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

The World Bank Group

Animal Manure Management System (AMMS) GHG Mitigation Project , Shandong Minhe Livestock Co. Ltd., Penglai, Shandong Province, P.R. of China

UNFCCC Ref. No. 1891

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
DOE	Designated Operational Entity
EB	Executive Board of the Clean Development Mechanism
EF	Emission Factor
EPA	Environmental Protection Authority
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MR	Monitoring Report
MW	Mega Watt
PDD	Project Design Document
PP	Project Participant
SGS	SGS United Kingdom Ltd
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1. Validation Opinion

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

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

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Manual version 1.1, Annexes 66 and 67 to EB 48 meeting report and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The report is based on the assessment of the revised project design document, application of standard auditing techniques including but not limited to document reviews, follow up actions (site visit, telephone and e-mail interviews) and also the review of the applicable methodology.

As per the registered PDD of the project activity, seven sets of 500 KW co-generators will be installed, among them, six sets of co-generators are for daily operation, one set of co-generator is backup to keep the project operation during the maintenance period. The project can produce 46,236 kWh electricity a day, annual biogas electricity will be 16.88 million kWh considering the loading factor of 75% of installed capacity. However, through the preliminary verification of the project, it is found in the actual implementation there are three sets of 1,063 KW co-generators installed at project site for daily operation under the recommendation of overseas experts and overseas investigation by the board to improve the performance and ensure the whole project lifetime in the registered PDD. The performance of installed three sets of 1,063 KW co-generators is much better than that of domestics co-generators designed in the FSR. The annual electricity produced by the project is estimated as 22.96 million kWh based on 300 operation days for each set. Therefore, the incomes from annual power generated by the project and carbon credits are affected accordingly.

In our opinion, the changes, as outlined in revised PDD version 09 dated 12/07/2010, from the project activity as described in the registered PDD have no impact on the following aspects:

(i) Additionality of the project activity;

(ii) Scale of CDM project activity;

(iii) Applicability and application of Approved Baseline Methodology under which the project activity has been registered.

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

Signed on Behalf of the Validation Body by Authorized Signatory

Signature: 

Name: Siddharth Yadav

Date: 28-09-2010

2. Introduction

2.1 Objective

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

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

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Manual version 1.2, Annexes 66 and 67 to EB 48 meeting report and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

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

2.2 Scope

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

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

2.3 GHG Project Description

As per http://cdm.unfccc.int/Projects/DB/TUEV-SUED1214574673.61/view , the project was registered on 27th April 2009 against ACM0010 version 2 under UNFCCC reference number 1891.

2.4 The Names and Roles of the Validation Team Members

Name	Role
Linda Hu Mudan	Lead Assessor/Team Leader
Yolanda Zheng Yue	Assessor
Shute Li Shude	Local Assessor
Kaviraj Singh	Sectoral Expert
Lei Zhongfang	Sectoral Expert

Technical Review Team	Role
Simon Zhao Xinguang	Technical Reviewer
Asish Chakraborty	Sectoral Expert
Ashok Kumar Gautam	Sectoral Expert

3. Methodology

3.1 Review of the revised CDM-PDD and Additional Documentation

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

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

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual, partly on the experience of SGS with the validation of CDM projects and the CDM Validation and Verification Manual version 1.2. It serves the following purposes:

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

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

Checklist Question	Ref ID	Means of Verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements are linked to checklist questions the project should meet.	Lists any references and sources used in the validation process. Full details are provided in the table at the bottom of the checklist.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). A Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

3.3 Findings

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

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

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

I. Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;

II. Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;

III. Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

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

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

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

3.4 Internal Quality Control

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

4. Validation Findings

4.1 Changes from the registered PDD

Based on the information available from the UNFCCC website, http://cdm.unfccc.int/Projects/DB/TUEV-SUED1214574673.61/view , the project was registered against the approved consolidated methodology ACM0010 version 2 under the UNFCCC Reference Number of 1891. The fixed crediting period is from 27/04/2009 to 26/04/2019.

In the registered PDD of the project activity, it is stated that seven sets of 500 KW co-generators will be installed, among them, six sets of co-generators are for daily operation, one set of co-generator is backup to keep the project operation during the maintenance period. The project can produce 46,236 kWh electricity a day, annual biogas electricity will be 16.88 kWh considering the loading factor of 75% of installed capacity.

However, through the on-site visit of preliminary verification of the project activity, it was validated that the project has never been implemented in accordance with description in the registered PDD. From the start of project activity, it was found that in the actual implementation there had been three sets of 1,063 KW co-generators (Type: Jenbacher) installed at project site for daily operation under the recommendation of overseas experts and overseas investigation by the board to improve the performance and ensure the project lifetime in the registered PDD. The total installed capacity is changed to 3,189 kW. The performance of the three sets of 1,063 KW co-generators is much better than that of domestics co-generators designed in the FSR. The annually electricity produced by the project is estimated as 22.96 million kWh based on 300 operation days for each set.

As per paragraph 10(b) of EB 48 Annex 66, validated against the co-generators purchased contract signed, it is validated by the assessment team that the change was known prior to the registration of the project activity. Through assessment, the change of co-generators installed has no impact on the operation/ability of the project activity. The annual average estimated emission reductions over the crediting period was increased as 72,371 tCO2e against 66,393 tCO2e original estimated in the registered PDD. The scale of the CDM project activity remains the same.

4.2 Validation of the changes from the registered PDD

4.2.1 Additionality of the project activity

Barrier analysis (Investment barriers, Technical barriers and Barriers due to prevailing practice) was used in the demonstration of additionality in the registered PDD and has been validated by the validator and approved by the EB.

Change of installed co-generators has no impact on the technical barriers and barriers due to prevailing practice. These two kinds of barriers still exist. Only investment barriers changed a bit. Parameters used in the investment barriers analysis were reassessed according to actual implementation. Details of the changes to the parameters are listed below:

Parameter	Registered PDD	Revised PDD
Annually output delivered to the network	16.88 million kWh/year	22.96 million kWh/year
Project life time	25 years	25 years
Total Investment	63.68 million Yuan	78.21 million Yuan
Maintenance	6.12 million year each year	6.12 million year each year
Electricity Tariff	0.60 Yuan/kWh	0.60 Yuan/kWh
Tax for the first 5 years	Free	Free
Tax from the 6th year	33% of net income	33% of net income
Expected CERs	17,865 tCO2 in 2008; 71,458 tCO2 from 2009-2017; 53,593 tCO2 in 2018.	54,278 tCO2 in 2009; 72,371tCO2 from 2010-2018; 18,093 tCO2 in 2019.

Expected CERs Price	15$/tCO2	15$/tCO2
Annual verification	US$20,000	US$20,000
CERs crediting time	10 Year	10 Year
Exchange rate	$1=7.0 RMB	$1=7.0 RMB
The discount rate	9%	9%

The following steps were taken to assess the impact of change to each parameter used in the investment barriers analysis:

1) Annually output delivered to the network:

In the registered PDD, it is stated that the project activity involves the installation of seven sets of 500 KW co-generators, among them, six sets of co-generators are for daily operation, one set of co-generator is backup to keep the project operation during the maintenance period. The project can produce 46,236 kWh electricity a day. Annual biogas electricity will be 16.88 million kWh considering the loading factor of 75% of installed capacity. However, during preliminary verification, according to the purchased contract verified, it is found that there are three sets of 1,063 KW co-generators (Type: Jenbacher) were installed at project site for daily operation since the start of project activity. The total installed capacity is revised as 3,189 kW. The annually electricity produced by the project is estimated as 22.96 million kWh based on 300 operation days for each set, about 36% higher than the estimate in the registered PDD. The statement of the load factor of 300 operation days per year from the turbine supplier was provided for validation. Consistency is found with each other. It is validated to be in compliance with EB 48 Annex 11.

2) Project life time:

According to the clarification of change of co-generators type installed under the recommendation of overseas experts and overseas investigation by the board provided by the client, it is concluded that if domestic equipments were installed as per registered PDD, it was unlikely to ensure the 25 years project lift time. Same was confirmed with our local sectoral expert. Considering the performance of overseas co-generators is much better than that of domestic co-generators designed in the FSR, advanced overseas co-generators (Type: Jenbacher) were installed instead of domestic equipments. Therefore, the operation period of 25 years is not expected to be changed.

3) Total investment

The total investment used in the PDD was calculated based on the costs of Digester and engineering, Equipment and co-generators, Tax for construction period and other costs such as consultancy, design, training as per FSR of the project. Advanced co-generators (Type: Jenbacher) have been installed at project site. More equipment cost of co-generators is spent compared with that of domestic co-generators designed in the FSR.

Therefore, due to this change, cost on equipment and co-generators of “RMB 27,791,000” in the registered PDD was increased to “RMB 40,277,273” in the revised PDD. It was validated against the equipment purchased contract and invoices. Consistency is found among these evidences. The construction of project is finished now. Actual total investment of “RMB 78,205,769” was applied in the revised PDD accordingly (about 22.8% higher than that estimated in the registered PDD (“RMB 63,678,524”)) which was validated to be consistent with invoices provided by the client.

4) Maintenance and running cost

In approved FSR, annual maintenance and running costs consist of electricity cost, maintenance & repair cost, material and transportation cost, salary, administration cost, capital assets depreciation fee and other costs which are mainly calculated based on the total investment. Total investment was increased a lot due to the change of co-generators installed. Therefore, maintenance and running cost is increased accordingly. As a conservative approach, maintenance and running cost in the revised PDD remains the same with that estimated in the registered PDD (6.12 million Yuan each year). Furthermore, the actual maintenance and running cost is not available since no maintenance has occurred so far. Hence annual maintenance and running costs in FSR is accountable and applicable in the reassessment to reflect the situation back to the decision making time

5) Electricity Tariff

The electricity tariff in the FSR was approved by the government authority, which was confirmed in the validation report of the project. It is thus validated the power price is not affected by the changes of co-generators installed.

6) Tax

The income tax rate (tax free for the first 5 years, 33% of net income from 6th year) in the registered PDD derived from the FSR was determined as per related guidance from the government in the FSR. It was not affected by the changes of co-generators.

7) Expected CERs

As discussed in 1) Annually output delivered to the network above, annually output delivered to the network by project activity of "16.88 million kWh/year" in the registered PDD will be increased as "22.96 million kWh/year" considering the good performance of co-generators (Type: Jenbacher) installed at the project site. It is 36% higher than the estimation in the registered PDD. Therefore, expected CERs (17,865 tCO2 in 2008; 71,458 tCO2 from 2009-2017; 53,593 tCO2 in 2018) estimated in the registered PDD is updated to be 54,278 tCO2 in 2009; 72,371 tCO2 from 2010-2018; 18,093 tCO2 in 2019 considering the project was registered on 27th April 2009.

8) Expected CERs Price

The expected CERs price of 15$/tCO2 in the registered PDD derived from the FSR were not affected by the changes of co-generators.

9) Annual verification

The estimated annual verification of US$20,000 in the registered PDD was not affected by the changes of co-generators.

10) CERs crediting time

The fixed 10 years crediting period covering the period from 27/04/2009 to 26/04/2019 was not affected by the changes of co-generators.

11) Exchange rate

The estimated exchange rate of $1=7.0 RMB from FSR was not affected by the changes of co-generators.

12) The discount rate

The discount rat of 9% in the registered PDD from the FSR was not affected by the changes of the co-generators.

Therefore, PP recalculated the NPV and IRR for the project activity based on the updated parameters. Results are validated as follows:

	Registered PDD	Revised PDD
NPV without CDM income (Unit: RMB Yuan)	-32,043,425	-18,111,686
IRR without CDM income (benchmark=9%)	0.85%	5.44%

The investment barrier analysis in the registered PDD was established based on IRR benchmark analysis. The updated IRR calculation spreadsheet has been walked through and it has been validated that IRR was calculated in the same procedures as that in the registered PDD. The IRR without CDM revenue (5.44%) in the revised PDD remains lower than the applied benchmark of 9% for animal industry.

Further, three factors (Total investment, Annual operation and maintenance cost, Electricity tariff) are justified as three main indicators in the registered PDD. In the revised PDD, it shows that within a variation of ±10% of the critical parameters (Total investment, Annual operation and maintenance cost, Electricity tariff), the IRR of the project does not exceed the benchmark IRR, and the variation of a critical parameter is not likely to reach a degree where the benchmark IRR can be exceeded. It shows that the conclusion regarding the economic unattractiveness of the project is robust to reasonable variations in the critical assumptions.

Besides, Investment analysis was used in the demonstration of additionality in the registered PDD and has been validated by the validator and approved by the EB.

Three possible baseline scenarios as follows:

1. Uncovered Anaerobic Lagoon
2. Press (Separation)- Uncovered anaerobic lagoon
3. Anaerobic Digester with Biogas Co-generation – Aerobic Storage Lagoon without CDM

For each alternative that does not face any barriers, as identified in barrier analysis, investment analysis was undertaken. After assessment, it is validated that the change of installed co-generators has no impact on the NPV and IRR of baseline scenarios 1 and 2 as listed above. For baseline scenario 3: Anaerobic Digester with Biogas Co-generation – Aerobic Storage Lagoon without CDM, as discussed above, due to the change of installed co-generators, the NPV and IRR were changed as -18,111,686 RMB and 5.44%. It is validated that the baseline scenario 1 is most economically attractive and baseline scenario 3 is most economically unattractive. Therefore, an open anaerobic lagoon remains the baseline scenario for the project.

Based on above clarification, it is of SGS's opinion that the changes from the registered PDD have no impact on the additionality of the project activity. The project activity is additional.

4.2.2 Scale of CDM project activity

In the revised PDD version 09 dated 12/07/2010, the annual average estimated emission reductions over the crediting period was 72,371 tCO2e against 66,393 tCO2e in the registered PDD. Thus, the project remains a large scale CDM project activity. It is of SGS's opinion that the changes from the registered PDD do not have the impact on the scale of the CDM project activity.

4.2.3 Applicability and application of the Applied Approved Baseline Methodology

The project was registered against the approved consolidated methodology: Consolidated baseline methodology for grid-connected electricity generation from renewable sources, ACM0010 version 2. The changes with the total installed capacity of the project activity do not affect the applicability and application of the applied approved baseline methodology.

5. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
21/02/2009-22/02/2009	Qu Hongbo	Vice President of Shandong Minhe Livestock Co. Ltd.	Reasons for changes of the total installed capacity.
21/02/2009-22/02/2009	Zhang Dongming	Board secretary of Shandong Minhe Livestock Co. Ltd.	Reasons for changes of the total installed capacity; The prices of the turbine and generator in the purchase agreement and FSR; Applicability and application of the Applied Approved Baseline Methodology, etc.
21/02/2009-22/02/2009	Fang Qingshuang	Engineer of Shandong Minhe Livestock Co. Ltd.	Changes of the total installed capacity of the CDM project activity in Grid Company side.
21/02/2009-22/02/2009	Dong Taili	CDM Project Manager of Shandong Minhe Livestock Co. Ltd.	Changes of the total installed capacity of the CDM project activity in Grid Company side.
21/02/2009-22/02/2009	Cai Qingqing	CDM Monitoring Manager of	Changes of the total installed capacity of the CDM project activity in Grid Company side.

Date	Name	Position	Short Description of Subject Discussed
		Shandong Minhe Livestock Co. Ltd.	
21/02/2009-22/02/2009	Li Zijun	Project Manager of the World Bank	The Additionality of the project activity; Scale of CDM project activity; Applicability and application of the Applied Approved Baseline Methodology.
21/02/2009-22/02/2009	Linda Hu Mudan	Assessor in SGS	Site visit

6. Document References

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

/1/ Revised PDD version 09 dated 12/07/2010
/2/ Revised IRR calculation spreadsheet of the project activity (Minhe-_Financial_Analysis-2010-07-12)
/3/ Revised ERs calculation spreadsheet of the project activity (ER_calculation-2010-06-16)

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

/4/ Registered PDD version 08 dated 30/03/2009
/5/ Validation report for Animal Manure Management System (AMMS) GHG Mitigation Project , Shandong Minhe Livestock Co. Ltd., Penglai, Shandong Province, P.R. of China issued by TÜV SÜD dated 15/04/2009 Report No.914065
/6/ ACM0010 version 2
/7/ Feasibility Study Report for the project
/8/ Equipment Purchase Agreements signed between the supplier and the project owner
/9/ Invoices regarding the total investment of the project
/10/ Clarification on the reason of change of co-generators under the recommendation of overseas experts and overseas investigation by the board
/11/ The statement of the load factor of 300 operation days per year from the turbine supplier

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A.1 Annex 1 Validation Checklist

Validation of the Revised PDD

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A. General Description of Project Activity				
A.1. Project Title				
A.1.1. Is there an indication of a revision number and the date of the revision?	VVM Para.56 PDD section A.1	DR	Yes. The revised version number 09 of the PDD is described in section A.1. of the revised PDD dated 12/07/2010.	OK
A.2. Description of the changes of the Project Activity				
A.2.1. Does the description of the CDM project activity as contained in the revised PDD sufficiently cover all relevant elements accurately? Does it give a clear description of the changes as compared to the description in the registered PDD?	VVM Para.59 PDD section A.2 see also A.4, A.4.3 and B.3	DR, SV	As per paragraph 5 of Annex 67 to EB 48 meeting, details are validated as follows: (a) Changes in the effective output capacity due to increased installed capacity or increased number of units, or installation of units with lower capacity or units with a technology which is less advanced than that described in the PDD; In the registered PDD of the project activity, it is stated that seven sets of 500 KW co-generators will be installed, among them, six sets of co-generators are for daily operation, one set of co-generator is backup to keep the project operation during the maintenance period. The project can produce 46,236 kWh electricity a day, annual biogas electricity will be 16.88 kWh considering the loading factor of 75% of installed capacity. However, through the on-site visit of preliminary verification of the project activity, it was validated that the project has never been implemented in accordance with description in the registered PDD. From the start of project activity, it is found that in real action there are three sets of 1,063 KW co-generators (Type: Jenbacher) were installed at project site for daily operation under the recommendation of overseas experts and overseas investigation by the board to improve the performance and ensure the project lifetime in the registered PDD. The total installed capacity is increased to be 3,189 kW. The performance of installed three sets of 1,063 KW co-generators is much better than that of domestics co-generators designed in the FSR. The annually electricity produced by	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			the project is estimated as 22.96 million kWh based on 300 operation days for each set. (b) Addition of component or extension of technology; Not applicable (c) Removal or addition of one (or more) site of a project activity registered with multiple-sites; Not applicable. (d) Different values of those actual operational parameters relevant to determination of emission reduction which are within the control of project participant and which result in the IRR passing the benchmark as described in the registered PDD. No such difference. As per paragraph 10 of Annex 67 to EB 48 meeting, it is validated that the change has no impact on the scale of the project activity. As per paragraph 12 (a)(b) and (c) of Annex 67 to EB 48 meeting, it is validated that the changes has no impact on the applicability/application of baseline methodology. The original methodology would no longer be applicable; or The original methodology ACM0010 version 2 is still applicable. Another methodology would have been applicable; or There is no reason to believe another methodology would have been applicable. Another baseline scenario would be more appropriate. No change with the baseline scenarios. The applied baseline scenario is appropriate.	
A.2.2. Is all information provided consistent and in compliance with the actual situation or planning?	VVM Para.64 PDD section A.2 see also A.4,	DR, SV	Yes. All information provided is consistent with the actual situation of the project.	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
	A.4.3 and B.3			
A.2.3. Are the changes permanent changes from the registered project activity under one of the following situations? (a) the project has never been implemented in accordance with description in the registered PDD; or (b) permanent changes occur after the project activity has been implemented in accordance with the description in the PDD and issuance of CERs has taken place.	Para 7 of Annex 66 to EB 48 meeting	DR, SV	Yes. The project has never been implemented in accordance with description in the registered PDD. It is validated that from the start of project activity, in actual implementation, there are three sets of 1,063 KW co-generators were installed at project site for daily operation. The total installed capacity is increased to be 3,189 kW. The annually electricity produced by the project is estimated as 22.96 million kWh based on 300 operation days for each set.	OK
A.2.4. When did the changes occur?	Para 10(b) of Annex 66 to EB 48 meeting	DR, SV	As per paragraph 10(b) of EB 48 Annex 66, validated against the co-generators purchased contract signed, it is validated by the assessment team that the change was known prior to the registration of the project activity. Three sets of 1,063 KW co-generators were installed at project site for daily operation in August 2008 instead of the installation of seven sets of 500 KW co-generators (six sets of co-generators are for daily operation, one set of co-generator is backup to keep the project operation during the maintenance period as per the registered PDD). The total installed capacity is increased to be 3,189 kW. Therefore, the total installed capacity of the project activity has been increased to be 3,189 kW. The annually electricity produced by the project is increased as 22.96 million kWh based on 300 operation days for each set.	OK
A.2.5. What are the reasons for these changes taking place?	Para 10(b) of Annex 66 to EB 48 meeting	DR, SV	As per paragraph 10(b) of EB 48 Annex 66, validated against the co-generators purchased contract signed, it is validated by the assessment team that the change was known prior to the registration of the project activity. As clarified by the PP, this is mainly due to the recommendation of overseas experts and overseas investigation by the board to improve the performance and ensure the project lifetime in the registered PDD.	OK
A.2.6. Would the changes have been known prior to	Para 10(b) of Annex 66 to EB	DR,	Validated against the co-generators purchased contract signed, it is validated by the assessment team that the change was known prior to the registration of the project	OK

<table>
<tr><th colspan="2">Checklist Question</th><th>Ref. ID</th><th>MoV*</th><th>Comments</th><th>Conclusion/ CARs/CLs</th></tr>
<tr><td></td><td>registration of the project activity?</td><td>48 meeting</td><td>SV</td><td>activity.</td><td></td></tr>
<tr><td>A.2.7.</td><td>How would the changes impact the overall operation/ability of the project activity to deliver emission reductions as stated in the registered PDD?</td><td>Para 10(b) of Annex 66 to EB 48 meeting</td><td>DR, SV</td><td>It was validated that three sets of 1,063 KW co-generators were installed at project site for daily operation. The total installed capacity is increased to be 3,189 kW. Therefore, the total installed capacity of the project activity has been increased to be 3,189 kW. The annually electricity produced by the project is increased as 22.96 million kWh based on 300 operation days for each set. The change has no impact on the operation/ability of the project activity.

The estimated emission reduction of the project is changed accordingly. Details are as follows:

<table>
<tr><td></td><td>Revised PDD</td></tr>
<tr><td>2009 (4-12)</td><td>54,278</td></tr>
<tr><td>2010</td><td>72,371</td></tr>
<tr><td>2011</td><td>72,371</td></tr>
<tr><td>2012</td><td>72,371</td></tr>
<tr><td>2013</td><td>72,371</td></tr>
<tr><td>2014</td><td>72,371</td></tr>
<tr><td>2015</td><td>72,371</td></tr>
<tr><td>2016</td><td>72,371</td></tr>
<tr><td>2017</td><td>72,371</td></tr>
<tr><td>2018</td><td>72,371</td></tr>
<tr><td>2019 (1-3)</td><td>18,093</td></tr>
<tr><td>Total estimated reductions (tonnes of CO_2 e)</td><td>723,710</td></tr>
<tr><td>Total number of crediting years</td><td>10</td></tr>
</table></td><td>OK</td></tr>
</table>

<table>
<tr><th>Checklist Question</th><th>Ref. ID</th><th>MoV*</th><th>Comments</th><th>Conclusion/ CARs/CLs</th></tr>
<tr><td></td><td></td><td></td><td><table><tr><td>Annual average over the crediting period of estimated reductions (tonnes of CO_2 e)</td><td>72,371</td></tr></table>The scale of the CDM project activity remains the same.</td><td></td></tr>
<tr><td colspan="5">A.3. Technical Description of the Project Activity</td></tr>
<tr><td>A.3.1. Is the table required for the indication of projected emission reductions correctly applied and do the changes to the PDD result in a change in the total emission reductions?</td><td>VVM Para.64
PDD section A.4</td><td>DR, SV</td><td>Yes. The table is correctly applied in the revised PDD.</td><td>OK</td></tr>
<tr><td colspan="5">A.4. Scale of project activity</td></tr>
<tr><td>A.4.1. Is the project activity a small scale or large scale project activity according to the original registered PDD?</td><td>PDD section A.2, A.4.4, B.1 and B.2</td><td>DR, SV</td><td>It was validated that three sets of 1,063 KW co-generators were installed at project site for daily operation. The total installed capacity is increased to be 3,189 kW. Therefore, the total installed capacity of the project activity has been increased to be 3,189 kW. The annually electricity produced by the project is increased as 22.96 million kWh based on 300 operation days for each set.
Therefore, the estimated emission reduction of the project is changed accordingly. Details are as follows:<table><tr><td></td><td>Revised PDD</td></tr><tr><td>2009 (4-12)</td><td>54,278</td></tr><tr><td>2010</td><td>72,371</td></tr><tr><td>2011</td><td>72,371</td></tr><tr><td>2012</td><td>72,371</td></tr><tr><td>2013</td><td>72,371</td></tr><tr><td>2014</td><td>72,371</td></tr></table></td><td>OK</td></tr>
</table>

<table>
<tr><th>Checklist Question</th><th>Ref. ID</th><th>MoV*</th><th>Comments</th><th>Conclusion/ CARs/CLs</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>2015</td><td>72,371</td></tr>
<tr><td>2016</td><td>72,371</td></tr>
<tr><td>2017</td><td>72,371</td></tr>
<tr><td>2018</td><td>72,371</td></tr>
<tr><td>2019 (1-3)</td><td>18,093</td></tr>
<tr><td>Total estimated reductions (tonnes of CO_2 e)</td><td>723,710</td></tr>
<tr><td>Total number of crediting years</td><td>10</td></tr>
<tr><td>Annual average over the crediting period of estimated reductions (tonnes of CO_2 e)</td><td>72,371</td></tr>
</table>
Thus, the project remains a large scale CDM project activity. Thus, it is of SGS's opinion that the changes from the registered PDD do not have the impact on the scale of the CDM project activity.</td><td></td></tr>
<tr><td>A.4.2. Is the current project activity a small scale or large scale project activity according to the revised PDD?</td><td>Revised PDD section A.2, A.4.4, B.1 and B.2</td><td>DR, SV</td><td>The project activity remains a large scale project activity as per the revised PDD. The same with the original registered PDD.</td><td>OK</td></tr>
<tr><td colspan="5">B. Baseline Methodology</td></tr>
<tr><td colspan="5">B.1. Choice and Applicability</td></tr>
<tr><td>B.1.1. Is the selected approved methodology applicable to the project activity in the PDD?</td><td>VVM Para.75/66a/68/73
PDD section B (B.1-B.2)</td><td>DR, SV</td><td>This methodology ACM0010 version 2 is applicable to the project activity. The changes of co-generators installed do not affect the applicability and application of the applied approved baseline methodology.</td><td>OK</td></tr>
</table>

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.1.2. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology? If the project activity was originally a small scale project activity applying small scale methodology, do the changes have such impact that the methodology is not applicable to the current project activity?	VVM Para.75/66b/68 PDD section B (B.1-B.2)	DR	After site visit, it is validated that the applied methodology ACM0010 version 2 is still applicable.	OK
B.2. Project Boundary				
B.2.1. As a result of the implementation of the CDM project activity are there any sources added to the project boundary which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology?		DR, SV	No changes with the original registered PDD.	OK
B.3. Additionality :				
B.3.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and by	VVM Para.67d/95 PDD Section B.1/B.4/B.5	DR	Yes. The investment barrier analysis in the registered PDD was established based on IRR benchmark analysis. The updated IRR calculation spreadsheet has been walked through and it has been validated that IRR was calculated in the same procedures as that in the registered PDD. The IRR without CDM revenue (5.44%) in the revised PDD	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
following all the required steps?			remains lower than the applied benchmark of 9% for animal industry. No changes with the additionality of the project activity.	
B.3.2. In case of using the additionality tool: Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes impact the discussion in the PDD? Are all steps followed in a transparent manner?	PDD Section B.1/B.4/B.5	DR	The same with the original registered PDD. No changes.	OK
B.3.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with complete transparency to all available data and documentation?	VVM Para.93/91 PDD Section B	DR	The same with the original registered PDD. No changes.	OK
B.3.4. If an investment analysis has been used, has it been shown that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?	VVM Para. 106, 107, 109 112a-c PDD Section B.5	DR	Please refer to B.3.6. below.	OK
B.3.5. If a benchmark is used, is it ensured that it is selected in accordance	VVM Para. 110 PDD Section B.5	DR	The same with the original registered PDD. No changes.	OK

<table>
<tr><th colspan="2">Checklist Question</th><th>Ref. ID</th><th>MoV*</th><th>Comments</th><th>Conclusion/ CARs/CLs</th></tr>
<tr><td></td><td>with the requirements of the tool /methodology and it represents standard returns in the market (not linked to the subjective profitability expectation or risk profile of a particular project developer).</td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.3.6.</td><td>If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?</td><td>VVM Para.
114
115a-b/116
PDD Section B.5</td><td>DR</td><td>Yes. Barrier analysis (Investment barriers, Technical barriers and Barriers due to prevailing practice) was used in the demonstration of additionality in the registered PDD and has been validated by the validator and approved by the EB.

Change of installed co-generators has no impact on the technical barriers and barriers due to prevailing practice. These two kinds of barrier still exist. Only investment barriers changed a bit. Parameters used in the investment barriers analysis were reassessed according to actual implementation. Details of the changes to parameters are listed below:
<table>
<tr><td>Parameter</td><td>Registered PDD</td><td>Revised PDD</td></tr>
<tr><td>Annually output delivered to the network</td><td>16.88 million kWh/year</td><td>22.96 million kWh/year</td></tr>
<tr><td>Project life time</td><td>25 years</td><td>25 years</td></tr>
<tr><td>Total Investment</td><td>63.68 million Yuan</td><td>78.21 million Yuan</td></tr>
<tr><td>Maintenance</td><td>6.12 million year each year</td><td>6.12 million year each year</td></tr>
<tr><td>Electricity Tariff</td><td>0.60 Yuan/kWh</td><td>0.60 Yuan/kWh</td></tr>
<tr><td>Tax for the first 5 years</td><td>Free</td><td>Free</td></tr>
<tr><td>Tax from the 6th year</td><td>33% of net income</td><td>33% of net income</td></tr>
<tr><td>Expected CERs</td><td>17,865 tCO2 in 2008;
71,458 tCO2 from 2009-2017;
53,593 tCO2 in 2018.</td><td>54,278 tCO2 in 2009;
72,371 tCO2 from 2010-2018;
18,093 tCO2 in 2019.</td></tr>
<tr><td>Expected CERs Price</td><td>15$/tCO2</td><td>15$/tCO2</td></tr>
<tr><td>Annual verification</td><td>US$20,000</td><td>US$20,000</td></tr>
<tr><td>CERs crediting time</td><td>10 Year</td><td>10 Year</td></tr>
</table></td><td>OK</td></tr>
</table>

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs

Exchange rate	$1=7.0 RMB	$1=7.0 RMB
The discount rate	9%	9%

The following steps were taken to assess the impact of change to each parameter used in the investment barriers analysis:

1) Annually output delivered to the network:

In the registered PDD, it is stated that the project activity involves the installation of seven sets of 500 KW co-generators, among them, six sets of co-generators are for daily operation, one set of co-generator is backup to keep the project operation during the maintenance period. The project can produce 46,236 kWh electricity a day. Annual biogas electricity will be 16.88 million kWh considering the loading factor of 75% of installed capacity. However, during preliminary verification, according to the purchased contract verified, it is found that there are three sets of 1,063 KW co-generators (Type: Jenbacher) were installed at project site for daily operation since the start of project activity. The total installed capacity is revised as 3,189 kW. The annually electricity produced by the project is estimated as 22.96 million kWh based on 300 operation days for each set, about 36% higher than the estimate in the registered PDD. The statement of the load factor of 300 operation days per year from the turbine supplier was provided for validation. Consistency is found with each other.

2) Project life time:

According to the clarification of change of co-generators type installed under the recommendation of overseas experts and overseas investigation by the board provided by the client, it is concluded that if domestic equipments were installed as per registered PDD, it was unlikely to ensure the 25 years project lift time. Same was confirmed with our local sectoral expert. In this case, considering the performance of overseas co-generators is much better than that of domestic co-generators designed in the FSR. Advanced overseas co-generators (Type: Jenbacher) were installed instead of domestic equipments. Therefore, the operation period of 25 years is not expected to be changed.

13) Total investment

The total investment used in the PDD was calculated based on the costs of Digester and engineering, Equipment and co-generators, Tax for construction period and other costs such as consultancy, design, training as per FSR of the project. Advanced co-

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			generators (Type: Jenbacher) have been installed at project site. More equipment cost of co-generators is spent compared with that of domestic co-generators designed in the FSR. Therefore, due to this change, cost on equipment and co-generators of "¥ 27,791,000" in the registered PDD was increased as "¥ 40,277,273" in the revised PDD. It was validated against the equipment purchased contract and invoices. Consistency is found among these evidences. The construction of project is finished now. Actual total investment of "¥ 78,205,769" was reported in the revised PDD accordingly (about 22.8% higher than that estimated in the registered PDD ("¥ 63,678,524")) which was validated to be consistent with invoices provided by the client. 14) Maintenance and running cost In approved FSR, annual maintenance and running costs consist of electricity cost, maintenance & repair cost, material and transportation cost, salary, administration cost, capital assets depreciation fee and other costs which are mainly calculated based on the total investment. Total investment was increased a lot due to the change of co-generators installed. Therefore, maintenance and running cost is increased accordingly. As a conservative approach, maintenance and running cost in the revised PDD is still the same with that estimated in the registered PDD (6.12 million Yuan each year). Furthermore, the actual maintenance and running cost is not available since no maintenance has occurred so far. Hence annual maintenance and running costs in FSR is accountable and applicable in the reassessment to reflect the situation back to the decision making time 15) Electricity Tariff The electricity tariff in the FSR was approved by the government authority, which was confirmed in the validation report of the project. It is thus validated the power price is not affected by the changes of co-generators installed. 16) Tax The income tax rate (tax free for the first 5 years, 33% of net income from 6th year) in the registered PDD derived from the FSR was determined as per related guidance from the government in the FSR. It was not affected by the changes of co-generators.	

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			17) Expected CERs As discussed in 1) Annually output delivered to the network above, annually output delivered to the network by project activity of "16.88 million kWh/year" in the registered PDD will be increased as "22.96 million kWh/year" considering the good performance of co-generators (Type: Jenbacher) installed at the project site. It is 36% higher than the estimation in the registered PDD. Therefore, expected CERs (17,865 tCO2 in 2008; 71,458 tCO2 from 2009-2017; 53,593 tCO2 in 2018) estimated in the registered PDD is updated to be 54,278 tCO2 in 2009; 72,371 tCO2 from 2010-2018; 18,093 tCO2 in 2019 considering the project was registered on 27th April 2009. 18) Expected CERs Price The expected CERs price of 15$/tCO2 in the registered PDD derived from the FSR were not affected by the changes of co-generators. 19) Annual verification The estimated annual verification of US$20,000 in the registered PDD was not affected by the changes of co-generators. 20) CERs crediting time The fixed 10 years crediting period covering the period from 27/04/2009 to 26/04/2019 was not affected by the changes of co-generators. 21) Exchange rate The estimated exchange rate of $1=7.0 RMB from FSR was not affected by the changes of co-generators. 22) The discount rate The discount rat of 9% in the registered PDD from the FSR was not affected by the changes of the co-generators. Therefore, PP recalculated the NPV and IRR for the project activity based on the updated parameters. Results are validated as follows:	

<table>
<tr><th>Checklist Question</th><th>Ref. ID</th><th>MoV*</th><th>Comments</th><th>Conclusion/ CARs/CLs</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td></td><td>Registered PDD</td><td>Revised PDD</td></tr>
<tr><td>NPV without CDM income (Unit: RMB Yuan)</td><td>-32,043,425</td><td>-18,111,686</td></tr>
<tr><td>IRR without CDM income (benchmark=9%)</td><td>0.85%</td><td>5.44%</td></tr>
</table>
The investment barrier analysis in the registered PDD was established based on IRR benchmark analysis. The updated IRR calculation spreadsheet has been walked through and it has been validated that IRR was calculated in the same procedures as that in the registered PDD. The IRR without CDM revenue (5.44%) in the revised PDD remains lower than the applied benchmark of 9% for animal industry.

Investment analysis was used in the demonstration of additionality in the registered PDD and has been validated by the validator and approved by the EB.

Three possible baseline scenarios as follows:

1. Uncovered Anaerobic Lagoon
2. Press (Separation)- Uncovered anaerobic lagoon
3. Anaerobic Digester with Biogas Co-generation – Aerobic Storage Lagoon without CDM

For each alternative that does not face any barriers, as identified in barrier analysis, investment analysis was undertaken. After assessment, it is validated that the change of installed co-generators has no impact on the NPV and IRR of baseline scenarios 1 and 2 as listed above. For baseline scenario 3: Anaerobic Digester with Biogas Co-generation – Aerobic Storage Lagoon without CDM, as discussed above, due to the change of installed co-generators, the NPV and IRR were changed as -18,111,686 RMB and 5.44%. It is validated that the baseline scenario 1 is most economically attractive and baseline scenario 3 is most economically unattractive. Therefore, an open anaerobic lagoon remains the baseline scenario for the project.

Based on above clarification, it is of SGS's opinion that the changes from the registered PDD have no impact on the additionality of the project activity. The barriers still exist.</td><td></td></tr>
<tr><td>B.3.7. Is the discussion on additionality consistent with the identification of all plausible and credible</td><td>VVM Para. 105
PDD Section B.5</td><td>DR</td><td>Yes. The discussion on additionality is consistent with the identification of all plausible and credible baseline scenarios. The IRR of the project in the revised PDD is still below the benchmark IRR of 9% without CERs income and financially unattractive to the investor with CERs income.</td><td>OK</td></tr>
</table>

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
baseline scenarios?				
B.3.8. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the CDM project activity? Do they also abide by the same applicable laws and legislations?	VVM Para. 105 PDD Section A.4.3/B.5	DR	The same with the original registered PDD. No changes.	OK
B.3.9. Has it been shown that the project is not common practice?	VVM Para. 119a/b PDD Section B.5	DR	The same with the original registered PDD. No changes.	OK
B.3.10. What are the key distinctions between the project activity and any similar projects that are widely used as common practice?	VVM Para. 118, 119c/d PDD Section B.5	DR	The same with the original registered PDD. No changes.	OK
B.4. Application of the Baseline Methodology				
B.4.1. Has the approved methodology been applied correctly for determining **baseline emissions**?	VVM Para. 91d PDD Section B (B.6.1 -B.71)	DR	Yes. ACM0010 version 2 is correctly applied. No changes with the original registered PDD.	OK
B.4.2. Has the approved methodology been applied	VVM Para.	DR	Yes. ACM0010 version 2 is correctly applied. No changes with the original registered PDD.	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
correctly for determining **project emissions**?	90/91d PDD Section B (B.6.2-B.71)			
B.4.3. Has the approved methodology been applied correctly for determining **leakage**?	VVM Para. 91d PDD Section B (B.6.2 -B.71)	DR	Yes. ACM0010 version 2 is correctly applied. No changes with the original registered PDD.	OK
B.4.4. Where applicable, has the approved methodology been applied correctly for the **direct calculation of emission reductions?**	VVM Para 88/91d PDD Section B (B.6.2 -B.71)	DR	Yes. ACM0010 version 2 is correctly applied. No changes with the original registered PDD.	OK
B.4.5. Where there is an option between different equations or parameters, has the methodological choices for the project been explained, have they been properly justified and are they correct?	VVM Para.89/90/91 PDD Section B (B.6.2 -B.71)	DR	Not applicable. No changes with the original registered PDD.	OK
B.4.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD Sections B.5-C	DR	Yes. The same with the original registered PDD. No changes.	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.5. Ex-ante Data and Parameters Used				
B.5.1. Are the data provided in compliance with the methodology?	VVM Para. 91/67c PDD Section B.6.3B.6.4	DR	Yes. The same with the original registered PDD. No changes.	OK
B.5.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVM Para. 91a/b PDD Section B.6.3/B.6.4	DR	Yes, all the data is derived from official data sources such as China Energy Statistical Yearbook, China Electric Power Yearbook and IPCC default value and have been correctly quoted. The same with the original registered PDD. No changes.	OK
B.5.3. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	The same with the original registered PDD. No changes.	OK
B.5.4. Is all the data appropriate and correctly applied to the CDM project activity?	VVM Para. 91c PDD Section B.6.3/B.6.4	DR	The same with the original registered PDD. No changes.	OK
B.5.5. Are data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately assessed, correct, and will they result in conservative estimates?	VVM Para. 90 PDD Section B.6.3/B.6.4	DR	The same with the original registered PDD. No changes.	OK
B.6. Calculation of Emissions Reductions				
B.6.1. Has the approved methodology been applied correctly for determining **emission reductions**?	VVM Para. 91d PDD Section	DR	Yes. ACM0010 version 2 has been applied exactly as defined for determining emission reductions. All the required steps/calculations have been followed. The same with the original registered PDD. No changes.	OK

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
	A.4.4/B.6			
B.6.2. Are the emission reduction calculations documented in a complete and transparent manner?	VVM Para. 91e PDD Section B.6	DR	Yes. The PDD documented how each equation is applied in a manner that enables readers to reproduce the calculation. The same with the original registered PDD. No changes.	OK
B.6.3. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	PDD Section B.6	DR	Yes. The projection is based on same procedures as to be used for later monitoring. The same with the original registered PDD. No changes.	OK
B.6.4. Is the calculation of the emission reduction correct?	VVM Para. 91e PDD Section B.6	DR	Yes, the calculation of emission reductions is correct. The same with the original registered PDD. No changes.	OK
B.7. Emission Reductions				
B.7.1. Is the form/table required for the indication of projected emission reductions correctly applied?	PDD Section A.4.4/ Section B.6	DR	Yes. The form/table is required for the indication of projected emission reductions correctly applied. The same with the original registered PDD. No changes.	OK
B.7.2. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	PDD Section A.4.4/ Section B.6	DR	Yes. The projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period. The same with the original registered PDD. No changes.	OK
B.8. Baseline Details				
B.8.1. Is there any indication of a date when determining the baseline?	PDD Section B.8/Annex 3	DR	The same with the original registered PDD. No changes.	OK
B.8.2. Is this consistent with the time line of the PDD	Also see revision history of the PDD	DR	The same with the original registered PDD. No changes.	OK

Checklist Question		Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
	history?				
B.8.3.	Is all data required provided in a complete manner by annex 3 of the PDD?	PDD Annex 3	DR	The same with the original registered PDD. No changes.	OK

References

Reference ID	Title / Description	Comments
/1/	Revised PDD version 09 dated 12/07/2010	Revised PDD of the project
/2/	Revised IRR calculation spreadsheet of the project activity (Minhe-_Financial_Analysis-2010-07-12)	Used to check the revised IRR of this project due to the changes of co-generators
/3/	Revised ERs calculation spreadsheet of the project activity (ER_calculation-2010-06-16)	Used to check the calculation of ERs of this project due to the changes of co-generators
/4/	Registered PDD version 08 dated 30/03/2009	Registered PDD of the project
/5/	Validation report for Animal Manure Management System (AMMS) GHG Mitigation Project , Shandong Minhe Livestock Co. Ltd., Penglai, Shandong Province, P.R. of China issued by TÜV SÜD dated 15/04/2009 Report No.914065	Validation report of the project
/6/	ACM0010 version 2	Applied methodology
/7/	Feasibility Study Report for the project	FSR of the project activity
/8/	Equipment Purchase Agreements signed between the supplier and the project owner	Used to confirm the parameters and price of the advanced co-generators installed at the project site
/9/	Invoices regarding the total investment of the project	Used to confirm the actual total investment cost by the project activity
/10/	Clarification on the reason of change of co-generators under the recommendation of overseas experts and overseas investigation by the board	Used to confirm the reason for the change of co-generators installed
/11/	The statement of the load factor of 300 operation days per year from the turbine supplier	Used to check the load factor of installed co-generators

A.2 Annex 2 Overview of Findings

No findings were raised.

A.3 Annex 3 Team Members Statements of Competency

Statement of Competence

Name: Linda Hu

Status

-	Lead Assessor	x	-	Expert	x
-	Assessor	x	-	Financial Expert	
-	Local Assessor	China	-	Technical Reviewer	Verification only

Scopes of Expertise

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

Approved Member of Staff by: Siddharth Yadav Date: 09.03.2010

Statement of Competence

Name: Zheng, Yolanda

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable) **x**
Sub scope(s): Hydro, Wind

2. Energy Distribution
Sub scope(s):

3. Energy Demand
Sub scope(s):

4. Manufacturing
Sub scope(s):

5. Chemical Industry
Sub scope(s):

6. Construction
Sub scope(s):

7. Transport
Sub scope(s):

8. Mining/Mineral Production
Sub scope(s):

9. Metal Production
Sub scope(s):

10. Fugitive Emissions from Fuels (solid, oil and gas)
Sub scope(s):

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Sub scope(s):

12. Solvent Use
Sub scope(s):

13. Waste Handling and Disposal
Sub scope(s):

14. Afforestation and Reforestation
Sub scope(s):

15. Agriculture
Sub scope(s):

Approved Member of Staff by: Siddharth Yadav Date: 11/03/2010

Statement of Competence

Name: Shute Li

Status

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

Scopes of Expertise

5. Energy Industries (renewable / non-renewable)	**x**
Sub scope(s): Hydro	
6. Energy Distribution	
Sub scope(s):	
7. Energy Demand	
Sub scope(s):	
8. Manufacturing	
Sub scope(s):	
16. Chemical Industry	
Sub scope(s):	
17. Construction	
Sub scope(s):	
18. Transport	
Sub scope(s):	
19. Mining/Mineral Production	
Sub scope(s):	
20. Metal Production	
Sub scope(s):	
21. Fugitive Emissions from Fuels (solid, oil and gas)	
Sub scope(s):	
22. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Sub scope(s):	
23. Solvent Use	
Sub scope(s):	
24. Waste Handling and Disposal	**x**
Sub scope(s): Landfill gas	
25. Afforestation and Reforestation	
Sub scope(s):	
26. Agriculture	
Sub scope(s):	

Approved Member of Staff by: Siddharth Yadav Date: 07/06/2010

Statement of Competence

Name: Lei Zhongfang

Status

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

Scopes of Expertise

9. Energy Industries (renewable / non-renewable)
Sub scope(s):

10. Energy Distribution
Sub scope(s):

11. Energy Demand
Sub scope(s):

12. Manufacturing
Sub scope(s):

27. Chemical Industry
Sub scope(s):

28. Construction
Sub scope(s):

29. Transport
Sub scope(s):

30. Mining/Mineral Production
Sub scope(s):

31. Metal Production
Sub scope(s):

32. Fugitive Emissions from Fuels (solid, oil and gas)
Sub scope(s):

33. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Sub scope(s):

34. Solvent Use
Sub scope(s):

35. Waste Handling and Disposal
Sub scope(s):

36. Afforestation and Reforestation
Sub scope(s):

37. Agriculture **x**
Sub scope(s): Manure Management

Approved Member of Staff by: Siddharth Yadav Date: 19/5/2010

Statement of Competence

Name: Singh, Kaviraj

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)
Sub scope(s):

2. Energy Distribution
Sub scope(s):

3. Energy Demand
Sub scope(s):

4. Manufacturing
Sub scope(s):

5. Chemical Industry
Sub scope(s):

6. Construction
Sub scope(s):

7. Transport
Sub scope(s):

8. Mining/Mineral Production
Sub scope(s):

9. Metal Production
Sub scope(s):

10. Fugitive Emissions from Fuels (solid, oil and gas)
Sub scope(s):

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Sub scope(s):

12. Solvent Use
Sub scope(s):

13. Waste Handling and Disposal **x**
Sub scope(s): Landfill gas, Wastewater and sludge treatment, Composting

14. Afforestation and Reforestation
Sub scope(s):

15. Agriculture
Sub scope(s):

Approved Member of Staff by: Siddharth Yadav Date: 16/12/2009

Statement of Competence

Name: Zhao, Simon

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)
Sub scope(s):

2. Energy Distribution
Sub scope(s):

3. Energy Demand
Sub scope(s):

4. Manufacturing
Sub scope(s):

5. Chemical Industry
Sub scope(s):

6. Construction
Sub scope(s):

7. Transport
Sub scope(s):

8. Mining/Mineral Production
Sub scope(s):

9. Metal Production
Sub scope(s):

10. Fugitive Emissions from Fuels (solid, oil and gas)
Sub scope(s):

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Sub scope(s):

12. Solvent Use
Sub scope(s):

13. Waste Handling and Disposal
Sub scope(s):

14. Afforestation and Reforestation
Sub scope(s):

15. Agriculture
Sub scope(s):

Approved Member of Staff by: Siddharth Yadav Date: 09/03/2010

Statement of Competence

Name: Asish Chakraborty

Status

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

Scopes of Expertise

13. Energy Industries (renewable / non-renewable)
Sub scope(s):

14. Energy Distribution
Sub scope(s):

15. Energy Demand
Sub scope(s):

16. Manufacturing
Sub scope(s):

38. Chemical Industry
Sub scope(s):

39. Construction
Sub scope(s):

40. Transport
Sub scope(s):

41. Mining/Mineral Production
Sub scope(s):

42. Metal Production
Sub scope(s):

43. Fugitive Emissions from Fuels (solid, oil and gas)
Sub scope(s):

44. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Sub scope(s):

45. Solvent Use
Sub scope(s):

46. Waste Handling and Disposal
Sub scope(s):

47. Afforestation and Reforestation
Sub scope(s):

48. Agriculture **x**
Sub scope(s): Land use
Manure Management
Urea Fertilization

Approved Member of Staff by: Siddharth Yadav Date: 09.07.2010

Statement of Competence

Name: Gautam, Ashok

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable) **x**
Sub scope(s): Biomass based Thermal/ Electricity Utilization

2. Energy Distribution
Sub scope(s):

3. Energy Demand
Sub scope(s):

4. Manufacturing
Sub scope(s):

5. Chemical Industry
Sub scope(s):

6. Construction
Sub scope(s):

7. Transport
Sub scope(s):

8. Mining/Mineral Production
Sub scope(s):

9. Metal Production
Sub scope(s):

10. Fugitive Emissions from Fuels (solid, oil and gas)
Sub scope(s):

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Sub scope(s):

12. Solvent Use
Sub scope(s):

13. Waste Handling and Disposal **x**
Sub scope(s): Landfill gas, Wastewater and sludge treatment, Composting

14. Afforestation and Reforestation
Sub scope(s):

15. Agriculture
Sub scope(s):

Approved Member of Staff by: Siddharth Yadav Date: 16/12/2009