



**CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-PDD)
Version 03 - in effect as of: 28 July 2006**

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**SECTION A. General description of project activity****A.1 Title of the project activity:**

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Bundled wind power project in Tamilnadu managed by Enercon India Limited
Version 1.0
26/03/2007

A.2. Description of the project activity:

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Objective of the Project

The objective is development, design, engineering, procurement, finance, construction, operation and maintenance of bundled wind power projects totalling 21.93 MW wind power projects (“Project”) in the Indian state of Tamilnadu to provide reliable, renewable power to the Tamil Nadu state electricity grid which is part of the Southern regional electricity grid. The Project will lead to reduced greenhouse gas emissions because it displaces electricity from fossil fuel based electricity generation plants.

Nature of Project

The project activity consists of the 27 machines of Enercon make of 800 KW and 1 machine of Enercon make of 330 KW, totaling to the capacity of 21.93 MW. The Project harnesses renewable resources in the region, and thereby displacing non-renewable natural resources thereby ultimately leading to sustainable economic and environmental development. Enercon (India) Ltd (“Enercon” or “EIL”) is the equipment supplier and the operations and maintenance contractor for the Project. The generated electricity will be supplied to Tamil Nadu state electricity grid. The details of sub-projects comprising the Project are as under:

SI No.	Customer Name	Capacity (MW)
1	Gangadhar Narsingdas Agarwal	1.6
2	Popuri Engg. & Consultancy	0.8
3	Radhika Metals & Minerals	0.8
4	Fashion Suitings Pvt. Ltd	0.33
5	Indiana Engg. Works (Bombay) Pvt. Ltd.	0.8
6	Supreme Power Company, Mumbai	0.8
7	Royal Energy Company, Mumbai	0.8
8	Ushdev International Ltd., Mumbai	1.6
9	Indiana Gratings Pvt. Ltd.	0.8
10	Indiana Gratings Pvt. Ltd.	0.8
11	Indiana Gratings Pvt. Ltd.	0.8
12	Pragati Aroma Oil Distillers P. Ltd.	0.8



13	DCW	11.2
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Contribution to Greenhouse gas emissions reduction

The project activity harnesses wind energy to generate and supply electricity to the southern regional electricity grid of India. The Project displaces fossil fuel based electricity generation that would have otherwise been provided by the operation and expansion of the fossil fuel based power plants in southern region electricity grid, thereby leading to reduction in emission of greenhouse gases associated with fossil fuel based electricity generation.

Contribution to sustainable development

The project activity contributes towards sustainable development of the country and the state of Tamil Nadu by reducing the dependency on fossil fuel based electricity generation, which ultimately leads to reduction in greenhouse gas emissions. The project also fulfills several other sustainable development objectives as set out below:

- Contribution towards the policy objectives of Government of India and Government of Tamil Nadu of incremental capacity from renewable sources;
- Contribution towards meeting the electricity deficit in Tamil Nadu;
- CO₂ abatement and reduction of greenhouse gas emissions through development of renewable technology;
- Reducing the average emission intensity (SO_x, NO_x, PM, etc.), average effluent intensity and average solid waste intensity of power generation in the system;
- Conserving natural resources including land, forests, minerals, water and ecosystems; and
- Developing the local economy and create jobs and employment, particularly in rural areas, which is a priority concern for the Government of India;

A.3. Project participants:

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Please list project participants and Party(ies) involved and provide contact information in Annex 1. Information shall be indicated using the following tabular format.

Name of Party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) project participants (*) (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
Government of India (Host)	Private: Enercon India Limited	No

(*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party(ies) involved is required.



Note: When the PDD is filled in support of a proposed new methodology at least the host Party(ies) and any known project participant (e.g. those proposing a new methodology) shall be identified.

Contact details of project participant are provided in Annex – 1.

A.4. Technical description of the project activity:

A.4.1. Location of the project activity:

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A.4.1.1. Host Party(ies):

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The host party to the project activity is the Government of India.

A.4.1.2. Region/State/Province etc.:

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The project is located in the State of Tamil Nadu that forms part of Southern regional electricity grid of India.

A.4.1.3. City/Town/Community etc.:

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The project is located in Erode district in the State of Tamil Nadu.

A.4.1.4. Detail of physical location, including information allowing the unique identification of this project activity (maximum one page):

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The project is located at Chinnaputhur, Chinnakampalayam, Govindhapuram, Uthupalayam and Dhallavaipatinam villages in Erode district in the state of Tamil Nadu. The location of the units is on the micro-siting data to get optimum performance. The project involves 27 machines of Enercon make of 800 KW and 1 machine of Enercon make of 330 KW:

- 13 Units are located at Chinnaputhur
- 12 Units are located at Chinnakampalayam
- 1 Units are located at Dhallavaipatinam
- 1 Units are located at Govindhapuram
- 1 Units are located at Uthupalayam

A.4.2. Category(ies) of project activity:

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The project activity is considered under CDM category zero-emissions '**grid-connected electricity generation from renewable sources**' that generates electricity in excess of 15 MW (limit for small scale project). Therefore as per the scope of the project activity enlisted in the 'list of sectoral scopes and related approved baseline and monitoring methodologies (version 02 Mar 05/07:23)', the project activity may principally be categorized in Scope Number 1, Sectoral Scope - Energy industries (renewable/ non-renewable sources).

**A.4.3. Technology to be employed by the project activity:**

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The Project involves 27 wind energy converters (WECs) of Enercon make (800 kW E-48) and 1 wind energy converter (WEC) of Enercon make (330 kW E-33) with internal electrical lines connecting the Project with local evacuation facility. The WECs generates 3-phase power at 400V, which is stepped up to 33 KV. The Project can operate in the frequency range of 47.5–51.5 Hz and in the voltage range of 400 V \pm 12.5%. The other salient features of the state-of-art-technology are:

- Gearless Construction - Rotor & Generator Mounted on same shaft eliminating the Gearbox.
- Variable speed function – has the speed range of 18 to 33 RPM thereby ensuring optimum efficiency at all times.
- Variable Pitch functions ensuring maximum energy capture.
- Near Unity Power Factor at all times.
- Minimum drawl (less than 1% of kWh generated) of Reactive Power from the grid.
- No voltage peaks at any time.
- Operating range of the WEC with voltage fluctuation of -20 to +20%.
- Less Wear & Tear since the system eliminates mechanical brake, which are not needed due to low speed generator which runs at maximum speed of 33 rpm and uses Air Brakes.
- Three Independent Braking System.
- Generator achieving rated output at only 33 rpm.
- Incorporates lightning protection system, which includes blades.
- Starts Generation of power at wind speed of 3 m/s.

Enercon (India) Ltd has secured and facilitated the technology transfer for wind based renewable energy generation from Enercon GmbH, has established a manufacturing plant at Daman in India, where along with other components the "Synchronous Generators" using "Vacuum Impregnation" technology are manufactured.

A.4.4 Estimated amount of emission reductions over the chosen crediting period:

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Crediting Period for the Project: fixed for 10 years

Years	Annual estimation of emission reductions in tonnes of CO ₂ e
2007-08	29,471
2008-09	44,207
2009-10	44,207
2010-11	44,207
2011-12	44,207
2012-13	44,207
2013-14	44,207
2014-15	44,207
2015-16	44,207
2016-17	44,207



Years	Annual estimation of emission reductions in tonnes of CO ₂ e
2017-18	14,736
Total estimated reductions (tonnes of CO ₂ e)	442,070
Total number of crediting years	10
Annual average over the crediting period of estimated reductions (tonnes of CO ₂ e)	44,207

A.4.5. Public funding of the project activity:

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There is no ODA financing involved in the Project.

SECTION B. Application of a baseline and monitoring methodology

B.1. Title and reference of the approved baseline and monitoring methodology applied to the project activity:

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The approved consolidated baseline and monitoring methodology **ACM0002 Version 6.0** (19 May 2006) has been used. The titles of these baseline and monitoring methodologies are “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” and “Consolidated monitoring methodology for grid-connected electricity generation from renewable sources.”

B.2 Justification of the choice of the methodology and why it is applicable to the project activity:

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The Project is wind based renewable energy source, zero emission power project connected to the Tamilnadu state grid, which forms part of the Southern regional electricity grid. The Project will displace fossil fuel based electricity generation that would have otherwise been provided by the operation and expansion of the fossil fuel based power plants in Southern regional electricity grid.

The approved consolidated baseline and monitoring methodology ACM0002 Version 6 is the choice of the baseline and monitoring methodology and it is applicable because:

- the Project is grid connected renewable power generation project activity
- the Project represents electricity capacity additions from wind sources
- the Project does not involve switching from fossil fuel to renewable energy at the site of project activity since the Project is green-field electricity generation capacities from wind sources at sites where there was no electricity generation source prior to the Project, and
- the geographical and system boundaries of the Southern electricity grid can be clearly identified and information on the characteristics of the grid is available.

B.3. Description of the sources and gases included in the project boundary

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According to ACM0002, for the baseline emission factor, the spatial extent of the project boundary includes the project site and all power plants connected physically to the electricity system that the CDM project power plant is connected to.

The Indian electricity system is divided into five regional grids, viz. Northern, Eastern, Western, Southern, and North-Eastern. Each grid covers several states. As the regional grids are interconnected, there is inter-state and inter-regional exchange. A small power exchange also takes place with neighbouring countries like Bhutan and Nepal.

The project boundary encompasses the physical extent of the southern regional electricity grid which includes the project site and all power plants connected physically to the electricity system.

Power generation and supply within the regional grid is managed by Regional Load Dispatch Centre (RLDC). The Regional Power Committees (RPCs) provide a common platform for discussion and solution to the regional problems relating to the grid. Each state in a regional grid meets its demand with its own generation facilities and also with allocation from power plants owned by the Central Sector such as NTPC and NHPC etc. Specific quotas are allocated to each state from the Central Sector power plants. Depending on the demand and generation, there are electricity exports and imports between states in the regional grid. The regional grid thus represents the largest electricity grid where power plants can be dispatched without significant constraints and thus, represents the “project electricity system” for the Project. As the Project is connected to the Southern regional electricity grid, the Southern grid is the “project electricity system”.

	Source	Gas	Included?	Justification/ Explanation
Baseline	Electricity generation from power plants connected to the Southern Grid	CO ₂	Included	Main emission source
		CH ₄	Excluded	This source is not required to be estimated for wind energy projects under ACM0002
		N ₂ O	Excluded	This source is not required to be estimated for wind energy projects under ACM0002
Project Activity	Electricity generation from the Project	CO ₂	Excluded	Wind energy generation does not have any direct GHG emissions.
		CH ₄	Excluded	
		N ₂ O	Excluded	

B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

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According to ACM0002, for project activities that do not modify or retrofit an existing electricity generation facility, the baseline scenario is the following:

Electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described below.



As the Project does not modify or retrofit an existing generation facility, the baseline scenario is the emissions generated by the operation of grid-connected power plants and by the addition of new generation sources. This is estimated using calculation of Combined Margin multiplied by electricity delivered to the grid by the Project.

B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality): >>

Step 0: Preliminary screening based on the starting date of the project activity

If project participants wish to have the crediting period starting prior to the registration of their project activity, they shall:

- a) Provide evidence that the starting date of the CDM project activity falls between 1 January 2000 and the date of the registration of a first CDM project activity, bearing in mind that only CDM project activities submitted for registration before 31 December 2005 may claim for a crediting period starting before the date of registration.
- b) Provide evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity. This evidence shall be based on (preferably official, legal and/or other corporate) documentation that was available at, or prior to, the start of the project activity.

The Project start date is prior to the date of validation of the PDD. The following evidence will be made available to the validator to demonstrate that CDM benefits were considered while considering investments in these projects:

- The Management Committee of Enercon set out the CDM initiative in 2000 and since then monitored the progress of the CDM initiative. Enercon management had taken a decision to go ahead with the development of the wind farm in Rajasthan in 2002, after duly considering CDM benefits under the Kyoto Protocol.
- In late 2001, Government of Netherlands came out with the CERUPT Tender. Enercon participated in CERUPT tender by offering 15 MW + 15 MW wind farm projects and was selected under the tender. Enercon was not able to conclude the contract with CERUPT and the 15 MW + 15 MW projects were subsequently cancelled. However, this provided Enercon with a considerable experience in the CDM process.
- Enercon appraised its customers in Tamil Nadu about the CDM benefits.
- The letter of intent entered between Enercon and DCW, owner of the largest sub project in this PDD contains the provisions for sharing of CDM related costs and benefits. The cash flow statement considered by DCW while taking decision to go ahead with the project activity also considers the CDM benefits.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a. Define alternatives to the project activity:



1. Identify realistic and credible alternative(s) available to the project participants or similar project developers that provide outputs or services comparable with the proposed CDM project activity. These alternatives are to include:

- The proposed project activity not undertaken as a CDM project activity;
- All other plausible and credible alternatives to the project activity that deliver outputs and on services (e.g. electricity, heat or cement) with comparable quality, properties and application areas;
- If applicable, continuation of the current situation (no project activity or other alternatives undertaken).

Alternative(s) available to the project participants or similar project developers include:

- (a) The Project is not undertaken as a CDM project activity.
- (b) Setting up of comparable utility scale fossil fuel fired or hydro power projects that supply to the Tamil Nadu grid under a PPA.
- (c) Continuation of the current situation where no project activity or any of the above Alternatives are undertaken would not be applicable as Tamilnadu had energy (MU) shortages of 0.6% and peak (MW) shortages of 8.6% in 2005-06 (Source: Southern Region Power Sector Profile January 2007, Ministry of Power, Government of India).

Sub-step 1b. Enforcement of applicable laws and regulations

2. The alternative(s) shall be in compliance with all applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution. This sub-step does not consider national and local policies that do not have legally-binding status.
3. If an alternative does not comply with all applicable legislation and regulations, then show that, based on an examination of current practice in the country or region in which the law or regulation applies, those applicable legal or regulatory requirements are systematically not enforced and that non-compliance with those requirements is widespread in the country. If this cannot be shown, then eliminate the alternative from further consideration.
4. If the proposed project activity is the only alternative amongst the ones considered by the project participants that is in compliance with all regulations with which there is general compliance, then the proposed CDM project activity is not additional.

There are no legal and regulatory requirements that prevent Alternatives (a) and (b) from occurring.

Proceed to Step 2 (Investment analysis) or Step 3 (Barrier analysis). (Project participants may also select to complete both steps 2 and 3.)

Step 2: Investment Analysis

Determine whether the proposed project activity is the economically or financially less attractive than other alternatives without the revenue from the sale of certified emission reductions (CERs). To conduct the investment analysis, use the following sub-steps:

Sub-step 2a. - Determine appropriate analysis method



1. Determine whether to apply simple cost analysis, investment comparison analysis or benchmark analysis (sub-step 2b). If the CDM project activity generates no financial or economic benefits other than CDM related income, then apply the simple cost analysis (Option I). Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III).

Sub-step 2b. – Option I. Apply simple cost analysis

2. Document the costs associated with the CDM project activity and demonstrate that the activity produces no economic benefits other than CDM related income.

Sub-step 2b. – Option II. Apply investment comparison analysis

3. Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service (e.g., levelized cost of electricity production in \$/kWh or levelized cost of delivered heat in \$/GJ) most suitable for the project type and decision-making context.

Sub-step 2b. – Option III. Apply benchmark analysis

4. Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service (e.g., levelized cost of electricity production in \$/kWh or levelized cost of delivered heat in \$/GJ) most suitable for the project type and decision context.

Option I – Simple cost analysis is not applicable as the project activity sells electricity to the grid and obtains economic benefits in the form of electricity tariffs.

Enercon proposes to use **Option II – Investment comparison analysis** and the financial indicator that is identified is the post-tax return on equity or the equity IRR.

The post tax return on equity and equity IRR is used as the appropriate financial indicator because in the Indian power sector, a 14% post tax return on equity is an established benchmark for projects in public or private sector based on cost-plus regulations (Source: Central Electricity Regulatory Commission, Terms and Conditions of Tariff, Regulations 2004 dated 26 March 2004) for utility scale power plants (similar to Alternative (b)). Incentives, foreign exchange variations and efficiency in operations are in addition to this benchmark of 14%.

For determining the tariffs for wind power projects, the electricity regulatory commissions of the state of Rajasthan and Gujarat have considered the return on equity at 14% while the electricity regulatory commissions of the state of Madhya Pradesh, Maharashtra and Karnataka have considered the return on equity at 16%. (Source: RERC Order dated 29 September 2006).

There are some essential differences between the Project (whether implemented with or without CDM revenues) and the Alternatives identified in Sub-step 1(b) (utility scale fossil fuel and hydro projects). These should be taken into account while setting the appropriate level of equity IRR.

- The project activity tariff structure is a single-part tariff structure as compared to utility scale fossil fuel and hydro projects, which have two-part tariff structure. This implies that project activity carries a higher investment risk than the utility scale fossil fuel and hydro projects (Alternative (b)) where the investment recovery is decoupled from the level of actual generation achieved by the project due to variations in offtake.

Thus, in case of the project activity, issues such as transmission unavailability, back-down of generation or part-load operations, which are beyond the control of the investors are likely to affect the project activity more severely and therefore the project activity investors would require higher rate of return to compensate them for these additional risks.



- In case of utility scale fossil fuel and hydro projects (Alternative (b)), these are by reference to cost-plus approach whereby the projects recover their full investment cost each year if they are able to reach specified level of plant availability. In case of the Project, it does not recover its full investment cost in the initial years as the tariffs are back-loaded. This increases the investment risks in the project activity compared to the alternatives.

Based on the above considerations, 16% post-tax equity IRR is considered to be the appropriate post-tax equity return. If the Project has a post-tax equity IRR of less than 16%, then it can be considered to be additional.

Sub-step 2c. Calculation and comparison of financial indicators (only applicable to options II and III):

5. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but including subsidies/fiscal incentives where applicable), and, as appropriate, non-market cost and benefits in the case of public investors.
6. Present the investment analysis in a transparent manner and provide all the relevant assumptions in the CDM-PDD, so that a reader can reproduce the analysis and obtain the same results. Clearly present critical techno-economic parameters and assumptions (such as capital costs, fuel prices, lifetimes, and discount rate or cost of capital). Justify and/or cite assumptions in a manner that can be validated by the DOE. In calculating the financial indicator, the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions (e.g. insurance premiums can be used in the calculation to reflect specific risk equivalents).
7. Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated.
8. Present in the CDM-PDD submitted for validation a clear comparison of the financial indicator for the proposed CDM activity and:
 - (a) The alternatives, if Option II (investment comparison analysis) is used. If one of the other alternatives has the best indicator (e.g. highest IRR), then the CDM project activity can not be considered as the most financially attractive;
 - (b) The financial benchmark, if Option III (benchmark analysis) is used. If the CDM project activity has a less favourable indicator (e.g. lower IRR) than the benchmark, then the CDM project activity cannot be considered as financially attractive.

The key assumptions used for calculating the benchmark (post-tax equity IRR) are set out below. This has been done for the 11.2 MW DCW Wind Farm (Tamilnadu) which is the largest sub-project in the bundle:

Capacity of Machines in kW	800
Number of Machines	14
Project Capacity in MW	11.20
Project Commissioning Date	31-May-05
Project Cost per MW (Rs. In Millions)	45.3



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Operations	
Plant Load Factor	24.69%
<i>* There is no CWET data available for this site as the nearest CWET wind mast is more than 15 kms away from the site. Therefore, in the absence of CWET data, we have used the PLF considered by TNERC for tariff determination in its discussion paper on “Tariff Related Issues for Non Conventional Energy Sources”</i>	
Insurance Charges @ % of capital cost	0.18%
Operation & Maintenance Cost base year @ % of capital cost	1.25%
% of escalation per annum on O & M Charges	5.0%

Tariff	
Year 1	2.70
Escalation	0%

Project Cost	Rs Million
Land and Infrastructure, Generator & Electrical Equipments, Mechanical Equipments, Civil Works, Instrumentation & Control, Other Project Cost, Pre operative Expenses, etc.	
Total Project Cost	507

Means of Finance		Rs Million
Own Source	30%	152
Term Loan	70%	355
Total Source		507
Loan 1		
Loan Amount	122	
Tenure	5	Years
Moratorium	6	Months
Interest Rate		
	1-Jun-05	7.75%
	1-May-06	8.25%
	2-Aug-06	8.50%
	27-Dec-06	9.00%
	19-Feb-07	10.75%
Principal Repayment		
	1-Jun-05	6.08
	1-Sep-05	12.16
	Balance	17
Loan 2		
Loan Amount	234	
Tenure	6	Years
Moratorium	12	Months
Interest Rate		



	1-Jun-05	7.75%	
	10-Jan-06	8.13%	
	14-Jun-06	8.50%	
	1-Jan-07	9.50%	
	15-Feb-07	10.50%	
Principal Repayment		20.00	EQIs

Income Tax Depreciation Rate (Written Down Value basis)	
on Wind Energy Generators	80%
On other Assets	10%
Book Depreciation Rate (Straight Line Method basis)	
On all assets	7.86%
Book Depreciation up to (% of asset value)	90%

Income Tax	
Income Tax rate	30%
Minimum Alternate Tax	10%
Surcharge	10%
Cess	2%

Working capital	
Receivables (no of days)	45
O & m expenses (no of days)	30
Working capital interest rate	12%

CER Revenues	
CER Price in US\$	-
Exchange rate Rs./US\$*	43.59

* RBI reference rate as of 30 March 2007

Crediting period starts	1-Aug-07
Length of Crediting period	10

Baseline Emission Factor for Southern Region (tCO ₂ /GWh)	932.04
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The equity IRR for the Project without CDM revenues is 7.5% and with CDM revenues is 9.5%.

Sub-step 2d. Sensitivity analysis (only applicable to options II and III):

9. Include a sensitivity analysis that shows whether the conclusion regarding the financial attractiveness is robust to reasonable variations in the critical assumptions. The investment analysis provides a valid argument in favor of additionality only if it consistently supports (for a realistic range of



assumptions) the conclusion that the project activity is unlikely to be the most financially attractive (as per step 2c para 8a) or is unlikely to be financially attractive (as per step 2c para 8b).

Sensitivity analysis of the Equity IRR to the Plant Load Factor (the most critical assumption) has been carried out considering a plant load factor of 20% (Actual PLF achieved by the project) and 27.16% (10% upward variation in PLF). Plant Load Factor is the key variable encompassing variation in wind profile, variation in off-take (including grid availability) including machine downtime. The post tax Equity IRRs at the stated PLFs are as follows:

	PLF at 20%	PLF at 27.16%
Post tax Equity IRR without CER revenues	3.3%	9.7%
Post tax Equity IRR with CER revenues	4.9%	11.7%

As can be seen from above, the Project is not the most financially attractive (as per step 2c para 8a) we proceed to Step 4 (Common practice analysis).

Step 4. Common practice analysis

Sub-step 4a. Analyze other activities similar to the proposed project activity:

1. Provide an analysis of any other activities implemented previously or currently underway that are similar to the proposed project activity. Projects are considered similar if they are in the same country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc. Other CDM project activities are not to be included in this analysis. Provide quantitative information where relevant.

Sub-step 4b. Discuss any similar options that are occurring:

2. If similar activities are widely observed and commonly carried out, it calls into question the claim that the proposed project activity is financially unattractive (as contended in Step 2) or faces barriers (as contended in Step 3). Therefore, if similar activities are identified above, then it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it financially attractive (e.g., subsidies or other financial flows) or did not face the barriers to which the proposed project activity is subject.
3. Essential distinctions may include a serious change in circumstances under which the proposed CDM project activity will be implemented when compared to circumstances under which similar projects were carried out. For example, new barriers may have arisen, or promotional policies may have ended, leading to a situation in which the proposed CDM project activity would not be implemented without the incentive provided by the CDM. The change must be fundamental and verifiable.

We analyze the extent to which wind energy projects have diffused in the electricity sector in Tamil Nadu. In 2004 – 05, electricity generation from wind sources was 2,426 GWh and the total electricity



available at bus bar in the state of Tamil Nadu was 51,486 GWh. Thus wind generation works out to 4.7% of total electricity available to the state of Tamil Nadu. Clearly, electricity generation from wind is not a common practice in Tamil Nadu.

A comparison of installed capacities of wind generation sources between year 2000 and 2005 indicates that during the period 2000 to 2005 about 938 MW of wind generating capacity was added in Tamil Nadu (Source: Central Electricity Authority, General Reviews of 2004-05 and 1999-00). Currently, there are approximately 827 MW wind energy projects in Tamil Nadu that are in various stages of CDM development and more are expected to follow. Therefore wind power project development is substantially dependent on CDM and thus is not a common practice.

Sub-steps 4a and 4b are satisfied.

Step 5. Impact of CDM registration

Explain how the approval and registration of the project activity as a CDM activity, and the attendant benefits and incentives derived from the project activity, will alleviate the economic and financial hurdles (Step 2) or other identified barriers (Step 3) and thus enable the project activity to be undertaken.

Registering the project activity as a CDM activity provides a significant amount of revenue, improving the project’s cash flow and improving the equity IRR by 2.0%. The revenues from sale of the Certified Emission Reductions would enhance the viability of the project and would partially offset the risks associated with the possible changes in policy, wind regime, project implementation risks (time and cost overruns), etc. Further, CER revenues will be high quality cash flows coming from creditworthy parties and denominated in foreign currency. The CDM revenues will attract new players to wind investments in Tamilnadu, as they provide compensation for the regulatory and project risks implicit in the wind power projects.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

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According to the approved baseline methodology ACM0002, the emission reductions *ERy* by the project activity during a given year “y”¹ is

$$ERy = BEy - PEy - Ly.....(1)$$

Where: *BEy* is the baseline emissions
PEy is project activity emissions and;
Ly is the amount of emissions leakage resulting from the project activity.

Baseline Emissions for the amount of electricity supplied by project activity, *BEy* is calculated as

$$BEy = EGy * EFy(2)$$

¹ Throughout the document, the suffix y denotes that such parameter is a function of the year y, thus to be monitored at least annually.



where EG_y is the electricity supplied to the grid, EF_y is the CO₂ emission factor of the grid as calculated below.

The emission factor EF_y of the grid is represented as a combination of the Operating Margin (OM) and the Build Margin (BM). Considering the emission factors for these two margins as $EF_{OM,y}$ and $EF_{BM,y}$, then the EF_y is given by:

$$EF_y = w_{OM} * EF_{OM,y} + w_{BM} * EF_{BM,y} \dots \dots \dots (2)$$

with respective weight factors w_{OM} and w_{BM} (where $w_{OM} + w_{BM} = 1$).

The Operating Margin emission factor

As per ACM0002, dispatch data analysis should be the first methodological choice. However, this option is not selected because the information required to calculate OM based on dispatch data is not available in the public domain for the Southern electricity regional grid.

The Simple Operating Margin approach is appropriate to calculate the Operating Margin emission factor applicable in this case. As per ACM 0002 the Simple OM method can only be used where low cost must run resources constitute less than 50% of grid generation based on average of the five most recent years. The generation profile of the Southern grid in the last five years is as follows:

Generation in GWh	2004-05	2003-04	2002-03	2001-02	2000-01
Low cost/must run sources					
Hydro	24,951	16,943	18,288	26,260	29,902
Wind & Renewables	3,256	1,865	1,607	1,456	1,262
Nuclear	4,408	4,700	4,390	5,244	4,331
Other sources					
Coal	99,010	98,435	92,053	84,032	83,292
Diesel	2,434	3,295	4,379	4,155	2,868
Gas	12,428	14,214	13,950	10,331	7,132
Total Generation	146,487	139,451	134,667	131,478	128,787
Low cost/must run sources	32,615	23,508	24,285	32,960	35,496
Low cost/must run sources	22%	17%	18%	25%	28%

Source: Table 3.4 of CEA General Review 2004-05, 2003-04, 2002-03, 2001-02, 2000-01

From the available information it is clear that low cost/must run sources account for less than 50% of the total generation in the Southern grid in the last five years. Hence the Simple OM method is appropriate to calculate the Operating Margin Emission factor applicable.



Build Margin Emission Factor

The Build Margin emission factor $EF_{BM,y}$ (tCO₂/GWh) is given as the generation-weighted average emission factor of the selected representative set of recent power plants represented by the 5 most recent plants or the most recent 20% of the generating units built (summation is over such plants specified by k):

$$EF_{BM,y} = [\sum_i F_{i,m,y} * COEF_i] / [\sum_k GEN_{k,m,y}] \dots \dots \dots (5)$$

The summation over i and k is for the fuels and electricity generation of the plants in sample m mentioned above.

The choice of method for the sample plant is the most recent 20% of the generating units built as this represents a significantly larger set of plants, for a large regional electricity grid have a large number of power plants connected to it, and is therefore appropriate.

The Central Electricity Authority, Ministry of Power, Government of India has published a database of Carbon Dioxide Emission from the power sector in India based on detailed authenticated information obtained from all operating power stations in the country. This database i.e. The CO₂ Baseline Database provides information about the Operating Margin and Build Margin Emission Factors of all the regional electricity grids in India. The Operating Margin in the CEA database is calculated ex ante using the Simple OM approach and the Build Margin is calculated ex ante based on 20% most recent capacity additions in the grid based on net generation as described in ACM0002. We have, therefore, used the Operating Margin and Build Margin data published in the CEA database, for calculating the Baseline Emission Factor.

Combined Margin Emission Factor

As already mentioned, baseline emission factor (EF_y) of the grid is calculated as a combined margin (CM), calculated as the weighted average of the operating margin (OM) and build margin (BM) factor. In case of wind power projects default weights of 0.75 for EF_{OM} and 0.25 for EF_{BM} are applicable as per ACM0002. No alternate weights are proposed.

Using the values for operating margin and build margin emission factors provided in the CEA database and their respective weights for calculation of combined margin emission factor, the baseline carbon emission factor (CM) is 932.04 tCO₂e/GWh or 0.93204 tCO₂e/MWh.

Project Emissions:

The project activity uses wind power to generate electricity and hence the emissions from the project activity are taken as nil.

$$PE_y = 0$$

Leakage:



Emissions Leakage on account of the project activity is ignored in accordance with ACM0002.

$$L_y = 0$$

B.6.2. Data and parameters that are available at validation:

>>

Data / Parameter:	<i>EF_{OM,y}</i>						
Data unit:	tCO ₂ e/MWh						
Description:	Operating Margin Emission Factor of Southern Regional Electricity Grid						
Source of data used:	“CO ₂ Baseline Database for Indian Power Sector” published by the Central Electricity Authority, Ministry of Power, Government of India. The “CO ₂ Baseline Database for Indian Power Sector” is available at www.cea.nic.in						
Value applied:	<table border="1"> <tr> <td>2002 – 03</td> <td>0.9970</td> </tr> <tr> <td>2003 – 04</td> <td>1.0094</td> </tr> <tr> <td>2004 – 05</td> <td>1.0038</td> </tr> </table>	2002 – 03	0.9970	2003 – 04	1.0094	2004 – 05	1.0038
2002 – 03	0.9970						
2003 – 04	1.0094						
2004 – 05	1.0038						
Justification of the choice of data or description of measurement methods and procedures actually applied :	Operating Margin Emission Factor has been calculated by the Central Electricity Authority using the simple OM approach in accordance with ACM0002.						

Data / Parameter:	<i>EF_{BM,y}</i>
Data unit:	tCO ₂ e/MWh
Description:	Build Margin Emission Factor of Southern Regional Electricity Grid
Source of data used:	“CO ₂ Baseline Database for Indian Power Sector” published by the Central Electricity Authority, Ministry of Power, Government of India. The “CO ₂ Baseline Database for Indian Power Sector” is available at www.cea.nic.in
Value applied:	0.7180
Justification of the choice of data or description of measurement methods and procedures actually applied :	Build Margin Emission Factor has been calculated by the Central Electricity Authority in accordance with ACM0002.

B.6.3 Ex-ante calculation of emission reductions:

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Ex-ante calculation of emission reductions is equal to ex-ante calculation of baseline emissions as project emissions and leakage are nil.

Baseline emission factor (combined margin)
= 932.04 tCO₂e/GWh



Annual electricity supplied to the grid by the Project
 = 21.93 MW (Capacity) x 24.69% (PLF) x 8760 (hours) / 1000 GWh
 = 47.431 GWh

Annual baseline emissions
 = 932.04 tCO₂e/GWh x 47.431 GWh
 = 44,207 tCO₂e

B.6.4 Summary of the ex-ante estimation of emission reductions:
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Years	Estimation of project activity emissions (tCO ₂ e)	Estimation of baseline Emissions (tCO ₂ e)	Estimation of Leakage (tCO ₂ e)	Estimation of overall emission reductions (tCO ₂ e)
2007-08	0	29,471	0	29,471
2008-09	0	44,207	0	44,207
2009-10	0	44,207	0	44,207
2010-11	0	44,207	0	44,207
2011-12	0	44,207	0	44,207
2012-13	0	44,207	0	44,207
2013-14	0	44,207	0	44,207
2014-15	0	44,207	0	44,207
2015-16	0	44,207	0	44,207
2016-17	0	44,207	0	44,207
2017-18	0	14,736	0	14,736
Total (tonnes of CO₂e)	0	442,070	0	442,070

B.7 Application of a monitoring methodology and description of the monitoring plan:
--

B.7.1 Data and parameters monitored:

Data / Parameter:	EGy
Data unit:	MWh (Mega-watt hour)
Description:	Net electricity supplied to the grid by the Project
Source of data to be used:	Electricity supplied to the grid as per the tariff invoices raised on TNEB.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Annual electricity supplied to the grid by the Project = 21.93 MW (Capacity) x 24.69% (PLF) x 8760 (hours) / 1000 GWh = 47.431 GWh
Description of measurement methods and procedures to be applied:	Net electricity supplied to grid will be measured through meter readings of the two-way export meter installed by TNEB. The procedures for metering and meter reading will be as per the provisions of the power purchase agreement
QA/QC procedures to be applied:	QA/QC procedures will be as implemented by TNEB pursuant to the provisions of the power purchase agreement
Any comment:	



B.7.2 Description of the monitoring plan:

>>

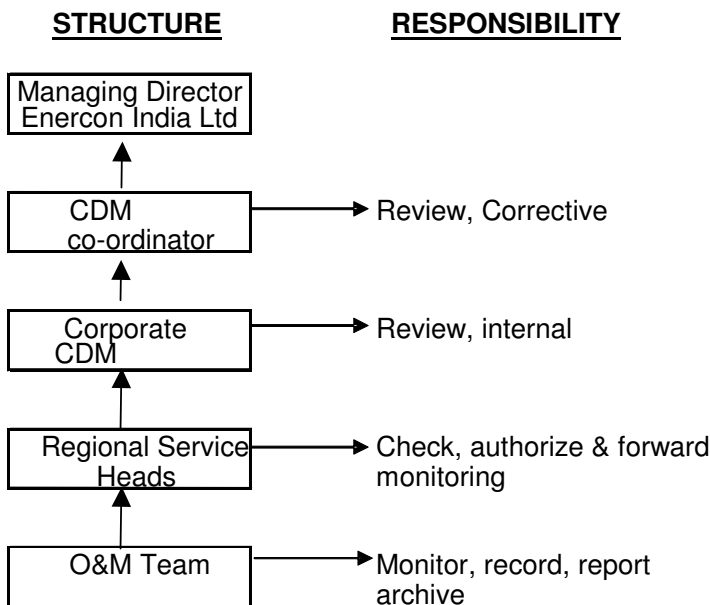
Approved monitoring methodology ACM0002 / Version 06 Sectoral Scope: 1, “Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources”, by CDM - Meth Panel is proposed to be used to monitor the emission reductions.

This approved monitoring methodology requires monitoring of the following:

- Electricity generation from the project activity; and
- Operating margin emission factor and build margin emission factor of the grid, where *ex post* determination of grid emission factor has been chosen

Since the baseline methodology is based on *ex ante* determination of the baseline, the monitoring of operating margin emission factor and build margin emission factor is not required.

The sole parameter for monitoring is the electricity supplied to the grid. The Project is operated and managed by Enercon (India) Ltd. The operational and management structure implemented by Enercon is as follows:



B.8 Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)

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Date of completion: 30/03/2007

Name of responsible person/entity: PricewaterhouseCoopers Private Limited (Not a Project Participant)

**SECTION C. Duration of the project activity / crediting period****C.1 Duration of the project activity:****C.1.1. Starting date of the project activity:**

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17/11/2004, being the date of purchase order of the first sub-project in the bundle

C.1.2. Expected operational lifetime of the project activity:

>>

20 years

C.2 Choice of the crediting period and related information:

The project activity will use fixed crediting period.

C.2.1. Renewable crediting period**C.2.1.1. Starting date of the first crediting period:**

>>

C.2.1.2. Length of the first crediting period:

>>

C.2.2. Fixed crediting period:**C.2.2.1. Starting date:**

>>

01/08/2007, being the expected date of registration of the project.

C.2.2.2. Length:

>>

10 years

SECTION D. Environmental impacts

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D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts:

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Enercon appointed Care Sustainability to conduct rapid environmental impact assessment study to assess the impact of the project on the local environment.



Environmental Impact Assessment (EIA) of this project is not an essential regulatory requirement, as it is not covered under the categories as described in EIA Notification of 1994 or the Amended Notification of 2006. However, Enercon conducted the EIA to study impacts on the environment resulting from the project activity.

The EIA study included identification, prediction and evaluation of potential impacts of the CDM activities on air, water, noise, land, biological and socio-economic environment within the study area. The ambient air concentrations of Suspended Particulate Matter, Respirable Particulate Matter, Oxides of Nitrogen, Sulphur dioxide and Carbon Monoxide were monitored and were found under limits as specified by CPCB. The noise levels were observed through out the study period and were found to be in the permissible range as specified by the state pollution control board and National Ambient Air Quality Standards. Water quality monitoring studies were carried out for determination of physico-chemical characteristics of bore wells. The ph level of water was found to be under the specified limits.

The site does not involve any sensitive archaeological monuments as per the Archaeological Survey of India. No Historical and Cultural Monuments have been affected due to project location. The project area consists of some grass shrubs and does not have much to offer aesthetically. However, construction of wind power mills with pleasing architectural design that blends with the landscape will have a positive impact on the aesthetics of the present surrounding of the site.

D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:

>>

EIA demonstrated that there is no major impact on the environment due to the installation and operation of the windmills. The local ecology is not likely to get impacted by this type of project activity. The local population confirmed that there is no noise or dust nuisance due to windmills. The EIA also ruled out any adverse impacts due to the project activity.

SECTION E. Stakeholders' comments

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E.1. Brief description how comments by local stakeholders have been invited and compiled:

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The comments from local stakeholders were invited through a local stakeholder meeting conducted at Rotary centenary hall, Dharapuram, Erode, Tamil Nadu on 04th December 2006. A local newspaper advertisement was placed in Dinamani on 18th November 2006 inviting the local stakeholders for the meeting.

E.2. Summary of the comments received:

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The comments from local villagers included:

- The nature of benefits that local stakeholders will get
- Impact on the grazing of local cattle
- Impact on any migratory patterns of birds or fauna
- Addressing safety issues by Enercon, incidence of accidents



- Noise disturbance

E.3. Report on how due account was taken of any comments received:

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Report on how due account was taken of comments is provided in the Minutes of Stakeholders Consultation meeting attached in appendix 2.

**Annex 1****CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY.**

Organization:	Enercon (India) Limited
Street/P.O.Box:	Kolsite House, Plot No. 31, Shah Industrial Estate, Veera Desai Road, Andheri (West)
Building:	
City:	Mumbai
State/Region:	Maharashtra
Postfix/ZIP:	400 053
Country:	India
Telephone:	+91-22-5522 7794
FAX:	+91-22-5692 1175
E-Mail:	a.raghavan@enerconindia.net
URL:	
Represented by:	
Title:	Associate Vice President
Salutation:	Mr.
Last Name:	Raghavan
Middle Name:	
First Name:	A
Department:	Corporate
Mobile:	+91-98200 45724
Direct FAX:	+91-22-5692 1175
Direct tel:	+91-22-5522 7794
Personal E-Mail:	a.raghavan@enerconindia.net



Annex 2

INFORMATION REGARDING PUBLIC FUNDING

No ODA financing has been used in the project activity.

**Annex 3****BASELINE INFORMATION**

The Operating Margin data for the most recent three years and the Build Margin data for the Southern Region Electricity Grid as published in the CEA database are as follows:

Simple Operating Margin

	tCO ₂ e/GWh
Simple Operating Margin - 2002-03	997.02
Simple Operating Margin - 2003-04	1,009.37
Simple Operating Margin - 2004-05	1,003.76
Average Operating Margin of last three years	1,003.38

Build Margin

	tCO ₂ e/GWh
Build Margin	717.99

Combined Margin calculations

	Weights	tCO ₂ e/GWh
Operating Margin	0.75	1003.38
Build Margin	0.25	717.99
Combined Margin		932.04

Detailed information on calculation of Operating Margin Emission Factor and Build Margin Emission Factor is available at www.cea.nic.in.



Annex 4

MONITORING INFORMATION

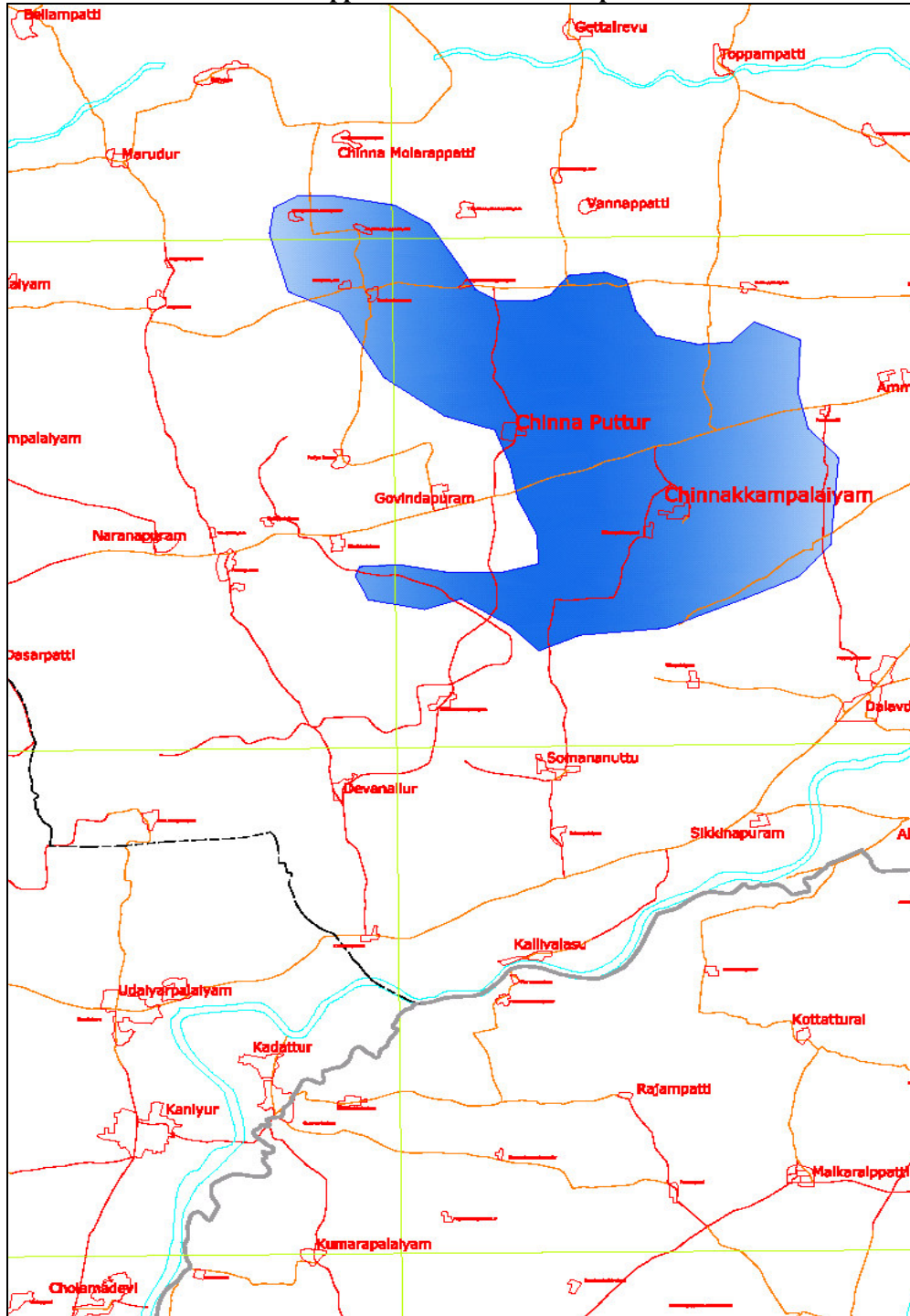
- **Metering:** Electricity supplied to the grid is metered through the two way export meter installed by TNEB at the high voltage side of the step up transformer installed at the Project Site.
- **Metering Equipment:** Metering equipment is an electronic trivector meter of accuracy class 0.5 required for the Project. The meter is installed and owned by TNEB. The metering equipment is maintained in accordance with electricity standards prevalent in Tamil Nadu.
- **Meter Readings:** The monthly meter reading is taken jointly by the parties for the last month. At the conclusion of each meter reading an appointed representative of TNEB and Enercon sign a document indicating the number of Kilowatt-hours indicated by the meter.
- **Inspection of Energy Meters:** The two-way export meter and all associated instruments, transformers installed at the Project are of 0.5 accuracy class. The meter is jointly inspected and sealed on behalf of the Parties and is not to be interfered with by either Party except in the presence of the other Party or its accredited representatives.
- **Meter Test Checking:** The meter is tested for accuracy with reference to a portable standard meter. The portable standard meter is also owned by TNEB. The meter is deemed to be working satisfactorily if the errors are within specifications for meters of 0.5 accuracy class. The consumption registered by the meter alone holds good for the purpose of metering electricity supplied to the grid as long as the error in the meter is within the permissible limits.

If during the meter test checking,

- The meter is found to be beyond permissible limits of error, the meter shall be immediately calibrated and the correction applied to the reading registered by the meter to arrive the correct reading of energy supplied for metering electricity supplied to the grid for the period from the last month's meter reading up to the current test. Meter reading for the period thereafter till the next monthly reading shall be as per the calibrated meter.



Appendix 1 – Location Map





Appendix 2 Minutes of Stakeholder Consultation meeting

Minutes of Clean Development Mechanism meeting held at ROTARY CENTENARY HALL, Dharapuram Tk, Tamil Nadu on 04/12/2006.

MEETING PRESIDED BY:

1. Mr.Muthukrishnan, Thasildhar ,Dharapuram Tk
2. Mr.Ganapathy, Deputy Thasildhar ,Dharapuram Tk
3. Mr.Kesavan, Executive Engineer. Wind Farm Projects Udumalpet.
4. Mr.Subramaniam Executive Engineer. Dharapuram.
5. Mr.Deivasikamani .Panchayat President, Chinnaputhur Village.
6. Mr.Senthil Kumar. Councilor. Town Panchayat .Chinnkampalayam .
7. Mr.Santhanam Panchayat President , Thalavaipattinam Village.
8. Mr.Anandan .Manager Enercon India Limited.

AGENDA OF THE MEETING IS FIXED AS FOLLOWS:

1. Welcome speech by the organizers.
2. Introduction to 'Clean Development Mechanism' by the Organizers.
3. Description of the project by Enercon.
4. Speech of Invitees.
5. Interactive session with the stake holders.
6. Vote of thanks.

Welcome Speech:

Mr. K.V.Suresh from Enercon India Ltd welcomed The Village community members, Elected Representatives of Public, Tamilnadu Electricity Board Officials, Suppliers and Regulators and other stake holders who had come to take part in the '*Local Stakeholders consultation meeting*' in order to understand the Concerns and Opinions of them regarding the Wind Power Projects established in that region.

Soon after the welcome speech **Mr. Govidarajan** took charge of the stage and addressed the delegates to speak about the project.

Introduction to 'Clean Development Mechanism' by the Organizers

Mr. Saravanan of Enercon explained about the Kyoto protocol and CDM to the villagers. He also brought to light that the ozone layer is getting depleted due to poisonous gases emitted by using fossil fuel energy sources. In his speech he also spoke about the carbon levels in the atmosphere is increasing. He opined that Wind energy is the boon to our environment and that it doesn't spoil our environment, more over wind power projects in remote villages has increased employment opportunities and per capita income to such villagers.



Speech of Invitees

Mr.Muthukrishnan Thasildar of Dharapuram in his speech explained the impact of wind energy development projects in Dharapuram area, which includes Chinnaputhur Chinnakampalayam, Thalvaipatinam, Govindapuram, Naranapuram, Gethalrev Villages. He also explained to the stakeholders about the social, industrial and economic Developments brought by the Wind Energy Projects to the Villages in Dharapuram Tk. He further explained that the Distribution of Electricity to Villages improved dramatically. He pointed out that there is no adverse impact of Wind Energy Projects.

Mr.Ganapathy, Deputy Thasildhar ,Dharapuram Tk in his speech explained about the Present Socio-Economic Condition of Dharapuram Tk and he compared the recent Developments to the olden days . He thanked Enercon India limited for installing Wind Energy Projects in Dharapuram Taluk Which resulted in the overall Development & Economic well being of the village community. He also explained that Due to Un-Interrupted power supply, Productivity of Farm Products had increased significantly.

Mr.Kesavan, Executive Engineer. Wind Farm Projects Udumalpet of TNEB explained about the Wind Power Plants and its importance. He also said that the demand for Electricity is always increasing and wind energy converters in this area are providing Electricity to meet out the demand.. He also told that the wind power projects are supplying the energy which would otherwise could have come from the other conventional sources. He opined that Wind Energy converters are producing Green Energy without causing any damage to the environment unlike conventional sources.

Mr.Subramaniam Executive Engineer. Dharapuram of TNEB in his speech explained about the benefits attained by the people around the villages. Lot of employment opportunities were created by the wind energy development projects and its allied activities .The supply of electricity in terms of quality and quantity have increased a lot due to wind power projects he said. He thanked Enercon India Limited for producing Green Energy and to cater the needs of electricity demands of nearby industrialized towns.

Mr.Deivasikamani Panchayat President, Chinnaputhur Village spoke about the advancements in the villages after the installation of wind power projects. He opined that after coming-up of Wind projects in these villages, the roads were developed Significantly and employment opportunities are being created in wind power projects such as casual labours, securities , drivers and technicians.

Mr.Senthil Kumar. Councilor, Town Panchayat, Chinnkampalayam voiced similar opinion in his speech, He said that Wind power projects in these remote villages around Dharapuram Taluk have brought prosperity to the villagers and also the transportation facility has been increased enormously due to the project installation activities.

Mr.Santhanam Panchayat President, Thalavaipattinam Village. In his speech he categorically stated that the wind projects have not affected either Ground water Level or Drinking water quality of this area. Grazing of cattle is also not affected because these Projects are being installed on waste barren dry lands. He also pointed out that uncultivable lands are being purchased from the villagers for wind power projects which in turn help them economically; many marriages and educational expenses in the villages were possible only by selling such waste lands.



Queries and responses from the proponent and the stakeholders

1. ***What are the benefits of the wind power projects the stake holders have observed?:*** The Wind Power Projects has increased the employment opportunities of this area. Village roads are motorable than ever before. The supply of electricity in terms of quality and quantity has increased.
2. ***Has the project affected the Ground water level?:*** Wind projects have not affected either Ground water Level or Drinking water quality of this area.
3. ***Has the project affected the grazing of local cattle?:*** The cattle grazing area has increased since the installation of Converters are in barren and uncultivable lands., the accessibility of cattle to the areas for grazing and drinking water has improved.
4. ***Has the project affected any migratory patterns of birds or fauna?:*** The project does not fall under migratory patterns of Birds or Fauna.
5. ***During construction and erection has any incident of accident or damage occurred?:*** As on date no such incidents of have occurred.
6. ***Does the project help in improving the electricity supply to the villagers or the neighbourhood areas?:*** The fluctuation of power supply has decreased and there is continuous uninterrupted supply of electricity to the farmers resulted in good amount of farm products
7. ***Have you observed any noise disturbances from the project during construction and operation of the project?:*** Disturbances of such kind has not occurred to this date
8. ***Do Enercon take care of safety issues?:*** Enercon India Ltd is taking adequate safety measures and there are sufficient safety instruments in order to avoid any untoward incidents.

Vote of thanks

Mr. Anandan, Manager Enercon India Limited thanked all the stakeholders, Village Public Representatives, Government Officials, Tamilnadu Electricity Board Officials for sharing their opinions and Concerns.