

TAMIL NADU ELECTRICITY REGULATORY COMMISSION
(Constituted under section 82 (1) of the Electricity Act, 2003)
(Central Act 36 of 2003)

PRESENT:-

Thiru S.Akshayakumar

.... Chairman

and

Thiru.G.Rajagopal

.... Member

R.A. No.6 of 2013

1. Beta Wind Farm (P) Ltd..
2. Indian Wind Power Association
3. Southern India Mills Association
4. Indian Wind Turbine Manufacturer Association
5. Indian Wind Energy Association
6. Velatal Spinning Mills Pvt.Ltd.
7. Tamil Nadu Spinning Mills Association
8. Indian Spinning Mill Owner Association

... Remand Applicants

(Thiru Rahul Balaji, Advocate
for the Remand Applicants 1 and 2

(Thiru S.P.Parthasarathy, Advocate
for the Remand Applicant 7)

Vs.

1. TANGEDCO
2. TANTRANSCO

... Respondents

(Thiru Yashod Vardhan
Senior Advocate for the Standing
Counsel for Respondents)

**Dates of hearing: 22-12-2014, 19-01-2015, 28-10-2015, 13-11-2015
29-12-2015, 06-01-2016, 28-01-2016 and
11-02-2016,**

Date of Order : 31-03-2016

The R.A. No.6 of 2013 has been initiated by the Commission pursuant to the orders of APTEL dated 24-05-2013 made in Appeal No.197, 198, 200, 201, 208 of

2012 and Appeal No.6 of 2013. The above R.A.No.6 of 2013 came up for final hearing on 11-02-2016. The Commission upon perusing the Written Submissions made by the parties to the R.A., after perusal of the connected records and after hearing the arguments on both sides passes the following

ORDER

The Tamil Nadu Electricity Regulatory Commission (Commission) issued a comprehensive Tariff Order on wind energy vide T.R.No.6 of 2012 dated 31-07-2012. The said order dealt with the tariff and all other allied issues related to Wind Energy Generators installed in the State. A number of appeals were filed against the said order of the Commission before the APTEL. M/s./Beta Wind Farm (P) Limited filed Appeal No.197 of 2012. Indian Wind Power Association (IWPA) filed Appeal No.198 of 2012. Southern Indian Mills Association (SIMA) filed Appeal No.200 of 2012. Indian Wind Turbine Manufacturers Association (TWTMA), Indian Wind Energy Association (IWEA) and Velatal Spinning Mills Pvt. Ltd. have filed Appeal No.201 of 2012. Tamil Nadu Spinning Mills Association (TASMA) filed Appeal No.208 of 2012. M/s.Indian Spinning Mill Owner Association filed Appeal No.6 of 2013. The Appellants in the above appeals made various contentions challenging various aspects in the order of the Commission in T.R.No.6 of 2012. Besides the Commission, the TANGEDCO and TANTRANSCO were arrayed as Respondents in the said Appeals. The APTEL after hearing the above appeals made a judgment dated 24-05-2013 by way of a common order in all the aforesaid appeals.

In paragraph 64 of its order, the APTEL made the following directions, viz:-

“64. At this point of time, we deem it appropriate to give a general direction to all the Commissions by invoking Section 121 of the Act, 2003 for future guidance regarding procedure to be followed in suo-moto proceedings for seeking specific suggestions and objections from the stake holders and the Public. Accordingly, we direct that all the Commissions, in order fo facilitate effective participation of the

stake-holders and to obtain specific and relevant comments from them on the issues under consideration of the Commission, shall ensure the circulation of the Consultative Paper clearly indicating the proposal by putting in the public domain for seeking suggestions and objections of the public. The Commissions are advised to frame suitable Regulations regarding the procedure to be followed in the suo-moto proceedings as indicated above.”

Further, the APTEL made the following observations and directions in para 170 of the said order dated 24-05-2013:-

“170. *Summary of Our Findings:*

*i) **Circulation of Consultative Paper prior to issuing the tariff order:** No prejudice has been caused by non- circulation of Consultative Paper regarding determination of tariff of wind energy generators for procurement of power by the distribution licensee as the base for this proceeding was the last tariff order. All the stake-holders had given their suggestions for either retaining or modifying the various norms decided in the earlier tariff order and the State Commission after giving them an opportunity of hearing and after considering their suggestions and objections on the various components of tariff has finally determined the tariff. However, regarding the some issues relating to the transmission and wheeling of energy from wind generators for captive use and third party sale, the State Commission has introduced new method for determination of charges as well as the mode for recovery of charges and revised the charges substantially, Hence, we feel that the State Commission should have circulated a Consultative Paper on these Gissues. All these issues have been specifically challenged by the Appellants in these Appeals. At this stage, when the State Commission has already given its findings and given its own reasons for the same, Circulation of a Consultative Paper by the State Commission and de- novo hearing of the case would not be necessary. However, after considering the submissions of the parties on some specific issues, we have given our findings and remanded the matter to the State Commission for reconsideration of those issues where we felt that the Appellants have to be heard by the State Commission.*

*ii) **Applicability of Tariff order:** The Tariff of the wind energy generators for procurement of energy by the distribution licensee would apply prospectively i.e. w.e.f. 1.8.2012 for the projects which are commissioned and entered into PPA on or after 1.8.2012. For wind energy generators who have entered into PPAs for sale of power to the distribution licensees prior to 1.8.2012, the then prevailing tariff would be applicable. However, the transmission and wheeling charges for wind energy wheeled for captive use or third party sale irrespective of date of wheeling agreement, the rate as decided in the impugned order will be applicable w.e.f. 1.8.2012.*

*iii) **Capital cost:** We confirm the order of the State Commission regarding Capital cost.*

*iv) **Return on Equity:** We do not find any infirmity in the findings of the State Commission.*

v) Annual Maintenance Contract Charges and Insurance Charges: We direct the State Commission to allow the same O&M charges and insurance charges as a percentage of Capital Cost as decided in the previous tariff order dated 20.3.2009.

vi) Plant Load Factor/Capacity Utilisation Factor: We are not inclined to allow any reduction in Capacity Utilisation Factor on account of loss of generation due to grid problems. However, we have given directions to the State Commission, TANGEDCO and TANTRANSCO in paragraph 114 for augmentation of transmission and distribution system to avert loss of generation at Wind Energy Generators due to inadequate power evacuation infrastructure.

vii) Time Value of Money: This issue is decided in favour of the Appellants in terms of this Tribunal's findings in judgment dated 18.12.2007 in Appeal No.205 and 235 of 2006.

viii) Recovery of Transmission Charges on the basis of Plant Load Factor: This issue is decided as against the Appellants in terms of our findings in judgment dated 4.2.2013 in Appeal No.102 of 2012.

ix) Abnormal Rise of Banking Charges: The findings of the State Commission on this issue are set aside. The State Commission is directed to reconsider the computation of the-charges after hearing the stake-holdings and decide the issue afresh keeping in view - the observations made' by this Tribunal in Appeal No.98 of 2010.

x) Levy of transmission charges and transmission loss: Levy of a single transmission and wheeling charges is not possible after unbundling of the erstwhile Electricity Board. The State Commission has determined the transmission charges for TANTRANSCO and wheeling charges for TRANGEDCO by its orders 1 of 2012 and 2 of 2012 respectively. When the captive users of wind energy do not pay the full transmission charges, wheeling charges and losses, the burden of the same falls on the consumers of the distribution licensees and other open access customers/consumers. No doubt the wind energy has to be promoted but the promotion has to be balanced with the interest of the consumers of the distribution licensees. The State Commission has 'balanced the interest of both by charging only 40% of the normal transmission and. wheeling charges and recovering the actual losses fully from the wind energy generators supplying energy for captive use or third party sale.

xi) Scheduling & System Operation Charges: We do not find any infirmity' in the order of the State Commission in deciding the Scheduling & System Operation Charges payable by the Appellants.

xii) Deemed Demand Charges: We set aside the order of the State Commission and remand the matter to the State Commission for reconsideration after giving opportunity to all the persons concerned and in the light of the earlier tariff orders.

xiii) Encashment or lapsed Units by REC Captive users: The findings of the State Commission on this issue are set aside and the matter is remanded back to the State Commission with directions to hear all the parties concerned and decide

the issue in the light of the judgment rendered by this Tribunal in Appeal No. 45 and 91 of 2012.”

The Commission has been directed to comply with the directions of APTEL and pass the consequential orders on the specified' issues after hearing the parties and after allowing the parties to furnish the materials.

The issues remanded by APTEL are being dealt with hereunder one by one with regard to the rival submissions made by the parties to the R.A. herein:-

1. AMC Charges and Insurance Charges:-

APTEL has directed the Commission to allow the same O & M Charges and Insurance Charges as a percentage of capital cost as decided in the previous Tariff Order dated 20-03-2009.

1.1. Submission of Beta Wind Farm Private Limited and Indian Wind Power Association:-

The AMC (Annual Maintenance Contract Charges) with insurance is considered at 1.1 % of the total capital cost which is not the same as specified in the earlier tariff order of the Commission dated 20.3.2009. Moreover, actual AMC with insurance works out to 2.8% of the total cost per year. It should be based on the above actual cost incurred. Further, as and when the capital cost undergoes a revision, it should also get automatically revised as a percentage of capital cost. The O & M charges per MW collected by the TANGEDCO should be included in the operating cost for the calculation of the Feed in Tariff. Legally, the O&M charges shall not be collected since the network charges like transmission and wheeling takes care of these charges. AMC charges and insurance charges should at least be allowed as specified by the Commission in their previous tariff order dated 20.3.2009.

1.2. TANGEDCO's submission vide affidavits dated 17-02-2015 and 08-02-2016:-

The Commission may allow the same O & M Charges and Insurance Charges as a percentage of Capital Cost as decided in the previous Tariff Order dated 20-03-2009 as directed by the APTEL.

2. Plant Load Factor / Capacity Utilisation Factor (PLF / CUF):-

APTEL observed as follows:-

“ vi) Plant Load Factor/Capacity Utilisation Factor: We are not inclined to allow any reduction in Capacity Utilisation Factor on account of loss of generation due to grid problems. However, we have given directions to the State Commission, TANGEDCO and TANTRANSCO in paragraph 114 for augmentation of transmission and distribution system to avert loss of generation at Wind Energy Generators due to inadequate power evacuation infrastructure.”.

Paragraph 114 of the order of the APTEL dated 24-05-2003 is extracted below:-

“114. We have gone through the data given by the Appellants relating to loss of generation due to grid problems from April 2012 to January, 2013. The total loss of generation during the said period was about 44.5 million units. Considering loss of 44.5 million units for the above period, based on 6900 MW of wind generation capacity in the State, the loss would amount to less than 0.1 % in terms of loss factor. This is insignificant for consideration in deciding the normative Capacity Utilization Factor. However, we feel that the loss due to weakness in the transmission and distribution system has to be minimized. Therefore, we direct the TANGEDCO and TANTRANSCO to appropriately augment the transmission and distribution system to avoid loss of generation due to inadequate power evacuation infrastructure from wind energy projects. TANGEDCO and TANTRANSCO are also directed to file an affidavit in this regard before the State Commission indicating the extent of the problem, identification of weak areas in transmission system affecting evacuation from wind generators, remedial measures proposed and schedule of implementation of the preventive measures within three months from the date of this Judgment. The

State Commission is directed to consider those details contained in the said Affidavit and pass appropriate order after hearing the parties on this issue.”

2.1. Submissions of Beta Wind Farm and IWPA as to Plant Load Factor/Capacity Utilization Factor (PLF/CUF) :

i. The Plant Load Factor (PLF)/Capacity Utilization Factor (CUF) is determined on the basis of three components, namely, wind availability, machine availability and grid availability. Of the three factors, wind being a natural force is unpredictable. Machinery falls within the responsibility of the promoter of the WEG, whereas the grid is solely controlled by the utility.

ii. However, TANGEDCO regularly gives instructions to back out generation which culminates in a situation wherein when there is adequate wind for generation of electricity, the grid is not in a position to accept the generated power for transmission due to alleged non-availability of evacuation infrastructure and for other reasons best known to them. This position has been confirmed by TANGEDCO also. It should be noted that only after the issuance of NOC by TANGEDCO, windmills are installed and therefore the non-availability of evacuation infrastructure is a default on the part of TANGEDCO for which the Commission has even mooted the possibility of levying damages against TANGEDCO in the earlier tariff orders. While so, the evacuation problems which continue to persist automatically results in lower PLF/CUF. While so, considering the backing down of WEGs as a separate issue and it cannot be mixed up with adoption of CUF for determination of tariff is not sustainable in any manner and therefore, such an argument is as such untenable.

iii. According to the statistics available, the following is the back out position seen in Tamil Nadu in wind energy segment.

Grid Drop / Backout hours details from April 2012 to January 2013

Sl. No.	Month	Year	Grid Drop Details		
			Total	Total	Total
			Capacity in MW	Hours	Loss of Generation
1.	April	2012	791	674	1379147
2	May	2012	1280	1072	5972325
3	June	2012	1958	1244	7488175
4	July	2012	2399	1397	7747488
5	August	2012	1419	1105	4109228
6	September	2012	1058	997	4589036
7	October	2012	1154	1169	5321584
8	November	2012	1135	1321	3028368
9	December	2012	1231	1036	1600938
10	January	2013	1055	841	3353383
	Total		13476	10857	44589672

Backing down duration in 2013-14 and in the subsequent financial year was even more. With such a huge back out, naturally the CUF/PLF will get affected and therefore, instead of taking an abstract method of calculating the PLF/CUF, the Commission should take real time factors in arriving the final PLF/CUF.

iv. If the above revised parameters are taken into consideration, the wind tariff should have been fixed as Rs.4.59 per unit instead of RS.3.51 per unit.

v. The Commission may therefore issue specific directions for filing Affidavits by TANTRANSCO/TANGEDCO to provide necessary data in this regard for determination.

2.2. Submissions of TANGEDCO in common Written Submissions dated 17-02-2015 & 08-02-2016 regarding PLF/CUF :-

The total installed capacity of wind in Tirunelveli area and Udumalpet as on 31-12-2014 is:

Tirunelveli area	:	3891.200 MW
Udumalpet area	:	3485.855 MW

Total	:	7377.055 MW

The peak reached during this wind season is 4201 MW as on 25.06.2014. The wind generation for the year 2012-13 is 12948.238 MU and 2013-14 is 10930.237 MU and the generation for the year 2014-15 upto December 2014 was 9497.435 MU.

As the installed capacity rose upto 7400 MW to transmit the wind energy generated in and around Tirunelveli and Udumalpet area to the load centres, the green energy corridor programme has been sanctioned with the financial assistances of MNRE, KFW German. The 1st phase of green energy corridor 400 KV evacuation line has been sanctioned from Kayathar, Karaikudi, Pugalur and Ottiyambakkam, Chennai. Similarly to transmit the wind energy generated in and around Udumalpet, Theni area to the load centres the green energy corridor 400 KV evacuation line has been sanctioned from Thoppakundu, Anikadavu, Rasipalayam, Singarapettai (Palavadi) and to Bengaluru, Karnataka. As the installed capacity of wind rose considerably, there are some evacuation constraints found by TANTRANSCO. In order to sort out the evacuation constraints and to add new capacity additions, 5 Nos. 400 KV Substations were sanctioned by TANGEDCO / TANTRANSCO namely, Kayathar 400 KV SS, Kanarpatti 400 KV SS, Thoppakundu 400 KV SS, Anilkadavu 400 KV SS and Rasipalayam 400 KV SS.

IWPA's reply that if the loss of generation is considered for April 2012 to March 2013, the tariff would be Rs.4.59 per unit instead of Rs.3.51 per unit, is not acceptable. As the tariff order issued on 31.07.2012 is based on the facts and figures available as on 31.07.2012, considering the factors of 2013 beyond the date of the order is not at all accepted.

The contention of IWPA that the backing down of WEGs has to be considered as a separate issue and it cannot be mixed up with adoption of CUF for determination tariff is also not sustainable. The stake-holders, presented the matter

of loss of generation to APTEL as if it was due to evacuation constraints and grid problem. But APTEL has considered the back down of WEG as due to grid problem and is a separate issue and hence has not discussed the same and has discussed only the evacuation constraints and directed the TANGEDCO/TANTRANSCO to submit its evacuation estimate plan.

The present position of the evacuation schemes carried out by TANTRANSCO is as follows:

(1) Kayathar 400 KV SS:

The Kayathar 400/230-110KV Substation has been sanctioned in BP.(FB) No.77, dated 17.06.2010. However, the budget provision has been made in 2013-14 2014-2015 only for an amount of Rs.7560 Lakhs in 2013-14 and Rs.3000 Lakhs in 2014-15 respectively. The work has been awarded to M/s. L&T Ltd on 30.11.2012 under total Turnkey contract basis. The sub-station was successfully commissioned on 04.07.2014 with 1x315MVA Auto transformer and subsequently all the Auto transformers have been commissioned.

The details are given below:

Sl.No.	Name of the Equipment	Date of Commissioning
1	400/230kV, 315 MVA Auto Transformer#1	04-07-2014
2	400/230kV 315 MVA Auto Transformer#2	08-09-2014
3	400/230kV, 315 MVA Auto Transformer#2	25.02.2015
4	400/110kV, 200 MVA Auto Transformer#1	16-08-2014
5	400/110kV, 200 MVA Auto Transformer#2	09-03-2015
6	230kV Feeder Breaker-4 Nos (Kayathar-Anuppankulam LILO & Kayathar Pasumalai LILO)	19-07-2014
7	400 KV Feeder Breaker-2 Nos	26-07-2014 21.04.2015
8	400kV Tie Feeder Breaker-1 No (for Karaikudi feeder 1 & 2)	25-02-2015
9	400/230kV ICT (1&2) Tie Breaker- 1 No	08-09-2014
10	400/110kV ICT Tie Breaker-1 No	16-08-2014

It is reported that the 400 KV Kayathar-Karaikudi feeder I has been tied up with Karaikudi PGCIL 400 KV Grid SS on 26.07.2014 and the 400 KV Kayathar-Karaikudi feeder II has been tied up with Karaikudi PGCIL 400 KV Grid SS on 21-04-2015. After tie up with PGCIL Grid, the power flow was found maximum (167 MW & 168 MW respectively) on both the 400 KV feeders as on 12.08.2015.

(2) Kanarpatty 400 KV SS:

Even though Kanarpatty 400 KV SS was approved in 2007, as the Commission has stayed the collection of IDC amount from wind developers, the project was taken up, subsequently based on the 10(1) applications and revised approval has been issued to Kanarpatty 400 KV SS. M/s.Shreem Electric Limited, Chennai has been awarded the work on 11.03.2014 with total turnkey contract for design, detailed engineering, fabrication, manufacturing, supply, erection, testing & commissioning of 400/230-110KV AIS substation at Kanarpatti for a total award cost of Rs.171,87,83,197/- on 11.03.2014. Site has been taken over by M/s.Shreem Electric Ltd, Chennai and the scheduled period for the commissioning of the substation is 15 months from the date of LOA and contractual commissioning date is 10-06-2015.

The following is the status of work as on contractual completion date:

- a) Civil:- Tower foundation works completed. 500 MVA Transformer Rail pole fixing works is under progress, control room building – Excavation & PCC completed, Reinforcement work in progress.
- b) Electrical:- Tower erection is in progress. Sub vendor approvals, drawing approval and inspection approvals are under progress.

Due to slow progress of work by the contractor, meetings are being held with the company at HQs level and field level to review the progress of work and to expedite the commissioning of the sub stations.

M/s.Shreem had requested for grant of extension of time for completion of the substation works without levy of LD. However, they were informed to continue the balance work upto 31.03.16 without prejudice to the levy of penalty. In case of delay, appropriate amount of Liquidated Damages is being deducted from the initial payment itself as per payment terms in the contract. The work is expected to be completed by March'16.

PRESENT STATUS:

All major equipments including 2 Nos. 500 MVA 400/230 kV & 4 Nos. 200 MVA 400/110 kV Transformers have been received at the site. Construction of control room is under progress. Transformer, Equipment & Tower foundations 100% completed. 400KV, 230KV & 110kV Tower erection completed. 400KV, 230 KV & 110 kV Structure erection works under progress. All the balance works are under progress,

(3) Thappagundu 400 KV SS:

M/s Bharat Heavy Electricals Limited (BHEL) has been awarded with total turnkey contracts for design, detailed engineering, fabrication, manufacturing, supply, erection, testing & commissioning of 400/110KV SS at Thappagundu. The total award cost is Rs.125,58,80,419/-. The work was awarded on 05.09.2013 and site taken over by BHEL on 18.09.2013. The contractual completion period for commissioning of the substation is 15 months from the date of LOA i.e. the substation should be commissioned on or before 04.12.2014.

The following is the status of work as on contractual completion date:

Site leveling work completed; construction of compound wall and 400 KV bus tower foundation were completed; 110 KV side Tower foundation 55% completed, transformer and reactor foundation work under progress; equipment foundation work under progress; control room lintel beam concrete completed. Sub-vendor approvals, drawing approvals and inspection approvals for equipments and materials are under progress. Regular meetings are being held with BHEL to review the progress of work and to expedite the commissioning of the sub stations. M/s.BHEL had requested for grant of extension of time for completion of the substation works without levy of LD. However, M/s.BHEL has been informed to continue the balance work upto 31.03.16 without prejudice to the levy of penalty. In case of delay, appropriate amount of Liquidated Damages is being deducted from the initial payment itself as per payment terms in the contract. The work is expected to be completed by March'16.

Present Status:

All major electrical equipments including 4 Nos, 200 MVA 400/110 KV Transformers and 1 No. 63 MVAR Reactor have been received at site. Control room first floor roof completed. 400KV tower erection completed; 400 KV Equipment erection 70% completed; 110 KV Equipment structure erection under progress; 400 KV bus stringing works 50% completed and Earthing work 50% completed. All the balance works are under progress.

(4) Anikadavu 400 KV SS:

M/s.Bharat Heavy Electricals Limited (BHEL) has been awarded with total turnkey contracts for design, detailed engineering, fabrication, manufacturing, supply, erection, testing & commissioning of 400/230-110KV AIS substation at Anikadavu. The total award cost is Rs.156,19,09,867/- and the works were awarded on 05.09.2013. The site was taken over by BHEL on 19.09.2013. The scheduled

completion period for commissioning of the substations is within 15 months from the date of LOA i.e. the substation should be commissioned on or before 04.12.2014.

The following is the status of work as on contractual completion date:

The Company has so far completed 35% work of tower foundation and final lift, 10% of equipment foundation work and 100% of lintel work is completed in control room. Regarding supply of equipments / materials, 50% of materials were dispatched to site and remaining materials are under progress of inspection and dispatch. Sub vendor approvals, drawing approvals and inspection approvals for equipment / materials under progress. Regular meetings are being held with BHEL at HQs level and field level to review the progress of work and to expedite the commissioning of the substation. M/s.BHEL had requested for grant of extension of time for completion of the substation works without levy of LD. However, M/s.BHEL has been informed to continue the balance work upto 31.03.16 without prejudice to the levy of penalty. In case of delay, appropriate amount of Liquidated Damages is being deducted from the initial payment itself as per payment terms in the contract. The work is expected to be completed by March'16.

Present Status:

All major electrical equipments including 3 Nos. 315 MVA 400/230 KV and 2 Nos, 200 MVA 400/110 KV Transformers have been received at site. Control room first floor completed. 400KV tower erection completed. 400KV main bus stringing is under progress. 230 KV & 110 KV Tower erection and equipment structure foundation works under progress. Earthing work 50% completed. All the balance works are under progress.

(5) Rasipalayam 400KV SS:

M/s Alstom T&D India Ltd., Chennai has been awarded with total turnkey contract for design, detailed engineering, fabrication, manufacturing, supply, erection, testing & commissioning of 400/230-110KV AIS substation at Rasipalayam for a total award cost of Rs. 166,43,16,353/- the award has been issued on 16.5.2014 and site has been taken over by M/s.Alstom. The scheduled period for the commissioning of the substation is 18 months from the date of LOA and contractual commissioning date 15.11.2015. Regular meetings are being held with ALSTOM at HQs level and field level to review the progress of work and to expedite the commissioning of the substation. The company has informed that all works would be completed before April'16.

Present Status:

All major electrical equipments including 2 Nos. 315 MVA 400/230 KV and 3 Nos. 200 MVA 400/110 KV Transformers and 1 No. Reactor have been received at site. Control room finishing work under progress. Transformer and reactor foundation completed. 400 KV tower foundation completed and tower erection works under progress. 230 KV and 110 KV foundation work under progress. Sub vendor approvals, drawing approvals and inspection approvals for equipments and materials under progress. Balance erection works are under progress.

It is submitted that the evacuation scheme of Renewable Energy has been reviewed at National level by CEA/PGCIL/MNRE at regular interval. It is stated that, if there is any issues in the evacuation system, the same has been addressed by them at appropriate manner.

It is submitted that, in the minutes (revised) of the meeting of Central Electricity Authority, New Delhi held on 10.12.2015, as follow up actions subsequent to the review meeting of Hon'ble MoSP(IC) with Govt. of TN, held on 02.11.2015 in para (2) the Director (PSPA-II) has stated that,

"It was also informed that the additional transmission system has already been planned to cater to a total of 12000 MW of RE power in Tamil Nadu. Further a number of transmission infrastructure facilities are under execution and are expected to be commissioned at the earliest such as; 400 KV Kanarpatty SS, 400 KV Rasipalaym SS, 400 KV Anikadavu SS, 400 KV Thoppakundu SS, 400 KV Kayathar-Karaikudi-II line, 400 KV Karaikudi-Pugalur DC line."

In para (3) Member Secretary, SRPC has informed that constraints in wind power evacuation, is primarily an operational issue.

In para (6) the President, Indian Wind Power Association (IWPA) quoted PRDC report which reveals that there is no transmission constraints in wind power evacuation from Tamil Nadu.

Finally with regard to the evacuation issue, the meeting ended with the following note:

- i) It was brought out during discussions that curtailment in wind power in Tamil Nadu is an operational and regulatory issue.
- ii) Adequate 400 KV and 220 KV transmission system has already been planned for evacuation of 12000 MW of RE power in Tamil Nadu and in adequacy of transmission infrastructure is not the issue in evacuation of wind power from Tamil Nadu. (emphasis supplied)

As TANGEDCO/TANTRANSCO has programmed and carrying out the evacuation infrastructure works, and the evacuation scheme has been reviewed at National level by CEA/PGCIL/MNRE at regular interval, it is requested not to revise the CUF and to fix the same CUF of 27.15% as already fixed in Order No.6, dated 31.7.2012.

3. Time Value of Money:-

APTEL observed as follows:-

***"Time Value of Money:** This issue is decided in favour of the Appellants in terms of this Tribunal's findings in judgment dated 18.12.2007 in Appeal No.205 and 235 of 2006."*

Submissions of the IWPA and Beta Wind Farm:-

The Commission may pass appropriate orders in the light of APTEL 's order dated 18-12-2007 in Appeal No.205 and 235 of 2006.

4. Recovery of Transmission Charges on PLF:-

APTEL observed as follows:-

“Recovery of Transmission Charges on the basis of Plant Load Factor: This issue is decided as against the Appellants in terms of our findings in judgment dated 4.2.2013 in Appeal No.102 of 2012.”

4.1. Submission of IWPA and Beta Wind Farm Pvt. Ltd:-

The findings to the effect that transmission charges should not be based on PLF adjusted capacity but it should be based on the installed capacity of wind generators have been implemented. The Commission may formally reiterate the same.

4.2. Submission of TASMA in their Written Submission:-

It could be seen that eventhough, the Transmission and Distribution losses remained at 18% all together the Wheeling and Transmission Charges including Transmission loss were retained at 5% only as such in both the earlier orders. During the issuance of the impugned order also, the Transmission and Distribution losses were remained at 18% only and however, without analyzing this fact, the Commission has increased the Transmission and Wheeling charges to the extent of 17% instead of 5%. But however, no justification with facts and figures for this abnormal increase was found provided anywhere in the impugned order and this is being now appealed before the Supreme Court.

To fix the transmission as well as wheeling charges, the Commission has taken a figure of 40% as a preferential measure. How the Commission was able to arrive at a figure of 40% of the total Transmission and Wheeling charge for collection, is nowhere explained in the impugned order. Hence, the rationality found behind such fixation of 40% is totally not sustainable, unless it is supported by facts and figures. On the above grounds, the matter is being appealed at the Supreme Court of India.

Without prejudice to the above submission, APTEL has ordered to fix the Transmission Charge as follows, the Transmission Charge needs to be re-fixed by considering the direction of the APTEL to the extent extracted below:-

“125. The findings to the effect that transmission charges should not be based on PLF adjusted capacity but it should be based on the installed capacity of wind generators, would also apply to the present case as well.

x x x x x

145. The Appellants have indicated that the revised transmission charges come to 47.33 paisa calculated at 40% of Rs.6483/MW per day. In this connection, we have to observe that this Tribunal in the judgment in Appeal No.102 of 2012 dated 04-02-2012 has already directed the State Commission to re-determine the transmission charges as per directions given in that judgment.

146. In the light of the said directions, the Appellants are at liberty to make submissions before the State Commission for getting the benefit on account of redetermination of the transmission charges.

147. In view of the above, this issue is decided accordingly.”

Hence, the Transmission charge needs to be fixed based on the installed capacity of wind generators as decided in Appeal No.102 of 2012 dated 04-02-2013 and accordingly, the Transmission Charges need to be revised suitably.

5. Abnormal rate of Banking Charges:-

APTEL's Direction is as below:-

Abnormal Rise of Banking Charges: The findings of the State Commission on this issue are set aside. The State Commission is directed to reconsider the computation of the-charges after hearing the stake-holdings and decide the issue

afresh keeping in view - the observations made' by this Tribunal in Appeal No.98 of 2010.

5.1. Submission of IWPA, Beta Wind Farm (P) Ltd and TASMA:-

(i) Banking charge was earlier collected at the rate of 5% of the units banked. Now, the banking charges are collected at 94 paise of each unit banked and redrawn for consumption. In terms of money, it is considered highly abnormal and exorbitant.

(ii) According to the calculations available, the TANGEDCO is only benefitted out of banking facility and is in no way incurring losses in any manner. There is no material facts made available to the stakeholders as how the TANGEDCO is stating that it is incurring losses due to banking. No such records are placed for comments in any public domain. In the earlier order there is no basis for accepting the views of TANGEDCO before arriving to such a conclusion.

(iii) The Commission is to hear stakeholders and follow the orders of the APTEL in Appeal No.98 of 2010 to compute banking charges.

(iv) The stakeholders if required shall file statements as how the TANGEDCO is benefitting and profiting out of banking facility. In contra TANGEDCO never shared the reasons along with facts and figures for the alleged loss. Hence, the entire assumption that TANGEDCO is incurring loss due to banking has to be rejected.

(v) The Commission's taking the Bench mark to fix banking charges is also not correct. On one hand it takes the average power purchase cost of Rs.4.45 per kWhr found at the national level, and subtracts the same with the maximum preferential tariff for wind energy as contained in the impugned Order (Rs.3.51/kWhr) and accordingly, arrives a figure of 94 paise per unit. Hence, the method of calculation of the Bench Mark is totally wrong. Banking is a provision arising after the adjustment of consumption by wheeling the electricity availing open access. The electricity, thus banked, is instantaneously supplied to the consumers by TANGEDCO thereby

recovering a cost equivalent to average realization rate of Rs.4.99/kWhr. When the banked power is redrawn by the Open Access customer this electricity thus provided is purchased at an average power purchase cost of Rs.4.45/kWhr. Only these two rates are relevant to be compared for computing the banking charges. One rate is from the recovery of banked energy supplied and the other rate is for purchase of redrawn energy to be supplied.

(vi) The average power purchase cost of TANGEDCO was not at all taken in to account. In contra only the all India average on the basis of power purchases made through bilateral trading based on the CERC figures is taken which is not relevant to the present situation in Tamil Nadu. Therefore, the scientific way of calculating the difference ought to be between the average cost of power incurred by TANGEDCO (at Rs.4.05 for the year 2011-12) and the average sales realization per unit (at Rs.4.99 for the year 2011-12) and that should be the Bench Mark only then it would satisfy regulatory requirements. Thus, it could be seen that the average realization by TANGEDCO is more than 94 paise per unit over the average cost of power spent by TANGEDCO. Hence, there is no loss to TANGEDCO, due to banking and therefore banking could be serviced at a reasonable cost as stood earlier at 5% which works out to 28.46 paise per unit in terms of money,

(vii) If the present Bench Mark is considered correct, then the average realization cost of Rs.4.45 should be subtracted only on the average total realization by TANGEDCO at Rs.4.99 per unit and accordingly, the difference should be worked out for collection of banking charge which works out to a negative figure and therefore, that would demonstrate that there is no loss to TANGEDCO due to banking in any manner.

(viii) The maximum preferential tariff of Rs.3.51 for arriving the Bench Mark has totally nothing to do for calculating the banking charges as it is a tariff fixed for Sale

to Board categories prospectively and therefore, totally irrelevant to the existing captive consumers.

(ix) When the TANGEDCO insisted for increase of banking charges from 5% to 15% during the earlier stakeholders' process, the Commission had not accepted the views of the TANGEDCO and accordingly while issuing the Comprehensive Tariff Order on Wind Energy in No.1 of 2009 dated 20-03-2009 rejected it as follows.

8.2. Banking” *The plea of the TNEB to raise the banking charge from 5% to 15% and curtail the banking period from one year to one month are too radical to be accepted by the Commission.*”

(x) When the banking charges remained at 5% of the units banked, the 5% worked out to 28.46 paise per unit in terms of money. Whereas, it has now been increased to 94 paise per unit. Hence, when this new banking charge of 94 paise per unit is converted into percentage of units, it amounts to 17% as against the earlier rate of 5%. When the TANGEDCO sought increase of the banking charge from 5% to 15%, the Commission considered the plea as too radical at that point of time and however, by the order the Commission increased the banking charges from 5% to 17% without any reasoning. The Commission may therefore consider the above aspects and pass appropriate orders.

5.2. Submissions of TASMA in their Written Submissions dated 28-10-2015:-

Based on Clause 8.2.12.3 of Order No.6 of 2012, the TANGEDCO ought to have revised the banking charges by applying the guidelines of the Commission for the years followed after the issuance of Order No.6 of 2012 dated 31.07.2012 as follows.

Year	Banking charges – Paise / Unit
2012-13	94
2013-14	75
2014-15	78
2015-16	44

TANGEDCO has not worked out the banking charge as per the Table above and submitted it for the information of the Commission as ordered already on 31.07.2012 itself. However, the TANGEDCO is continuing to collect the banking charge only at 94 paise per unit from 01.08.2012 onwards till today which amounts to not following the order of the Commission. The windmill captive consumers are also paying it for past three years at the old rate of banking charge at 94 paise per unit even though they are entitled to pay only a lesser amount as per the declared guidelines of the Commission. The Commission may consider to direct to revise and re-fix the banking charges for the years 2013-14, 2014-15 and 2015-16 at paise 75, 78 and 44 respectively and accordingly, further direct the TANGEDCO to adjust the excessively collected amounts of banking charge at 94 paise per unit during the years 2013-14, 2014-15 and 2015-16 and accordingly, order to adjust the same in their CC bills to be issued for the windmill captive consumers suitably.

5.3. Submissions of TANGEDCO in the Written Submissions dated 17-02-2015, 08-02-2016 and 22-02-2016:-

The concept of banking is detrimental to the financial interest of the TANGEDCO. However the same is provided for utilizing the infirm power from wind energy generators. TANGEDCO as a licensee is under an obligation to bank wind energy supplied by the WEG's during peak wind season (four months in a year). During off season (remaining eight months), TANGEDCO has to discharge the obligation of providing electricity to the captive consumers of the WEGs. Since

electricity cannot be stored, TANGEDCO is bound to purchase high cost power from various sources even at rates as high as Rs.14/- per unit and supply the power to the captive consumers of the wind energy generators. It is not rational to put the financial burden incurred by the TANGEDCO due to the above act of banking, which provides power to the wind captive consumers during the eight months when wind energy is deficient, on any other category of consumers.

There is no abnormal rise in banking charges. The rise in banking charge is consistent with the rise in transmission and wheeling charges. The facility of banking is exclusive to wind energy generators and the cost incurred by the distribution licensee and the transmission licensee in providing banking facility has to be borne by the beneficiaries of banking. Even the revised banking charges provided under the Tariff Order are only concessional. The remaining expense of the licensees, in providing banking facility to wind energy generators, is borne by the other consumers which is not equitable.

APTEL failed to appreciate the fact that when transmission charges paid by conventional generators has been increased, a proportionate increase in banking charges was necessary for wind energy generators. Promotional incentives cannot be there forever. Wind energy generators, were availing concessional transmission, wheeling, banking charges for the last 20 years. As per the mandate of a National Electricity Policy, non-conventional energy sources are required to be brought at par with the conventional sources of energy. This particular issue was specifically intimated by the Commission in the public notice dated 08.09.2011. The relevant portion is extracted hereunder:

- “a) *Whether competitive bidding to be introduced and tariff determination by the Commission to be dispensed with for wind energy in view of the satisfactory growth of wind energy in this State and in accordance with the tariff policy of Government of India?*

- b) *Whether banking period to be retained, reduced or dispensed with in view of the satisfactory growth in the installed capacity of wind generators?"*

The fact that the Commission wanted to put wind energy generators to be at par with other conventional generators by introducing competitive bidding process to determine tariff and to dispense with or reduce provisions relating to banking are sufficient to indicate that the Regulatory Commission was bringing in modifications in the banking charges. The APTEL failed to appreciate the facts in the right perspective and came to the conclusion that there is an abnormal rise in banking charges.

The Commission calculated the average power purchase cost of Rs.4.45 per kWhr on the basis of data taken by it on all India basis. This average power purchase cost arrived at by taking a national average cannot be made applicable to the State of Tamil Nadu. The purchase price of power by the Southern States is 3 to 4 times costlier than rest of the country due to the geographical location of the Southern States. TANGEDCO is forced to purchase power at Rs.14/- per unit also from the market to discharge its obligation to compensate the banked energy to wind energy captive consumers.

The installed capacity of wind generation was only 4889.765 MW during 2009, when the earlier order was passed. Now the capacity has grown up enormously and touched 7300 MW. Similarly the quantum of unutilized banked energy has been increasing every year exponentially as below:

Sl. No.	Year	Million Units
1	2008	315
2	2009	251.13
3	2010	350.658
4	2012	481.848
5	2013	769.952

The benefit of banking, which has not been mentioned in the Electricity Act, 2003 was extended to promote the Wind Energy Sector. Continuing the same benefit even after the sector has grown up is not fair and it is only a huge burden on TANGEDCO.

There is a substantial difference in the facts and circumstances under which the earlier Wind Tariff Order No.1 of 2009 was passed and the present Wind Tariff Order No.6 of 2012 was passed. The transmission charges for conventional generators were Rs.2781/MW/day when the 2009 Wind Tariff Order No.1 of 2009 was passed. However, in Order No.1 of 2012 and 2 of 2012, the Commission has fixed Transmission Charges of Rs.6483/MW/day and wheeling charges of 23.27 paise/kWh. The increase in transmission charges is due to the addition of transmission capacity for which the State Transmission Corporation had made substantial investments. The Commission increased the banking charges after a detailed discussion in the Tariff Order. It passed the Wind Tariff Order No.6 of 2012 after taking into consideration the prevalent facts and circumstances and based on the increase in transmission charges.

The APTEL did not consider anything that took place between 2009 and 2012. One of the major factors, among many others, which was not considered by the APTEL is the bifurcation of Tamil Nadu Electricity Board into TANGEDCO and TANTRANSCO, which led to creation of separate assets and liabilities for both the Distribution and Transmission Corporations. The APTEL failed to appreciate that the Commission has discussed all the issue and has given Tariff Order No.6 of 2012 only after considering the prevalent facts and circumstances. The APTEL has not furnished any reason for setting aside of the detailed order of the Commission in the present Wind Order. Further previously it was in terms of units and now the rate is in

terms of money value. Hence, there is no abnormal rise of banking charges and the charges fixed by the Commission is correct and as such may be retained.

As the loss has been continued for two decades on account of the concessional promotional of banking benefit, in order to arrest the above loss, TANGEDCO requested to withdraw the banking. Earlier 5% of banking charges was collected for the services rendered by TANGEDCO regarding banking of wind energy. TANGEDCO cannot do the service at a loss for an endless period. If it has to be continued, along with service charge a compensation has also to be paid by the generator / consumer. Hence the TANGEDCO requested the Commission to increase the banking charges to 20% for service charges and consumption charges. As the TANGEDCO time and again apprised the Commission that TANGEDCO is incurring loss due to banking, the Commission fixed the banking charges in money value to compensate the TANGEDCO.

APTEL says that the computation of taking National average is not correct the State average has to take. Accordingly, the APTEL directed the State Commission to reconsider the computation after hearing the stakeholders. But to utter shock, the TASMA and SIMA took a “U” turn and TASMA filed a interim application before the Commission and SIMA wrote a letter to CMD/TANGEDCO on 24-10-2015 that to implement the computation method of taking National average trading value. Since the banking charges worked out for the year 2013-14, 2014-14 is very minimum, the stand of TASMA and SIMA cannot be accepted by TANGEDCO.

Even though M/s.Beta Wind Farm Pvt. Ltd and IWPA have accepted to take the State average power purchase cost, the contention of them is not to take the Wind Power Purchase cost of Rs.3.51 per unit for banking, since Rs.3.51 per unit is

only for sale to Board category and not to captive generators. The contention of the above parties cannot be accepted, since at the end of banking period at 31st March the unutilized banked energy is paid at the 75% of the Wind Power Purchase rate for captive generators.

The method of calculation for banking suggested by IWPA by equating average power purchase cost with average rate of realization is wrong and it cannot be accepted. In order to return back the wind energy supplied by the generators for banking, by purchasing outside TANGEDCO is supplying the energy at State Average Power Purchase cost at one rate at windy season and at another rate at non-windy season which are higher rate than the wind tariff.

There are 5 Nos. wind tariff rates (Rs.2.70, Rs.2.75, Rs.2.90, Rs.3.39, Rs.3.51) available. For supply of above different rate of wind energy for banking, calculating the banking charges by taking only one rate of wind energy (Rs.3.51) is not correct. It is appropriate to take the average of Rs.2.70, Rs.2.75, Rs.2.90, Rs.3.39, Rs.3.51 = Rs..3.05 per unit (or) at the relevant wind tariff.

Further taking of two years average is also not correct because the tariff of Rs.2.90 or Rs.3.39 (or) Rs.3.51 is fixed with the one year annual generation and not with two years. If the tariff of Rs.3.51 per unit has been fixed immediately after expiry of the control period of Order No.1, dated 20.03.2009, one year average could have been taken, hence taking the two years average is not correct.

Hence, by taking State Average Power Purchase cost and with the average of wind tariff rate for one year 2011-12, the banking charges worked out for the windy season and non-windy season as follows:-

The banking charges worked out for windy season:

I Wind Season:-

Month	2011-12
	Unit rate in Rs.
May	5.80
June	4.84
July	3.56
August	3.53
September	3.64
Average	4.274
Loss per unit	$4.27-3.05^*=1.22$

* The average of Rs.2.70, Rs.2.75, Rs.2.90, Rs.3.39 & Rs.3.51 is Rs.3.05
The banking charges worked out for non-windy season:

II Off Wind Season:-

Month	2011-12
	Unit rate in Rs.
October	5.37
November	4.23
December	4.17
January	4.17
February	5.07
March	3.92
April	7.67
Total	34.6
Average	4.94
Loss per unit	$4.94-3.05^*=1.89$

* The average of Rs.2.70, Rs.2.75, Rs.2.90, Rs.3.39 & Rs.3.51 is Rs.3.05

Eventhough the method of calculation of taking average of 2 years of Central Trading Value for banking charges in 2012 is not accepted to TANGEDCO, but TANGEDCO has implemented the same with a thought that, a separate approval may be requested to adopt the 1 year State average power purchase cost with relevant wind tariff rate for the next year 2013-14 for arriving at the banking charges.

But the above stake holders filed the petition at APTEL and stated that the Commission has raised the banking charges abnormally. Hence the TANGEDCO filed its position at APTEL that the method of calculation of taking 2 years average of

Central Trading Value is wrong and to adopt the 1 year State average with relevant wind tariff.

Considering the above, the Commission in consultative paper issued for the next tariff order, has requested the comments to extend banking facility by adopting the following method:

“Alternatively, the Commission may consider banking for one year. Due to extension of banking facility, the loss that may be accrued to the Distribution Licensee would be the difference between marginal cost of power purchase of TANGEDCO and the applicable wind tariff. In case the banking facility is to be extended, the TANGEDCO shall be permitted to collect banking charges which may be upto the difference as stated above.

Banking charges may be fixed for windy season and non-windy season separately as above for the year 2012-13 i.e. for windy season (May to September) at the rate of Rs.1.22 per unit (Rs.4.27 – Rs.3.05) and non-windy season (October to April) at the rate of Rs.1.89 per unit (Rs.4.94 – Rs.3.05) by taking average power purchase cost with Average Wind Tariff (or) at relevant wind tariff. It is further submitted that, as 94 paise has already been collected, the difference in amount of $Rs.1.22 - 0.94 = 0.28$ paise per unit for windy season and $Rs.1.89 - 0.94$ paise / unit for non-windy season will be collected from the captive consumers for the year 2012-13.

The Commission may fix a rate at which the energy to be banked i.e. out of 1000 units generated, after adjustment of 500 units, balance 500 units to be banked. The 94 paise by the Commission and Rs.1.22 & Rs.1.89 arrived by the TANGEDCO is for the rate at which the energy to be redrawn from that 500 banked units. But for placing the 500 units at banking, a rate has to be fixed but the rate has not been fixed by the Commission. Hence it is requested that the Commission may fix a separate rate at which the energy is to be placed at banking.

It has been viewed in the whole discussion that, the banking charges is a compensation charge to be adjusted to TANGEDCO. But it is not so. The banking

charge means that, a "service charge" to TANGEDCO, for the service rendering to the banking of wind energy, as like the Transmission charge, Wheeling charge and Scheduling and System operation charges for their services. But the Commission has failed to discuss this point and to fix a "service charge" for banking. Initially, for banking the wind energy, 2% of the energy was deducted as a commission to TANGEDCO as banking charges and subsequently it has been increased to 5%. For rendering the service of banking, the above charges were collected in the name of banking charges. As of now also, there is no change in the service rendering by TANGEDCO. As the service charges is very low at 5% from 2001, and in order to compensate the loss out of power purchase from outside for resupplying the power to banking, TANGEDCO requested to dispense with the banking (or) to increase the banking charges.

As of now no service is available in the market at free of cost. Hence, TANGEDCO cannot do a service without any service charges.

The Commission may fix the following two charges for banking separately:

(a) Service charges for banking.

(b) Compensation charges for banking.

(i) the rate at which energy to be banked.

(ii) the rate at which energy to be redrawn from the bank.

For the year 2013-14, 2014-15 and 2015-16, TANGEDCO will work out the banking charges on the Commission approved method in this R.A.No.6 of 2013 and file a separate petition for approval of the Commission. Based on the approval of the Commission, TANGEDCO will collect the difference in charges for the year 2013-14, 2014-15 and 2015-16 from the captive consumers.

6. Deemed Demand Charges:-

Order of APTEL:-

“ xii) Deemed Demand Charges: We set aside the order of the State Commission and remand the matter to the State Commission for reconsideration after giving opportunity to all the persons concerned and in the light of the earlier tariff orders.”

6.1. Submission of IWPA, Beta Wind Farm Pvt. Ltd. and TASMA:-

(1) In Order No.2 dated 15-05-2006 Commission recognized the Deemed Demand concept. This had been followed in subsequent Commission's orders till 2009 as well. It was only in the 2012 renewable tariff orders, the deemed demand concept was withdrawn without calling for any views / comments from the stakeholders. This was set aside by the APTEL in their order dated 24-05-2013.

(2) The position that demand charge is meant for the fixed charges incurred by the Distribution Licensee in providing infrastructure and also incurring the capacity charges is misconceived and incorrect in view of the fact that transmission and wheeling charges are recovered based on the financial costs of infrastructure and capacity charges. Similarly, the position that the Distribution Licensee is providing standby supply Demand and therefore demand charges are to be collected is also misconceived and incorrect in view of the fact that the cost of the entire generation and purchase of power include the standby supply and is factored in determination of retail tariff.

(3) The original position adopted by the Commission will lead to a conclusion of double recovery. If it is established that the demand is a component of tariff, then the demand charges shall also to be adjusted against open access generation transaction as is being done with energy charges. Therefore, withdrawal of deemed demand concept is neither legally tenable nor factually correct. Only after consulting the various stakeholders, the Commission has justified the introduction of deemed

demand concept in both the earlier orders and the Commission has also introduced a formula as how deemed demand charges should be worked out. However, the entire deemed demand charges have been withdrawn with no supporting reasons.

(4) Every unit of energy when injected in to the grid and consumed by consumer results in to reaching of certain quantity of demand, as energy and demand will never go separate. Energy injected would result into a demand and therefore, as already provided by a formula, the demand needs to be arrived for the units of energy supplied and consumed by the captive consumers and accordingly, they are to be made entitled for suitable reduction in the demand charges. When the captive power plant is not generating and injecting any power, the licensee is authorized to collect full demand charges and no reduction in demand charges would occur as no units are injected in such occasions. Hence, there is no revenue loss to the Licensee as contended. It is not technically feasible for the Open Access customer to reduce the sanctioned demand to the extent of availing electricity through Open Access without payment of excess demand charges as specified in the Tamil Nadu Electricity Supply Code. It is irrelevant to consider whether a generating station is injecting power throughout the year or not. Instead, when energy is injected, to the extent of energy injected, there should be some reduction in the demand and consequent demand charges. Accordingly, a formula was already prescribed and followed for several years. As such, the deemed demand concept was in force for almost 6 years and therefore there exists no ground for any change as nothing material was changed in the present scenario.

(5) For the universal obligation of providing electricity to all the open access customers whether captive or otherwise, no doubt, the Distribution Licensee shall adequately equip with standby arrangements. The approval of ARR and the

determination of retail tariff by the Commission are exercised by taking into consideration all the costs incurred by the Licensee to provide these standby arrangements too.

(6) To the extent of electricity provided by the licensee, the licensee is authorized to collect demand charges and therefore, it should be with reference to the quantum of energy supplied and hence there is no justification available to Commission to withdraw the deemed demand concept. On one side, the captive windmill generators are injecting energy and however, on the energy injected and consumed by the captive consumers of wind energy, the utility cannot demand charges to the extent of energy injected by the captive consumer. When the energy is supplied by the captive consumer, for the supplied energy, the utility cannot demand demand charges which amounts to unjust enrichment. Hence, the withdrawal of deemed demand concept is totally untenable.

6.2. Views of TANGEDCO in Written Submission dated 17-02-2015, 08-02-2016 and 22-02-2016:-

The deemed demand, which was introduced to promote captive use and third party sale of wind energy in the earlier wind tariff order is removed by the Commission as the installed capacity of wind energy generation in the State of Tamil Nadu is at par with conventional energy generation. The Commission has introduced the deemed demand concept only for captive consumption in its previous orders. Since the TANGEDCO could not recover the fixed charges fully, the difference in demand charges has been passed on to the general public.

The Petitioners / stakeholders were informed of the revision of deemed demand in the public notice issued by the Commission. The comments were called

for on the point of deemed demand from the stakeholders and they have also filed their comments to the points given in the two public notices.

At the cost of the public, the concessional and promotional benefits were extended to the wind energy generators in the State for the last 20 years. As wind energy sector has grown upto 7500 MW, keeping on extending the concessional and promotional benefits will burden the public. Considering the facts, the concessional and promotional schemes are being removed gradually in the larger interest of public by the Central and State Government.

The fact that the concessional schemes are at the cost of other consumers, is accepted by APTEL. The demand charges are governed by the provisions of Supply Code, Distribution Code and the applicable Tariff Order issued by the Commission from time to time. Sections 9 and 42 of the Electricity Act, 2003 enable consumption of electricity from the captive generating plant. Fourth proviso to section 42 (2) of the Act envisages that surcharge shall not be levied, in case open access is provided to a person, which has established captive generation plant for carrying the electricity to the destination of his own use. This is also reflected in the Note to Regulation 9 (2) of the TNERC Intra State Open Access Regulations, 2005.

In the Tariff Order issued by the Commission in 2006 and 2009, the concept of deemed demand was introduced with a view to reduce the demand charges. However, this was opposed by the TANGEDCO as it was unable to recover the full demand charges relating to providing all the infrastructure facilities as well as tying up of the generation capacity, due to which there is a reduction in the Annual Revenue Return also.

Since the open access regulation cast a duty on the licensee to provide electricity to all open access customers whether captive or otherwise, the fixed charge is getting shifted to the licensee. It is in view of the above, the Commission

decided to withdraw the deemed demand concept followed so far. The Commission also observed that such deemed demand concept is not prevalent in many other states in India.

A Wind Energy Generator either sells the entire energy to TANGEDCO (or) uses it for captive consumption by wheeling the energy through the transmission network of TANTRANSCO and banks the excess energy injected into the grid. The wind generation tariff is a single part tariff. The tariff rate is for unit generation only. There is no variable fuel cost and also there is no demand tariff rate. But, for a HT consumer the tariff is two part tariff – energy charges and demand charges.

In the earlier wind Tariff Orders, the Commission created a two part tariff, fixing energy rate and demand rate for wind energy, even though there was no meter to record demand supplied by Wind Energy Generator. But at the consumer end, the meter records unit consumption and demand consumption.

Both the captive wind generator and sale to TANGEDCO generators are supplying energy to the grid not the demand. But the Commission in the previous Orders observed that the captive wind generators are supplying demand and that demand charges shall be deducted from the total demand charges to be payable by the consumers. For which, 'sale to TANGEDCO generator' did not raise any objection. If the 'sale to TANGEDCO generator' also claims payment for the demand stating that they also supply demand as like the captive Wind Energy Generators, even though the wind tariff is a single part tariff, the same will result in heavy loss to the TANGEDCO.

As a promotional activity, the Commission introduced the deemed demand concept only for captive consumption in its previous orders. Now, it has been removed in the present order keeping in view the larger public interest and the mandate of National Electricity Policy. The Commission has the authority to provide

concession and withdraw the same in exercise of its regulatory powers of all tariffs equitably.

For a consumer of TANGEDCO having sanctioned demand of 1000 KVA, it is the obligation on the part of TANGEDCO to supply the demand at any point of time to the consumer for which the demand charges are collected. During the power shortage period also, by purchasing power at higher cost such as Rs.14 per unit, TANGEDCO supplied the demand to the consumer. As such the consumer is obliged to pay the demand charges to TANGEDCO for the sanctioned demand.

In order to recover the fixed cost made for the infrastructure, to supply the demand to the above consumer, the demand charges are collected by TANGEDCO. Without making any effort on the infrastructure and by availing the same from TANGEDCO, the wind generator wanted to enjoy the benefit of recovery of his demand charges, which is not correct and will result in burden on the general public and hence it can't be accepted. If at all a charge is to be fixed and recovered for the demand supplied by the wind generator, he can charge and recover from his consumer only, not from the demand charges of the TANGEDCO.

It is pertinent to note that, the Commission in para 8.7.4.4 of the Wind Tariff Order No.1, dated 20.03.2009 has stated the following:

"On the other hand, the wind energy generators have represented that the distribution licensee should recover demand charges only for the net energy supplied by them. The commission rejects this proposition because the licensee is obliged at all times to supply the committed demand to the consumer despite wide ranging fluctuations in the availability of wind energy. "

Demand charges and energy charges are intended to defray different items. Broadly speaking while demand charges are meant to defray capital costs, energy charges are supposed to meet the running charges. Every electricity licensee

requires machinery, plant, equipment, substations, distribution lines and so on, all of which require huge capital outlay. The licensee has to raise funds for this purpose which means it has to obtain loans. The loans have to be repaid with interest. Provision has to be made for depreciation of machinery, building, plants stations, lines and have to be maintained, all of which require huge staff. It is to meet the capital outlay and to properly maintain the distribution network, the demand charges are levied and collected. The above expenditures are incurred by the licensee only and not by the generator. Hence the request of the wind generator to reduce the demand charges as deemed demand is not tenable.

The deemed demand concept of reducing the recovery of demand charges of TANGEDCO is not justifiable, since TANGEDCO could not recover the fixed charges fully, then the difference in demand charges are to be passed on to the general public. In view of the larger public interest, removal of deemed demand concept in Order No.6 dated 31.07.2012 by the Commission is in order. This order has not been challenged on the issue of not providing deemed demand to generators. Hence the removal of Deemed Demand facility is correct and may be retained.

7. Banking of Energy and Encashment of lapsed units in REC Captive

Users:-

APTEL's Direction is as below:-

“(xiii) Encashment or lapsed units by REC Captive users: The findings of the State Commission on this issue are set aside and the matter is remanded back to the State Commission with directions to hear all the parties concerned and decide the issue in the light of the judgment rendered by this Tribunal in Appeal No.45 and 91 of 2012.”

7.1. Submissions of IWPA, Beta Wind Farm Pvt. Ltd.and TASMA:-

The averment that the non-extension of banking facility to WEGs under the Renewable Energy Certificate scheme is in consonance with CERC regulations, is

evidently incorrect. The intention and approach behind the evolution of the REC scheme was only to ensure that WEG availing REC benefits was not enjoying dual benefits of availing REC and other concession such as Transmission charges and wheeling charges. However, regulation 5 of CERC Regulations for Renewable Energy Certificate also provides that WEGs under REC scheme can also avail banking subject to the condition that the banking is done on the basis of slot wise adjustment of energy generated and off peak hours energy is not adjusted against peak hour consumption. Slot wise adjustment is followed in the State of Tamil Nadu and the same is also provided for under the impugned tariff order. While so, denying banking to WEGs under REC scheme, would be untenable. Further, this issue has been decided by APTEL in Appeal Nos.45 &91 of 2012 wherein the APTEL has held that WEGs under REC scheme can avail banking provided slot wise adjustment of energy is followed and the same will not amount to a concession as stipulated under the CERC Regulations for Renewable Energy Certificate. This position has also been admitted by TANGEDCO in its counter-affidavit before the APTEL.

In appeal Nos.45 & 91 of 2012 APTEL has held that banking can be availed in respect of REC machines subject to the payment of the applicable banking charges prevailing from time to time. Hence, it is unambiguously clear that the banking facility would be available for machines commissioned under REC and consequently the question of how to treat the surplus units, after adjusting the consumption of the month, does not arise as it would go into the banking. However, there could be surplus units at the end of the financial year. The facilities extended to wind energy are because of its inherent characteristics of the source of the energy i.e., wind. To deny a benefit that is extended to a normal wind energy generator on the ground that REC benefits are availed is neither logical nor in the intention of the REC scheme. The intention and approach behind the evolution of the REC scheme was only to

ensure that a wind energy generator availing REC benefits was not enjoying dual benefits by availing both REC and other concessions that are normally extended to wind energy. It was only to ensure that dual benefits were not enjoyed, CERC in the REC regulations mandated that no concessions in respect of transmission / wheeling charges, and electricity duty should be availed in order to claim REC. To be eligible for claiming REC benefit, in the very same regulations, CERC had allowed availing banking benefit subject to fulfillment of condition pertaining to slot to slot adjustment and off peak hour not being allowed to be adjusted against peak hour.

It is therefore evident that there are no concessional financial benefits available to the generators for availing RECs but the other benefits like banking extended because of the inherent nature of the source' of 'energy shall continue to be extended while availing RECs. If at the end of the financial year, if there are any banked units remaining unconsumed, presently in respect of Non-REC machines the Commission has approved payment of 75% of applicable tariff normally and 100% of applicable tariff during the period when R & C measures are enforced. For a normal machine (non-REC machine), the applicable tariff is preferential tariff.

In respect of REC machines, the applicable tariff is APPC tariff. Hence surplus banked/generated units remaining unconsumed at the end of the financial year shall be paid at APPC rate, i.e. applicable tariff for REC machine. It is very common in the State to have surplus units remaining unconsumed at the end of the financial year as load shedding varying between 8 and 16 hours are enforced resulting in the consumers not being able to consume the available power in full leading to surplus units remaining unconsumed. The captive generators, besides suffering from loss of production due to such rampant load shedding on one hand, would be put to severe

financial hardship if such surplus units are treated as lapsed with no corresponding revenue.

As held by the APTEL, REC generators would be eligible for banking subject to payment of applicable banking charges. The conclusion of the Commission that the REC generators enjoy double sale of energy having been disagreed with by the APTEL because the claim for lapsed energy is made only for the energy component which has not been consumed by the captive consumers and there is no logic in saying that such encashment of lapsed energy to generators availing REC would amount to discrimination as compared to the normal captive user as it is factually incorrect for the following reasons:

- a. A normal captive consumer is entitled to encash such lapsed energy and hence not at a loss.
- b. In order to avail REC, normative transmission and wheeling charges are paid against the concessional charges paid by a normal captive user. Hence the generator availing REC incurs much higher charges compared to a normal generator not availing REC.

In case of Non-REC, it is necessary that payment to lapsed units for REC WEGs at the time of existence of Restriction and Control measures should be 100%. The Commission may extend banking for REC machines and allow APPC rates in respect of excess energy remaining unconsumed at the end of the financial year.

7.2. Views of TASMA on banking to REC Windmills :

The contention that the non-extension of banking facility to WEGs under the Renewable Energy Certificate scheme is in consonance with CERC regulations, is wrong. This matter has been fully analyzed in the Order passed in Appeal No.45 of

2012 by this Hon'ble Tribunal. The intention and approach behind the evolution of the REC scheme was only to ensure that WEG availing REC benefits was not enjoying dual benefits of availing REC and other concession such as banking. However, Regulation 5 of CERC Regulations for Renewable Energy Certificate provides that WEGs under REC scheme can also avail banking subject to the condition that the banking is done on the basis of slot wise adjustment of energy generated. Slot wise adjustment is followed in the State of Tamil Nadu and the same is also provided for under the impugned tariff order. While things are placed so, denying banking to WEGs under REC scheme would be untenable. Further, this issue has been decided by the APTEL in Appeal 91 of 2012 dated 23.11.2012 wherein it has been held that WEGs under REC scheme can avail banking provided slot wise adjustment of energy is followed and the same will not amount to a concession as stipulated under the CERC Regulations for Renewable Energy Certificate. In view of the same, the APTEL has remanded this issue to the Commission in its order dated 24-05-2013 in Appeal No.208 of 2012.

7.3. Contentions of TANGEDCO in Written Submission dated 17-02-2015 and 08-02-2016:-

The period of adjustment provided for conventional generators is one month, after which the unused power gets lapsed. Since REC Regulations of CERC mandate that REC wind generators should not avail any concession, the normative one month adjustment period alone is applicable to REC availing wind energy generators.

The issue of banking on slot to slot basis was held not to be a concession availed by REC availing wind energy generators in A. No. 45 and 91 of 2012. The

issue of period for which banked energy could be retained was not an issue before the Commission or APTEL in the original proceedings.

The Commission has decided that only one month adjustment period is allowed to wind energy generators availing REC as permitted to conventional power as per CERC's REC Regulations. This is in consonance with the fact that wind energy generators availing REC are paying the transmission charges on par with the conventional generators. Merely, because banking on a slot to slot basis is held to be not concessional, the period of banking for one year cannot be held to be not concessional. The APTEL has not given any reason for treating the period of banking on par with the slot to slot banking of energy. The CERC Regulations also do not provide any such provision in the period of banking. Extending banking facility to REC customers might lead to double benefit when compared to regular customers.

Hence, the lapsing the surplus energy after adjustment on every month by the Commission is correct and this position may be retained. As the TANGEDCO is seriously aggrieved and in public interest, an appeal has been filed in. C.A.No.9677 to 9682 of 2013 before the Hon'ble Supreme Court of India against the aforesaid order of the APTEL. The said Civil Appeal is pending and the Supreme Court, on 25.10.2013, has issued notice on the stay' application filed by the TANGEDCO. While so, the present proceedings intended to comply with the directions of the APTEL in Appeal Nos.197, 198, 200, 201, 208 of 2012 and 6 of 2013 by the Commission would end up in multiplicity of proceedings inasmuch as in the event of the Commission passing orders as per the said orders of the APTEL, the TANGEDCO will be put to much disadvantageous position of either taking up the matter again to the Supreme Court or to rework the entire calculations for all these years for a large number of wind energy generators in the first instance and again to

revisit the entire calculations in respect of all such wind energy generators in the later event of the Supreme Court allowing the appeal or passing any modified order in the pending appeal filed by the TANGEDCO. Such an exercise will cause serious prejudice including technical, administrative and accounting difficulties. Therefore, ends of justice require that the Commission may defer all further proceedings in R.A.No.6 of 2013 until a decision is pronounced by the Supreme Court of India in the above C.A.

8. Findings of the Commission:

1. The Hon'ble Appellate Tribunal for Electricity (APTEL) in its Order dated 24.05.2013 based on the Appeal Nos. 197, 198, 200, 201, 208 of 2012 and 6 of 2013 remanded to the State Commission the following issues in the comprehensive tariff order No. 6 of 2012 on Wind Energy dated 31.07.12 for reconsideration:

- (i) Annual Maintenance Charges & Insurance Charges
- (ii) Plant Load factor/Capacity Utilisation Factor
- (iii) Time Value for Money
- (iv) Abnormal rise of banking charges
- (v) Transmission and wheeling charges and line losses
- (vi) Deemed Demand charges
- (vii) Encashment of lapsed units by REC Captive Users

2. Pursuant to the above, the R.A.No.6 of 2013 has been initiated by the Commission and written submissions were made by the parties to the R.A.

Let us now go into the remanded issues one by one.

(i) Annual Maintenance Charges and Insurance charges:

Hon'ble APTEL directed the State Commission to allow the same O&M charges and insurance charges as a percentage of Capital cost as decided in the previous tariff order dated 20.03.09.

The Remand applicant as well as the respondent TANGEDCO have submitted to fix the insurance charges as directed by the APTEL.

Decision of the Commission:

The Commission decides to retain the insurance charges at the rate of 0.75% of machinery cost (i.e. 85% of the capital investment) for the first year to be reduced by half a percent of the previous year's insurance cost every year thereafter along with in addition to the Operation and Maintenance charges already provided in the Commission's Order No.6 dt.31.07.12.

(ii) Plant Load Factor/ Capacity Utilisation Factor:

In regard to the prayer of the appellants in the petition before the Hon'ble APTEL against the order No.6 of 2012 issued by the Commission that the PLF/CUF to be reduced in view of the evacuation constraints, the Hon'ble APTEL observed that 'we are not inclined to allow any reduction in Capacity Utilisation factor on account of loss of generation due to grid problems. However, we have given directions to the State Commission, TANGEDCO and TANTRANSCO in paragraph 114 for augmentation of transmission and distribution system to avert loss of generation at Wind Energy Generators due to inadequate power evacuation infrastructure'.

The Remand Applicants submitted that with huge backing down, naturally the CUF/PLF will get affected and therefore instead of taking an abstract method of calculating the PLF/CUF, the Commission should take real time factors in arriving the final PLF/CUF whereas the Respondent (TANGEDCO) in their submission have stated that in order to sort out the evacuation constraints

and to add new capacity additions, five new 400 KV sub stations were sanctioned by TANGEDCO/TANTRANSCO namely Kayathar 400 KV SS, Kanarpatti 400 KV SS, Thappagundu 400 KV SS, Anikadavu 400 KV SS and Rasipalayam 400 KV SS; the present position of the evacuation schemes carried out by TANTRANSCO as below:

Kayathar 400 KV SS has been commissioned on 04.07.14. Kayathar - Karaikudi I feeder has been tied up with Karaikudi PGCIL 400 KV Grid substation on 26.07.14 and the Kayathar – Karaikudi II feeder has been tied up on 21.04.2015. The works are under progress in Kanarpatty, Thappagundu, Anikadavu and Rasipalayam 400 KV sub stations and expected to be completed before March'16/April'16. TANGEDCO/TANTRANSCO has programmed and is carrying out the evacuation infrastructure works and the evacuation scheme has been reviewed at national Level by CEA/PGCIL/MNRE at regular interval and that there is presently no evacuation constraint which fact has been reported by Southern Regional Power Committee (SRPC) itself.

Decision of the Commission:

The Commission took note of the transmission infrastructure facilities that have since been established and are under execution or expected to be commissioned early. We are satisfied that the above schemes would be more than adequate to address the constraints faced by TANTRANSCO to evacuate the energy generated in full by the Wind Energy Generators. However, we direct the TANGEDCO and TANTRANSCO,

a) to ensure timely completion of the schemes under execution and that are planned. A periodic report to this effect shall be sent to the Commission every quarter.

b) to address the sub transmission issues, if any, that are standing in way of complete evacuation of the wind energy generated; such issues identified and action plan to address them submitted to the Commission within 3 months from the date of the order.

c) Backing down of wind generation shall be avoided. Such backing down can be resorted only when there is any threat to grid security. Every wind energy generation backing down instruction by State Load Despatch Center shall be recorded alongwith reasons as to why such backing down had become inevitable.

(iii) Time value for Money:

Hon'ble APTEL remanded the issue observing that this issue is decided in favour of the Appellants in terms of this Tribunal's findings in Judgment dated 18.12.2007 in Appeal No.205 and 235 of 2006.

The Remand Applicants submitted that the Commission may pass appropriate orders in the light of APTEL's order dated 18.12.2007 in Appeal No. 205 of 2006

Decision of the Commission:

The Commission's order No. 3 dated 15.05.2006 adopted the "cost plus single part average tariff". This tariff order was challenged by Wind Power Producers Association before the Hon'ble APTEL. The Hon'ble APTEL in its order dated 18.12.2007 against the appeal No. 205/06 and 235/06 have directed the Commission that 'the tariff for the wind power producers be redetermined within the next two months by taking into consideration the time

value of money'. The order of the APTEL has been challenged by the Commission and the TNEB before the Hon'ble Supreme Court and the Hon'ble Supreme Court in its order dated 03.03.2008 (against appeal Nos. 1361-1362 of 2008) have stayed the order of the APTEL. Therefore, the Commission decided to continue with the present methodology of cost plus single part average tariff in the impugned Tariff order No. 6 of 2012 dated 31.07.12.

In this regard, the Hon'ble APTEL in its Judgment in the present remanded appeal directed as follows:

“As correctly pointed out by the Appellants that it is settled law as laid down by the Hon'ble Supreme Court in (1991) 4 SCC1, that a stay order is always in relation to the implementation of the order under challenge and not the principle on the basis of which the order had been passed. As matter of fact, the concept of time value of money has been explained in detail in the judgment of this tribunal dated 18.12.07. The Central Commission's Regulations, 2012 for Renewable Energy Generators also provide for determination of generic tariff on levelised basis for the tariff period. Therefore, the concept as decided by this tribunal being valid can be considered by the State Commission on the strength of the amended Regulations which were framed subsequent to the stay order. Therefore, the State Commission is directed to pass appropriate order in the light of the observations made in this judgment on this point.”

The TNERC's Regulation on Power Procurement from New and Renewable Sources of Energy Regulations 2008 with regard to tariff determination is reproduced below:

“4. Determination of Tariff

(6) While determining the tariff, the Commission may adopt appropriate tariff methodology.”

The Commission therefore proposes to adopt cost plus single part levelised tariff methodology in adherence to the directions of the APTEL and invoking the above proviso in the TNERC's Regulations.

(iv) Abnormal rise of Banking:

With regard to banking, Hon'ble APTEL's ruling is given below:

‘The findings of the State Commission on this issue are set aside. The State Commission is directed to reconsider the computation of the charges after hearing the stake-holders and decide the issue afresh keeping in view the observations made by this Tribunal in Appeal No. 98 of 2010.’

The Remand Applicants submit that,

a) banking charges was earlier collected at the rate of 5% of the units banked. Now, the banking charges are collected at Rs.0.94 per KWhr of each unit banked and redrawn for consumption. In terms of money, it is considered highly abnormal and exorbitant.

b) the average power purchase cost of TANGEDCO was not at all taken into account. In contra, it is only the all India average taken on the basis of power purchases made through bilateral trading based on the CERC figures which is not relevant to the present situation in TamilNadu. Therefore, the scientific way of calculating the difference ought to be between the average cost of power incurred by TANGEDCO (at Rs.4.05 for the year 2011-12) and the average sales realization per unit (at Rs.4.99 for the year 2011-12) and that should be the Bench mark. It would satisfy regulatory requirements only then. Thus, it could be seen that the average realization by TANGEDCO is 94 paise per unit more than the average cost of power spent by TANGEDCO. Hence there is no loss due to banking and banking therefore could be serviced at a reasonable cost as stood earlier at 5% which works out to 28.46 paise per unit in terms of money.

c) the Commission is to hear stakeholders and follow the orders of the APTEL in Appeal No.98 of 2010 to compute banking charges.

Per contra Respondent (TANGEDCO) submit that,

a) the concept of banking is detrimental to the financial interest of the TANGEDCO, however the same is provided for utilizing the infirm power from wind energy generators. TANGEDCO as a licensee is under obligation to bank wind energy supplied by the wind energy generator during peak wind season (four months in a year). During off season (remaining eight months), TANGEDCO has to discharge the obligation of providing electricity to the captive consumers of the wind energy generators. TANGEDCO is bound to purchase high cost power from various sources even at Rs.14/- per unit and supply it to the captive consumers of the wind energy generators. It is not rational to put the financial burden incurred by the TANGEDCO in the above act of banking which provides to the wind captive consumers during the eight months when wind energy is deficient on any other category of consumers.

b) Banking charges may be fixed for windy season and non-windy season separately by taking average power purchase cost with average wind tariff (or) at the relevant wind tariff.

c) The Commission may fix the following two charges for banking separately:

1. Service charges for banking
2. Compensation charges for banking
 - (i) The rate at which energy to be banked
 - (ii) The rate at which energy to be drawn from the bank.

Decision of the Commission:

The concept of banking of power from captive generating units which was initially introduced in TNEB in October 1983/December 1983 with a banking period of nine/one month(s) slowly evolved and in 2002, TNEB revised the banking period to one year commencing from 1st April with banking and wheeling charges having been fixed at 5% and the balance units being treated as lapsed. Thereafter, the Commission issued two tariff orders one in 2006 and 2009 wherein the banking period was considered as 12 months from April to March and the unutilized energy was allowed to be encashed at 75% of the preferential tariff rate. Prior to issuing Wind Tariff order in 2012, the commission invited views of all stakeholders on whether banking period to be retained, reduced or dispensed with in view of the satisfactory growth in the installed capacity of wind generators. In response most of the wind generators insisted retaining the existing banking mechanism. But banking period was sought to be changed from May to April every year. TANGEDCO in its comments had stated that the banking provision for wind energy may be dispensed with not only to the future projects but also to the existing projects commissioned before and after 15.05.06 irrespective of tariff order to which WEG is covered. These issue have been analysed and discussed elaborately in the Wind Tariff order of 2012 and finally fixing of banking charges was decided by the Commission keeping in view that the two periods relating to banking of energy and drawl of energy from the banking should be equitable to both generators/consumers on one hand and the licensee/consumers on the other hand.

In the appeal No. 98 of 2010 filed by TANGEDCO against the previous wind energy order dated 20.03.09 passed by this Commission, the Hon'ble APTEL

held that there is no justification for the Appellant to pray for the increase of banking charges from 5% to 15% and curtailment of banking period from one year to one month and observed that the State Commission has rightly decided that the prayer of the TNEB was too radical.

Though banking has not been mentioned in the Electricity Act 2003, the facility of banking has been extended time and again to the wind energy generation in the State. For reasonably compensating the loss to the distribution licensee on account of banking of wind energy, the Commission examined different alternatives. However, now both the remand applicants and the respondent have contested the average purchase cost through bilateral trading segment (All India) being taken as benchmark for adjustment for the purpose of banking in the Tariff order 2012.

Such concessions like banking are essential to promote investments in the sector. These are parts of hand holding exercise for the industry to grow, mature and stand on their own. It is also necessary to infuse confidence in the minds of investors that there is a continued and sustained policy which does not undergo flip flops or irrational and drastic changes. It is with this view the concessions are to be looked into. However, it is equally essential that these hand holding concessions are reviewed and slowly withdrawn as the maturity level of the sector grows up for, continuing concessions admittedly means that someone else is paying for the concessionaire. It is necessary to understand that there is no free lunch in a free market. The test of maturity lies in testing the growth. The capacity of wind energy generator which was little over 4000 MW at the beginning of 2009 has approached near the 7000 MW mark at the

end of 2011. The number of established players in the sector has also substantially increased. While the installed capacity of the utility from other sources of energy stood at 10,237 MW, the same from wind energy was 6971 MW. Hence, so far as the state of TamilNadu is concerned, the wind sector has been more than adequately promoted to an extent that utility is finding it difficult to handle the energy generated from the wind energy generators and facing complaints of rampant back down. It is therefore time that the promotional concessions are gradually withdrawn. It is in this light the concession of banking is to be looked into. This concession is not mandated in the Electricity Act 2003 and many states do not have this provision. Even in the States where banking facility has been extended, it is not in the same form as is being extended in the State. There the concessions of banking are much limited.

Instead of withdrawing the concession abruptly the Commission decided to compensate the losses that would be sustained by the utility in the process of extending this facility. However both the remand applicant as well as the respondent TANGEDCO have vehemently contested the adoption of all India average purchase cost through bilateral trading.

Let us try to understand as to what happens to the energy banked at the time of its injection as well as its withdrawal. When the generator generates more energy than what he can consume the extra energy thus generated and injected into the grid is the banked energy. The law of electricity dictates that at any point of time the energy injected shall exactly be equal to the energy consumed. It can't be more or less but need to be exact. Therefore one may wonder as to what happens to extra energy injected in. As the supply has to

be equal to the demand, the above energy may be consumed in the following ways:

- i) Creating a demand locally within the area of licensee
- ii) Backing down generation from other sources of energy
- iii) Allowing the extra energy to pass through the licensee's boundary as Unscheduled Interchange (UI)
- iv) Selling to other licensees or parties.

When demand and supply equal each other, creating a demand within the licensee's area to absorb the additional generation is theoretically difficult one. May be, for example, the licensee would increase the number of hours of supply to the consumers like agriculture where they are required to be fed for a restricted hours. The revenue to the licensee out of this mode of adjustment is nil since it is getting paid annual subsidy by the Government of TamilNadu on fixed number of units per horsepower per annum basis.

Another possibility is to back down generation from power plants operating with other resources. The technical limitations would restrict the quantum or level up to which the backing down can be resorted to. Further as the backing down progressively increases the variable cost of power from such sources would see a rapid dip.

It may also be possible to let the energy flow into the grid and be consumed by any other utility/licensee who is in need at that point of time. Payment for such energy transaction is settled under UI mechanism or deviation settlement mechanism. The Grid code discourages the practice of unscheduled interchange and stipulates stringent conditions and penal measures.

Finally the extra power can be sold in the market. If the licensee can foresee the quantum of excess energy that may be available, in advance, it has the option of selling the same through the exchanges. As the quantum

that could be banked on the given day is pretty difficult to predict in advance and initiate sale of the same through the exchange. Again the rate that can be realized from selling through exchanges depends on the demand vs supply equation. As additional energy is tended to be sold in the exchange the final derived rate would tend to go down from what it would be in the absence of such energy.

Similarly the reverse happens when the consumer wants to use its banked energy. The licensee would resort the following:

- i) Increasing generation from other sources of energy
 - ii) Drawing from grid as unscheduled interchange
 - iii) Buying from exchanges
 - iv) Shedding some of its loads.
- In practice the utility would be following one or more or combination of

above avenues both while disposing the extra energy as well while returning the banked energy to the consumer.

Using the pumped storage plant may be said to be another option. However, the pumped storage plant is useful to address the intra day variation than to come into rescue of banking operations.

The liability to the licensee, that is the cost of banking, would be difference in cost of supplying the banked energy and realization from utilization of the same at the time of its injection.

It can be looked at in another angle also. We may try to understand what would be the gain that would be derived by the consumers of captive energy from wind energy generators due to extension of the benefit of banking. In the absence of banking facility the additional units generated would have been encashed by them at 75% of the applicable wind tariff. Let us see what happens when they are allowed to bank that units for adjusting against their future consumption. This enable them to avoid payment of

electricity consumption charges in the following months to the extent of units available at banking. In the process, the gain accruing to them on account of extension of banking is nothing but the difference between the applicable electricity consumption rate, that is to say Industrial tariff or commercial tariff as the case may be and the 75% of the wind tariff. This is the opportunity cost lost by the licensee due to the extension of banking facility. This is exactly what they want to get compensated.

The calculation of the actual cost of banking is complex as seen above especially in the absence of data and dynamic in nature. Therefore, the Commission desists from fixing finite charge in terms of paise for banking in this order.

However, the Commission fully appreciates that such concessions are not to be continued for ever beyond the point of its utility and have to be gradually withdrawn by adopting such measures which would discourage the practice.

In light of the above analysis, the Commission decides that bringing back the old practice of levying banking charges in terms of percentage of energy banked and to progressively increase it over time is the best option left to it at the present juncture. To begin with it is decided to fix the banking charges at 10% of the energy banked. While fixing so, the Commission does not want to touch the banking period of one year from 1st April to 31st March in this order.

(v) Levy of Transmission Charges and Transmission Losses:

Hon'ble APTEL held that 'the Appellants have indicated that the revised transmission charges come to 47.33 paise calculated at 40% of Rs.6483/MW per day. In this connection, we have to observe that this tribunal

in the Judgment in Appeal No.102 of 2012 dated 4.2.2013 has already directed the State Commission to re-determine the transmission charges as per the directions given in that judgment. In the light of the said directions, the Appellants are at liberty to make submissions before the State Commission for getting the benefit on account of redetermination of the transmission charges'.

Commission's Status:

The Hon'ble Appellate Tribunal for Electricity (APTEL) in its Order dated 04.02.2013 based on the Appeal No 102 of 2012 directed the State Commission to redetermine the transmission charges passed in Order No.2 of 2012 for the intra state transmission tariff by TNERC on basis of allotted transmission capacity. Pursuant to the above, the R.A.No.1 of 2013 has been initiated by the Commission and written submissions are being made by the parties to the R.A. and final orders are yet to be pronounced. As and when this Commission comes out with the order, the benefit of redetermination of transmission charges that accrue will be passed on to the Remand applicants.

(vi) Deemed Demand Charges:

Hon'ble APTEL held that, 'we set aside the order of the State Commission and remand the matter to the State Commission for reconsideration after giving opportunity to all the persons concerned and in the light of the earlier Tariff Orders'.

It is contended by the remand applicants that, when energy is injected, to the extent of energy injected, there should be some reduction in the demand and on consequent demand charges; levying demand charges to the extent of energy injected by the captive consumers would amount to unjust enrichment by the utility.

Per contra the respondent TANGEDCO submits that the deemed demand concept was introduced for captive consumption in its previous Orders. The Commission have the authority to provide concession and withdraw the same in exercise of regulatory powers of tariff equitably. The concept of deemed demand which is not prevalent in any other State, has been removed by the Commission in its tariff order No.2 of 2012 which has not been challenged and hence the deemed demand facility needs to be removed.

Decision of the Commission:-

While the utility files its ARR it has to account for all its revenue including the demand charges. In doing so the utility would reckon the sanctioned demand of all its consumers to arrive at the total demand charges realisable. It would not have any provisions or allowance for the deemed demand charges. In the given situation if reduction in deemed demand charges is effected for the energy injected by the captive consumer there is bound to be a shortfall in the revenue to that extent than provided for in the ARR against demand charges. Therefore, the Commission feels that the contention that removal of deemed demand charges would result in unjust enrichment of the utility is not tenable. The Distribution Licensee is entitled to collect demand charges as per the relevant provisions of supply and distribution code. There is no such provision in the codes available to effect reduction in payment of demand charges towards deemed demand. It is the duty cast on the Distribution licensee to ensure supply to the consumer upto the extent of sanctioned demand at any point of time during the period of agreement. Hence it has a right to collect demand charges for such

sanctioned capacity. The consumer is obligated to pay demand charges to that extent. It is always open to the consumers who avail captive consumption or third party purchase to have its sanctioned demand reduced to the extent thereby reducing its liability to pay the demand charges. However, there is no way to deny the Distribution Licensee from exercising its rights to collect the demand charges based on the sanctioned demand subject to provisions in the codes. The concept of deemed demand itself is not a well conceived one. It should have been introduced without the full knowledge of its implications. There is no reason to continue that. Despite the fact that it has been introduced by this Commission as early as 2006 no other States/Commission preferred to replicate the concept in their respective States. In fact, TNERC itself has removed this provision in its tariff Order No. 2 dated 30-3-2012. The concept of deemed demand cannot be said to be pertained to the exclusive domain of wind generators. The deemed demand under dispute, when it was introduced covered energy availed from all sources. Applicability to Wind Energy Generator is a natural extension. In-as-much as this concept has been withdrawn in the tariff order 2012, and such facility is not extended to any other consumer, there is no reason to retain it for Wind Energy Generators alone. In the light of the above, the Commission decides that the benefit of deemed demand cannot be extended to the Wind Generators also as held in Order No. 6 dated 31-7-2012.

(vii) Banking facility and encashment of lapsed units by REC Captive users:

Hon'ble APTEL set aside the findings of the State Commission on this issue and remanded the matter to the State Commission with directions to hear all

the parties concerned and decide the issue in the light of the judgment rendered by the Tribunal in Appeal Nos. 45 and 91 of 2012.

Remand Applicants submit that the contention that the non extension of banking facility to WEGs under Renewable Energy Certificate (REC) Scheme is in consonance with CERC Regulations is wrong. The intention and approach behind the evolution of the REC scheme was only to ensure that WEG availing REC benefits was not enjoying dual benefits of availing REC and other concession such as banking. However, Regulation 5 of CERC Regulations for Renewable Energy Certificate provides that WEGs under REC scheme can also avail banking subject to the condition that the banking is done on the basis of slot wise adjustment of energy generated. Slot wise adjustment is followed in the State of TamilNadu and the same is also provided for under the impugned order. While things are placed so, denying banking to WEGs under REC scheme would be untenable. In appeals Nos. 45 & 91 of 2012, APTEL has held that WEGs under REC scheme can avail banking provided slot wise adjustment of energy is followed and the same will not amount to a concession as stipulated under the CERC Regulations for Renewable Energy Certificate. Banking can be availed in respect of REC machines subject to the payment of the applicable banking charges prevailing from time to time.

Respondent (TANGEDCO) submits that the period of adjustment provided for conventional generators is one month after which the unused power gets lapsed. Since REC Regulations of CERC mandate that REC wind generators should not avail any concession, the normative one month adjustment period alone is applicable to REC availing wind energy generators. The issue of

banking on slot to slot basis was held not to be a concession availed by REC availing wind energy generators in Appeal No. 45 and 91 of 2012. The issue of period for which banked energy could be retained was not an issue before the Regulatory Commission or APTEL in the original proceedings. Merely because banking on a slot to slot basis is held to be not concessional, the period of banking for one year cannot be held to be not concessional. The CERC Regulations also do not provide any such provision in the period of banking. Extending banking facility to REC customers might lead to double benefit when compared to regular customers. Hence, lapsing the surplus energy after adjustment on every month by the Commission is correct and this position may be retained.

Decision of the Commission:

Appeal Nos. 45 and 91 of 2012 before the Hon'ble APTEL was for determination of any concession availed by the WEGs for availing the REC with respect to Transmission charges and banking facility. The Appeal was disposed of by the Hon'ble APTEL as follows with respect to the banking facility for REC captive users:

“The banking facility provided to the wind energy generator by the State Commission in its order no.3 dated 15.05.06 requires maintenance of slot to slot banking account and adjustment in the same way as for other renewable generator against peak/off peak/normal consumption and the unutilized portion of the banked energy as on 31st March to be treated as sold to the distribution licensee at the rate of 75% of normal purchase rate. The banking charges have been decided as 5%. Thus the wind energy generator cannot utilize banked energy generated during off peak hours during the peak hours or normal hours. According to the explanation to Regulation 5 of the Central Commission Regulations for Renewable Energy Certificate, the CPP cannot avail any benefit in the form of concessional/promotional transmission or wheeling charges, banking facility etc. for being entitled to get REC. The banking facility benefit has been explained to mean only such facility where CPP can utilize banked energy at any time even when it is injected into grid during off peak hours. Thus, the Appellant satisfies the condition laid down in

the Central Commission Regulations regarding banking facility benefit. However, the State Commission has correctly decided that the banking charges as determined by the State Commission in the respective tariff order will be payable by the Appellant. Thus, the appellant is entitled to REC benefit on payment of banking charges at the prevailing rate. As and when the banking charges are revised by the State Commission, the same will be applicable to the Appellant.”

The Central Electricity Regulatory Commission had notified the CERC (Terms and Conditions for Recognition and Issuance of Renewable Energy certificate for Renewable Energy Generation) Regulations, 2010 vide notification dated 14th January 2010. As per the notification, the concept of renewable energy certificate seeks to address the mismatch between availability of renewable energy sources and the requirement of obligated entities to meet their renewable purchase obligations. The REC mechanism mainly aims at promoting investment in the renewable energy projects and to provide an alternative mode to the RE generators for recovery of their costs.

The Regulation 5 of the CERC’s Regulation on renewable energy certificates specifies eligibility criteria for an RE generator under REC framework and the extracts with respect to “banking facility benefit” is reproduced below:

“5.c.it sells the electricity generated either (i) to the distribution licensee of the area in which the eligible entity is located, at the pooled cost of power purchase of such distribution licensee as determined by the appropriate commission (ii) to any other licensee or to an open access consumer at a mutually agreed price, or through power exchange at market determined price.

Explanation- for the purpose of these regulations “Pooled Cost of Purchase’ means the weighted average pooled price at which the distribution licensee has purchased the electricity including cost of self generation, if any, in the previous year from all the energy suppliers long term and short-term, but excluding those based on renewable energy sources, as the case may be.

*.....
Provided further that a Captive generating Plant (CGP) based on renewable energy sources shall be eligible for the entire energy generated from such plant for self consumption for participating in the REC scheme subject to the condition that such CGP has not availed or does not propose to avail any*

benefit in the form of concession/promotional transmission or wheeling and/or banking facility benefit:

.....

Explanation: For the purpose of this Regulation, the expression “banking facility benefit shall mean only such banking facility whereby the CGP or any other renewable energy generator gets the benefit of utilizing the banked energy at any time (including peak hours) even when it has injected into grid during off-peak hours.

As per TNERC’s Renewable Purchase Obligation Regulations, 2010, the Regulation 6, Eligibility and Registration for Certificates stipulates as follows:

- 1) *A generating company engaged in generation of electricity from renewable energy sources shall be eligible for obtaining accreditation from the State Agency if it fulfills the following conditions:*

.....
b) it sell the electricity generated either (i) to the distribution licensee in the State of Tamil Nadu at a price not exceeding the pooled cost of power purchase or (ii) to any other licensee or to an open access consumer at a mutually agreed price or through power exchange at market determined price

Provided that such a generating company having entered into a power purchase agreement for sale of electricity at a preferential tariff shall not on case of premature termination of the agreement, be eligible for participating in the Renewable energy Certificate scheme for a period of three years from the date of termination of such agreement or till the scheduled date of expiry of power purchase agreement whichever is earlier, if any order or ruling is found to have been passed by the Commission or a competent court against the generating company for material breach of terms and conditions of the said power purchase agreement;

Provided further that a grid connected CGP based on renewable energy sources shall be eligible for the entire energy generated excluding auxiliary consumption from such plant but including self consumption for participating in the REC scheme subject to the condition that such CGP has not availed or does not propose to avail any benefit in the form of concession/promotional transmission or wheeling and/or banking facility benefit and waiver of electricity duty/tax:”

The Central Commission vide their above Regulation 5 have specified about the slot to slot adjustment only as banking facility and banking period has not been mentioned as rightly contended by TANGEDCO. Further it is stated again that the facility of banking permitted for the wind energy generator is not contemplated in the Electricity Act 2003. But at the same time Section 86 (1) (e) of the Act as well as the Section 61 of the Electricity Act

mandates the Appropriate Commission to promote co-generation and generation of electricity from renewable sources of energy. As promotional/concessional facility, banking of energy for one year was provided to the wind energy generators alone and was extended time and again. Though the wind sector has been adequately promoted in the State, the concession provided is being continued with in spite of the considerable impact on the finances of the distribution utility of the State. The impact of banking is meager in other states in view of the much limited concessions of banking available there. Hence, this benefit/concession was not extended to REC captive users since REC Regulations of CERC and TNERC mandate that REC wind generators should not avail any concession.

However, now, as per directions of Hon'ble APTEL this one year banking facility benefit applicable to non REC captive users is extended to REC Captive Users as well and the encashment of lapsed unit may be made at 75% of the applicable rate for REC users.

(viii) Based on the above decisions, the Tariff for Wind Energy covered under Order No.6 of 2012 dated 31-7-2012 is recomputed and found to be Rs.3.96 per kwh without considering the Acceleration Depreciation (AD) benefit to be availed by the consumers and Rs.3.53 per KWh in case of generators who avail AD benefit. Detail Tariff workings are placed as annexure I & II respectively.

(ix) The wind mills commissioned on or after 01.08.2012 shall be eligible for this recomputed tariff. Other related charges specified in this order shall be applicable to all the wind energy generators, irrespective of the date of commissioning.

Summary of our Findings:

- i) Insurance charges: As per directions of the Hon'ble APTEL, Insurance charges is allowed as a percentage of capital cost as decided in the previous tariff order dated 20.03.2009.
- ii) Plant Load factor/Capacity Utilisation Factor: The TANGEDCO/TANTRANSCO are directed to furnish periodic report every quarter on transmission schemes under execution and that are planned. Similarly, report on sub transmission issues if any and action plan to address them shall be furnished separately by TANGEDCO within 3 months from the date of the order. Also every wind energy generation backing down shall be recorded with reasons.
- iii) Time Value for money: As per directions of the Hon'ble APTEL, the Wind energy tariff is recomputed on levelised basis.
- iv) Abnormal rise in banking charges: After hearing the stake holders, this has been reconsidered by the Commission and banking charges has been fixed at 10% of the energy banked.
- v) Transmission and wheeling charges and line loss: The benefit of redetermination of transmission charges passed in Order No.2 of 2012 for the intra state transmission tariff that accrue will be passed on to the Remand Applicants as and when the respective Order of this Commission is pronounced.
- vi) Deemed Demand charges: After due consideration to the views of all the persons concerned and in the light of the earlier tariff orders, this Commission decides that as the concept of deemed demand has been withdrawn and not extended to any consumer, the benefit of deemed demand cannot be extended to the Wind Generators as well.

vii) Encashment of lapsed unit by REC captive users: As per directions of the Hon'ble APTEL one year banking facility benefit applicable to non REC captive users is extended to REC Captive Users as well and the encashment of lapsed unit may be made at 75% of the applicable rate for REC users.

The above findings are rendered by the Commission subject to the outcome of C.A.Nos.9677 to 9682 of 2013 filed by the TANGEDCO and C.A.No.9683 of 2013 filed by TASMA pending before the Hon'ble Supreme Court of India.

9. Appeal:-

An appeal against this order shall lie before the Appellate Tribunal for Electricity under section 111 of the Electricity Act, 2003 within a period of 45 days from the date of receipt of a copy of this order by the aggrieved person.

(Sd.....)
(G.Rajagopal)
Member

(Sd.....)
(S.Akshayakumar)
Chairman

/ True Copy /

Secretary
Tamil Nadu Electricity
Regulatory Commission

