



UNFCCC Secretariat
 Martin-Luther-King-Strasse 8
 D-53153 Bonn
 Germany

Att: CDM Executive Board

DET NORSKE VERITAS
 DNV AS
 International Climate Change Services
 Veritasveien 1
 NO-1322 Høvik
 Norway
 Tel: +47-6757 9900
 Fax: +47-6757 9911
 http://www.dnv.com
 NO 945 748 931 MVA

Your ref.:
 CDM Ref 1259

Our ref.:
 MLEH/KCHA

Date:
 10 October 2007

Response to request for review

“Enercon Wind Farm (Hindustan) Ltd in Karnataka ”(Ref. no. 1259)

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 “Enercon Wind Farm (Hindustan) Ltd in Karnataka” (Ref. no. 1259) 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:

As stated in DNV’s validation report, Enercon has chosen to use the 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 in the process, Enercon has chosen to use the option (iii) Benchmark Analysis, with the financial indicator to be the equity Internal Rate of Return (IRR). In India there is no publicly available project IRR benchmark for energy generation projects. In 2003, Central Electricity Regulatory Commission 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.

It has been demonstrated that the equity IRR of the project activity without CDM revenues is 11.7% which is lower than the benchmark equity IRR of 16% for independent power producers (IPP) as per KERC order. The IRR improves to 16.50 % with CDM revenues.

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 (CERC). CERC 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 PP 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 13.9%. This is also below the chosen benchmark of equity IRR of 16%. The excel working sheets pertaining to the IRR have been verified and uploaded as part of the request for registration package. The financial analysis and the benchmark have been verified by DNV and found to be appropriate.

It is further demonstrated that the project activity has the following barriers:

Barrier due to high cost of wind power projects:

It has been demonstrated through a comparison of wind, biomass, hydro, gas and coal based power plants, that the capital cost (cost/MW) is the highest for wind power projects and the normative plant load factors achievable are the lowest for wind power projects as compared to all the other power plants. (Source KERK order dated 18 January 2005*, in the matter of Determination of Tariff in respect of Renewable Sources of Energy – Appendix 2)

It has also been demonstrated that out of a total wind generation potential of 45 000 MW in India (Appendix 3), and a potential of 7023 MW in the state of Karnataka (Appendix 4), India has managed to achieve wind capacity installations only to the extent of 7 231 MW[†] and in the state of Karnataka, only to the extent of 853 MW as on date.

From the above it is demonstrated that the investment costs associated with wind power projects are high (against the back drop of low PLF). It is therefore DNV's opinion that low cost thermal plants are preferred and project activities, such as the wind power plant initiative by Enercon will continue to be deemed as not common practice and will require the support of CDM revenues for sustenance.

Barriers due to unfavourable regulatory regime:

It is verified that unfavourable regulatory regimes and policy frameworks for fixing power tariff for wind power projects in Karnataka make ventures in wind power projects difficult and risk prone. This is deemed to be acceptable.

Comment 2:

The additionality of the project should be demonstrated using version 3 if the additionality tool.

DNV Response:

Version 3.0 of the additionality tool was made public on 16th February 2007. As per guidance from the EB.

Enercon has now chosen to revise the PDD in line with version 3 of the additionality tool. DNV would like to reiterate that the validation opinion with respect to 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 (Appendix 16).

* Reference: [http://www.kerc.org/order2005/Order%20on%20NCE%20Tariff%20\(FINAL\).doc](http://www.kerc.org/order2005/Order%20on%20NCE%20Tariff%20(FINAL).doc)

[†] Source – Ministry of New and Renewable Energy (MNRE), <http://mnes.nic.in/ach1.htm>

Comment 3:

Further evidence regarding the investment analysis and common practice should be provided

DNV Response:

DNV confirms to have verified the following, as part of the investment analysis and the same is enclosed as Appendix 17, 18, 2, 19

- Purchase orders for project capacity and costs
- Operation and maintenance costs based on the agreement signed
- Tariff – KERC order
- Bank documents for the loan and term conditions.

DNV has addressed the evidences with regards to the common practice test under DNV response to comment 1 above. Moreover, it has been demonstrated that in 2004–05, wind electricity generation in Karnataka was 489.53 GWh* (Appendix 13) and just about 1.45% of the total electricity available at bus-bar in the state of Karnataka at 33 523.92 GWh† (Appendix 14). This demonstrates that wind power generation is still insignificant as compared to other power generation sources in the state of Karnataka in India.

Comment 4:

Further validation of the appropriateness of the benchmark is required.

DNV Response:

As stated in the DNV response under comment 1 above, an equity 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 has been verified and attached as Appendix 1 and 2.

Comment 5:

Justification and the validation of the PLF is required in the context of this specific project activity.

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. DNV is able to confirm that the PLF consideration of 26.5% has been verified from the KERC tariff order dated 18 January 2005.

Comment 6:

The PPs applies ACM0002/ Version 6. The grid EF is calculated for southern regional grid of India and is fixed ex-ante. The PPs use the statistics from CEA database. Simple OM is calculated

* Table 3.4 titled “Gross Electrical Energy Generation (Utilities Only) Primemoverwise, Regionwise / Statewise During 2004-05” in chapter 3 of the CEA general review 2006

† Table 5.3 titled “Statewise System Losses During 2004-05” in chapter 5 of the CEA General review 2006

for years 2002-2005 but year for BM is not clearly mentioned in the PDD. Further clarification is required.

DNV Response:

DNV hereby confirms that the value of BM considered and reported as 0.72 tCO₂e/MWh, pertains to the year 2004-05 and is derived from the data published by the CEA (Central Electricity Authority). DNV confirms that the BM value is taken from the CEA CO₂ database and the sources are verified and found appropriate.

Comment 7:

Only one parameter, net electricity supplied to the grid, is considered for monitoring. This is net electricity supplied to the grid. According to the validation report (page 14) “the net electricity export to the grid will be reported on monthly basis and cross checked with the invoices raised to KPTCL”. This means that measured electricity is the basis for CERs and the invoices are only for crosschecking, though this is not clearly expressed in monitoring information (annex 4 to the PDD). At least two parameters, import and export should be listed in B.7.1 Data and Parameters Monitored” and the third net electricity should be calculated. Roles of invoices should be added in the Annex 4 to the PDD

DNV Response:

DNV reiterates the following:

- The metering system for the project activity consists of one main and one check meter. Both the meters are two-way trivector meters capable of recording import and export of electricity and provide output in the form of net electricity supplied to the grid.
- The Net electricity supplied to the grid is recorded by taking a Joint Meter Reading (JMR) in the presence of Officials from off-taking Utility and Enercon India Limited. The Joint meter reading contains the value of energy imported and exported and the net export to the grid during the recording period. This Joint meter reading is certified by the Executive engineer of the utility and by Enercon Officials. These certified readings are then used by the Discom officials to prepare the tariff invoices.
- Thus the sole monitoring parameter for the project activity is the net electricity supplied to the grid as mentioned in the JMR, which will be crosschecked with the value mentioned in the invoices.

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



Michael Lehmann
Technical Director
International Climate Change Services



C Kumaraswamy
Manager – South Asia
Climate Change Services