may be considered keeping in mind ground realities and need to encourage wind projects in the state. The suggestions are in line with existing CERC RE Tariff Regulations, 2012.

Capital Cost:

18. The petitioner stated that in its tariff order dated 15.11.2012, the then APERC had approved a capital cost of Rs. 575 lakh / MW. This cost was fixed in 2012 and has subsequently undergone substantial increase on account of rise in cost of raw material (steel) as well as electrical components. It is pertinent to point out here that the WPI of electrical machinery and steel has been increasing year on year basis. This data is critical as the same has been used by CERC in its indexation mechanism. This shows that the project cost associated with a wind power project has been increasing over the past few years.

19. The petitioner stated that the CERC in its generic tariff order for renewable energy dated 15.05.2014 has determined capital cost for wind projects as Rs. 604 lakhs / MW for FY 2014-15. CERC while specifying the capital cost for wind projects

has considered Index based approach considering WPI values for electrical machinery and steel for the respective year and thus provide a more genuine indication of capital cost for wind projects. In order to derive at capital cost for FY 2015-16 they have considered WPI values for the month of January 2014 to December 2014 for electrical machinery and steel and CERC indexation mechanism. Based on the same the capital cost for FY 2015-16 is estimated at 620 lakhs / MW for FY 2015-16.

20. The petitioner stated that it would like to refer to the case of Rajasthan and Maharashtra, where the said Commissions have specified the indexing mechanism for wind energy tariff. Indexing mechanism has been operationalized by linking the tariff for electricity with the base tariff rate and certain indices which reflect the need for variation in the tariff with respect to market conditions. For the purpose of indexing mechanism, wholesale price index for steel and electrical machinery has been considered, as the steel and electrical machinery cost comprise more than 70% of the total project cost for wind energy project.

21. The petitioner stated that in view of the above developments, it requests the Commission to adopt indexation mechanism and consider base assumption of Rs. 620 lakhs per MW for capital cost FY 2015-16 for wind projects (excluding transmission and evacuation costs) for the purpose of tariff determination. Alternatively, the control period for determination of tariff for wind energy may be considered as two / three years, in order to maintain capital cost norm to be a realistic estimate of ground reality. It is also stated that any expenditure incurred on account of ensuring compliance to any new regulations orders and notification etc. should be considered while determining the capital cost and associated O&M for that period. This would be of immense help to avoid any costing / legal issues between the investor and developer of the wind farms.

Capacity Utilization Factor (CUF):

22. The petitioner stated that CUF represents important parameter that influences the economics of a wind project at a particular wind site. CUF depends on prevailing wind power density at particular site. It is evident from C-WET (80 m) map that wind power density in the state of Telangana is below 200 Watts / sq.m with a few regions in the range between 201 and 250 Watt / sq.m. The wind profile in Telangana is

similar to wind profile in Rajasthan as also evident from the C-WET (80 m) map. The CUF norm considered by Rajasthan Commission is 21% for wind projects based in Jaisalmer, Jodhpur and Barmer and 20% for other districts.

23. The petitioner stated that while determining the existing applicable wind tariff. APERC had also acknowledged that only low wind sites are presently available in the state and hence higher hub-height machines have to be considered in the context of setting up of fresh capacity in the wind power sector and considered a CUF norm of 23% with average wind profile in Telangana being lower than that available in Andhra Pradesh region (due to its close proximity of coast), the lower CUF norm should be adopted. The petitioner stated that they have super-imposed C-WET 80 m map on the map of India to segregate wind potential regimes in Telangana and Andhra Pradesh. As observed from the map above, Telangana has WPD range of less than 200 W/m^2 as compared to Andhra Pradesh, wherein there are certain pockets with WPD of $200\text{-}250 \text{ W/m}^2$. Thus, CUF norm corresponding to wind power density available in the state of Telangana is in the range of 20 – 22%. In view of the above, the petitioner requests the Commission to adopt a normative CUF norm of 21% for determination of wind tariff in Telangana.

Depreciation:

24. The petitioner stated that the para 5.8.2 of the NEP provides that appropriate depreciation reserves should be created so as to fully meet the debt service obligations. Considering debt service obligation of 70% of the capital cost and repayment period of 12 years, the annual debt service obligation works out to 5.83%. The depreciation reserve of 4.5 as per the existing depreciation norm of the Commission, created falls short by 1.33% so as to fully meet the debt service obligation, as mandated under the NEP. This results in reducing the effective return on investment for the project developer.

25. The petitioner stated that based on the same principle, the CERC has allowed a depreciation rate of 5.83% for first 12 years and balance depreciation spread over useful life and thereby allowing wind project developer to recover debut amount. The relevant Regulation is extracted in the petition. In the light of above facts, it requests the Commission to consider the depreciation rate in line with CERC Regulation at

the rate 5.83% for first 12 year and the remaining depreciation amount should be spread over the remaining tenure of the useful life.

Operation & Maintenance Expense:

26. The petitioner stated that the O & M of wind power plants is being undertaken by the turbine manufacturers on Annual Maintenance Contract (AMC) basis. With concept of large size wind farms, where centralized monitoring, control and maintenance is undertaken for the large size wind farm, the operation and maintenance costs are likely to be increased. There is a constant development of the technology in the process of undertaken the O and M. With the technology of the wind turbines improving, the costs towards O & M are also increasing with the advancement of technology.

27. The petitioner stated that there are many expenses as land lease rents, taxes, electrical safety and testing charges and panchayat tax etc, which increase year on year basis. Also wind farms require central monitor stations (SCADA based CMS) to control wind turbines through fiber optic network and its maintenance is costly affair. Enforcement of scheduling and forecasting for wind energy will also increase O & M expenses in the near future. The CERC in its RE Tariff Order dated 15.05.2014 has approved a normative O & M cost of Rs. 10.05 lakh / MW for FY 2014-15 with 5.72% annual escalation. The same works out to Rs. 10.62 lakh / MW for FY 2015-16. Therefore, it urges the Commission to consider O & M charges of Rs. 10.62 lakh / MW for FY 2015-16 in line with CERC RE Tariff Regulations 2012 and an escalation factor of 5.72% per annum for the next control period.

Interest on Debt:

28. The petitioner stated that the CERC under its RE Tariff Regulations has specified norm for interest on debt as average SBI base rate for first six months of the previous year plus 300 basis points. Accordingly, the average SBI base rate prevalent first six months of the year FY 2014-15 has been considered for computation of applicable interest rate. The average SBI base rate of first six months of FY 2014-15 was 10%. Therefore, interest on debt for FY 2015-16 works out to 13% (that is 10%) plus 300 basis points. Thus, it requests the Commission to

consider the interest rate on loan as 13% and a loan tenure of 12 years in line CERC RE Tariff Regulations.

Interest on Working Capital:

29. The petitioner stated that the CERC under its RE Tariff Regulations has specified norm for interest on working capital. Considering the above regulation average SBI base rate of 10% for first six months of FY 2014-15, the interest on working capital for FY 2015-16 works out to 13.50% that is 10% plus 350 basis points. Thus, it requests the Commission to consider the interest rate on working capital as 13.50% in line with CERC Regulations. The components of working capital to include 1 month of O & M cost, 15% of O & M cost towards maintenance spares and 2 month of receivables for debtors.

Return on Equity:

30. The petitioner stated that CERC under its RE Tariff Regulations has specified norm for return of equity of 20% pre-tax for the first 10 years followed by 24% pre-tax for 11th year onwards. It request the Commission to consider ROE of 20% pre-tax for the first 10 years followed by 24% pre-tax for 11th year for the new control period beyond 31.03.2015 in line with CERC RE Tariff Regulation 2012. Based on the above assumptions the levellised tariff for wind project works out to Rs. 6.36 / KWH.

31. The petitioner has sought the following prayer in the petition.

- 1) "To kindly admit this petition and grant an opportunity in person before Hon'ble Commission during hearing on the above matter.
- 2) To determine wind generation tariff for future wind projects entering into PPA with ESCOMs after March 31, 2015 as per cost plus basis regime as outlined in this petition.
- 3) To condone any inadvertent omissions / errors / short comings and permit WIPPA to add / change / modify / alter this filing and make further submissions as may be required at a future date."

32. The petitioner stated that it has filed an interlocutory application and has sought to amend the petition and its memo of parties by way of inserting M/s. Hero Wind Energy Private Limited, being a generator / developer, as a co-petitioner in the captioned petition. M/s. Hero Wind Energy Private Limited has been allotted 100 MW

wind project in the state of Telangana. As of this day and date, M/s. Hero Wind Energy Private Limited does not have any installed capacity in the state of Telangana as the wind project of M/s Hero Wind Energy Private Limited, is yet to be commissioned. However, M/s. Hero Wind Energy Private Limited, is taking the appropriate measures so as to commission the project within the control period for which determination of wind generation tariff is being sought. As such, the said generator requires that a tariff is determined for the third control period. The same is necessary for recovery of generation cost of the said generator, as guaranteed under Sec 61 (d) of the Act, 2003.

33. The petitioner stated that it may be permitted to include the following cause title in place of the original cause title of the petition:

“Wind Independent Power Producers Association & Anr.	Versus PETITIONERS
Southern Power Distribution Company of Telangana Ltd. & Anr.	 RESPONDENTS”

The petitioner may be permitted to include the word ‘petitioners’ in place of the word ‘petitioner’ as and where it appears in the petition.

34. The petitioner stated that it may be permitted to include the phrase ‘WIPPA and the co-petitioner’ in place of the word ‘WIPPA’ as and where it appears in the petition. The petitioner may be permitted to remove the sentence ‘WIPPA is filing this petition on behalf of its members’ appearing in paragraph 3 of the petition. The petitioner may be permitted to include the following paragraph 3A after the original paragraph 3 in the petition which is shown in the petition. The present application is bonafide and made in the interest of justice.

35. The petitioner has sought the following prayer in the present petitioner.

“a) Allow the present application seeking amendment of the cause title, para’s 1, 3, 4, 12, 13, 23, 30, 38, 51, 54, 57 and the prayer clause in the captioned petition.

b) Take on record amended petition being annexure to this application.”

36. The Southern Power Distribution Company of Telangana Limited (TSSPDCL) being the 2nd respondent has filed a counter affidavit on behalf of the respondent Nos. 1 to 3 and stated as below.

Capital Cost

i. The Commission of united Andhra Pradesh (APERC) in its erstwhile order in O. P. No. 13 of 2012 dated on 15.11.2012 has determined the tariff for wind power projects commissioned before 31.03.2015 and has come up with the capital cost of INR 575 Lakhs duly considering the CERC Regulation 2012 date 06.02.2012, various other Commission orders and assessing the market conditions.

ii. The latest tariff order on wind released on 29.05.2015 by RERC considers the capital cost to be INR 579 Crores for projects commissioned in FY 2015-16. The base capital cost has been calculated in the FY 2014-15. The tariff order by KERC released in 2015 considers the capital cost as INR 576.8 Crores for the year FY 2015-16. KERC has further made the following observation on the declining wind turbine costs. The International Renewable Agency (IRENA) in its report on

“Renewable Power Generation Costs in 2014” issued in January, 2015 has observed that the global capital costs of wind power plants are on a declining trend. The report points out that with improved technology, higher hub heights and larger rotor diameter, higher energy output is evident. It is observed that the capital costs in India are fractionally higher in 2014 as compared to costs in 2010 and has broadly remained stable.”

iv. The petitioner has asked for capital cost as determined by CERC with annual escalations from 2012. The CERC regulations base capital cost has been assessed in 2012. It is felt that adopting the method of indexation on the basis of the prevailing rate of inflation may result in the capital cost getting unduly inflated. Also indexation mechanism does not account for the technological progress and the associated cost reduction and improvement in efficiencies it brings. It is seen that capital cost for same renewable energy technologies tend to decline over the years due to more efficient technologies becoming available. This phenomenon has been most marked in the case of solar energy where the capital cost per MW has declined from more than Rs.

16 Crores per MW in 2010 to about Rs. 7 Crores per MW at present that is in less than five years.

v. A more apt approach would be to consider the actual capital costs as assessed in the latest years by the various SERCs which would give a better picture of the prevailing market conditions. The capital cost is in the range of INR 579 Crores for the financial year as evident in the latest tariff orders passed by the various SERCs.

Sl. No.	Commission	Order	Date	Capital Cost / MW (in Lakhs)	Financial Year considered
1	RERC	Determination of generic tariff for sale of electricity from wind power plant	29.05.2015	579	(For FY 15-16)
2	KERC	Tariff for wind power plants FY 14-18	24.02.2015	576.8	(For FY 15-16)
3	MERC	Determination of generic tariff for renewable energy sources for FY 2014-15	07.07.2014	585	For FY 14-15
4	GERC	Determination of tariff for procurement of power by the distribution licensees and others from wind power projects and petition No. 1243 / 2012	08.08.2012 & 07.01.2014	568	For FY 15-16 (excluding transmission infrastructure cost)

vi. Therefore, the respondents pray that this Commission may consider the capital cost be fixed at INR 579 lakhs / MW towards capital cost component for FY 2015-16. The capital cost for subsequent year to be determined based on prevalent market conditions.

O & M Cost

vii. The Commission of united Andhra Pradesh (APERC) in its erstwhile order in O. P. No. 13 / 2012 dated on 15.11.2012 has felt appropriate to consider O & M cost at 1.25% of the capital cost, which works out to 7.20 lakhs / MW and has followed in its previous order dated 01.05.2009. However, keeping in view the possible increases in O & M over and long period and the

rates fixed by other SERCs, the then APERC has fixed the O & M cost at Rs. 7.40 lakhs / MW with an O & M escalation of 5% every year.

viii. The respondents stated that since O & M cost is dependent on capital cost, O & M cost be taken as 1.3% of the capital cost with an escalation of 5.72% every year which is slightly more than the erstwhile APERC tariff order. This is also in-line with the other SERCs such as Rajasthan, Tamil-Nadu. Further as stated by the petitioner, centralized monitoring and control measures are being implemented by many wind farm developer, the respondents are of the view that this will lead to a decrease in the employee and associated expenses.

ix. The respondents pray that this Commission may be pleased to consider the O & M cost at INR. 7.53 lakhs / MW (1.3% of the capital cost) with an annual escalation of 5.72%.

CUF

x. DISCOMs stated that the tabulation of wind potential regions in Telangana as put up the Indian Wind Power Association is based on the wind power density measured at the rate of 50 m. However, the CUF determination has to be at 80 m level as the new wind power projects are of the latest technology and would be implemented at 80 m level or higher level. Moreover, this is also being reflected in the CERC regulations.

xi. DISCOMs invite the kind attention of this Commission to the CUF determination followed by CERC Regulations 2012, which provides as under.

1. CUF norms for this control period shall be as follows:

Annual Mean Win Power Density (W/m^2)	CUF
Upto 200	20%
201-250	22%
251-300	25%
301-400	30%
>400	32%

2. (2) The CERC regulation the annual mean wind power density specified in sub-clause (1) shall be measured at 80 meter hub-height.

3. For the purpose of classification of wind energy project into particular wind zone class, as per MNRE guidelines for wind

measurement, wind mast either put up by C-WET or a private developer and validated by C-WET would be normally extended 10 KM from the mast-point to all directions for uniform terrain and limited to appropriate distant in complex terrain with regard to

4. Complexity of the site. Based on such validation by C-WET, state nodal agency should certify zoning of the proposed wind farm complex.

xi. As per National Institute of Wind Energy (NIWE) the WPD at 50 mts and 80 mts hub height are as per the table below.

Sl. No.	Mast Location of WPD measured	District	WPD measured / Extrapolated @ 50 m (W/m ³)	WPD measured / Extrapolated @ 80 m (W/m ³)
1	Nazeerabd	Rangareddy	232	311*
2	Kottur	Medak	187	250*
3	Kotrathanda	Mahboobnagar	180	241*
4	Mangithanda	Medak	169	231
5	Motlampalli	Mahboobnagar	164	220*
6	Sanghi Nagar	Rangareddy	154	206*
7	Chowdarapalli	Medak	154	206*
8	Tadwai	Nizamabad	138	185*
9	Ottuguntla	Mahboobnagar	131	170
10	Samudrathanda	Medak	129	173
11	Bandameedapalli	Rangareddy	117	175
12	Patha Ananthapur	Adilabad	109	130
13	Chinnapalasa	Adilabad	72	96*

Note:* The WPD measurement for 80 m has been extrapolated considering the ratio of Telangana specific sites ratio of WPD at the rate of 50 m and at the rate of 80 m at ratio of 1.34 as given by the unstarred sites. (For sites numbered 4, 9, 10, 11 and 12) the WPD has been measured at 80 mts. The average ratio of WPD at the rate of 80 mts / WPD at the rate of 50 mts comes to 1.34).

xii. As wind power generation is in the nascent stage in Telangana and areas with high potential are yet to be fully utilized. It is requested that the CUF is set corresponding to the 201-250 W / m² band.

xiii. As 7 sites out of the total of 13 sites in the above table are having a WPD greater than 200 w / sq. m, the high wind potential areas needs to be tapped effectively by the developers before looking at other areas in the state. Further, in order to encourage wind generation, any generation above 23%, the Commission may fix a nominal rate (Rs.0.50 / KWh) at which the licensee may buy power from wind power developers. This rate may act as an incentive only as the developer is recovering all costs and earns a return at 23% CUF.

xiv. The respondents pray that this Commission may consider a CUF of 23% between 22% and 25% corresponding to the two bands) be fixed to fully utilize arears with high potential.

Depreciation:

xv. Government of India vide its Notification No. 43 / 2014 / F. No. 152 /1 / 2013-TPL S. O. 239 (E) dated 16.09.2014 has reinstated the benefit of accelerated depreciation of 80% for wind power plants installed on or after 01.04.2014. Accordingly, the generic tariff may be worked out. In case accelerated depreciation is not availed by the developer, CERC mandated depreciation rates may be taken.

Return on Equity:

xvi. The then APERC in its order dated 01.08.2015 has considered a normative return on equity of 16% post tax with MAT / Income Tax as pass through. Before considering post tax RoE the following points need to be considered.

- a) Economic: The tax implication on project developer would vary substantially depending on factors like actual capital structure, CUF, O & M expenses etc. The tax pay out of project developer would increase if actual equity is more than the normative equity which would have a financial impact on distribution licensees.
- b) Administrative: Distribution licensees would face challenges in implementation of the same as the same as the actual tax receipts submitted by the project developer would have to verified by

distribution licensees to ensure tax paid by the project developer is specific to that particular project for which tariff payment has been done and not for other projects which the project developer might operate.

xvii. Given the tax incentives being extended to industries in the state of Telangana and challenges expressed above, the respondents pray that the Commission may consider a normative return on equity of 16% (pre-tax) for tariff determination.

Proposed tariff:

xviii. Considering the above facts the respondents pray that this Commission may determine the tariff for future wind power projects to be commissioned in Telangana at Rs. 4.64 / kWh in line with the following assumptions.

Parameters	Proposed value / assumptions	Remarks
Capital cost	579 lakhs / MW	As per the norms followed by other SERC's in their latest tariff orders
CUF	23%	Considering potential at 80 mt. hub height and availability of regions with adequate capacity in wind zone – 2 & wind zone – 3.
Debt – equity	70:30	As per CERC guidelines
Interest on loan	13%	As per CERC guidelines (SBI base rate for FY 2014 – 15 + 300 basis points)
Interest on working capital	13.5%	As per CERC guidelines (SBI base rate for FY 2014 – 15 + 350 basis points)
Term of loan	12 years	As per CERC guidelines
Return on equity	16% (pre – tax)	In view of tax incentives for Telangana and challenges expressed in the clause 5.1 above.
O & M expenses per annum	1.3% of capital cost with an escalation of 5.72%	As per erstwhile APERC guidelines.
Depreciation	5.83% for the first 12 years 1.54% for the remaining 13 years	As per CERC guidelines

Discount rate	First 10 years – 9.85% 11 – 25 years – 9.18%	As per CERC methodology
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The sharing of CDM benefits may please be considered as per CERC Regulations.

xix. As all reasonable costs and returns are being allowed to be recovered through this proposed tariff, any policy support by way of capital subsidy / capital finance assistance (CFA), higher depreciation benefit or generation based incentives (GBI) by the GoI / GoAP, which becomes available to the developer / generator, may be passed on to the DISCOMs.

37. The matter was listed for hearing on the above said dates and arguments were advanced in the matter. Later the arguments were concluded and I have perused the record and the material available therefor.

38. While the matter stood thus for consideration and passage of orders, this Commission noticing that there is a need for determining the generic tariff in respect wind based power plants initiated the necessary process. After undertaking thorough exercise by following the due procedure, this Commission had passed an order on 06.10.2018 determining the generic tariff for wind based power projects, which is applicable for the period 2018 -2020. In the conclusion the Commission observed as below.

6. SUMMARY OF TARIFF COMPONENTS:

The Commission has considered all the parameters and submissions brought before it with reference to its discussion paper and it is of the view that the submissions made in respect of certain issues do not satisfy the normative conditions nor can they be factored while determining the tariff. Therefore, the Commission has arrived at the tariff based on the normatives that are taken into consideration and discussed thoroughly in this order. Based on the discussion, the final tariff is arrived at, which is applicable in the State of Telangana for wind generation projects for the period FY 2018-2020 (FY 2018-19 and 2019-20) in terms of the applicability stated at clause 4 of this order. Normatives parameter adopted for determination of tariff are given at Table – 5.”

39. In view of the determination made in the above said order, there is no necessity of undertaking a separate exercise of determination of tariff with reference to the petitioner's project specifically. Suffice it to state that the determination would equally apply to the petitioner also. It is also appropriate to state that the Commission is not required to go into the rival contentions in view the order passed in the above said proceeding. That all the other contentions are left open except tariff determination which is covered by the said order and the same is being applied to this case.

40. Accordingly, having considered the rival contentions and relevant material including the discussion in the preceding paragraphs, the present petition is disposed in terms of the above said order. However, in the circumstances without any costs.

41. The interlocutory application for amending the title and adding another petitioner is allowed. Accordingly, the original petition is treated as a petition filed by two petitioners.

This order is corrected and signed on this the 8th day of January, 2019.

**Sd/-
(ISMAIL ALI KHAN)
CHAIRMAN**

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