Appellate Tribunal for Electricity
(Appellate Jurisdiction)

Appeal No. 98 of 2010

Dated:18th March, 2011

Present: Hon'ble Mr. Justice M. Karpaga Vinayagam, Chairperson
Hon'ble Mr. V. J. Talwar, Technical Member,

IN THE MATTER OF

Tamilnadu State Electricity Board,
144, Anna Salai,
Chennai-600 002 … Appellant

Versus

1. **Tamil Nadu Electricity Regulatory Commission,**
   TIDCO Office Building,
   No.19A,
   Rukmani Lakshmipathi Salai,
   Marshells Road,
   Chennai-600 008

2. **Indian Wind Turbine Manufacturers Association,**
   Mahaveer Apartments,
   4A/511, East Coast Road,
   Thiruvanmiyur,
   Chennai-600 041

3. **Indian Wind Power Association,**
   Ground Floor,
   40, Besant Avenue, Adyar,
   Chennai-600 020 ….Respondent(s)

Counsel for Appellant(s): Mr. Ramji Srinivasan,Sr Adv.
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Mr. Swapnil Verma,
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Mr. Sunil Sharma,
Mr. Raghenth Basani
Mr. Anurag Sharma,
Mr. Sreekumar Panicker,
Ms. Surbhi Sharma,

JUDGMENT

PER HON'BLE MR. JUSTICE M. KARPAGA VINAYAGAM, CHAIRPERSON

1. Tamil Nadu Electricity Board is the Appellant. Tamil Nadu State Regulatory Commission (State Commission) is the

first Respondent. The Indian Wind Turbine Manufacturers Association and the Indian Wind Power Association are the Respondents 2 and 3.

2. The impugned order passed by the State Commission dated 20.3.2009, relating to the Comprehensive Tariff Order for Power Procurement from Wind Energy Generators is the subject matter of the challenge in this Appeal filed by the Tamil Nadu Electricity Board. The relevant facts are as follows:

(i) The Appellant has been concentrating on and encouraging Wind Energy Sector from the year 1986, with the guidance of Ministry of Non-Conventional Energy Sources (MNES). The Appellant has established its 19.355 MW demonstration Wind Farm Project in Tirunelveli and Udumalpet area from 1986 to 1993 with the financial assistance from the Ministry of Non-Conventional Energy sources (MNES). Based on

the successful functioning of the demonstration Wind Farm Project, the private sector in Tamil Nadu showed interest in investing in the Wind Farm Projects. The State Commission passed the tariff order dated 15.5.2006, for the non-conventional energy sources based energy generation. Aggrieved over the said order, the Appellant filed a review petition before the State Commission. However, the State Commission dismissed the same. There upon, the Appellant requested the Government to issue policy directives u/s 108 of Electricity Act, 2003. Accordingly, on 11.04.2007, the State Government issued the policy directives to the State Commission to the effect that power purchase rate of Rs.2.90 per unit should be from 1.4.2007. However, the State Commission requested the Government to withdraw this directives and directed the Appellant Board to implement the order dated 15.5.2006. The

Appellant Board implemented the said order. In the meantime, the Wind Power Producers Association filed an Appeal before this Tribunal as against the order dated 15.5.2006 to revise the tariff rates based on the Time value of money. Accordingly, this Tribunal by the order dated 18.12.2007 directed the State Commission to revise the tariff rates as fixed in the order dated 15.5.2006. Against this Judgment of Tribunal, the Appellant Board filed an Appeal before the Supreme Court and the same is pending.

(ii) At that stage, the Wind Energy Generators filed a petition before the State Commission in MP No.9 and 23 of 2008 to waive the control period of 03 years and prayed the State Commission for a new tariff rate. Even though the Appellant Board objected to the waiver of control period, the State

Commission through its order dated 19.9.2008 waived off the control period of 03 years.

(iii) Thereupon, on 26.12.2008, the State Commission issued a draft consultative paper on power procurement for wind energy generators and allied issues. The Appellant Board submitted its suggestions/comments on the draft consultative paper based on the financial and operational position of the Appellant Board. However, the State Commission without accepting the suggestions made by the Appellant Board, passed the impugned order dated 20.03.2009. Aggrieved, by the said order, the Appellant Board has filed this Appeal.

3. The Learned Counsel for the Appellant has made the following submissions while assailing the impugned order:

(i) The reduction in control period by the State Commission from 3 years to 2 years will cause a lot of

hardship to the Appellant as it can not plan its operation in a short period of 2 years.

(ii) The State Commission wrongly arrived at a conclusion of the capital cost of Rs.5.35 crores MW without calling upon the wind energy developers to substantiate the cost of wind mill.

(iii) The State Commission has fixed the interest rate as 12% instead of fixing interest rate of 9% without considering the reduction in interest after economic reforms in the country.

(iv) The State Commission directed the Appellant to pay full value of the unutilised energy at the end of the financial year when it enforces restriction control measures. This would result in heavy financial burden on the Appellant and the management of the grid would become difficult.

(v) The State Commission has fixed wheeling and transmission charges as 5%. Since the transmission and distribution losses have gone up in the recent years, the charges should have been enhanced to 15%.

(vi) The Clean Development Mechanism at the rate of 100% to the developers in the first year and thereafter reduced by 10% every year till the sharing becomes equal in the 6th year is erroneous, as it runs in conflict with the order passed by the State Commission earlier on 15.5.2006.

(vii) In regard to the Scheduling and System Operation charges, the State Commission has failed to appreciate that in the case of conventional energy, frequency is maintained through its generation and supply and no continuous monitoring is required. However, in case of infirm power like wind energy frequency is always dependent upon the generation

which require continuous monitoring and therefore, the benefit on this account should not be passed on to the wind energy operators.

(viii) The State Commission has gone ahead and fixed the purchase price in the absence of the guidelines to be framed by the Central Commission and without following the competitive bidding process as laid down u/s 63 of the Electricity Act.

(ix) The State Commission has fixed the purchase price of Wind Mill without being conscious of the fact that as per Section 61 of the Electricity Act, the appropriate Commission must safeguard the interest of the consumers, while fixing the tariff besides providing for the recovery for the cost of electricity in a reasonable manner.

4. The Learned Counsel for the Respondents defended the impugned order by pointing out various findings and reasonings

given in the impugned order passed by the State Commission.

5. We have heard the Learned Counsel for the parties and carefully considered the submissions of the rival parties. The issues that may arise for consideration in this Appeal are as follows:

(i) Reduction of Control Period,

(ii) Capital Cost,

(iii) Interest on Loan,

(iv) Banking of Wind Energy,

(v) Renewable Energy Purchase Obligation

(vi) Levy of Transmission and Wheeling Charges,

(vii) Clean Development Mechanism,

(viii) Evacuation of Wind Energy

(ix) Adjustment of generated energy

(x) Scheduling and System Operation Charges

(xi) Competitive Bidding,

(xii) Consumer's Interest

6. Let us now deal with the issues one by one:

7. The **first** issue is relating to reduction of control period. According to the Appellant, the reduction in Control Period by the State Commission from 3 years to 2 years will cause lot of hardship to the Appellant as it can not plan its operation in a short period of two years. On the other hand, it is the contention of the Respondent that the stand taken by the Appellant Board with regard to the reduction of the Control Period is contrary to the Regulations framed by the State Commission. In this regard, we will now refer to the relevant findings on this issue by the State Commission:-

***"8.19 Control Period**: The Order No.3 dated 15.5.2006 of the Commission lays down a control period of three years. As the determinants of tariff underwent radical changes during the control period, some of the stakeholders represented for curtailing the control period. In pursuance*

of that effort the Commission consulted experts on 16.7.20089 and delivered an Order on 19.9.2008 in M.P Nos. 9,14 and 23 of 2008 scaling down the control period to two years. Clause 6 of the Power Procurement from New and Renewable Sources of Energy Regulation 2008 of the Commission promulgated on 8.2.2008 specifies that the control period may be ordinarily two years. Taking into account the views of the stakeholders, the Commission decides that the control period of this Order shall extend upto 31.3.2011".

8. The above findings rendered by the State Commission were based on representations received from some of the stake holders for curtailing the control period and after consulting experts on 16.7.2008. The State Commission delivered an order on 19.9.2008 for scaling down the control period of Order 3 dated 15.5.2006 to 2 years. Admittedly this Order dated 19.9.2008 curtailing the control period to two years has not been challenged. Further,

clause-6 of the Power Procurement from New and Renewable Sources of Energy Regulations – 2008 specifies that the control period may be ordinarily two years. The State Commission exercised adequate caution in reducing the control period.

9. The reduction of control period is in consonance with the State Commission's Power procurement from New and Renewable Source of Energy Regulations 2008. The said Regulation is as follows:

"*The tariff determined by the commission in the tariff order shall be applicable for the power purchase agreement period of twenty years.* ***The control period may ordinarily be two years.*** *When the Commissions revisit the tariff and allied issues, the revision shall be applicable only to the generator of new and renewable energy sources commissioned after the date of such revised order".*

10. The above Regulations have also not been challenged by the Appellant. The Appellant did not demonstrate as to how reduction in control period would be injurious to his interests. Therefore, there is no merit in the contention of the Appellant with regard to the issue.

11. The **second** issue is relating to the Capital Cost of Rs.5.35 Crores. According to the Appellant, the State Commission arrived at a conclusion at the capital cost of Rs.5.35 crores MW without calling upon the wind energy developers to substantiate the cost of wind mill. The contention of the Appellant that the particulars should have been obtained from the wind mill generators before fixing the capital cost is not tenable. As a matter of fact, the State Commission has considered the entire materials available including the information provided by the central agencies and other relevant materials before arriving at the capital cost. It is also noticed that the cost was arrived at by the State Commission based on the inputs received from Ministry of

New and Renewable Energy Sources and the Indian Renewable Energy Development Agency, a Government of India undertaking. That apart, the State Commission excluded the Evacuation Cost and reduced the Capital Cost by Rs.25 lacs and brought down the project cost to Rs.5.35 crores.

12. It is also seen in the impugned order that the State Commission has clearly stated that the Capital Cost arrived at Rs.5.35 crores on the basis of the recommendation of the apex bodies (Ministry of New and Renewable Energy sources and Indian Renewable Energy Development Agency). In fact the Appellant Board in its suggestions on the Draft Consultative Paper on Power Procurement by Distribution Licensees from Wind Energy Generators have suggested that the Indian Wind Power Association, Tamil Nadu Spinning Mill Association and Southern India Mills Association are the pioneers in installation of wind mill generators in Tamil Nadu and their submissions before the

Commission may be given weightage while deciding the actual cost of the installation of Wind Energy Generators. The State Commission, while discussing the capital cost of Wind Energy Generators in para 7.2.1 of the impugned order has recorded the following:

"...Indian Wind Power Association representing and installed capacity of 1500 MW suggests that the capital cost is in the range of Rs 6 to 6.5 crores per MW. The Tamil Nadu Spinning Mills Association which represents installed capacity of 1200 MW suggests a capital cost of Rs 5.4 crores per MW"

The Capital cost of Rs 5.35 Crore per MW adopted by State Commission is less than the cost suggested by these Associations. Therefore, there is no infirmity in the fixation of the Capital Cost by the State Commission.

13. The **third** issue is relating to the Interest on loan.

14. According to the Appellant, the State Commission ought to have considered the reduction in interest rate after economic reform in the country and should have restricted it to only 9% instead of 12%. Let us now see the findings which have been given in the issue of interest on loan which is given below:-

" 7.7. ***Rate of Interest****: the IREDA, which is a major financier of renewal energy projects, has stated that interest rate of IREDA is in the range of 11.75% to 12.9%. The Indian Wind Power Association submits that apart from the IREDA, finances are secured from banks which charge interest rate of 13% to 13.5%. The Tamil Nadu Spinning Mills Association demanded interest rate of 13.5% for loan from commercial banks. The Indian Wind Turbine Manufacturers Association pitches for interest rate of 13%. The TNEB considers that a rate of 9% to 10% should be adequate on the ground that the public financial institutions should offer*

concession for renewable energy generators. However, this has not happened and there is no preferential rate of interest for renewal energy generators. The Commission considers that interest rate of 12% as reasonable".

15. The above discussions made by the State Commission clearly indicate that the State Commission took into consideration the interest rates prevalent at the relevant time the impugned order passed. Accordingly, the State Commission considered 12% interest rate as reasonable. The State Commission was informed that the interest rates of Indian Renewable Energy Development Agency, which is major financing agency for wind mills, were higher than 12%. The Indian Wind Power Association claimed that finances secured from banks at interest rate charged between 13 to 13.5%. The Tamil Nadu Spinning Mills Association had demanded interest rate of Rs.13.5%. The Indian Wind Turbine Manufacturers Association demanded

interest rate at the rate of 13%. The State Commission in the impugned order has held that no preferential rate of interest was being made available to the renewable energy generators by the financial institutions. Based on the data furnished by Indian Renewable Energy Development Agency, which is a major financier of renewable energy projects, interest rate had been fixed at 12% per annum. The Prime Lending Rate of State Bank of India, was 12.83% for the year 2008-2009 and 11.9% in 2009-2010. Thus, the interest rate provided by the State Commission is in the same range as that of Prime Landing Rate of State Bank India. Therefore, the State Commission had found that 12% interest rate as reasonable as there was no any preferential rate of interest for renewable energy generators. So this point is answered accordingly.

16. The **next** issue related to banking of Wind Energy.

17. According to the Appellant, it claimed before the State Commission that banking charges should be enhanced from 5% to 15% and banking period should be curtailed to one month instead of one financial year but none of these requests has been considered by the State Commission in the impugned Order. Appellant Board further contended that State Commission's direction to pay full value of unutilised energy during enforcement of restriction mechanism would result in heavy financial burden upon it.

18. Before getting into the merits of Appellant Board's arguments, on this issue let us understand the very concept of Banking of Electrical Energy. Banking of energy is analogous to small saving bank account in a financial bank. A person deposits his surplus amount in a saving bank account. He can withdraw his money from bank any time according to his requirement. For this deposited money, he earns some interest. The bank in turn gives loan to some other needy customer at a higher rate of interest. In this

process, saving account holder as well as bank are benefited. Now come to electricity banking. Electricity is a commodity which cannot be stored. It is to be consumed at the very instant it is produced. Generation by Wind Energy Generators solely depends upon availability of wind at a particular velocity. In other words it is periodical in nature. Its generation is not constant even during a period of 24 hours of a day. It could be possible that it generates electricity when captive user does not require it. In such a case energy generator banks it with distribution licensee who supplies this energy to its consumers at applicable tariff. However, for returning the banked energy, Licensee may have to procure additional electricity from other sources. Unlike the Banks which pay interest to saving account holder, here the licensee, banker of electrical energy, earns interest on this banked energy. Thus banking rate electrical energy should be nominal. In the light of above fact situation, we would now examine the merits of

Appellant Board's contentions vis-a-vis findings of State Commission on this issue.

19. The State Commission is empowered to make provisions for banking of energy generated by Renewable Sources of Energy under the Power Procurement from New and Renewable Sources of Energy Regulations, 2008. The Said Regulation is as follows:-

"3. Promotion of new and renewable sources of energy.....

(4) The Commission may consider appropriate banking mechanism for generation of power from a particular kind of renewable source depending upon the inherent characteristics of such source.

20. The relevant portion of the findings given on this issue by the State Commission is as follows:

"8.2.1. Banking as a concept was introduced by the Tamil Nadu Electricity Board in 1986 to encourage generation of wind energy. The banking charge was fixed at 2% in 1986 and raised to 5% in 2001. The

figure remained at 5% when the Commission issued order No.3 dated 15.5.2006. The banking period was fixed at one month in March 2001 by the TNEB and doubled in September, 2001. It was further raised by TNEB to one year in March, 2002 commencing from 1st April and ending on 31st March of the following year.

8.2.2 The banking charges shall be realised every month for the quantum of units generated during the billing month less the consumption of the captive users/third party sale. Slot-wise banking is permitted to enable unit to unit adjustment for the respective slots towards rebate/extra charges. No carry over is allowed beyond the banking period. Unutilised energy at the end of the financial year may be encashed at the rate of 75% of the relevant purchase tariff. The Commission proposes to retain the same features with some modifications based on the suggestions made by the stakeholders. As and when the distribution licensee

enforces restriction control measures for restricting the consumption of wind energy generators, the Commission finds justification the plea that the unutilized energy at the end of the financial year may be encashed at full value of the relevant tariff for sale to the licensee. 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.

8.2.3. Therefore, the Commission decides to retain banking charges at 5%. Banking charges will be levied on the net energy saved by the generator in a month after adjustment of the consumption during that month. The banking period commences on 1st April and ends on 31st March of the following year. The energy generated during April shall be adjusted against consumption in April and the balance if any shall be reckoned as the banked energy for April. The

generation in May shall be first adjusted against the consumption in May. If the consumption exceeds the generation during May, the energy banked in April shall be drawn to the required extend. If the consumption during May is less than the generation during May, the balance shall be reckoned as the banked energy for May and banking charges for May will be leviable only for this component. This procedure shall be repeated every month".

From the above observations, it is clear that concept of banking has been introduced by Appellant Board itself in 1986 to encourage generation of electricity from abundant wind power potential available in the state. Banking charges were fixed at 2% in 1986 which were enhanced to 5% in 2001. The figure remained at 5% till 2009 when the impugned order was delivered by State Commission. Thus, there was no reason for State Commission to enhance the same to 15%. State Commission has rightly observed that

the plea of TNEB (Appellant) to raise the banking charge from 5% to 15% were too radical. As regards Appellant Board's demand for reduction of banking period from one year to one month, it is pointed out banking period was fixed at one month in March 2001, doubled to two months in September 2001 and then further increased to one year in March 2002 by Appellant Board itself. Thus Appellant Board has increased it from one month to one year within a span of one year. There should have been some rationale on the part of Appellant Board to do so. Appellant Board has not assigned any new development, which was not present in 2001-02 and which has warranted the curtailment of banking period from one year to one month now. The State Commission has rightly rejected it as otherwise it would have rendered banking mechanism as meaningless.

21. Appellant Board has contended that the State Commission's direction to encash the unutilised banked energy at full value in the event of enforcement of restriction control measures

would put additional financial burden on the Board. The State Commission in para 8.2.2 of the impugned order has provided that:

" ... as and when the distribution licensee enforces restriction control measures for restricting the consumption of wind energy generators, the Commission finds justification in the plea that the unutilised energy at the end of financial year may be encashed at full value of the relevant tariff for sale to the licensee. "

22. From the above, it is clear that this provision would come in to operation only when distribution licensee restricts the consumption of wind energy generators. We feel that the observation of State Commission is logical and just. Distribution Licensee cannot be allowed to get unduly benefitted of its own restriction imposed on consumption of energy and wind energy generators were restricted to consume their own energy banked with the Board.

23. Therefore, 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. Therefore, this point is also answered accordingly.

24. Next issue is related to Renewable Energy Purchase Obligation fixed by State Commission

25. According to the Appellant, the directions given by State Commission for Renewable Energy Purchase Obligation (RPO) at minimum of 13% for the year 2009-10 and at minimum of 14% for the year 2010-11 is totally unworkable, and Appellant Board cannot achieve these targets because most of the wind energy generators are either captive consumers or are making third party sale.

26. It cannot be disputed that the mandate given to the State Commission under Section 86 (1) is to promote

non-conventional source of energy. Wind energy being a non conventional source of energy, promotion of the same falls under section 86 (1) (e) of the Electricity Act, 2003. Clause 6.4 of Tariff Policy mandate State Commission to prescribe procurement of minimum percentage of power from Renewable Sources of Energy. Clause 6.4 of Tariff Policy is reproduced below:

"6.4 Non-conventional sources of energy generation including Co-generation:

(1) Pursuant to provisions of section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage for purchase of energy from such sources taking into account availability of such resources in the region and its impact on retail tariffs. Such percentage for purchase of energy should be made applicable for the tariffs to be determined by the SERCs latest by April 1, 2006.

It will take some time before non-conventional technologies can compete with conventional sources in terms of cost of electricity. Therefore, procurement by distribution companies shall be done at preferential tariffs determined by the Appropriate Commission."

27. Accordingly, the State Commission has fixed the minimum purchase of non conventional energy source for the year 2009-10 at the rate of 13% and for the year 2010-11 at the rate of 14%. In accordance with the tariff policy, the Renewable Energy Purchase Obligation is to be fixed on the basis of (i) availability of resources (ii) impact on retail tariff. While specifying Renewable Energy Purchase Obligation for control period of 2009-2011, the State Commission has carried out detailed study regarding availability of power from such sources. In this context, it will be proper to refer to the findings of the orders which are

as follows:-

"Renewable Energy Purchase Obligations (RPO)

8.18.1 Section 86 (1) (e) enjoins upon the Commission to specify, for purchase of electricity from renewable sources of energy, a percentage of the total consumption of electricity in the area of a distribution licensee. The above statutory provisions is supplemented by clause 6.4 of the National Tariff Policy which states that the Appropriate Commission shall fix a minimum percentage for purchase of energy from renewable energy sources, taking into account availability of such resources in the region and its impact on retail tariff. The Forum of Regulators (FOR) has recommended that Renewable Energy Purchase Obligation should be computed with reference to the energy input into the system and not the energy consumed.

8.18.2 As per the statistics furnished by the TNEB, the energy injected into the grid by the TNEB was 65085 MU for 2007-08. The Chief Electrical Inspector, Government of Tamil Nadu has reported that 2,570 MU were generated by standby generator sets during 2007-08. As it is not possible to estimate the energy generated by unorganised standby generators, it is sufficient to estimate the energy input on the basis of the above two figures, at 67,655 MU.

8.18.3 The energy injected by renewable source of energy into the TNEB grid during 2007-08 was 7,615 MU. The percentage of energy injected by the renewable energy sources works out to 11.26% of the total energy consumption in the area of distribution licensee (7615 ÷ 7655). Excluding the energy generated by the standby generators, the percentage works out to 11.70 as against 11.26.

8.18.4 The Commission decides to fix the Renewable Energy Purchase Obligation at minimum of 13% for 2009-10 and minimum of 14% for 2010-11.

28. It is noticed that the Appellant's contention that achieving RPO at 13% during 2009-10 and 14% during 2010-11 would be unworkable has been countered by his own written submissions made during hearing. On page 18 of the said submissions the Appellant Board has stated the following:

> *"...fortunately TANGEDCO (successor company of Appellant Board) have already crossed 13% for the year 2009-10 and expected to cross 14% for the year 2010-11."*

Therefore, Appellant Board cannot contend now that the targets set by State Commission for RPO are unreasonable and unworkable.

As regards impact of Renewable Energy Purchase Obligation on retail tariff, the matter is akin to consumer interests and has been discussed in detail in the later part of this Judgment.

Therefore, on this issue, we find that the State Commission has arrived at a correct conclusion.

29. The **next** issue is relating to Levy of transmission and wheeling charges.

30. According to the Appellant, the Wheeling and transmission charges should be 15% instead of 5%. The State Commission has fixed the transmission and wheeling charges as 5%. According to the State Commission, the Transmission and Distribution losses of the Appellant have remained static at 18% since 2003. The Transmission and Wheeling Charges were initially fixed by the Electricity Board at 2% in the year 1986. The charges were enhanced to 5% by the Electricity Board in September,

2001. They remained at that level till 2006. The State Commission adopted the same rate of 5% towards the transmission and wheeling charges including line losses in order No.3 dated 15.5.2006. The Appellant has now pleaded for stepping up the charges to 15% on the ground that the transmission and distribution losses have gone up in the recent years. The State Commission did not see merit in the prayer of the Appellant to raise the charges to 15% since the distribution losses of the Appellant have remained static at 18% from the year 2003. Thus, the State Commission has correctly decided to retain the said charges including line losses at 5% uniformly for captive use for 3rd party sale of wind energy in the case of HT/EHT consumption. However, the charges in regard to captive use and third party sale in LT services are fixed at 7.5%. The relevant findings given in the impugned orders are as follows:-

"8.3 ***Transmission and Wheeling charges****: The transmission and wheeling charges were initially fixed*

by the TNEB at 2% in 1986. The charges were enhanced to 5% by the TNEB in September, 2001. They remained at that level till 2006. The Commission adopted the same rate of 5% towards the transmission and wheeling charges including line losses in order No.3 dated 15.5.2006. The TNEB has now pleaded for stepping up the charges to 15% on the ground that transmission and distribution losses have gone up in the recent years. The transmission and distribution losses of the TNEB has remained static at 18% since 2003 and therefore, the Commission does not see merit in the plea of the TNEB to abruptly raise the charges to 15%. The Commission decides to retain the wheeling and transmission charges including line losses at 5% uniformly for captive use and third party sale of wind energy in the case of HT/EHT consumption. However, the charges in regard to captive use and third party sale in LT services are fixed at 7.5%".

31. That apart, the State Commission's Regulation namely Open Access Regulations, 2005 provides for open access to Captive Consumers without any condition of voltage level or contract demand. The impugned order, on this issue, thus is in line with the above said Regulations. As indicated above, the State Commission has provided for transmission and wheeling charges as 7.5% as against 5% tariff applicable for HT consumers category. Keeping in view the difficulties in extending these facilities to LT consumers, the State Commission has adequately compensated the State Electricity Board, the Appellant Board by providing higher charges in LT Consumer Category. Therefore, the findings on this issue by the State Commission is valid.

32. The **next** issue is relating to Clean Development Mechanism.

33. According to the Appellant, the Clean Development Mechanism at the rate of 100% to the developers in the first year and thereafter reducing by 10% every year till the sharing becomes equal between the developers and the consumers in the 6th year is erroneous, as it runs in conflict with the order No.3 dated 15.5.2006. The Appellant in its written submission has submitted that the State Commission in its Order dated 15.5.2006 has not extended CDM benefit to Wind Generators because advantage of fixing the other factors like transmission and wheeling charges and banking provisions had been extended to the Wind Generators. Appellant has further submitted that while fixing the CDM benefit to Wind Generators in the impugned Order; no increase in transmission, wheeling and banking charges has been provided to the Appellant Board.

34. The State Commission on the other hand has stated in its counter affidavit that State Commission did not make any stipulation on Clean Development Mechanism in their order

no 3 dated 15.5.2006, which means that the Wind Energy Generators can avail full CDM benefit to them self without sharing with TNEB.

35. We have gone through the Order no 3 dated 15.5.2006 attached with the appeal at Annexure A-1 and could not locate any provision regarding CDM benefit. Thus the statement of State Commission in their counter affidavit appears to be correct. So, the State Commission in impugned order has extended CDM benefit to the Appellant Board by providing sharing formula as recommended by Forum of Regulators, a Statutory Body established under the Electricity Act 2003.

The findings of the State Commission on the issue are as follows:

***" 8.5 CDM Benefits**:*

Undoubtedly, a promoter of wind energy is required to put in considerable efforts to secure the benefits of Clean Development Mechanism and therefore, there is

merit in the views of certain stakeholders that the entire credit should accrue to the promoter as it obtains now. Some State Commissions have permitted the distribution licensee to share 25% of the CDM benefits. The Forum of Regulators has considered this issue and has recommended that CDM benefits should be shared on gross basis starting from 100% to developers in the first year and thereafter reducing by 10% every year till the sharing becomes equal (50:50) between the developer and the consumer in the sixth year. Thereafter, the sharing of CDM benefits will remain equal till such time the benefits accrue. The Commission accepts the formula recommended by the Forum of Regulators".

36. In the light of above discussions, we do not find any ground to differ from the findings of the Commission and this issue is answered accordingly.

37. The next issue is related to Evacuation of Wind Energy

As per the Appellant Board, the State Commission's direction on providing infrastructure facilities by the Appellant for evacuation of power from Wind Generators is erroneous because the Wind Power is produced only a period of six months and for rest of the six months would be of no use.

38. State commission's findings on the issue are as under:

"8.15 Evacuation of Wind Energy

8.15.1. Section 39(2)(c) of the Act states that the State Transmission Utility shall ensure development of an efficient, co-ordinated and economical system of intra State transmission lines for smooth flow of electricity from a generating station to the load centres. Section 40 of the Act stipulates that it shall be the duty of the transmission licensee to build, maintain and operate an efficient, co-ordinated and economical system of intra State transmission and to provide non-discriminatory open access to its transmission system for use by any

licensee or generating company on payment of the transmission charges or any consumer as and when such open access is provided by the State Commission under section 42(2) on payment of the transmission charges and a surcharge thereon, as may be specified by the State Commission. Section 42 of the Act states that it shall be the duty of the distribution licensee to develop and maintain an efficient, co-ordinated and economical distribution system in his area of supply.

8.15.2. The Forum of Regulators has recommended that grid connectivity should be provided by the transmission licensee / distribution licensees for renewable energy sources in an optimum manner, through their capital expenditure plans to be submitted to the appropriate Commissions for their approval. Clause 3 of the Power Procurement from New and Renewable Sources of Energy Regulations,2008 states as follows:

"Provided that, in the case of sale of entire power to the distribution licensee by any new and renewable source based generator, the cost of interfacing lines up to the interconnection point shall have to be borne only by the STU/ distribution licensee provided further that in case where the new and renewable source based generator referred to in the first proviso who has entered into an EPA with the distribution licensee referred to therein for the sale of entire power to the said distribution licensee decides to use such power agreed to be sold to the said distribution licensee, for his captive use or for sale of such power to a third person or to a distribution licensee other than the distribution licensee referred to above before the expiry of the period referred to in such EPA, then he shall be bound to reimburse the entire cost of interfacing lines to the distribution licensee with whom he has executed such EPA, before the wheeling of power to his captive use or sale to third person or distribution licensee other

than the distribution licensee with whom the said EPA has been executed by him".

8.15.3. The TNEB submits that evacuation facility could be provided by them on priority basis, if they are permitted to collect infrastructural development charges. The Commission does not accept this plea because the Electricity Act 2003 makes it clear that it shall be the responsibility of the transmission utilities and the distribution licensee to create the appropriate infrastructure. Therefore, the Commission prescribes the following procedure for creation of evacuation facilities.

....

8.15.4. The Commission decides that the cost of interfacing line upto the interconnection point shall have to be borne by the STU/Distribution Licensee in case of sale of entire power to Distribution Licensee by WEGs. For the captive use or sale of such power to third parties or to Distribution Licensee other than the

Distribution Licensee of that area, the entire cost of inter facing line upto inter connection point shall have to be borne by the WEGs and the work will be executed by the Distribution Licensee under Deposit Contribution Work basis. The STU/ Distribution Licensee shall have to maintain the standards as per CEA norms and Tamil Nadu Electricity Grid Code."

39. Inter-connection point has not been defined in the impugned Order or in the Act. However, Central Commission's Renewable Energy Sources Regulations on 16.9.2009 has defined Inter-connection Point as given below:

"Inter-connection point shall mean interface point of renewable energy generating facility with the transmission system or distribution system, as the case may be:

a) in relation to wind energy projects and Solar Photovoltaic Projects, inter-connection point shall be line isolator on outgoing feeder on HV side of the pooling sub-station;..."

40. Para 8.15.4 of the impugned order read with definition of Inter-connection point as per Central Commission's Regulations on Renewable Energy makes it clear that system beyond inter-connection point has to be provided by the STU or Distribution Licensee as the case may be. The dispute is for Interface system between generating facilities and inter-connection point. Impugned order provides that STU or Distribution licensee, as the case may be, would provide this system in case full power from Wind Energy Generator is sold to such distribution licensee. In all other cases, the cost of such works would be borne by Wind Energy Generator. This provision is in line with Sections 10, 39, 40 and 42 of the Act as well as with the ratio of this Tribunal's Judgement in Appeal no. 93 of 2009 relied upon by the Appellant. Hence, the view of the State Commission on this issue is perfectly justified.

41. The next issue for consideration is relating to adjustment of energy in LT Service.

42. Appellant has contended that while directing the adjustment of generated energy in relation to LT services, the State Commission has failed to appreciate the fact that if any adjustment is to be made, the same would require metering arrangement, which would increase the operation & maintenance cost and billing cost for which no compensation has been provided in the impugned order.

43 State Commission's views in the issue are as below:

8.8 Adjustment of generated energy

Section 9 (2) of the Electricity Act 2003 confers on the captive generator the right to open access for the purpose of carrying electricity from the captive plant to the destination of his use. Therefore, a wind energy generator shall be entitled to adjust the generated energy for captive consumption whether as a LT or a HT consumer. As regards sale to third parties, Clause 11 of the Intra State Open Access Regulations 2005 of

the 28 Commission, which prescribes a minimum limit of 1 MW, shall apply to wind generators also. Views have been expressed by some stakeholders against adjustment of captive generation for LT services. Acceptance of such a view would run counter to law and therefore, the Commission does not favour that view.

44 In the light of the above reasonings, we find that the findings given by State Commission on this issue are correct and valid.

45. The **next** issue is relating to the Scheduling and System operation charges.

46. According to the Appellant, unlike the conventional energy, frequency in case of infirm power is dependent upon generation and requires constant monitoring and therefore, the benefit on this account should not be passed on to the wind power operators.

47. The power from Renewable Energy Sources injected into the grid has been accorded “must run status” and is

exempted from “merit order dispatch principal”. The Wind Generation is not scheduled at all, thus there should not be no scheduling charges on Wind Energy Generator. However, keeping in view, small capacity of Wind Generators, the system operation charges has been reasonably specified in the impugned order which is as follows:-

“8.9 ***Scheduling and System Operation Charges***

The scheduling and system operation charges for wind energy generators have been prescribed in Order No.2-5 dated 11.10.2008 at Rs.300/-per day per 1.65 MW for each service connection. If the generation capacity of a service connection exceeds 1.65 MW, the same charge of Rs.300/- per day would apply. If the generation capacity of a service connection is less than 1.65 MW, the charges shall be proportionate. While arriving at the quantum of this charge, the Commission took into account the fact that the capacity utilization in

wind energy generators is about 27% as against the average of 85% in conventional power plants and that large size wind mills are generally available in capacities of 1.65 MW".

48. Therefore, we are of the view that the issue relating to the system operation charges has also been correctly decided.

49. The **next** issue is relating to Competitive Bidding .

50. Appellant has submitted that the State Commission has gone beyond the National Tariff Policy especially when sections 61 and 86(1)(e) of the Electricity Act 2003, enjoin the State Commission to discharge its function based on National Electricity Policy and Tariff Policy. Appellant contended that sub-clause (3) of Clause 2.5 of Tariff Policy clearly provides that Central Electricity Commission would lay down guidelines within three months for pricing of non-firm power. However, the State Commission have passed

the impugned order without there being any guidelines from the Central Commission and without bidding process.

Before proceeding further let us examine the relevant provisions of Electricity Act 2003 and Tariff Policy, which are reproduced below:

Tariff Policy

6.4 Non-conventional sources of energy generation including Co-generation:

(1) Pursuant to provisions of section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage for purchase of energy from such sources taking into account availability of such resources in the region and its impact on retail tariffs. Such percentage for purchase of energy should be made applicable for the tariffs to be determined by the SERCs latest by April 1, 2006.

It will take some time before non-conventional technologies can compete with conventional sources in

terms of cost of electricity. Therefore, procurement by distribution companies shall be done at preferential tariffs determined by the Appropriate Commission.

(2) Such procurement by Distribution Licensees for future requirements shall be done, as far as possible, through competitive bidding process under Section 63 of the Act within suppliers offering energy from same type of non-conventional sources. In the long-term, these technologies would need to compete with other sources in terms of full costs.

(3) The Central Commission should lay down guidelines within three months for pricing non-firm power, especially from non–conventional sources, to be followed in cases where such procurement is not through competitive bidding. "

51. Sub-clause (1) Clause 6.4 of the Tariff Policy clearly stipulates that until non-conventional technologies could compete with conventional sources in terms of cost of

electricity, **the procurement by distribution companies shall be done at preferential tariffs determined by the Appropriate Commission.**

Sub-clause (3) states that Central Commission **should** lay down the guide lines for pricing non-firm power from non-conventional sources.

52. It is well established principles of construction of statutes that the term 'should' may not be construed invariably as mandatory provision, but in some context, it may be considered to be a discretionary provision. Thus provision contained in sub-clause (3) using word 'should' cannot be considered as mandatory. On the other hand provisions of sub-clause (1) regarding procurement of power by distribution companies from non-conventional sources at preferential tariff determined by the Commission are mandatory in nature because of use of word 'shall'.

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53. It would be pertinent to mention that the Appellant Board in their comments on Concept Paper on Procurement of

Power by Distribution Licensee from Wind Energy Generators dated 12.12.2008 annexed as Annexure A -10 to the appeal had rejected procurement through bidding process stating as under:

" 7.1 Preferential Tariff/ Bidding Process *– Tariff based bidding may not bring desired results in the present shortage conditions and market will try to exploit the situation by forming cortel or other methods. Since Wind Power is infirm power, tariff determination based on competitive bidding is neither desirable in Tamil Nadu nor it is justifiable on any count."*

54. From this observation, it is clear that the Appellant Board has opposed competitive bidding before the State Commission. On the other hand, the Appellant welcomed the cost plus tariff determination. The issue regarding procurement through bidding process has also been dealt by this Tribunal in appeal No.106 and 107 of 2009 dated

31.2.2010 in BSES Rajdhani Power Limited Vs. DERC & Ors. The relevant portion of the judgement is as follows:-

"The argument advanced by the Learned Counsel for the Appellants that resort to tariff determination under Sec 62 (1) (a) without adopting the competitive bidding process will render clause 5.1 of the NTP redundant as the distribution licensees in the future will procure power from the generating companies only through the negotiated route, cannot be accepted as it is always open to the State Commission to direct the distribution licensee to carry out power procurement through competitive bidding process only in case where the rates under the negotiated agreement are high. In other words, the State Commissions have been given discretionary powers either to choose Section, 62 (1) (a) to give approval for the PPA or to direct the distribution licensee to resort to the competitive bidding

process as per clause 5.1 of the NTP read with Section 63 of the Act".

55. In view of the above, contention on this issue, urged by the Appellant is not tenable.

56. The **next** issue is Consumers' Interest.

57. According to the Appellant, the State Commission has gone ahead to fix the purchase price of the wind mill without being conscious of the fact that as per Sec 61 of the Electricity Act, the Commission while fixing the tariff must safeguard the consumers' interests and at the same time, shall provide for the recovery for the cost of electricity in a reasonable manner. In the present case, no reference has been made by the State Commission with reference to Sec 61 (d) of the Electricity Act. On the other hand, it is contended by the Respondent that the reliance placed with the Appellant under Section 61 (d) is misplaced. Section 61 (d) deals with the retail tariff to be paid by the consumer, whereas the Commission's order in question relates to

Section 62 of the Act. The said section has to be read harmoniously in such a way that both the interests of the consumers as well as the recovery of cost of electricity is made in a reasonable manner and not in an isolated manner. Further State Commission is mandated under section 86 (1) (b) of the Act to provide encouragement to cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person. It also provides for purchase of electricity from such source, a percentage of the total consumption of electricity in the area of a distribution licensee. It can not be disputed that in the absence of generation of wind energy in the State, power shortage in the state would have been more acute resulting in more severe power cuts.

58. The State Commission has taken into account the impact of wind energy tariff while fixing the Renewable Energy Purchase Obligation. The Appellant purchased

power only to 30 to 35% of the total installed wind energy generators. For the year 2009-10, the average power purchase cost (excluding the Appellant's own generation) works out to be Rs. 3.75 per unit. On the other hand, the cost of wind power is only 3.39 per unit. If the Appellant purchases more power from wind mills, it will reduce other over power purchase cost because of Merit Order Operation under ABT regime and thereby reduce the tariff to the consumers. As a matter of fact, as can be seen in the Table below, the wind power tariff fixation of the State of Tamil Nadu is lowest among the tariff of the other leading wind power generating State of except Kerala.

Table-1

S.No.	State	Rs.Per Unit
1.	Tamil Nadu	3.39
2.	Madhya Pradesh	4.35
3.	Rajasthan	4.28
4.	West Bengal	4.00
5.	CERC	3.75
6.	Gujarat	3.56
7.	Andhra Pradesh	3.50
8.	Maharashtra	3.50
9.	Karnataka	3.40
10.	Kerala	3.14

59. Therefore, the contention of the Appellant that the State Commission has fixed a high tariff is incorrect. It is also seen from the written submissions filed by the State Commission that the cost of wind energy fixed by the State Commission is among the lowest. To establish this, the State Commission has given the following particulars:-

GMP Power Corporation	Rs.7.75 per unit
Samalpatti Power Corporation	Rs.8.32 per unit
Madurai Power Corporation	Rs.8.12 per unit
Purchase from Traders	Rs.5.30 per unit
Wind Tariff	Rs.3.39 per unit

60. Thus, in parameter mentioned above, the cost of wind energy fixed by the State Commission is the lowest and the tariff which the Appellant pays for purchase of power from various sources is almost doubled as compared to the tariff for the winder energy fixed by the State Commission.

In view of above, we are of the opinion that State Commission has taken care of consumer's interests while fixing tariff for energy for Wind Generators.

61. **Summary Of Our Findings**

(i) The Stand taken by the Appellant with regard to reduction of control period from 3 to 2 years is contrary to the Regulations framed by the State Commission. When some of the stake holders represented before the State Commission for curtailing the control period, the State Commission consulted the experts and delivered an order for scaling down the control period from 3 to 2 years. Thus, the State Commission exercised adequate caution in reducing the control period as per the Regulations.

(ii) According to the Appellant, the State Commission's conclusion with reference to the capital cost of Rs.5.35

crores MW is wrong as it has been done without calling upon the Wind Energy Developers and obtain any particulars from them to substantiate the cost of wind mill. This contention is not tenable. The State Commission in fact, has considered the entire material available including the information provided by the Central Agencies and relevant materials before arriving at the capital cost. The State Commission clearly stated in the impugned order that the capital cost arrived at Rs.5.35 crores on the basis of the recommendations of the apex bodies such as Ministry of New and Renewable Energy Sources and Indian Renewable Energy Development Agency. Further, the capital cost has been correctly followed by adopting the methodology specified by the Central Commission as there is no infirmity in the fixation of the capital cost.

(iii) The interest rate on loan has been fixed as 12%. According to the Appellant, it should be restricted to only 9%. The State Commission took into consideration the interest rates prevalent at the relevant time on the basis of the information given by the Indian Renewable Energy Development Agency and also various other associations. Therefore, the 12% interest rate fixed by the State Commission is quite reasonable.

(iv) As per the Regulation, the State Commission is empowered under the Regulations to provide for banking mechanism. The State Commission rightly rejected the plea of the Appellant to increase the banking charges from 5% to 15%. The State Commission is guided by clause 5.2.20 of the National Electricity Policy to increase the potential of non conventional energy source. There is no justification

in the prayer made by the Appellant for increasing the banking charges from 5% to 15%.

(V) As regards the Renewable Energy Purchase Obligation prescribed by the State Commission for the Appellant Board, it is noticed that the Appellant Board has claimed that they have already achieved the targets for the year 2009-10 and would cross the targets for year 2010-11 too. In the light of assertion made by the Appellant Board we find that the State Commission has correctly decided the R.P.O.

(vi) With regard to Levy on transmission and Wheeling charges, the Appellant pleaded for stepping up the charges to 15% on the ground that the transmission and distribution losses have gone up in the recent years. The transmission and distribution losses of the Appellant have remained static at 18% since 2003. Therefore, the Commission correctly

rejected the plea of the Appellant to abruptly raise the charges to 15%. Further, this finding which refers to this issue is in line with the open access Regulations 2005 of the State Commission.

(vii) The State Commission through its tariff order dated 15.5.2006 issued directions that the Wind Developers can retain the entire revenue accured from sale of Emission Reduction under CDM (Clean Development Mechanism) as there is no specific requirement of sharing Clean Development Mechanism revenue. That apart, there is no link between the Clean Development Mechanism benefits and the charges related to the Banking, Wheeling, Transmission etc.

(viii) On the issue of evacuation of Wind Energy, that the of approach of State Commission is in line with various provisions of the Act and with the 'ratio' of this Tribunal's Judgment in Appeal no 93 of 2009.

(ix) Regarding adjustment of generated energy in LT services, we find that the State Commission has acted as per law.

(x) The power from Renewable Energy Sources injected into the grid has been accorded "must run status" . This is exempted from "merit order dispatch principle". The Wind Generation is not scheduled at all, and thus there cannot be no scheduling charges on Wind Energy Generator. However, the State Commission found that if the generation capacity is less than 1.65 MW, the charges shall be proportionate. While arriving at the quantum of this charge, the State Commission took into account the fact that the capacity utilisation of Wind Energy Generators is 27% as against the average of 85% in conventional power plants.

(xi) The Appellant, during the proceedings before the State Commission has not suggested for competitive bidding. On the other hand, the Appellant welcomed the cost plus tariff determination. The State Commission, in the present case, feels that the tariff determination on the basis of competitive bidding is not desirable, since the Wind Power is infirm power. This discretion has been given to the State Commission to adopt either of procedure as contemplated under section 62 (1) and 63 of the Act.

(xii) It is not disputed that as per Section 61 of the Act, the State Commission shall safeguard the interest of the consumers while fixing the tariff. At the same time, it shall provide for the recover for the cost of electricity in a reasonable manner. The State Commission is mandated u/s 86 (1) (b) of the Act to encourage and promote cogeneration from the renewable source of energy by providing suitable measures for connective

with the grid. In the present case, the State Government has taken into the impact of Wind Energy tariff while fixing the renewable Wind Energy tariff. It is seen from the datas given by the State Commission that cost of Energy in Tamil Nadu fixed by the State Commission is amongst the lowest.

62. In the light of the above findings, we find that the impugned order is in conformity with the Section 86 (1) (e) of the Electricity Act and also in conformity with the National Electricity Policy as well as National Tariff Policy. Hence the Appeal is dismissed. However, there is no order to costs.

(V.J. Talwar)
Technical Member

(Justice M. Karpaga Vinayagam)
Chairperson

Dated: 18th March, 2011

REPORTABLE/NON-REPORTABALE