

PATSPIN'S RESPONSE TO THE QUERIES RAISED BY EB MEMBERS FOR THE 5.8 MW WIND ENERGY GENERATION PROJECT (REF NO 2026)

24 October 2008
The CDM Executive Board
c/o UNFCCC Secretariat
Martin Luther King Strasse 8
D-53153 Bonn
Germany

Dear CDM Executive Board,

We are hereby submitting our responses to the clarifications requested as part of the request for review of "5.8 MW Wind Energy Generation by M/s Patspin India Limited"; Project activity 2026. We are providing the necessary details to each of the queries as required by the Executive Board for registering the project activity.

Query no 1

The DOE should clarify why it has not validated the investment cost based on invoices and the PLF on actual or manufacturers' data as the project activity is already operational, and also why the tariff for self-consumption is: (a) based on electricity bills prior to the sale to the grid (Dec. 2005); (b) assumed to be higher than the selling rate to the grid; and (c) assumed to be fixed for the whole wheeling period (second year onwards).

Response to query no 1.

1.a)

Guidance provided by EB in meeting no 39, Annex no 35 on financial analysis states the following for the input values:

***Guidance:** Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant. The DOE is therefore expected to validate the timing of the investment decision and the consistency and appropriateness of the input values with this timing. The DOE should also validate that the listed input values have been consistently applied in all calculations.*

Hence the PP demonstrated investment barrier analysis with the input values available to the PP during the investment decision. The investment decision of this project was taken in 21st January/ 16th February 2006¹. Accordingly the power tariff was taken from the electricity bill of December 2005.

Regarding the comparison of the investment costs and actual PLF the data is presented below:

	<i>Value considered in PDD</i>	<i>Actually obtained</i>	<i>Reference</i>
Investment cost	INR 342.2 Million	INR 342.2 Million	Purchase orders ²
PLF	27.46%	26.58%	Generation data ³ during June07-May08

¹ Evidences of board notes submitted to DOE

² Verified by DOE during validation

³ The last turbine got commissioned in May 2007. Hence the actual data is compiled for one year period (covering all the wind seasons) from June 2007 to May 2008. The data from June 2008 to September 2008

It may be noticed that the assumptions made in PDD is conservative when compared with the actual obtained values.

1.b) & 1.c)

In India, the power selling rate to the electricity board and power tariff both are controlled by the State Electricity Board which follows the regulations by State Electricity regulatory commission. As per the Tamil Nadu government policy(<http://www.tn.gov.in/policynotes/archives/policy2003-04/energy2003-04-1.htm>) the power purchase rate for windmills were fixed at Rs. 2.70 per kWh. The PPA signed by the PP with the Tamil Nadu State Electricity Board also supports the same value. Hence this value is considered for the period PP was engaged in selling power to the grid.

When PP wheel the power for their captive consumption, they save the electricity bill that they would have paid to State Electricity Board if purchased from grid. The power tariff applicable to the PP's consumption point is Rs 3.50 /kWh + 5% electricity duty. The tariff is determined by Tamil Nadu Electricity Regulatory Commission – TNERC through an order dated 14 June 2004. (www.tnecr.gov.in/orders/newtariff.pdf) and there is no indication provided by the regulatory authorities about its escalation or revision possibilities. In absence of any guidelines, PP had no other alternative than to consider a constant value for the same over the crediting period. Actual experience also supports the practicality of this assumption that the power tariff has not got revised till date (electricity bill for September 2008 is attached as Annex 2) and remains at the same level of Rs 3.50+ 5% ED as of December 2005.

The power tariff and selling rate both are fixed by regulatory authorities and it so happens that in most of the states in India including Tamil Nadu the power tariff is higher than the selling rate. Actually, consideration of savings of electricity bill provides more revenue to the PP than selling to the grid, hence making the investment barrier calculation more conservative.

Query no. 2

The DOE should clarify why it has considered the PLF as the only critical parameter for the sensitivity analysis and how it has considered that the project activity is additional with the IRR (10.46%) actually passing the benchmark with a 10% increase in the PLF.

Response to query no. 2:

As per guideline provided by EB in meeting no. 41 annex 45 the criteria for choosing the sensitivity analysis parameter is:

Sensitivity analysis

*16. **Guidance:** Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation (all parameters varied need not necessarily be subjected to both negative and positive variations of the same magnitude), and the results of this variation should be presented in the PDD and be reproducible in the associated spreadsheets.. Where a DOE considers that a variable which constitute less than 20% have a material impact on the analysis they shall raise a corrective action request to include this variable in the sensitivity analysis*

is also available but not considered for calculation of annual PLF because it covers only one wind season which is not a representation of one full year. Evidence of generation data submitted as Annex 1.

For this wind project, the only source of revenue is the electricity bill saved due to wheeling of power to PP's manufacturing unit. This revenue is dependent on the power tariff and power generation as presented below:

$$\begin{aligned}\text{Revenue} &= \text{power tariff} * \text{power generation} \\ &= \text{power tariff} * (\text{capacity of generation} * \text{PLF}) \\ &= \text{power tariff} * 5.58 \text{ MW} * 8760 \text{ hours/year} * \text{PLF}\end{aligned}$$

Since $\pm 10\%$ variation in either of these variables (power tariff or PLF) would result in the same change in the revenue and in turn affect the IRR to same extent, one of these variables were chosen for demonstrating the robustness of financials through sensitivity analysis.

Since the probability of variation in PLF is more as it is dependent on many variables like grid availability, wind speed, breakdown / shutdowns etc. it has been chosen as the parameter for variation which can directly affect the revenue.

Similarly the parameters which can affect 20% of the total cost for this case is only the investment cost. Since the investment costs were considered on the final negotiated values (later the value remained same in the purchase orders also⁴) there were no possibilities of this cost getting reduced. Hence the sensitivity analysis would have to be performed only for an increase in capital cost which would result in decreasing project IRR further and make CDM revenue all the more important to make project happen. Hence this analysis was not presented in the PDD.

Thus PLF was the only parameter which required to be checked for sensitivity analysis.

The sensitivity analysis was carried on project IRR varying the PLF +/- 10% following the EB39 guidelines on investment analysis. We present below the justification, supported by the data from actual evidence that the chances of PLF reaching +10% of the base value is almost negative.

Base PLF considered in PDD is 27.46% and +10% variation takes up the PLF to 30.2%. The actual PLF of the wind turbines of various wind-zones (passes) in the state of Tamil Nadu was presented in the discussion paper of Nonconventional Energy Sources in December 2005⁵ is the following:

⁴ It has been verified by DOE during validation

⁵ A copy of the report submitted to DOE

<i>Wind zone</i>	<i>Average PLF (%)</i>
Muppandal pass	28.74
Shencotta Pass	23.6
Palaghat Belt	22.63
Sea coast	22.55
Weighted average of larger machines for the state	27.46
Weighted average of smaller machines for the state	23.85
Weighted average for the state	25.66

The Wind turbines of the project activity falls in the wind-zone of Palaghat belt (2 turbines) and Muppandal Pass (2 turbines). As per the above data the average PLF of the project activity should be 26.52% ($1.65*2*28.74+1.25*2*23.6/5.8$), where as the PDD has demonstrated additionality using the value 27.46% which itself is 3.5% higher than the actual data available for these windzones. In spite of having >40% capacity in the lower windzone the investment barrier analysis has assumed the highest average PLF for larger machines as its base PLF. The possibility of further 10% increase in this base value does not seem to be viable under the given circumstances.

The above claim is also justified by the actually obtained PLF of 26.58% for these machines operating since April 2007.

Even at 30.2% PLF (+10% of base value), which is very unlikely for the project activity as described above, the project IRR (10.46%) do not cross the benchmark value of 10.5%. Thus the robustness of the financial analysis is established.

Response to query no 3:

The PP has presented the chronology of the major events for availing the CDM revenue in the PDD. PP confirms the same and adds few more details in the list to clarify the fact that the **efforts towards availing CDM revenue was parallel** to that of implementation of the project. In fact the first consultant was engaged for CDM documentation simultaneous to the first purchase order. The consultant could not deliver the PDD by the stipulated time, hence the PP confidence on him and searched for more reputed consultants. The second consultant was engaged (confirmation mail from consultant) in the month April 07 which is before the final wind turbine of the bundle got commissioned.

PP understands engaging a consultant in February 2006 before installation of the turbine (April 2006) itself proves that the efforts were real and the series of correspondences submitted to you supports the continuity of the efforts.

CHRONOLOGY OF EVENTS FOR SETTING UP WIND MILLS WITH CDM REVENUE

Date	Windmill Project	Availing CDM revenue	Evidences (copy submitted to DOE)
21-Jan-06	Board discusses expansion of their manufacturing unit and possibility of setting up windmills for captive consumption		Board minutes-P1
28-Jan-06	Third party assessment report stating windmill is not viable without CDM revenue		Copy of the report of CA- C1
16-Feb-06	Board approves the decides to put up windmill and avail CDM revenue to make it viable	Board decides to put up windmill and avail CDM revenue to make it viable	Board minutes - P1
18-Feb-06		Engage a consultant (Bharati Priya consultancy) for documentation	Engagement letter - E1
18-Feb-06	Purchase order on windmills - Suzlon		Copy of the PO -P2
04-Apr-06	Commissioning of Suzlon machines		Commissioning certificates - E2
July 06		Patspin decides to change the consultant	
28-Aug-06		Proposal for availing carbon credit – Synergy Global P. Ltd.	Copy of e-mail *(1)
03-Oct-06		Letter from Synergy Global P. Ltd. regarding project due diligence documents	Copy of e-mail*(2)
29-Nov-06		Letter from Analyst – Carbon Advisory Services; NEG Micon	Copy of e-mail*(3)
19-Dec-06		Presentation by Deloitte	Copy of e-mail *(4)
02-Jan-07		Project enquiry note from M/s.Asia Carbon Emission Management India Pvt. Ltd.	Copy of e-mail*(5)
04-Jan-07		Enquiry with Consultants M/s. Asia Carbon Emission Management India Pvt. Ltd.	Copy of e-mail *(6)
24-Jan-07		CDM Proposal from CantorCO2e	Copy of e-mail *(7)
30-Jan-07		Letter from Synergy Global Consultants	Copy of e-mail *(8)

23-Feb-07		Draft engagement letter – CDM Project	Copy of e-mail *(9)
28-Feb-07		Carbon Credit CDM proposal – Deloitte	Copy of e-mail *(10)
18-Apr-07		Mail from CantorCO2e – CDM documents	Copy of e-mail*(11)
18-Apr-07		Mail from CantorCO2e – Acknowledgement of the assignment for CDM project	Copy of e-mail*(12)
04-May-07	Commissioning of Vestas machines(2Nos)		Certificate of commissioning –E2
12-Jul-07		Patspin India Limited Agreement with CantorCO2e	Copy of engagement letter E3
16 th and 17 th July, 2007		Minutes of the discussion of Carbon Credit Project with CantorCO2e	copy of minutes*(14) D1
24-Aug-07		Submission for HGA	copy of covering letter *(19)
08-Sep-07		LOA to BVQI	copy of mail *(21)
13-Sep-07		Confirmation regarding submission of PDD for public hosting letter from BVQI	copy of mail*(22)
27-Oct-07		Site visit mail from BVQI	copy of mail*(24)
15-Nov-07		Host government approval	copy of HCA*(25)

* - Evidences have been scanned together. The number in brackets indicate the serial number in the scanned document

We once again confirm that the PP has engaged two consultants for the project. The first consultant was engaged before commissioning of the first turbine of the project. As per the engagement conditions the contract was deemed to be cancelled if the consultant did not deliver the draft PDD within four months of the order placed. Since he did not submit any PDD, the project proponent again looked up for other consultants and engaged the present consultant before commissioning of the last windmill of the bundle. (Kindly refer the confirmation mail from consultant dated 18 April 2007 and the commissioning certificate dated 4 May 2007). With the detailed chronology, supported by the evidences submitted above, PP firmly believes the real and parallel continuous action for availing CDM revenue has been demonstrated adequately.

We would be glad to provide any further clarifications on this important matter.

Yours truly,

For Patspin India Limited

(P.C.Seksaria)

Authorized Signatory

Enclosures:

1. Annex 1 - Actual generation data of the turbines
2. Annex 2 - Electricity bill of September 2008
3. Annex 3 – Zipped files on Evidences of the chronology