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Validation Report

Tamilnadu Spinning Mills Association (TASMA)

VALIDATION OF THE CDM-PROJECT:

BUNDLED WIND POWER PROJECT IN TAMILNADU, INDIA CO-ORDINATED BY THE TAMILNADU SPINNING MILLS ASSOCIATION (TASMA)

REPORT NO. 806969

March 12, 2007

TÜV SÜD Industrie Service GmbH

Carbon Management Service
Westendstr. 199 - 80686 Munich – GERMANY

Industrie Service

Report No.	Date of first issue	Revision No.	Date of this revision	Certificate No.
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Subject: Validation of a CDM Project

Accredited TÜV SÜD Unit:	**TÜV SÜD Contract Partner:**
TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 - 80686 Munich Federal Republic of Germany	TÜV SÜD South Asia C-153/1, Okhla Industrial Estate Phase- 1 New Delhi – 110020 India
Client:	**Project Site(s):**
Tamilnadu Spinning Mills Association (TASMA) 11 th Cross Street, Spencer Compound Dindigul, Tamilnadu India	704 wind mill locations in Coimbatore, Tirunelveli and Kanyakumari disctricts of Tamilnadu India

Project Title: Bundled Wind power project in Tamilnadu, India co-ordinated by the TamilNadu Spinning Mills Association (TASMA)

Applied Methodology / Version: ACM0002 version 06 | **Scope(s):** 1

First PDD Version:		**Final PDD version:**	
Date of issuance:	2005-09-15	Date of issuance:	2007-03-01
Version No.:	1	Version No.:	9.0
Starting Date of GSP1	2005-10-15		
Starting Date of GSP2	2006-11-15		

Estimated Annual Emission Reduction: 686,697 tons CO_{2e}

Assessment Team Leader:	**Further Assessment Team Members:**
Dr. Ayse Frey	Sunil Kathuria Ponnuswamy Lakshmanan Abhishek Goyal Klaus Wallner

Summary of the Validation Opinion:

☒ The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board in case letters of approval of all Parties involved will be available before the expiring date of the applied methodology(ies) or the applied methodology version respectively.

☐ The review of the project design documentation and the subsequent follow-up interviews have not provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. Hence TÜV SÜD will not recommend the project for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board on this decision.

Abbreviations

ACM	Approved Consolidated Methodology
AM	Approved Methodology
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority, India
CER	Certified Emission Reduction
CR	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GHG	Greenhouse gas(es)
IRR	Internal Rate of Return
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non Governmental Organisation
PDD	Project Design Document
PP	Project Participant
TASMA	Tamilnadu Spinning Mills Association
TNEB	Tamil Nadu Electricity Board
TNERC	Tamil Nadu Electricity Regulatory Commission
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
WTG	Wind Turbine Generator

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1 INTRODUCTION

1.1 Objective

The validation objective is an independent assessment by a Third Party (Designated Operational Entity = DOE) of a proposed project activity against all defined criteria set for the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and will finally result in a conclusion by the executing DOE whether a project activity is valid and should be submitted for registration to the CDM-EB. The ultimate decision on the registration of a proposed project activity rests at the CDM Executive Board and the Parties involved.

The project activity discussed by this validation report has been submitted under the project title:

Bundled Wind power project in Tamilnadu, India co-ordinated by the TamilNadu Spinning Mills Association (TASMA).

1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of CDM project activities the scope is set by:

- The Kyoto Protocol, in particular § 12
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions by the EB published under http://cdm.unfccc.int
- Specific guidance by the EB published under http://cdm.unfccc.int
- Guidelines for Completing the Project Design Document (CDM-PDD), and the Proposed New Baseline and Monitoring Methodlogy (CDM-NM)
- The applied approved methodology
- The technical environment of the project (technical scope)
- Internal and national standards on monitoring and QA/QC
- Technical guideline and information on best practice

The validation is not meant to provide any consulting towards the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

Once TÜV SÜD receives a first PDD version, it is made publicly available on the internet at TÜV SÜD's webpage as well as on the UNFCCC CDM-webpages for starting a 30 day global stakeholder consultation process (GSP). In case of any request a PDD might be revised (under certain conditions the GSP will be repeated) and the final PDD will form the basis for the final evaluation as presented by this report. Information on the first and on the final PDD version is presented at page 1.

The only purpose of a validation is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

2 METHODOLOGY

The project assessment aims at being a risk based approach and is based on the methodology developed in the Validation and Verification Manual (for further information see www.vvmanual.info), an initiative of Designated and Applicant Entities, which aims to harmonize the approach and quality of all such assessments.

In order to ensure transparency, a validation protocol was customised for the project. TÜV SÜD developed a "cook-book" for methodology-specific checklists and protocol based on the templates presented by the Validation and Verification Manual. The protocol shows, in a transparent manner, criteria (requirements), the discussion of each criterion by the assessment team and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below.

The completed validation protocol is enclosed in Annex 1 to this report.

Validation Protocol Table 1: Conformity of Project Activity and PDD				
Checklist Topic / Question	***Reference***	***Comments***	***PDD in GSP***	***Final PDD***
The checklist is organised in sections following the arrangement of the applied PDD version. Each section is then further subdivided. The lowest level constitutes a checklist question / criterion.	*Gives reference to documents where the answer to the checklist question or item is found in case the comment refers to documents other than the PDD.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached. In some cases sub-checklist are applied indicating yes/no decisions on the compliance with the stated criterion. Any **Request** has to be substantiated within this column*	*Conclusions are presented based on the assessment of the first PDD version. This is either acceptable based on evidence provided (☑), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification Request (CR)** is used when the validation team has identified a need for further clarification.*	*Conclusions are presented in the same manner based on the assessment of the final PDD version.*

Validation Protocol Table 2: Resolution of Corrective Action and Clarification Requests			
Clarifications and corrective action requests	***Ref. to table 1***	***Summary of project owner response***	***Validation team conclusion***
If the conclusions from table 1 are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	*Reference to the checklist question number in Table 1 where the Corrective Action Request or Clarification Request is explained.*	*The responses given by the client or other project participants during the communications with the validation team should be summarised in this section.*	*This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 1, under "Final PDD".*

In case of a denial of the project activity more detailed information on this decision will be presented in table 3.

Validation Protocol Table 3: Unresolved Corrective Action and Clarification Requests		
Clarifications and corrective action requests	***Id. of CAR/CR 1***	***Explanation of the Conclusion for Denial***
If the final conclusions from table 2 results in a denial the referenced request should be listed in this section.	*Identifier of the Request.*	*This section should present a detail explanation, why the project is finally considered not to be in compliance with a criterion.*

2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body "climate and energy". The composition of an assessment team has to be approved by the Certification Body ensuring that the required skills are covered by the team. The Certification Body TÜV SÜD operates four qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL)
- Greenhouse Gas Auditor (GHG-A)
- Greenhouse Gas Auditor Trainee (T)
- Experts (E)

It is required that the sectoral scope linked to the methodology has to be covered by the assessment team.

The validation team was consisting of the following experts (the responsible Assessment Team Leader in written in bold letters):

Name	Qualification	Coverage of technical scope	Coverage of sectoral expertise	Host country experience
Dr. Ayse Frey	**ATL**	☑	☑	
Sunil Kathuria	GHG-A	☑	☑	☑
Abhishek Goyal	T		☑	☑
Ponnuswamy Lakshmanan	T			☑
Klaus Wallner	E		☑	

Dr. Ayse Frey is an auditor and project manager for CDM/JI projects as well as an energy/waste expert at TÜV SÜD Industrie Service GmbH. In her position she is responsible for the implementation of validation, verification and certifications processes for greenhouse gas mitigation projects in the context of the Kyoto Protocol. After her studies in civil and environmental engineering, she completed a PhD in the field of water and waste policy. She has extensive experience with the CDM and JI flexible mechanisms as well as with management systems.

Sunil Kathuria is an electrical engineer and a lead auditor for CDM projects and a lead auditor for quality and environmental management systems (according to ISO 9001 and ISO 14001) at TÜV SÜD South Asia, TÜV SÜD Group. He is based in New Delhi. In his position he is implementing validation, verification and certifications audits for CDM projects. He has received extensive training in the CDM validation process and has already participated in several CDM project assessments.

Abhishek Goyal is an auditor trainee and project manager for CDM projects and environment/energy expert at TÜV SÜD Industrie Service GmbH. Before joining the TÜV SÜD Industrie Service GmbH he has worked on development of PDDs and methodologies for several energy efficiency, renewable energy, and waste to energy projects. He has extensive experience in CDM.

Ponnuswamy Lakshmanan is an electrical engineer, holding a Master's Degree in Public Administration and an auditor for CDM projects and a lead auditor for quality and environmental management systems (according to ISO 9001 and ISO 14001) at TÜV SÜD South Asia, TÜV SÜD Group. He is based in Nagpur India. In his position he is implementing validation, verification and certifications audits for CDM projects. He has received extensive training in the CDM validation process and has already participated in several CDM project assessments.

Klaus Wallner is an economist and was employed as an intern at TÜV SÜD during the months of September – December 2006. Currently he is pursuing a PhD in economics. He assisted the team in the assessment of the investment analysis.

2.2 Review of Documents

The first PDD version submitted by the client and additional background documents related to the project design and baseline were reviewed as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as annex 2 to this report.

2.3 Follow-up Interviews

In the period of November 15-18, 2005, TÜV SÜD performed interviews on-site with project stakeholders to confirm selected information and to resolve issues identified in the first document review. Annex 2 lists all persons interviewed in the context of this on-site visit.

2.4 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to resolve the requests for corrective actions and clarifications and any other outstanding issues which needed to be clarified for TÜV SÜD`s positive conclusion on the project design. The Corrective Action Requests and Clarification Requests raised by TÜV SÜD were resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that have been given are summarised in chapter 3 below and documented in more detail in the validation protocol in annex 1.

2.5 Internal Quality Control

As final step of a validation the validation report and the protocol have to undergo and internal quality control procedure by the Certification Body "climate and energy", i.e. each report has to be approved either by the head of the certification body or his deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one.

It rests at the decision of TÜV SÜD's Certification Body whether a project will be submitted for requesting registration by the EB or not.

3 SUMMARY OF FINDINGS

This section summarizes the main issues that were found and resolved during the validation process. A detailed listing of all findings is available in table 2 of the attached validation protocol (in annex 1 of this report). In total, the assessment team expressed 19 Clarification Requests and 14 Corrective Action Requests.

The main issues identified were:

1. Proof of CDM consideration for all WTGs in the project activity (Step 0 of Additionality Tool)
2. Proof of additionality using the IRR analysis (Step 2 of the Additionality Tool)
3. Common practice analysis (Step 4 of Additionality Tool)
4. Adequacy of monitoring system for entire project with all sub-projects

Resolution of: 1. Proof of CDM consideration for all WTGs in the project activity

Originally the starting date of the project activity was taken to be 2000 as this is when TASMA began its discussions on CDM; however, the first official document demonstrating that a decision to go ahead with a CDM project activity was only available from the second CDM meeting held on 07.02.2002. As a result of this meeting, the General Rules Circular on the CDM project activity was distributed to all members of TASMA. This document outlines the general rules and guidelines for the TASMA members participating in this CDM project. It also mentions that all members wishing to be a participant are required to enter into an authorization between the Association and the participating member. Authorizations for all sub-projects from all participating members have been submitted to the audit team.

Following a request from the assessment team, the starting date of the project activity has been changed to 15.02.2002 by which time the General Rules Circular had been communicated to all TASMA members. All WTGs are implemented after this date. A few WTGs which were commissioned prior to this date were removed from the project activity. All relevant documents from the first two CDM meetings as well as the General Rules Circular are uploaded with this validation report. These earlier documents are in the name of Dindigul Spinners Association, which was the former name of TASMA (a relevant document confirming the same has been submitted to the audit team).

Resolution of: 2. Proof of additionality using the IRR analysis

The assessment team was aware that this is the most critical aspect of this project activity. Therefore, several measures were taken during the validation process to ensure that the IRR analysis was performed correctly.

As a first step, all registered wind projects in India were analyzed and it was found that all of them use 16% as a benchmark for IRR. Furthermore, the calculation of IRR varied significantly between the projects, and several differences were found such as depreciation rates, number of years for cash flow (10 vs. 20), project IRR vs. equity IRR, profit before tax vs. profit after tax, and various tax rates, insurance rates, CER prices, charges, etc.

So to ensure that the submitted IRR calculations were acceptable and correct, an economist was added to the project team whose main objective was to ensure their accuracy. All parameters used were supported with official documents, and all assumptions taken were justified.

Finally, a few more steps were taken to ensure conservativeness:

1. a 20 year cash flow was used instead of 10 years

2. profit before tax was used instead of profit after tax
3. IRR was calculated for each sub-project separately, taking into account the tax rates relevant at the time of implementation

As a result, the assessment team believes that the IRR calculations have been carried out correctly and that all relevant parameters and assumptions are justified. All IRR calculations are uploaded together with the validation report.

Resolution of: 3. Common practice analysis

The common practice analysis needed further evidence as a large number of wind mills exist in Tamil Nadu. The revised PDD presents a much clearer picture of the situation. The total installed capacity of wind mills in Tamil Nadu as of 31.12.2004 was 1677.4 MW and as of 31.03.2005 was 2040 MW. The PDD outlines a series of policy decisions that were made which changed the climate of wind turbine investment decisions during late 2001 and early 2002. As a result, the policy regime was more favourable for wind power investments up to 2001. Since the investment decisions for the projects in this bundle were made in the years 2002-2004, the wind mills commissioned during this time are analyzed.

During the years 2002-03, 2003-04 and 2004-05, 819.9 MW of wind mill capacity was added in Tamil Nadu. The PDD demonstrates that 96.63% of these 819.9 MW are projects seeking CDM revenues. Since the Additionality Tool requires that “other CDM project activities are not to be included in this analysis”, it can be concluded that the project is not common practice.

Furthermore, the project activity has been initiated and promoted on a larger scale by a spinning mills association, and no similar activity is known for the state of Tamil Nadu. In this sense, the project is a novel idea in which an association encourages its members to invest in renewable energy for their operations. This programmatic type of project activity greatly encourages the use of renewable sources in small and medium sized enterprises whose core business is not the production of energy.

However, since some sub-project owners installed turbines before 2001 (not part of the project activity) and after 2001 (part of the project activity), IRR calculations were asked to be submitted for both the scenarios to prove that the policy prior to 2001 was attractive for wind power investments and became unattractive after policy changes which affected factors such as tariff and wheeling charges.

The IRR comparison for projects in 2001 and in 2003 has been submitted and clearly indicates that the investment climate for wind power projects prior to 2002 was more financially attractive and that after all policy changes, wind power became much less financially attractive. This IRR comparison is also uploaded together with the validation report.

Resolution of: 4. Adequacy of monitoring system for entire project with all sub-projects

Since this is a large project with a high number of sub-projects (704 wind mills across Tamil Nadu), it needed to be confirmed that the monitoring system is in place and adequately recording and consolidating the generation figures from all wind mills. In addition to revising the monitoring plan in Annex 4 of the PDD to present a more detailed monitoring system, sample generation and noise level data were requested for the month of February for the years 2003-2006. These are compiled in a computer software by TASMA, and they were submitted to the audit team. These documents indicate that the monitoring system seems to be working. The details of the generation figures will be part of the verification process.

In conclusion, the assessment team has found that all major and minor issues were resolved during the validation process.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project documents on UNFCCC website by installing a link to TÜV SÜD's own website and invited comments by Parties, stakeholders and non-governmental organisations during a period of 30 days.

The following table presents all key information on this process:

<table>
<tr><td colspan="2">webpage:

http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=1310&Ebene1_ID=26&Ebene2_ID=334&mode=1</td></tr>
<tr><td colspan="2">Starting date of the global stakeholder consultation process:

2005-10-15</td></tr>
<tr><td>Comment submitted by:

1. Axel Michaelowa
2. Arman Sharma
3. Deepak Mawandia</td><td>Issues raised and responses by project proponent and TÜV SÜD:

Since Axel Michaelowa is an accredited observer under the UNFCCC, his comments and the associated responses are listed below. Arman Sharma and Deepak Mawandia are not accredited observers under the UNFCCC, hence their comments have not been considered as per the regulations, but relevant points have been taken into account during the validation process.

<u>Comment 1:</u>

This project raises principal issues about project organization and bundling linked with additionality determination. Most wind projects in India are planned and operated by the turbine manufacturers who then sell entire wind turbines to industrial electricity consumers (such as the members of TASMA) who can reduce their electricity supply cost (SEB electricity tariff for industrial consumers being at least twice as high as wind electricity generation cost) and can depreciate 80% of the wind turbine investment in the first year. Thus wind turbine investment is very attractive to industrial electricity consumers and certainly business-as-usual in Southern India. As the wind turbine manufacturers get a good profit from this business model as well, the projects would not be additional from that side as well.

<u>Response by project proponent:</u>

The comment suggests that wind turbine investment is very attractive to industrial electricity consumers and business as usual in Southern India. The investment analysis in step 2 of the additionality assessment in the PDD and the detailed IRR analyses in the excel file shows that the wind turbine investment is not very attractive after the policy changes from 2001. The common practice analysis in step 4 of the additionality assessment in the PDD shows that the business model of this project is not common practice in Tamil Nadu.

<u>Response by TÜV SÜD:</u>

The revised PDD clearly demonstrates that all steps of the Additionality Tool are complied with and that the project activity is additional. Relevant documentary evidence and justification of assumptions and choices</td></tr>
</table>

	have been provided for all parameters. Comment 2: The question is of course whether the CDM project can be proposed by the formal owner of the turbine (who has nothing to do with the operation of the project and just receives its electricity) or the operator of the turbines, which has an impact on monitoring. The only reason for additionality would be a novel intermediary structure that mobilizes small industrial electricity customers that so far have not been targeted by the business model described and thus overcomes barriers. However, this is not the case as TASMA just lists the member companies who own a wind turbine and does no active intermediary role apart from writing the PDD. Response by project proponent: Step 0 does not require the evidence that CDM has been taken into account to come from decision makers, as suggested by the comment. Instead, step 0 requires evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity. Each member of the project has signed a statement that it will participate in the CDM project in order to get funding for the wind farm. Members of TASMA did this because TASMA – in a novel approach – informed its members about the CDM and its benefits when investing in green captive power rather than sourcing from the grid. Again, the common practice analysis in step 4 of the additionality assessment in the PDD shows that this model is not common practice in Southern India. Response by TÜV SÜD: TASMA has demonstrated its efforts to inform its members of the CDM via a series of seminars and meetings, of wind power in general, and it has assisted its members actively in the procurement of wind technology. Comment 3: The investment analysis is flawed. The analysis would have to compare the following options: a) continued acquisition of grid electricity at TSEB rates for textile industry b) In-house captive power c) the wind project and include tax benefits from wind power as mentioned above. Grid electricity generation costs are not at all relevant for the decision making of the industrial electricity consumers. Response by project proponent: The revised PDD reflects this comment. Response by TÜV SÜD: The revised IRR calculations are deemed to be correct now.

	Comment 4: Tax cuts have to be taken into account in the IRR analysis: Response by project proponent: 80% of investment in the wind turbine in one year can only be deducted from the tax if the company has that much tax on the net income to be paid otherwise. It is wrong to assume that the sub project owners have such large operating profits. The TNEB, while determining the tariff, does not take eighty percent depreciation in the first year but an average depreciation rate. (TNERC order no 3, dated 15/05/2006) Response by TÜV SÜD: The revised IRR calculations are deemed to be correct now. A 4.5% depreciation is acceptable as the TNERC order no 3 states this figure and it is an official document. Furthermore, the audit team has tested the effect of depreciation, and since it is taken out again in the cash flow analysis, the effect of changing it is minimal (it only effects the tax on profits in the cash flow.) Comment 5: More information on local stakeholders involvement and whether stakeholders were consulted for all sub-projects is required. The same applies to the EIA. Response by project proponent: The revised PDD reflects this comment. Response by TÜV SÜD: The revised PDD includes more information on the stakeholder consultation process and environmental impacts. In addition, several documents regarding both issues were verified during the on-site audit. Comment 6: For baseline calculation, the Southern regional grid should be used, not the state grid (see Meth Panel guidance). Comments on emissions rates: The emission rate of Talcher power plant with 1370 g/kWh is a crude overestimate as even under Indian condition no 500 MW new coal plant has an efficiency of 25% as implied by that emission factor. New Indian plants have an efficiency of around 35%. Moreover, Talcher plant is located in Orissa and not Tamil Nadu. One should consistently calculate a state or a regional grid! Response by project proponent: The revised PDD reflects this comment. Response by TÜV SÜD: The revised PDD is based on the Southern regional grid. The emission rates are based on the CEA published values. Mr. Michaelowa is mentioned in the Acknowledgements of the CO_2 Database Userguide for ”providing [his] expert views in establishing the baseline emissions.”

	Comment 7: The monitoring plan does not address at all the challenge to monitor several hundred subprojects. Response by project proponent: The revised PDD reflects this comment. Response by TÜV SÜD: The revised PDD includes a more detailed monitoring plan. Furthermore, monitored data from the years 2003-2006 was available from TASMA's computer software used in this project activity, which indicates that monitoring of all sub-projects seems to be working.

During the time when it was not exactly clear when a global stakeholder consultation process needs to be repeated, this project activity was unnecessarily made public again. The link to the second global stakeholder consultation process is given below.

webpage: http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=2317&Ebene1_ID=26&Ebene2_ID=687&mode=1	
Starting date of the global stakeholder consultation process: 2006-11-15	
Comment submitted by: 1. Peter Smith 2. Raman S. Muthuraman 3. Santosh Santosh	**Issues raised:** The comments have not been submitted by accredited observers under the UNFCCC. Thus, they have not been considered as per the regulations, but relevant points have been taken into account during the validation process.

5 VALIDATION OPINION

TÜV SÜD has performed a validation of the following proposed CDM project activity:

Bundled Wind power project in Tamilnadu, India co-ordinated by the TamilNadu Spinning Mills Association (TASMA)

The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board.

An analysis as provided by the applied methodology demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions as specified within the final PDD version.

The validation is based on the information made available to us and the engagement conditions detailed in this report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

Munich, 2007-03-12

Certification Body “climate and energy”
TÜV SÜD Industrie Service GmbH

Munich, 2007-03-12

Assessment Team Leader

Annex 1: Validation Protocol

Industrie Service

Table 1 Conformity of Project Activity and PDD

CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
A. General description of project activity					
A.1. Title of the project activity					
A.1.1.	Does the used project title clearly enable to identify the unique CDM activity?	1,2	Yes, the title is clear and unique.	☑	☑
A.1.2.	Are there any indication concerning the revision number and the date of the revision?	1,2	No, a version number and date are not given in section A.1. of the PDD. **Corrective Action Request No.1.** Please provide the version number and date of the PDD in section A.1. of the PDD.	CAR	☑
A.1.3.	Is this consistent with the time line of the project's history?	1,2	Yes, this was verified on-site.	☑	☑
A.2. Description of the project activity					
A.2.1.	Is the description delivering a transparent overview of the project activities?	1,2	The description of the project activity clearly indicates that this project involves the grouping of 704 wind turbines with a combined installed capacity of 468 MW in the Indian state of Tamil Nadu. The PDD includes detailed information on make, location, high tension service connection number and installed capacity of the individual wind turbine generators. The individual wind mill sub project owners, who operate spinning mills, are members of the Tamil Nadu Spinning Mills Association (TASMA). **Clarification Request No. 1.** In order to clarify who is decisive for the investment decision, please describe exactly the role of TASMA and the difference TASMA makes for its members versus a direct involvement in CDM.	CR	☑

Table 1 is applicable to ACM0002, version 06 with ex-ante determination of CM
* For a list of references, please see the Information Reference List in Annex 2

CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
A.2.2.	What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1,2	While on-site the audit team verified the following documents which indicate that the project description is in compliance with the actual situation: • land acquisition documents However, further documents were necessary to determine whether the project was in line with relevant legislation and to verify the project description. **Clarification Request No. 2.** Please provide the power purchase agreements with TNEB available for all involved WTGs. **Clarification Request No. 3.** Please provide evidence of permissions and licenses for the erection and operation of the WTGs.	CR	☑
A.2.3.	Is the information provided by these proofs consistent with the information provided by the PDD?	1,2	Yes, the information is consistent with the PDD.	☑	☑
A.2.4.	Is all information presented consistent with details provided by further chapters of the PDD?	1,2	Yes.	☑	☑
A.3. Project participants					
A.3.1.	Is the form required for the indication of project participants correctly applied?	1,2	No. **Corrective Action Request No.2.** Provide information on all project participants as per the tabular format prescribed by the CDM-PDD guidelines. Project participants listed in A.3. should also be listed in Annex 1.	CAR	☑

Table 1 is applicable to ACM0002, version 06 with ex-ante determination of CM
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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
A.3.2.	Is the participation of the listed entities or Parties confirmed by each one of them?	1,2	No. **Observation** A Letter of Approval from the DNA of both involved Parties (India and Sweden) needs to be submitted to the audit team.	O	☑
A.3.3.	Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1,2	No. See A.3.1.	CAR	☑
A.4. Technical description of the project activity					
A.4.1.	*Location of the project activity*				
A.4.1.1.	Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1,2	Yes, the PDD gives information on the village where each individual WTG is located as well as the high tension service connection (HTSC) number to the Tamil Nadu Electricity Board (TNEB) grid.	☑	☑
A.4.1.2.	How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?	1,2	Land acquisition documents for the wind mills have been verified on-site. Furthermore, loan sanction letters from Indian banks have also been submitted to the audit team.	☑	☑
A.4.2.	*Category(ies) of project activity*				
A.4.2.1.	To which category(ies) does the project activity belonging to? Is the category correctly identified and indicated?	1,2	The PDD correctly identifies the project as belonging to the category 1: energy industries.	☑	☑
A.4.3.	*Technology to be employed by the project activity*				
A.4.3.1.	Does the technical design of the project activity reflect current good practices?	1,2	The project bundles wind mills with a range of capacity from 225 kW to 1650 kW. Current good practice in India for WTG connected to the power grid seems to be above 750 kW. **Clarification Request No. 4.**	CR	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
			Please discuss the choice of technology against this background in which wind mills above 750 kW seem to be the current good practice in India. Furthermore clarification concerning the inconsistency on the capacity details of WTG on page 11, line 6: 3 WTG of 20 kW providing 0.96 MW needs to be provided.		
A.4.3.2.	Does the description of the technology to be applied provide sufficient and transparent input/ information to evaluate its impact on the greenhouse gas balance?	1,2	Yes, the wind power generated in the project activity avoids greenhouse gas emissions by displacing electricity from the Southern grid which includes fossil-fuel fired power plants.	☑	☑
A.4.3.3.	Does the implementation of the project activity require any technology transfer from annex-I-countries to the host country(ies)?	1,2	The project foresees the implementation of WTGs from reputed international suppliers. The skills necessary for operation and maintenance of the wind mills are available within India.	☑	☑
A.4.3.4.	Is the technology implemented by the project activity environmentally safe?	1,2	Yes, the project is deemed to be environmentally safe. See also section D.	☑	☑
A.4.3.5.	Is the information provided in compliance with actual situation or planning?	1,2	Yes. However, it needs to be demonstrated that the technology has not been transferred from another site. **Clarification Request No. 5.** Please provide evidence that new equipments have been installed and no transfer from other sites has taken place.	CR	☑
A.4.3.6.	Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2	Yes, the WTGs are all of reputes makes such as Suzlon, Enercon, Siemens and Vestas.	☑	☑
A.4.3.7.	Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2	It is unlikely that the project technology will be substituted by other technologies during the crediting period (2003-2012).	☑	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
A.4.3.8.	Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	1,2	No extensive initial training is required. The project has been running since 2002 and the project's technology is well-established. Nevertheless, the maintenance efforts need clarification. **Clarification Request No. 6.** Please clarify the expected maintenance efforts in order to achieve the presumed load factor. Respective provisions for meeting maintenance needs along with relevant service contracts should be submitted to the audit team.	CR	☑
A.4.3.9.	Is information available on the demand and requirements for training and maintenance?	1,2	See A.4.3.8.	CR	☑
A.4.3.10.	Is a schedule available for the implementation of the project and are there any risks for delays?	1,2	Yes. As this is a retroactive project, there are no risks for delays since all wind mills have already been commissioned.	☑	☑
A.4.4.	*Estimated amount of emission reductions over the chosen crediting period*				
A.4.4.1.	Is the form required for the indication of projected emission reductions correctly applied?	1,2	No. Please see the Observation in Table 2 requesting the project proponent to revise the PDD format along with the tables.	O	☑
A.4.4.2.	Are the figures provided consistent with other data presented in the PDD?	1,2	Yes, the figures are consistent within the PDD and with the excel sheets provided to the audit team detailing all calculations.	☑	☑
A.4.5.	*Public funding of the project activity*				
A.4.5.1.	Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1,2	The funding for the project activity comes from individual subproject owners and the commercial loans available to them. There has been no diversion of Official Development Assistance for this project.	☑	☑
A.4.5.2.	Is all information provided consistent with the details given in remaining chapters of	1,2	Yes, the information is the same as in Annex 2.	☑	☑

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CHECKLIST TOPIC / QUESTION	Ref*	COMMENTS	PDD in GSP	Final PDD
the PDD (in particular annex 2)?				
B. Application of a baseline and monitoring methodology				
B.1. Title and reference of the approved baseline and monitoring methodology				
B.1.1. Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	1,2	Yes, the version number and title of the baseline and monitoring methodology are clearly indicated in section B.1.	☑	☑
B.1.2. Is the applied version the most recent one and / or is this version still applicable?	1,2	The project activity uses the "Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources", ACM0002, version 06. This is currently the most recent version.	☑	☑
B.2. Justification of the choice of the methodology and why it is applicable to the project activity				
B.2.1. Is the applied methodology considered the most appropriate one?	1,2	Yes, the applied methodology is considered to be the most appropriate one as the project activity involves the electricity generation from wind sources.	☑	☑
Fill in the required amount of sub checklists for applicability criteria as given by the methodology applied and comment at least every line answered with "No"				
B.2.2. Criterion 1: Type of capacity addition by renewable energy	1,2	Applicability checklist / Yes / No Criterion discussed in the PDD? Yes Compliance provable? Yes Evidences provided in the PDD? Yes Compliance verified? Yes	☑	☑
B.2.3. Criterion 2: Exclusion of fuel switching activities	1,2	Applicability checklist / Yes / No	☑	☑

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CHECKLIST TOPIC / QUESTION	Ref*	COMMENTS	PDD in GSP	Final PDD
		Criterion discussed in the PDD? Yes Compliance provable? Yes Evidences provided in the PDD? Yes Compliance verified? Yes		
B.2.4. Criterion 3: Defined electricity grid boundaries	1,2	Applicability checklist / Yes / No Criterion discussed in the PDD? Yes Compliance provable? No Evidences provided in the PDD? No Compliance verified? No **Clarification Request No. 7.** The PDD defines the electricity system as the TNEB grid. However, as per the applied methodology, in large countries with layered dispatch systems such as in India, a state grid definition may be too narrow. Please justify the choice of grid boundary.	CR	☑
B.2.5. Criterion 4: Approved inclusion in other methodologies (if applied only)	1,2	Not applicable.	☑	☑
B.3. Description of the sources and gases included in the project boundary				
Integrate the required amount of sub-checklists for sources and gases as given by the methodology applied and comment on at least every line answered with "No"				
B.3.1. Source: Fugitive Emissions from non-condensable gases (geothermal activities only) Gas(es): CO_2, CH_4	1,2	Not applicable.	☑	☑

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CHECKLIST TOPIC / QUESTION	Ref*	COMMENTS	PDD in GSP	Final PDD
Type: Project Emissions				
B.3.2. Source: Emissions from combustion of fossil fuels (geothermal activities only) Gas(es): CO_2 Type: Project Emissions	1,2	Not applicable.	☑	☑
B.3.3. Source: Emissions from the reservoir (new hydroelectric activities only) Gas(es): CO_2, CH_4 Type: Project Emissions	1,2	Not applicable.	☑	☑
B.3.4. Source: Emissions from electricity generation in fossil fuel fired power plants of the project electricity system Gas(es): CO_2 Type: Baseline Emissions	1,2	Boundary checklist / Yes / No Source and gas(es) discussed by the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes	☑	☑
B.3.5. Source: Emissions from electricity generation in fossil fuel fired power plants of any connected electricity system Gas(es): CO_2 Type: Baseline Emissions	1,2	Boundary checklist / Yes / No Source and gas(es) discussed by the PDD? No Inclusion / exclusion justified? No Explanation / Justification sufficient? No Consistency with monitoring plan? No Imports have not been taken into account. See section B.6.2.12.	CR	☑
B.3.6. Source: Emissions from electricity generation in	1,2	Boundary checklist / Yes / No Source and gas(es) discussed by the PDD? No	CR	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
	electricity Gas(es): CO_2 Type: Baseline Emissions		Inclusion / exclusion justified? No Explanation / Justification sufficient? No Consistency with monitoring plan? No Imports have not been taken into account. See section B.6.2.12.		
B.3.7.	Do the spatial and technological boundaries as verified on-site comply with the discussion provided by the PDD?	1,2	Partly, see B.2.4.	CR	☑
B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario					
B.4.1.	Is it clearly described that the baseline is represented by the combined margin of the grid the activity will be connected to?	1,2	Yes. The project activity takes place in Tamil Nadu, which is part of the Southern grid. In the absence of the project activity, the spinning mill owners would have continued drawing power from the Southern grid.	☑	☑
B.4.2.	In case of any modification or retrofit of existing facilities: Is data available to determine the historic production level?	1,2	Not applicable.	☑	☑
B.4.3.	In case of any modification or retrofit of existing facilities: Have conservative assumptions been applied in order to estimate the point in time when the existing equipment needs to be replaced?	1,2	Not applicable.	☑	☑
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):					
B.5.1.	In case of applying step 0 of the addition-	1,2	Although the starting date and operational lifetime are clearly de-	CR	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
	ality tool: Is evidence provided, that the project's starting date is after Jan 01, 2000 and before Nov 18, 2004?		fined, some documents are missing to demonstrate the starting date for all projects. **Clarification Request No. 8.** Please provide substantial documentation for each subproject activity demonstrating that they were implemented after the starting date of the project activity.		
B.5.2.	In case of applying step 0 of the additionality tool: Is evidence provided, that CDM has been considered seriously in the decision to proceed with the project activity?	1,2	The PDD does not clearly describe how and when the decision to proceed with the project activity took place. Furthermore, documentary evidence is missing. **Corrective Action Request No.3.** Please revise the PDD to clearly describe how and when the decision to proceed with the project activity took place.	CAR	☑
B.5.3.	Have realistic and credible alternatives been identified providing comparable outputs or services? (step 1a)	1,2	Yes. The most realistic alternative is to continue drawing power from the electricity grid.	☑	☑
B.5.4.	Is the project activity without CDM included in these alternatives? (step 1a)	1,2	Yes.	☑	☑
B.5.5.	Is a discussion provided for all identified alternatives concerning the compliance with applicable laws and regulations? (step 1b)	1,2	Yes, all alternatives are in compliance with applicable laws and regulations.	☑	☑
B.5.6.	In case the PDD argues that specific laws are not enforced in the country or region: Is evidence available concerning that statement? (step 1b)	1,2	Not applicable.	☑	☑
B.5.7.	In case of applying step 2 / investment analysis of the additionality tool: Is the	1,2	**Corrective Action Request No.4.** In general, the investment analysis needs to be made much more	CAR	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
	analysis method identified appropriately (step 2a)?		transparent – both in the submitted excel files and in the PDD. All assumptions must be explained and the exact sources must be listed.		
B.5.8.	In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than CDM income?	1,2	Not applicable.	☑	☑
B.5.9.	In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1,2	Not applicable.	☑	☑
B.5.10.	In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1,2	Option III – benchmark analysis – is chosen and the financial indicator that is identified is the IRR. In the absence of a project IRR benchmark, the benchmark which has been selected is the Return on Equity before tax of 16%, which is suggested by the Central Electricity Authority and further confirmed by the Tamil Nadu Electricity Commission Order No.3 dated 15.05.2006. For this project activity, the project IRR has been calculated for each windmill based on PBITDA (Profit before interest, tax, depreciation and amortization). This is deemed appropriate.	☑	☑
B.5.11.	In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?	1,2	Yes, the IRR calculation is made for the following alternative: project activity not undertaken as a CDM activity.	☑	☑
B.5.12.	In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for the utilized data?	1,2	No. Please see B.5.7.	CAR	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
B.5.13.	In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?	1,2	The barrier analysis is weak and is not supported with documents. **Corrective Action Request No.5.** The barriers described are general and not substantiated by underlying documents. Neither the technological nor the barrier due to prevailing practice is supported by developments in the wind power sector in South India over the last 5 years. DOEs are requested to ask project proponents to either provide substantial documentary evidence for each barrier or to remove barriers that are not significant.	CAR	☑
B.5.14.	In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?	1,2	No. Please see B.5.13.	CAR	☑
B.5.15.	In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers?	1,2	No. Please see B.5.13.	CAR	☑
B.5.16.	Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD (step 4a)?	1,2	**Corrective Action Request No.6.** The common practice analysis in the PDD (Step 4 of the Additionality Tool) is too general and does not explain how 2040 MW of installed capacity from wind sources in the state of Tamil Nadu have been implemented. Please demonstrate why the existence of these wind mills does not contract the claim that the proposed sub-project activities are subject to barriers, and not simply business as usual.	CAR	☑
B.5.17.	If similar activities are occurring: Is it demonstrated that in spite of these simi-	1,2	No. Please see B.5.16.	CAR	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
	larities the project activity would not be implemented without the CDM component (step 4b)?				
B.5.18.	Is it appropriately explained how the approval of the project activity will help to overcome the economic and financial hurdles or other identified barriers (step 5)?	1,2	**Clarification Request No. 9.** The PDD does not clearly explain how the registration of the project as a CDM activity will help alleviate economic and financial hurdles or other identified barriers.	CR	☑
B.6. Emissions reductions					
B.6.1. Explanation of methodological choices					
B.6.1.1.	Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1,2	The application of the methodology is mainly clear. However, some calculations seem to be incorrect and sometimes there is need for more transparency in the selection of choices. See B.6.1.2 and B.6.1.4.	CR/ CAR	☑
B.6.1.2.	Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?	1,2	No. The selection of options is not clear. **Corrective Action Request No.7.** Please revise the PDD so that each step of the ACM0002 version 06 and the Additionality Tool becomes clear. Every option selected should be explained and correctly justified.	CAR	☑
B.6.1.3.	Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2	Since the project activity is generation of electricity from wind sources, no project emissions are expected. However, the potential emissions from back-up diesel gensets should be discussed. **Clarification Request No. 10.** Please discuss the use of diesel gensets as a back-up and whether these will lead to project emissions.	CR	☑
B.6.1.4.	Are the formulae required for the determination of baseline emissions correctly pre-	1,2	No. The calculation of baseline emission factor is not exactly according to ACM0002. See Section B.6.2. for the relevant clarifica-	CR/ CAR	☑

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	CHECKLIST TOPIC / QUESTION	Ref*	COMMENTS	PDD in GSP	Final PDD
	sented, enabling a complete identification of parameter to be used and / or monitored?		tion and corrective action requests.		
B.6.1.5.	Is the choice of options to determine the emissions factor (OM, BM) justified in a suitable and transparent manner?	1,2	No. See B.6.1.2.	CAR	☑
B.6.1.6.	In case of alternative weighing factors for the Combined Margin: Is the quantification of the alternative weighing factor justified in a suitable and transparent manner?	1,2	The ACM0002 version 06 states that for "wind and solar projects, the default weights are as follows: w_{OM}=0.75 and w_{BM}=0.25 (owing to their intermittent and non-dispatchable nature)". Thus, the same has been selected in the project activity and this is deemed acceptable.	☑	☑
B.6.1.7.	In case of alternative weighing factors for the Combined Margin: Is the guidance for the PDD concerning the acceptability of alternative weights considered in the discussion?	1,2	Not applicable as weights have been defined for wind projects in ACM0002 version 06. See B.6.1.6.	☑	☑
B.6.1.8.	Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2	As per the applied methodology, leakage is considered negligible for this project activity.	☑	☑
B.6.1.9.	Are formulae required for the determination of emission reductions correctly presented?	1,2	Yes. The emission reductions are calculated according to the formula prescribed by ACM0002 version 06: ER = BE – PE – L Since PE and L are zero, ER = BE, and BE is calculated as the estimated net electricity generation times the calculated baseline emission factor for the Southern grid.	☑	☑
B.6.2.	*Data and parameters that are available at validation*				

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CHECKLIST TOPIC / QUESTION	Ref*	COMMENTS	PDD in GSP	Final PDD
B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?	1,2	The Monitoring Plan seems to include more parameters than necessary. Firstly, the Monitoring Plan also includes parameters necessary to re-calculate OM and BM (ex-post). See B.6.2.2. Secondly, an environmental management program and an environmental operational control/monitoring plan are also provided. The reason for including certain parameters is not clear. **Clarification Request No. 11.** The reason for including air quality and soil tests in the monitoring plan for the operation of WTG should be explained.	CR	☑
B.6.2.2. Is the choice of ex-ante or ex-post vintage of OM and BM factors clearly specified in the PDD?	1,2	**Clarification Request No. 12.** The monitoring plan seems to be based on an ex-post definition of baseline emission factor while B2 of the PDD states ex-ante calculations. Please clarify this discrepancy.	CR	☑
Fill in the required amount of sub checklists for monitoring parameter and comment any line answered with "No"				
B.6.2.3. Parameter Title: Annual electricity supplied to the grid prior to retrofit (applicable only for retrofit and modification activities)	1,2	Not applicable.	☑	☑
B.6.2.4. Parameter Title: Emission factor of the grid (CM)	1,2	Data Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? No Correct value provided? No Has this value been verified? No	CAR	☑

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CHECKLIST TOPIC / QUESTION	Ref*	COMMENTS	PDD in GSP	Final PDD
		Choice of data correctly justified? — No Measurement method correctly described? — No **Corrective Action Request No.8.** The data used are not clearly referenced. Please provide clear, retraceable references for all values and assumptions taken in the calculation of OM and BM. When using default values instead of country-specific values, please discuss and justify the choice.		
B.6.2.5. Parameter Title: Operating margin (OM) emission factor of the grid	1,2	Data Checklist — Yes / No Title in line with methodology? — Yes Data unit correctly expressed? — Yes Appropriate description? — No Source clearly referenced? — No Correct value provided? — No Has this value been verified? — No Choice of data correctly justified? — No Measurement method correctly described? — No **Corrective Action Request No.9.** The PDD mentions that OM has been calculated based on an average of 5 most recent years. This is incorrect.	CAR	☑
B.6.2.6. Parameter Title: Build margin (BM) emission factor of the grid	1,2	Data Checklist — Yes / No Title in line with methodology? — Yes Data unit correctly expressed? — Yes Appropriate description of parameter? — No Source clearly referenced? — No Correct value provided? — No	CAR	☑

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		Has this value been verified? No Choice of data correctly justified? No Measurement method correctly described? No **Corrective Action Request No.10.** The PDD mentions that "BM has been calculated based on the historic capacity addition in the recent 5 years, taking into consid-eration of the actual emission of the sample plants." This is not as per ACM0002. Please correct.		
B.6.2.7. Parameter Title: fuel consumption of each power source	1,2	Data Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? No Correct value provided? No Has this value been verified? No Choice of data correctly justified? No Measurement method correctly described? No Data is not clearly referenced, hence it is not possible to verify the figures. See B.6.2.4.	CAR	☑
B.6.2.8. Parameter Title: emission coefficient of each fuel	1,2	Data Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? No Correct value provided? No	CAR	☑

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CHECKLIST TOPIC / QUESTION	Ref*	COMMENTS	PDD in GSP	Final PDD
		Has this value been verified? No Choice of data correctly justified? No Measurement method correctly described? No Data is not clearly referenced, hence it is not possible to verify the figures. See B.6.2.4.		
B.6.2.9. Parameter Title: electricity generation of each power source	1,2	Data Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? No Correct value provided? No Has this value been verified? No Choice of data correctly justified? No Measurement method correctly described? No Data is not clearly referenced, hence it is not possible to verify the figures. See B.6.2.4.	CAR	☑
B.6.2.10. Parameter Title: surface area of full reservoir level (for new hydroelectric activities only)	1,2	Not applicable.	☑	☑
B.6.2.11. Parameter Title: fraction of time with low costs /must run plant at the margin (for simple adjusted OM only)	1,2	Not applicable.	☑	☑
B.6.2.12. Parameter Title:	1,2		CR	☑

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CHECKLIST TOPIC / QUESTION	Ref*	COMMENTS	PDD in GSP	Final PDD
electricity imports		Data Checklist / Yes / No Title in line with methodology? No Data unit correctly expressed? No Appropriate description of parameter? No Source clearly referenced? No Correct value provided? No Has this value been verified? No Choice of data correctly justified? No Measurement method correctly described? No **Clarification Request No. 13.** Electricity imports should be considered in the determination of OM as per ACM0002 Version 06. Furthermore, electricity exports should not be subtracted from electricity generation data used for calculating the OM.		
B.6.2.13. Parameter Title: CO_2 emission coefficient of fuels used in connected grids	1,2	See B.6.2.12.	CR	☑
B.6.3. Ex-ante calculation of emission reductions				
B.6.3.1. Is the projection based on the same procedures as used for future monitoring?	1,2	Yes. The projection is based on multiplying the estimated net electricity generation by the calculated baseline emission factor.	☑	☑
B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?	1,2	No. See section B.6.2. for clarification requests regarding calculation of baseline emission factor and see section B.7.1.2 for clarification requests regarding estimation of net electricity generated from the project activity.	CR/ CAR	☑
B.6.3.3. Is the data provided in this section consistent with data as presented in other	1,2	Yes.	☑	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
	chapters of the PDD?				
B.6.4.	*Summary of the ex-ante estimation of emission reductions*				
B.6.4.1.	Will the project result in fewer GHG emissions than the baseline scenario?	1,2	Yes. The project foresees the installation of wind mills that will generate electricity from renewable sources and thereby displace electricity from the Southern grid, which includes fossil-fuel fired power plants.	☑	☑
B.6.4.2.	Is the form/table required for the indication of projected emission reductions correctly applied?	1,2	No. Please see the Observation in Table 2 requesting the project proponent to revise the PDD format along with the tables.	O	☑
B.6.4.3.	Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1,2	Yes. Since it is a retroactive project, the time schedule is in line with the indicated crediting period.	☑	☑
B.6.4.4.	Is the data provided in this section in consistency with data as presented in other chapters of the PDD?	1,2	Yes.	☑	☑
B.7.	**Application of the monitoring methodology and description of the monitoring plan**				
B.7.1.	*Data and parameters monitored*				
B.7.1.1.	Is the list of parameters presented by chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology?	1,2	The monitoring plan seems to include more parameters than necessary. Since the PDD was originally prepared in the old CDM-PDD (version 02) format and the entire monitoring plan was grouped together, please see section B.6.2 for the relevant CARs/CRs.	CR/ CAR	☑
Integrate the required amount of sub-checklists for monitoring parameter and comment on any line answered with "No"					
B.7.1.2.	Parameter Title: Electricity supplied to the grid	1,2	Monitoring Checklist / Yes / No Title in line with methodology? / Yes	CR	☑

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CHECKLIST TOPIC / QUESTION	Ref*	COMMENTS	PDD in GSP	Final PDD
		Data unit correctly expressed? — Yes Appropriate description of parameter? — No Source clearly referenced? — No Correct value provided for estimation? — No Has this value been verified? — No Measurement method correctly described? — No Correct reference to standards? — No Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No **Clarification Request No. 14.** The calculation of emission reductions is based on the electricity supplied to the grid by the project activity. Since this is a retroactive project and the wind mills have already been commissioned, please provide documentary evidence on the annual energy generated and whether the estimated load factor of 25% is justified. **Clarification Request No. 15.** The monitoring plan should discuss recording frequency of the electrical energy generated. In addition, the accuracy level of the energy meter and its calibration should be discussed. **Clarification Request No. 16.** The monitoring plan mentions the “electricity supplied to grid”. Please clarify whether this is net electricity.		
B.7.1.3. Parameter Title: Quantity of steam produced (for geothermal projects only)	1,2	Not applicable.	☑	☑

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CHECKLIST TOPIC / QUESTION	Ref*	COMMENTS	PDD in GSP	Final PDD
B.7.1.4. Parameter Title: Fraction of CO_2 in steam produced (for geothermal projects only)	1,2	Not applicable.	☑	☑
B.7.1.5. Parameter Title: Fraction of CH_4 in steam produced (for geothermal projects only)	1,2	Not applicable.	☑	☑
B.7.1.6. Parameter Title: Quantity of steam generated during well testing (for geothermal projects only)	1,2	Not applicable.	☑	☑
B.7.1.7. Parameter Title: Fraction of CO_2 in steam during well testing (for geothermal projects only)	1,2	Not applicable.	☑	☑
B.7.1.8. Parameter Title: Fraction of CH_4 in steam during well testing (for geothermal projects only)	1,2	Not applicable.	☑	☑
B.7.1.9. Parameter Title: CO_2 emission coefficient of fuel used by the geothermal plant (for geothermal projects only)	1,2	Not applicable.	☑	☑
B.7.2. Description of the monitoring plan				
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisoned situation?	1,2	Partly. **Corrective Action Request No.11.** Due to the complex structure of the project with its numerous sub-units, a strong management with clearly defined roles and responsibilities is required. Please submit detailed procedures outlining the same.	CAR	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
B.7.2.2.	Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1,2	**Corrective Action Request No.12.** No procedures for internal audits of GHG project compliance have been defined. Respective procedures covering internal audits, performance reviews and corrective actions should be defined and submitted to the audit team.	CAR	☑
B.7.2.3.	Does the monitoring plan provide current good monitoring practice?	1,2	Partly. See B.7.2.1. and B.7.2.2.	CAR	☑
B.7.2.4.	If applicable: Does annex 4 provide useful information enabling a better understanding of the envisoned monitoring provisions?	1,2	Yes, it provides additional information on the procedure for measuring and recording the energy generated by the project activity.	☑	☑
B.8. Date of completion of the application of the baseline study and monitoring methodology an the name of the responsible person(s)/entity(ies)					
B.8.1.	Is there any indication of a date when the baseline was determined?	1,2	Yes, a date is provided in the PDD.	☑	☑
B.8.2.	Is this consistent with the time line of the PDD history?	1,2	Yes, it is consistent with the time line of the PDD history.	☑	☑
B.8.3.	Is the information on the person(s) / entity(ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1,2	Yes.	☑	☑
B.8.4.	Is information provided whether this person / entity is also considered a project participant?	1,2	No. **Corrective Action Request No.13.** Please indicate in Section B.8. if the entity mentioned is also a project participant.	CAR	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
C. Duration of the project activity / crediting period					
C.1. Duration of the project activity					
C.1.1.	Are the project's starting date and operational lifetime clearly defined and reasonable?	1,2	No. It is not clear from the PDD when all of the sub-projects started. Please see B.5.1. and B.5.2.	CR/ CAR	☑
C.2. Choice of the crediting period and related information					
C.2.1.	Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1,2	A fixed crediting period of 10 years starting on 01/01/2003 has been chosen. **Corrective Action Request No.14.** Please state the start of the crediting period in the format DD/MM/YYYY as per the CDM-PDD guidelines.	CAR	☑
D. Environmental impacts					
D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts					
D.1.1.	Has the analysis of the environmental impacts of the project activity been sufficiently described?	1,2	**Clarification Request No. 17.** An environmental impact study has been performed, but the same is not transparent in the PDD. A more detailed analysis should be provided.	CR	☑
D.1.2.	Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	1,2	There are no Indian requirements for an EIA for this project activity.	☑	☑
D.1.3.	Will the project create any adverse envi-	1,2	The project is not expected to create any significant adverse envi-	☑	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
	ronmental effects?		ronmental effects. To ensure that the project stays below the relevant standards for noise pollution, the monitoring plan in section D.2. (of the revised PDD) includes the yearly monitoring of noise levels at every WTG location.		
D.1.4.	Were transboundary environmental impacts identified in the analysis?	1,2	No transboundary environmental impacts were identified for this project.	☑	☑
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**				
D.2.1.	Have the identified environmental impacts been addressed in the project design sufficiently?	1,2	An environmental management program has been prepared for this project but the details are not transparent in the PDD. See also D.1.1.	CR	☑
D.2.2.	Does the project comply with environmental legislation in the host country?	1,2	Yes, the project complies with environmental legislation in India.	☑	☑
E. Stakeholders' comments					
E.1.	**Brief description how comments by local stakeholders have been invited and compiled**				
E.1.1.	Have relevant stakeholders been consulted?	1,2	The local people living in the surroundings of the WTGs have been addressed via a questionnaire. **Clarification Request No. 18.** Please provide further information on the questionnaire survey, such as the methodology used for the selection of participants, background of the participants (e.g. involvement of local Gram Panchayat), number of questionnaires submitted and received, for which plants survey has been performed, etc.	CR	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
			Please provide also a detailed list of the critical comments received for each question with the corresponding corrective actions to be undertaken.		
E.1.2.	Have appropriate media been used to invite comments by local stakeholders?	1,2	See E.1.1.	CR	☑
E.1.3.	If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1,2	A stakeholder consultation process is not required by the host country for this project activity.	☑	☑
E.1.4.	Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1,2	See E.1.1.	CR	☑
E.2. Summary of the comments received					
E.2.1.	Is a summary of the stakeholder comments received provided?	1,2	The summary is provided in the form of a score table, however, more details must be provided. See E.1.1.	CR	☑
E.3. Report on how due account was taken of any comments received					
E.3.1.	Has due account been taken of any stakeholder comments received?	1,2	Yes. The PDD lists the comments that were deemed to be the most significant and proposes corrective actions and an implementation plan to mitigate the effects. These are to be checked during verification.	☑	☑
F. Annexes 1 - 4					
Annex 1: Contact Information					
F.1.1.	Is the information provided consistent with the one given under section A.3?	1,2	No, see A.3.1.	CAR	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
F.1.2.	Is the information on all private participants and directly involved Parties presented?	1,2	No, see A.3.1.	CAR	☑
Annex 2: Information regarding public funding					
F.1.3.	Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	1,2	Yes.	☑	☑
F.1.4.	If necessary: Is an affirmation available that any such funding from Annex-I-countries does not result in a diversion of ODA?	1,2	Not applicable.	☑	☑
Annex 3: Baseline information					
F.1.5.	If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1,2	It is consistent, but partly incorrect. Please see CARs/CRs related to baseline emission factor calculation in section B.6.	CR/ CAR	☑
F.1.6.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1,2	See B.6.	CR/ CAR	☑
F.1.7.	Does the additional information substantiate / support statements given in other sections of the PDD?	1,2	See B.6.	CR/ CAR	☑
Annex 5: Monitoring information					
F.1.8.	If additional background information on monitoring is provided: Is this information	1,2	Yes.	☑	☑

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CHECKLIST TOPIC / QUESTION		Ref*	COMMENTS	PDD in GSP	Final PDD
	consistent with data presented in other sections of the PDD?				
F.1.9.	Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1,2	**Clarification Request No. 19.** Annex 4 of the PDD states that daily energy meter reading for all WTGs will be taken by the maintenance staff, and will be recorded in the generation log. Please clarify in the PDD, whether this daily reading would be based on “Main” or “Check” meter. Also clarify in the PDD, whether the emission reduction calculation would be based on this daily reading or the monthly joint meter reading.	CR	☑
F.1.10.	Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1,2	Yes.	☑	☑

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Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by validation team	Ref to checklist question in Table 1	Summary of project owner response	Validation team conclusion
Observation: A Letter of Approval from the DNA of both involved Parties (India and Sweden) needs to be submitted to the audit team.	general	A Letter of Approval from both involved Parties has been submitted.	☑
Observation: A letter on the Modalities of Communication needs to be submitted to the audit team.	general	A letter on the Modalities of Communication has been submitted.	☑
Observation: Please revise the PDD as per the newest version of the CDM-PDD format. Also revise all tables to comply with the CDM-PDD guidelines.	general	The PDD and all tables have been revised as per the newest version of the CDM-PDD guidelines.	☑
Observation: Use only SI units in the PDD. For example, section E.6 of the PDD says “Generation-MU”. MU is not an appropriate unit for electrical energy. Also use international system of counting. Section B.3 of the PDD mentions “Rs. In Lakhs-Actual”. Lakh is not used in international system of counting.	general	PDD has been corrected.	☑
Corrective Action Request No.1. Please provide the version number and date	A.1.2.	PDD has been corrected.	☑

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of the PDD in section A.1. of the PDD.			
Corrective Action Request No.2. Provide information on all project participants as per the tabular format prescribed by the CDM-PDD guidelines. Project participants listed in A.3. should also be listed in Annex 1.	A.3.1.	PDD has been corrected. The names of all project participants are given and these are also listed in Annex 1.	☑
Corrective Action Request No.3. Please revise the PDD to clearly describe how and when the decision to proceed with the project activity took place.	B.5.2.	TASMA began discussing the potential benefits from carbon credits in 2000. The first official activity which was recorded is the CDM seminar that was held on 03.11.2001. The record of the meeting as well as signatures of the participants have been submitted. A second CDM meeting took place on 07.02.2002 – this was the Extraordinary General Meeting of the Association – in which the General Rules Circular for the CDM project activity were formulated. The Minutes of this Meeting, the signatures of the participants as well as the General Rules Circular have been submitted. The PDD has been revised.	Response by audit team: The starting date of the project activity seems to be the decision taken at the second CDM meeting, which was the "Extraordinary General Meeting of the Association" on 07.02.2002, since this is when the decision to go ahead with the CDM activity was officially made. The General Rules Circular resulted from this meeting and not from the first CDM meeting held on 03.11.2001. Thus, the starting date of the project activity should be changed to 07.02.2002 at the earliest, when the decision to go ahead with the project activity was officially formulated. Response by project proponent: Although the members of the Association started considering CDM already in 2000, the starting date has been changed to 15.02.2002, by which time the General Rules Circular on the CDM project activity had been circulated to all TASMA members. Final response by audit team:

			☑ The revised starting date is deemed acceptable. All relevant documents are uploaded together with the validation report.
Corrective Action Request No.4. In general, the investment analysis needs to be made much more transparent – both in the submitted excel files and in the PDD. All assumptions must be explained and the exact sources must be listed.	B.5.7.	A revised IRR calculation has been submitted to the audit team and the relevant sections have been revised in the PDD. The IRR has been calculated for each subproject in the bundle. A summary of IRR for all the projects has also been given. We have made the best efforts to maintain transparency and clarity in presenting the IRR calculations.	Response by audit team: The IRR calculations provided are not in line with the requirements of the Additionality Tool. The following issues need special attention: 1. As per the Additionality Tool, project IRR should be calculated and not equity IRR 2. Documentary evidence should be provided for the selected benchmark of 16% 3. It should be explained why the IRR calculations are made for 10 years instead of the lifetime of 20 years 4. Justification for using 2 % variation in the sensitivity analysis is to be provided since it is less than what is considered in normal practice 5. Variation in O&M costs in the IRR calculations is not as per the TNERC order No3 dated 15/05/2006 6. Evidence of cost of power sale (Rs. 3.68/kWh) and generation tax has not been provided Response by project proponent: 1. Project IRR has been used, and it has been based on profit before tax (PBT). 2. Several documents are available to

			support the selected benchmark of 16% for return on equity. The Central Electricity Regulatory Commission (CERC) Notification dated 26.03.2001 as well as the TNERC Order No.3 dated 15.05.2006 mention this benchmark. 3. The 10 year cash flow method to calculate IRR is suggested by bankers and is used by almost all registered wind projects from India. The 20 year cash flow method, however, is suggested by Tamil Nadu Electricity Regulatory Commission (TNREC). Therefore, and to be more conservative, we have opted to revise the calculations taking into account a 20 year cash flow. For depreciation, the TNERC guideline is to use a depreciation of 4.5%. This is an approved practice – called Straight line Method (SLM), which is based on a life of 20 years and a residual value of 10% (90/20=4.5). A document from the Company Act which supports such depreciation calculations is submitted to the audit team. 4. Sensitivity analysis is provided for a 4% variation in generation and a 5% variation in maintenance costs. This assumption is based on the expectation of variation in plant load factor of 1% based on wind speed patterns. This translates into a variation of less than 4% in generation.

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			5. The variation in maintenance costs has been done as per TNERC order. 6. Please see attachment "Current Consumption Charges" issued by Tamil Nadu Electricity Board. This mentions the cost of power and the rate of generation tax. Final response by audit team: ☑ Please also see the final summary in the Validation Report regarding IRR calculations.
Corrective Action Request No.5. The barriers described are general and not substantiated by underlying documents. Neither the technological nor the barrier due to prevailing practice is supported by developments in the wind power sector in South India over the last 5 years. DOEs are requested to ask project proponents to either provide substantial documentary evidence for each barrier or to remove barriers that are not significant.	B.5.13.	Step 3 (Barrier Analysis) has been removed from the PDD. The barrier due to prevailing practice has been revised in the PDD under Step 4 (Common Practice Analysis) to demonstrate this barrier more clearly. Instead, the Step 2 (Investment Analysis) has been demonstrated more clearly. See also response to CAR6.	☑ Since the Additionality Tool requires either the use of Step 2 or of Step 3, it is deemed acceptable to concentrate on the main barrier. In this project activity, Step 2 has been used to demonstrate additionality.
Corrective Action Request No.6. The common practice analysis in the PDD (Step 4 of the Additionality Tool) is too general and does not explain how 2040 MW of installed capacity from wind sources in the state of Tamil Nadu have been implemented.	B.5.16.	The common practice analysis has been revised in the PDD.	Response by audit team: The common practice analysis has been revised to present a much clearer picture of the situation. The total installed capacity of wind mills in Tamil Nadu as of 31.12.2004 was 1677.4 MW and as of 31.03.2005 was 2040

Please demonstrate why the existence of these wind mills does not contract the claim that the proposed sub-project activities are subject to barriers, and not simply business as usual.			MW. The PDD outlines a series of policy decisions that were made which changed the climate of wind turbine investment decisions during late 2001 and early 2002. As a result, the policy regime was more favorable for wind power investments up to 2001. Since the investment decisions for the projects in this bundle were made in the years 2002-2004, the wind mills commissioned during this time are analyzed. During the years 2002-03, 2003-04 and 2004-05, 819.9 MW of wind mill capacity was added in Tamil Nadu. The PDD demonstrates that 96.63% are projects seeking CDM revenues. Since the Additionality Tool requires that "other CDM project activities are not to be included in this analysis", it can be concluded that the project is not common practice. Furthermore, the project activity has been initiated and promoted on a larger scale by a spinning mills association, and no similar activity is known for the state of Tamil Nadu. In this sense, the project is a novel idea in which an association encourages its members to invest in renewable energy for their operations. This programmatic type of project activity greatly encourages the use of renewable sources in small and medium sized enterprises whose core business is not the production of energy. However, since some sub-project owners installed turbines before 2001 (not part of the project activity) and after 2001 (part of the project activity), IRR calculations should be sub-

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			mitted for both the scenarios to prove that the policy prior to 2001 was attractive for wind power investments and became unattractive after policy changes (such as tariff and wheeling charges). Further response by project proponent: A comparative IRR statement is provided to the audit team. The four factors that contributed to policy change making wind power less financially attractive after the year 2002 in the state of Tamil Nadu are: 1. increased land price 2. increased price of WTGs 3. introduction of generation tax and increased wheeling charges 4. evacuation infrastructure overcrowding resulting in lower deliveries These changes occurred during a span of 18 months. Final response by audit team: ☑ The IRR comparison for projects in 2001 and in 2003 has been submitted and clearly indicates that the investment climate for wind power projects prior to 2002 was more financially attractive and that after all policy changes, wind power became much less financially attractive.

Corrective Action Request No.7. Please revise the PDD so that each step of the ACM0002 version 06 and the Additionality Tool becomes clear. Every option selected should be explained and correctly justified.	B.6.1.2.	PDD has been revised accordingly.	☑ The PDD now clearly explains the steps taken and also every option selected is clearly explained and justified.
Corrective Action Request No.8. The data used are not clearly referenced. Please provide clear, retraceable references for all values and assumptions taken in the calculation of OM and BM. When using default values instead of country-specific values, please discuss and justify the choice.	B.6.2.4.	PDD has been revised and relevant references have been included. The calculation of OM and BM is now based on the published emission factors of the Central Electricity Authority (CEA), India.	☑ Clear references are provided for all values and assumptions taken.
Corrective Action Request No.9. The PDD mentions that OM has been calculated based on an average of 5 most recent years. This is incorrect.	B.6.2.5.	Calculation of OM is now based on the published emission factors of the CEA. The average of the latest 3 years (2002-03, 2003-04 and 2004-05) have been taken to estimate OM.	☑ OM has now been calculated using the latest published OM values (including imports) from the CEA database. These CEA calculations have been verified by the audit team and since they have been calculated according to ACM0002 version 06, they are deemed acceptable. The average of the latest three years' data has been taken to calculate OM.
Corrective Action Request No.10. The PDD mentions that "BM has been calculated based on the historic capacity addition in the recent 5 years, taking into consideration of the actual emission of the sample plants." This is not as per ACM0002. Please correct.	B.6.2.6.	Estimation of BM is now based on the published emission factors of the CEA. The BM calculated for the year 2004-05 has been used.	☑ BM is now based on the latest published values from the CEA database. This is deemed acceptable.
Corrective Action Request No.11. Due to the complex structure of the project with its numerous sub-units, a strong man-	B.7.2.1.	The basic management system for monitoring has been explained more clearly in the revised PDD in Annex 4. As per the	Response by audit team: Annex 4 now includes a more detailed monitoring plan which describes the procedures for

agement with clearly defined roles and responsibilities is required. Please submit detailed procedures outlining the same.		existing plan, the data is being collected and compiled in all the sites. A computer software is used to collect and compile the data.	collecting, reporting and consolidating the data from the individual sub-projects. In addition, power purchase agreements with the TNEB also define monitoring, calibration and invoicing procedures. However, since this is a retroactive project, please provide actual electricity data (as samples) for the months of February 2003, February 2004, February 2005 and February 2006 that has been collected by TASMA through the computer software from all the sub-projects. Similarly, please provide samples of monitored noise level data for the same months for all sub-projects. Further response by project proponent: The relevant sample data has been provided for electricity generation and for noise levels. Final response by audit team: ☑ Complete data for the requested months has been submitted. The exact verification of figures is part of the verification process.
Corrective Action Request No.12. No procedures for internal audits of GHG project compliance have been defined. Respective procedures covering internal audits, performance reviews and corrective actions should be defined and submitted to the audit	B.7.2.2.	An audit checklist has been developed including options for corrective actions. Furthermore, Annex 4 has been revised to include a more detailed monitoring plan. All generation figures will be double-checked with the invoices raised.	☑

team.			
Corrective Action Request No.13. Please indicate in Section B.8. if the entity mentioned is also a project participant.	B.8.4.	PDD has been corrected. The entity is not a project participant.	☑
Corrective Action Request No.14. Please state the start of the crediting period in the format DD/MM/YYYY as per the CDM-PDD guidelines.	C.2.1.	PDD has been corrected.	☑
Clarification Request No. 1. In order to clarify who is decisive for the investment decision, please describe exactly the role of TASMA and the difference TASMA makes for its members versus a direct involvement in CDM.	A.2.1.	This is a bundled project of similar activities and TASMA does play a major role which is more than simply co-ordinating. It encourages the industry to invest their profit from other business in wind mills and provides active support to the members in wind mill related issues.	☑
Clarification Request No. 2. Please provide the power purchase agreements with TNEB available for all involved WTGs.	A.2.2.	Power purchase agreements for all involved WTG have been submitted and verified by the audit team.	☑
Clarification Request No. 3. Please provide evidence of permissions and licenses for the erection and operation of the WTGs.	A.2.2.	No objection certificates issued by the TNEB as well as Commissioning certificates for all WTGs have been provided to the audit team.	☑ The audit team verified the no objection certificates and commissioning certificates for all WTGs during the on-site visit.
Clarification Request No. 4.	A.4.3.1.	The choice of the capacity of the individual WTGs was based on the following	☑ It is deemed appropriate that choice of capac-

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Please discuss the choice of technology against this background in which wind mills above 750 kW seem to be the current good practice in India. Furthermore clarification concerning the inconsistency on the capacity details of WTG on page 11, line 6: 3 WTG of 20 kW providing 0.96 MW needs to be provided.		factors: • the power requirements of the spinning mill owners (on average about 500 kW. Most spinning mill owners do not want to generate surplus power) • the availability and cost of WTGs • wind characteristics and location Furthermore, the lower unit sized were chosen by the individual spinning mills to match their residual power requirements after choosing higher unit sizes. The PDD has been revised accordingly.	ity for the WTGs should be based on the energy requirements of the individual spinning mills.
Clarification Request No. 5. Please provide evidence that new equipments have been installed and no transfer from other sites has taken place.	A.4.3.5.	Purchase contracts for all installed equipment have been submitted and the same has been verified by the audit team.	☑
Clarification Request No. 6. Please clarify the expected maintenance efforts in order to achieve the presumed load factor. Respective provisions for meeting maintenance needs along with relevant service contracts should be submitted to the audit team.	A.4.3.8.	The preventative maintenance schedules, which have been derived from the machine manuals, have been submitted for 225, 250, 600 and 750 kW turbines. Furthermore, a statement showing the availability of maintenance contracts for all sites has been submitted. An example of the maintenance contract is provided to the audit team.	☑
Clarification Request No. 7.	B.2.4.	PDD has been revised and the Southern grid has been chosen as the grid bound-	☑ Since the project activity takes place in Tamil

The PDD defines the electricity system as the TNEB grid. However, as per the applied methodology, in large countries with layered dispatch systems such as in India, a state grid definition may be too narrow. Please justify the choice of grid boundary.		ary.	Nadu which is part of the Southern grid, this is deemed acceptable.
Clarification Request No. 8. Please provide substantial documentation for each subproject activity demonstrating that they were implemented after the starting date of the project activity.	B.5.1.	The commissioning certificates for all WTGs have been submitted to the audit team.	Response by audit team: The starting date of the project activity seems to be the decision taken at the second CDM meeting, which was the "Extraordinary General Meeting of the Association" on 07.02.2002, since this is when the decision to go ahead with the CDM activity was officially made. The General Rules Circular resulted from this meeting and not from the first CDM meeting held on 03.11.2001. Therefore, any WTGs for which the investment decision was made before the second CDM meeting should be removed from this project activity, since TASMA had not officially circulated the decision yet. The decision was made official only by the General Rules Circular dated 07.02.2002. Further response by project proponent: Although TASMA had started discussing the benefits of carbon credits in 2000 already, the official decision was made at the second CDM meeting, therefore the project proponent agrees to remove the WTGs falling before this date. The starting date of the project activity is chosen as 15.02.2002, since by this time the

			General Rules Circular had been circulated to all TASMA members. Furthermore, a project activity report demonstrating the consent to adhere by the General Rules issued by TASMA has been submitted for each company which has sub-projects. Final response by audit team: ☑ All WTGs prior to 15.02.2002 have been removed from the project activity.
Clarification Request No. 9. The PDD does not clearly explain how the registration of the project as a CDM activity will help alleviate economic and financial hurdles or other identified barriers.	B.5.18.	PDD has been revised accordingly.	☑ The PDD now clearly describes how the CDM revenues help to improve the IRR of the sub-projects thereby enabling a favorable investment decision.
Clarification Request No. 10. Please discuss the use of diesel gensets as a back-up and whether these will lead to project emissions.	B.6.1.3.	Data on diesel use and outages of power supply have been submitted. These indicate that diesel gensets were only used as a back-up, which will also be the case in the project activity.	☑ Evidence has been submitted illustrating that diesel gensets were used as a back-up only in the baseline, and this will also be the case in the project activity. Thus, no additional project emissions are expected from the diesel gensets.
Clarification Request No. 11. The reason for including air quality and soil tests in the monitoring plan for the operation	B.6.2.1.	The parameter “air quality” and “soil tests” have been removed as their level of significance is less. The “noise levels”, which is deemed a more significant environmental issue, will be monitored yearly	☑ The applied methodology does not prescribe the monitoring of environmental indicators for wind projects. However, the monitoring of noise levels to ensure compliance with national

of WTG should be explained.		to ensure that they are below permissible levels.	standards is deemed appropriate.
Clarification Request No. 12. The monitoring plan seems to be based on an ex-post definition of baseline emission factor while B2 of the PDD states ex-ante calculations. Please clarify this discrepancy.	B.6.2.2.	Ex-ante OM and BM will be used. The revised PDD now clearly outlines this approach.	☑ PDD has been corrected to mention that OM and BM are calculated ex-ante. The relevant parameters have been removed from the section B.7.1. (which includes parameters to be monitored) and are only included in section B.6.2. (which includes parameters available at validation).
Clarification Request No. 13. Electricity imports should be considered in the determination of OM as per ACM0002 Version 06. Furthermore, electricity exports should not be subtracted from electricity generation data used for calculating the OM.	B.6.2.12.	Calculation of OM and BM is now based on the published emission factors of the CEA.	☑ Since the published CEA values for OM are based on ACM0002 version 06 and they take imports into account, this is deemed acceptable.
Clarification Request No. 14. The calculation of emission reductions is based on the electricity supplied to the grid by the project activity. Since this is a retroactive project and the wind mills have already been commissioned, please provide documentary evidence on the annual energy generated and whether the estimated load factor of 25% is justified.	B.7.1.2.	The actual generation data has been submitted. The actual load factor was 20.9% versus the estimate load factor of 25%. The actual load factor has been used to estimate emission reductions.	Response by audit team: The relevant correction has been made in the PDD and in the calculations of emission reductions. However, the PDD should explain the reason for the increase in generation over the first four years. Further response by project proponent: This is due to the fact that all the machines were not installed in the first year. The installations had taken place progressively. A similar explanation is provided in the revised PDD.

Table 1 is applicable to ACM0002, version 06 with ex-ante determination of CM

* For a list of references, please see the Information Reference List in Annex 2

			Final response by audit team: ☑
Clarification Request No. 15. The monitoring plan should discuss recording frequency of the electrical energy generated. In addition, the accuracy level of the energy meter and its calibration should be discussed.	B.7.1.2.	The revised PDD includes recording frequency in Annex 4. Accuracy levels and calibration procedures have also been described. Also the power purchase agreements have been submitted to the audit team, which describe metering and calibration requirements.	☑ Annex 4 now includes a detailed monitoring plan which describes the recording frequency, accuracy levels and calibration procedures.
Clarification Request No. 16. The monitoring plan mentions the "electricity supplied to grid". Please clarify whether this is net electricity.	B.7.1.2.	The main meter at the TNEB end measures both export and import parameters, and the NET electricity supplied to the grid will be used to calculate emission reductions. The monitoring plan has been revised accordingly.	☑ The monitoring plan now clearly mentions that "Net electricity supplied to the Southern grid of India by the project" will be monitored, which is correct as per ACM0002 version 06.
Clarification Request No. 17. An environmental impact study has been performed, but the same is not transparent in the PDD. A more detailed analysis should be provided.	D.1.1.	Further data has been provided in the PDD and a more detailed analysis is presented.	☑
Clarification Request No. 18. Please provide further information on the questionnaire survey, such as the methodology used for the selection of participants, background of the participants (e.g. involvement of local Gram Panchayat), number of	E.1.1.	Following documents have been submitted to the audit team: • list of interviewed persons • responses of the interviewed persons • profile of respondents	☑

Table 1 is applicable to ACM0002, version 06 with ex-ante determination of CM
* For a list of references, please see the Information Reference List in Annex 2

questionnaires submitted and received, for which plants survey has been performed, etc. Please provide also a detailed list of the critical comments received for each question with the corresponding corrective actions to be undertaken.		• samples of surveys (all surveys were verified during the on-site visit by the audit team) The PDD also lists the main comments and the corrective actions and implementation plan that was developed to take due account of any comments received.	
Clarification Request No. 19. Annex 4 of the PDD states that daily energy meter reading for all WTGs will be taken by the maintenance staff, and will be recorded in the generation log. Please clarify in the PDD, whether this daily reading would be based on "Main" or "Check" meter. Also clarify in the PDD, whether the emission reduction calculation would be based on this daily reading or the monthly joint meter reading.	F.1.9.	The monitoring and recording of daily generation readings will be done on the main meter. Emission reduction calculation is based on monthly joint meter readings. This is clarified in the revised PDD version.	☑

Table 3 Unresolved Corrective Action and Clarification Requests (in case of denials)

Clarifications and / or corrective action requests by validation team	Id. of CAR/CR	Explanation of Conclusion for Denial
-	-	-

Annex 2: Information Reference List

Reference No.	Document or Type of Information
1	On-site interview at the offices and at the plants of “Bundled Wind power project in Tamilnadu, India co-ordinated by the TamilNadu Spinning Mills Association (TASMA)” in India were conducted on 15th November - 18th November 2005 by the auditing team of TÜV SÜD. **Validation team on-site:** Sunil Kathuria — TÜV South Asia (TÜV SÜD Group) Ponnuswamy Lakshmanan — TÜV South Asia (TÜV SÜD Group) **Interviewed persons:** A) Tamil Nadu Spinning Mills Association(TASMA) Mr.K.Vekatachalam — Chief Advisor, Tamil Nadu Spinning Mills Association Mr.K.N.Ravichandren — Member, Charted Accountant ,Tamil Nadu Spinning Mills Association B) Members of TASMA (Sample size 10 selected) Mr. KN.Ravichandran — Charted Accountant Ambika Spinning Mills Mr. S. Prasanna Venkatesan — Accounts Manager Jayaverma Textiles Mr. GJ.Sambandam — General Manager Eveready Spinning Mills Mr. ACG.Venantius — General Manager Tutukorin Spinning Mills Mr. James — Chief Engineer Paranni Spinning Mills Mr. R.Bhaskaran — Accounts Manager Chola Textiles Mr. Kalimuthu — Administrative Manager Guhan tetiles Mr. B.Seenivasagam — Electrical Engineer Shri Jayajothi Spinnng Mills Mr. R.Venu Gopal — Finance Manager S.P.Spinning Mills Mr. Vetrivelan — Project Manager Sri Shanmugavel Mills Group

Reference No.	Document or Type of Information
2	Draft Project Design Document, submitted by TASMA Version 1.0 dated 15.09.2005
3	UNFCCC homepage http: www.unfccc.int
4	Host Country Approval issued by Government of India dated 21st November 2005 submitted December 2005
	Sample: 1 Ambika Cotton Mills
5	Loan Sanction issued by State Bank of India, dated 13.8.2003 submitted November 2005
6	No Objection Certificate issued by Tamil Nadu Electricity Board, dated 4.9.2003, submitted November 2005
7	Daily Generation Report issued by Ambica Cotton Mills, dated from 30.12.2003 to 31.08.2005, submitted November 2005
8	Land Acquisition Documents issued by Assistant Registrar , Radha Puram. dated 16.12.2003, submitted November 2005
9	Purchase Invoice issued by ENERCON, dated 03.12.2003, submitted November 2005
10	Power Purchase Agreement issued by Tamil Nadu Electricity Board,TamilNadu, dated 6.10.03, submitted November 2005
11	Project Commissioning Certificate issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 10.12.03, submitted November 2005
	Sample: 2 JAYAVARMA TEXTILES PRIVATE LIMITED
5	Loan Sanction issued by Indian Overseas Bank, dated 22.07.2003, submitted November 2005
6	No Objection Certificate issued by Tamil Nadu Electricity Board. dated 28.8.2003, submitted November 2005
7	Daily Generation Report issued by Jayaverma Textiles, dated from Sep’2003 to Oct’2005, submitted November 2005
8	Land Acquisition Documents issued by Assistant Registrar, Radha Puram, dated 25.06.2003, submitted November 2005
9	Purchase Invoice issued by SUZLON ENERGY LIMITED, dated 02.06.2003, submitted November 2005
10	Power Purchase Agreement issued by Tamil Nadu Electricity Board,TamilNadu, dated 23.09.03, submitted November 2005
11	Project Commissioning Certificate issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 07.10.03, submitted November 2005
	Sample:3 Eveready Spinning Mills (P) Ltd.
5	Loan Sanction issued by State Bank of India, dated 13.8.2003, submitted November 2005
6	No Objection Certificate issued by Tamil Nadu Electricity Board, dated 23.01.2003, submitted November 2005
7	Daily Generation Report issued by Eveready Spinning Mills, dated from April’2003 to Oct’2005, submitted November 2005
8	Land Acquisition Documents issued by Assistant Registrar, Radha Puram, dated 26.12.2003, submitted November 2005
9	Purchase Invoice issued by SUZLON ENERGY LIMITED, dated 24.02.2003, submitted November 2005
10	Power Purchase Agreement issued by Tamil Nadu Electricity Board,TamilNadu, dated 03.02.2003, submitted November 2005
11	Project Commissioning Certificate issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 24.03.2003, submitted November 2005
	Sample:4 Tuticorin Spinning Mills Ltd.

Reference No.	Document or Type of Information
5	Loan Sanction issued by Indian Bank, dated 24.06.2004, submitted November 2005
6	No Objection Certificate issued by Tamil Nadu Electricity Board, dated 25.09.2004, submitted November 2005
7	Daily Generation Report issued by Tutucorin Spinning Mills, date from 1.12.2004 to 0ctober’2005, submitted November 2005
8	Land Acquisition Documents issued by Assistant Registrar , Pannakudi, dated 07.09.2004, submitted November 2005
9	Purchase Invoice issued by NEG-MICON, dated 20.09.2004, submitted November 2005
10	Power Purchase Agreement issued by Tamil Nadu Electricity Board,TamilNadu, dated 02.08.2004, submitted November 2005
11	Project Commissioning Certificate issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 29.09.2004, submitted November 2005
	Sample 5: Parani Spinning Mills p Ltd.,
5	Loan Sanction issued by Karur Vysya Bank, dated 29.10.2004, submitted November 2005
6	No Objection Certificate issued by Tamil Nadu Electricity Board, dated 21.09.2004, submitted November 2005
7	Daily Generation Report issued by Parrani Spinning Mills, dated from October 2004 toMarch’2005, submitted November 2005
8	Land Acquisition Documents issued by Assistant Registrar , Radha Puram, dated 27.08.2004, submitted November 2005
9	Purchase Invoice issued by SUZLON ENGINEERING LIMITED . dated 23.09.2004, submitted November 2005
10	Power Purchase Agreement issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 30.09.2004, submitted November 2005
11	Project Commissioning Certificate issued by Tamil Nadu Electricity Board, Tamil Nadu, dated30.09.2004, submitted November 2005
	Sample 6:Chola textiles P Ltd
5	Loan Sanction issued by State Bank of India.dated 13.10.2004, submitted November 2005
6	No Objection Certificate issued by Tamil Nadu Electricity Board. dated 25.08.2004, submitted November 2005
7	Daily Generation Report issued by Chola Textiles.date from 11.11.2004 TO October’2005, submitted November 2005
8	Land Acquisition Documents issued by Assistant Registrar, Radha Puram, dated 24.02.2004, submitted November 2005
9	Purchase Invoice issued by SUZLON ENERGY LIMITED, dated 17.05.2004, submitted November 2005
10	Power Purchase Agreement issued by Tamil Nadu Electricity Board,TamilNadu, dated 25.09.2004, submitted November 2005
11	Project Commissioning Certificate issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 25.09.2004, submitted November 2005
	Sample 7: Guhan TextilesMill P Ltd
5	Loan Sanction issued by Karur Vysya Bank, dated 29.10.2004, submitted November 2005
6	No Objection Certificate issued by Tamil Nadu Electricity Board, dated 21.09.2004, submitted November 2005
7	Daily Generation Report issued by Guhan Textile Mills, date from September ‘2004 to October’2005, submitted November 2005
8	Land Acquisition Documents issued by Assistant Registrar, Radha Puram, dated 27.08.2004, submitted November 2005

Reference No.	Document or Type of Information
9	Purchase Invoice issued by SUZLON ENERGY LIMITED, dated 23.09.2004, submitted November 2005
10	Power Purchase Agreement issued by Tamil Nadu Electricity Board,TamilNadu, dated 30.09.2004, submitted November 2005
11	Project Commissioning Certificate issued by Tamil Nadu Electricity Board, Tamil Nadu, dated30.09.2004, submitted November 2005
	Sample 8 :Sri Jayajothi and Company Limited
5	Loan Sanction issued by Tamil Nadu Mercantile Bank, dated 09.08.2002, submitted November 2005
6	No Objection Certificate issued by amil Nadu Electricity Board, dated 13.08.2002, submitted November 2005
7	Daily Generation Report issued by Jayajothi and Company Limited, date from October 2002 to October’2005
8	Land Acquisition Documents issued by Assistant Registrar , Raja Palayam, dated 02.05.2002, submitted November 2005
9	Purchase Invoice issued by NEG-MICON, dated 29.08.2002, submitted November 2005, submitted November 2005
10	Power Purchase Agreement issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 29.09.2002 submitted November 2005
11	Project Commissioning Certificate issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 05.10.2002, submitted November 2005
	Sample 9 : S.P.Spinning Mills Pvt. Ltd.,
5	Loan Sanction issued by State Bank of Travecore, dated 03.05.2003, submitted November 2005
6	No Objection Certificate issued by Tamil Nadu Electricity Board, dated 18.01.2003, submitted November 2005
7	Daily Generation Report issued by S.P.Spinning Mills, date from April ‘2003 to October’2005
8	Land Acquisition Documents issued by Assistant Registrar, Kari patti, dated 03.01.2003, submitted November 2005
9	Purchase Invoice issued by ENERCON, dated 20.03.2003, submitted November 2005, submitted November 2005
10	Power Purchase Agreement issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 24.03.2003, submitted November 2005
11	Project Commissioning Certificate issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 08.04.2003, submitted November 2005
	Sample 10: Sri Shanmugavel Mills Group
5	Loan Sanction issued by Lakshmi Vilas Bank Limited, dated 17.10.2003, submitted November 2005
6	No Objection Certificate issued by Tamil Nadu Electricity Board, dated 25.09.2003, submitted November 2005
7	Daily Generation Report issued by Shri Shanmugavel Mills, date from 29.09.2003 to 10.08.2005, submitted November 2005
8	Land Acquisition Documents issued by Assistant Registrar, Thadikombil, dated 19.06.2003, submitted November 2005
9	Purchase Invoice issued by NEG-MICON, dated 30.09.2003, submitted November 2005
10	Power Purchase Agreement issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 29.09.2003, submitted November 2005
11	Project Commissioning Certificate issued by Tamil Nadu Electricity Board, Tamil Nadu, dated 07.10.2003, submitted November 2005

12	ACM 002 Version 06 issued by UNFCCC
13	Sample of Calculation of Cost, Estimated Unit Generation, Term Loan and promoters Fund details issued by Tamilnadu SpinningMill Associaton for 750KW Wind mill, dated 15th November, submitted November 2005
14	Sample of Calculation of Cost, Estimated Unit Generation, Term Loan and promoters Fund details for 1250KW Wind mill, dated 15th November, submitted November 2005
15	Sankaneri WTGs(Wind Turbine Generators) Generation Details year 2004-2005, dated 15 April 2005, submitted November 2005
16	Samples of authorisation to Tamilnadu Spinning Mills Association issued by its Members Sri Arunothya Textiles & Others, dated 17.09.2003, submitted November 2005
17	Proposal for holding seminar on CDM issued by Enercon India, dated 26.10.2001, submitted October 2005
18	Proposal for holding seminar on CDM issued by Suslon India, dated 25.10.2001, submitted October 2005
19	Minutes of the Meetings and records of Discussion dated 03.11.2001 issued by Tamilnadu Spinning Mills Association, submitted October 2005
20	Minutes of the Meetings and records of Discussion dated 07.02.2002 issued by Tamilnadu Spinning Mills Association, submitted October 2005
21	General Rules and Guidelines for Bundled CDM projects dated 07.02.2002 issued by Tamilnadu Spinning Mills Association, submitted October 2005
22	CDM matrix of the Project participant issued by Tamilnadu Spinning Mills Association, dated 13.12.2005, submitted December 2005
23	Evaluation of Stake holder Comments issued by Tamilnadu Spinning Mills Association, dated 13.12.2005, submitted December 2005
24	Sample of Calculation of Cost, Estimated Unit Generation, Term Loan and Promoters Fund Details for 1250KW Wind mill, dated 14th December 2005, submitted November 2005
25	TNERC Order No. 3, dated 15.05.2006
26	IRR calculations for all sub-projects, IRR comparison 2001 and 2003, final versions submitted February 2007
27	Revised Final Project Design Document, submitted by TASMA, Version 9.0, dated 01.03.2007