GUJARAT ELECTRICITY REGULATORY COMMISSION
Ahmedabad

Order No.1 of 2010

In the matter of : Determination of the tariff for Procurement of Power by Distribution Licensees from Wind Energy Generators and other commercial issues

In exercise of the powers conferred under sections 61(h), 629(1)(a) and 86(1)(e) of the Electricity Act, 2003 (36 of 2003) and all other powers enabling it in this behalf, the Gujarat Electricity Regulatory Commission (hereinafter referred to as "the Commission") determines the price for procurement of power by Distribution Licensees and Others in Gujarat from wind energy projects.

This order is the second order on Wind energy. This order is culmination of an elaborate consultative process after considering the suggestions received from various stakeholders

1. Background

1.1 Draft Order on Wind Energy Project

1.2 Public Hearing

1.1 Draft Order on Wind Energy Project

The Commission prepared draft Order No.2 of 2009 on "Determination of Tariff for Procurement of Power by Distribution Licensees from Wind Energy Generators and other Commercial Issues", which was placed on the website of the Commission on 17.5.2009 for

inviting comments and suggestions. The list of those who have communicated their views is given in Annexure-1.

1.2 Public Hearing:

A public hearing was held on 13.10.2009. The list of the participants who participated in the hearing and expressed their views is given in Annexure-II.

2. General Approach

2.1 Commission's Regulations on Procurement of Power from Renewable Energy Sources
2.2 Control period
2.3 Process of Determination of Tariff
2.4 Preferential Tariff
2.5 Determination of Tariff

2.1 Commission's Regulations on Procurement of Power from Renewable Energy Sources

The Commission had notified Regulations No.15 titled the "Gujarat Electricity Regulatory Commission (Power Procurement from Renewable Sources) Regulations, 2005" on 29th October, 2005. By the said Regulations, the Commission fixed the Renewable Power Purchase Obligations (RPPO) of the Distribution Licensees for the years 2006-07, 2007-08 and 2008-09. For the subsequent period, the Commission prepared draft regulations viz. "The Gujarat Electricity Regulatory Commission (Power Procurement from Renewable Sources) Regulations,2009 and issued Public Notice and invited

comments/ suggestions from the stakeholders. In the said draft regulations, the Commission proposed a higher percentage of power purchase obligation by Distribution licensees and it was also proposed to extend the scope of applicability of these regulations to captive and open access user(s)/ consumer(s). These draft regulations were challenged by some of the stakeholders before the Hon'ble High Court of Gujarat and the Hon'ble High Court of Gujarat disposed of the petition on 9.11.2009 by vacating interim stay which was granted earlier. The Commission is in the process of finalizing its regulations.

2.2 Control period

The Commission had, vide its Order No.2 of 2006 dated 11th August,2006, determined the Wind Energy Tariff for a period of three years, i.e. upto 10th August,2009.

The draft for the present order was published on 17.05.2009 and it was proposed to be effective from 1st July, 2009.However, some of the objectors suggested that the present order be made effective from the end of previous control period.

Since the previous control period expired on 10th August, 2009, the Commission decides that the control period for this order will be 3 (three) years w.e.f. 11th August, 2009.

2.3 Process of Determination of Tariff

The Commission has determined the Wind energy tariff based on broad principles contained in Commission's regulations on "Terms

& Conditions of Tariff" and "Procurement of Power from Renewable Energy Sources by the Distribution Licensees". The Commission has also considered provisions of the CERC (Terms & Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 notified on 16th September, 2009. Prior to final decision on the tariff, the Commission invited comments/ suggestions from the stakeholders and also held public hearing and considered the suggestions of various stakeholders.

2.4 Preferential Tariff

Clauses 6.4(1) and 6.4(2) of the Tariff Policy provide that the State Electricity Regulatory Commissions shall fix minimum percentage of power purchase from non-conventional energy sources taking into account availability of such resources in the region and determine the preferential tariff for non-conventional energy sources. Distribution companies may procure such energy at preferential tariff determined by the State Commission or through competitive bidding process. The Working Group constituted by the Forum of Regulators (FOR) for Policies on Renewable have in their recommendation suggested that a cost-plus tariff based on reasonable norms should be adopted for Renewable Energy (RE).

Keeping in view provisions of the Tariff Policy, recommendations of the Working Group of FOR, and larger objectives with reference to climate change and global warming, the

Commission has adopted an approach of preferential treatment to the renewable sources.

2.5 Determination of Tariff

In the process of determination of tariff, it is essential to consider financial and technical /operating parameters. Financial parameters comprise capital cost, O&M charges, interest on loans, depreciation, etc. whereas the operating parameters include capacity utilization factor.

While determining the tariff for the Wind energy generation, it is essential to verify the capital cost for determination of the tariff. Capital cost is the most critical element while determining the tariff in a regulated environment. The capital cost of wind energy generator comprises costs of (i) tower and its base, (ii) turbine generators, (iii) blades, (iv) controllers, (v) power and control cabinets, (vi) distribution structure, (vii) transformer and associated equipments, (viii) land and its development cost, (ix) processing fee of Gujarat Energy Development Agency, (x) erection and commissioning charges, and (xi) creation of interfacing system connecting with interconnection point of State Transmission Utility. The above components may be grouped into four important categories, i.e. Plant and Machinery cost, Land Cost, Evacuation Infrastructure and Associated service charges. There is no detailed break-up submitted by either Indian Wind Energy Association or Indian Wind Power Association in their petition or in the orders of the other Commissions.

Tariff for any type of power generating projects can be categorized in various ways:

(i) Market Based Tariff or Cost Plus Tariff

(ii) Project Specific Tariff or Generalised Tariff.

(iii) Single Part Tariff or Two Part Tariff

(iv) Front Loaded, Back Loaded or Levelised Tariff.

The Commission has examined various options and come to conclusion that in the context of Wind Energy Generators a Single part, Generic levelised tariff arrived on cost plus basis is the best option. Accordingly, the Commission decides to proceed with determination of tariff for procurement of power by Distribution licensees from Wind Energy Generators on the above principles.

3. Financial and Technical Parameters

The following financial and operational parameters have been considered while determining wind energy tariff.

3.1 Capital cost
3.2 Evacuation cost
3.3 Operations & Maintenance cost
3.4 Debt Equity Ratio
3.5 Terms of Loan
3.6 Rate of Interest
3.7 Return on equity
3.8 Capacity Utilization Factor.
3.9 Project Life
3.10 Depreciation
3.11 Interest on working capital

3.1 Capital cost

The capital cost of a Wind energy generation project consists of cost of plant and machinery, civil works, erection and commissioning and service charges. But the item-wise break-up of the capital cost of a wind energy project is presently not available. The estimate of capital cost for Wind energy generators considered by various Commissions for determination of tariff varies from Commission to Commission. This Commission had, in its Order No.2 of 2006 dt.11.8.2006, considered the project cost of Rs.4.35 crores per MW. After adopting the above amount as a base capital cost, there has been substantial increase in the installed capacity of Wind energy generation in the State and the same trend continues uptill now. The Tamil Nadu Electricity Regulatory Commission has in its Order of 2009 recorded that the Centre for Wind Energy Technology, Govt. of India, has indicated on their Website that capital costs of wind energy generation ranges from Rs.4.5 to Rs.5.5 crores per MW depending on the site and the type of wind energy generators. Latest figures on the CWET website are in the range of Rs.4.5 to Rs.6.85 crores per MW. The CERC has, in its Explanatory Memorandum for Tariff Norms for Renewable Energy projects in which various approaches like pooled cost, regulatory approach, market based approach, actual project cost based approach and international project cost approach are described, observed that,

"The capital cost for financial Year 2008-09 under various approaches has varied from Rs.4.58 crores per MW under pooled cost regulatory approach to Rs.5.76 crores per MW under actual project

cost approach whereas capital cost based on proposed formulation suggests norms of Rs.5.14 croes/MW."

The CERC, in their Regulations, have adopted capital cost of Rs.5.15 crores/ MWfor 2009-10 with provision of indexation for future.

The CERC has further observed that even with the pooled costs being in the range of Rs.4.06 to 4.58 crores/MW, there is substantial increase in the installed capacity of Wind energy generation in the country. However, the cost varies from state to state due to geographical conditions. It is also found that there is increase in the cost of material, labour etc. - which are utilized in the Wind energy generating projects - since last 3 years. It also appears that the wind energy generation technology is fast developing and cost reduction measures could be adopted by the manufacturers using better technology, which will lead to reduction in the capital cost of the wind energy generation projects.

In view of above, the Commission had considered the pooled capital cost for this order as Rs.4.62 crores per MW for the next 3 years.

Suggestions of the Objectors

Suggestions regarding capital cost of Wind energy generation projects have been received from a number of objectors, which are summarized below:

(a) With development of technology, cost of wind generating equipment is bound to come down. Benefit of advanced technology must be passed on to consumers in the form of reduced capital costs.

(b) In order to lay down a reasonable trajectory for project cost, the developers should be mandated to submit the cost break up of their completed projects.

(c) Wind energy developers have proposed the capital costs in the range of Rs.5.25 to 6.50 Crores/MW.

(d) Provision for indexation of capital costs should be made to account for increase in prices of material and manpower.

(e) In view of different sizes and technology being adopted by different developers, it is not proper to apply uniform capital cost for all the projects.

(f) Any increase in capital cost due to change in law should be allowed to pass through.

Commission's Ruling

It is observed that diverse views have been expressed by various stakeholders. Several objectors have suggested that the capital cost considered by the Commission is inadequate and it should be in the range of Rs. 5.25 crore to Rs. 6.50 crore per MW, while the others have objected to further increase in the capital cost over Rs. 4.35 crore/MW considered by the Commission in earlier order No. 2 of 2006. Some of the objectors have suggested that the Commission

should direct the project developers to reveal correct cost of the wind energy generators. It is necessary to clarify that as mentioned in the draft order, itemwise cost data have not been submitted by any of the project developers or Association to the Commission. Cost of Rs.4.35 crores adopted by the Commission in its earlier order of 2006, comprised of Rs.4.05 crores/ MW as the capital cost and 0.30 crores/ MW as cost of evacuation. As against this, the Commission now proposes Rs.4.62 Cr/ MW as capital cost of generating facility, which is substantially higher than previous figure of Rs.4.05 Cr/Mw. Moreover, M/s.Theolia Ltd. has admitted that the capital cost of Wind energy generators depends on the size of the machine, blade size, tower height, type of turbine, etc.

CERC has, in the Explanatory Memorandum on Norms for determination of tariff Regulations for renewable energy sources, stated that the pooled cost was found as Rs. 4.58 crores in the year 2008-09. As such, the capital cost of Rs. 4.62 crore/MW for the control period comprising the next three years is a just proposition. While determining the wind energy tariff, the Commission has also to ensure that the consumers are not burdened with exorbitant tariff. The Commission has determined the generalized tariff and in such a case it is not possible to evaluate impact of change in law at the time of tariff determination. However, if any project developer comes with specific project with all technical and financial details, the Commission may verify and decide the tariff in that case in accordance with law. In

view of the above, the Commission considers the capital cost of Rs.4.62 crore/ MW as appropriate.

3.2 Evacuation Cost

Section 86(1)(e) of the Electricity Act,2003 stipulates that the State Commission should take suitable measures for providing grid connectivity to the renewable energy sources. The Forum of Regulators has also recommended that Grid Connectivity be provided by the transmission and distribution licensees for renewable energy sources in an optimal manner.

Wind Energy projects are often at a distance from load centres. It is necessary to create adequate infrastructure to bring such power to the grid.

The Government of Gujarat, in the amended Wind Power Policy 2007, stipulated that the evacuation facility from wind farms sub-stations to GETCO substation within a range of 100 kms. shall be erected by developers at their own cost and beyond this limit GETCO shall erect the evacuation facility. The said policy also provides that evacuation shall be at 66 KV and above. The project developer shall have to install Remote Terminal Units (RTU) so that the injection of energy can be monitored by the SLDC in real time.

Cost of creation of transmission line and associated system depends on the voltage level and length of transmission line as well as

the quantum of power to be evacuated from the Generator. The Commission had in its order no.2 of 2006 considered evacuation cost of Rs.30 lakhs per MW for creation of necessary infrastructure for evacuation of power by Wind Energy Generators to inter-connection point i.e. sub-station of GETCO. The materials required for creation of transmission system consist of line conductors, insulators, steel structures, civil works, electrical goods, etc. It is also observed that during the last three years the cost of materials and labour for creation of transmission system has increased. It is essential to consider this aspect while estimating the evacuation cost for wind power generation upto the inter connection point by the project developer.

The Commission, having considered the above aspects, had proposed to increase the evacuation cost to Rs.38 lakhs per MW for Wind Energy Tariff for the next control period of three years.

Suggestions of the Objectors

CERS has suggested that evacuation cost should be allowed as Rs. 36 lakhs/MW while IWEA, M/s Kenersys India Pvt Ltd., M/s. Azalea Enterprise Pvt Ltd. and M/s Acciona Wind Energy Pvt Ltd. have suggested different evacuation costs varying from Rs. 45 lakhs/MW to 60 lakhs/MW. GETCO has suggested that wherever construction of evacuation line requires less than 100 Kms the difference of evacuation cost approved and the cost required to construct lesser length of line should be recovered from developers

and the same should be utilized for strengthening the GETCO network.

Commission's Ruling

The Commission had in its previous order considered Rs. 30 lakhs/MW as evacuation cost which is now enhanced to Rs. 38 lakhs/MW, to address the increase in cost of material, labour cost etc. The costs of Rs. 45 lakhs/MW to Rs .60 lakhs/MW is too high a cost and there is no justification for the same. The Commission therefore adopts Rs. 38 lakhs/MW as evacuation cost for determination of wind tariff. So far as recovery of amount from developers having lines shorter than 100 Kms is concerned, it requires evaluation of the cost of each line created for evacuation purpose by the WEGs. The Commission has determined the tariff on a general basis. Hence, it is unfair to re-evaluate the evacuation cost on a case-to-case basis and the suggestion of GETCO on this issue is not accepted.

3.3 Operations & Maintenance Costs

Operations and Maintenance (O&M) costs consist of statutory charges, spares, employee cost, administrative and general expense, repairs and maintenance, and insurance expenses. The maintenance of wind farm is carried out through a centralized maintenance system which results in a lower amount of employees expenses as well as administrative and general expenses. The Commission had, in its earlier order, considered the O&M expenses at 1.5% of the Capital Cost for the first year, increasing it by 5% per annum thereafter which

includes the insurance cost. The same has been proposed to be adopted for this order.

Suggestions of the Objectors

M/s Kenersys India Pvt Ltd., M/s Azalea Enterprise Pvt Ltd., Indian Wind Power Association, M/s Acciona Wind Energy Pvt Ltd., GUVNL and M/s Gujarat Fluorochemicals Ltd. have proposed different rates for O&M cost, varying from 1.25% to 4% of capital cost with a provision to escalate it by 5% to 7.5% per annum. Some of the objectors have proposed to add service tax charges, local panchayat charges, land lease, GETCO charges etc. as part of O&M charges.

Commission's Ruling

The Commission has, in the draft order, proposed O&M cost @ 1.5% of the capital cost. The CERC has, in its order dated 3rd December,2009 in suo motu petition No.284 of 2009 adopted the normative O&M expenses as 6.5 lakhs per MW for 2009-10 with escalation of 5.72% from second year onward. After considering the submission of objectors and CERC order, the Commission decides to keep normative O&M expenses as Rs.6.5 lakhs per MW for the first year with escalation of 5% per annum on it from the 2nd year onward for determination of levelised tariff. The O&M cost includes all statutory charges, administrative charges, spares, and maintenance and insurance charges also. Moreover, an annual escalation @ 5% is being allowed to address the issue of rise in prices

3.4 Debt-Equity Ratio

Clause 5.3(b) of the Tariff Policy notified by the Government of India stipulates a debt-equity ratio of 70:30 for financing power projects. The terms and conditions of Tariff Regulations, 2005 notified by the Commission also provide normative debt-equity ratio of 70:30 for Generating Company/Licensees. If the equity employed is more than 30%, the amount of equity for the purpose for determining the tariff will be limited to 30% only and the rest to be treated as loans advanced. In case the equity employed is less than 30%, the actual equity employed is to be considered. Accordingly, the Commission has decided to keep Debt-Equity Ratio of 70:30 based on Tariff Policy, Terms & Conditions of Tariff and earlier Orders No.2 of 2006 dated 11.8.2006.

Suggestions of the Objectors

M/s CLP Wind Farm (India) Pvt Ltd. and M/s Acciona Wind Energy Pvt Ltd. have proposed that debt-equity ratio should be kept lower such as 60 : 40 or 65 : 35.

Commission's Ruling

The Tariff Policy formulated by the Ministry of Power, Govt. of India, under section 3 of the Electricity Act, 2003 stipulates debt-equity ratio of 70: 30 for power projects. The Terms and Conditions of Tariff Regulation, 2005 notified by the Commission also provides that debt-equity ratio should be kept at 70: 30. Hence, the Commission decides to retain the same ratio for this order.

3.5 Terms of Loan

The Commission had, in its earlier order dated 11.8.2006, considered the loan tenure as 10 years with quarterly repayment in equal installments and for this order also, the Commission has proposed to continue the same.

Suggestions of the Objectors

GUVNL has suggested considering repayment period for debt as 12 years. M/s Acciona Wind Energy Ltd. has suggested to consider @ 0.3% of the capital cost as a part of financing cost for tariff calculation.

Commission's Ruling

The Commission has considered loan repayment period as 10 years with equal annual installments. The Commission decides to retain the same tenure for repayment of loan for this order.

Regarding provision for cost of financing, the Terms and Conditions of the Tariff Regulations notified by the Commission do not provide for any such charges and as such, the Commission decides not to allow any finance charges for loan.

3.6 Rate of Interest

The Commission proposed an interest rate of 10.25% based on its earlier order dtd.11.8.2006 and considering that the interest rates

for both deposit and loans were showing a declining trend at that time.

Suggestions of the Objectors

M/s CLP Wind Farm (India) Pvt Ltd., and Power & Energy Consultants have suggested that the Commission may consider interest rate on loan as normative interest rate of Long Term Prime Lending Rate (LTPLR) of SBI plus 100 points. Indian Wind Power Association has proposed to consider interest rate on loan as 13%. M/s Acciona Wind Energy Pvt Ltd. has suggested to consider the interest rate on loan as 12.9% and annual review of the same should be made as it influenced project returns.

Commission's Ruling

The Commission had considered an interest rate of 10.25% in its earlier order dated 11.8.2006. The objectors have suggested to consider higher interest rate. The Commission has also considered the prevailing prime lending rates of the banks/ financial institutions for such projects in the market. Based on the above aspects, the Commission decides to revise rate of interest on loan to 10.75% for this order. This is equal to the SBI PLR minus 1 (one) percent.

3.7 Return on Equity

The Commission had proposed a rate of return on equity at 15.5% pre-tax after considering the interests of various stakeholders, such as project developers, Discoms, retail consumers and others.

Suggestions of the Objectors

Central Electricity Authority has suggested to consider pre-tax RoE @ 18% per annum. M/s Power & Energy Consultants suggested that RoE should be @ 18.14% per annum for the first 15 years and @ 20.77% per annum for remaining 5 years. M/s Kenersys India Pvt Ltd. and M/s Azalea Enterprise Pvt Ltd. have suggested post tax RoE @ 16% per annum. M/s Acciona Wind Energy Pvt Ltd has suggested that RoE should be @ 21% per annum. M/s Tata Power Company Ltd. have suggested that post tax RoE should be 14% per annum. Indian Wind Energy Association and GE Energy have suggested pre-tax RoE at 17% per annum for initial 10 years and 23% per annum for next years. M/s Gujarat Fluorochemicals Ltd. has suggested that pre-tax RoE should be 23% per annum.

Gujarat Urja Vikas Nigam Ltd. and Energy & Petrochemicals Department, GoG have suggested that sale of scrap/residual value of the project is to be considered in determination of the tariff. It is essential to consider (i) Income Tax on RoE, (ii) Income from sale of scrap, (iii) Residual value at the end of project life and availability of generation after completion of project life due to operation of WEG projects and (iv) benefit of Accelerated Depreciation which is not considered in determination of tariff. Due to factors (ii) to (iv)

mentioned above, the project developers earn higher RoE than approved by the Commission.

Commission's Ruling

The Commission had proposed Return on Equity pre-tax at the rate of 15.5% in the draft order. However, no provision for Income tax was made in the draft order. On the basis of suggestions from some of the objectors, the Commission has now decided to include provision for Income tax (i.e. MAT @ 16.995% for the initial 10 years of the project life and Corporate Tax @ 33.99% from 11th year to 25th year of the project). As such, the Commission decides to allow the RoE at the rate of 14% (instead of 15.5% pre-tax) as provided in the Terms and Conditions of Tariff Regulations, 2005 notified by the Commission. In addition, reimbursement of income tax as mentioned above has been allowed.

Regarding residual value and proceeds from sale of scrap, it is necessary to consider the cost of dismantling the project as well. Also, since the tariff being worked out is generic in nature, the above factors have not been taken into account.

3.8 Capacity Utilization Factor (CUF)

Capacity Utilization Factor is a vital parameter influencing the viability of a wind energy project at a particular site. The capacity utilization factor depends on site specific parameters like wind power index and machine specific parameters, viz. hub height, rotor

diameter, power curve, etc. Wind power density is a function of wind velocity and air density and the same varies from zone to zone as has been identified by the Centre for Wind Energy Technology (C-WET). The C-WET have installed wind masts to carry out detailed wind resource surveys at various wind sites in different states. As per the data collected by C-WET, wind power density is found at a moderate level in the State of Gujarat. The Commission in its earlier order dated 11.8.2006 had considered the CUF at 23%. Technological developments in designs of wind generators, blades, etc. should result in increased capacity utilization factor**.** However, for the present order**,** the Commission proposed to continue the CUF at 23% for tariff determination.

Suggestions of the Objectors

Indian Wind Power Association, M/s Acciona Wind Energy Pvt Ltd. and M/s Gujarat Fluorochemicals Ltd have suggested that capacity utilization factor should be considered at 20% and allow de-rating in capacity utilization factor at 1% or 1.25% every 5 years from the 5th year onwards. GE Energy has suggested that CUF of 23% is a valid assumption.

Commission's Ruling

The Commission has time and again emphasized the need for adoption of latest technology in the field of Wind Energy Generation. Now, in India significant number of Wind Energy Generators have been installed. The technology up-gradation and experience gained

by manufacturers, lead to increase in capacity utilization factors. However, keeping the projected wind power index in the State of Gujarat, the Commission decides to retain the CUF at 23%.

Regarding de-rating in terms of CUF, the Commission do not find any justification for the same. Moreover, the Commission has approved O&M charges with the provisions of escalation of 5% every year which will be helpful to the project developers to keep wind energy generators in good condition. The Commission decides not to allow revision of CUF over the years. Hence, the Commission decides to retain the CUF at 23% for determination of tariff for the entire project life.

3.9 Project Life

The Commission considered the life of a Wind Energy Generation plant as 20 years in its earlier order (No.2 of 2006) dated 11.8.2006. In the draft order, the same period of 20 years was proposed to be continued by the Commission.

Suggestions of the Objectors

GETCO and GUVNL have suggested that duration of tariff period should be considered as 25 years as proposed in CERC's Explanatory Memorandum of Determination of Tariff of Renewable Energy Sources.

Commission's Ruling

The CERC has in its Order dated 3rd December, 2009 in suo motu petition No.284 of 2009 adopted Project life of Wind Energy Generators as 25 years. Based on the suggestions by some of the objectors and keeping in view CERC order, the Commission decides to assume the life of plant as 25 years for determination of tariff.

3.10 Depreciation

The Regulations on Terms and Conditions of Tariff, 2005 specify that depreciation rate should be calculated based on the straight line method as specified in the CERC (Terms and Conditions of Tariff) Regulations 2004, which lay down that asset life is to be depreciated up to 90% of its initial value (considering residual value as 10% of its initial value) over the entire asset life (which in present case was 20 years).

Accordingly, the Commission proposed 4.5% of the capital cost per annum as the rate of depreciation in the last Order No.2 of 2006 dt.11.8.2006 and proposed to continue the same for this order also.

Suggestions of the Objectors

CEA and Indian Wind Energy Association (IWEA) have suggested that rate of depreciation may be considered as proposed in CERC "Explanatory Memorandum for draft determination of Tariff Norms for Renewable Energy Projects" which suggests that 90% of the project cost as depreciable and that for initial 12 years,

depreciation should be @ 6% per annum of the capital cost and thereafter remaining part should be spread over the useful life of the project. CERC, in its final regulations, have adopted depreciation @ 7% per annum for the first 10 years and the remaining depreciation to be spread over the remaining useful life.

M/s RIL, GUVNL and Energy and Petrochemicals Department, Govt. of Gujarat have suggested that some of the Wind Farm Developers (Project Developers) avail benefit of the Accelerated depreciation as tax planning measures. GUVNL and EPD (GOG) have further stated that if the accelerated depreciation is taken into account the tariff reduces drastically i.e. to about Rs. 3.05 per unit, while if the above benefit is not taken into account the tariff works out at Rs. 3.77 per unit. GUVNL and EPD (GoG) have suggested that the Commission may specify either an average tariff of Rs. 3.50 per unit or two different tariffs for wind farm developers (i) availing the benefit of Accelerated Depreciations and (ii) who are not availing benefit of Accelerated Depreciation. Moreover, the wind farm developers who are not availing the Accelerated Depreciation benefit may be asked to submit affidavits along with supporting documents that Accelerated Depreciation is not being claimed by them.

Commission's Ruling

Depreciation is a non-cash flow expenditure and it is linked with the loan repayment. The loan repayment period is considered by the Commission as 10 years. Hence, the requirement of cash flow in

the initial 10 years is more to match with the loan repayment. After considering the suggestions of the objectors, the Commission decided to allow 6% of the capital cost per annum as depreciation for the initial 10 years and 2% per annum from 11th to 25th year of the plant.

The provisions of Accelerated Depreciation are provided in the Income Tax Act, 1961 and Rules framed thereunder. A person who qualifies under the above statutory provisions is entitled to get benefits of the Accelerated Depreciation. Hence, the Commission decides to determine the tariff taking into account the benefit of accelerated depreciation available under Income Tax Act, 1961 and Rules framed under it. Those who do not avail of such benefit may submit petitions on case-to-case basis.

3.11 Interest on Working Capital

The Commission did not propose interest on working capital in the draft order.

Suggestions of the Objectors

The Indian Wind Energy Association has suggested inclusion of the interest on working capital at the interest rate equivalent to SBI, the working capital requirement equivalent to one month of O&M expenses and one and a half month's receivables and maintenance spare @ 15% of operation & Maintenance expenses for determination of tariff for Wind energy project.

Commission's Ruling

The Commission has in the draft order, not proposed any interest on working capital. The Commission has considered the suggestions of the objectors and decided to allow working capital for the following:

1) Receivable of one month.
2) O&M cost for one month.

The Working Capital required by the Project developers would be based on short-term basis which are available at prime lending rate of banks or even at lower rates. The prime lending rate of SBI at present is 11.75%. In view of these facts, the Commission decides to allow the interest on working capital at 11.75% per annum.

4. Tariff Determination

In view of the foregoing discussions, the various parameters considered by the Commission for determination of tariff are given in the table below:

Parameters for determination of tariff

	Parameter (per MW basis)	**11th August 2006 Order**	**Decided by the Commission for the 2010 order.**
Project Cost			
1	Land+ Plant & Machinery + Erection cost (Rs. Lakh)	435	462
2	Evacuation Infrastructure (Rs.Lakh)	30	38
	Total Capex (Rs. Lakh)	465	500
Operational parameters			

3	Debt- Equity ratio	70:30	70:30
4	Cost of debt and Interest on loan (tenure 10 years)	10.25%	10.75%
5	Return on Equity	14%	14%
6	Normative O&M cost for first year	1.5%	6.5 lakhs/MW
7	Insurance	Nil	Nil
8	Escalation in O&M (per annum)	5%	5%
9	CUF (at 100% grid & m/c availability)	23%	23%
10	De-rating in CUF	Nil	Nil
11	Actual machine availability	100%	100%
12	Actual grid availability	100%	100%
13	Depreciation	4.5%	6% for initial 10 yrs and 2% from11th year onwards.
14	Project life (years)	20	25
15	Minimum Alternate Tax (MAT)	11.33%	16.995%
16	Corporate Income Tax	33.66%	33.99%
17	Interest on working capital (i) Receivable of one month (ii) O&M expenses for one month		11.75%

Based on the above parameters, the levelised tariff including RoE of wind energy generation using a discounting rate of 10.19% works out to **Rs. 3.56 per kWh**.

The above tariff takes into account the benefit of accelerated depreciation under the Income Tax Act and Rules. For a project that does not get such benefit, the Commission would, on a petition in that respect, determine a separate tariff taking into account all the relevant facts.

The Commission, therefore, determines the tariff for generation of electricity from wind energy projects at **Rs.3.56** (constant) for its entire project life of 25 years i.e. from the first year to the twenty fifth year. This tariff shall be applicable for purchase of wind energy by Distribution Licensees/ other entities for complying with the renewable power purchase obligations specified in the regulation by commission from time to time. This tariff is applicable to wind energy projects which commission brand new wind energy plants and equipments from 11th August, 2009 onwards.

5. Other Suggestions

The Consumer Education and Research Society (CERS) has suggested that the prevailing tariff of Rs. 3.37 per unit for wind energy generation should not be increased in order to create competition amongst Wind Energy Developers. M/s. Kenersys India Pvt Ltd. and M/s Azalea Enterprise Pvt Ltd. have suggested that an escalation of 15 paise per unit on annual basis be incorporated in the tariff determined by the Commission. CEA has suggested that in a cost plus approach the yearly tariff during first three years would be around Rs.4.33, Rs. 4.18, Rs. 4.02 per kWh respectively. In such conditions project developers might face cash flow problems. CLP Wind Farms (India) Pvt Ltd. has suggested that the capital cost may be varied from year to year. Moreover, various types of fees, duties are also charged on annual basis by the authorities and hence, tariff should be reviewed on annual basis. M/s Acciona Wind Energy Pvt

Ltd. has suggested that annual review of the interest rate and financing cost should be considered and accordingly annual review of the tariff may be done by the Commission

Commission's Ruling

The Commission had earlier determined the wind energy tariff on 11th August 2006 for a control period of three years considering various parameters like capital cost, interest rate, O&M charges etc. There is an increase in the cost of labour, material etc. during the last three years. Hence, it is necessary to consider the same and re-evaluate the tariff considering the prevailing rates of material and labour. The Commission has determined the tariff on the above premises. Keeping tariff rate at Rs. 3.37 will affect the future development of renewable energy utilization as the project developers may not receive reasonable prices. The Commission has considered the incremental cost factor in capital cost, including evacuation cost and also 5% annual escalation in O&M cost. Hence, annual escalation of 15 paise per unit as suggested by M/s Kenersys India Pvt Ltd. and Azalea Enterprise Pvt Ltd. has not been considered by the Commission.

The Commission has re-considered and allowed (i) RoE at the rate of 14% , (ii)MAT @ 16.995% p.a. for initial 10 years and Corporate Tax @ 33.99% from 11th to 25th years, and (iii)depreciation at the rate of 6% p.a. for initial 10 years, which will provide the

necessary support to the project developers to overcome the problem of cash flows in the initial years.

Regarding proposal of M/s.CLP Wind Farms and M/s.Acciona Wind Energy regarding annual review of tariff, the Commission is of the view that this would create uncertainty in the minds of investors. Moreover, tariff determination is a time-consuming process. As such, their suggestion cannot be accepted.

6. Other Commercial Issues

6.1 Transmission and Wheeling charges
6.2 Banking
6.3 Purchase of Surplus Power from WEGs Wheeling Power for their Captive use after adjustment of energy against consumption at the recipient unit(s)
6.4 Security Deposit
6.5 Sharing of CDM
6.6 Pricing of Reactive Power
6.7 Third Party Sales and Cross Subsidy Surcharge.

Other commercial issues connected with transmission & wheeling, payment for sale of surplus energy by Captive Generation Plants to the licensee, security deposit, evacuation facility etc. are incorporated in this order considering the State Government Policy and for encouraging wind energy generation projects in the State through further capacity additions.

6.1 Transmission and Wheeling charges

While determining the Transmission and wheeling charges for captive users, the Commission has considered Capacity Utilization Factor (CUF) of wind energy generators at 23%, which is significantly lower as compared to conventional energy sources. The power plants based on coal/ gas based technology have plant load factor of 80% and more. Thus, plant load factor (capacity utilization factor) of wind energy generators is about one-third that of the conventional energy generators. Based on the above, the Commission had, in the draft order proposed to levy the transmission charges at 1/3rd of normal open access charges and wheeling losses at 10% and 7% depending on number of WEGs.

Suggestions of the Objectors

CLP Wind Farms (India) Pvt Ltd. has suggested that the Commission may clarify about applicability of the transmission and wheeling charges. M/s Power & Energy Consultants has proposed that the transmission and wheeling charges should be either zero or maximum 20% of normal applicable open access charges. M/s. Kenersys India Pvt Ltd., M/s. Azalea Enterprise Pvt Ltd., Indian Wind Power Association, M/s Acciona Wind Energy Pvt Ltd., and Shree Vanraj Besan Mills Ltd. have suggested that the existing transmission and wheeling charges of 4% of the energy injected (in kind) as all inclusive of transmission, wheeling charges is to be continued. M/s Gujarat Fluorochemicals Ltd. has suggested that no transmission and wheeling charges, SLDC charge, cross subsidy surcharge should be levied on project developers of WEGs. Surat Municipal Corporation

has suggested all HT connections above 11 KV, should be charged commercial wheeling charges @ 2% for water supply and sewerage and 4% for other services like street lights shared between transmission and distribution licensees.

Gujarat Energy Transmission Corporation, Gujarat Urja Vikas Nigam Ltd. and Torrent Power Ltd. have suggested that normal transmission charges should be applicable to wind energy generators wheeling power within the State for captive purpose as per the amendment made in Wind Power Policy, 2007 of the Govt of Gujarat. Even after paying normal charges sufficient margin is available to the Industrial Consumers who desire to wheel power for captive purpose. If GETCO has to sign bulk power transmission agreement with beneficiaries with 1/3 charges, such financial schemes cannot achieve financial closure and hence GETCO will not be in a position to create appropriate transmission system for evacuation of power from wind generators. Industrial consumers have capacity to pay normal transmission and wheeling charges. Allowing the wind energy generators to wheel power by paying 1/3 of normal transmission and Wheeling charges will be tantamount to cross subsidization of such industrial consumers by other category of consumers. Tata Power Company Ltd. requested clarification that "whenever any person desires open access of transmission and distribution over 1 MW, is it with reference to contracted demand from the distribution utility or contracted capacity with the generators?"

The Gujarat Energy Transmission Corporation Ltd. has vide their submission dated 20th November,2009, submitted an undertaking given by (1)M/s.Vestas Wind Technology India (P) Ltd. (2) M/s.AuroMira Energy Company Pvt.Ltd (3) M/s.Suzlon Power Infrastructure Ltd, (4) M/s.Enercon India Limited, (5) M/s.RRB Energy Limited, (6) M/s.Gujarat Fluorochemicals Ltd. and (7) M/s.Elecon Engineering Co.Ltd. to the effect that they have no objection to levy of Transmission charges and losses as declared by Govt. of Gujarat vide Notification No.WND-11-2008-2321-B dated 7th January,2009 for Wheeling of Wind Energy in the State of Gujarat. GETCO has requested the Commission that since the developers have now consented and confirmed that they have no objection to levy of transmission charges as per the amendment to the Wind Power Policy, 2007 of the Government of Gujarat; the same may be approved by the Commission.

The GUVNL has suggested that wheeling below 11kv should not be allowed. The Indian Wind Power Association has suggested that if captive generator desires wheeling power below 11kv for captive use the same should be allowed.

Commission's Ruling

The Commission had, in the draft order, proposed lower transmission/ wheeling charges in case of the wind energy Generators opting for wheeling of power for own use, considering the lower power plant load factor of the wind energy projects. But, as suggested

by GETCO, cost of transmission/ distribution assets created for such projects is required to be recovered through tariff. The proposed charges do not recover fully the cost of transmission and distribution assets. After considering the suggestions of the objectors and Govt. of Gujarat Amended Wind Power Policy dated 13th January 2009, the Commission decides the transmission and wheeling charges applicable to the captive consumers as under:

(a) <u>Wheeling of power to consumption site at 66 KV voltage level and above.</u>

The wheeling of electricity generated from the Wind Power Generators, to the desired location(s) within the State, shall be allowed on payment of transmission charges and transmission losses applicable to normal Open Access Consumer.

(b) <u>Wheeling of power to consumption site below 66 KV voltage level.</u>

(i) The wheeling of electricity generated from the Wind Power Generators, to the desired location(s) within the State, shall be allowed on payment of transmission charges, applicable to normal Open Access Consumer and transmission and wheeling losses @ 10% of the energy fed to the grid. The above loss is to be shared between the transmission and distribution licensee in the ratio of 4:6. This provision shall be applicable to the WEGs who are having more than one WEGs

(ii) The wheeling of electricity generated by smaller investors, having only one WEG in the State, to the desired location(s), shall be allowed on payment of transmission charges, applicable to normal open access consumer, and transmission and wheeling losses @ 7% of the energy fed to the grid. The above losses are to be shared between the transmission and distribution licensee in the ratio of 4:3.

Wind Energy Generator owner, who desires to wheel electricity to more than two locations, shall pay 5 paise per unit on energy fed in the grid to the Distribution Company concerned in whose area power is consumed in addition to the above mentioned transmission charges and losses, as applicable.

So far as the clarification sought by Tata Power Company Ltd. is concerned, it is clarified that open access in transmission and distribution system is granted with reference to the quantity of power desired to be transmitted/wheeled by the generator/ consumer. The generator requires injecting power which includes the desired quantity of power to be consumed at place of consumption and transmission / distribution network losses. Hence, open access is granted with reference to the power desired to be wheeled from the generators to the place of consumption by the person concerned.

As regards wheeling of power below 11 kv system level, neither the Electricity Act, 2003 nor Amendment made in Wind

Power Policy, 2007 of Govt. of Gujarat contains any restriction. Hence, the Commission decides that whenever any person applies for wheeling of power below 11kv level, the same should be allowed as decided earlier.

6.2 Banking

The Commission had in its draft order, proposed that the WEG units set up after 1st July, 2009 and opting for captive use of the energy generated shall be eligible to get set off against the energy generated during peak and normal hours as specified by the Commission in the tariff orders. The WEGs are eligible for one month banking for the electricity generated during the month. However, they are eligible to utilize the same during the month in proportion to the energy generated during peak and normal hour period.

Suggestions of the Objectors

GETCO and GUVNL have suggested that on implementation of Intra-State ABT in the State if one month banking is provided for captive use, that will create imbalance in energy accounting. GETCO has further suggested that the proposed mechanism for giving set off should be applicable to Industrial consumers only. Otherwise, such condition will distort the tariff recovery of Discoms. M/s Kenersys India Pvt Ltd., Azalea Enterprise Ltd., Indian Wind Power Association, M/s Acciona Wind Energy Pvt Ltd. and M/s Gujarat Flourochemicals Ltd. have suggested to keep banking of surplus wheeled energy period for 12 months. It is also proposed that set-off

during peak-hours and normal peak hours should not be applied on banking units. M/s. Acciona Wind Energy Pvt Ltd. have suggested that adequate flexibility may be allowed for migration between sale to utility or third party sale or to the captive consumption in the PPA.

Commission's Ruling

The Commission had issued intra-State ABT order in August 2007. Thereafter, all the constituents have been participating in the mock trial. The state energy accounts are also been prepared by the SLDC. At present, as per earlier order No. 2 of 2006 dated 11.8.2006 the banking of wind energy for captive purpose is permissible and accordingly the same is allowed. The state energy accounting is also prepared by the SLDC taking into consideration banking of wind energy generation. Neither any constituent nor SLDC/GETCO had so far raised the issue of imbalance in energy accounting. Hence, the submission of GETCO/GUVNL that banking will distort energy account is not acceptable and the same is rejected. So far as wheeling of wind energy to be allowed to only industrial consumers and not to commercial consumers is concerned, it is also not acceptable because Electricity Act, 2003 and Open Access regulations, 2005 framed by the Commission emphasize allowing non-discriminatory open access to the consumers irrespective of their categories by the transmission and distribution licensees. Thus, such restriction is against the provisions of the Act and regulations framed under it. Moreover, such action will imply discrimination between the two categories of consumers which is also not permissible under the Electricity Act,

2003. Hence, the suggestion of GETCO to this effect is not accepted. So far as the banking of surplus units for a period of 12 months is concerned the same is not allowed because banking is allowed to captive users due to the infirm nature of the wind energy. It provides flexibility to project developers to utilize the banked units within one month time, which should be sufficient. So far as the consumption of energy during peak, and normal hours is concerned, it is a well known fact that due to shortage of power, rates of the electricity sold/traded in the market during the peak hours and normal hours are different. Moreover, the Commission has approved the tariff rates for peak hours and normal hours. Thus, there is no reason to accept the suggestion that consumption of surplus energy by the captive users during of peak-hours, and normal hours should have similar treatment. Hence, the Commission decides to retain the relevant clause as per the draft.

6.3 Purchase of Surplus Power from WEGs Wheeling Power for their Captive use after adjustment of energy against consumption at the recipient unit(s)

Wind Energy Generation is an infirm power and is not predictable, creating uncertainty for the distribution licensees regarding availability. It is also a fact that wind energy generation is available both during peak and off-peak hours. One month banking is allowed during which WEGs would be able to utilize the surplus power generated by them. At times, when they are unable to utilize the same within a month, it needs to be considered as sale to the Distribution licensee concerned.

The amended Wind Power Policy of the Government of Gujarat states as under:

"Amendment of Clause No.8 – Sale of Power:

GUVNL and /or any Distribution licensee may purchase surplus power from WEGs wheeling power for their captive use after adjustment of energy against consumption at the recipient unit(s) at a rate of 85% of tariff applicable to WEGs (Commissioned in same tariff block) selling power to GUVNL and /or any Distribution licensee. This provision will be applicable for WEGs commissioned under Wind Power Policy-2007 also, from the date of issuance of this GR."

The Wind Energy Generators, who desire to be eligible as Captive Generating Plant, shall have to fulfill the criteria as laid down in the Electricity Act, 2003 and Electricity Rules, 2005.

In view of the above facts, the Commission had proposed that any excess generation (over and above that set off against monthly consumption) would be treated as sale to the distribution licensee concerned at a rate of 85% of the tariff applicable to WEGs.

Suggestions of the Objectors

Surat Municipal Corporation, M/s Acciona Wind Energy Pvt Ltd., Indian Wind Power Association, M/s Gujarat Fluorochemicals Ltd. have suggested that any excess energy after captive consumption

be treated as sale to distribution licensees at 100% of the tariff applicable for WEGs. GETCO has suggested that deemed sale to distribution licensee at 85%of the applicable tariff, should be limited to their Renewable Power Purchase Obligation only. Beyond RPPOs the Discoms should be permitted to buy at competitive bidding rate. GUVNL and EPD (GOG) have suggested that Discoms will be able to make payment after bills are raised by Wind Farm generators for excess generation. Discoms shall be able to make payment within 30 days from the receipt of invoice from Wind Farm generators.

Commission's Ruling

In view of infirm nature of wind energy, its availability or otherwise is not known to Distribution Licensees and they are unable to estimate the actual quantity of electricity required to be purchased/ scheduled by them. As such, payment for excess generation at 85% of applicable tariff is a fair proposition. On the same reasoning, the proposal regarding purchase of excess generation at competitive bidding rates is also not acceptable.

So far as GUVNL/EPD(GOG) suggestion that payment should be done by the distribution licensee after receipt of the claim/bill from captive users, it is a valid suggestion and therefore, it is decided that the distribution licensees shall make payment of excess generation within a month from the date of receipt of invoices from wind farm generators.

6.4 Security Deposit

The objective of the order is to promote development of renewable energy in the state. A procedure of giving permission for the proposed wind projects, based on the load flow studies has been followed by the GETCO. Thus, the proposed evacuation system from the pooling station of wind projects forms part of the overall GETCO System. While timely completion of power evacuation system of such wind projects is essential, timely execution of WEG project is also equally important. Non-completion of WEG projects leads to idling of transmission resources. Thus, to assure GETCO about seriousness of wind power projects, the project Developer shall be required to furnish a Bank Guarantee of Rs. 5 lakhs/MW to GETCO. The Bank guarantee shall be forfeited if the project is not commissioned within a specified time period as follows:

Projected capacity in MW	**Prescribed Period for Commissioning of the project**
1 to 100	1 (one) Year from the date of allotment of transmission capacity
101 to 200	One and a half years from the date of allotment of transmission capacity
201 to 400	Two years from the date of allotment of transmission capacity
401 to 600	Three years from the date of allotment of transmission capacity

Suggestions of the Objectors

GETCO suggested that date of allotment of the transmission capacity shall be considered from the date of issue of estimate for the

wind farm site to the developer. M/s Kenersys India Pvt Ltd. and M/s. Azalea Enterprise Pvt Ltd. have suggested that a period of 3 years be given to the developer before any view is taken with regard to non-utilization of allotment. The security deposit of Rs. 5 lakhs per MW and that too for completion instead of starting of activities is not justified. M/s Acciona Wind Energy Pvt Ltd. has suggested that a minimum period of 4 years should be allowed irrespective of the capacity of the proposed project. Indian Wind Energy Association has suggested that the provisions of security deposit should not be made.

Commission's Ruling

As clarified above, the duty has been cast upon GETCO to create necessary infrastructure of transmission system for evacuation of power generated by WEG. If, GETCO fails to create the same, the power generated from wind energy is not utilized. Similarly, if the project developer fails to complete his project and evacuation system upto GETCO inter-connection point within the stipulated time frame, the infrastructure created by the GETCO will remain unutilized and the burden of the network charges is borne by other consumers. Hence, the Commission does not agree to any change in the provisions regarding security deposit and prescribed time period.

So far as the allocation of transmission capacity is concerned, the date of estimate given by GETCO and receipt of the same by the project developer may be considered as starting date for this clause. It creates the right of the project developer on the proposed transmission

system. With the above observation, the Commission decides that date of receipt of estimate from GETCO by the project developer shall be the starting date for the period of commissioning of WEG as well as power evacuation arrangement as stipulated in this clause.

6.5 Sharing of CDM

The Commission has proposed sharing of CDM benefits as per the recommendation made by the Working Group for Renewable Energy Generation constituted by the Forum of Regulators and as per the CERC (Tariff for Renewable Energy Sources) Regulations, 2009, which is as under:

"The CDM benefits should be shared on a gross basis, starting from 100% to developers in the first year after commissioning, and thereafter reducing by 10% every year till the sharing becomes equal (50:50) between the developers and the consumers, in the sixth year. Thereafter, the sharing of CDM benefits should remain equal till the time that benefit accrues."

Suggestions of the Objectors & Commission's Ruling

Various Wind Energy Project Developers and the consumers of wind energy have proposed different ways for sharing of CDM benefits, which range from full benefits to developers to more benefits to consumers. Keeping in view the effort of developers to harness renewable sources of green energy and also the fact that the consumers are sharing all the costs of projects, the Commission

decides that the above mentioned formula for sharing of CDM benefits is just, and the same is accepted.

6.6 Pricing of Reactive Power

Due to its inherent characteristics, Wind Energy Generators are prone to draw reactive power from the grid, if adequate power factor correction is not applied. During the high wind season, wind energy generation is considerable, and in such situation, grid stability will be adversely affected , if the wind energy generators are allowed to draw reactive power from the grid. As such, the Commission decides to continue with Reactive Energy Charges as provided in the order No 2 of 2006 dated 11.8.2006, which are reproduced below:

10 paise / KVARH - For the drawal of reactive energy at 10% or less of the net energy exported.

25 paise / kVARH - For the drawal of reactive energy at more than 10% of the net active energy exported.

6.7 Third Party Sales and Cross Subsidy Surcharge

The Commission had, in the draft order, proposed that Third Party Sales under Open access transactions carried out using generation from renewable sources shall be exempted from levy of cross- subsidy surcharge under section 42 (2) of the Electricity Act, 2003. However, no banking facility shall be provided for supply from renewable sources under open access for third party sales. In third party sale, whenever the transmission and distribution network is utilized, the person concerned has to pay open access charges as

decided in para 6.1 of this order. Further, ABT compatible interface metering system capable of energy accounting for each block of 15 minutes time shall be provided at both supplier as well as drawal point. Since energy generation from renewable sources such as Wind and mini hydro are exempted from the requirements of scheduling, for those WEGs who opt for third party sale, the generation from such sources in each 15-minute time block shall be set off against the open access consumer's consumption in the same 15-minute time block. Any excess generation (over and above that set off against consumption in each time block) will be treated as sale to the distribution licensee concerned at 85% of the tariff rate determined by the Commission for such renewable sources. Any excess consumption by a third party (consumer) up to contract demand will be treated as sale by the distribution licensee concerned at retail tariff rates applicable to that consumer category as determined by the Commission from time to time.

Objections have been raised regarding exemption from cross-subsidy charges on open access transactions from Wind Energy Projects. However, keeping in view the climate change issues, promotion of such renewable sources of energy has to be encouraged. As such, the Commission do not propose any amendment to the above, and decide to retain the provision of exemption from cross-subsidy charges in respect of open access use of wind energy.

7. Other Issues

7.1 Non-applicability of Amendmended Wind Power Policy 2007 for excess units for WEGs installed prior to tariff order
7.2 Interconnection Point
7.3 Timeframe for creation of evacuation of infrastructure by GETCO and providing Grid connectivity.
7.4 Scheduling/Forecasting, installation of RTU, Option for wheeling/sale/third party sale raised by GETCO.
7.5 Financing of evacuation/ transmission system upto pooling station.
7.6 Indexing

7.1. Non-applicability of Amendmended Wind Power Policy 2007 for excess units for WEGs installed prior to tariff order

Shree Vanraj Besan Mills Pvt Ltd. submitted that PGVCL is implementing the amended the Wind Power Policy, 2007 and paying charges for the units which remained unutilized after banking by deducting an amount of 15% from the tariff rate of Rs. 3.37 per unit decided by the Commission.

Commission's Ruling

The Commission has already given directives to GUVNL and licensees to strictly follow the Commission's orders on these matters.

7.2 Interconnection Point

Indian Wind Energy Association and Gujarat Fluorochemicals Ltd. have suggested that "Interconnection Point" should be defined as the "line isolator on outgoing feeder on HV side of the pooling sub-station" for wind energy projects.

Commission's Ruling

The interconnection point is specified in the Order No. 2 of 2006 dated 11.8.2009 as sub-station of GETCO. The Commission has already granted additional provision towards evacuation costs for laying down the necessary transmission system from wind farms to GETCO sub-station. Thus, interconnection point should be the delivery point of power at the relevant GETCO sub-station. In case of any dispute on interconnection point, provisions of the Grid Code shall prevail.

7.3 Timeframe for creation of evacuation of infrastructure by GETCO and providing Grid connectivity

M/s Gujarat Fluorochemicals Ltd. has suggested that a timeframe should be specified for evacuation infrastructure to be laid down by GETCO. For large projects with high capital outlay timeframe is crucial to avoid cost overrun due to interest during construction.

Grid connectivity should be made mandatory for encouraging the setting up of renewable projects.

Commission's Ruling

The Commission has issued necessary directives to GETCO to undertake necessary planning for evacuation of power projects which are upcoming, either conventional/or renewable. GETCO has also assured that they will carry out necessary planning for evacuation of power generation available from power projects in future. Hence, it is

not necessary to give specific directions for the same. It is the duty of GETCO to provide grid connectivity to the wind energy projects. The Commission has not received any complaints regarding non-provision of grid connectivity by GETCO. In the absence of any specific case, it is not appropriate to give such directives.

7.4 Scheduling/Forecasting, installation of RTU, Option for wheeling/sale/third party sale raised by GETCO

GETCO brought these issues to the notice of the Commission and requested that the following may be included/ addressed in the Commission's order.

SCHEDULING:- Under normal conditions it should have must-run status and not related to merit order, but in case of contingency or grid constraints viz. overloading of lines or Act of God they shall be responded on real time basis as per the instructions of SLDC.

FORECASTING:- Provision in the Regulation which mandate WEG to furnish the tentative day-ahead generation forecast (MWh) in blocks of 1.5 hour duration for the wind energy availability on collective basis at inter-connection point (Pooling Station) to the LDC concerned to facilitate better grid-co-ordination.

Option for wheeling/sale/Third party sell: - Option once selected by any person i.e wheeling, sale or third party sale shall not be changed during the term of Agreement.

Installation of RTU: - The amendment in GoG policy stipulates that the project developer will have to install Remote Transmitting Units (RTU) so that the injection can be monitored by the SLDC on a real time basis. The same should be made applicable to the existing wind farm locations as well so that the monitoring of real time data can be carried out by SLDC when the wind injection is more, and when wind generation starts decreasing, SLDC would be in position to pick its other available generation.

Commission's Ruling

The points raised by GETCO on scheduling, forecasting, installation of RTU are related to intra-State ABT. The Commission has issued a separate order on this aspect also. If any further clarification/modification in this regard is required, the Commission will give necessary directives in future. So far as installation of RTU is concerned, necessary provisions are made in earlier paras of this order. In case of the wind farms which were installed prior to this order, the same will be decided by the Commission after providing opportunity of being heard to all such wind farm owners. Wheeling/sale/third party sale are commercial issues and are governed by the agreements between the parties, provisions of law, regulations etc.

7.5 Financing of evacuation / transmission system upto pooling station

Indian Wind Power Association suggested that it is the responsibility of the developer to create necessary infrastructure

facility from the Wind Energy Generator's location to pooling station, and after completion of the same, it is shown as assets of GETCO. In this situation, it becomes difficult to get finance from the lender (financial institution) because the asset is not shown in the books of account of the project developer. Hence, bank is not granting finance on such asset. They requested that some documents may be provided to the project developers so that they are able to receive loans on such assets.

Commission's Ruling

The evacuation cost is considered as Rs.38 lakhs per MW for the tariff determination by the Commission and it is factored in the tariff also. It is the duty of project developers to raise necessary loans/ finances. So far as issuing the documents which relate to the above assets is concerned, it is to be prepared and documented in consonance with the prescribed financial norms/ rules/ regulations. It is for the project developers of Wind Energy Generators to explore how to get loan/ finance on such assets and it is not necessary for the Commission to give solutions for the same.

7.6 Indexing

Indian Wind Energy Association has requested to consider the indexing mechanism as specified by Central Electricity Regulatory Commission and Rajasthan Electricity Regulatory Commission for tariff determination purposes as it automatically adjusts the cost with the change in underlying tariff parameters.

Commission's Ruling

The capital cost of the Wind energy generator consists of Plant and Machinery and Civil Works as stated in earlier paras. The advancement of technology in construction of machines, erection, changes in design patterns adopted by manufacturers and cost cutting measures adopted by the manufacturers, etc. will lead to economy in requirements of steel, cement, labour for erection of projects etc. Hence, the above costs will not remain static for all the time. The requirements of steel, epoxy, cement, labour for wind energy generators depend upon the types of Wind energy generators, its size, its technology etc. It is found that same manufacturer produces different machines which require different quantum of above materials and manpower. An indexing mechanism would be appropriate where there is no change in the quantum of materials like steel, cement, epoxy, manpower etc. Hence, the Commission decides that the indexing mechanism is not to be adopted for the present tariff order.

8. Commercial settlement of WEGs installed under Wind Generation Policies of State Government issued in the years 1993 and 2002

The existing wind energy policies (1993 and 2002) of the State Government contain a provision for banking of wind energy generation. Under this arrangement, the WEG gets set off against his captive consumption to the extent of his wind energy generation. Such set off is given based on his captive consumption (which in effect is

the energy he draws from the licensee at the point of use) and his wind energy generation in three specified parts of the day over a six month period.

In respect of wind energy generating units set up under the 1993 policy of Government of Gujarat and who have opted for wheeling for self use, the existing facility of six month banking will continue till the agreement period. The WEGs set up during the operative period of the Wind Power Generation Policy-2002 (up to 19th June 2007) and who may have opted for wheeling for self-use, will also be eligible for the banking facility as envisaged in that policy. Any generation not consumed within the permissible banking period of six months will lapse.

The WEGs which came up under State Government's earlier policies will be governed for the Agreement periods (as may have been entered into under the State Government's policies of 1993 and 2002) by the applicable provisions of set-off and payment under the relevant policies.

9. Applicability of the Order

As already clarified in para 2.2 above, this order shall come into force from 11th August, 2009. The tariff fixed in the order shall be applicable to all the wind energy generators commissioned on or after 11th August, 2009. The existing contracts and agreements between the wind energy generators (WEGs) and Distribution Licensees signed

upto 10th August, 2009 will continue to remain in force as per the PPA signed by the parties.

The GUVNL/Discom may revise the PPA if already signed with the WEGs who have commissioned machines on or after 11th August, 2009 in accordance with the provisions of this order. It is also clarified that the WEG's in such cases are not entitled to claim the difference between the Rs. 3.56/unit (fixed by this order) and Rs. 3.37/unit (earlier tariff) paid by the GUVNL/Discoms for the units injected into the system upto the date of this order.

Sd/-

[Dr.P.K.MISHRA]
CHAIRMAN

Sd/-

[PRAVINBHAI PATEL]
MEMBER (T)

Place: Ahmedabad
Date: 30/01/2010

Secretary
Gujarat Electricity Regulatory Commission
Ahmedabad

Annexure I

List of Objectors

	Name of the Objectors
1	Central Electricity Authority
2	Consumer Education and Research Society
3	CLP Wind Farms (India) Pvt. Ltd.
4	Power and Energy Consultants
5	Gujarat Energy Transmission Corporation Limited (GETCO)
6	Kenersys India Pvt. Ltd
7	Indian Wind Power Association
8	Surat Municipal Corporation
9	Azalea Enterprises Private Limited
10	Acciona Wind Energy Pvt. Ltd.,
11	Tata Power
12	Indian Wind Energy Association
13	Reliance Industries Limited,
14	Gujarat Urja Vikas Nigam Ltd.
15	Gujarat Fluorochemicals Ltd
16	Shree Vanraj Besan Mill Pvt. Ltd.
17	EPD, Government of Gujarat
18	CE, Western Railway
19	GE Energy
20	Torrent Power Ltd
21	Theolia Wind Power Pvt. Ltd.
22	Gujarat State Fertilizers & Chemicals Ltd.

Annexure II

Objectors present on the date of hearing: 13th October, 2009

	Name of the Objectors
1	Consumer Education and Research Society
2	Power and Energy Consultants
3	Gujarat Energy Transmission Corporation Limited (GETCO)
4	Kenersys India Pvt. Ltd
5	Indian Wind Power Association
6	Surat Municipal Corporation
7	Azalea Enterprises Private Limited
8	Acciona Wind Energy Pvt. Ltd.,
9	Indian Wind Energy Association
10	Reliance Industries Limited,
11	Gujarat Urja Vikas Nigam Ltd.
12	Gujarat Fluorochemicals Ltd
13	Regent Power Pvt.Ltd.
14	EPD, Government of Gujarat
15	CE, Western Railway
16	GE Energy
17	Torrent Power Ltd
18	Theolia Wind Power Pvt. Ltd.
19	Gujarat Ambuja Exports Ltd.