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Att: CDM Executive Board

Your ref.:
CDM Ref 1268

Our ref.:
MLEH/KCHA

Date:
24 October 2007

Response to request for review

“Tungabhadra wind power project in Karnataka”(1268)

Dear Members of the CDM Executive Board,

We refer to the issues raised in the requests for review raised by three Board members concerning DNV's request for registration of the “Tungabhadra wind power project in Karnataka” (1268) and would like to provide the following clarifications for your perusal and review.

The points raised and our response to the same are indicated below.

Comment 1:

Further demonstration of the additionality of the project activity is required.

DNV Response:

Since the comment does not indicate the specific issues for which further information is needed, we summarise below the main points how the additionality was demonstrated by the project participant and assessed by DNV. Moreover, we refer to our response to the comments which were on specific issues related to the demonstration and assessment of the additionality of the project.

As stated in DNV's validation report, Enercon has chosen to use an investment analysis, i.e. step 2, to demonstrate the additionality of the project activity. As the project activity provides electricity to the Karnataka state electricity grid and earns revenues from sale of electricity to the grid, Enercon has chosen to use the option (iii), i.e. a benchmark analysis, with the financial indicator to be the equity Internal Rate of Return (IRR).

It has been demonstrated that the equity IRR of the project activity without CDM revenues is 10.9% which is lower than the benchmark equity IRR of 16% for independent power producers (IPP) as per KERC order.

Post tax equity return or equity IRR has been used as the financial indicator and is confirmed to be in line with the prescription by the Central Electricity Regulatory Commission that is mandated by the statute of the Electricity Act 2003 to set the terms and conditions for determination of tariff for electricity generation, transmission and distribution activities in the power sector. The CERC order dated 24th January 2004 has stipulated that a post tax equity return of 16% can be

considered as appropriate for Independent Power Producers (IPPs). This is attached as Appendix 1 to the response. Moreover, the Karnataka Electricity Regulatory Commission (KERC) has also prescribed 16% post tax equity IRR as the appropriate equity return for determining the tariff for non conventional energy based power plants. This is attached as Appendix 2 to the response.

As stated in the validation report, Enercon has also carried out a sensitivity analysis with $\pm 5\%$ change in the PLF. With a 5% increase in PLF, the equity IRR becomes 12.9%. This is also below the chosen benchmark of equity IRR of 16%. The excel spread sheets pertaining to the IRR have been verified and uploaded as a part of the request for registration package. The financial analysis and the benchmark have been verified by DNV and found to be appropriate.

Comment 2:

The version 2 of the additionality tool is no longer applicable.

DNV Response:

DNV acknowledges that the project should have applied this version of the additionality tool and would like to thank the EB for pointing out this.

Enercon has thus revised the PDD in line with version 3 of the additionality tool. Nonetheless, DNV would like to emphasise that the validation opinion with respect to the project additionality does not change as a result of the re-assessment. The necessary changes, as required by the latest version of the additionality tool, have been incorporated in the revised final validation report and are enclosed herewith.

Comment 3:

For a project activity of this type, a project IRR should be calculated rather than an equity IRR.

DNV Response:

DNV acknowledges that the additionality tool requires using a project IRR for a benchmark analysis. However, in India there is no publicly available project IRR benchmark for energy generation projects. In 2003, the Central Electricity Regulatory Commission (CERC) debated a lot on this and finally concluded that return on equity should be considered as benchmark for power projects in India. This is evident in the terms and conditions of power tariff 2004 by CERC (Appendix 3). Apart from that, even the tariff rates are computed from the post-tax return on equity. Due to non-availability of benchmark on project IRR, all the wind projects in India have adopted the same approach that is to utilize equity IRR. Thus it is deemed acceptable that the project proponent uses equity IRR as a basis of analysis for project additionality in order to allow for a comparison with an equity benchmark.

Comment 4:

Further information should be supplied regarding how it has been validated that the applied benchmark has been assessed to be the most suitable indicator against which to compare the IRR of the project activity.

DNV Response:

As stated in the DNV response under comment 1 above, the IRR of 16% has been chosen as the benchmark indicator by Enercon. DNV confirms that this is deemed appropriate, given that the Central Electricity Regulatory Commission, the nodal government agency for electricity generation, transmission and distribution activities in the power sector in India, under the Electricity Act 2003, and the Karnataka Electricity Regulatory Commission (KERC), both have

stipulated that a post tax equity return of 16% can be considered as appropriate for Independent Power Producers (IPPs). This benchmark of 16% has been verified from the Central Electricity Regulatory Commission order and the KERC regulatory order which are provided as Appendix 1 and 2.

Comment 5:

Further information should be supplied regarding how the plant load factor has been validated and how the variations in this assumption for the sensitivity analysis have been considered appropriate.

DNV Response:

In the state of Karnataka, the Karnataka Electricity Regulatory Commission (KERC) is the regulator of tariff structures for energy projects in the region. The KERC in its tariff order dated 18 January 2005 for wind projects has stated that a PLF of 26.5% consideration would be reasonable for tariff computations. KERC has arrived at this PLF consideration after a study of actual PLF achieved by various operating wind farms in the region (ref. Appendix 2). DNV is able to confirm that the PLF consideration of 26.5% has been verified from the KERC tariff order dated 18 January 2005. The wind power projects are dependent on the wind regime which in-turn affects the PLF and thus the PLF as a crucial parameter in financials of wind power projects. The variations in wind are not very large and are not expected to increase to a tune of more than 5%. Tariff price is as per the PPA and the revenue returns are in-turn dependent on PLF, hence consideration of 5 % variation in PLF is deemed appropriate for sensitivity analysis for wind projects.

Comment 6:

The project applies the approved consolidated methodology ACM0002, version 6 dated 19 May 2006. The baseline has been established by using the operating margin (OM) and build margin (BM) data published in government database. The DOE validate the database as an official publication of the Government of India for the purpose of CDM baselines and confirms that the discussion of the baseline selection has been done in a transparent manner. However, in Section B.4. of PDD, the baseline scenario is directly identified according to ACM0002 as the emissions generated by the operation of grid-connected power plants and by the addition of new generation sources. But in Sub-step 1a of Section B.5., it concludes that the continuation of the current situation (no project activity or other alternatives undertaken) would not be applicable. In addition, further explanation is required on why it is impossible that a baseline scenario is constituted by the comparable utility scale hydro power project, which has been listed as one of alternatives.

DNV Response:

DNV is able to confirm that in the state of Karnataka all hydro power projects were developed earlier than 2001, except for one mini-hydel plant of 3.2 MW and one large hydro power plant being commissioned in phases from 2003. There are no potential for future hydro projects in the state of Karnataka. This is evident from the fact that of the 62 PPA applications received in 2005-06* by the KERC (Appendix 5) from the IPPs, only one PPA was pertaining to a hydro power project (10 MW mini-hydel project). Thus the baseline scenario to be constituted by the comparable utility scale hydro power project is not a likely alternative due to lack of hydro potential in the state.

* KERC Annual Report 2005-06, pg no16, section 2.10.1 'PPAs of Non-conventional power projects'

Comment 7:

The project directly adopted OM and BM from the government database. The DOE shall further clarify how they have verified whether the OM and BM calculation are strictly following ACM0002, and why there is no real calculation process in PDD.

DNV Response:

DNV has verified that the CO₂ database is an official source of information developed exclusively for CDM projects by CEA. DNV has verified that the OM and BM calculations are in line with the ACM0002 methodology. This is evident from the user guide,^{*} which describes the purpose, official status, data sources, assumptions and calculations involved in the database. This user guide describes the computation of OM and BM based on the formula and approach given in the ACM0002 methodology. This user guide also provides an insight on how data was collected for OM and BM computation for the regional grids in India. From this user guide, DNV was able to confirm that OM and BM calculations are performed in line with the ACM0002 methodology.

DNV has also communicated with the DNA of India on the utilization of the emission factors from this CO₂ database for CDM projects. DNA of India did not object to the utilization of this CO₂ database for CDM projects.

We sincerely hope that the Board accepts our aforementioned explanations and we look forward to the registration of the project activity.

Yours faithfully
for DET NORSKE VERITAS LTD



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^{*} http://www.cea.nic.in/planning/c%20and%20e/user_guide_ver2.pdf