
**VALIDATION OPINION FOR
ASSESSMENT OF CHANGES FROM
THE
PROJECT ACTIVITY AS DESCRIBED
IN THE REGISTERED PDD**

Zhejiang Leomax Group Co., Ltd.

**25.3MW WHR Project of Zhejiang
Leomax Group**

UNFCCC Ref. No. 1874

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16-08-2011		CDM.VER0947 RC PDD	
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25.3MW WHR Project of Zhejiang Leomax Group			
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SGS United Kingdom Limited		Zhejiang Leomax Group Co., Ltd.	
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Abbreviations

AQC	Air Quenching Chamber
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CERs	Certified Emission Reductions
CL	Clarification Request
DOE	Designated Operation Entity
EB	Executive Board
ECPG	East China Power Grid
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas(es)
GWP	Global Warming Potential
PDD	Project Design Document
PP	Project Participant
SGS	SGS United Kingdom Ltd.
SP	Suspension Preheater
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
WHR	Waste Heat Recovery

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1. Validation Opinion

Paragraph 62(g) of the CDM Modalities and Procedure requires that the DOE contracted by the project participant to perform verification shall identify and inform the project participants of any concerns related to the conformity of the actual project activity and its operation with the registered project design document. Annex 66 to EB 48 meeting report requests the DOE to provide a validation opinion on whether changes from the registered PDD identified during verification raise concerns on the additionality of the project activity, the scale of the CDM project activity and the applicability and application of Approved Baseline Methodology under which the project activity has been registered.

SGS United Kingdom Ltd has been contracted by Zhejiang Leomax Group Co., Ltd. to perform such a validation of the changes from the project activity as described in the registered PDD according to the procedure detailed in annexes 66 and 67 to EB 48 meeting report.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Manual version 01.2, Annexes 66 and 67 to EB 48 meeting report and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The report is based on the assessment of the revised project design document, application of standard auditing techniques including but not limited to document reviews, follow up actions like site visit, or interviews and also the review of the applicable methodology AM0024 Version 01.

The model (N9-1.25/325), the main steam temperature (325°C) and exhaust steam pressure (0.008MPa) of the 9MW steam turbine and the model (QF9-2) of generator in Tonglu site, the rated power (8.8MW) and the main steam pressure (0.9MPa) of the 8.8MW steam turbine in Guangde Site actual information on the nameplates of the turbines and generator installed onsite for 25.3MW WHR Project of Zhejiang Leomax Group (UNFCCC Ref: 1874) is inconsistent with the description contained in section A.4.3 of the registered PDD Version 03 dated 11/03/2009.

In the revised PDD, the key technical parameters have been revised to be consistent with the actual status as the model (N9-1.25), the main steam temperature (320°C) and exhaust steam pressure (0.0075MPa) of the 9MW steam turbine in Tonglu site, the rated power (9MW) and the main steam pressure (0.88MPa) of the 8.8MW steam turbine in Guangde Site, model (QF2-J9-2) of generator in Tonglu site. These key changes of technical parameters of steam turbine and generator are permanent changes from the registered project activity and the project has never been implemented in accordance with the description in the registered PDD (Relevant issue has been reported in the verification report for the first monitoring period). Based on the validation of the changes, it was confirmed that these changes have no impact on the emission reduction calculation.

In our opinion, the changes, as outlined in the revised PDD version 04 dated 11/07/2011, from the project activity as described in the registered PDD have no impact on the following aspects:

- (i) Additionality of the project activity;
- (ii) Scale of CDM project activity;
- (iii) Applicability and application of Approved Baseline Methodology under which the project activity has been registered.

Based on the above conclusion, following Annex 66 to EB 48 meeting report, SGS will submit a notification of the changes to EB.

Signed on Behalf of the Validation Body by Authorized Signatory

Signature:





Name: Siddharth Yadav

Date: 16-09-2011

2. Introduction

2.1 Objective

Paragraph 62(g) of the CDM Modalities and Procedure requires that the DOE which is contracted by the project participant to perform verification shall identify and inform the project participants of any concerns related to the conformity of the actual project activity and its operation with the registered project design document. Annex 66 to EB 48 meeting report requests DOE to provide a validation opinion on whether changes from the registered PDD identified during verification raise concerns on the additionality of the project activity, the scale of the CDM project activity and the applicability and application of Approved Baseline Methodology under which the project activity has been registered.

SGS United Kingdom Ltd has been contracted by Zhejiang Leomax Group Co., Ltd. to perform such a validation of the changes from the project activity as described in the registered PDD according to the procedure detailed in annexes 66 and 67 to EB 48 meeting report.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Manual version 01.2, Annexes 66 and 67 to EB 48 meeting report and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

SGS reviewed the revised project design documentation, using a risk based approach and conducted follow-up actions, i.e. site visit and interview, and also the review of the applicable methodology.

2.2 Scope

The scope of the validation is defined as an independent and objective review of the revised project design document and other relevant documents. The information in these documents is reviewed against the Kyoto Protocol requirements, the 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/the project. However, SGS may issue requests for clarifications and/or corrective actions which may provide input for improvement of the project design.

2.3 GHG Project Description

As per <http://cdm.unfccc.int/Projects/DB/DNV-CUK1213687702.85/view>, the project was registered on 16/03/2009 against ACM0024 version 01 under UNFCCC reference number 1874.

2.4 The Names and Roles of the Validation Team Members and Technical Review Team Members

Name of validation team members	Role
Michael Wu	Lead Assessor
Yi Liao	Assessor
Lenore Yin	Local Assessor
Yi Liao	Technical Expert (TA1.1)
George Chen	Technical Expert (TA4.1)

Name of technical review team members	Role
Joe Sun	Technical Reviewer
Jumson Fu	Technical Expert (TA1.1)
Qingmei Zeng	Technical Expert (TA4.1)

3. Methodology

3.1 Review of the revised CDM-PDD and Additional Documentation

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

A site visit was undertaken to verify the changes in project design from the registered PDD assumptions in the baseline.

3.2 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, partly on the experience of SGS with the validation of CDM projects and the CDM Validation and Verification Manual version 01.2. 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	Ref ID	Means of Verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements are linked to checklist questions the project should meet.	Lists any references and sources used in the validation process. Full details are provided in the table at the bottom of the checklist.	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). A Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

3.3 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 **Clarification Request (CL)** 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. Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- II. Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- III. Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A Forward Action Request (FAR) is raised during verification for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

The validation process may be halted until the project activity information meets the CDM EB/UNFCCC's requirements. Failure to address a CL/FAR may result in a CAR. Information or clarifications provided as a result of a CL/FAR may also lead to a CAR.

Corrective Action Requests, Clarification Requests and Forward Action Requests are raised in the draft validation protocol and detailed in a separate form (Findings Overview). In this form, the Project Developer is given the opportunity to respond to CARs, CLs and FARs.

3.4 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to an independent 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.

4. Validation Findings

4.1 Changes from the registered PDD

The technical parameters of the major facilities listed in Table A4-1 of Section A.4.3 of the registered PDD (/2/) were found to be different from the information in the nameplates of the equipments installed onsite (/11/). Following EB 48 Annex 66 (/6/) Paragraph 10(a), a clear description of the changes as compared to the registered PDD has been presented in the revised PDD version 04(/1/). Detailed differences are listed in table 1 below.

Table 1 Changed Technical Parameters

Technical Parameters		In the registered PDD version 03	In the nameplates and revised PDD version 04
Tonglu cement clinker line			
Generator	Model	QF9-2	QF2-J9-2
Steam Turbine	Model	N9-1.25/325	N9-1.25
	Main steam temperature	325°C	320°C
	Exhaust steam pressure	0.008MPa	0.0075MPa
Guangde cement clinker line			
Steam turbine	Rated power	8.8MW	9MW
	Steam pressure	0.9MPa	0.88MPa

Through interviewing the project owner and document review of the feasibility study report (FSR, /8/) and the equipment purchase agreements signed with the suppliers (/10/), it was confirmed that these changes happened when purchasing this equipment on 11/12/2007 for Tonglu site and 25/12/2005 for Guangde site. Specifications of equipment described in PDD were derived from Feasibility Study Reports which were finished in Dec 2006 for Tonglu line and Dec 2005 for Guangde's, PDD version 03 dated 11/03/2009 adopted them as such because the actual variations were deemed minor and had no impact on project feasibility by the PP. The described parameters in FSRs or original PDD have never been actually realized, this leads to the changes from the registered PDD. The assessment of each change is presented below:

The model of generator in Tonglu cement clinker line was changed from QF9-2 to QF2-J9-2. This change was caused by the recoding of the generator by the manufacturer after completion of the FSR. QF9-2 had been initially indicated in the FSR thus was quoted as such in the PDD. At later stage, the manufacturer decided to change its code to QF2-J9-2 with exactly the same specification and price. This issue had already been raised and closed out through CL #2 during the verification for the 1st monitoring period (/16/). It was concluded in the verification report that the generator QF2-J9-2 was actually the same as had been described as QF9-2 in PDD. Thus, there is no impact from this change.

The model of 9MW steam turbine in Tonglu cement clinker line was changed from N9-1.25/325 to N9-1.25. After checking the FSR, the "/325" suffixed to the model number refers to the main steam temperature. The turbine manufacturer did not include this feature in the model number displayed on the nameplate, so the actual model number of N9-1.25 is the same as that described in FSR/PDD.

The main steam temperature of the steam turbine in Tonglu cement clinker line was changed from 325°C to 320 °C and the exhaust steam pressure was changed from 0.008Mpa to 0.0075Mpa. After checking the FSR and the Technical Agreement of the turbine from the supplier, the minor variations in values of steam temperature and exhaust stream pressure displayed on the nameplate are within the range of specifications specified in the Technical Agreement (270°C~350°C and 0.0070Mpa~0.0085Mpa, /10/). The rated power of the turbine (9MW) is the same as that projected in the FSR and PDD. Therefore, these minor variations do not affect the estimated output in the FSR/PDD.

The rated power of the steam turbine in Guangde cement clinker line was changed from 8.8 MW to 9 MW. Based on the information from the project owner, the originally planned rated power of 8.8 MW steam turbine was upgraded to be 9 MW when purchasing this equipment. As per the FSR, the electricity that could be produced by the project was estimated on the basis of total waste energy that can be utilized and prevailing

thermal efficiency of the technology, equipment including the turbine and generator were selected aiming to achieve the projected electricity output, which was found to be in compliance with the description in the consolidated national standard GB50588-2010, 'Code for Design of Waste Heat Power Generation in Cement Plant' (/13/). As per the clarification from the manufacturer (/14/), the 9 MW turbine was recommended to the project owner by the turbine-generator manufacturer because the 9 MW turbine suited the 9 MW generator better and thus would be able to achieve the design output in the FSR. In other words, the output would be under the designed value if the 8.8 MW was adopted. Based on the information from the project owner (/15/), the 9 MW turbine was chosen in order to suit the 9MW generator and reach the designed output after consulting the manufacture and the designing institute. Therefore, as the change of rated power of turbine from 8.8 MW to 9 MW was aimed at reaching the designed output in the FSR and PDD, it is considered that the rated power change of the steam turbine would not result in the increase of electricity output. In addition, the capacities of AQC and SP boilers which supply the energy needed for generating electricity and the capacity of the coupled electricity generator all remain unchanged in this project, which excludes the possibility that project output is significantly changed. This can also be evidenced by the fact that the net electricity supplied to the cement plant is 96% of the estimated value in the registered PDD for the period from 01/03/2009 to 31/01/2011.

The steam pressure of the steam turbine in Guangde cement clinker line was changed from 0.9Mpa to 0.88Mpa. After checking the Technical Agreement and FSR, it was confirmed that the steam pressure of 0.88Mpa as displayed on the nameplate is within the range of 0.85 Mpa ~1.6 Mpa as specified in the Technical Agreement (/10/). Therefore, it is consistent with the project design in the FSR and registered PDD.

For the above reasons, since the capacity and physical performance of generator and turbine for Tonglu site remain unchanged, it is confirmed that the changes have no impact on the overall operational capacity of the Tonglu site. Besides, as the turbine change did not result in the increase of output and other changes are within the acceptable range, it is believed that the operational capacity would not be increased for Guangde site.

The monitoring plan was revised by PP and approved by EB on 24/10/2009 (/12/). The revision was also included in the revised PDD version 04. The assessment team has checked the monitoring plan in the revised PDD and confirmed the consistency with the approved revision of monitoring plan.

4.2 Validation of the changes from the registered PDD

Following EB48 Annex 67 (/7/), the impact of changes from the registered PDD to (i) Additionality of the project activity; (ii) Scale of CDM project activity; and (iii) Applicability and application of Approved Baseline Methodology was assessed below:

4.2.1 Additionality of the project activity

The additionality of the project was demonstrated applying investment analysis and barrier analysis. Based on the assessment of the changes above, it was confirmed the output of the Guangde Site estimated in the FSR and PDD would not be increased as a result of the change of turbine. And after checking the purchasing agreement and the FSR, it was found that the price of the turbine and generator for Tonglu and Guangde sites was slightly over the projected value in the FSR. Detailed data is listed in table 3 below:

Table 3 The comparison of the price of steam turbine and generator units

Price of steam turbine and generator unit	In the FSR	In the purchasing agreement
Tonglu cement clinker line	8.6142 million RMB	8.8 million RMB including shipping cost
Guangde cement clinker line	9.515 million RMB	9.6 million RMB.

The changes do not increase the estimated output nor reduce the costs, so the original investment analysis is still valid. It reveals that to reach the IRR benchmark, electricity output shall be increased at least 10.2% for Tonglu site, or 14.5% for Guangde site or the total investment shall be reduced at least 22.65% for Tonglu site, or 25.6% for Guangde site (PDD page 19). The changes under validation neither increase the designed electricity output nor reduce the total investment thus are not likely to affect the established additionality.

The barriers identified include Investment Barriers, Technological Barriers and Lack experience in power generation. These changes have no impact on the investment barrier because the total investment was not

reduced as a result of the changes. Also, these changes did not impact the technological barrier because the project still applied the domestic equipment from the same supplier with similar specifications. And the typical technical barrier identified in the PDD (the dust content in exit gases from SP during clinker production) was also not alleviated by these changes because the SP boiler remains unchanged. It is also considered that the changes also have no impact on the lack of experience in power generation. Therefore, the changes did not impact on the additionality of the project.

4.2.2 Scale of CDM project activity

The total installed capacity of the project in the registered PDD was 25.3 MW. Even if the rated power of the steam turbine was changed from 8.8 MW to 9 MW for the Guangde Site, the project can still be defined as a large scale project.

4.2.3 Applicability and application of the Applied Approved Baseline Methodology

The project has applied the consolidated baseline methodology AM0024 version 01 (/4/).The methodology is applicable under the following conditions:

Conditions	Impact from the changes
The electricity produced is used within the cement works where the proposed project activity is located and excess electricity is supplied to the grid; it is assumed that there is no electricity export to the grid in the baseline scenario (in case of existing captive power plant);	The electricity produced is still used within the cement works. There is no impact from the changes of technical parameters.
Electricity generated under the project activity displaces either grid electricity or from an identified specific generation source. Identified specific generation source could be either an existing captive power generation source or new generation source;	The electricity generated under the project activity displaces grid electricity. There is no impact from the changes of technical parameters.
The grid or identified specific generation source option is clearly identifiable	The project is connected to East China Power Grid which is clearly identifiable. There is no impact from the changes of technical parameters.
Waste heat is only to be used in the project activity	Waste heat is only used in the project activity. There is no impact from the changes of technical parameters.
In the baseline scenario, the recycling of waste heat is possible only within the boundary of the clinker making process (e.g. clinker production lines in baseline scenario could include some heat recovery systems to capture a portion of the waste heat from the cooler end of the clinker kiln and use this to heat up the incoming raw materials and fuel – so called Type 1 Waste Heat Utilization as described in explanatory note below)	In the baseline scenario, the recycling of waste heat is possible only within the boundary of the clinker making process. There is no impact from the changes of technical parameters.

This methodology is NOT applicable to project activities:

Conditions	Impact from the changes
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<p>Where the current use of waste heat or the identified alternative business as usual use of waste heat is located outside of the clinker making process (so called Type 2 Waste heat utilization as described in explanatory note below)</p>	<p>The waste heat is not located outside of the clinker making process. There is no impact from the changes of technical parameters.</p>
<p>That affect process emissions from cement plants.</p>	<p>The project activity does not affect process emission from cement plants. There is no impact from the changes of technical parameters.</p>

As the changes do not impact the (i) Additionality of the project activity; (ii) Scale of CDM project activity; and (iii) Applicability and application of Approved Baseline Methodology, following EB48, Annex 66, a notification of the changes will be submitted to EB.

5. List of Persons Interviewed

Date	Names	Position	Short Description of Subject Discussed
10/05/2011 to 13/05/2011	Xiong Weidong	Project Manager of Jiande site	1. The installation and implementation of the project activity and its operation status.
	Ying Hongfe	Project Manager of Tonglu Site	2. The reason and time of the changes from the registered PDD;
	Jin Xu	Project Manager of Guangde site	3. The cost of the main equipment compared with the data in the investment analysis;
	Ma Zhiwei	Project Manger of Shanghai Chuanji Investment Management Co., Ltd.;	4. The impact of the changes on the barriers identified in the registered PDD. 5. Applicability and application of the Applied Approved Baseline Methodology;

6. 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/ Revised PDD version 04 dated 11/07/2011

PDD Version	Date of Revision	Main changes reason for Revision
PDD Version 04	11/07/2011	In the revised PDD, the key technical parameters have been revised to be consistent with the actual status as the model (N9-1.25), the main steam temperature (320°C) and exhaust steam pressure (0.0075Mpa) of the 9MW steam turbine in Tonglu site, the rated power (9MW) and the main steam pressure (0.88Mpa) of the 8.8MW steam turbine in Guangde Site, model (QF2-J9-2) of generator in Tonglu site. The monitoring plan also revised to be consistent with the revised monitoring plan approved by EB on 24/10/2009.

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):

/2/ Registered PDD version 03 dated 11/03/2009

/3/ Validation Report of 25.3MW WHR Project of Zhejiang Leomax Group, issued by DNV, Report No. 2007-1755, and Revision No.02 dated 23/02/2009.

/4/ AM0024 Baseline methodology for greenhouse gas reductions through waste heat recovery and utilization for power generation at cement plants, version 01, dated 30/09/2005.

/5/ Validation and Verification Manual version 1.2 dated 30/07/2010

/6/ EB 48 Annex 66 Procedures for notifying and requesting approval of changes from the project activity as described in the registered project design document

/7/ EB 48 Annex 67 Guidelines on assessment of different types of changes from the project activity as described in the registered PDD

/8/ Feasibility Study Report for Jiande plant of March 2006, for Guangde plant of December 2005 and for Tonglu plant of December 2006.

/9/ The purchasing agreements for the steam turbine and generator units dated 11/12/2007 for Tonglu Site and dated 25/12/2005 for Guangde Site.

/10/ The technical agreements dated 11/12/2007 for Tonglu site and dated 25/12/2005 for Guangde site

/11/ Generator and turbine nameplates

/12/ Revised monitoring plan approved on 24/10/2009.

/13/ GB50588-2010 Code for Design of Waste Heat Power Generation in Cement Plant

/14/ Clarification from the manufacturer regarding the turbine change dated 10/08/2011

/15/ Statement from the project owner regarding the turbine change dated 10/08/2011

/16/ Verification report for the first monitoring period of the project from 16/03/2009 to 30/11/2009 version 0 dated 22/04/2010

A.1 Annex 1 Validation Checklist

Validation of the Revised PDD

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A. General Description of Project Activity				
A.1. Project Title				
A.1.1. Is there an indication of a revision number and the date of the revision?	VVM Para.56 PDD section A.1	DR	Yes. The version number in the registered PDD is 03 and dated 11/03/2009. The revised PDD version 04 dated 11/07/2011 is used for the request for notification of changes from registered PDD.	OK
A.2. Description of the changes of the Project Activity				
A.2.1. Does the description of the CDM project activity as contained in the revised PDD sufficiently cover all relevant elements accurately? Does it give a clear description of the changes as compared to the description in the registered PDD?	VVM Para.59 PDD section A.2 see also A.4, A.4.3 and B.3	DR SV I	Yes, the description of the CDM project activity as contained in the revised PDD sufficiently covers all the relevant elements accurately. A description of the changes as compared to the description in the registered PDD is clearly presented in section A.4.3 of the revised PDD. Through interviewing the project owner and document review of the feasibility study report and the technology agreement, it was confirmed that these changes happened when purchasing these equipments. Table 1 Key Changed technical Parameters Presented in the Revised PDD	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs																																							
			<table border="1"> <tr> <td data-bbox="972 354 1361 408">Technical Parameter</td> <td data-bbox="1361 354 1680 408">In the registered PDD version 03</td> <td data-bbox="1680 354 1989 408">In the nameplates and revised PDD version 04</td> </tr> <tr> <td colspan="3" data-bbox="972 408 1989 443">Tonglu cement clinker line</td> </tr> <tr> <td data-bbox="972 443 1097 497">Generator</td> <td data-bbox="1097 443 1361 497">Model</td> <td data-bbox="1361 443 1989 497">QF9-2</td> </tr> <tr> <td data-bbox="972 497 1097 533"></td> <td data-bbox="1097 497 1361 533">Model</td> <td data-bbox="1361 497 1989 533">QF2-J9-2</td> </tr> <tr> <td data-bbox="972 533 1097 657">Steam Turbine</td> <td data-bbox="1097 533 1361 596">Main steam temperature</td> <td data-bbox="1361 533 1989 596">325°C</td> </tr> <tr> <td data-bbox="972 596 1097 657"></td> <td data-bbox="1097 596 1361 657">Exhaust steam pressure</td> <td data-bbox="1361 596 1989 657">320°C</td> </tr> <tr> <td data-bbox="972 657 1097 692"></td> <td data-bbox="1097 657 1361 692"></td> <td data-bbox="1361 657 1989 692">0.008MPa</td> </tr> <tr> <td data-bbox="972 692 1097 727"></td> <td data-bbox="1097 692 1361 727"></td> <td data-bbox="1361 692 1989 727">0.0075MPa</td> </tr> <tr> <td colspan="3" data-bbox="972 727 1989 762">Guangde cement clinker line</td> </tr> <tr> <td data-bbox="972 762 1097 820">Steam turbine</td> <td data-bbox="1097 762 1361 801">Rated power</td> <td data-bbox="1361 762 1989 801">8.8MW</td> </tr> <tr> <td data-bbox="972 801 1097 820"></td> <td data-bbox="1097 801 1361 820">Steam pressure</td> <td data-bbox="1361 801 1989 820">9MW</td> </tr> <tr> <td data-bbox="972 820 1097 855"></td> <td data-bbox="1097 820 1361 855"></td> <td data-bbox="1361 820 1989 855">0.9MPa</td> </tr> <tr> <td data-bbox="972 855 1097 890"></td> <td data-bbox="1097 855 1361 890"></td> <td data-bbox="1361 855 1989 890">0.88MPa</td> </tr> </table>	Technical Parameter	In the registered PDD version 03	In the nameplates and revised PDD version 04	Tonglu cement clinker line			Generator	Model	QF9-2		Model	QF2-J9-2	Steam Turbine	Main steam temperature	325°C		Exhaust steam pressure	320°C			0.008MPa			0.0075MPa	Guangde cement clinker line			Steam turbine	Rated power	8.8MW		Steam pressure	9MW			0.9MPa			0.88MPa	
Technical Parameter	In the registered PDD version 03	In the nameplates and revised PDD version 04																																									
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Generator	Model	QF9-2																																									
	Model	QF2-J9-2																																									
Steam Turbine	Main steam temperature	325°C																																									
	Exhaust steam pressure	320°C																																									
		0.008MPa																																									
		0.0075MPa																																									
Guangde cement clinker line																																											
Steam turbine	Rated power	8.8MW																																									
	Steam pressure	9MW																																									
		0.9MPa																																									
		0.88MPa																																									
<p>A.2.2. Is all information provided consistent and in compliance with the actual situation or planning?</p>	<p>VVM Para.64 PDD section A.2 see also A.4, A.4.3 and B.3</p>	<p>DV SV I</p>	<p>Yes, the information provided in the revised PDD version 04 is validated to be consistent and in compliance with the actual situation.</p>	<p>OK</p>																																							
<p>A.2.3. Are the changes permanent changes from the registered project activity under one of the following situations?</p> <p>(a) the project has never been implemented in accordance with description in the registered PDD; or</p> <p>(b) permanent changes occur after the project activity has been implemented in accordance with the description in the PDD and issuance of CERs has taken place.</p>	<p>Para 7 of Annex 66 to EB 48 meeting</p>	<p>DV SV I</p>	<p>It was confirmed that these changes happened when purchasing these equipments on 11/12/2007 for Tonglu site and 25/12/2005 for Guangde site. Specifications of equipment described in PDD were derived from Feasibility Study Reports which were finished in Dec 2006 for Tonglu line and Dec 2005 for Guangde's, PDD version 03 dated 11/03/2009 adopted them as such because the actual variations were deemed minor and had no impact on project feasibility by the PP, the described parameters in FSRs or original PDD have never been actually realized, this leads to the changes from the registered PDD.</p>	<p>OK</p>																																							

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A.2.4. When did the changes occur?	Para 10(b) of Annex 66 to EB 48 meeting	DV SV I	During the site visit and relevant review of documents provided by Project Participant, the assessment confirmed the change occurred when the Project Participant signed the equipment purchase contract on 11/12/2007 for Tonglu site and 25/12/2005 for Guangde site.	OK
A.2.5. What are the reasons for these changes taking place?	Para 10(b) of Annex 66 to EB 48 meeting	DV SV I	<p>The changes took place when purchasing the main equipments. These changes are due to the difference of the information in the FSR with the actual nameplates which changed after FSR was completed.</p> <p>The rated power of the steam turbine in Guangde cement clinker line was changed from 8.8 MW to 9 MW. Based on the information from the project owner, the original planned rated power of 8.8 MW steam turbine was upgraded to be 9 MW when purchasing this equipment. As per the clarification from the manufacturer (/14/), the 9 MW turbine was recommended to the project owner by the turbine-generator manufacturer because the 9 MW turbine suited the 9 MW generator better and thus would be able to achieve the design output in the FSR. In other words, the output would be under the designed value if the 8.8 MW was adopted. Based on the information from the project owner (/15/), the 9 MW turbine was chosen in order to suit the 9MW generator and reach the designed output after consulting the manufacture and the designing institute.</p>	OK
A.2.6. Would the changes have been known prior to registration of the project activity?	Para 10(b) of Annex 66 to EB 48 meeting	DR SV I	The equipment purchase contract was signed on 11/12/2007 for Tonglu site and 25/12/2005 for Guangde Site. The changes occurred before the registration date of the project (16/03/2009).	OK
A.2.7. How would the changes impact the overall operation/ability of the project activity to deliver emission reductions as stated in the registered PDD?	Para 10(b) of Annex 66 to EB 48 meeting	DR SV I	Through on site visit inspection of the project operation status, document review, comparing with the FSR and the technology application agreement for Tonglu and Guangde, it has been confirmed the actual rated install capacity of the generator remain unchanged. The changes belong to the description of key technical performance parameter. The changes of the key technical parameter do not impact the overall operation / ability of the project activity to deliver emission reductions as stated in the registered PDD.	OK
A.3. Technical Description of the Project Activity				
A.3.1. Is the table required for the indication of projected	VVM Para.64	DR	Yes. As the changes did not affect the estimated output, thus the estimated emission reductions were not changed.	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs				
emission reductions correctly applied and do the changes to the PDD result in a change in the total emission reductions?	PDD section A.4	SV I						
A.4. Scale of project activity								
A.4.1. Is the project activity a small scale or large scale project activity according to the original registered PDD?	PDD section A.2, A.4.4, B.1 and B.2	DR SV I	No change has been made in this regard. The total installed capacity of the project in the registered PDD was 25.3MW. Even considering the change from 8.8 MW to 9 MW for Guangde site. The project is still a large scale CDM project activity.	OK				
A.4.2. Is the current project activity a small scale or large scale project activity according to the revised PDD?	Revised PDD section A.2, A.4.4, B.1 and B.2	DR SV I	The scale and estimated annual electricity generation of the project remains unchanged as the changes of the key technical parameter of the generator and turbine do not change the output of the project. The project is still a large scale CDM project activity.	OK				
B. Baseline Methodology								
B.1. Choice and Applicability								
B.1.1. Is the selected approved methodology applicable to the project activity in the PDD?	VVM Para.75/66a/68/73 PDD section B (B.1-B.2)	DR SV I	The Project has applied the AM0024 version 01. The changes do not impact the applicability and application of AM0024 version 01 under which the project has been registered.	OK				
B.1.2. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVM Para.75/66b/68 PDD section B (B.1-B.2)	DR SV I	The changes do not impact the applicability and application of Approved Baseline Methodology. The methodology AM0024 is still applicable for the project activity.	OK				
			<table border="1"> <thead> <tr> <th>Conditions</th> <th>Impact from the changes</th> </tr> </thead> <tbody> <tr> <td>The electricity produced is used</td> <td>The electricity produced is still used</td> </tr> </tbody> </table>	Conditions	Impact from the changes	The electricity produced is used	The electricity produced is still used	
Conditions	Impact from the changes							
The electricity produced is used	The electricity produced is still used							

Checklist Question	Ref. ID	MoV*	Comments		Conclusion/ CARs/CLs
<p>If the project activity was originally a small scale project activity applying small scale methodology, do the changes have such impact that the methodology is not applicable to the current project activity?</p>			<p>within the cement works where the proposed project activity is located and excess electricity is supplied to the grid; it is assumed that there is no electricity export to the grid in the baseline scenario (in case of existing captive power plant);</p>	<p>within the cement works. There is no impact from the changes of technical parameters.</p>	
			<p>Electricity generated under the project activity displaces either grid electricity or from an identified specific generation source. Identified specific generation source could be either an existing captive power generation source or new generation source;</p>	<p>The electricity generated under the project activity displaces grid electricity. There is no impact from the changes of technical parameters.</p>	
			<p>The grid or identified specific generation source option is clearly identifiable</p>	<p>The project is connected to East China Power Grid which is clearly identifiable. There is no impact from the changes of technical parameters.</p>	
			<p>Waste heat is only to be used in the project activity</p>	<p>Waste heat is only used in the project activity. There is no impact from the changes of technical parameters.</p>	

Checklist Question	Ref. ID	MoV*	Comments		Conclusion/ CARs/CLs						
			<p>In the baseline scenario, the recycling of waste heat is possible only within the boundary of the clinker making process (e.g. clinker production lines in baseline scenario could include some heat recovery systems to capture a portion of the waste heat from the cooler end of the clinker kiln and use this to heat up the incoming raw materials and fuel - so called Type 1 Waste Heat Utilization as described in explanatory note below)</p> <p>In the baseline scenario, the recycling of waste heat is possible only within the boundary of the clinker making process. There is no impact from the changes of technical parameters.</p> <p>This methodology is NOT applicable to project activities:</p> <table border="1" data-bbox="976 879 2018 1286"> <thead> <tr> <th data-bbox="976 879 1491 927">Conditions</th> <th data-bbox="1491 879 2018 927">Impact from the changes</th> </tr> </thead> <tbody> <tr> <td data-bbox="976 927 1491 1134">Where the current use of waste heat or the identified alternative business as usual use of waste heat is located outside of the clinker making process (so called Type 2 Waste heat utilization as described in explanatory note below)</td> <td data-bbox="1491 927 2018 1134">The waste heat is not located outside of the clinker making process. There is no impact from the changes of technical parameters.</td> </tr> <tr> <td data-bbox="976 1134 1491 1286">That affect process emissions from cement plants.</td> <td data-bbox="1491 1134 2018 1286">The project activity does not affect process emission from cement plants. There is no impact from the changes of technical parameters.</td> </tr> </tbody> </table>		Conditions	Impact from the changes	Where the current use of waste heat or the identified alternative business as usual use of waste heat is located outside of the clinker making process (so called Type 2 Waste heat utilization as described in explanatory note below)	The waste heat is not located outside of the clinker making process. There is no impact from the changes of technical parameters.	That affect process emissions from cement plants.	The project activity does not affect process emission from cement plants. There is no impact from the changes of technical parameters.	
Conditions	Impact from the changes										
Where the current use of waste heat or the identified alternative business as usual use of waste heat is located outside of the clinker making process (so called Type 2 Waste heat utilization as described in explanatory note below)	The waste heat is not located outside of the clinker making process. There is no impact from the changes of technical parameters.										
That affect process emissions from cement plants.	The project activity does not affect process emission from cement plants. There is no impact from the changes of technical parameters.										

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.2. Project Boundary				
B.2.1. As a result of the implementation of the CDM project activity are there any sources added to the project boundary which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology?		DR SV I	N/A, All emission sources related to the baseline scenario, project scenario and leakage are clearly identified and described in a complete and transparent manner.	OK
B.3. .Additionality : Within this category are the changes which may impact the validity of investment analysis or barrier analysis established at the time of project registration, thus affecting the additionality of the project activity				
B.3.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and by following all the required steps?	VVM Para.67d/95 PDD Section B.1/B.4/B.5	DR SV I	Yes. The approach to demonstrate additionality remains the same as the registered PDD.	OK
B.3.2. In case of using the additionality tool: Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes impact the discussion in the PDD? Are all steps followed in a transparent manner?	PDD Section B.1/B.4/B.5		Additionality tool is used and the changes from the registered PDD do not affect the application of the tool.	

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs									
B.3.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with complete transparency to all available data and documentation?	VVM Para.93/91 PDD Section B	DR SV I	<p>Yes. The revised PDD only modified part of Generator and Turbine key technical parameters, all the other information and data remained unchanged compared to those in the registered PDD. These information and data were validated by DOE during the validation stage.</p> <p>The changed information has been validated through reviewing the FSR, The technology application agreement for Tonglu and Guangde, the site visit inspection of the nameplate by assessment team.</p>	OK									
B.3.4. If an investment analysis has been used, has it been shown that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?	VVM Para. 106, 107, 109 112a-c PDD Section B.5	DR	<p>As the change of rated power of turbine from 8.8 MW to 9 MW was aimed at reaching the designed output in the FSR and PDD, it is considered that the rated power change of the steam turbine would not result in the increase of electricity output, it was confirmed the output of the Guangde Site estimated in the FSR and PDD would not be increased as a result of the change of turbine. And after checking the purchasing agreement and the FSR, it was found that the price of the turbine and generator for Tonglu and Guangde sites was slightly over the projected value in the FSR</p> <table border="1" data-bbox="992 858 1998 1093"> <thead> <tr> <th data-bbox="992 858 1323 938">Price of Steam turbine and generator unit</th> <th data-bbox="1323 858 1601 938">In the FSR</th> <th data-bbox="1601 858 1998 938">In the purchasing agreement</th> </tr> </thead> <tbody> <tr> <td data-bbox="992 938 1323 1018">Tonglu cement clinker line</td> <td data-bbox="1323 938 1601 1018">8.6142 million RMB</td> <td data-bbox="1601 938 1998 1018">8.62 million RMB</td> </tr> <tr> <td data-bbox="992 1018 1323 1093">Guangde cement clinker line</td> <td data-bbox="1323 1018 1601 1093">9.515 million RMB</td> <td data-bbox="1601 1018 1998 1093">9.6 million RMB.</td> </tr> </tbody> </table> <p>The changes do not increase the estimated output nor reduce the costs, so the original investment analysis is still valid. It reveals that to reach the IRR benchmark, electricity output shall be increased at least 10.2% for Tonglu site, or 14.5% for Guangde site or the total investment shall be reduced at least 22.65% for Tonglu site, or 25.6% for Guangde site (PDD page 19), the changes under validation neither increase the designed electricity output nor reduce the total investment thus are not likely to affect the established additionality.</p>	Price of Steam turbine and generator unit	In the FSR	In the purchasing agreement	Tonglu cement clinker line	8.6142 million RMB	8.62 million RMB	Guangde cement clinker line	9.515 million RMB	9.6 million RMB.	OK
Price of Steam turbine and generator unit	In the FSR	In the purchasing agreement											
Tonglu cement clinker line	8.6142 million RMB	8.62 million RMB											
Guangde cement clinker line	9.515 million RMB	9.6 million RMB.											
B.3.5. If a benchmark is used, is it ensured that it is selected in accordance	VVM Para. 110 PDD Section B.5	DR	This change did not have impact on the selected benchmark.	OK									

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
<p>with the requirements of the tool /methodology and it represents standard returns in the market (not linked to the subjective profitability expectation or risk profile of a particular project developer).</p>				
<p>B.3.6. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?</p>	<p>VVM Para. 114 115a-b/116 PDD Section B.5</p>	<p>DR</p>	<p>The barriers identified include Investment Barriers, Technological Barriers and Lack experience in power generation. These changes have no impact on the investment barrier because the total investment was not reduced as a result of the changes. Also, these changes did not impact the technological barrier because the project still applied the domestic equipment from the same supplier with similar specifications. And the typical technical barrier identified in the PDD (the dust content in exit gases from SP during clinker production) was also not alleviated by these changes because the SP boiler remains unchanged. It is also considered that the changes also have no impact on the lack experience in power generation.</p>	<p>OK</p>
<p>B.3.7. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?</p>	<p>VVM Para. 105 PDD Section B.5</p>	<p>DR</p>	<p>No change has been made in this regard.</p>	<p>OK</p>
<p>B.3.8. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the CDM project activity? Do they also abide by the same applicable laws and legislations?</p>	<p>VVM Para. 105 PDD Section A.4.3/B.5</p>	<p>DR</p>	<p>No change has been made in this regard.</p>	<p>OK</p>

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.3.9. Has it been shown that the project is not common practice?	VVM Para. 119a/b PDD Section B.5	DR	No change has been made in this regard.	OK
B.3.10. What are the key distinctions between the project activity and any similar projects that are widely used as common practice?	VVM Para. 118, 119c/d PDD Section B.5	DR	No change has been made in this regard.	OK
B.4. Application of the Baseline Methodology				
B.4.1. Has the approved methodology been applied correctly for determining baseline emissions ?	VVM Para. 91d PDD Section B (B.6.1 -B.71)	DR	The changes do not impact the applicability and application of Approved Baseline Methodology. The methodology AM0024 is still applicable for the project activity.	OK
B.4.2. Has the approved methodology been applied correctly for determining project emissions ?	VVM Para. 90/91d PDD Section B (B.6.2-B.71)		The changes do not impact the applicability and application of Approved Baseline Methodology. The methodology AM0024 is still applicable for the project activity.	OK
B.4.3. Has the approved methodology been applied correctly for determining leakage ?	VVM Para. 91d PDD Section B (B.6.2 -B.71)		The changes do not impact the applicability and application of Approved Baseline Methodology. The methodology AM0024 is still applicable for the project activity.	OK
B.4.4. Where applicable, has the approved methodology	VVM Para 88/91d		The changes do not impact the applicability and application of Approved Baseline Methodology. The methodology AM0024 is still applicable for the project activity.	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
been applied correctly for the direct calculation of emission reductions ?	PDD Section B (B.6.2 -B.71)			
B.4.5. Where there is an option between different equations or parameters, has the methodological choices for the project been explained, have they been properly justified and are they correct?	VVM Para.89/90/91 PDD Section B (B.6.2 -B.71)		The changes do not impact the applicability and application of Approved Baseline Methodology. The methodology AM0024 is still applicable for the project activity.	OK
B.4.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD Sections B.5-C	DR	The changes do not impact the applicability and application of Approved Baseline Methodology. The methodology AM0024 is still applicable for the project activity.	OK
B.5. Ex-ante Data and Parameters Used				
B.5.1. Are the data provided in compliance with the methodology?	VVM Para. 91/67c PDD Section B.6.3B.6.4	DR	No change has been made in this regard.	OK
B.5.2. Is all the data derived from official data sources or replicable records and have these been correctly	VVM Para. 91a/b PDD Section	DR	No change has been made in this regard.	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
quoted?	B.6.3/B.6.4			
B.5.3. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	N/A, not within the scope of request for change of PDD as per EB 48 annex 66 and annex 67. No change has been made in this regard.	OK
B.5.4. Is all the data appropriate and correctly applied to the CDM project activity?	VVM Para. 91c PDD Section B.6.3/B.6.4	DR	No change has been made in this regard.	OK
B.5.5. Are data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately assessed, correct, and will they result in conservative estimates?	VVM Para. 90 PDD Section B.6.3/B.6.4	DR	No change has been made in this regard.	OK
B.6. Calculation of Emissions Reductions				
B.6.1. Has the approved methodology been applied correctly for determining emission reductions ?	VVM Para. 91d PDD Section A.4.4/B.6	DR	No change has been made in this regard.	OK
B.6.2. Are the emission reduction calculations documented in a complete and transparent manner?	VVM Para. 91e PDD Section B.6	DR	No change has been made in this regard.	OK
B.6.3. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	PDD Section B.6	DR	No change has been made in this regard.	OK
B.6.4. Is the calculation of the	VVM Para.	DR	No change has been made in this regard.	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
emission reduction correct?	91e PDD Section B.6			
B.7. Emission Reductions				
B.7.1. Is the form/table required for the indication of projected emission reductions correctly applied?	PDD Section A.4.4/ Section B.6	DR	No change has been made in this regard.	OK
B.7.2. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	PDD Section A.4.4/ Section B.6	DR	No change has been made in this regard.	OK
B.8. Baseline Details				
B.8.1. Is there any indication of a date when determining the baseline?	PDD Section B.8/Annex 3	N/A	N/A, not within the scope of request for change of PDD as per EB 48 annex 66 and annex 67. No change has been made in this regard.	N/A
B.8.2. Is this consistent with the time line of the PDD history?	Also see revision history of the PDD	N/A	N/A, not within the scope of request for change of PDD as per EB 48 annex 66 and annex 67. No change has been made in this regard.	N/A
B.8.3. Is all data required provided in a complete manner by annex 3 of the PDD?	PDD Annex 3	N/A	N/A, not within the scope of request for change of PDD as per EB 48 annex 66 and annex 67. No change has been made in this regard.	N/A

A.2 Annex 2 Overview of Findings**Findings Overview Summary**

	CARs	CLs	FARs
Total Number raised	0	0	0

A.3 Annex 3 Team Members Statements of Competency

Statement of Competence

Name: Michael Wu

Status

- Lead Assessor - Expert
- Assessor - Financial Expert
- Local Assessor China - Technical Reviewer

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)

Technical Area(s): TA 1.2 Energy generation from renewable energy sources.

2. Energy Distribution

Technical Area(s):

3. Energy Demand

Technical Area(s):

4. Manufacturing

Technical Area(s):

5. Chemical Industry

Technical Area(s):

6. Construction

Technical Area(s):

7. Transport

Technical Area(s):

8. Mining/Mineral Production

Technical Area(s):

9. Metal Production

Technical Area(s):

10. Fugitive Emissions from Fuels (solid, oil and gas)

Technical Area(s):

11. Fugitive Emissions from Production and

Consumption of Halocarbons and Sulphur Hexafluoride

Technical Area(s):

12. Solvent Use

Technical Area(s):

13. Waste Handling and Disposal

Technical Area(s):

14. Afforestation and Reforestation

Technical Area(s):

15. Agriculture

Technical Area(s):

Approved Member of Staff by: Siddharth Yadav Date: 14/04/2011

Statement of Competence

Name: Lenore Yin

Status

- Lead Assessor	<input checked="" type="checkbox"/>	- Expert	<input checked="" type="checkbox"/>
- Assessor	<input checked="" type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	China	- Technical Reviewer	<input type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
Technical Area(s): TA 1.2 Energy generation from renewable	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s):	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input type="checkbox"/>
Technical Area(s):	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input type="checkbox"/>
Technical Area(s):	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by:

Siddharth
Yadav

Date:

05/01/2011

Statement of Competence

Name: Yi Liao

Status

- Lead Assessor	<input checked="" type="checkbox"/>	- Expert	<input checked="" type="checkbox"/>
- Assessor	<input checked="" type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	China	- Technical Reviewer	<input type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
Technical Area(s): TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity generation from solar	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s):	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input type="checkbox"/>
Technical Area(s):	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input checked="" type="checkbox"/>
Technical Area(s): TA 13.1: Waste handling and disposal	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 30/06/2011

Statement of Competence

Name: **George Chen**

Status

-	Lead Assessor	<input type="checkbox"/>	-	Expert	<input checked="" type="checkbox"/>
-	Assessor	<input type="checkbox"/>	-	Financial Expert	<input type="checkbox"/>
-	Local Assessor	<input type="checkbox"/>	-	Technical Reviewer	<input type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input type="checkbox"/>
Technical Area(s):	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s):	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input checked="" type="checkbox"/>
Technical Area(s): TA 4.1 Cement sector	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input type="checkbox"/>
Technical Area(s):	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by: **Siddharth Yadav** Date: **07/01/2011**

Statement of Competence

Name: **Joe Sun**

Status

- Lead Assessor	<input checked="" type="checkbox"/>	- Expert	<input type="checkbox"/>
- Assessor	<input checked="" type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input type="checkbox"/> China	- Technical Reviewer	<input checked="" type="checkbox"/>

Scopes of Expertise

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

Approved Member of Staff by: **Siddharth Yadav** Date: **29/09/2010**

Statement of Competence

Name: **Jumson Fu**

Status

-	Lead Assessor	<input type="checkbox"/>	-	Expert	<input checked="" type="checkbox"/>
-	Assessor	<input type="checkbox"/>	-	Financial Expert	<input type="checkbox"/>
-	Local Assessor	<input type="checkbox"/>	-	Technical Reviewer	<input type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
Technical Area(s):TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity from solar.	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s):	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input type="checkbox"/>
Technical Area(s):	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input type="checkbox"/>
Technical Area(s):	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by:

Siddharth Yadav

Date:

16/11/2010

Statement of Competence

Name: **Qingmei Zeng**

Status

-	Lead Assessor	<input type="checkbox"/>	-	Expert	<input checked="" type="checkbox"/>
-	Assessor	<input type="checkbox"/>	-	Financial Expert	<input type="checkbox"/>
-	Local Assessor	<input type="checkbox"/>	-	Technical Reviewer	<input type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input type="checkbox"/>
Technical Area(s):	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s):	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input checked="" type="checkbox"/>
Technical Area(s): TA 4.1 Cement sector	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input type="checkbox"/>
Technical Area(s):	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by: **Siddharth Yadav** Date: **16/05/2011**