VALIDATION REPORT

Aruppukottai Sri Jayavilas Limited

7.25 MW WIND ENERGY PROJECT OF ARUPPUKOTTAI SRI JAYAVILAS LTD, TAMILNADU, INDIA

SGS Climate Change Programme
SGS United Kingdom Ltd
SGS House
217-221 London Road
Camberley Surrey
GU15 3EY
United Kingdom

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7.25 MW wind energy project of Aruppukottai Sri Jayavilas Ltd, Tamilnadu, India	SGS Climate Change Programme
Revision number	Client:
4.0; 01/08/2007	Aruppukottai Sri Jayavilas Limited

Summary
SGS India Pvt. Ltd., an affiliate of SGS United Kingdom Ltd. has made a validation of the CDM project activity "7.25 MW wind energy project of Aruppukottai Sri Jayavilas Ltd, Tamilnadu, India" at wind generating sites in Tirunelvelli and Coimbatore district of Tamilnadu state in India, on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria. The project falls under small scale category and scope 1. Energy Industries (Renewable/ Non-renewable sources).

The scope of validation is the independent and objective review of the project design document, baseline study and monitoring plan and other relevant document of the project. The information in this document is reviewed against the criteria defined in the Marrakech Accords (Decision 17) and the Kyoto Protocol (Article 12) and subsequent guidance from the CDM Executive Board.

The overall validation process, from Contract Review to Validation Report & Opinion, was conducted using internal procedures (UK.PP.12 issue 3 dated 19/01/2007).

The first output of the validation process is a list of Corrective Actions Requests and New Information Requests (CARs and NIRs), presented in Annex 3 of this document. Taking into account this output, the project proponent revised its project design document.

In summary, it is SGS's opinion that the proposed CDM project activity correctly applies the baseline and monitoring methodology as mentioned in approved methodology adopted for the proposed project activity and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Subject.:			
CDM validation			**Indexing terms**
Work carried out by			
Mr. Sanjeev Kumar – Team Leader Mr. Pankaj Mohan - Assessor Mr. Vikrant Badve - Local Assessor			
Technical review (Name and date)			
Mr. Siddharth Yadav , 17/05/07			☒ No distribution without permission from the Client or responsible organisational unit
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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CER	Certified Emission Reductions
CERC	Central Electricity Regulatory Authority
CFE	Consent for Establishment
CFO	Consent for Operation
CO2	Carbon Dioxide
COP/MOP	Conference of parties serving as the meeting of parties to Kyoto Protocol
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EIA	Environment Impact Assessment
GHG	Green House Gas(es)
GWh	Giga watt hour
I	Interview
IPCC	Intergovernmental Panel on Climate Change
ISHC	International Stakeholder Consultation
kWh	Kilo watt hour
MNES	Ministry of Non Conventional Energy Sources
MoEF	Ministry of Environment and Forest
MoV	Means of Verification
MP	Monitoring Plan
MW	Mega watt
MT	Metric Tonne
NIR	New Information Request
NGO	Non Government Organisation
NOC	No Objection Certificate
PDD	Project Design Document
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention for Climate Change
TNEB	Tamilnadu Electricity Board
WTG	Wind Turbine Generator

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1 Introduction

1.1 Objective

Aruppukottai Sri Jayavilas Limited has commissioned SGS to perform the validation of the project: "7.25 MW wind energy project of Aruppukottai Sri Jayavilas Ltd, Tamilnadu, India" with regard to the relevant requirements for CDM project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

1.2 Scope

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

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.

1.3 GHG Project Description

The proposed CDM project activity is an electricity generation project through wind turbines and wheeling the same for captive use at the factory owned by the client. The project will result in replacing wheeled amount of electricity from southern regional grid which is dominated by fossil fuel based power plants. The project activity is located in Pazhavoor, Levenjipuram, Thanakkarkulam and Udayathur villages in Tirunelveli district of Tamilnadu state in India. The project activity was already commissioned and working in satisfactory condition. The first wind turbine out of the 17 was commissioned on 18th March 2006 and last one was commissioned on 12th June 2006. This was checked during the site visit and cross-checked from commissioning letter issued by TNEB.

Baseline Scenario:

Under the baseline scenario, there would have been more direct off-site emissions through burning of fossil fuel in the coal based power plant for meeting electrical energy requirements of the factory.

With Project Scenario:

The project activity will generate and feed the electricity to the southern regional grid and same will be wheeled for the factory usage. This will fulfil the electricity requirement which otherwise would have been fulfilled by the electricity from southern regional grid. Thus project activity replaces electrical energy from fossil fuel and contributes to conservation of fossil fuel, a non-renewable natural resource and consequently reduces GHG emissions.

Leakage:

As per the methodology AMS I-D version 10 dated 23rd December 2006; applicable for the project activity, leakage is to be considered if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity. However this is not the case for

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present project activity and hence no leakage is considered for the present CDM project activity.

Environmental & Social Impacts:
There are no negative environmental and social impacts expected with the project activity, the same has been cross-checked during local stakeholder consultation process by the local assessor during the validation site visit.

1.4 The names and roles of the validation team members

Name	***Supplier***	***Role***
Mr. Sanjeev Kumar	SGS India	Team Leader / Lead Auditor
Mr. Pankaj Mohan	SGS India	Assessor
Mr. Vikrant Badve	SGS India	Local Assessor
Mr. Siddharth Yadav	SGS UK	Technical reviewer

Statement of Competence of team members are attached at Annex IV.

2 Methodology

2.1 Review of CDM-PDD and additional documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

A site visit is usually required to verify assumptions in the baseline. Additional information can be required to complete the validation, which may be obtained from public sources or through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country). These may be undertaken by the local SGS affiliate. The results of this local assessment are summarized in Annex 1 to this report.

2.2 Use of the validation protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements are linked to checklist questions the project should meet.	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.*	*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.*	*This is either acceptable based on evidence provided (**Y**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **New Information Request (NIR)** is used when the validation team has identified a need for further clarification.*

The completed validation protocol for this project is attached as Annex 2 to this report

2.3 Findings

As an outcome of the validation process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **New Information Request (NIR)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR).** A CAR is issued, where:

I. mistakes have been made with a direct influence on project results;

II. validation protocol requirements have not been met; or

III. there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be verified.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may also lead to a CAR.

Observations may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form (Annex 3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

2.4 Internal quality control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

3 Determination Findings

3.1 Participation requirements

The host Party for this project is India. India has ratified the Kyoto protocol on 26th Aug 2002. A Letter of Approval from Indian DNA was not submitted by the project proponent. CAR (1) was raised asking project proponent to submit the Letter of approval from Indian DNA. Project proponent has received the Host country approval for the present project activity on 22nd January 2007 issued by the Indian DNA (reference number 4/21/2006-CCC. This letter was checked and the project activity name indicated in the HCA and in section A.1 of the PDD was found same. CAR (1) was closed.

No Annex I Party has been identified in the PDD and therefore no further Letter of Approval was available. It is observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration although it should be noted that before CER can be transferred to an Annex I Party, a Letter of Approval will need to be submitted.

3.2 Baseline selection and additionality

The project has applied baseline as mentioned in the small scale methodology AMS I-D version 10 dated 23rd December 2006 for "Grid connected Renewable electricity generation" as per Appendix B of the simplified modalities and procedures for small-scale CDM project activities. The project activity is generates electricity from wind and thus replaces electricity from fossil fuel and contributes to conservation of fossil fuel, and fall under the category AMS I-D of the appendix B.

Initially when project was web-hosted for international stakeholder comment PDD mentions project activity uses small scale methodology AMS I-D version 09 dated 28th July 2006. Since the version of AMS I-D methodology has been changed during EB 28 and version 10 has been in force from 23rd December 2006; a grace period of 8 weeks for using old version of the methodology was there but the project activity could not be submitted for RfR before end of grace period and hence project proponent was asked to revised the version of the AMS I-D. CAR (14) was raised for same. In response to CAR (14) project proponent mentioned that AMS I-D version 10 dated 23rd December 2006 will be used for the project activity. This was found acceptable when PDD version 03 dated 10th February 2007 was checked by the local assessor and hence CAR (14) was closed.

The present CDM project activity will generate and feed the electricity to the southern regional grid and same will be wheeled for the factory usage. This will fulfil the electricity requirement which otherwise would have been fulfilled by the electricity from southern regional grid. The emission reductions achieved because of the project activity will be direct function of the net electricity feed to the grid and grid emission factor for the southern regional grid.

The project has adopted the Investment barrier for the present project activity to justify the additionality of the project. In addition to this project proponent has also mentioned few institutional barriers, technological barriers regarding the project activity and barriers due to prevailing practise. In order to get all the related documents on the basis of which the project was shown additional, CAR (11) was raised.

The funds for the project activity are made available partly from equity and partly through bank finance. The total project cost is Rs. 355 Millions the bank has sanctioned a loan of Rs. 1125 lacs i.e. 112.5 at interest rate of 10.50% and 750 lacs i.e. 75 millions at interest rate of 8.50% and rest amount for the project activity was raised through equity by the project proponent. This information was cross

checked during the discussion with the project proponent and also verified from the bank loan documents submitted by the project proponent. Project proponent has submitted excel spreadsheet giving the detailed calculations for investment analysis and also submitted assumptions and data used to calculate the IRR for project activity and the same were checked and found credible. Project proponent has calculated IRR for the present project activity considering the CDM revenue and without CDM revenue and pre and post tax scenario. The pre tax IRR without CDM revenue works out to 8.0% and that in post tax scenario is 8.3%. The pre tax IRR with CDM revenue was 9.2% and that in post tax scenario was 9.4%. Project proponent mentioned in the PDD that expected post tax IRR from the project activity without CDM revenue is 8.3% was much less than the standard benchmark value considered for captive power plants i.e. 14% laid by CERC. This was checked from the document CERC order (Chapter-2 page no-18) attached in Audit Trail folder and mentioned in section 7 of the report. The document is also available in audit trail folder and mentioned in section 7 of this report. CDM benefits are boosting the post tax IRR of project activity and project proponent decided to go for project activity as on a lifetime of project activity the CDM benefits will help for the project.

The financial analysis sheet given by the project proponent along with assumptions used during the calculation and the financial calculations have been discussed with project proponent on telephone; also a letter from Internal Finance Auditor who has prepared the financial analysis is obtained and attached in the audit trail document. The financial figures given in the PDD are checked with excel spreadsheet figures and found correct also it was checked during the discussion with the project proponent. The comments mentioned in the PDD were found correct and are acceptable. The difficulties like paying higher interest rate and higher equity participation from project proponent which project proponent has faced for getting a financial closure are discussed with the project proponent. The documents are submitted to the validator and same is also mentioned in the section 7 of this report. After getting such a low returns from the project activity the project proponent still go ahead with the implementation of the project activity just to utilize the Green Power available and avail the carbon credit benefit on account of this.

As mentioned in the PDD, it was checked that the capital cost per MW for this wind power plant is 1.1 Million US$ while same for biomass and small hydro power plant ranges 0.449 to 0.561 Million US$ and for coal based thermal power plant it works as 0.561 – 0.786 Million US$. Thus it can be concluded that project proponent taking a risk by choosing an option of wind power plant for which capital cost is high.

The project proponent's claim under the technological barriers was cross-checked during site visit. Since the higher capacity WTG is a recent introduction in Indian market and experience of handling higher capacity WTGs is lesser as compared to lower capacity WTGs. Hence project proponent has to train his employees for operation and maintenance of 850kW capacity wind generators. The training certificates for the same have been submitted by the project proponent and same were attached in audit trail document for reference. It was fact that due to high initial cost of wind power plant and less Plant load factor the per unit cost of wind is much higher when compared with the other power generation sources. This was found correct and acceptable. It was also checked that the energy generation from the wind is not a common practise in Southern regional grid since the power mix shows a larger share about 75% is from Thermal Power plants which puts them as a the prevailing practice is power generation scenario and only @1.0 % share from wind energy. Same was cross-checked with CEA data (http://www.cea.nic.in/power_sec_reports/Executive_Summary/2007_02/22-28.pdf) and found acceptable.

It can be concluded that the project activity without CDM funds is not a financially viable alternative and by putting the project with low IRR project proponent is bearing a financial risk. CAR (11) was closed.

NIR (07) was raised and project proponent was asked to mention training given to the employees regarding operation and maintenance of the wind turbines and provide evidence for same. In response to NIR (07) project proponent submitted certificate from Pioneer Asia Wind Turbines to the validator mentioning that training regarding operation and maintenance of 850 kW capacity turbines has been provided to the plant operators and for operation and maintenance of 250 kW wind turbine generator the training was not required as these are very common and all the plant employees are aware about the know how of the particular wind generator. This was found accepted during discussion with project proponent and plant operators during site visit. Hence NIR (07) was closed.

The project proponent is claiming credits from 1st May 2007 or from date of registration whichever is later. The present project activity has chosen ten years fixed crediting period. This was verified during the discussion with the project proponent.

3.3 Application of Baseline methodology and calculation of emission factors

The present project activity was generating wind power and supplying it to southern grid for wheeling purpose. The project has applied baseline methodology as mentioned in the small scale methodology AMS I-D version 10 dated 23rd December 2006 for "Grid connected Renewable electricity generation" as per Appendix B of the simplified modalities and procedures for small-scale CDM project activities.

It was mentioned in the PDD version 01 that the present project activity will generate 13295 emissions per year. Project proponent has not provided excel spreadsheet for calculation of grid emission factor and baseline as well as project emissions for the project activity. NIR (09) was raised and project proponent was asked to provide the excel spreadsheet for the same. During validation site visit project proponent submitted concern excel spreadsheets. It was found that grid emission factor calculated for the project activity was on higher side when compared with the CEA database for grid emission factor; which uses a conservative approach. Project proponent was asked to clarify this. In response to NIR (09) Project proponent agreed that CEA value for grid emission factor is calculated on a conservative approach and same will be used for the project activity. Also it was found that the emission reduction does not takes into account the 5% wheeling charges on the total electricity feed to the grid. Project proponent in response to NIR (09) mentions that the wheeling surcharge of 5% and CEA value for grid emission factor is considered and the emission reduction calculation spreadsheet was revised and submitted to the validator. Local assessor has cross-checked the grid emission factor value used by the project proponent from CEA website and checked the data used for calculation purpose. The data used is found acceptable and hence NIR (09) was closed.

The baseline emission calculations and emission reductions were found to be in order during the desk review and during the local assessments at the site. The emission reduction figures would further be checked during verification. As per methodology AMS I-D version 10 dated 23rd December 2006; leakage due to project activity will be consider only when there is an equipment transfer from one place to another but this is not the case with present project activity hence no leakage is considered.

The project proponent's claim of project activity being a small scale project activity was also checked by the local assessor. A copy of purchase order was submitted by the project proponent for the present project activity. This copy was used to cross-checked the technical description of the project activity and capacity of the present project activity. It was found that the capacity of the present project activity is 7.25 MW which is less than 15 MW and hence project was eligible under small scale category. The documents were used to verify the information given in section A.4.2 under sub-heading Technology to be employed by the project activity in the PDD.

3.4 Application of Monitoring methodology and Monitoring Plan

The present CDM project activity uses monitoring methodology AMS I-D version 10 dated 23rd December 2006 for "Grid connected Renewable Electricity generation". The PDD clearly mentions that leakage is not consider in present project activity as methodology AMS I-D version 10 mentions

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leakage due to project activity will be consider only when there is an equipment transfer from one place to another but this is not the case with present project activity hence no leakage is considered. This was acceptable.

During review of version 1 of the PDD it was found that project proponent was not clear on monitoring practice. The several issues as mentioned in CAR (13) were not addressed in the version 01 of the PDD and thus CAR (13) was raised. The project proponent in his response to CAR (13) explained that the calibration of the meters will be done once in two year and since WTGs are commissioned just 6 to 8 months before; no calibration is done. The certificates were made available to the validator once calibration is done. Also project proponent was asked to include management structure in the PDD which was included by the project proponent in the rephrased version of PDD. This was accepted and the corrections made was cross checked with the rephrased version of the PDD and found acceptable. Hence CAR (13) was closed.

Project proponent in PDD version 1 did not mention responsible party for the measuring power wheeled through grid and also did not give any information on location of check meters installed. NIR (12) was raised and project proponent asked to provide the information. In response to NIR (12) project proponent provided the clarification that TNEB will be responsible for measuring the power wheeled through grid and as per TNEB's policy no promoter is allowed to put check meter and hence the meter at the panel board of the WTG would serve as the check meter. The readings in the panel board meter are recorded regularly and compared with the Meter at the interconnection point. Any discrepancy in the readings would be immediately observed and corrective actions would be taken. This explanation was found acceptable and NIR (12) was closed.

3.5 Project design

The PDD of the present project activity have been prepared in accordance with the guidelines for completing CDM-SSC-PDD in Annex 27 of EB 23. Thus when PDD was cross checked against these guidelines it was found that section A.2 and section A.4.1.4 are not according to the guidelines for completing CDM-SSC-PDD and hence CAR (04) was raised. Project proponent accepted that the sections are not as per the guidelines and corrected same in rephrased PDD. This was cross-checked with rephrased PDD and found correct and hence accepted. CAR (04) was closed.

In section B.5 of version 01 of PDD project proponent has given detailed information regarding grid emission factor calculation CAR (05) was raised and project proponent was asked to provide this data in separate annex. But since project proponent was using CEA value for calculation of the grid emission factor; project proponent has just deleted this information which was not relevant to grid emission value calculated by CEA. Instead of that project proponent inserted table from CEA data base which is relevant to the value used and hence CAR (05) was closed.

It was found that section C.1.1 of version 01 of the PDD indicated 27th October 2005 as project activity starting date; but evidence for the same was not provided. NIR (08) was raised asking project proponent to provide an evidence for the starting date of the project activity. In response project proponent provided a copy of purchase order for wind turbines; same was cross-checked and found acceptable and also attached in the audit trail folder and mentioned in section 7 of this report. NIR (08) was closed and 27th October 2005 was accepted as starting date for the project activity. A board resolution dated 16th September 2005 in which the project activity was discussed and CDM benefits for the project activity was considered. This was verified during the discussion with the project proponent.

The project boundary given in version 01 of the PDD was clear on the components included in the project boundary and it mentions clearly that project boundary covers wind turbine generators, step up transformers and grid interconnection point. This was cross-checked during site visit and found acceptable.

Operational lifetime of the project activity was mentioned as 25 years which was found acceptable after reviewing the project technology details mentioned in the purchase order of the project activity component. NIR (06) was raised asking project proponent to provide any documentary evidence that the present project technology will not be substituted or replaced by the more efficient technologies during the crediting period. Project proponent has assured that project technology will not be substituted or replaced by more efficient technology during the crediting period and same has been mentioned PDD version 03 in section A.4.2. This was accepted and NIR (06) was closed.

Project proponent in the PDD mentioned that project activity has not received any public funding from parties listed in Annex 1. This was cross-checked during the discussion with the project proponent and found acceptable.

3.6 Environmental Impacts

In state of Tamil Nadu TNEB is authorized government agency to keep an eye on wind mill projects hence CAR (10) was raised to check whether the project commissioning has been done as per TNEBs requirement or not. In response project proponent has provided commissioning certificates and PPA signed with TNEB as a proof that TNEB allows the operation of the project activity and commissioning is done as per their procedures. Hence CAR (10) was closed. The other information provided under section F in rephrased PDD was found satisfactory when checked with MoEF's web-site.

3.7 Local stakeholder comments

The project activity involves setting up of 7.25 MW wind energy based power project for electricity generation and feeding same to southern regional grid through TNEB's distribution lines for wheeling purpose, the project proponent identified local administrative body, local population and government organizations like TNEB as local stakeholders for the project activity. CAR (02) was raised asking project proponent to clarify which government departments they have considered as a local stakeholder for the project activity as version 01 of the PDD remains silent on this issue. In their response to CAR (02) project proponent clarifies that TNEB and local village panchayat are the concern government departments project proponent has considered; this was accepted and CAR (02) was closed.

Project proponent in version 01 of the PDD mentions that comments from local stakeholders have been invited through questionnaire. CAR (03) was raised and project proponent was asked to provide a copy of pre-designed questionnaire circulated among the villagers for seeking their comments. Project proponent in response to CAR (03) provided filled copies of questionnaire in local language and same translated in English to the validator. The same has been verified and accepted. Thus CAR (03) is closed.

Project proponent have conducted local stakeholder consultation as a requirement of CDM project and seek the comments of identified local stakeholders through questionnaire as described in earlier paragraph; and same were submitted to the DOE during the site visit. Also commissioning certificate from TNEB; were submitted to the validator which indicates the government authority approves this project activity. This was acceptable to the validator.

The summary of local stakeholders' comments provided in version 01 of the PDD was cross-checked during the local stakeholder consultation process during site visit. It was found that the summary provided in the PDD is correct and hence was acceptable to the validator. It was also found that no public complain was registered with the concern government department and no negative comment has been received on the project activity the information provided under section G.3 of the PDD was accepted. Also one comment received during international stakeholder consultation process has been answered satisfactorily by the project proponent (which was discussed in more detail in section 4 of

this report.

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4 Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

4.1 Description of how and when the PDD was made publicly available

The PDD and the monitoring plan for this project were made available on the SGS website http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=145 from 19th September 2006 to 18th October 2006 and Comments were invited through the UNFCCC CDM homepage.

4.2 Compilation of all comments received

The project was up loaded for International stakeholder consultation (ISHC) for a period of 30 days and received one comment.

No adverse comment received during local stakeholder consultation.

Comment number	*Date received*	*Submitter*	*Comment*
1	05-10-2006	NAME: Arun ORGANISATION: Individual, Stakeholder CITY: Mumbai COUNTRY: India	Please justify the additionality for this Project. The barriers are too general and if it does apply to the Project then it must be quantified.

4.3 Explanation of how comments have been taken into account

The comments got during web-hosting were sent to project developer and clarification was asked for the same.

The comments received during ISHC process and clarification from project developer is attached below

Date:5th October 2006 Raised by: Arun

Comment	Issue	Ref
1	Please justify the additionality for this Project. The barriers are too general and if it does apply to the Project then it must be quantified.	
Date:20th February 2007 [Comments from project developer] The barriers discussed in Section B.3.are specific to the project activity. All the barriers have been quantified and discussed elaborately in the PDD.		
Date: 22nd February 2007 [Comment from Local Assessor] The project activity uses investment analysis as a barrier for proving the additionality of the project activity. The required documents like IRR sheet, bank loan documents etc. for proving the additionality has been provided by the project proponent. The same has been cross-checked by		

the DOE and the assumptions and data used in the IRR calculation spreadsheet was discussed with the project proponent, and same was found accepted.
[Acceptance and close out] [Sanjeev Kumar] (22nd February 2007) The comment raised during ISHC was replied by client and found accepted hence it was closed out.

5 Validation opinion

SGS has performed a validation of the project: "7.25 MW wind energy project of Aruppukottai Sri Jayavilas Ltd, Tamilnadu, India". The Validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

Using a risk based approach, the review of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project will hence be recommended by SGS for registration with the UNFCCC.

SGS has received confirmation by the host Party that the project activity assists it in achieving sustainable development.

By installing wind power plant the project activity will lead to displacement of carbon-intensive electricity by the electricity from a renewable source and thus the project results in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. A review of the barrier analysis involving investment analysis and barriers due to prevailing practice associated with project activity demonstrates that the proposed project activity was 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. The project activity was already commissioned and working in satisfactory condition. The first wind turbine out of the 17 was commissioned on 18th March 2006 and last one was commissioned on 12th June 2006. The project will likely achieve the estimated amount of emission reductions in the crediting period duration of 7 years.

The validation is based on the information made available to SGS and the engagement conditions detailed in the 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 SGS 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.

6 List of persons interviewed

Date	*Name*	*Position*	*Short description of subject discussed*
02/11/2006	Mr. Ravikumar	Electrical Engineer-Project activity Site In-charge	Project activity, Baseline for the project activity
02/11/2006	Mr. C.B.L. Vishwanathan	Internal Auditor (Finance)	Financial additionality for the project activity, IRR analysis
02/11/2006	Mr. Ilango Bharthi	Project Consultant	Baseline and Additionality for the Project activity.
02/11/2006	Mr. Shivakumar	Local Stake-holder	Local Stake-holder consultation
02/11/2006	Mr. Subbayya	Local Stake-holder	Local Stake-holder consultation

7 Document references

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

/1/ Letter of Approval from Host Country

/2/ Modalities of communication

/3/ PDD version 1 dated 15th September 2006

/4/ PDD version 2 dated 10th November 2006

/5/ PDD version 3 dated 27th February 2007

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

/1/ Purchase Order for present project activity

/2/ Commissioning Letter for Wind Turbine Generator and PPA with TNEB

/3/ Board Resolution regarding CDM consideration

/4/ CA letter regarding Funds Availability for project activity and no-use of ODA

/5/ CERC Order

/6/ Local Stakeholders Comments

/7/ A copy of PPA between Project Proponent and TNEB

/8/ Sample copy of Electricity Bill for the project activity

/9/ Assumptions and Data used for IRR calculation

/10/ Bank Loan documents

/11/ Training Certificates

Annex 1: Local Assessment

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
12.1 To get copy Host Country Approval (HCA) letter from Project Proponent.	PDD	DR	The letter (reference number 4/21/2006-CCC) has been obtained and verified with the original. The same was listed under heading Document references in Category 1 as /1/ and also submitted with validation report UK.AR.6.CDM.Val0770	Y	Y
12.2 No ODA has been used for this project and to be confirmed during site visit.	PDD Annex 2	DR/I	Project proponent has submitted letter from Company CA regarding funds availability for the project. The document was listed under heading Document references in Category 2 as /4/.	Y	Y
12.3 Invitation for LSC meeting was sent to participate and communicate suggestions regarding the project activity. Documents are required to verify the same.	PDD	DR/I	The comments from the Local stakeholders were invited through the questionarrire circulated within the villages falling under project activity area. A copy of filled questionarrire were submitted by the project proponent to the validator. The same was obtained to verify the transparency in consultation process. The document was verified during local stakeholder consultation and listed under heading Document references in Category 2 as /6/.	Y	Y

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
12.4 The commissioning letters for each the wind turbine generator from Tamilnadu State Electricity Board (TNEB).	PDD	DR	The commissioning letters for each of the wind turbine generator have been obtained, verified for the date of commisioning and listed under heading Document references in Category 2 as /2/.	Y	Y
12.5 Local stakeholders' comments are required to be verified for any adverse comment. Due account of stakeholder comments received required to be verified..	PDD	DR/I	There were no adverse comments found in the questionarraire filled by the local stakeholders and submitted by project proponent during site visit. This was verified during local stakeholder consultation process. The same was listed under heading Document references in Category 2 as /6/.	Y	Y
12.6 Project design engineering documents from the technology supplier are required to be checked. Copy of offer made/ specifications given by technology supplier.	PDD	DR	Purchase specifications for Project activity were obtained and verified for the project capacity. The document was listed under heading Document references in Category 2 as /1/.	Y	Y
12.7 EIA report for the project activity.	PDD	Web site	EIA requirement for the present project activity was not required and same was checked with MoEF notification available on web-site http://envfor.nic.in/legis/eia/so1533.pdf. This was found acceptable.	Y	Y
12.8 The monitoring plan required to be checked.	PDD	DR/ SV	The monitoring plan for the project activity was checked during site visit and found satisfactory. Although during verification it will be checked again.	Y	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
12.10 All the calibration certificates are required to be checked.	PDD	DR	The calibration of Electricity meters is done once in every two years as per the monitoring plan mentioned in D.5 of the PDD. Project proponent will keep necessary records of the same. Since the WTGs are commisioned in year 2006 the calibration certificates for same are not available. The same will be checked during verification of the project activity.	Y	Y
12.11 MoM of board meeting in which CDM was considered for the project activity.	PDD	DR	Project proponent has submitted the MoM of board meeting which took held on 16th September 2005 in which CDM was considered for project activity. A copy of same has been given to the validator and same was cross-checked during discussion with project proponent. The document was listed under heading Document references in Category 2 as /3/.	Y	Y
12.12 Quality Assurance (QA) and Quality Control (QC) procedures for data monitoring.	PDD	DR/ SV	QA and QC procedures for data monitoring were verified during site visit. It was found satisfactory and same will be again cross-checked during verification of the project activity.	Y	Y

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
12.13 Financial analysis for the project activity.	PDD	DR	The financial analysis spreadsheet for the project activity was submitted by project proponent and verified for IRR calculations. The document is attached in 'Project Doc' folder. Also project proponent has submitted documents like one mentioning the assumptions used for IRR calculations and bank loan documents, same were obtained and verified during discussions with Internal Financial Auditor of the company. The document were listed under heading Document references in Category 2 as /9/ and /10/.	Y	Y
12.14 Calculation spreadsheet for baseline and project emission reductions during project crediting period.	PDD	DR	The excel spreadsheet for emission reduction calculation was obtained and the calculations were verified and same is found satisfactory. The document was attached in 'Project doc' folder.	Y	Y
12.15 Documentary evidence that the employees of the company undergone training programme related to project activity.	PDD	DR	The document was obtained; verified during local stakeholder consultation and listed under heading Document references in Category 2 as /11/.	Y	Y
12.16 Modalities of communication			The document was submitted and same was listed under heading Document references in Category 1 as /2/ and also submitted with validation report UK.AR6.CDM.Val0770	Y	Y

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Annex 2: Validation Protocol

Table 1 Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, LETTERS OF APPROVAL AND UNFCCC WEBSITE) ALL CDM PROJECT ACTIVITIES

REQUIREMENT	Ref	MoV	Comment	Draft finding	Final Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.	PDD	DR	Project will assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3. However, no Annex-1 participant has been identified so far by project proponent for this CDM project activity.	Y	Y
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily.	PDD	DR	The project activity is likely to contribute to sustainable development. Letter of approval from Host Country (India) Designated National Authority (DNA) to be submitted by the project proponent.	CAR1	Y CAR1 closed
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	PDD/ UNFCCC Web-site	DR/ UNFCCC Web-site	Project is unilateral and India has ratified the protocol on 26th August 2002 and is allowed to participate. The web link is http://unfccc.int/parties_and_observers/parties/items/2109.php	Y	Y

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REQUIREMENT	Ref	MoV	Comment	Draft finding	Final Concl
1.4 The project results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario.	PDD	DR	The project will generate electricity using wind energy through operation of wind turbines and will replace same amount of electricity from southern regional grid which is dominated by fossil fuel based power plants. The electricity generated from the wind turbine will be wheeled for own purpose use by the client.	Y	Y
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available	PDD	DR/ UNFCCC Web-site	Yes, the project is listed on UNFCCC website from 19th September 2006 to 18th October 2006. http://cdm.unfccc.int/Projects/Validation/DB/9CZ1D36KE36RWJHYKIJFUKWMFH2RW2/view.html The project was also listed on SGS climate change website from 19th September 2006 to 18th October 2006. http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=145 Number of comments received during web-hosting period- 1	Y	Y International Stakeholder comment addressed in validation report section 4.0
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance	PDD	DR	Project has used current version (version 2) of PDD applicable. The PDD template used has been tempered and it is not as per the guidelines of UNFCCC. Closure of CARs/ NIRs raised is also pending.	Pending closure of CAR4	Y CAR4 closed
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA.	PDD	DR	No ODA has identified in PDD. Evidence needs to be provided.	Site visit	Y Evidence provided

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REQUIREMENT	Ref	MoV	Comment	Draft finding	Final Concl
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?	PDD	DR	Not relevant as the project is not an AR project.	Not Applicable	Not Applicable
1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects	PDD	DR	This is an SSC project which comes under category AMS I-D and hence table 9 is applicable.	Y	Y
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment?	PDD	DR	The version of PDD used by project proponent present all the information, except pending closure of some CARs/ NIRs.	Pending CARs/ NIRs	Y All CARs/ NIRs are closed
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner?	PDD	DR	The PDD uses reliable information and that can be verified in an objective manner.	Pending site visit clarification	Y

Table 2 Baseline methodology/ies (Ref: PDD Section B and E and Annex 3 and AM) Normal CDM projects only

Table 3 Additionality (Ref: PDD Section B3 and AM) Normal CDM projects only

Table 4 Monitoring methodology (PDD Section D and AM) Normal CDM Projects only

Table 5 Monitoring plan (PDD Annex 4) Normal CDM Project activities only

Table 6 Environmental Impacts (Ref PDD Section F and relevant local legislation) Normal CDM Project Activities only

Table 7 Comments by local stakeholders (Ref PDD Section G) All CDM Project Activities

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR	No, the relevant local stakeholders for the project activity have not been consulted. It is not clear from PDD that whether Govt. departments related to project activity are contacted or not. It is not clear from PDD that how project proponent has identified prominent members in villages for seeking comments on project activity.	CAR2	Y CAR2 closed
8.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	Questionnaires were sent to nearby village panchayat and few other prominent members of these villages informing about the project activity. Comments were received from local community regarding the effects of the project activity. The comments were received in local language. Evidence for above information needs to be checked during site visit.	Site visit	Y Evidence provided
8.3 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?	PDD	DR	Stakeholder consultation process is not required as per regulation/laws in host country. However, the project participant has consulted the stakeholders as a requirement for CDM project. Evidence needs to be checked during site visit.	Site visit	Y Evidence provided

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.4 Is a summary of the stakeholder comments received provided?	PDD	DR	The summary of the stakeholder comments is provided in PDD but it is not clear. Evidence needs to be provided.	CAR3	Y CAR3 closed
8.5 Has due account been taken of any stakeholder comments received?	PDD	DR/I	No adverse comment identified in the PDD. Evidence to be checked during site visit.	Site visit	Y Evidence checked during local stakeholder consultation during site visit

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Table 8 Other requirements All CDM project activities

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	The PDD template for version 02 has been tempered. Following sections are not as per the guidelines mentioned in CDM-SSC-PDD version 03 dated 28th July 2006 Section A.2 is having maximum one page limit. Section A.4.1.4 is having maximum one page limit.	CAR4	Y CAR4 closed
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified.	PDD	DR	The PDD address all the specific requirements under each header. Except the information provided under section B.5 and G.2 which can be provided under separate appendix to the PDD.	CAR5	Y CAR5 closed
8.2 Technology to be employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	The project design engineering reflects the current good practices. Evidence needs to be checked during site visit	Site visit	Y Evidence provided
8.2.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	PDD	DR	The project activity is going to use proven technology for harnessing energy from wind. Evidence needs to be checked during site visit	Site visit	Y Evidence provided

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	Project technology will not substituted by other or more efficient technologies during the crediting period. Evidence needs to be provided.	NIR6	Y NIR6 closed
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR	Training requirement regarding operation and maintenance of project activity is not mentioned in PDD.	NIR7	Y NIR7 closed
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Project activity starting date (27th October 2005) is defined in the PDD. Evidence needs to be provided.	NIR8	Y NIR8 closed
8.3.2 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Renewable crediting period of 7 years was chosen for the project activity. The crediting period starting was selected from the date of registration and clearly mentioned in C.2.1.1 which is tentatively mentioned 01/08/2007.	Y	Y
8.3.3 Does the project's operational lifetime exceed the crediting period?	PDD	DR	The project's operational life time is expected to be 25 years which exceeds the renewable crediting period of (7 x 3) i.e. 21 years.	Y	Y

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Table 9 Additional requirements for SSC project activities only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
9.1 Does the project qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?	PDD	DR	The project is 7.25 MW grid connected wind energy project and it qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7.	Y	Y
9.2 The project conforms to one of the categories listed in Appendix B to Annex II to Decision 21/CP8.	PDD	DR	Yes, AMS I-D version 9 dated 28th July 2006. Please mention the version of the small scale methodology AMS I-D which is in force for the project activity.	Y CAR14	Y Y Project activity uses AMS I-D version 10 dated 23rd Dec. 2006
9.3 The small scale project activity is not a debundled component of a larger project activity?	PDD	DR	Small scale project activity is not a debundled component of a larger project. Evidence needs to be checked during site visit.	Site visit	Y Evidence checked
9.4 PDD has been prepared in accordance with appendix A of Annex II to Decision 21/CP8.	PDD	DR	The CDM - SSC - PDD (version 3) template is followed. Pending closure of CAR4.	Pending	Y CAR4 closed

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
9.5 The project uses a simplified baseline and monitoring methodology specified in Appendix B. If not, they may propose changes to the meths or a new SSC project category.	PDD	DR	Yes, AMS I-D version 9 dated 28th July 2006 Please mention the version of the small scale methodology AMS I-D which is in force for the project activity.	Y Pending CAR14	Y Y Project activity uses AMS I-D version 10 dated 23rd Dec. 2006
9.6 Are the emission reductions determined in accordance with the methodology described?	PDD	DR	Provide calculation spreadsheet for grid emission factor calculation. Provide yearly emission reductions calculation spreadsheet for baseline and project emissions. Evidence to be provided for claim of reduction in carbon emissions from project activity.	NIR9	Y NIR9 closed
9.7 Is there any bundling of SSC activities into one PDD? If so, does the monitoring plan consider sampling of activities? Refer to para 19 of Annex II. Also, note bundling provisions in SSC Briefing Note and SSC meths I C / I D and III D and Para 22e of Appendix B.	PDD	DR	No bundling of SSC activities into one PDD.	Site visit	Y
9.8 Is EIA required by host party? If not, none is required irrespective of SHC. If yes, has one been performed consistent with local requirements?	PDD	DR	EIA requirement by host Party is to be checked. Provide a copy of NOC from Tamilnadu Energy Development Agency (TEDA).	CAR10	Y CAR10 closed

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
9.9.The project results in emission reductions that are additional in accordance with the following requirements: (Para 26) The project is additional if emissions are reduced below those in the absence of the project. (Para 27) Simplified baseline can be used; if not, baseline proposed shall cover all gases, sectors and sources listed in Annex A to the KP (Para 28) One or more barriers as detailed in attachment A to Appendix B to Annex II will be used to demonstrate that the project would not proceed without the CDM	PDD	DR	The project will generate electricity using wind energy and will replace the same amount from southern regional grid which is dominated by fossil fuel based power plants so emissions will reduce below those would be in the absence of the project activity. The simplified baseline as per AMS.I.D. has been used for the project activity. The Investment barrier, Technological barrier and barriers due to prevailing practice mentioned in the PDD are not clear. Evidence needs to be provided.	Y Y CAR11	Y Y Y CAR11 closed
9.10 Leakage is calculated according to the provisions of the SSC methodologies in Appendix B.	PDD	DR	No GHG emissions due to project activity are mentioned in PDD. Also there is no equipment transfer from other location in case of present project activity and hence as per SSC methodology AMS I-D, no leakage is being considered. Evidence for leakage emissions need to check during site visit.	Site visit	Y No evidence for project emission was found at the site during site visit

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
9.11 The project boundary shall be constructed in accordance with the requirements of the SSC meths in Appendix B	PDD	DR	Project boundary for present project activity mentioned in the PDD needs to check during site visit.	Site visit	Y
9.12 The Monitoring plan shall be consistent with the requirements of the SSC methodology in Appendix B and shall provide for the collection and archiving of data needed to determine project emissions, baseline emissions and leakage.	PDD	DR	Yes, the monitoring plan for the project activity is consistent with the requirements of the SSC methodology Para 22e of Appendix B. The power exported to southern grid will be measured at the interconnection point. Responsible party for measuring power exported at interconnection point is not mentioned in the PDD. Provision for check meters is not mentioned in PDD. Evidence needs to be checked.	Y Y NIR12	Y Y Y NIR12 closed
9.13 The monitoring plan shall present good monitoring practice appropriate to the circumstances of the project activity.	PDD	DR	Provide a copy of calibration certificates for the equipments used for measurement purpose. Provide a copy of monitoring procedures laid by the project proponent for the project activity. Management structure given in section D.5 of PDD is not clear.	CAR13	Y CAR13 closed
9.14 If project activities are bundled, separate monitoring plan shall be prepared for each of the activities or an overall plan reflecting good monitoring practice will be prepared, consistent with the above requirements	PDD	DR	The SSC project is a bundled project activity and consists of an overall monitoring plan as per para 19 of Annex II.	Y	Y

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Table 10 Additional requirements for AR projects – Not applicable

Table 11 Additional requirements for SSC AR projects – Not applicable

Table 12 Additional information to be verified by local assessors / Site visit – Separate File attached (Annex 1)

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Annex 3: Overview of Findings

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified.
[CDM.Val0770]

Description of table:

Type	Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.
Issue	Details the content of the finding
Ref	refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Please note that this is an open list and more findings may be added as validation progresses.

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
1	CAR	Provide HCA letter for present CDM project activity from Indian DNA.	1.2
07/11/.2006: [Response from project developer] PDD and PCN are submitted to DNA. We are awaiting the call from DNA for presentation. We would forward the HCA letter as soon as receive the same.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] HCA letter has not been received to the project activity.			
07/02/2007: [Response from project developer] Host Country Approval (HCA) letter has now been forwarded to DOE.			
Date:15/02/2007 [Vikrant Badve] [Comments from Local Assessor] A copy of HCA letter has been submitted by the project proponent the same has been accepted. CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (15/02/2007)			

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
2	CAR	It is not clear from PDD that whether Govt. departments related to project activity are contacted or not. It is not clear from PDD that how project proponent has identified	7.1

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		prominent members in villages for seeking comments on project activity.	
07/11/2006: [Response from project developer]: The Government Departments related to the project activity are Village Panchayats of the villages and Tamil Nadu Electricity Board. The same are mentioned in the attached PDD. The prominent members in villages are traders of the area, advocates, politicians etc., Questionnaires were given to them inviting their opinions on the project activity.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] The explanation given in response to the CAR is sufficient and acceptable. Also it has been cross-checked with rephrased version of the PDD that relevant information has been included in the PDD. CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (22/11/2006)			

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
3	CAR	Provide documentary evidence for the comments received from identified local stakeholders.	7.4
07/11/2006: [Response from project developer]: The documentary evidence of the comments received from identified local stakeholders was handed over to DOE during site visit for validation. The English translation of the same was also forwarded to DOE.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] The comments received from the local stakeholders in the local language (Tamil) and same has been translated in English and handed over to the validator same has been cross-checked during local stakeholder consultation process at the site. CAR may be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (22/11/2006)			

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
4	CAR	Following sections are not as per the guidelines mentioned in CDM-SSC-PDD version 03 dated 28th July 2006, Section A.2 is having maximum one page limit. Section A.4.1.4 is having maximum one page limit.	8.1.1
07/11/2006: [Response from project developer]: The section A.2 and a.4.1.4 are amended as per guidelines mentioned in CDM-SSC-PDD in the revised PDD version 02.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] The correction made in section A.2 and A.4.1.4 has been accepted and same has cross-checked with the rephrased version of the PDD and found OK. CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (22/11/2006)			

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Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
5	CAR	The information provided under section B.5 which can be provided under separate appendix to the PDD.	8.1.2
07/11/2006: [Response from project developer]: Section B.5 is provided as separate annex (Annex 3 – Baseline information) in the revised PDD version 02.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] OK, the change has been made in rephrased version of the PDD and is acceptable. CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (22/11/2006)			

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
6	NIR	Provide documentary evidence that the present project technology will not be substituted by any other or more efficient technology during the crediting period.	8.2.3
07/11/2006: [Response from project developer]: The project proponent assures that the present technology will not be substituted by any other or more efficient technology during the crediting period.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] The project proponent during discussions made it clear that the technology used for project activity will not be replaced by any other or more efficient technology. The project proponent was asked to include the same in the rephrased PDD.			
20/02/2007: [Response from project developer]: Aruppukottai Sri Jayavilas Ltd hereby undertakes that the project activity will not be replaced by any other or more efficient technology. The same has been included in the rephrased PDD version 03 in section A.4.2			
Date:22/02/2007 [Vikrant Badve] [Comments from Local Assessor] The explanation given by the project proponent was accepted and NIR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (22/02/2007)			

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
7	NIR	Training requirement regarding operation and maintenance of project activity is not mentioned in PDD.	8.2.4
07/11/2006: [Response from project developer]: Training requirement is now mentioned more clearly in revised PDD version 02.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] The training in operation and maintenance of Wind Turbine Generators (WTG) is mentioned in section D.5 of the PDD. The information provided is sufficient and acceptable. NIR can be closed.			

[Acceptance and close out] OK, Sanjeev Kumar (22/11/2006)

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
8	NIR	Provide evidence regarding the starting date of project activity.	8.3.1
07/11/2006: [Response from project developer]: The evidence for starting date of the project activity was handed over to DOE during site visit.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] Project proponent has submitted a copy of purchase order for 12 nos. of WTG dated 27/10/2005; the same has been verified with the original copy during site visit. Thus 27/10/2005 was considered as the starting date of the project activity. NIR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (22/11/2006)			

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
9	NIR	Provide calculation spreadsheet for grid emission factor calculation. Provide yearly emission reductions calculation spreadsheet for baseline and project emissions. Evidence to be provided for claim of reduction in carbon emissions from project activity.	9.6
07/11/2006: [Response from project developer]: The spreadsheet for calculation of emission factor of the grid was handed over to DOE during site visit. The yearly emission reduction calculations are provided in the same spread sheet as a separate sheet. The evidences for claim of reduction in carbon emissions from project activity are explained in PDD in section in A.4.3.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] Project proponent has submitted the excel spreadsheet giving detailed calculations of grid emission factor for southern region and yearly emission reductions on account of CDM project activity. The spreadsheets are checked for the calculations and it was observed that the grid emission factor calculated by project proponent is on higher side if compare the same with the data provided by Central Electricity Authority (CEA). Project proponent was asked to clarify the same. Under section A.2 of the PDD project proponent has mentioned that 5% of total kWh fed to grid was deducted on account of wheeling charges. But while calculating emission reductions the wheeling charges has not been considered. Project proponent was asked to clarify the same. The information provided under section A.4.3 is sufficient and accepted.			
Date 12/02/2007: [Response from Project Developer]: The most conservative estimate of the			

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CEA data for baseline emission factor is considered now and ex-ante emission reduction calculations are revised in the revised PDD version 03. The net electricity is considered after allowing for wheeling charges.
Date:15/02/2007 [Vikrant Badve] [Comments from Local Assessor] The CEA data used for grid emission factor calculation is cross-checked from the CEA database for CDM from the CEA web-site and same was found correct and acceptable. Project proponent has also revised emission reduction estimates in the rephrased PDD. Project proponent need to provide the information on how they have estimated the annual amount of electricity fed to the grid. Please provide evidence for same and explain the same in the PDD and in excel spreadsheet used for emission reduction calculations.
20/02/2007: [Response from project developer]: The estimate for annual amount of electricity fed into the system and displaced by the project activity is given in section E.1.2.4 and an excel sheet is attached giving the same.
Date:22/02/2007 [Vikrant Badve] [Comments from Local Assessor] The estimate for amount of electricity generated, fed and replaced by the project activity was found acceptable after cross-checking the excel sheet and NIR can be closed.
[Acceptance and close out] OK, Sanjeev Kumar (22/02/2007)

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
10	CAR	Provide a copy of NOC from Tamilnadu Energy Development Agency (TEDA).	9.8
07/11/2006: [Response from project developer]: TEDA does not issue any NOC for the project activity. Tamil Nadu Electricity Board (TNEB) issues the NOC, which was handed over to DOE during site visit.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] The copies of letters regarding permission for installation of WTGs; from TNEB to the project proponent has been submitted to the validator during site visit the same has been verified with the original and found correct. Project proponent has also submitted the copies of Power Purchase Agreements (PPAs) between TNEB and project proponent. The same has been verified with the original copies during site visit and found acceptable. CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (22/11/2006)			

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
11	CAR	Provide documentary evidence for the barriers discussed in the PDD.	9.9
Date: [Response from project developer]: The documentary evidences for the barriers are being forwarded to the validator separately.			

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Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] The documents regarding term loan taken for installation of project activity has been submitted by the project proponent. The same has been verified during telephonic discussions with the General Manager and Finance Manager of the company. Project proponent was asked to submit the IRR calculation sheet against the claim under heading of Impact of CDM registration. If project proponent is having any record of discussions regarding the barriers with the wind project activity then please submit the same.
12/02/2007: [Response from project developer] The IRR calculations are attached now.
Date:15/02/2007 [Vikrant Badve] [Comments from Local Assessor] IRR sheet for the project activity was submitted by the project proponent. But PDD does not given any information on the IRR values please include same under investment barrier heading. Also provide evidence for the assumptions used while calculating IRR for the project activity.
20/02/2007: [Response from project developer]: The IRR of the project activity is discussed in section B.3. The excel sheet giving the calculations was already forwarded to DOE.
Date:22/02/2007 [Vikrant Badve] [Comments from Local Assessor] The changes made in the rephrased PDD in section B.3 are acceptable. The excel spreadsheet giving details of IRR calculation has been submitted by the project proponent; the same has been checked for the data and calculations made. This was also discussed with the project proponent and found satisfactory. CAR can be closed.
[Acceptance and close out] OK, Sanjeev Kumar (22/02/2007)

Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
12	NIR	Responsible party for measuring power exported at interconnection point is not mentioned in the PDD. Provision for check meters is not mentioned in PDD.	9.12
07/11/2006: [Response from project developer]: TNEB is the party responsible for measuring power exported at interconnection point. The meter at the panel board of the WTG would serve as the check meter. The readings in the panel board meter are recorded regularly and compared with the Meter at the interconnection point. Any discrepancy would be immediately observed and corrective actions would be taken.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] The explanation given by the project proponent is sufficient and same has been verified during the site visit and found satisfactory. NIR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (22/11/2006)			

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Date: 9th October 2006 Raised by: Vikrant Badve

No.	Type	Issue	Ref
13	CAR	Provide a copy of calibration certificates for the equipments used for measurement purpose. Provide a copy of monitoring procedures laid by the project proponent for the project activity. Management structure given in section D.5 of PDD is not clear.	9.13
07/11/2006: [Response from project developer]: The calibration of the meters is done once in two years. Since the WTGs are commissioned recently (6-8 months back), calibration is not yet done. A copy of the Monitoring procedures was handed over to DOE during site visit. Management structure is now given more clearly in rephrased PDD.			
Date:22/11/2006 [Vikrant Badve] [Comments from Local Assessor] The explanation regarding calibration certificates is acceptable and same was cross-checked during validation site visit. A sample copy of data monitoring report for WTG has been submitted by the project proponent during site visit. The same has been verified with the original and found satisfactory. Operating staff was also trained for data recording and monitoring. The correction made in management structure given in section D.5 of the PDD is acceptable. CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (22/11/2006)			

Date: 22nd January 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
14	CAR	Please mention the version of the small scale methodology AMS I-D which is in force for the project activity.	
22/01/2007: [Response from project developer]: PDD has been rephrased and mentions AMS I-D version 10 dated 23rd December 2006 will be used as baseline and monitoring methodology.			
Date:22/02/2007 [Vikrant Badve] [Comments from Local Assessor] The PDD version 03 dated 10th February 2007 was checked and it was found that the project activity used recent version 10 of the AMS I-D methodology. This was accepted and CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (22/02/2007)			

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Annex 4: Statement of Competence of Validation Team

Statement of Competence

Name:Sanjeev Kumar SGS Affiliate:SGS India Pvt. Ltd.

Status

- Product Co-ordinator ☐
- Operations Co-ordinator ☐
- Technical Reviewer ☐
- Expert ☒

	Validation	Verification
- Local Assessor	☒	☒
- Lead Assessor	☒	☒
- Assessor /Trainee Lead Assessor	☐	☐

Scopes of Expertise

1.	Energy Industries (renewable / non-renewable)	☒
2.	Energy Distribution	☒
3.	Energy Demand	☒
4.	Manufacturing	☒
5.	Chemical Industry	☐
6.	Construction	☐
7.	Transport	☐
8.	Mining/Mineral Production	☐
9.	Metal Production	☐
10.	Fugitive Emissions from Fuels (solid,oil and gas)	☐
11.	Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	☐
12.	Solvent Use	☐
13.	Waste Handling and Disposal	☐
14.	Afforestation and Reforestation	☐
15.	Agriculture	☐

Approved Member of Staff by Siddharth Yadav Date: 16th May 2007

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Statement of Competence

Name:Pankaj Mohan SGS Affiliate:SGS India Pvt. Ltd.

Status

- Product Co-ordinator	☐	
- Operations Co-ordinator		☐
- Technical Reviewer	☐	
- Expert	☒	

	Validation	Verification
- Local Assessor	☒	☒
- Lead Assessor	☒	☒
- Assessor / Trainee Lead Assessor	☒	☒

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	☒	
2. Energy Distribution	☒	
3. Energy Demand	☒	
4. Manufacturing	☒	
16. Chemical Industry	☐	
17. Construction	☐	
18. Transport	☐	
19. Mining/Mineral Production	☐	
20. Metal Production	☐	
21. Fugitive Emissions from Fuels (solid,oil and gas)		☐
22. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride		☐
23. Solvent Use	☐	
24. Waste Handling and Disposal	☐	
25. Afforestation and Reforestation	☐	
26. Agriculture	☐	

Approved Member of Staff by Marco van der Linden Date: 03-04-07

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Statement of Competence

Name:Vikrant Badve SGS Affiliate:SGS India Pvt. Ltd.

Status

- Product Co-ordinator	☐	
- Operations Co-ordinator		☐
- Technical Reviewer	☐	
- Expert	☒	

	Validation	Verification
- Local Assessor	☒	☒
- Lead Assessor	☐	☐
- Assessor / Trainee Lead Assessor	☐	☐

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	☒	
2. Energy Distribution	☒	
3. Energy Demand	☒	
4. Manufacturing	☒	
27. Chemical Industry	☐	
28. Construction	☒	
29. Transport	☐	
30. Mining/Mineral Production	☐	
31. Metal Production	☐	
32. Fugitive Emissions from Fuels (solid,oil and gas)		☐
33. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride		☐
34. Solvent Use	☐	
35. Waste Handling and Disposal	☐	
36. Afforestation and Reforestation	☐	
37. Agriculture	☐	

Approved Member of Staff by Marco van der Linden Date: 29-12-06

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Statement of Competence

Name: Siddharth Yadav SGS Affiliate:SGS United Kingdom Ltd.

Status

- Product Co-ordinator	☒	
- Operations Co-ordinator		☐
- Technical Reviewer	☒	
- Expert	☒	

	Validation	Verification
- Local Assessor	☐	☐
- Lead Assessor	☒	☒
- Assessor / Trainee Lead Assessor	☒	☒

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	☒	
2. Energy Distribution	☐	
3. Energy Demand	☐	
4. Manufacturing	☒	
38. Chemical Industry	☐	
39. Construction	☐	
40. Transport	☒	
41. Mining/Mineral Production	☒	
42. Metal Production	☐	
43. Fugitive Emissions from Fuels (solid,oil and gas)		☐
44. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride		☐
45. Solvent Use	☐	
46. Waste Handling and Disposal	☒	
47. Afforestation and Reforestation	☐	
48. Agriculture	☐	

Approved Member of Staff by Marco van der Linden Date: 24-04-07

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