
VALIDATION REPORT

“YUNNAN LINCANG CITY NANLINGHE 1ST LEVEL SMALL- SCALE HYDROPOWER PROJECT”

REPORT No. 0078

VERSION No. 1.1

VALIDATION REPORT

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Approved by: INANAGA, Hiroshi	Organisational unit: Deloitte Tohmatsu Evaluation Certification Organization
Client: Mitsubishi Corporation	Client ref.:
<p>Summary:</p> <p>Deloitte Tohmatsu Evaluation Certification Organization (Deloitte-TECO) has performed a validation of the "Yunnan Lincang City Nanlinghe 1st level Small-scale Hydropower Project" to confirm whether or not it has met the UNFCCC criteria for the CDM, as well as the criteria required for consistent project operations, monitoring and reporting. The abovementioned UNFCCC criteria refer to Article 12 of the Kyoto Protocol, CDM modalities and procedures, as well as subsequent decisions by the CDM Executive Board. This validation report summarizes the findings of the validation Deloitte-TECO team.</p> <p>The validation process covered three phases: i) a review of the project design documents, ii) follow-up interviews with project stakeholders and iii) a resolution of outstanding issues and the issuance of the final validation report and opinion.</p> <p>In summary, it is Deloitte-TECO's opinion that the project, as described in the project design document of 15th Feb 2009 (version 06), meets all relevant UNFCCC requirements for the CDM and correctly applies the approved baseline and monitoring methodology of AMS-I.D. (ver. 13). Deloitte-TECO requests that the Yunnan Lincang City Nanlinghe 1st level Small-scale Hydropower Project be registered as a CDM project activity.</p>	

Report No.:	Subject Group: Environment	
Report title: Yunnan Lincang City Nanlinghe 1st level Small-scale Hydropower Project		
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Indexing terms

Climate Change, Kyoto Protocol, Validation, Clean Development Mechanism

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Abbreviations

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
SCPG	Southern China Power Grid
DNA	Designated National Authority
DOE	Designated Operational Entity
GHG	Greenhouse Gas(ses)
GSC	Global Stakeholder Consultation
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LOA	Letter of Approval
MP	Monitoring Plan
NDRC	National Development and Reform Commission
NGO	Non-governmental Organisation
ODA	Official Development Assistance
OM	Operational Margin
PDD	Project Design Document
PDR	Preliminary Design Report
PP	Project Participants
UNFCCC	United Nations Framework Convention on Climate Change

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1 INTRODUCTION

1.1 Objective of CDM validation

Mitsubishi Corporation has commissioned Deloitte Tohmatsu Evaluation Certification Organization (Deloitte-TECO) to validate the “Yunnan Lincang City Nanlinghe 1st level Small-scale Hydropower Project” (hereafter called “the proposed project”). The purpose of a validation is to conduct an independent third party assessment on 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 a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of certified emission reductions (CERs). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed in the Bonn Agreement and the Marrakesh Accords.

1.2 Scope

The validation scope 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 the Kyoto Protocol requirements, UNFCCC rules and associated interpretations. Based on the recommendations in the Validation and Verification Manual, Deloitte-TECO has employed a risk-based approach in the validation process, focusing on the identification of significant risks to project implementation and the generation of CERs.

While validation is a third party exercise that is completely distinct from consulting, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design. The validation process applied the CDM AMS-I.D.(ver.13) monitoring methodology and included a review of the following documents:

- Project Design Document
- Feasibility Study Report
- Environmental Impact Assessment
- Summary of Comments by Local Stakeholders

2 VALIDATION APPROACH

In order to ensure transparency, a validation protocol was customised for the project, according to the validation and verification manual (VVM) in Annex 3 of EB44. The protocol which was prepared according to the VVM shows, in a transparent manner, requirements to be validated,

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means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

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

The validation protocol consists of four tables. The different columns in these tables are described in Figure 1. The completed validation protocol is enclosed in Appendix A to this report.

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Figure1 Validation protocol tables

Table A1 Mandatory Requirements for Clean Development Mechanism (CDM) Project Activities						
Category	Checklist Question	Reference	Means of verification (MoV)	Comment	Draft Conclusion	Final Conclusion
<i>Categories of requirements of CDM VVM</i>	<i>The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further subdivided. The lowest level constitutes a checklist question.</i>	<i>Gives reference to documents where the answer to the checklist question or item is found.</i>	<i>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.</i>	<i>The section is used to elaborate and discuss the checklist question and/or the conformance to the question after the on-site assessment of the validation. It is further used to explain the conclusions reached.</i>	<i>The conclusion of both the document review and the on-site assessment is stated in the section. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification (CL) is used when the validation team has identified a need for further clarification.</i>	<i>The conclusion of all of validation process is stated in the section. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification (CL) is used when the validation team has identified a need for further clarification.</i>

Table A2 -1: Requirement Checklist						
Category	Checklist Question	Reference	Means of verification (MoV)	Comment	Draft Conclusion	Final Conclusion
<i>Categories of requirements of CDM VVM</i>	<i>The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further subdivided. The lowest level constitutes a checklist question.</i>	<i>Gives reference to documents where the answer to the checklist question or item is found.</i>	<i>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.</i>	<i>The section is used to elaborate and discuss the checklist question and/or the conformance to the question after the on-site assessment of the validation. It is further used to explain the conclusions reached.</i>	<i>The conclusion of both the document review and the on-site assessment is stated in the section. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification (CL) is used when the validation team has identified a need for further clarification.</i>	<i>The conclusion of all of validation process is stated in the section. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification (CL) is used when the validation team has identified a need for further clarification.</i>

Table A2-2 Investment Analysis Checklist based on EB41 Annex 45 “Guidance on the Assessment of Investment Analysis”				
Category	Guidance	Comments	Draft Concl	Final Concl
<i>As shown in Guidance</i>	<i>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.</i>	<i>The conclusion of both the document review and the on-site assessment is stated in the section. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification (CL) is used when the validation team has identified a need for further clarification.</i>	<i>The section is used to elaborate and discuss the checklist question and/or the conformance to the question after the on-site assessment of the validation. It is further used to explain the conclusions reached.</i>	<i>The conclusion of all of validation process is stated in the section. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification (CL) is used when the validation team has identified a need for further clarification.</i>

Table A3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Validation conclusion
<i>If the conclusions from the draft Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.</i>	<i>Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification Request is explained.</i>	<i>The responses given by the Client or other project participants during the communications with the validation team should be summarised in this section.</i>	<i>This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under “Final Conclusion”.</i>

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3 VALIDATION METHOD

The validation process consisted of the following three phases:

- I* Document review including risk approach
- II* Follow-up interviews
- III* Clarification requests and corrective action requests

3.1 Document review including risk approach

The Project Design Document submitted by the client and additional background documents related to the project design and baseline were reviewed. A complete list of all documents and evidence reviewed is included in the Reference section of this document. The original PDD (ver. 05, dated Aug 26th, 2008) was received after performing a completeness check for the global stakeholder consultation process (GSP). A document review including risk analysis was conducted on the basis of the PDD. The results of the risk analysis are as follows:

Risk Analysis

Risk	Verify	L/M/H	Correspondence/Action	Result
Baseline emissions	Appropriateness of emissions factor	M	Cross-check with the web information provided by Chinese government.	The original PDD for the GSP was based on the "2007 Baseline Emission Factors for Regional Power Grids in China". Since the "2008 Baseline Emission Factors for Regional Power Grids in China" had already been issued by the time the GSP commenced, the PDD should be revised accordingly.
	Confirmation of amount of electricity generated		Accuracy of meters, $\pm 0.2\%$, must be confirmed during on-site visit	
Leakage	Diversion of used facilities and/or equipment from other locations	L	No leakage	Must confirm during the on-site visit whether or not all the equipment to be used in the proposed project activities will be newly installed, since it is not specified in the PDD.
Monitoring Plan	Deficiency in data collection system	M	Preparation process must be checked with PP during validation	Must confirm whether the electricity meter data in the monitoring plan is going to be double-checked by both the project owner and the grid company. This should also be confirmed during verification.
	Deficiency in data calculation system			
Investment Cost	Consistency between Feasibility Study Report (FSR) and PDD	H	Investment costs noted in FSR were prepared by the Design Institute of China. PDD must be crosschecked with FSR.	Must check the total investment cost for turbines/generators as specified in the purchase contract against the FSR data.

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Risk	Verify	L/M/H	Correspondence/Action	Result
Internal Rate of Return (IRR) Calculation	Appropriateness of figures, factors, and calculation methods	H	IRR excel sheet must be checked in detail.	All the formulas and cells were viewable without password protection. Since some of the calculation formulas and format were difficult to understand, it will be necessary to assess it via interviews during the on-site inspection.
IRR Calculation (with CER)	Appropriateness of project period applied in IRR calculation	L	IRR excel sheet was checked	21 years was applied.
Starting Date of Project Activity	Selection of starting date	L	Confirmed by interview and with evidential document.	Event history shall be assessed.
Environmental Impact	Terms of license based on the result of environmental impact assessment	L	Terms of license was checked via EIA during the on-site assessment.	EIA was conducted in accordance with Chinese law. No problems identified so far.
Stakeholders' Opinion	Correspondence to opinions	L	Result of stakeholders' questionnaire was confirmed in on site interviews with local residents.	Stakeholder consultation is a part of EIA. No problems identified so far.
Common Practice	Existence of similar projects in neighboring area	N/A	One on-going projects was identified near the project site. Investigated whether or not the project was receiving financial or policy support from the government.	N/A

3.2 Follow-up interviews

During the period of 9-11 December 2008, Deloitte-TECO conducted interviews with project stakeholders to confirm certain information and to resolve issues identified during the document review. Representatives of Lincang City Xinshui Hydropower Development Co. Ltd. and related stakeholders were interviewed. The interviewees and main topics of the interviews are summarised in the table below:

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Interview Topics

Interviewed organisation	Interviewees	Interview topics
Lincang City Xinshui Hydropower Development Co. Ltd.	Peng Guangyun	The project design and the evidential documents of the proposed project
Lincang City Xinshui Hydropower Development Co. Ltd.	Zhao Yongchao	The project design and the evidential documents of the proposed project
Water Authority of Lingcan City, Yunnan Province	Yang Tihua	Environmental impacts of the construction
Water & Hydroelectric Power Investigation, Design and Research Institute of Lincang City, Yunnan Province	Yang Songyi	The feasibility study report of the proposed project
Lincang City Local Grid Company	Li Xinhua	Power purchase contract and the monitoring plan of the proposed project
Local Government of Mang Ka Town	Yin Tianzhi	Contribution to local sustainable development of the proposed project
Accord Global Environment Technology (Beijing) Co., Ltd.	Jin Song	The project design and the evidential documents of the proposed project
Bai Yan Village	Tian Guanghui	Environmental impact assessment and compensation for resettlement if any
Bai Yan Village	Yang Yongsheng	Environmental impact assessment and compensation for resettlement if any
Bai Yan Village	Wang Shuhua	Environmental impact assessment and compensation for resettlement if any
Bai Yan Village	Jia Yonglin	Environmental impact assessment and compensation for resettlement if any

The schedule for the 9-11 Dec 2008 on-site visits was as follows:

- 9 Dec 2008: On-site visit including stakeholders interview
- 10-11 Dec 2008: Interview with project participants to check technical aspects etc.

3.3 Clarification requests and corrective action requests

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification, and any other outstanding issues which needed to be clarified for Deloitte-TECO's positive conclusion on the project design. The Corrective Action Requests and Clarification Requests raised by Deloitte-TECO were resolved during communications between the client and Deloitte-TECO. To guarantee the transparency of the validation process, the concerns raised and responses given are described in the validation protocol in Appendix A.

Since modifications to the project design were necessary to resolve Deloitte-TECO's concerns, the client decided to revise and resubmit the project design document. After reviewing the revised and resubmitted project document, Deloitte-TECO issued this final validation report and opinion. After the on-site visit, Deloitte-TECO prepared a Clarification and Corrective Action Request list on 22/12/2008, and final answers from project participants were submitted to Deloitte-TECO by 15/05/2009.

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4 STAKEHOLDER CONSULTATION PROCESS

According to the modalities for the validation of CDM projects, Deloitte-TECO made the original PDD publically available on its website on 10 Sep 2008, and invited comments from all parties, stakeholders and non-governmental organisations over the next 30 days until 09 Oct 2008. No comments were received.

http://www.teco.tohmatsu.co.jp/service/cdm/cdm9_7.html

5 VALIDATION FINDINGS

In the following sections, the findings of the validation are stated. The validation findings for each validation subject are presented as follows:

- 1) The findings from the document review of the original project design documents and the findings from interviews during the follow up visit are summarised. A more detailed record of these findings can be found in the Validation Protocol in Appendix A.
- 2) Where Deloitte-TECO identified issues that needed clarification or that represented a risk to the fulfilment of the project objectives, a Clarification or Corrective Action Request, respectively, was issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the project resulted in twelve Corrective Action Requests and five Clarification Requests.
- 3) Where Clarification or Corrective Action Requests have been issued, the exchanges between the client and Deloitte-TECO to resolve these Clarification or Corrective Action Requests are summarised.
- 4) The conclusions for validation subject are presented.

The final validation findings relate to the project design as documented and described in the revised and resubmitted project design document of Version 06 (15 Feb. 2009).

5.1 Approval of the project activity

(Ref. 4, 5)

The letter(s) of approval by the DNA of each Party, China and Japan, have been received from both parties and confirmed. It was stated that both DNA are from the Parties to the Kyoto Protocol. Referring to the exact title of the proposed CDM project activity as it appears in the PDD submitted for registration, the host party, China, has noted that the proposed CDM project activity will contribute to the sustainable development of the country. The proposed CDM project activity title in the PDD was confirmed precisely.

- Letter of Approval issued by Chinese government: [2008] No.2123, 14/08/2008 in Chinese version (and No.1300, July 2008 in English version)
- Letter of Approval issued by Japanese government: 20.10.01 No.6, 01/10/2008

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Parties to the Kyoto protocol have been confirmed via the website of UNFCCC as follows:

- Ratification of China: 30/08/2002
- Ratification of Japan: 04/06/2002

5.2 Approval of participation

(Ref. 4, 5)

All project participants listed in the PDD was cross-checked in the letter(s) of approval. Each letter of approval states that participation is voluntary. It was confirmed that no official development funding is involved.

5.3 Project design document

(Ref. 1)

The latest CDM-SSC- PDD form, version 03, was used for the original PDD. A completeness check of the original PDD was conducted before the global stakeholder process, in accordance with “*Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD, Version 05)*”. No critical instances of noncompliance were found.

5.4 Project description

5.4.1 Project design of small-scale clean development mechanism project activities

(Ref. 1, 2, 9, 10)

➤ Maximum output capacity:

The output capacity of this project is claimed to be 8MW. The design values of the equipment, such as turbines and generators, were all accurately assessed in the FSR and the technical agreement. It was also confirmed that the installed turbine/generator nameplate capacity was 4000kW (an efficiency equal to 5000kVA rated capacity X 0.8) during the on-site visit. It was finally concluded that the maximum output capacity was 8MW and that it meets the requirements for a small-scale project. The maximum output capacity is equivalent to up to 15 megawatts.

➤ Debundling:

The definition of debundling is included in Annex 27 of EB36 as: “A proposed small-scale project activity shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity with the following conditions:

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Debundling conditions

	Yes/No
(a) With the same project participants;	No
(b) In the same project category and technology/measure;	No
(c) Registered within the previous two years;	No
(d) Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point;	No

It was confirmed during the on-site assessment as well as on the UNFCCC website that the proposed project does not meet the criteria of debundling requirement for small-scale project activities, as there is neither registered small-scale CDM project activity nor an application to register another small-scale CDM project activity meeting the definition above.

➤ Leakage:

Leakage could only possibly be due to a transfer of existing equipment from another area. Since all the equipment has been newly installed, no leakage has occurred.

5.4.2 The nature of the proposed project activity

(Ref. 1, 2, 11)

The project is located on the intersection of Nanlahe River and Nanlinghe River in Nanla Town, Cangyuan County, Lincang City, Yunnan Province, P.R. China. This project employs a run-of-river hydropower system, which consists of a diversion system (composed of 5 dams, water diversion channels, water diversion tunnels, pressure pool and pressure pipeline), and power plants with substations. Due to topographic constraints, 5 dams were built. Each of the dams is very small in size and spans only part of the river's full width, yet maintains a steady flow of water. This structure is deemed to be more environmentally friendly than having one large dam. The on-site inspection confirmed that the power plant and two sets of turbines/generators are being installed in accordance with the technical agreement for the turbines/generators.

5.4.3 Technical aspects

(Ref. 1, 2, 11)

Hydropower station is well established technology in China. It was confirmed that generators and turbines were newly produced by a domestic engineering company and were installed with a total capacity of 8MW (two 4MW turbines/generators). There is no technology transferred from abroad.

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5.4.4 Designs and feasibility studies

The FSR for the proposed project was developed by the Water & Hydroelectric Power Investigation, Design and Research Institute of Lincang City, Yunnan Province in September 2006. It was approved by the Local Development and Reform Commission of Lincang City on 03/11/2006. It means that this project is in line with local government policy. All data and sources are clearly stated in the PDD.

5.4.5 Crediting period

(Ref. 1, 2)

The first crediting period is seven years, and may be renewed up to two times at most. The starting date for the first crediting period was specified as 01/01/2009 in the original PDD. During the on-site visit, it was observed that construction was behind schedule and the starting date of the crediting period will be postponed to the more feasible date of 01/07/2009 or the date of registration, whichever is later. Clarification on this issue has been requested.

5.5 Baseline and monitoring methodology**5.5.1 The selected methodology**

(Ref. 1, 2, 26)

The selected baseline methodology is in line with the approved baseline methodology in AMS-I.D. “*Grid connected renewable electricity generation*” (ver. 13). Emission factors are calculated according to the “*Tool to calculate the emission factor for an electricity system*” (ver.01.1) and the “*Notification on Determining Baseline Emission Factor of China’s Grid*” issued and authorized by the NDRC on 18/07/2008 (renewed on 30/12/2008). This proposed project is in line with the official emission factors for calculating emissions reduction amounts.

5.5.2 Applicability of the selected methodology to the project activity

It was confirmed during the document review that the type of the proposed project should be categorized into (i) Renewable energy project as Type, and (A) Electricity generation for a system as Category in AMS-I.D. According to the methodology, a simple OM method can be used since low-cost/must run resources constitute less than 50% of total grid generation in average of the five most recent years. This proposed project employs hydropower to supply electricity to the Southern China Power Grid Co., Ltd. (SCPG). Annual portion of low-cost/must run resources of total amount of SCPG was about 29~35% during the most recent five years, from 2003 to 2007. Thus, it is applicable.

5.5.3 Project Boundaries

(Ref. 1, 2, 9, 10)

The identified boundaries and selected sources and gases were justified for the project activity through the on-site audit that included an inspection of the project site area, design book,

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facilities as well as personal interviews. It was concluded that no other emission sources exist for this project and no deviations were found. The geographical and physical boundaries of the proposed project were clearly revised as a flowchart in Section B.3 of the final PDD. Emission sources and gases included in the project boundary for the purpose of calculating project emissions and baseline emissions are as follows:

GHG emission in Project boundary

Source		Gas	Included?	Justification / Explanation
Baseline	Electricity generation of Southern China Power Grid	CO ₂	Yes	In accordance with AMS-I.D., only CO ₂ emissions from electricity generation should be accounted.
		CH ₄	No	In accordance with AMS-I.D.
		N ₂ O	No	In accordance with AMS-I.D.
Project Activity	For hydropower plants, emission of CH ₄ from the reservoir.	CO ₂	No	In accordance with AMS-I.D.
		CH ₄	No	In accordance with AMS-I.D.
		N ₂ O	No	In accordance with AMS-I.D.

5.5.4 Baseline identification

Alternative 4 in B.4 of the PDD was assessed as a realistic and credible alternative. The other alternatives given in B.4 of the PDD could not be considered realistic alternatives since alternative number 2 is prohibited by Chinese law due to the low capacity (below 135 MW) of the coal fired boiler. Alternative 3 was excluded due to lack of renewable resources (e.g. wind, biomass, etc.) and the project site's rough terrain (rivers, hills, mountains, and valleys). Only alternatives 1 and 4 were concluded to be plausible and credible alternatives. An analysis of the alternatives is provided in table 3.5.1.

Identification of Alternatives

Description	Yes/No	Adequacy
1. Carry out the proposed hydropower plant development project, but not as a CDM project activity	No	Since it is not financially feasible it is rejected as a proposed project activity.
2. Construction of a fossil fuel power plant with the same amount of annual electricity generation	No	The project which employs a below 135 MW capacity boiler is prohibited by law.
3. Construction of a power plant using other renewable energy sources, like biomass or wind power, with the same annual electricity generation.	No	It is not feasible due to geographic features of the terrain.
4. Use China Southern Power Grid (CSG) as the provider for the same amount of electricity generated by the proposed project	Yes	This is the baseline.

5.5.5 Algorithms and/or formulae used to determine emission reductions

(Ref. 1, 2, 26)

Emission reductions are calculated in accordance with AMS-I.D. (ver. 13). All of emission factors applied in the original PDD for global stakeholder consultation was calculated by the project participants, but contained some calculation errors. Therefore, the emission factors were checked against the authorized data from NDRC during the validation process as follows:

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Comparison of emission factors

PDD version	Calculated by	Emission factors of CSPG(tCO ₂ /MWh)		
		OM	BM	CM
Original PDD for GSC	The project owner	1.0607	0.6816	0.87115
Final PDD	NDRC	1.0608	0.6816	0.8712

The original PDD was publically available on 10 Sep 2008, and the most up-to-date data for emission factors at the time of validation was carefully considered. After the follow-up interviews, it was concluded that “2008 Baseline Emission Factors for Regional Power Grids in China” issued by NDRC on 18/07/2008 was the most appropriate figures, though the original data was withdrawn from the NDRC official website. Since the revised emission factors, renewed on 30/12/2008, were deemed to be more accurate and traceable by recalculating by the project participants, it was concluded that the revision of emission factors was reasonable.

Using the calculated emission factor, the GHG reduction is determined to be 26,869 tCO₂e since the estimation of actual electricity supplied to the grid is cross-checked to be 30,841.56 MWh. All assumptions and data used by the project participants are listed in the PDD.

5.6 Additionality of a project activity

(Ref. 1, 2, 6, 30)

Additionality of the proposed project is demonstrated by investment barrier analysis, based on the requirements of Attachment A to Appendix B, “*Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories*” in the “*Simplified Modalities and Procedures for Small-scale CDM Project Activities*”. The investment barrier analysis was carried out using the “*Tool for the demonstration and assessment of addtionality (ver 05.2)*”. The data used is based on the FSR which was developed by the Water & Hydroelectric Power Investigation, Design and Research Institute of Lincang City, Yunnan Province. Input values in the FSR were confirmed through a review of evidentiary documents during the on-site visit. The IRR study concluded that the proposed project was not financially sustainable without CER, because the IRR was less than the Chinese government’s official 10% benchmark figure for small scale hydropower projects (less than 25 MW) in China, according to the *Economic Evaluation Code for Small Hydropower Projects (SL16-95)*.

5.6.1 Prior consideration of the clean development mechanism

(Ref. 1, others in the table below)

VALIDATION REPORT

It was demonstrated that the CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity. The following documents were verified by Deloitte-TECO during the validation process to substantiate the events mentioned below:

Project Event History

Dates	Events	Evidence Refer to
09/ 2006	Final FSR is completed. According to the FSR, the fixed assets investment IRR is lower than the benchmark and the design institute recommends that the project owner apply for CDM status to improve the chances for financial success of the project.	2
10/ 2006	EIA is developed by the Environmental Science Research Institute of Honghe District.	3
03/11/2006	FSR is approved by Lincang City Development and Reform Commission.	7
03/11/2006	EIA is approved by Environmental Protection Bureau of Lincang City.	8
16/04/2007	Project owner holds Board meeting to discuss applying for CDM status. During the meeting it was decided that one person should be designated to take charge of the CDM process.	13
03/08/2007	The total construction contract is signed, signaling the start of the project.	12
03/08/2007	The equipment purchase contract is signed.	11
01/2008	The project owner signs a consultant agreement with AGET.	29
22/05/2008	The project owner signs the ERPA with Mitsubishi Corporation.	28
14/08/2008	The project gets LoA from China NDRC.	4
10/09/2008	The Project is at GSP stage.	-

The FSR for this project, which was developed in September 2006 on the basis of an 8 MW capacity, determined that it was not feasible due to an IRR that was below the benchmark figure. Upon the suggestion of the FSR author (the Water & Hydroelectric Power Investigation, Design and Research Institute of Lincang City, Yunnan Province), the project owner decided to consider applying for CDM status. After the FSR was approved by the local Development and Reform Commission, the project owner held an internal board meeting and eventually decided to assign a person to implement the project as a CDM as a way to overcome the financial barriers. Despite all the efforts by the project owner to boost profitability, poor financial performance precluded the project from securing needed bank loans. This left the project owner completely dependent on invested capital. Once the project was launched, the ongoing steps listed above were taken to maintain its CDM status. Specific requirements for prior CDM consideration are discussed in the following sections.

5.6.1.1 Starting date of the project

(Ref. 12)

VALIDATION REPORT

In the original PDD, the starting date of the project activity was given as 01/08/2007 without any explanation. A survey of evidence during the on-site assessment, confirmed that the start date of the project was 03/08/2007. This was the date the construction agreement was signed. Since this was the earliest possible date any project actions could have been implemented, clarification was requested.

5.6.1.2 Period of time between FSR finalization and investment decision

The period of time between the finalization of the FSR and the investment decision was assessed in line with EB38, paragraph 54 (a). The FSR was finalized in September 2006, and the investment decision based on the FSR was made at the board meeting of the project owner on 16 April 2007. It was deemed that the period of time between them is seven months and it is unlikely that the input values would have materially changed.

5.6.1.3 Continuous real actions taken to secure CDM project activities

It was confirmed that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation. The history of project activity was summarised according to the Guidance on the Demonstration and Assessment of Prior Consideration of the CDM (EB 41 Annex 46). Deloitte-TECO focused on available evidences, including, inter alia, contracts with consultants for CDM/PDD/methodology services, Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds), evidence of agreements or negotiations with a DOE for validation services, submission of a new methodology to the CDM Executive Board, publication in newspaper, interviews with DNA, earlier correspondence on the project with the DNA or the UNFCCC secretariat. As shown in the table of project event history above, each of key events after the time of decision making by the board members applying for CDM project was continuously taken without break period. All documentary evidence in the table of project event history was available to verify the above-mentioned actions and demonstrate that the proposed project activity complies with the requirements.

5.6.2 Identification of alternatives

See 5.5.4. Baseline identification.

5.6.3 Assessment of investment analysis

(Ref. 1, 2, 6, 11, 12, 19, 28, 32)

Investment analysis was conducted using IRR checklist (Appendix A, Table A2-2) based on "*Guidance on the Assessment of Investment Analysis (EB41 Annex 45)*". It was deemed that some of the assumptions in the investment analysis of the original PDD were necessary to be amended, and it was confirmed that the corrections in the final PDD were completed appropriately.

VALIDATION REPORT

5.6.3.1 Consistency between the values in the PDD and in the FSR

In line with EB38, paragraph 54 (b), it was checked in the following table whether all input values used in the original PDD was derived from the FSR or not.

Comparison chart of input values in the PDD

Parameter	Original PDD for GSC (Version 05: 26 Aug. 2008)			Final PDD (Version 06: 15 Feb. 2009)		
	Figure	Units	Resource	Figure	Units	Resource
Installed capacity	8	MW	FSR	8	MW	FSR
Estimated annual generated electricity	36072	MWh	FSR	36072	MWh	FSR
Project lifetime (include construction period)	21	years	FSR	21	years	FSR
Total investment	38.2755	million RMB	FSR	3827.55	10000RMB	FSR
Expected bus-bar tariff (including VAT)	0.18	RMB/kWh	FSR	0.18	RMB/kWh	FSR
Annual O&M cost	883671	RMB	FSR	88.3671	10000RMB	FSR
Value added tax rate	6	%	FSR	6	%	FSR
Income tax rate	33	%	FSR	33	%	FSR
Expense for city maintenance and construction	5	%	FSR	5	%	FSR
Education fee addition	3	%	FSR	3	%	FSR
CER price	EU 8 /tCO ₂ e			10	\$/tCO ₂ e	FSR

While the original PDD mentioned a CER price of EU 8 /tCO₂e which came from the emissions reduction purchase agreement (ERPA), the FSR mentioned that CER price was assumed as USD10/tCO₂e when it calculated incomes from emissions reductions. In the final PDD, it was revised from Euro to USD.

5.6.3.2 Cross-checking of the input values from the FSR

Cross-checking of the input values from the FSR was carried out in line with EB38, paragraph 54 (c).

➤ Installed capacity

The capacity of equipment installed in the proposed project was examined in the FSR and it was determined that the two 4MW turbines/generators met the stated requirements. The capacity was cross-checked by using a technical agreement and an equipment purchase agreement (signed on 03/08/2007), as well as a nameplate on the installed facilities in the power plant during the on-site inspection.

VALIDATION REPORT

➤ Estimated annual grid-connected electricity

The amount of electricity generated is estimated at 36,072 MWh/year (8MW*4,509h/year). The actual electricity supplied to the grid is estimated to be 30,841.56 MWh after taking 0.9 as the efficiency factor into consideration, and deducting a total of 5% electricity due to transmission loss and self-consumption. This has been calculated as follows:

$$30,841.56\text{MWh}=36,072\text{MWh}\times 0.9\times (1-0.05)$$

The definition for the efficiency factor, shown in the table below, is in accordance with section 3.4 of the “*Economic Evaluation Code for Small Hydropower Projects (SL16-95)*”. The FSR notes that “the proposed project activities are categorized into monthly adjusted joint-grid power stations and that the grid company agrees to import electricity during high water periods as well as at night”. The description in the FSR was cross-checked against the power purchase agreement, and it was confirmed that the efficiency factor of 0.9 was used in this project. Since it is the maximum allowable factor for the project category (No.3-1) in the table below, it was deemed conservative estimation.

Parameter of Electricity Efficiency Factors

No.	Power Station Category	Electricity efficiency factors
1.	Annual/Semi-annual adjusted joint-grid power station	0.95~1.00
2.	Quarterly adjusted joint-grid power station	0.90~0.95
3	Monthly/Weekly/Daily adjusted or unadjusted joint-grid power station:	0.70~0.90
3-1	- where the grid company agrees to import the electricity during high water periods and at night	0.80~0.90
3-2	- where the grid company restricts electricity use during high water periods and at night	0.70~0.80
4	Daily adjusted or unadjusted independently operated power station .	0.60~0.70

➤ Investment cost

Investment cost in the FSR was verified in two manners, using evidences which were provided by the project owner and also those which were publicly available.

Firstly, the construction agreement including purchase contract for the turbine, generator and auxiliary equipment was obtained as additional reference documents, and cross-checked to confirm the relevance of the estimated equipment cost utilized in the FSR in the following table:

Comparison chart for total investment cost

Reference	Items	RMB (million)
FSR	Total investment costs	38.2755
Construction Agreement	Construction cost of power plant	34
	Construction expenditure of transmission cable to electricity grid	5
	Total	39

VALIDATION REPORT

This cross-check revealed no significant difference between the figures in the construction agreement (39 millionRMB) and those in the FSR (38.2755 millionRMB).

Secondary, it was recognized that two financial indicators were workable to evaluate reasonability of the investment cost estimation in the FSR. The first indicator is defined as “the investment cost per annual grid-connected electricity”. This indicator for the proposed project showed 1,241 yuan /MWh for 30841.56MWh of electricity generation supplied to the grid. An average range of this indicator was calculated based on the latest 20 samples of small scale CDM hydropower projects in Yunnan province China, registered between 08/11/2008 and 29/05/2009, and found that it was between approximately 900-1,690 yuan /MWh. The second indicator is defined as “the investment cost per installed capacity”. This indicator for the proposed project was 4,784 yuan /kW for 8 MW of installed capacity. An average range of this indicator was also calculated based on the latest 20 samples of small scale CDM hydropower projects in Yunann province China, which were registered between 08/11/2008 and 29/05/2009, and found that it was between approximately 4,070-7,500 yuan /kW. These caculations indicate that the investment cost of the proposed project is within average range of these indicators for registered CDM projects.

➤ Tariff

It was confirmed that the estimated tariff used in the FSR for the proposed project was 0.18RMB/kWh. This value was notified on the “Yunnan Power Grid Tariff Notice ([2005]792)”, which was issued by the Yunnan Development and Reform Commission on 30 Aug 2005. The value of tariff was also cross-checked with that of the Power Purchase Agreement. According to the PPA, there are two different tariffs defined for different seasons. During the rainy season, the tariff is 0.16 yuan/kWh, while the tariff is 0.18 yuan/kWh during the dry season. Investigation confirmed that using the tariff of 0.18 yuan/kWh for the investment analysis yielded a more conservative result.

➤ CER price

While the original PDD mentioned a CER price of EU 8 /tCO₂e which came from the emissions reduction purchase agreement (ERPA), the FSR stated the CER price as USD10/tCO₂e when calculating income from emissions reductions. In the final PDD, it was revised from Euro to USD. In both cases, the CER price is eventually converted to RMB80/tCO₂e, and the IRR calculation remains unaffected.

➤ IRR calculation

According to “Guidance on the Assessment of Investment Analysis” on EB41 Annex 45, all the data and formula used in the IRR calculation spreadsheet was checked. Some of the calculation spreadsheet were deemed necessary to be clarified due to a complicated calculation approach as well as data entered without formulas (see Table A2-2 “Investment Analysis Checklist”).

Deloitte-TECO requested that the calculation be reviewed and the figures/formula revised. After reviewing, it was confirmed that all the calculations on the spreadsheet were corrected.

VALIDATION REPORT

➤ **Benchmark**

Benchmark analysis was selected as a way to assess the financial feasibility of the project activity. The PDD specified the required a 10% benchmark figure to be used for small scale (less than 25 MW) hydropower plants, according to the *Economic Evaluation Code for Small Hydropower Projects (SL16-95)*.

In conclusion, no significant discrepancy was found by cross-checking of the input values in the investment analysis.

5.6.3.3 IRR sensitivity analysis

(Ref. 1, 2, 6)

➤ **Selection of variable parameters**

The IRR sensitivity calculation on the spreadsheet submitted by the project participants was checked carefully. In the original PDD, three factors were selected as reasonable financial parameters, as “total investment”, “annual O&M cost”, and “annual output”. In the validation process it was determined that the expected bus-bar tariff should be another reasonable financial parameter. In summary, a total of four factors were eventually considered to be adequate financial parameters for assessing the sensitivity analysis, namely “fixed assets investment”, “annual O&M cost”, “annual output” and “electricity price”.

➤ **Range of variations**

In the sensitivity analysis, even when the fixed assets investment declined by 10%, the IRR was still below the benchmark. Even if the rest of the factors changed within a 10% range either way, each IRR would be below 10%, meaning the project would not be feasible. The validation team concluded that the proposed project would not be financially attractive unless it was a CDM project. If CER were included as an additional revenue source, the calculated IRR of 8.17% without CER revenue could be upped beyond the benchmark (of 10%) to 15.35%. This was considered a reasonable way to improve the financial prospects of the proposed project.

5.6.4 Barrier analysis

An investment barrier analysis was demonstrated based on "Guidance on the Assessment of Investment Analysis (EB41 Annex 45)", in accordance with Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities.

5.6.5 Common practice analysis

Common practice analysis of the proposed project is not applicable since it is small-scale project.

5.7 Monitoring Plan

(Ref. 1, 15, 17, 18, 20, 21)

VALIDATION REPORT

5.7.1 Collecting data and reporting

The monitoring plan in the PDD provides detailed information related to the collection and archiving of all relevant data needed to:

1. Estimate or measure emissions occurring within the project boundary:

No emission occurs within the project boundary. The imported electricity is measured by an electricity meter (main meter) installed on the project site. The grid company reports electricity transfers via an invoice. After calculating net generated electricity, the amount is subtracted from the total exported to the grid.

2. Determine the baseline emissions:

Exported electricity is measured by a main meter installed on the project site. The baseline emission is calculated by multiplying exported electricity by the emission factor as defined in B.6.1 and B.6.3 in the PDD.

3. Estimate changes in emissions outside the project boundary:

No changes in emissions will occur outside the project boundary since the only output of the project is electricity.

It was confirmed that all important indicators for controlling and reporting project performance are incorporated in the monitoring plan.

5.7.2 Monitoring system

- The organization of monitoring system and emission reduction calculations are performed with the support of consultants. Plant operations and the recording of data are performed by trained technicians and experienced employees. Electricity meters, etc. are regulated by the “Tech Administrative Code of Electric Energy Metering (DL/T448-2000)”. Main and check meters connected to the grid have a precision of at least 0.5s, which is compliant with DL/T448-2000.
- It was confirmed that the procedures for recording the amount of electricity delivered to the grid were consistent with those stated in the Power Purchase Agreement issued on 15/12/2008.
- In order to maintain the reliability of meters, Project Participants will cross-check them (compare with last month’s data) at the end of every month, as does the grid company. The exact time for this cross-check is specified in the Power Purchase Agreement.
- The project owner will provide CDM training to operators before the start of operations.
- It was confirmed that Project Participants have the ability to operate the plant, execute initiatives designed to reduce emissions and then calculate and record the amount of reduced emissions with the assistance of a reliable consultant.

VALIDATION REPORT

5.8 Sustainable development

(Ref. 4, 5)

Chinese DNA has approved the proposed project activities in the letter of approval, describing the project's contribution of the proposed CDM project activity to the sustainable development of China.

5.9 Local stakeholder consultation

(Ref. 1, 14, 22)

Local stakeholder consultation was conducted during the environmental impact analysis for the proposed project activities. In addition, questionnaires distributed to fifty (50) residents were prepared by the project owner as a way to consult with local stakeholders on the proposed project. It was confirmed that those who participated in completing the questionnaire supported the proposed project activities. Most of local residents are ethnic minorities who fully support the sustainable development of the local area. They have great expectations for the proposed project, especially as a source of increased income and employment opportunities. No one expressed concerns about any adverse impact on the environment during the on-site interviews. The project owner also sought stakeholder consultation through a public announcement of project activities published in the Lincang Daily Newspaper on 13 March, 2008. No comments were received.

5.10 Environmental impacts

(Ref. 1, 3, 8)

An environmental impact analysis (EIA) was conducted for this project in compliance with Chinese law. The Environmental Science Research Institute of Honghe District performed the EIA on October 2006, and it was approved by the Environmental Protection Bureau of Lincang City on 03/11/2006 (approval number [2006]No.13). The EIA determined the project would cause no serious impact on the environment. Interviews with local stakeholders confirmed that no residents living near the project site would be displaced.

VALIDATION REPORT

6 VALIDATION OPINION

Deloitte-TECO has performed a validation of the Yunnan Lincang City Nanlinghe 1st level Small-scale Hydropower Project. The validation was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting. The validation process was composed of a document review and risk analysis, an on-site-visit, follow up assessment, and finalized conclusion based on the evidence collected during the validation. A profile of the CDM team members is shown in “6.1 Team”. Further information on quality controls within the team and about the validation process is shown in “6.2 Internal Quality Control”. Public comments were invited through a consultation process for global stakeholders. Since no comments were received, no modifications were made.

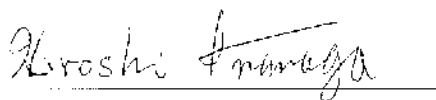
The validation process found no information indicating that the project receives any public funding which could result in a diversion of official development assistance (ODA).

The review of the project design document and the subsequent follow-up interviews have provided Deloitte-TECO with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. Deloitte-TECO also has reviewed a letter of approval from the host party confirming that the project activity assists in achieving sustainable development. Hence, the project will be recommended by Deloitte-TECO for registration with the UNFCCC.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An analysis of the investment barriers demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

If the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions (26,869 tCO₂e/year) under the assumptions made applying AMS-I.D. (ver. 13) methodology for calculating emissions reductions as specified in the final PDD (Version 06 dated on 15 Feb. 2009).

4 November, 2009



Hiroshi Inanaga

Chief Executive Officer

Deloitte Tohmatsu Evaluation and Certification Organization

VALIDATION REPORT

7 VALIDATION TEAM

7.1 Team

Name	Organization	Role on the team	Sectoral number
HAYASHI, Toshio	Deloitte-TECO	Team leader, validator	1,2,3,5,10,12,13
TANABE, Koichiro	Deloitte-TECO	Team member, on-site inspection leader, validator	5,12,13
KASAI, Katsuya	Deloitte-TECO	Team member, validator	4,5,13
SHI, Xueting	Deloitte-TECO	Team member, validator	1
AIKOSHI, Hiromu	Deloitte-TECO	Technical reviewer (Draft and Final report), Audit director	1,3,6,7,13,14
AIKOSHI, Hiromu	Deloitte-TECO	Engagement Quality Assurance	1,3,6,7,13,14
ICHIKAWA, Masahiko	Assessment Committee	Chairman of Assessment Committee	-
INANAGA, Hiroshi	Deloitte-TECO	Chief Executive Officer	3,13

7.2 Internal Quality Control

The draft and final validation reports were reviewed according to Deloitte-TECO's internal quality control policy. A technical review was performed by a technical reviewer meeting Deloitte-TECO's qualification criteria for CDM validation as follows:

Engagement Quality Assurance Review System

Step	Reviewer	Objectives/Responsibilities	Information (Input)	Reports (Output)	Details/Comments
1	GHG Audit Director	Review the validation process from an independent standpoint to ensure that it was effective, efficient, and, that every step was in conformance with the "Regulations for CDM Audits" and "Operational Management Procedure CDM (Validation/Verification)".	PDD (monitoring plan) Audit plan document Validation/Verification report DR DR report VVM (mainly sections A, C, and E)	Completion of requested corrections Confirmation of evidence for VVM Abstract of Audit outcome Witnesses	Checkmarks Add comments to the abstract
	When the GHG Audit Director doesn't have the necessary expertise,	Perform a technical review of additionality, baseline methodology, and monitoring methodology.	The latest approved methodologies PDD (monitoring plan) Request for review VVM (mainly sections	Assessment of applied methodologies Confirmation of accuracy and reliability of data and equations,	Comments on materiality and uncertainty

VALIDATION REPORT

Step	Reviewer	Objectives/Responsibilities	Information (Input)	Reports (Output)	Details/Comments
	include a technical review.		B and D)		
2	Engagement Quality Assurance Reviewer	Review how appropriate each step of the process was, from the order for the CDM project to registration request to EB, based on “CDM Audit Manual” and related procedures.	Statement on procedures Abstract of audit outcome Witness	Engagement Quality Assurance statement for operational procedures	Note concerns in comment field
3	Assessment Committee	Perform an Engagement Quality Assurance Review to assess CDM project registration submissions and/or the respond to requests for a review from CDM EB, in order to render a fair and objective decision based on steps (1) and (2).	PDD(monitoring plan) Validation/Verification report DR	Minutes of Assessment Committee	Add comments to the minutes
4	Chief Executive Officer	Express the final opinion, based on (1),(2), and (3),	Engagement Quality Assurance statement for operational procedures	Opinion (Validation/Verification Report)	Need to comment if it is a negative opinion

*1. The reviewers shall be as qualified or more qualified than the audit team leader.*2. An audit team leader, audit director and EQAR shall not concurrently supervise the same personnel.

VALIDATION REPORT

8 REFERENCES

No.	Title	Author/Source	Version /Issue date
1	Project Design Document	Accord Global Environment Technology (Beijing) Co., Ltd.	06
2	Feasibility Study Report (FSR)	Water & Hydroelectric Power Investigation, Design and Research Institute of Lingcang City, Yunnan Province	2006/09
3	Environmental Impacts Analysis (EIA)	Environmental Science Research Institute of Honghe District	2006/10
4	Letter of Approval by China DNA	The National Development and Reform Commission of PRC	14-Aug-08 (Chinese version) 2008/07 (English version)
5	Letter of Approval by Japan DNA	Ministry of Economy, Trade and Industry of Japan	01-Oct-08
6	IRR calculation spreadsheet	Accord Global Environment Technology (Beijing) Co., Ltd.	
7	Approval letter for FSR	Local Development and Reform Commission of Lingcang City	03-Nov-06
8	Approval letter for EIA	Environmental Protection Bureau of Lingcang City	03-Nov-06
9	Map of river basin (that the project site is identifiable)	Water & Hydroelectric Power Investigation, Design and Research Institute of Lingcang City, Yunnan Province	2006/09
10	Facility layout plan of the power plant	Water & Hydroelectric Power Investigation, Design and Research Institute of Lingcang City, Yunnan Province	2006/08
11	Technical Agreement including parameters of turbine/generator	Harbin Hydroelectric Equipment Production Co., Ltd.	03-Aug-07
12	Construction Agreement	Lingcang Yuanfeng Hydroelectric Development Co., Ltd.	03-Aug-07
13	Minutes related to the consideration of the decision by the Board members of the project	Lingcang City Xinshui Hydropower Development Co., Ltd.	16-Apr-07
14	Stakeholder questionnaires	Accord Global Environment Technology (Beijing) Co., Ltd.	16-Mar-08
15	Parallel Operation Agreement of the project	Lingcang Local Power Grid Co., Ltd.	05-Dec-08
16	Approval letter for land use	Lingcang Land Resource Bureau	26-Oct-07
17	Monitoring manual	Lingcang City Xinshui Hydropower Development Co., Ltd.	2008/12
18	Technical Norm of the Calibration of AC Watt-hour Meters at Place of Installation(JJF1055-1997)	Technology Supervision Bureau of Liaoning Province	20-Nov-97
19	Power Purchase Agreement of the Project	Lingcang City Xinshui Hydropower Development Co., Ltd.	15-Dec-08
20	Specification/instruction of metering equipment(DTSD341/DSSD331-MC1)	Changsha Weisheng Electronics Co., Ltd.	29-May-07
21	DL/T 448-2000	dianli1000.com	-
22	Press advertising for local stakeholder consultation	Lingcang Daily	13-Mar-08
23	Thermal Power Generation by Region (2006)	Yearbook2007	2007
24	Thermal Power Generation by Region (2007)	Yearbook2008	2008
25	URL of Notice on Strictly Prohibiting the Installation of Fuel-fired Generators with the Capacity of 135 MW or Below issued by the General	General Office of the State Council	15-Apr-02

 VALIDATION REPORT

No.	Title	Author/Source	Version /Issue date
	Office of the State Council, decree No. 2002-6.		
26	2008 Baseline Emission Factors for Regional Power Grids in China	cdm.ccchina.gov.cn	2008
27	URL of Harbin Power Equipment Corporation	Harbin Electric Corporation	13-Mar-09
28	Emission Reduction Purchase Agreement	Lingcang City Xinshui Hydropower Development Co., Ltd.	22-May-08
29	CDM consulting contract between the project owner and the CDM consultant	Accord Global Environment Technology (Beijing) Co., Ltd.	25-Jan-08 03-Feb-08
30	SL16-95	The Ministry of Water Resources of PRC	02-Jun-95
31	Information related to CDM consulting agencies	cdm.ccchina.gov.cn (National Development and Reform Commission)	-
32	Notification of tariff in Yunnan Power Grid issued by Yunnan DRC ([2005]792)	Yunnan Development and Reform Commission	30-Aug-05
33	Notification of tariff in Yunnan Province ([2004]589)	Yunnan Development and Reform Commission	30-Jul-04
34	Notification of tariff in SCPG issued by NDRC ([2006]1229)	National Development and Reform Commission	28-Jun-06

VALIDATION REPORT

Appendix A: Validation Protocol

Table A1 Requirement to be validated for Clean Development Mechanism (CDM) Project Activities

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
E. Validation requirements based on paragraph 37 of the CDM modalities and procedures, on EB44 Annex 3								
Requirement to be validated								
1	1. Approval		44. All Parties involved have approved the project activity.			Yes. - Letter of Approval issued by Chinese government: [2008] No.2123, 14/08/2008 in Chinese version (and No.1300, July 2008 in English version) - Letter of Approval issued by Japanese government: 20.10.01 No.6, 01/10/2008	-	OK
2	2. Participation		51. All project participants have been listed in a consistent manner in the project documentation, and their participation in the project activity has been approved by a Party to the Kyoto Protocol.			Yes. It was confirmed in the LoAs.	-	OK
3	3. Project design document		55. The PDD used as a basis for validation shall be prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.			Yes. PDD version 03 has been used.	-	OK
4	4. Project description		58. The PDD shall contain a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.			Yes. The project activity is described precisely in the PDD.	-	OK
5	5. Baseline and monitoring methodology		65. The DOE shall ensure that the baseline and monitoring methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board.			Yes. It has been complied with AMS-I.D.	-	OK
6	5. Baseline and monitoring methodology	(a) General requirement	66. To ensure that the project activity meets this general requirement, the DOE shall determine whether:					
7	5. Baseline and monitoring methodology	(a) General requirement	(a) The selected methodology is applicable to the project activity;			Yes. The proposed project is small-scale hydropower, and in line with AMS-I.D.	-	OK

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I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
8	5. Baseline and monitoring methodology	(a) General requirement	(b) The selected methodology had been correctly applied.			Yes. It was confirmed in the PDD.	-	OK
9	5. Baseline and monitoring methodology	(a) General requirement	67. The DOE shall ensure that the selected methodology applies to the project activity and has been correctly applied with respect to following:					
10	5. Baseline and monitoring methodology	(a) General requirement	(a) Project boundary;			Yes. It is in accordance with AMS-I.D.(ver. 13).	-	OK
11	5. Baseline and monitoring methodology	(a) General requirement	(b) Baseline identification;			Yes. It is in accordance with AMS-I.D.(ver. 13) and public data issued by Chinese DNA.	-	OK
12	5. Baseline and monitoring methodology	(a) General requirement	(c) Algorithms and/or formulae used to determine emission reductions;			Yes. Assumptions are in accordance with AMS-I.D.(ver.13). In the original PDD, the emission factors were calculated based on the calculation tool which was publicly available by NDRC; however due to some computation error, corrective action was requested. All the data for recalculation of emission factors is included in Annex 3 of the PDD, and the calculation processes is fully demonstrated.	-	OK
13	5. Baseline and monitoring methodology	(a) General requirement	(d) Additionality;			Yes. Specific project conditions have been taken into account. Additionality of the project was demonstrated by investment barrier analysis by applying for "Tool for the demonstration and assessment of additionality (ver 05.2)". It was confirmed that a provision of an equivalent amount of electricity supplied by the grid is the most likely baseline scenario.	-	OK
14	5. Baseline and monitoring methodology	(a) General requirement	(e) Monitoring methodology.			Yes. The monitoring plan was prepared according to the approved monitoring methodology (AMS-I.D. ver.13).	-	OK
15	5. Baseline and monitoring methodology	(b) Applicability of the selected methodology to the project activity	68. The DOE shall validate that the selected baseline and monitoring methodology previously approved by the CDM Executive Board, is applicable to the project activity.			Yes. The monitoring plan was prepared according to the approved monitoring methodology (AMS-I.D. ver.13).	-	OK

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I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
1 6	5. Baseline and monitoring methodology	(c) Project boundary	77. The PDD shall correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity.			Yes. It was defined in the section B.3. In the PDD.	-	OK
1 7	5. Baseline and monitoring methodology	(d) Baseline identification	80. The PDD shall identify the baseline for the proposed CDM project activity, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CDM project activity.			Yes. It is reasonable to define SCPG as a baseline because SCPG is deemed as a provider for the same electricity generation which the proposed project might provide.	-	OK
1 8	5. Baseline and monitoring methodology	(d) Baseline identification	81. The DOE shall confirm that any procedure contained in the methodology to identify the most reasonable baseline scenario, has been correctly applied. The DOE shall check each step in the procedure described in the PDD against the requirements of the methodology.			Yes. It is in accordance with AMS-I.D.(ver. 13).	-	OK
1 9	5. Baseline and monitoring methodology	(d) Baseline identification	If the selected methodology requires use of tools (such as the " Tool for the demonstration and assessment of additionality" and the " Combined tool to identify the baseline scenario and demonstrate additionality") to establish the baseline scenario, the DOE shall consult the methodology on the application of these tools.			Yes. "Tool for the demonstration and assessment of additionality (ver 05.2)" was referred to conduct the investment barrier analysis appropriately.	-	OK
2 0	5. Baseline and monitoring methodology	(d) Baseline identification	The DOE shall check each step in the procedure described in the PDD against the requirements of the methodology.			Yes. It is in accordance with AMS-I.D.(ver. 13) appropriately.	-	OK
2 1	5. Baseline and monitoring methodology	(e) Algorithms and/or formulae used to determine emission reductions	88. The steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions shall comply with the requirements of the selected baseline and monitoring methodology.			Yes. The proposed hydropower project is no project emissions, also no leakage because of newly installation of equipment without transferring any existing equipments from the outside of the project boundary.	-	OK
2 2	6. Additionality of a project activity		93. The PDD shall describe how a proposed CDM project activity is additional.			Yes. It was confirmed by using the investment barrier analysis.	-	OK

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
2 3	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism ²¹	96. If the project activity start date is prior to the date of publication of the PDD for stakeholder comments it shall be demonstrated that the CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity.			Yes. The original PDD was made publicly available on 10 Sep 2008. CDM benefits were considered at the board meeting of the project owner on 16/04/2007, after the finalization of the FSR.	-	OK
2 4	6. Additionality of a project activity	(b) Identification of alternatives	103. The PDD shall identify credible alternatives to the project activity in order to determine the most realistic baseline scenario, unless the approved methodology that is selected by the proposed CDM project activity prescribes the baseline scenario and no further analysis is required (e.g., methodology ACM0002).			Yes. SCPG is a reasonable baseline in line with the methodology and the registered SSC CDM projects so far.	-	OK
2 5	6. Additionality of a project activity	(c) Investment analysis	106. If investment analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD shall provide evidence that the proposed CDM project activity would not be:					
2 6	6. Additionality of a project activity	(c) Investment analysis	(a) The most economically or financially attractive alternative; or			OK. The proposed project is not the most economically and financially attractive alternative.	-	OK
2 7	6. Additionality of a project activity	(c) Investment analysis	(b) Economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs).			OK. The proposed project is not financially attractive unless it was applied for CDM.	-	OK
2 8	6. Additionality of a project activity	(c) Investment analysis	107. Project participants can show this through one of the following approaches:					
2 9	6. Additionality of a project activity	(c) Investment analysis	(a) Demonstrate that the proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity;			OK. The proposed project generates a revenue of electricity generation, but it is neither financially attractive nor economically.	-	OK
3 0	6. Additionality of a project activity	(c) Investment analysis	(b) The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative;			Yes. The proposed CDM project activity is less economically or financially attractive than the baseline.	-	OK

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I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
3 1	6. Additionality of a project activity	(c) Investment analysis	(c) The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.			OK. A revenue of electricity generation is not sufficient for investment recovery.	-	OK
3 2	6. Additionality of a project activity	(c) Investment analysis	108. The DOE shall comply with the latest version of the "Guidance on the Assessment of Investment Analysis" as provided by the CDM Executive Board.			Yes. IRR Checklist in Table A2-2 of Appendix A was conducted by DOE to confirm the adequacy of this investment analysis, in accordance with "Guidance on the Assessment of Investment Analysis" in Annex 45 on EB41.	-	OK
3 3	6. Additionality of a project activity	(d) Barrier analysis	113. If barrier analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD shall demonstrate that the proposed CDM project activity faces barriers that:					
3 4	6. Additionality of a project activity	(d) Barrier analysis	(a) Prevent the implementation of this type of proposed CDM project activity;			It was confirmed in the validation process that this item is not applicable.	-	-
3 5	6. Additionality of a project activity	(d) Barrier analysis	(b) Do not prevent the implementation of at least one of the alternatives.			It was confirmed in the validation process that this item is not applicable.	-	-
3 6	6. Additionality of a project activity	(e) Common practice analysis	117. For large-scale CDM project activities, unless the proposed project type is first-of-its kind, common practice analysis shall be carried out as a credibility check of the other available evidence used by the project participants to demonstrate additionality.			It was confirmed in the validation process that this item is not applicable.	-	-
3 7	6. Additionality of a project activity	(e) Common practice analysis	This is a test to complement the investment analysis (Step 2 of the additionality tool) or barrier analysis (Step 3 of the additionality tool) to confirm that the project activity is not widely observed and commonly carried out in the region.			It was confirmed in the validation process that this item is not applicable.	-	-
3 8	7. Monitoring plan		120. The PDD shall include a monitoring plan. This monitoring plan shall be based on the approved monitoring methodology applied to the proposed CDM project activity.			Yes. It is in accordance with AMS-I.D.(ver. 13).	-	OK

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I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
39	8. Sustainable development		123. CDM project activities shall assist Parties not included in Annex I to the Convention in achieving sustainable development.			Yes. Chinese DNA has been approved the proposed project activities on 14/08/2008 [2008] No.2123, describing its contribution to sustainable development.	-	OK
40	9. Local stakeholder consultation		126. Local stakeholders shall be invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website.			Yes. Total 50 questionnaires from local residents were responded to the project owner for the purpose of local stakeholder consultation before the commencement of the global stakeholder consultation. Also, another local stakeholder consultation was conducted on local daily newspaper.	-	OK
41	10. Environmental impacts		129. Project participants shall submit documentation to the DOE on the analysis of the environmental impacts of the project activity in accordance with paragraph 37(c) of the CDM modalities and procedures			Yes. It was confirmed that EIA was developed on October 2006, and was approved by Environmental Protection Bureau of Linggang City on 03/11/2006.	-	OK
Table A 2-1 Requirements Checklist								
Means of validation								
42	1. Approval		45. The DOE shall determine whether the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD has provided a written letter of approval. The DOE shall determine whether each letter confirms that:				-	-
43	1. Approval		(a) The Party is a Party to the Kyoto Protocol;			Yes. - Ratification by China: 30/08/2002 - Ratification by Japan: 04/06/2002	OK	OK
44	1. Approval		(b) Participation is voluntary;			Yes. The letters of approval from both DNAs were obtained. The voluntary participation of China and Japan were confirmed in letters of approval from DNA.	OK	OK

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I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
4 5	1. Approval		(c) In the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country;			The letter of approval from the DNA of China has confirmed that the project is in line with the host country CDM requirements and assists China in achieving sustainable development. Moreover, the project has been approved by the Environmental Protection Bureau of Lingcang City. It was deemed that the proposed project has been expected to contribute a new creation of employment (more than 15 job positions) and social benefit for local economy development, as a result of interviewing local stakeholders.	OK	OK
4 6	1. Approval		(d) It refers to the precise proposed CDM project activity title in the PDD being submitted for registration.			Yes. Confirmed.	OK	OK
4 7	1. Approval		46. The DOE shall determine whether the letter(s) of approval is unconditional with respect to (a) to (d) above.			Yes. It was determined that there were no conditions attached to (a) through (d) above.	OK	OK
4 8	1. Approval		47. The DOE shall determine whether the letter(s) of approval has been issued by the respective Party's designated national authority (DNA) and if in doubt, shall verify with the DNA that the letter of approval is valid for the proposed CDM project activity under validation. A list of DNAs is available on the UNFCCC CDM website.			It is has been confirmed that the LoAs were issued by the DNA. - Letter of Approval issued by Chinese government: [2008] No.2123, 14/08/2008 - Letter of Approval issued by Japanese government: 20.10.01 No.6, 01/10/2008	OK	OK
4 9	1. Approval		48. If the DOE doubts the authenticity of the letter of approval, the DOE shall verify with the DNA that the letter of approval is authentic.			There is no doubt about the authenticity of the letter of approval.	OK	OK
5 0	2. Participation		52. The DOE shall confirm that the project participants are listed in tabular form in section A.3 of the PDD and that this information is consistent with the contact details provided in annex 1 of the PDD.			Yes. - Lincang City Xinshui Hydropower Development Co. Ltd. (China, host party) - Mitsubishi Corporation (Japan)	OK	OK
5 1	2. Participation		The DOE shall determine whether the participation of each project participant has been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation.			Yes. Two project participants are described in the letter of approval by both China and Japan DNA.	OK	OK

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
5 2	2. Participation		The DOE shall confirm that no entities other than those approved as project participants are included in these sections of the PDD.			Yes. Confirmed.	OK	OK
5 3	2. Participation		53. The DOE shall ensure that the approval of participation has been issued from the relevant DNA and if in doubt shall verify with the DNA that the approval of participation is valid for the proposed project participant.			It is has been confirmed that the LoAs were issued by the DNA unambiguously. - Letter of Approval issued by Chinese government: [2008] No.2123, 14/08/2008 - Letter of Approval issued by Japanese government: 20.10.01 No.6, 01/10/2008	OK	OK
5 4	3. Project design document		56. The DOE shall determine whether the PDD is in accordance with the applicable CDM requirements for completing PDDs.			Yes. Confirmed. CDM-SSC- PDD forms (Version 03) are used. The PDD was completed in accordance with "Guidelines for completing the Simplified Project Design Document(CDM-SSC-PDD, Version 05)".	OK	OK
5 5	4. Project description		59. The DOE shall confirm that the description of the proposed CDM project activity as contained in the PDD sufficiently covers all relevant elements, is accurate and that it provides the reader with a clear understanding of the nature of the proposed CDM project activity.			Yes. The description of the proposed CDM project activity as contained in the PDD was confirmed and amended, if necessary, in the following three phases: - I A document review of the project design documentation - II Follow-up interviews with project stakeholders - III The resolution of outstanding issues and issuance of the final validation report and opinion.	OK	OK
5 6	4. Project description		60. For proposed CDM project activities in existing facilities or utilizing existing equipments, the DOE shall conduct a physical site inspection to confirm that the description in the PDD reflects the proposed CDM project activity for the following types of CDM project activities unless other means are specified in the methodology:				-	-
5 7	4. Project description		(a) Large scale projects;			It was confirmed in the validation process that this item is not applicable.	OK	OK
5 8	4. Project description		(b) Non-bundled small scale projects with emission reductions exceeding 15,000 tonnes per year;			Yes. A site inspection was conducted.	OK	OK

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I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
59	4. Project description		(c) Bundled small scale projects, each with emission reductions not exceeding 15,000 tonnes per year; in such case the number of physical site visits may however be based on sampling, if the sampling size is appropriately justified through statistical analysis.			It was confirmed in the validation process that this item is not applicable.	OK	OK
60	4. Project description		61. For other individual proposed small scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year the DOE may conduct a physical site visit as appropriate.			It was confirmed in the validation process that this item is not applicable.	OK	OK
61	4. Project description		62. For all other proposed CDM project activities not referred to in paragraphs 59 - 61, the DOE shall undertake the validation by reviewing available designs and feasibility studies and may conduct comparison analysis to equivalent projects, as appropriate. The DOE may conduct physical site visit to assess the plan. For proposed CDM project activities for which the DOE does not undertake a physical site inspection this shall be appropriately justified.			Yes. The data used in the PDD was cross-checked against the figures in the FSR. No discrepancy was found between the PDD and FSR. Also, the Technical agreement and the installed turbines/generators were cross-checked against those data. No significant difference was found between the figures in the contract and the FSR.	OK	OK
62	4. Project description		63. If the proposed CDM project activity involves the alteration of an existing installation or process, the DOE shall ensure that the project description clearly states the differences resulting from the project activity compared to the pre-project situation.			OK. There is no existing equipment/facility applied for the project. All five dams are newly built for the power station.	OK	OK
63	5. Baseline and monitoring methodology	(b) Applicability of the selected methodology to the project activity	69. The DOE shall determine whether the methodology is correctly quoted and applied by comparing it with the actual text of the applicable version of the methodology available on the UNFCCC CDM website.			Clarification was requested: "ASM-I.D." to "AMS-I.D.", and the Version of "Tool to calculate the emission factor for an electricity system" from "1.1" to "01.1" in the PDD.	CL1	OK

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I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
6 4	5. Baseline and monitoring methodology	(b) Applicability of the selected methodology to the project activity	70. A selected approved methodology applies to the project activity if the applicability conditions of the methodology are met and the project activity is not expected to result in emissions other than those allowed by the methodology.			Yes. Maximum output capacity of the proposed project was claimed to be 8MW in the original PDD, and it was confirmed during the validation process. It meets the requirement of small-scale project, the maximum output capacity is equivalent of up to 15 megawatts.	OK	OK
6 5	5. Baseline and monitoring methodology	(b) Applicability of the selected methodology to the project activity	The DOE shall determine whether the choice of methodology is justified and the project participants have shown that the project activity meets each of the applicability conditions of the approved methodology or any tool or other methodology component referred to therein.			Yes. The choice of methodology (AMS-I.D.) was justified and the other tools applied were as follows: - "Tool to calculate the emission factor for an electricity system (ver.01.1)" - "Tool for the demonstration and assessment of additionality (ver 05.2)"	OK	OK
6 6	5. Baseline and monitoring methodology	(b) Applicability of the selected methodology to the project activity	This shall be done by validating the documentation referred to in the PDD and by verifying that its content is correctly quoted and interpreted in the PDD.			Yes. The documentation referred to in the PDD was verified by interviewing the project participants during the on-site assessment, and the evidential documents were listed in "6. REFERENCES" in the validation report.	OK	OK
6 7	5. Baseline and monitoring methodology	(b) Applicability of the selected methodology to the project activity	If the DOE, based on local and sectoral knowledge, is aware that comparable information is available from sources other than that used in the PDD, then the DOE shall cross check the PDD against the other sources to confirm that the project activity meets the applicability conditions of the methodology.			Comparable information, which is publicly available was taken into consideration, especially including sources by NDRC, local DRC, Yearbooks by National Authority of statistics, PDDs registered CDM projects and other public information in China.	OK	OK
6 8	5. Baseline and monitoring methodology	(b) Applicability of the selected methodology to the project activity	71. If the DOE cannot make a determination regarding the applicability of the selected methodology to the proposed CDM project activity then the DOE shall request clarification of the methodology in accordance with the guidance provided by the CDM Executive Board.			OK. The applicability of the selected methodology to the proposed CDM project activity was determinate.	OK	OK

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
6 9	5. Baseline and monitoring methodology	(b) Applicability of the selected methodology to the project activity	72. If the DOE determines that the proposed CDM project activity does not comply with the applicability conditions of the methodology the DOE may proceed by means of requesting revision to or deviation from the methodology in accordance with the guidance provided by the CDM Executive Board.			OK. The applicability of the selected methodology to the proposed CDM project activity was determinate.	OK	OK
7 0	5. Baseline and monitoring methodology	(b) Applicability of the selected methodology to the project activity	73. If the DOE has requested clarification of, revision to or deviation from a methodology, the DOE shall not submit a request for registration until the CDM Executive Board has approved the proposed deviation or revision.			OK. All of requested clarification is minor, neither deviation nor revision, and it was not critical for submission of a request for registration.	OK	OK
7 1	5. Baseline and monitoring methodology	(b) Applicability of the selected methodology to the project activity	74. Under no circumstance shall the DOE consider the submission of a request for registration as a means of seeking clarification from the CDM Executive Board on the applicability of a methodology.			OK. It was confirmed in the validation process that this item is not applicable.	OK	OK
7 2	5. Baseline and monitoring methodology	(c) Project boundary	78. Based on documented evidence and corroborated by a site visit where required by paragraphs 59-62 above, the DOE shall determine whether the delineation in the PDD of the project boundary is correct and meets the requirements of the selected baseline methodology.			The project boundary was cross-checked against Map of river basin (that the project site is identifiable), facility layout plan of the power plant, the other information by site inspection. The drawing of the project boundary was amended in the PDD for clarification. Since this is a hydropower plant project, it uses a renewable energy source and decreases GHG emissions as an alternative to power generation facilities that would use fossil fuels. China Southern Power Grid is defined as the project system boundary. It was confirmed the boundaries with grid via chart from FSR. The power station was built 12 km far from the nearest point of SCPG, which was added to the PDD.	CL2	OK
7 3	5. Baseline and monitoring methodology	(c) Project boundary	The DOE also shall confirm that all sources and GHGs required by the methodology have been included within the project boundary.			Yes. It was confirmed that CO2 in the baseline is the sole emission gas included in the project boundary for the purpose of calculating project emissions and baseline emissions, in accordance with AMS-I.D.	OK	OK
7 4	5. Baseline and monitoring methodology	(c) Project boundary	If the methodology allows project participants to choose whether a source or gas is to be included within the project boundary, the DOE shall determine whether the project participants have justified that choice.			OK. It was confirmed in the validation process that this item is not applicable.	OK	OK

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I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
7 5	5. Baseline and monitoring methodology	(c) Project boundary	The DOE shall confirm that the justification provided is reasonable, based on assessment of supporting documented evidence provided by the project participants and corroborated by observations if required.			OK. It was demonstrated that there is no environmental aspects and emission resources of GHG other than CO2 in the project activity. Any other emission sources was found during the on-site visits.	OK	OK
7 6	5. Baseline and monitoring methodology	(d) Baseline identification	82. If the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario, the DOE shall, based on financial expertise and local and sectoral knowledge, determine whether all scenarios that are considered by the project participants and are supplementary to those required by the methodology, are reasonable in the context of the proposed CDM project activity and that no reasonable alternative scenario has been excluded.			Yes. Identification of the baseline scenario alternatives and the selection of the most reasonable alternative are in accordance with the methodology, and are well in line with a common practice of most of registered SSC hydropower CDM projects.	OK	OK
7 7	5. Baseline and monitoring methodology	(d) Baseline identification	83. The DOE shall determine whether the baseline scenario identified is reasonable by validating the assumptions, calculations and rationales used, as described in the PDD.			1. The proposed hydropower plant development not undertaken as a CDM project activity is not reasonable baseline scenario, because it is not financially attractive and not approved the proposed project activity. 2. Construction of a fossil fuel power plant with the same amount of annual electricity generation is not reasonable baseline scenario, because the project which employs below 135 MW capacity boiler is prohibited. 3. Construction of a power plant using other renewable energy sources, like biomass or wind power, with the same annual electricity generation is not reasonable baseline scenario, because it is not feasible due to geographic features of the terrain. 4. The Southern China Power Grid as the provider for the same electricity generation as the proposed project is reasonable baseline scenario, because this is the most business as usual.	OK	OK
7 8	5. Baseline and monitoring methodology	(d) Baseline identification	It shall ensure that documents and sources referred to in the PDD are correctly quoted and interpreted.			The documents and sources in a footnote of section B.4. in the PDD were confirmed. For clarification, the URL of sources was added to the PDD.	CL3	OK

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
79	5. Baseline and monitoring methodology	(d) Baseline identification	The DOE shall cross check the information provided in the PDD with other verifiable and credible sources, such as local expert opinion, if available.			Yes. The PDD was prepared in accordance with the FSR, which was published by local experts of a design institute. Also, it was based on the EIA, which was conducted by local experts of the authority. Both of them were verified during the on-site assessment.	OK	OK
80	5. Baseline and monitoring methodology	(d) Baseline identification	84. The DOE shall determine whether all applicable CDM requirements have been taken into account in the identification of the baseline scenario for the proposed CDM project activity, including " relevant national and/or sectoral policies and circumstances."			Yes.	OK	OK
81	5. Baseline and monitoring methodology	(d) Baseline identification	Drawing on its knowledge of the sector and/or advice from local experts, the DOE shall confirm that all relevant policies and circumstances have been identified and correctly considered in the PDD, in accordance with the guidance by the CDM Executive Board.			Yes. The identification and consideration of relevant policies and circumstances were deemed as typical and reasonable examples among those of the other projects, which have been registered as CDM-SSC projects.	OK	OK
82	5. Baseline and monitoring methodology	(d) Baseline identification	85. The DOE shall determine whether the PDD provides a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity.			Yes. Technology used in the hydropower plant project is commonly used in China. On the other hand, the rest of technologies has been limited at least in the area. Wind energy technology has topographic constraint with poor wind resources. Biomass project requires a lot of biomass resources and it is not feasible for the project participants to procure them in the area.	OK	OK
83	5. Baseline and monitoring methodology	(e) Algorithms and/or formulae used to determine emission reductions	89. The DOE shall determine whether the equations and parameters in the PDD have been correctly applied by comparing them to those in the selected approved methodology.			Yes. It was confirmed that the equations and parameters in the PDD were well in line with the approved methodology.	OK	OK

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ID	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
84	5. Baseline and monitoring methodology	(e) Algorithms and/or formulae used to determine emission reductions	If the methodology provides for selection between different options for equations or parameters, the DOE shall confirm that adequate justification has been provided (based on the choice of the baseline scenario, context of the proposed CDM project activity and other evidence provided) and that the correct equations and parameters have been used, in accordance with the methodology selected.			Yes. The proposed project was determined that benchmark analysis is appropriate, and it was understood that the determination is reasonable. The benchmark adopted is in compliance with well-known Chinese regulation, "Economic Evaluation Code for Small Hydropower Projects" (SL16-95), for small scale hydropower project (below 25 MW) in China. In the regulation, the IRR of the proposed project has to be more than 10% of benchmark.	OK	OK
85	5. Baseline and monitoring methodology	(e) Algorithms and/or formulae used to determine emission reductions	90. The DOE shall verify the justification given in the PDD for the choice of data and parameters used in the equations.			Yes. Assumptions are in accordance with AMS-I.D.(ver.13). In the original PDD, the emission factors were calculated based on a calculation tool which was publicly available by NDRC; however due to some computation error, corrective action was requested. They were amended during the validation activities by reference to the official web page issued by NDRC. All the data for recalculation of emission factors is included in Annex 3 of the PDD, and the calculation processes is fully demonstrated.	OK	OK
86	5. Baseline and monitoring methodology	(e) Algorithms and/or formulae used to determine emission reductions	If data and parameters will not be monitored throughout the crediting period of the proposed CDM project activity but have already been determined and will remain fixed throughout the crediting period, the DOE shall assess that all data sources and assumptions are appropriate and calculations are correct, applicable to the proposed CDM project activity and will result in a conservative estimate of the emission reductions.			OK. The emission factor applied was verified against publicly available data, such as government data and guidance.	OK	OK
87	5. Baseline and monitoring methodology	(e) Algorithms and/or formulae used to determine emission reductions	If data and parameters will be monitored on implementation and hence become available only after validation of the project activity, the DOE shall confirm that the estimates provided in the PDD for these data and parameters are reasonable.			OK. Net electricity generated and delivered to the grid by power plant will be monitored during the crediting period.	OK	OK

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ID	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
88	6. Additionality of a project activity		The DOE shall assess and verify the reliability and credibility of all data, rationales, assumptions, justifications and documentation provided by project participants to support the demonstration of additionality. This requires the DOE to critically assess the presented evidence, using local knowledge and sectoral and financial expertise.			Yes. It was confirmed that investment barrier were deemed to be well analyzed for demonstration of Additionality.	OK	OK
89	6. Additionality of a project activity		94. The DOE shall consider tools and documents provided by the CDM Executive Board to demonstrate the additionality of proposed CDM project activities, as well as specific complementary or alternative requirements included in approved CDM methodology.			"Tool for the demonstration and assessment of additionality (ver 05.2)" was referred to conduct the investment barrier analysis appropriately. For clarification, the version number should be added to the PDD.	CL4	OK
90	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism	97. The DOE shall confirm that the start date of the project activity, reported in the PDD, is in accordance with the " Glossary of CDM terms" .	12		In the original PDD, the starting date of the project activity was defined just "01/08/2007". During the on-site assessment, it was found that it was the date of the total contract signed on "03/08/2007", which was demonstrated on Construction Agreement between the project owner and the subcontractor. Clarification was requested.	CL5	OK
91	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism	If the reported date is not in accordance with the glossary, the DOE shall raise a CAR to ensure that the start date is correctly reported in a revised PDD. In particular, for project activities that require construction, retrofit or other modifications, the date of commissioning cannot be considered the project activity start date.			OK. The starting date of the project activity was clarified in accordance with the glossary "the earliest date at which either the implementation or construction or real action of a project activity begins".	OK	OK
92	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism	98. The DOE, in accordance with the guidance from the Board, shall determine whether it is a new project activity (project activities with starting date on or after 02 August 2008) or an existing project activity (project activities with a start date before 02 August 2008).			OK. This is an existing project activity.	OK	OK

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
9 3	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism	99. For a new project activity with a start date on or after 2 August 2008 and for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the Executive Board before the project activity start date, the DOE shall ensure by means of confirmation from the DNA or UNFCCC secretariat that PPs had informed the Host Party DNA and/or the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status.			N/A	N/A	N/A
9 4	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism	If such a notification has not been provided by the project participants the DOE shall determine that the CDM was not seriously considered in the decision to implement the project activity.			N/A	N/A	N/A
9 5	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism	100. For an existing project activity with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, the DOE shall assess the project participant' s prior consideration of the CDM through document reviews and shall satisfy following requirements:				-	-

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
9 6	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism	(a) Evidence that must indicate that awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project. Evidence to support this would include, inter alia, minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participant, to undertake the project as a proposed CDM project activity.			<p>It was demonstrated that the board meeting minutes for CDM decision making by the project owner was defined as an important evidence of serious consideration for CDM project. The other key events of the project were confirmed as follows:</p> <ul style="list-style-type: none"> - FSR finalization on Sep/2006 - EIA developed on Oct/2006 - FSR approved on 03/11/2006 - EIA approved on 03/11/2006 - Board meeting minutes for CDM decision making on 16/04/2007 - Construction agreement on 03/08/2007 - Consulting Service contract on Jan/2008 - ERPA conclusion on 22/05/2008 - LoA by China DNA on 14/08/2008 - LoA by Japan DNA on 01/10/2008 - On-site assessment for validation on 09/12/2008 <p>Those above was added to the PDD as a table of events in section B.5.</p>	CL6	OK
9 7	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism	(b) Reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation.			Yes. Reliable evidences related to CDM consideration were listed in "6. REFERENCES" in the validation report.	OK	OK
9 8	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism	Evidence to support this should include, inter alia, contracts with consultants for CDM/PDD/methodology services, Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds), evidence of agreements or negotiations with a DOE for validation services, submission of a new methodology to the CDM Executive Board, publication in newspaper, interviews with DNA, earlier correspondence on the project with the DNA or the UNFCCC secretariat.	28, 29		Yes. Contracts with consultants for CDM/PDD/methodology services and Emission Reduction Purchase Agreements were also includes in "6. REFERENCES".	OK	OK
9 9	6. Additionality of a project activity	(a) Prior consideration of the clean development mechanism	101. If evidence to support the serious prior consideration of the CDM as indicated above is not available the DOE shall determine that the CDM was not considered in the decision to			OK. The evidence of the serious prior consideration of the CDM was available.	OK	OK

VALIDATION REPORT

ID	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
			implement the project activity.					
100	6. Additionality of a project activity	(b) Identification of alternatives	104. The DOE shall assess the list of alternatives given in the PDD and ensure that:					
101	6. Additionality of a project activity	(b) Identification of alternatives	(a) The list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity;			Yes. Included. Alternatives are as follows: 1. Project activity not undertaken as CDM 2. Construction of coal fired boiler 3. Renewable energy (biomass, wind power, etc.) 4. Provision of an equivalent amount of annual electricity output by grid.	OK	OK
102	6. Additionality of a project activity	(b) Identification of alternatives	(b) The list contains all plausible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity;			Yes. The list contains all plausible alternatives.	OK	OK
103	6. Additionality of a project activity	(b) Identification of alternatives	(c) The alternatives comply with all applicable and enforced legislation.			Yes. As for "2. Construction of coal fired boiler", one of relevant legislations is "Notice on Strictly Prohibiting the Installation of Fuel-fired Generators with the Capacity of 135 MW or Below", which issued by the General Office of the State Council, decree No. 2002-6.	OK	OK
104	6. Additionality of a project activity	(c) Investment analysis	109. To verify the accuracy of financial calculations carried out for any investment analysis, the DOE shall:				-	-
105	6. Additionality of a project activity	(c) Investment analysis	(a) Conduct a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices;			Yes. It was confirmed that all input values used the investment analysis in the final PDD was derived from the FSR, which was approved by certified local expertise.	OK	OK

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
1 0 6	6. Additionality of a project activity	(c) Investment analysis	(b) Cross-check the parameters against third-party or publicly available sources, such as invoices or price indices;			Yes. An indicator, "the investment cost per the annual generated electricity" , was defined workable to evaluate the project in the investment analysis. The indicator of the proposed project was 1,241 yuan /MWh for 8 MW. On the other hand, the range of indicators of registered CDM project activities (registration date from 29/03/2009 to 29/05/2009) showed approximately 1,100-2,300 yuan /MWh. This result indicates that the investment cost on the generated electricity of the proposed project is within the normal range of CDM project.	OK	OK
1 0 7	6. Additionality of a project activity	(c) Investment analysis	(c) Review feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants;			Yes. Feasibility Study Report was developed and approved. The information was the most important input for a decision making of applying for CDM project.	OK	OK
1 0 8	6. Additionality of a project activity	(c) Investment analysis	(d) Assess the correctness of computations carried out and documented by the project participants;			The IRR spreadsheet versions of all investment analysis were supplied. All the formulas and cells were viewable, without protection. However, some of the calculation formulas and format were difficult to understand during the assessment. They have been corrected appropriately. (see Table A2-2, 8)	CAR1	OK
1 0 9	6. Additionality of a project activity	(c) Investment analysis	(e) Assess the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions.			In the original PDD, the sensitivity analysis is shown using three variables, namely " Fixed asset investment" , " Annual O&M cost" , and " Annual output of electricity" . As a result of validation, " Electricity price" was added to the sensitivity analysis in the final PDD, as the fourth parameter.	CAR2	OK
1 1 0	6. Additionality of a project activity	(c) Investment analysis	110. To confirm the suitability of any benchmark applied in the investment analysis, the DOE shall:				-	-

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
1 1 1	6. Additionality of a project activity	(c) Investment analysis	(a) Determine whether the type of benchmark applied is suitable for the type of financial indicator presented;			Yes. Internal Rate of Return was applied for the investment analysis, and the benchmark was in compliance with spectral investment policy of hydropower development in China.	OK	OK
1 1 2	6. Additionality of a project activity	(c) Investment analysis	(b) Ensure that any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity;			N/A	N/A	N/A
1 1 3	6. Additionality of a project activity	(c) Investment analysis	(c) Determine whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants involved and determining whether the same benchmark has been applied or if there are verifiable circumstances that have led to a change in the benchmark.			Yes. In general, no investment is approved when the IRR would be lower than the benchmark in China. The bench mark is controlled by Chinese government, and all of hydropower projects in China has to be in line with the policy.	OK	OK
1 1 4	6. Additionality of a project activity	(c) Investment analysis	111. The Board clarified that in cases where project participants rely on values from Feasibility Study Reports that are approved by national authorities for proposed project activities, DOEs are required to ensure that:				-	-
1 1 5	6. Additionality of a project activity	(c) Investment analysis	(a) The FSR has been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed;			Yes. The design institute described in the FSR that the project should be applied for CDM, in order to improve the financial situation.	OK	OK
1 1 6	6. Additionality of a project activity	(c) Investment analysis	(b) The values used in the PDD and associated annexes are fully consistent with the FSR, and where inconsistencies occur the DOE should validate the appropriateness of the values;			In the original PDD, CER price was described as EU8/tCO _{2e} . On the other hand, it was demonstrated that CER price is USD10/tCO _{2e} in the FSR. Thus the unit was amended from EURO to USD appropriately. In both cases, the CER price was eventually exchanged to RMB80/tCO _{2e} , and IRR calculation was not affected by this change.	CAR3	OK

VALIDATION REPORT

ID	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
117	6. Additionality of a project activity	(c) Investment analysis	(c) On the basis of its specific local and sectoral expertise, confirmation is provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision.			Yes. This is an example of the cross-check comparison between 1) and 2). 1) Content from FSR Total investment value (including the funding cost) = RMB 38.2755 million 2) Content from construction agreement Construction cost of power plant = RMB 34 million Construction expenditure of transmission cable to electricity grid = RMB 5 million Total cost = RMB 39 million	OK	OK
118	6. Additionality of a project activity	(d) Barrier analysis	114. Issues that have a clear direct impact on the financial returns of the project activity cannot be considered barriers and shall be assessed by investment analysis. This does not refer to either				-	-
119	6. Additionality of a project activity	(d) Barrier analysis	(a) Risk related barriers, for example risk of technical failure, that could have negative effects on financial performance, or			N/A	N/A	N/A
120	6. Additionality of a project activity	(d) Barrier analysis	(b) Barriers related to the unavailability of sources of finance for the project activity.			N/A	N/A	N/A
121	6. Additionality of a project activity	(d) Barrier analysis	115. The DOE shall apply a two-step process to assessing the barrier analysis performed, as follows:			N/A	N/A	N/A
122	6. Additionality of a project activity	(d) Barrier analysis	(a) Determine whether the barriers are real. The DOE shall assess the available evidence and/or undertake interviews with relevant individuals (including members of industry associations, government officials or local experts if necessary) to determine whether the barriers listed in the PDD exist.			N/A	N/A	N/A
123	6. Additionality of a project activity	(d) Barrier analysis	The DOE shall ensure that existence of barriers is substantiated by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics.			N/A	N/A	N/A

VALIDATION REPORT

ID	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
1 2 4	6. Additionality of a project activity	(d) Barrier analysis	If existence of a barrier is substantiated only by the opinions of the project participants, the DOE shall not consider this barrier to be adequately substantiated.			N/A	N/A	N/A
1 2 5	6. Additionality of a project activity	(d) Barrier analysis	If the DOE considers, on the basis of its sectoral or local expertise, that a barrier is not real or is not supported by sufficient evidence, it shall raise a CAR to have reference to this barrier removed from the project documentation;			N/A	N/A	N/A
1 2 6	6. Additionality of a project activity	(d) Barrier analysis	(b) Determine whether the barriers prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives.			N/A	N/A	N/A
1 2 7	6. Additionality of a project activity	(d) Barrier analysis	Since not all barriers present an insurmountable hurdle to a project activity being implemented, the DOE shall apply its local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the proposed CDM project activity and would not equally prevent implementation of at least one of the possible alternatives, in particular the identified baseline scenario.			N/A	N/A	N/A
1 2 8	6. Additionality of a project activity	(e) Common practice analysis	118. The DOE shall use its local and sectoral expertise to:			N/A	N/A	N/A
1 2 9	6. Additionality of a project activity	(e) Common practice analysis	(a) Assess whether the geographical scope (e.g. the defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity' s technology or industry type.			N/A	N/A	N/A
1 3 0	6. Additionality of a project activity	(e) Common practice analysis	For certain technologies the relevant region for assessment will be local and for others it may be transnational/global. If a region other than the entire host country is chosen, the DOE shall assess the explanation why this region is more appropriate;			N/A	N/A	N/A

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
1 3 1	6. Additionality of a project activity	(e) Common practice analysis	(b) Using official sources and local and industry expertise, determine to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities, have been undertaken in the defined region;			N/A	N/A	N/A
1 3 2	6. Additionality of a project activity	(e) Common practice analysis	(c) If similar and operational projects, other than CDM project activities, are already " widely observed and commonly carried out" in the defined region, assess whether there are essential distinctions between the proposed CDM project activity and the other similar activities.			N/A	N/A	N/A
1 3 3	7. Monitoring plan		121. The DOE shall apply a two-step process to assessing compliance with this requirement, as follows:				-	-
1 3 4	7. Monitoring plan		(a) Compliance of the monitoring plan with the approved methodology. The DOE shall:				-	-
1 3 5	7. Monitoring plan		(i) By means of document review, identify the list of parameters required by the selected approved methodology;			OK. The project applies the approved monitoring methodology in AMS-I.D. (ver.13). The list of parameters were confirmed in the section B.6. and B.7. in the PDD.	OK	OK
1 3 6	7. Monitoring plan		(ii) Confirm that the monitoring plan contains all necessary parameters, that they are clearly described and that the means of monitoring described in the plan complies with the requirements of the methodology;			The electricity generated will be monitored directly. The electricity supplied to the grid will be measured by two meters, main-meter and check-meter. The power system diagram and the monitoring points were added to the PDD for clarification.	CL7	OK

VALIDATION REPORT

ID	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
137	7. Monitoring plan		(b) Implementation of the plan. The DOE shall, by means of review of the documented procedures, interviews with relevant personnel, project plans and any physical inspection of the proposed CDM project activity site in accordance with paragraphs 59-62, assess whether:				-	-
138	7. Monitoring plan		(i) The monitoring arrangements described in the monitoring plan are feasible within the project design;			Yes. The measuring meters are calibrated in compliance with national standard, " Tech Administrative Code of Electric Energy Metering (DL/T448-2000)" .	OK	OK
139	7. Monitoring plan		(ii) The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified.			Consistency between the monitoring procedure and the Power Sales Agreement were confirmed. Calibration procedures that will keep the monitoring equipment and installations accurate to within 0.5% have been explained. It is necessary to clarify the installed meters to be calibrated according to the national standard "JJF1055-1997". It is necessary to clarify the responsibilities of owner and internal audit in the PDD.	CL8	OK
140	8. Sustainable development		124. The DOE shall determine whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM project activity to the sustainable development of the host Party.			Yes. Contribution of the project activity to sustainable development of the host country was confirmed via the LoA from China DNA.	OK	OK
141	9. Local stakeholder consultation		127. The DOE shall, by means of document review and interviews with local stakeholders as appropriate, determine whether:				-	-
142	9. Local stakeholder consultation		(a) Comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited;			Yes. Total 50 questionnaires from local residents were responded to the project owner for the purpose of local stakeholder consultation before the commencement of the global stakeholder consultation. Also, another local stakeholder consultation was conducted on local daily newspaper.	OK	OK

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
1 4 3	9. Local stakeholder consultation		(b) The summary of the comments received as provided in the PDD is complete;			Yes.	OK	OK
1 4 4	9. Local stakeholder consultation		(c) The project participants have taken due account of any comments received and have described this process in the PDD.			Yes. The project owner has commented mainly four points, "land occupation", "the issue of solid waste", "the issue of decreases in the output of arable land", and "the issue of the noise", for taking account in the PDD.	OK	OK
1 4 5	10. Environmental impacts		130. The DOE shall confirm, by means of a document review and/or using local official sources and expertise, whether the project participants have undertaken an analysis of environmental impacts and, if required by the host Party, an environmental impact assessment.			It was confirmed that EIA was developed on October 2006, and was approved by Environmental Protection Bureau of Linggang City on 03/11/2006. For clarification, the approval number of EIA was added to the PDD.	CL9	OK
F. Specific validation activities, on EB44 Annex 3								
1 4 6	1. Background		132. Project participants may contract a DOE to undertake certain specific validation activities. For such validation activities, the DOE shall apply the general means of validation and reporting requirements described above as well as those described below.			N/A	N/A	N/A
1 4 7	2. Project design of small-scale clean development mechanism project activities		2. Project design of small-scale clean development mechanism project activities			Yes.	OK	OK
1 4 8	2. Project design of small-scale clean development mechanism project activities		133. The DOE shall determine whether a proposed small-scale project activity meets the requirements of the simplified modalities and procedures for small-scale CDM project activities.			Yes.	OK	OK

VALIDATION REPORT

I D	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
1 4 9	2. Project design of small-scale clean development mechanism project activities		134. During its validation of a small-scale project activity, the DOE shall confirm that:				-	-
1 5 0	2. Project design of small-scale clean development mechanism project activities		(a) The project activity qualifies within the thresholds of the three possible types of small-scale project activities. It may include more than one component; for example, a type III methane recovery component activity and a type I electricity component activity;			Yes.	OK	OK
1 5 1	2. Project design of small-scale clean development mechanism project activities		(b) The project activity conforms to one of the approved small-scale categories and applies the relevant tool or methodology. The DOE shall confirm that the small-scale methodologies are applied in conjunction with the general guidance to the methodologies, which provides guidance on equipment capacity, equipment performance, sampling and other monitoring-related issues;			Yes.	OK	OK
1 5 2	2. Project design of small-scale clean development mechanism project activities		(c) The project activity is not a debundled component of a large-scale project, in accordance with the rules defined in appendix C of the simplified modalities and procedures for small-scale CDM project activities;			Yes.	OK	OK
1 5 3	2. Project design of small-scale clean development mechanism project activities		(d) Whether an assessment of the environmental impacts of the proposed CDM project activity is required by the host Party.			Yes.	OK	OK
1 5 4	2. Project design of small-scale clean development mechanism project activities		135. In assessing the additionality of small scale CDM project activities, the DOE shall refer to the specific requirements on demonstration of additionality for small scale project activities in chapter V, section E, subsection 736 and may refer to the " Non-binding best practice examples to demonstrate additionality for SSC project activities."			Yes.	OK	OK

VALIDATION REPORT

ID	Category	Sub-category	Checklist Questions	Ref	Mo V	Comments	Draft Concl	Final Concl
155	6. Renewal of crediting period		161. When contracted to validate a proposed CDM project activity for a second or further crediting period, the DOE shall undertake a thorough reassessment of the validity of the original baseline or any updates thereto proposed by the project participants.			Yes.	OK	OK
156	6. Renewal of crediting period		This assessment shall be based on the latest version of the procedures for renewing the crediting period, the latest applicable version of approved methodology and the means of validation described in this Manual.			Yes.	OK	OK
157	7. Changes to the start date of the crediting period		162. The CDM Executive Board has provided procedures for requesting post-registration changes to the start date of the crediting period.			Yes.	OK	OK
158	7. Changes to the start date of the crediting period		If project participants wish to delay the start date of the crediting period by more than one year, the DOE shall validate the baseline scenario in accordance with chapter V, section E, subsection 5(d) above.			N/A	OK	OK
159	7. Changes to the start date of the crediting period		163. The validation report shall contain a description of the progress made in project implementation.			Yes.	OK	OK
160	7. Changes to the start date of the crediting period		Further, the DOE shall validate that the project participants have obtained written confirmation from the host Party that the delay will not alter the project's contribution to sustainable development.			Yes.	OK	OK

VALIDATION REPORT

Table A2-2 Investment Analysis Checklist based on EB41 Annex 45 " Guidance on the Assessment of Investment analysis"

Category	ID	Guidance	Comments	Draft Concl	Final Concl
General issues in calculation and presentation					
	3-1	The period of assessment should not be limited to the crediting period of the project activity. Both project IRR and equity IRR calculations shall as a preference reflect the period of expected operation of the underlying project activity (technical lifetime).	The period of assessment is 21 years (construction period: one year, operational period: 20 years). It is demonstrated that " Operational lifetime of the project activity" is 20 years which is based on Feasibility Study Report. IRR analysis is evaluated in a period of 21 years.	OK	OK
	3-2	The IRR calculation may include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment.	Yes. Maintenance cost was included in the cost of operation (7.48 million Yuan in total).	OK	OK
	4-1	The fair value of any project activity assets at the end of the assessment period should be included as a cash inflow in the final year.	Yes. " Residual value of fixed assets" (1.12 million Yuan) were included as a cash inflow in the final year.	OK	OK
	4-2	The fair value should be calculated in accordance with local accounting regulations where available, or international best practice. It is expected that such fair value calculations will include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets.	Yes. Calculation was in accordance with local accounting regulations.	OK	OK
	5-1	Depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, should be added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV).	Yes. Depreciation has been taken into consideration in the IRR analysis.	OK	OK
	5-2	Taxation should only be included as an expense in the IRR/NPV calculation in cases where the benchmark or other comparator is intended for post-tax comparisons.	Yes. Taxation was included as the expense of IRR calculation.	OK	OK
	6	Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant. The DOE is therefore expected to validate the timing of the investment decision and the consistency and appropriateness of the input values with this timing. The DOE should also validate that the listed input values have been consistently applied in all calculations.	Input values used in all investment analysis are confirmed based on FSR . The FSR for the project was approved by Lincang City Development and Reform Commission.	OK	OK
	7	In the case of project activities for which implementation ceases after the commencement and where implementation is recommended due to consideration of the CDM the investment analysis should reflect the economic decision making context at point of the decision to recommence the project. Therefore capital costs incurred prior to the revised project activity start date can be reflected as the recoverable value of the assets. (Capital expenditures should be included not at the original investment costs but at the market fair value at the point of the decision to proceed with the investment, demonstrating the value through assessments done by chartered specialists).	N/A	-	-

VALIDATION REPORT

Category	ID	Guidance	Comments	Draft Concl	Final Concl
	8	Project participants should supply spreadsheet versions of all investment analysis. All formulas used in this analysis are readable and all relevant cells are viewable and unprotected. The spreadsheet will be made available to the Executive Board, UNFCCC secretariat and others contracted to assess the request for registration on behalf of the Board including assigned members of the Registration and Issuance Team.	The spreadsheets of all investment analysis were provided. All the formulas and cells were viewable, without protection; however, the following two points were still remained and necessary to be corrected appropriately. 1) There are some notes scribbled in the spreadsheets. 2) Some of the calculation formulas were put a link to other sheets, but the calculation logic was not clarified due to a complicated calculation.	CAR1	OK
Specific Guidance on the Calculation of Project IRR and Equity IRR					
	9	The cost of financing expenditures (i.e. loan repayments and interest) should not be included in the calculation of project IRR.	The cost of financing expenditures is not included in the calculation of IRR.	OK	OK
	10	In the calculation of equity IRR only the portion of investment costs which is financed by equity should be considered as the net cash outflow, the portion of the investment costs which is financed by debt should not be considered a cash outflow.	N/A	-	-
Selection and Validation of Appropriate Benchmarks					
	11-1	In cases where a benchmark approach is used the applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for equity IRR.	Yes. The applied benchmark and calculated IRR have been used on a project IRR basis.	OK	OK
	11-2	Benchmarks supplied by relevant national authorities are also appropriate if the DOE can validate that they are applicable to the project activity and the type of IRR calculation presented.	The Chinese government Economic Evaluation Code for Small Hydropower Project (SL16-95) recognizes 10% as the official rate of return benchmark. The benchmark for this project is 10%.	OK	OK
	12	In the cases of projects which could be developed by an entity other than the project participant the benchmark should be based on publicly available data sources which can be clearly validated by the DOE.. Such data sources may include local lending and borrowing rates, equity indices, or benchmarks determined by relevant national authorities. The DOE' s validation of such benchmarks shall also include its opinion of the suitability of the benchmark applied in the context of the underlying project activity.	N/A	-	-
	13-1	Internal company benchmarks / expected returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital – WACC), should only be applied in cases where there is only one possible project developer and should be demonstrated to have been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region.	N/A	-	-
	13-2	This shall require as a minimum clear evidence of the resolution by the company' s Board and/or shareholders and will require the validating DOE to undertake a thorough assessment of the financial statements of the project developer – including the proposed WACC – to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects.	N/A	-	-

VALIDATION REPORT

Category	ID	Guidance	Comments	Draft Concl	Final Concl
	14	Risk premiums applied in the determination of required returns on equity shall reflect the risk profile of the project activity being assessed, established according to national/international accounting principles. It is not considered reasonable to apply the rate general stock market returns as a risk premium for project activities that face a different risk profile than an investment in such indices.	N/A	-	-
Investment comparison analysis and benchmark analysis					
	15	If the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services, a benchmark analysis is not appropriate and an investment comparison analysis shall be used. If the alternative to the project activity is the supply of electricity from a grid this is not to be considered an investment and a benchmark approach is considered appropriate.	N/A	-	-
Sensitivity analysis					
	16	Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation (all parameters varied need not necessarily be subjected to both negative and positive variations of the same magnitude). The results of this variation should be presented in the PDD and be reproducible in the associated spreadsheets. Where a DOE considers that a variable which constitute less than 20% have a material impact on the analysis they shall raise a corrective action request to include this variable in the sensitivity analysis.	Sensitivity analysis is demonstrated by using four variables, namely " Fixed asset investment" , " Annual O&M cost" , " Electricity price" , and " Annual output of electricity" , and the result of this variation is recorded in the PDD. However, the following two points were still remained and necessary to be corrected appropriately. 1) The name of each spreadsheet is inconsistent with the content of each sheet. 2) Some of values are entered in the spreadsheet directly, but using formulas is required.	CAR2	OK
	17-1	The DOE should assess in detail whether the range of variations is reasonable in the project context. Past trends may be a guide to determine the reasonable range. As a general point of departure variations in the sensitivity analysis should at least cover a range of +10% and 10%, unless this is not deemed appropriate in the context of the specific project circumstances.	Variations in the sensitivity analysis are covering a range of -10% ~ +10%.	OK	OK
	17-2	In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative the DOE shall provide an assessment of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity.	The result of the sensitivity analysis does not exceed the benchmark.	OK	OK

VALIDATION REPORT

Table A3 Resolution of Corrective Action and Clarification Requests**Project title: Yunnan Lincang City Nanlinghe 1st level Small-scale Hydropower Project**

CAR: Corrective action requested, CL: Clarification requested.

ID	Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table A2-1	Summary of project owner response	Validation team conclusion
CAR1	The IRR spreadsheet versions of all investment analysis were supplied. All the formulas and cells were viewable, without protection. However, some of the calculation formulas and format were difficult to understand during the assessment. They have been corrected appropriately. (see Table A2-2, 8)	ID 108 (and ID 8 in table A2-2)	The spreadsheet was amended and some of the calculation formula was added to the PDD.	The amendment was confirmed. This CAR can be closed.
CAR2	In the original PDD, the sensitivity analysis is shown using 3 variables, namely " Fixed asset investment" , " Annual O&M cost" , and " Annual output of electricity" . However, it is deemed necessary to add " Electricity price" as the fourth parameter.	ID 109 (and ID 16 in table A2-2)	" Electricity price" was added to the sensitivity analysis in the final PDD, as the fourth parameter.	The amendment was confirmed. This CAR can be closed.
CAR3	In the original PDD, CER price was described as EU8/tCO ₂ e. On the other hand, it was demonstrated that CER price is USD10/tCO ₂ e in the FSR. Thus the unit was amended from EURO to USD appropriately.	ID 116	It was amended from EURO to USD in the PDD. In both cases, the CER price was eventually exchanged to RMB80/tCO ₂ e, and IRR calculation wasn't affected by this change.	The amendment was confirmed. This CAR can be closed.
CL1	Clarification was requested: "ASM-I.D." to "AMS-I.D.", and the Version of "Tool to calculate the emission factor for an electricity system" from "1.1" to "01.1" in the PDD.	ID 63	It was amended appropriately.	The amendment was confirmed. This CL can be closed.
CL2	It is necessary to add the drawing of the project boundary to the PDD for clarification.	ID 72	The drawing of the project boundary was amended in the PDD for clarification.	The amendment was confirmed. This CL can be closed.
CL3	The documents and sources in a footnote of section B.4. in the PDD were confirmed. For clarification, the URL of sources was added to the PDD.	ID 78	It was added appropriately.	The amendment was confirmed. This CL can be closed.
CL4	"Tool for the demonstration and assessment of additionality (ver 05.2)" was referred to conduct the investment barrier analysis appropriately. For clarification, the version number should be added to the PDD.	ID 89	It was added appropriately.	The amendment was confirmed. This CL can be closed.
CL5	In the original PDD, the starting date of the project activity was defined just "01/08/2007". During the on-site assessment, it was found that it was the date of the total contract signed on "03/08/2007", which was demonstrated on	ID 90	The starting date of the project activity was amended from "01/08/2007" to "03/08/2007".	The amendment was confirmed. This CL can be closed.

VALIDATION REPORT

ID	Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table A2-1	Summary of project owner response	Validation team conclusion
	Construction Agreement between the project owner and the subcontractor. Clarification was requested.			
CL6	key events of the project including the board meeting for CDM decision making by the project need to be added to the PDD as a table of key events in section B.5..	ID 96	A table of key event history was added to the PDD.	The amendment was confirmed. This CL can be closed.
CL7	The electricity generated will be monitored directly. The electricity supplied to the grid will be measured by two meters, main-meter and check-meter. It is necessary to add the power system diagram and the monitoring points to the PDD for clarification.	ID 136	The power system diagram and the monitoring points were added.	The amendment was confirmed. This CL can be closed.
CL8	It is necessary to clarify the installed meters to be calibrated according to the national standard "JJF1055-1997". It is necessary to clarify the responsibilities of owner and internal audit in the PDD.	ID 139	The national standard with approval number was specified, and the responsibilities of owner and internal audit was added to the PDD.	The amendment was confirmed. This CL can be closed.
CL9	It was confirmed that EIA was developed on October 2006, and was approved by Environmental Protection Bureau of Lingcang City on 03/11/2006. For clarification, the approval number of EIA was needed to be added to the PDD.	ID 145	The approval number of EIA was added to the PDD.	The amendment was confirmed. This CL can be closed.

VALIDATION REPORT

Appendix B: Qualifications

Name:	HAYASHI, Toshio
Type of audit:	<input checked="" type="checkbox"/> 1. CDM <input type="checkbox"/> 2. JI <input checked="" type="checkbox"/> 3. J-VETS <input type="checkbox"/> 4. EU-ETS
Status:	<input checked="" type="checkbox"/> 1. Lead Auditor <input type="checkbox"/> 2. Auditor <input type="checkbox"/> 3. Technical Expert
Scope of Expertise:	<input checked="" type="checkbox"/> 1. Energy industries (renewable-/non-renewable sources) <input checked="" type="checkbox"/> 2. Energy distribution <input checked="" type="checkbox"/> 3. Energy demand <input type="checkbox"/> 4. Manufacturing industry <input checked="" type="checkbox"/> 5. Chemicals <input type="checkbox"/> 6. Construction <input type="checkbox"/> 7. Transport and freight <input type="checkbox"/> 8. Mining/mineral production <input type="checkbox"/> 9. Metal production <input checked="" type="checkbox"/> 10. Fugitive emissions from fuels (solid, oil and gas) <input type="checkbox"/> 11. Fugitive emissions from production and consumption of halocarbons and sulfur hexafluoride <input checked="" type="checkbox"/> 12. Solvent use <input checked="" type="checkbox"/> 13. Waste handling and disposal <input type="checkbox"/> 14. Afforestation and reforestation <input type="checkbox"/> 15. Agriculture
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO

VALIDATION REPORT

Name:	TANABE, Koichiro
Type of audit:	<input checked="" type="checkbox"/> 1. CDM <input type="checkbox"/> 2. JI <input checked="" type="checkbox"/> 3. J-VETS <input type="checkbox"/> 4. EU-ETS
Status:	<input type="checkbox"/> 1. Lead Auditor <input checked="" type="checkbox"/> 2. Auditor <input type="checkbox"/> 3. Technical Expert
Scopes of Expertise:	<input type="checkbox"/> 1. Energy industries (renewable-/non-renewable sources) <input type="checkbox"/> 2. Energy distribution <input type="checkbox"/> 3. Energy demand <input type="checkbox"/> 4. Manufacturing industry <input checked="" type="checkbox"/> 5. Chemicals <input type="checkbox"/> 6. Construction <input type="checkbox"/> 7. Transport and freight <input type="checkbox"/> 8. Mining/mineral production <input type="checkbox"/> 9. Metal production <input type="checkbox"/> 10. Fugitive emissions from fuels (solid, oil and gas) <input type="checkbox"/> 11. Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride <input checked="" type="checkbox"/> 12. Solvent use <input checked="" type="checkbox"/> 13. Waste handling and disposal <input type="checkbox"/> 14. Afforestation and reforestation <input type="checkbox"/> 15. Agriculture
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO

VALIDATION REPORT

Name:	KASAI, Katsuya
Type of audit:	<input checked="" type="checkbox"/> 1. CDM <input type="checkbox"/> 2. JI <input checked="" type="checkbox"/> 3. J-VETS <input type="checkbox"/> 4. EU-ETS
Status:	<input type="checkbox"/> 1. Lead Auditor <input checked="" type="checkbox"/> 2. Auditor <input type="checkbox"/> 3. Technical Expert
Scopes of Expertise:	<input type="checkbox"/> 1. Energy industries (renewable-/non-renewable sources) <input type="checkbox"/> 2. Energy distribution <input type="checkbox"/> 3. Energy demand <input checked="" type="checkbox"/> 4. Manufacturing industry <input checked="" type="checkbox"/> 5. Chemicals <input type="checkbox"/> 6. Construction <input type="checkbox"/> 7. Transport and freight <input type="checkbox"/> 8. Mining/mineral production <input type="checkbox"/> 9. Metal production <input type="checkbox"/> 10. Fugitive emissions from fuels (solid, oil and gas) <input type="checkbox"/> 11. Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride <input type="checkbox"/> 12. Solvent use <input checked="" type="checkbox"/> 13. Waste handling and disposal <input type="checkbox"/> 14. Afforestation and reforestation <input type="checkbox"/> 15. Agriculture
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO

VALIDATION REPORT

Name:	SHI, Xueting
Type of audit:	<input checked="" type="checkbox"/> 1. CDM <input type="checkbox"/> 2. JI <input type="checkbox"/> 3. J-VETS <input type="checkbox"/> 4. EU-ETS
Status:	<input type="checkbox"/> 1. Lead Auditor <input checked="" type="checkbox"/> 2. Auditor <input checked="" type="checkbox"/> 3. Technical Expert (Accounting)
Scope of Expertise:	<input type="checkbox"/> 1. Energy industries (renewable-/non-renewable sources) <input type="checkbox"/> 2. Energy distribution <input type="checkbox"/> 3. Energy demand <input type="checkbox"/> 4. Manufacturing industry <input type="checkbox"/> 5. Chemicals <input type="checkbox"/> 6. Construction <input type="checkbox"/> 7. Transport and freight <input type="checkbox"/> 8. Mining/mineral production <input type="checkbox"/> 9. Metal production <input type="checkbox"/> 10. Fugitive emissions from fuels (solid, oil and gas) <input type="checkbox"/> 11. Fugitive emissions from production and consumption of halocarbons and sulfur hexafluoride <input type="checkbox"/> 12. Solvent use <input type="checkbox"/> 13. Waste handling and disposal <input type="checkbox"/> 14. Afforestation and reforestation <input type="checkbox"/> 15. Agriculture
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO

VALIDATION REPORT

Name:	AIKOSHI, Hiromu
Type of audit:	<input checked="" type="checkbox"/> 1. CDM <input type="checkbox"/> 2. JI <input checked="" type="checkbox"/> 3. J-VETS <input type="checkbox"/> 4. EU-ETS
Status:	<input checked="" type="checkbox"/> 1. Lead Auditor <input type="checkbox"/> 2. Auditor <input type="checkbox"/> 3. Technical Expert
Scopes of Expertise:	<input checked="" type="checkbox"/> 1. Energy industries (renewable-/non-renewable sources) <input type="checkbox"/> 2. Energy distribution <input checked="" type="checkbox"/> 3. Energy demand <input type="checkbox"/> 4. Manufacturing industry <input type="checkbox"/> 5. Chemicals <input checked="" type="checkbox"/> 6. Construction <input checked="" type="checkbox"/> 7. Transport and freight <input type="checkbox"/> 8. Mining/mineral production <input type="checkbox"/> 9. Metal production <input type="checkbox"/> 10. Fugitive emissions from fuels (solid, oil and gas) <input type="checkbox"/> 11. Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride <input type="checkbox"/> 12. Solvent use <input checked="" type="checkbox"/> 13. Waste handling and disposal <input type="checkbox"/> 14. Afforestation and reforestation <input type="checkbox"/> 15. Agriculture
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO

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