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Validation Report

EcoSecurities International Limited

VALIDATION OF THE CDM-PROJECT:

Tianjin TEDA Sewage Methane Recovery Project

REPORT NO. 1113894

10 December 2009

TÜV SÜD Industrie Service GmbH

Carbon Management Service
Westendstr. 199 - 80686 Munich – GERMANY

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Subject: Validation of a CDM Project

Accredited TÜV SÜD Unit: TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 80686 Munich Germany	**TÜV SÜD Contract Partner:** Jiangsu TUV Product Service Ltd., Beijing Branch Unit 0918, Landmark Tower 2 100004 Beijing China
Project Participant: EcoSecurities International Limited 40 Dawson Street Dublin Ireland	**Project Site(s):** Ninghe Economic Development Zone Tianjin Municipality P.R. China GPS coordinates: 117°49′25″ East 39°17′45″ North

Project Title: Tianjin TEDA Sewage Methane Recovery Project

Applied Methodology / Version: AMS-III.H version 9 AMS-I.D version 13	**Scope(s):** 13, 1 **Technical Area(s):** 13.2, 1.1

First PDD Version: Date of issuance: 25-03-2008 Version No.: 1.0 Starting Date of GSP 23-04-2008	**Final PDD version:** Date of issuance: 09-12-2009 Version No.: 4.0

Estimated Annual Emission Reduction: 52,858tCO_2e

Assessment Team Leader: Ms. Xiaoyan Liu	**Further Assessment Team Members:** -

Summary of the Validation Opinion:

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

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

Abbreviations

ACM	Approved Consolidated Methodology
AM	Approved Methodology
AMS	Approved Methodology Small scale
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CR / CL	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	GreenHouse Gas(es)
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
IRR	Internal Rate of Return
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non Governmental Organisation
OM	Operational Margin
PDD	Project Design Document
PP	Project Participant
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

1.1 Objective

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

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

Tianjin TEDA Sewage Methane Recovery Project

1.2 Scope

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

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions and specific guidance by the EB published under http://cdm.unfccc.int
- Guidelines for Completing the Project Design Document (CDM-PDD), and the Proposed New Baseline and Monitoring Methodology (CDM-NM)
- Baselines and monitoring methodologies (including GHG inventories)
- Management systems and auditing methods
- Environmental issues relevant to the sectoral scope applied for
- Applicable environmental, social impacts, and aspects of CDM project activity
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice

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

Once TÜV SÜD receives a first PDD version, it is made publicly available at the UNFCCC webpage and at TÜV SÜD's webpage to start a 30 day global stakeholder consultation process (GSP). In special circumstances, e.g. certain conditions allow the GSP to be repeated, a request to revise the PDD will be processed. The original PDD and the modified PDD will form the basis for the final evaluation. Information on both PDD's is presented on page 1.

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

2 METHODOLOGY

The project assessment applies standard auditing techniques to assess the correctness of the information provided by the project participants. The assessment is based on the "Clean Development Mechanism Validation and Verification Manual" version 01. The work starts with the appointment of the team covering the technical scope(s), sectoral scope(s) and relevant host country experience for evaluating the CDM project activity. Once the project is made available for the stakeholder consultation process, members of the team carry out the desk review, follow-up actions, resolution of issues identified, and finally preparation of the validation report. The prepared validation report and other supporting documents then undergo an internal quality control by the CB "climate and energy" before submission to the CDM-EB.

In order to ensure transparency, assumptions are clear and explicitly stated; the background material is clearly referenced. TÜV SÜD developed methodology-specific checklists and protocol customised for the project. The protocol shows, in a transparent manner, criteria (requirements), the discussion of each criterion by the assessment team, and the results from validating the identified criteria.

The validation protocol serves the following purposes:

It organizes details and clarifies the requirements a CDM project is expected to meet;

It ensures a transparent validation process where the validator has to document how a particular requirement has been validated, as well as the results of the validation and any adjustments, if any, made to the project design.

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

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

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

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

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

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

2.1 Appointment of the Assessment Team

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

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

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

Name	Qualification	Coverage of sectoral scope	Coverage of technical area	Host country experience
Ms. Xiaoyan Liu	**ATL**	☑	☑	☑

Xiaoyan Liu is a senior engineer for Environmental Engineering and head at section of "Carbon Recourse Management" in Beijing branch office, Jiangsu TUV Product Service Ltd. She is also a lead auditor for environmental management systems and holds a Master Degree in environmental science. In her position she is responsible for the implementation of validation, verification and certifications audits for GHG projects. She received training in the CDM validation process early in 2006 and has participated already in many CDM project assessments as auditor / ATL.

2.2 Review of Documents

The first version of the PDD was submitted to the DOE in April 2008. The first PDD version submitted by the PP and additional background documents related to the project design and baseline have been reviewed to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources (if available) has been done as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as annex 2 to this report.

2.3 Follow-up Interviews

On 16 May 2008 TÜV SÜD performed interviews, telephone conferences, and physical site inspection with project stakeholders to confirm relevant information, and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in this context.

Name	Organisation
Mr. Han Changjun	Tianjin TEDA Alcohol Co., Ltd
Ms. Yang Zhen	Tianjin TEDA Alcohol Co., Ltd
Mr. Zhu Ning	Tianjin TEDA Alcohol Co., Ltd
Mr. Tian Weiran	Beijing Lianheyoufa Energy Technology Co., Ltd
Ms. Song Zhaojiayi	Beijing Lianheyoufa Energy Technology Co., Ltd
Ms. Shen Yuhuan	EcoSecurities International Limited
Mr. Han Changjun	Tianjin TEDA Alcohol Co., Ltd

2.4 Further cross-check

During the validation process the team makes reference to available information related to similar projects or technologies as the CDM project activity. The documentation has also been reviewed against the approved methodology/ies applied to confirm the appropriateness of formulae and correctness of calculations.

2.5 Resolution of Clarification and Corrective Action Requests

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

The final PDD version submitted December 2009 serves as the basis for the final assessment presented. Changes are not considered to be significant with respect to the qualification of the project as a CDM project based on the two main objectives of the CDM. These are an achievement of reduction of anthropogenic GHG emissions and to contribute to a sustainable development.

2.6 Internal Quality Control

As final step of a validation activity the final documentation, which includes the validation report and the validation protocol, has to undergo an internal quality control by the CB “climate and energy”. That means that each report has to be approved either by the head of the CB or the deputy. In projects where either the Head of the CB or his/her Deputy is part of the assessment team approval can only be given by the either one not serving on the project.

After confirmation of the PP the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.

3 SUMMARY

The assessment work and the main results are described below in accordance with the VVM reporting requirements. The reference documents indicated in this section and Annex 1 are stated in Annex 2.

3.1 Approval

The project participants are Tianjin TEDA Alcohol Co., Ltd of People's Republic of China and EcoSecurities International Limited of United Kingdom of Great Britain and Northern Ireland. The host Party China and further participant Parties United Kingdom of Great Britain and Northern Ireland meet the requirements to participate in the CDM.

The DNA of the United Kingdom has issued a LoA (IRL 27) on 07 April 2009 authorizing EcoSecurities International Limited as a project participant. The DNA of China has also issued a LoA (IRL 26) on 22 August 2008 authorizing Tianjin TEDA Alcohol Co., Ltd as a project participant. TÜV SÜD received these letters from the project participants directly and considers the provided letters as authentic.

The China LoA has further been double-checked with the CDM project webpage sponsored by the Department of Climate Change, NDRC (http://cdm.ccchina.gov.cn), which further confirms the approval of this CDM project.

Furthermore, after checking the provided LoAs, TÜV SÜD confirms that both letters refer to the precise proposed CDM project activity title in line with the title in the PDD "Tianjin TEDA Sewage Methane Recovery Project".

Both letters also indicate that each participating Party is a Party to the Kyoto Protocol, and that the participation in the Tianjin TEDA Sewage Methane Recovery Project is voluntary. The Chinese LoA also confirms that the proposed CDM project activity contributes to the sustainable development of China (host country). Based on the information given in these letters, TÜV SÜD considers the approval as unconditional with respect to these items.

Both LoAs have been issued by the respective Party's DNA, National Development and Reform Commission of the People's Republic of China (NDRC in short) and Department of Energy and Climate Change of United Kingdom of Great Britain and Northern Ireland, respectively.

TÜV SÜD therefore considers that the requirements of VVM (§§ 45-48) have been met.

The LoA does not refer to a specific version of the PDD or validation report. The corresponding references included to LoA, PDD and validation report are consistent.

3.2 Participation

The participants of the project activity have been approved by the corresponding Parties, which is confirmed by the issued LoAs.

The means of validation used are similar to the ones described in section 3.1, specifically in regard to the approval process of the project activity.

3.3 Project design document

The PDD is compliant with relevant form and guidance as provided by UNFCCC.

The most recent version of the PDD form was used.

TÜV SÜD considers that the guidelines for the completion of the PDD in their most recent version have been followed. Relevant information was provided by the participants in the applicable PDD sections. Completeness was assessed through the checklist included in Annex 1 of this report.

3.4 Project description

The following description of the project as per PDD was verified during the on-site audit:

The proposed project is to be implemented at Tianjin TEDA Alcohol Co., Ltd which produces 40,000 tonnes of beverages per year, generating approximately 1500 m^3 wastewater per day. The wastewater from the mill is treated through a combination of anaerobic and aerobic system consisting of sedimentation tanks, up-flow anaerobic sludge bed and aerobic tanks. By introducing methane recovery and combustion system to existing anaerobic wastewater treatment system (anaerobic reactor), the project will recover methane for generating electricity.

The project adopts a grid-connection operation mode without power injection. The generated electricity of the project will be consumed by the project de*v*eloper-Tianjin TEDA Alcohol Co., Ltd and substitute the purchased electricity from the North China Power Grid which is dominated by thermal power. Therefore, a certain amount of greenhouse gas (GHG) emissions will be consequently reduced while the annual emission reductions are expected to be 52,858 tCO_2e.

The information presented in the PDD on the technical design is consistent with the actual planning and implementation of the project activity as confirmed by:

- Review of data and information (see annex 2) This was verified with other sources.
- An on-site visit has been performed and relevant stakeholder and personnel with knowledge of the project were interviewed. If doubts arose further investigations and additional interviews were conducted
- Finally, information related to similar projects or technologies as the CDM project activity have been used to confirm the accuracy and completeness of the project description.

In conclusion, TÜV SÜD confirms that the project description, as included to the PDD, is sufficiently accurate and complete in order to comply with the requirements of the CDM.

3.5 Baseline and monitoring methodology

3.5.1 Applicability of the selected methodology

Compliance with each applicability condition as listed in the chosen baseline and monitoring methodology AMS-III.H Version 9 / AMS-I.D Version 13 has been demonstrated by the following approaches:

Release of methane generated in the baseline to the atmosphere without recovery

As mentioned in the PDD, the scenario existing prior to the project activity is that wastewater generated by the alcohol production is first treated in sedimentation tanks followed by two stages of Upflow Anaerobic Sludge Bed (UASB) and then in aerobic tanks before being discharged into a river through a civil pipeline. Methane generated in the anaerobic treatment is released directly into the

atmosphere without recovery. The baseline scenario is the continuation of the scenario existing prior to the start of implementation of the project activity.

During validation, TÜV SÜD reviewed the following evidences supporting the pre-project scenario described above:

- Both EIA (IRL 8) and FSR (IRL 6) state the fact that there was no methane recovery before the implementation of the Project. The EIA and FSR were approved by Environmental Protection Bureau of Ninghe County and Ninghe County Development and Reform Commission of Tianjin Municipality.
- During on-site visit, the construction of the proposed project has not been completed yet. The methane from wastewater treatment facilities is totally released to the atmosphere. The same has been witnessed by the auditor.
- The construction of the methane chamber started in October 2007, evidenced by the Methane Chamber Construction Agreement (IRL 36), which shows that there was no methane collection and treatment facility before the project activity.

Based on these evidences and the on-site visit, TUV SUD can confirm that the methane generated in the baseline is released to the atmosphere without recovery.

Applicability of AMS III H - Methane Recovery in Wastewater Treatment

AMS-III.H (Version 9) is applicable to the methane recovery component of the project activity as shown in the following table:

Table 1 Applicability check (AMS III H - methane recovery component)

No.	Technology/measure	In the case of the project	Applicability
1	This project category comprises measures that recover methane from biogenic organic matter in wastewaters by means of one of the following options:		Applicable (iv)
	(i) Substitution of aerobic wastewater or sludge treatment systems with anaerobic systems with methane recovery and combustion;	(i) N/A: Condition prior to implementation of the Project is not aerobic wastewater/sludge treatment since the existing UASB reactors are an anaerobic system.	
	(ii) Introduction of anaerobic sludge treatment system with methane recovery and combustion to an existing wastewater treatment plant without sludge treatment;	(ii) N/A: The Project is not introducing a sludge treatment system.	
	(iii) Introduction of methane recovery and combustion to an existing sludge treatment system;	(iii) N/A: The Project is not introducing a methane recovery and combustion to an existing sludge treatment system.	
	(iv) Introduction of methane recovery and combustion to an existing anaerobic wastewater treatment system such as anaerobic reactor, lagoon, septic tank or an on site industrial plant;	(iv) Applicable: The project is introducing methane recovery and power generation to the existing anaerobic UASB reactors.	
	(v) Introduction of anaerobic wastewater treatment with methane recovery and combustion, with or without anaerobic sludge treatment, to an untreated wastewater stream;	(v) N/A: Condition prior to implementation of the Project is not the untreated wastewater stream since there are existing UASB reactors.	

No.	Technology/measure	In the case of the project	Applicability
	(vi) Introduction of a sequential stage of wastewater treatment with methane recovery and combustion, with or without sludge treatment, to an existing wastewater treatment system without methane recovery (e.g. introduction of treatment in an anaerobic reactor with methane recovery as a sequential treatment step for the wastewater that is presently being treated in an anaerobic lagoon without methane recovery).	(vi) N/A: The project is not introducing a sequential stage of wastewater treatment with methane recovery and combustion since it is introducing methane recovery and combustion to the existing UASB reactor (see scenario iv).	
2	The recovered methane from the above measures may also be utilised for the following applications instead of combustion/flaring: (a) Thermal or electrical energy generation directly; or (b) Thermal or electrical energy generation after bottling of upgraded biogas; or (c) Thermal or electrical energy generation after upgrading and distribution: (i) Upgrading and injection of biogas into a natural gas distribution grid with no significant transmission constraints; or (ii) Upgrading and transportation of biogas via a dedicated piped network to a group of end users; or (d) Hydrogen production.	The project is covered under paragraph 2 (a).The recovered methane is utilised for electrical energy generation.	Applicable
3	If the recovered methane is used for project activities covered under paragraph 2 (a), that component of the project activity can use a corresponding category under type I.	The approved baseline and monitoring methodology AMS I.D. is used for the electricity generation component of the project activity – see Table 2.	Applicable
4	If the recovered methane is utilized for production of hydrogen (project activities covered under paragraph 2 (d)), that component of project activity shall use corresponding category AMS III.O.	The project is not covered under paragraph 2 (d).	N/A
5	In case of project activities covered under paragraph 2 (b) if bottles with upgraded biogas are sold outside the project boundary the end-use of the biogas shall be ensured via a contract between the bottled biogas vendor and the end-user. No emission reductions may be claimed from the displacement of fuels from the end use of bottled biogas in such situations. If however the end use of the bottled biogas is included in the project boundary and is monitored during the crediting period CO2 emissions avoided by the displacement of the fuels is eligible under a corresponding type I methodology, e.g. AMS I.C.	The project is not covered under paragraph 2 (b).	N/A
6	In case of project activities covered under paragraph 2 (c i) emission reductions from the displacement of the use of natural gas is eligible under this methodology, provided the geographical extent of the natural gas distribution grid is within the host country boundaries.	The project is not covered under paragraph 2 (c i).	N/A
7	In case of project activities covered under paragraph 2 (c ii) emission reductions for the displacement of the use of fuels can be claimed following the provision in the corresponding type I methodology, e.g. AMS I.C.	The project is not covered under paragraph 2 (c ii).	N/A

No.	Technology/measure	In the case of the project	Applicability
8	In case of project activities covered under paragraph 2 (b) and (c), methodology is only applicable if upgrade is done by way of absorption with water (with or without recovery of methane emissions from discharge) such that the methane content of the upgraded biogas shall be in accordance with national regulations (where these exist) or a minimum of 96% (by volume). These conditions are necessary to ensure that the recovered biogas is completely destroyed through combustion in an end use.	The project is not covered under paragraph 2 (b) and (c).	N/A
9	Measures are limited to those that result in aggregate emission reductions of less than or equal to 60 kt CO2 equivalent annually from all type III components of the project activity.	Annual emission reductions achieved by the methane recovery component of the project are estimated to be 52.8ktCO_{2e}, which is less than 60 ktCO_{2e}.	Applicable

Applicability of AMS-I.D - Grid connected renewable electricity generation

AMS-I.D (Version 13) is applicable to the electricity generation component of the project activity as shown in the following table:

Table 2 Applicability check (AMS I D - electricity generation component)

No.	Technology/measure	In the case of the project	Applicability
1	This category comprises renewable energy generation units, such as photovoltaics, hydro, tidal/wave, wind, geothermal and renewable biomass, that supply electricity to and/or displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit.	The project will generate electricity from the captured methane and displace electricity from the North China Power Grid supplied by many coal-fired power plants	Applicable
2	If the unit added has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel1, the capacity of the entire unit shall not exceed the limit of 15MW.	The total installed capacity of the generators is 1.0MW, less than the eligibility limit of 15MW.	Applicable
3	Combined heat and power (co-generation) systems are not eligible under this category.	The project does not install combined heat and power system.	N/A
4	In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	There is no existing renewable power generation facility.	N/A
5	Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category. To qualify as a small-scale project, the total output of the modified or retrofitted unit shall not exceed the limit of 15 MW.	There is no existing renewable power generation facility.	N/A

In summary, TÜV SÜD confirms that the chosen baseline and monitoring methodology is applicable to the project activity.

Emission sources, which are not addressed by the applied methodology, and are expected to contribute more than 1% of the overall expected average annual emission reductions, have not been identified.

3.5.2 Project boundary

The project boundary was assessed in the context of physical site inspection, interviews, and on the secondary evidence received on the design of the project.

- *The spatial extent of the project boundary includes the physical, geographical site where the wastewater treatment takes place, and the project power plant as well as all power plants connected physically to North China Power Grid. North China Power Grid has electricity import from Northeast China Power Grid.*

The relevant documentation assessed in order to confirm the project boundary are as follows: *General Layout of the alcoholic plant* (IRL 29) *and Baseline Emission Factors for Regional Power Grids in China* issued by NDRC on 9 August 2007 (http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1364.pdf IRL 28). This was also confirmed during the validation process. Details and/or observations are listed in Annex 1.

Therefore, TÜV SÜD confirms that the identified boundary, the selected sources, and gases as documented in the PDD are justified for the project activity.

3.5.3 Baseline identification

The PDD defines the following baseline scenario for methane recovery:

- *The existing anaerobic wastewater treatment system without methane recovery and combustion.*

and the baseline scenario for power generation as below:

- *Electricity delivered to the grid by the proposed project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources within the North China Power Grid, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system.*

The information presented in the PDD has been validated by an initial document review of all data. Further confirmation is based on the on-site visit and researching information from similar projects and/or technologies. The sources referenced in the PDD have been quoted correctly. The identified baseline scenarios for methane recovery and power generation are consistent with the applied methodology AMS-III.H Version 9 and AMS-I.D Version 13. Based on the validated assumptions on calculations TÜV SÜD considers that the identified baseline scenario is reasonable.

Taking the definition of the baseline scenario into account, TÜV SÜD confirms that all relevant CDM requirements, including relevant and/or sectoral policies and circumstances, have been identified correctly.

A verifiable description of the baseline scenario has been included in the PDD.

In regard to item 86 of VVM, TÜV SÜD confirms that:

1. All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;

2. All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
3. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence, and can be deemed reasonable;
4. Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;
5. The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario, and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

3.5.4 Algorithm and/or formulae used to determine emission reductions

TÜV SÜD has assessed the calculations of project emissions, baseline emissions and emission reductions. Corresponding calculations were carried out based on calculation spreadsheets. The parameters and equations presented in the PDD, as well as other applicable documents, have been compared with the information and requirements presented in the methodology and respective tools. The equation comparison has been made explicitly following all the formulae presented in the calculation files.

The assumptions and data used to determine the emission reductions are listed in the PDD and all the sources have been checked and confirmed. Based on the information reviewed it can be confirmed that the sources used are correctly quoted and interpreted in the PDD. The values presented in the PDD are considered reasonable based on the documentation and references reviewed, as well as, the result of the interviews. The baseline methodology has been correctly applied according to requirements. The estimate of the baseline emissions can be confirmed as the same that have been replicated by the audit team using the information provided.

Detailed information on the verification of the parameters used in the equations can be found in Annex 1. The algorithms for the determination of the baseline, project, and leakage are discussed in the following sections.

3.5.4.1 Baseline Emissions

The calculation of the baseline emissions followed the procedures described in the methodology AMS-III.H Version 9/AMS-I.D Version 13. The physical, geographical site where the wastewater treatment takes place and the North China Power Grid is considered to be the project boundary.

The operating margin emission factor (EF_{OM}) was determined based on the simple OM method. The ex-ante option was chosen for this calculation. The calculation of the build margin emission factor (EF_{BM}) was based on modified methods agreed by the EB, because plant specific data are not available in China. The emission factor of the thermal power plants was calculated by the proportion of the emissions of coal, gas and oil times the emission factor of the best available coal, gas and oil power plant as defined and published by the Chinese DNA. The new thermal capacity installation that exceeded 20% in the last years, for which data was available, was finally assessed with this factor.

The values of EF_{OM} and EF_{BM} in final PDD are same as those in first version of PDD for global stakeholders' comments. They are adopted from the latest publication of the NDRC (released on 9 August, 2007) using 2003-2005 historical data and are the latest available data at the time of submission of the CDM-PDD to the DOE for validation. TÜV SÜD can confirm that the adopted emis-

sion factors are reasonable and acceptable. The value for the combined margin emission factor (EFCM) was determined using the weighted average of the EFBM and EFOM using the default values for the factors as described in the Tool to calculate the emission factor for an electricity system (i.e. 0.5 for all other projects other than wind and solar power generation projects).

As per the methodology, the project does not need to consider leakage. As a result, the annual emission reductions equal the annual baseline emissions minus the project emissions.

3.5.4.2 Project emissions

Project emissions of the proposed project include the following emission sources:

- *CO_2 emission on account of power used by the project activity facilities. As the recovered methane is used to power auxiliary equipment of the project, this part of emissions is considered to be zero.*
- *Methane emissions on account of inefficiency of the wastewater treatment and presence of degradable organic carbon in treated wastewater.*
- *Methane emissions resulting from dissolved methane in the treated wastewater.*

The equation to calculate project emissions is presented as follows in the PDD, which is in accordance with the methodology AMS.III.H version 9:

$$PE_y=PE_{y,power}+PE_{y,ww,treated}+PE_{y,s\ final}+PE_{y,fugitive}+PE_{y,\ dissolved}+PE_{y,upgrading}+PE_{y,leakage,pipeline}$$

Where:

PE_y	Project activity emissions in the year "y" (tCO_2e)
$PE_{y,power}$	Emissions from electricity or diesel consumption in the year "y"
$PE_{y,ww,treated}$	Emissions from degradable organic carbon in treated wastewater in year "y".
$PE_{y,s,final}$	Emissions from anaerobic decay of the final sludge produced in the year "y".
$PE_{y,fugitive}$	Emissions from methane release in capture and utilization/combustion/flare systems in year "y"
$PE_{y,dissolved}$	Emissions from dissolved methane in treated wastewater in year "y".
$PE_{y,upgrading}$	Emissions related to the upgrading and compression of biogas in year "y".
$PE_{y,leakage,pipeline}$	Emissions due to physical leakage from the dedicated piped network in year "y".

The choice of the equations and parameters applicable to the proposed project is discussed below.

$PE_{y,s,final}$

For the proposed project activity, the handling of the sludge in the project scenario is the same as the baseline scenario, the sludge produced by the wastewater treatment system is concentrated and dewatered and finally used as soil additive, which has been evidenced by the agreement signed between the project owner and the nearby farmer (IRL 38). The sludge treatment equipments including sludge pump, dosage pump, air compressor, flush pump, mixer and dasher were purchased and operational before the design of the Project (IRL 39). No equipment is installed by the project activity to handle sludge. Besides, the quantity of sludge produced is not affected by the project activity. Therefore, the emissions resulting from the use of energy for the handling of the sludge will not be affected by the project activity. In TUV SUD's opinion, it is reasonable not to consider the emissions from the electricity consumption for the handling of sludge. Hence it can be confirmed that $PE_{y,s,final}$ can be neglected, in accordance with para 12 of the methodology.

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$PE_{y,dissolved}$ $PE_{y,upgrading}$, $PE_{y,upgrading}$

The project activity is to introduce the methane recovery system to an existing UASB reactors and recovered methane will be used to generate electricity. There are no any upgrading and compression of biogas activities or transportation of upgraded biogas to the end users by the dedicated piped network involved. Hence, $PE_{y,\ dissolved}$ and $PE_{y,upgrading}$ as well as $PE_{y,leakage\ pipeline}$ are all not applicable to the proposed project, in accordance with para 12 and 2 a) of the methodology .

$PE_{y,\ power}$

AMS III H (Version 9) stated that: If recovered methane is used to auxiliary equipment of the project it should be taken into account accordingly, using zero as its emission factor.

For the project case, the electricity generated by the project will be first consumed by the power auxiliary equipment and then supplied to the internal power grid of TEDA alcohol plant. Therefore assuming the project emission from electricity consumption to be zero is in compliance with AMS.III.H version 9 para 13. Furthermore, the net electricity supply by the project (Electricity generated minus auxiliary electricity consumption) is used to calculate the baseline emissions. It means that any emissions from auxiliary electricity consumption related to the project will be deducted from the emission reduction calculation. Besides, there are no other power supply source and fossil fuel consumption on site, such as diesel generators. Hence, the emission factor of $PE_{y,\ power}$ is set as zero, which is in line with the methodology AMS.III.H version 9, para13.

The equation of project emissions is thus simplified to include two terms: $PE_{y,ww,treated}$ and $PE_{y,fugitive:}$

$$PE_y = PE_{y,ww,treated} + PE_{y,fugitive}$$

The equations of calculation of $PE_{y,ww,treated}$ and $PE_{y,fugitive.}$ have also been clearly indicated in the PDD:

$$PE_{y,ww,treated} = Q_{y,ww} * COD_{y,ww,treated} * B_{o,ww} * MCF_{ww,final} * GWP\_CH_4$$

$$PE_{y,fugitive} = PE_{y,fugitive,ww} + PE_{y,fugitive,s}$$

As no methane recovery from sludge treatment is involved by the project, $PE_{y,fugitive,s}$ is neglected:

$$PE_{y,fugitive} = PE_{y,fugitive,ww}$$

$$= (1-CFE_{ww}) * MEP_{y,ww,treatment} * GWP\_CH_4$$

$$MEP_{y,ww,treatment} = Q_{y,ww} * B_{o,ww} * \sum_j COD_{y,removed,j} * MCF_{ww,j}$$

TÜV SÜD can confirm that the equations for the project emissions of the proposed project have been correctly applied according to the methodology AMS.III.H, version 9.

TÜV SÜD also validated the appropriateness of the parameters used in the above-mentioned equations. All the data sources quoted in the PDD have been checked and confirmed:

Ex-ante estimation:

-GWP_CH_4 , $B_{o,ww,}$ $MCF_{ww,final}$, $CFE_{ww,}$ and $MCF_{ww,j}$: the IPCC and methodology default values have been used for these parameters.

-$Q_{y,ww,,}$ $COD_{y,ww,\ untreated}$ and $COD_{y,ww,treated}$ ($CDM_{y,removed,y} = COD_{y,ww,\ untreated} - COD_{y,ww,treated}$) :
The applied values are taken from the FSR, they are all actually measured data of aerobic wastewater treatment process (IRL 6), thus considered as reliable and appropriate.

Ex-post estimation:

The project is the introduction of methane recovery system with the existing UASB reactors. that will not affect the operation of the UASB reactor. It was thus confirmed during the validation that the project will not result in a change in the feed inflow, volume or temperature of the UASB. In

accordance with the SSC WG clarification (SSC_215), it can be assumed that the technology implemented will not increase the amount of methane produced per unit of COD removed and outflow COD compared with the technology used in the baseline. Therefore, in accordance with AMS-III.H, para 34, project emissions PEy will be equal to zero in the ex-post calculation of emission reduction.

In a conclusion, it can be confirmed that the parameters used in the equations of project emissions are appropriate and the project emissions of the proposed project have been calculated correctly ex-ante.

3.5.4.3 Leakage

The leakage emission is not considered as per the methodology AMS-III.H Version 9 or AMS-I.D Version 13.

3.5.4.4 Emission Reductions

In summary, the calculation of the baseline emissions; project emissions and the emission reductions, respectively, can be considered as correct.

3.6 Additionality

The additionality of the project has been presented in the PDD using SSC approach based on *Attachment A of Appendix B of the simplified modalities and procedures for small-scale CDM project activities* (IRL 3).

The approach used in the PDD has been assessed initially through document review, during which following documents have been reviewed:

- *Feasibility Study Report (IRL 6, FSR in short)*
- *FSR Approval (IRL 7)*
- *Benchmark evidence- Economic evaluation measurements and parameters of constructive projects(version 3, IRL 14)*

On site the additionality has been discussed principally with: Mr. Wenyu Liu, General Manager of Tianjin TEDA Alcohol Co., Ltd who is the responsible of the company to take the decision on doing the project. Further documents have been reviewed on-site (Annex 2).

Finally, the data, rationales, assumptions, justifications, and documentation provided have been verified using local knowledge as well as sectoral and financial expertise. This information was also confirmed through the following documentation:

- *Construction Agreement signed with Ninghe County No.3 Construction Co., Ltd. (IRL 30)*
- *Purchase Contract of Main Power Unit signed with Shandong Shengdong Power Machine Co., Ltd. (IRL 11)*

Based on these validation steps we can confirm that the documentation assessed is appropriate for this project.

3.6.1 Prior consideration of the clean development mechanism

The starting date of the project activity is determined as the date when equipment purchase contract was signed, which is the earliest date at which either the implementation or construction or real ac-

tion of a project activity begins. In order to corroborate this information the assessment team has reviewed the following documents: *Purchase Contract of Main Power Unit (IRL 11)*, *Permission of Construction Start (IRL 10)* and *Construction Agreement (IRL 30)*, additionally the assessment team verified this information with Mr. Wenyu Liu, General Manager of Tianjin TEDA Alcohol Co., Ltd., Mr. Xiujun Yang, Manager of Ninghe County No.3 Construction Co., Ltd., and Mr. Xin Zhao, Sales Manager of Shandong Shendong Power Machine Co., Ltd.

The starting date of the project activity is determined to be 28 August 2007, which is before 02 August 2008, as well as prior to the GSP. Prior to that date, CDM was seriously taken into consideration which was demonstrated by the following events and actions:

- 10 May 2007

  The project owner and a CDM Consultancy Company, Beijing Lianheyoufa Energy Technology Co., Ltd, got in touch and discussed the possibility of using the CDM to help financing the project. They agreed that if it was decided to develop the project as a CDM project, the CDM consultancy company would then assist the project owner with the CDM application work.
- 12 June 2007
  The project owner commissioned an independent entity accredited by the Chinese government, Tianjin United Environmental Engineering Design Co., Ltd to conduct a Feasibility Study.
  The Feasibility Study was completed on 2 August 2007 which indicates that the project is not financially attractive and suggested the project owner to consider CDM as a potential solution.
- 20 August 2007

  The project owner held a board meeting and took the formal decision to undertake the project as a CDM project (IRL 37).

In summary, TÜV SÜD can confirm that CDM was seriously taken into consideration in order to proceed and implement the proposed project.

Additionally, in order to confirm that the PPs have taken real actions to continue the activity as CDM, the following timeline has been reviewed against the respective documents presented in the table below:

Activity	**Document**	**Auditor conclusion**
ERPA signed in October 2007	ERPA (IRL 33)	The documentation was signed by PPs which has been verified, on-going CDM related activity
GSP started in April 2008	UNFCCC website	Verified.
China LoA issued in August 2008	China LoA (IRL 26)	The documentation was issued by China DHA which has been verified, on-going CDM related activity
UK LoA issued on 07 April 2009	UK LoA (IRL 27)	The documentation was issued by UK DHA which has been verified, on-going CDM related activity

This confirms that the project complies with the requirements to demonstrate the prior consideration of the CDM.

3.6.2 Identifications of alternatives

Not applicable.

3.6.3 Investment analysis

The PP uses the investment analysis to demonstrate the additionality.

Benchmark analysis (Equity IRR after tax) has been used to demonstrate that the project is not financially attractive without CER revenues.

The parameters used in the financial calculations have been validated based on a review of the source presented in the PDD, inter alia: *FSR (IRL 6)*, the same that were confirmed verbally on-site. All values are from FSR and fully consistent with the FSR. Furthermore, the period of time between the finalization of the FSR and the investment decision with equipment purchase is very short, therefore it can be confirmed that it is unlikely that the input values have significantly changed. Additionally, based on local expertise, the audit team has cross-checked the main input data of financial analysis as follows:

- *Electricity tariff*

As the generated electricity of the project will be consumed by the project developer-Tianjin TEDA Alcohol Co., Ltd and substitute the purchased electricity from the grid, the tariff of purchasing the electricity from the grid (0.5 RMB with VAT) was applied, which has been confirmed with the invoice issued by the grid company (IRL 13). According to the economic assessment regulation of China, the fixed tariff and O&M cost were implemented in the entire IRR calculation period.

- *Total investment*

Construction of the proposed project has not been completed, however, the value involved in main contracts (IRL 11, IRL 30) signed has reached to 7.84 Mio. RMB, higher than the estimated investment in the FSR (7.70 Mio. RMB).

- *Operation costs*

As there are no available actual data of the operation costs and local literature regarding operation costs statistics of methane recovery projects from wastewater treatment, the audit team compared the value with the internal statistical results of the similar projects in China that are currently under validation. The operation costs of the proposed project is 1.5 Mio RMB per year, approx. 19.7% of the investment, lower than the average observed value of similar projects(33%).

- *Operation hours*

The operation of the proposed project is closly related to alcohol production. The operation hours of 300 days per year is a common practice in China Alcohol Industry, and is considered to be appropriate after confirming based on interviews with Mr. Zhenjing Wang, the member of Technical Committee, China Association of Alcohol Industry and reviewing other similar projects.

From above considering, the audit team deams that the parameters are plausible and can be considered acceptable under the project situation.

The adopted benchmark is 12%. The suitability of the benchmark has been validated by the following steps:

a) Determine whether the type of benchmark applied is suitable for the type of financial indicator presented;

The financial indicator of the Project is equity IRR after tax and the applied benchmark is 12%, which is taken from FSR completed on 2 August 2007 by an authorized third party Tianjin United Environmental Engineering Design Co. Ltd and approved by the local government department Ninghe County Development and Reform Commission on 25 January 2008 after expert panel review.

The benchmark applied in the FSR and the PDD was derived from the third edition of the "Economic evaluation measurements and parameters of constructive projects" which was co-published by the National Development and Reform Commission and the Ministry of Construction in 2006 (IRL 14). The benchmarks provided in this publication are the result of expert investigation and industry review, and it can be considered as an authoritative, credible and reliable data source for benchmarks.

According to the publication, the most relevant and appropriate sector benchmark for the project type - organic chemistry and intermediates production - has been chosen. The after tax equity benchmark for the organic chemistry and intermediates production is 12%. TÜV SÜD has validated this by the following facts:

- The publication sets the benchmark for all industries in China and classifies them into 100 industrial sectors. TÜV SÜD has checked the complete list of sectors and found that there is no separate sector for 'alcohol production' and there is also no other sector more appropriate other than organic chemistry and intermediates production as alcohol (mainly ethanol) is an organic product (IRL 40).
- A clarification from China Association of Alcohol Industry issued on October 26th, 2009 was provided by the PPs (IRL 41). The Association confirmed that it is common practice to use the sector benchmark for the 'organic chemistry and intermediates production' as the economic assessment benchmark of the alcohol production industry in China.
- One of the main editor experts of the "Economic evaluation measurements and parameters of constructive projects (third edition)", Professor Xinxiang Niu, superintendent of China National Petroleum and Chemical Planning Institute also agreed that the Alcohol production projects can refer to the sector benchmark of organic chemistry and intermediates production(IRL 42).
- The Ninghe Development and Reform Commission clarified that the benchmark applied is consistent with "Economic evaluation measurements and parameters of constructive projects (third edition)" and considered suitable for the type of projects (IRL 43).

From above considerations, TÜV SÜD is able to confirm the choice of benchmark applied is suitable for the type of financial indicator presented.

b) Ensure that any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity;

Since the benchmark is determined by national authorities as a result of expert investigation and industry review, it already considers the specific risk profile of the underlying industry. It can therefore be concluded that a suitable risk premium has already been factored into the applied benchmark. As the project is directly linked to the risks of the core business of the project developer (i.e. alcohol market determine the level of alcohol production and finally the amount of waste water available to generate power), TÜV SÜD concludes that the risk profile of the project activity is appropriately reflected in the applied benchmark.

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.

The project developer issued a statement on 22 October, 2009 that in 2001 they invested in an alcohol production expansion project with an IRR value over 30% in FSR and no other investment has been made during past 8 years (IRL 44). The assessment team verified financial analysis sheets in the FSR (IRL 45) and confirmed that the IRR is over 30%, but no benchmark for comparison. Hence, there is no previous investment decision by the project developer available to indicate the applied benchmark.

However, as indicated in the clarification issued by China Association of Alcohol Industry (IRL 41), it is common practice to use the sector benchmark for the 'organic chemistry and intermediates production' as the economic assessment benchmark for the alcohol production industry in China.

The Association provided information on 17 alcohol industry related projects from part of its information source as per the list below. The auditor could evaluate from the statement provided by the Association that all of these projects applied the 12% sector benchmark.

No.	Project Name	Location
1	Lianyungang Xinghe Edible Alcohol Production Company 50,000t Upgrade project	Jiangsu Province
2	Shandong Ajiao Alcohol Co., Ltd. Site-relocation 50,000t/y Project	Shandong Province
3	Mengzhou Yipu Alcohol Co., Ltd Alcohol Co., Ltd 50,000t Edible Alcohol Upgrade project	Henan Province
4	Suqian Qilong Chemical Co., Ltd 50,000t Edible Alcohol project	Jiangsu Province
5	Huachuan County Huifeng Alcohol Co., Ltd 60,000t Upgrade project	Heilongjiang Province
6	Meihe City Fukang Alcohol Co., Ltd 60,000t Superfine Edible Alcohol Project	Jilin Province
7	Jilin Province Xintianlong Alcohol Production Co., Ltd Retrofit project	Jilin Province
8	Ningjin County Youyi Alcohol Company 40,000t Expansion Project	Shandong Province
9	Donghai County Taihe Agriculture Products Co., Ltd 50,000t/y expansion project	Jiangsu Province
10	Guangxi Wumin Jiaolong Alcohol Energy Co., Ltd 10,000t/y project	Guangxi Province
11	Ganyu County Subei Alcohol Co., Ltd 50,000t/y retrofit project	Jiangsu Province
12	Hubei Province Lianhe Group Company Jiayu County Alcohol Production Co., Ltd 50,000t/y retrofit project	Hubei Province
13	Wujiang Yongxiang Alcohol Production Co., Ltd 50,000t/y retrofit project	Jiangsu Province
14	Guangxi Pinxiang City Fenghao Alcohol Co., Ltd 50,000t/y edible alcohol retrofit project	Guangxi Province
15	Guangdong Province Zhongneng Alcohol Co., Ltd 10,000t/y superfine edible alcohol production Project	Guangdong Province

16	Neimenggu 10,000t/y high quality edible alcohol production Project	Inner Mongolia
17	Nanchang City Ganjiang Solvent Company Alcohol expansion production project	Jiangxi Province

The audit team has also identified additional five alcohol production related projects from other public available sources which state that the 12% sector benchmark has been applied for these projects (IRL 46):

No.	Project Name	Location
1	Jilin Tuopai Co., Ltd Agriculture Products Co. Ltd Alcohol Production Project'	Jilin Province
2	Baishan Brew Production Project	Jilin Province
3	Mogao Wine Project	Gansu Province
4	Kazuo Alcohol Production Project	Liaoning Province
5	Guangxi Huaxin Development & Planning Bureau 100,000t Ethanol Project	Guangxi Province

Therefore, TÜV SÜD can confirm that the benchmark of 12% has been widely used in the alcohol production sector in China.

Furthermore, it has been demonstrated that similar projects (waste water treatment with methane recovery projects in the alcohol production sector in China, both CDM and non-CDM) have been applying the same benchmark of 12%:

No.	Project Name	Type
1	Methane Recovery Project of Huguan Yufeng Brewing Co., Ltd	CDM project UNFCCC Ref. No: 2647
2	Methane Recovery Project of Fuyu Huihai Alcohol Co., Ltd	CDM project UNFCCC Ref. No: 2649
3	Liyuan Alcohol Methane Recovery and Utilization Project(IRL 47)	Non-CDM project
4	Zhangjiakou Changcheng Alcohol Production Co., Ltd Methane Recovery Project (IRL 48)	Non-CDM project

Based on the above, TÜV SÜD has reason to assume that the project developer has no intension to invest in a project at a rate of return lower than the benchmark widely used in alcohol production sector.

In a conclusion, TÜV SÜD can confirm that the 12% benchmark is appropriate to the project activity.

Further assumptions presented in the financial analysis inter alia VAT rate and income tax rate have also been reviewed and were found to be appropriate based on *Interim Regulations of the People's Republic of China on Value-added Taxes* (IRL 34) *and Provisional Regulations of the People's Republic of China on Enterprises' Income Tax* issued by State Council of People's Republic of China (IRL 35). This confirms that the underlying assumptions are appropriate for this project.

The key parameters applied in financial analysis are appropriate and reasonable and the financial calculations have been verified and no mistakes have been found. This confirms that the calculations are correct. In both the calculation spreadsheet as submitted for registration and the Feasibility Study, the IRR without CERs of the proposed project amounts 6.38%, which is well below the benchmark. A sensitivity analysis is performed, by taking into account the variations in static total investment, operating costs, electricity tariff and power output. It is deemed reasonable to use the applied variables, and they present well realistic variations of these key parameters. The results of the sensitivity analysis show that a variation in static total investment (33%-), operation cost (28%-) and electricity tariff (19%+) will lead to an IRR exceeding the benchmark. However, these scenarios were very unlikely and can be excluded. We thus conclude the project is financially unattractive without CER revenues.

To conclude the addtionality assessment we can state that, according to all the documents we have reviewed, we can confirm the additionality of the project based on the available information.

3.6.4 Barrier analysis

The project participants have used the barrier analysis in order to demonstrate the additionality of the project based on *Attachment A of Appendix B of the Simplified Modalities and Procedures for Small-scale CDM Project Activities*. The presented barrier is investment barrier. The benchmark analysis is applied and the details please see section 3.6.3 of the validation report.

3.6.5 Common practice analysis

Not applicable.

3.7 Monitoring plan

The monitoring plan presented in the PDD complies with the requirements of the applicable methodology. The assessment team has verified that all parameters in the monitoring plan against the requirements of the methodology; no relevant deviations have been found.

The procedures have been reviewed by the assessment team through document review and interviews with the relevant personnel. This information, together with a physical inspection, allows the assessment team to confirm that the proposed monitoring plan is feasible, and within the project design. The major parameters to be monitored have been discussed with the PPs. Especially the location of meters, data management, and the quality assurance and quality control procedures to be implemented in the context of the project. In line with the methodology, the parameters that need to be monitored ex-post include net electricity generated by the proposed project, the recovered biogas and methane faction in the recovered biogas, as well as sludge application. The electricity generated by the project will be first consumed by the auxiliary equipment and then supplied to the internal power grid of TEDA alcohol plant. Net power supply will be monitored by the power meters. Emissions from electricity consumption from power generation are thus already taken into account since they are subtracted from the total electricity generated by the project activity. For the handling of sludge, as mentioned in section 3.5.5 of the validation report, project emissions are not taken into account since the project scenario is the same as the baseline scenario.

Power meters will be applied to monitor the net electricity. The data will be hourly measured, monthly recorded and cross-checked by electricity sales receipts. The recovered biogas will be measured by flow meters while the main meter will be installed at the inlet of power generators to avoid the vented gas during emergency being recorded as the recovered biogas. The flow meters automatically measures P and T, expressing the volumes in normalized cubic meters. The methane faction of the biogas will be monitored by a gas analyzer with periodical measurements at a 95% confidence level, which accords with the methodology. Therefore, we find that the PP's will be able to implement the monitoring plan and the emission reductions achieved can be reported ex-post and verified.

3.8 Sustainable development

The LoA of the Host Country presented a statement that the project contributes to the sustainable development of the Host Party.

3.9 Local stakeholder consultation

The relevant local stakeholders have been invited via the notice board. The evidence of these invitations is IRL 22 and IRL 32. The assessment team has reviewed the documentation in order to validate the inclusion of relevant stakeholders. Local experts confirmed that the communication method used to invite the stakeholders was considered appropriate. The summary of comments presented in the PDD has been verified with the documentation of the stakeholder consultation and is found to be complete.

Comments presented by the local stakeholders have been taken into account by the PP. This has also been verified with information obtained during interviews.

Hence the local stakeholder consultation has been adequately performed according to the CDM requirements.

3.10 Environmental impacts

The project participants undertook an environmental impact assessment. The assessment team reviewed the documentation of the presented information. The *Environmental Impact Assessment Report* (IRL 8) and *Environmental Impact Assessment Report Approval* (IRL 9) confirm the correctness of the approach used by the PPs. We conclude that the PPs followed the requirements of the host country in regards to environmental impacts.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

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

The following table presents all gathered key information:

webpage: http://www.netinform.net/KE/Wegweiser/Guide2_3.aspx?ID=4641&Ebene1_ID=26&Ebene2_ID=1453&mode=0	
Starting date of the global stakeholder consultation process: 2008-04-23	
Comment submitted by: None	**Issues raised:** -
Response by TÜV SÜD: -	

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5 VALIDATION OPINION

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

Tianjin TEDA Sewage Methane Recovery Project

Standard auditing techniques have been used for the validation of the project. Methodology-specific customized checklists and protocol for the project have been prepared to carry out the audit in order to present the outcome in a transparent and comprehensive manner.

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

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

The validation is based on the information made available to us, as well as the engagement conditions detailed in this report. The validation has been performed following the VVM requirements. The single purpose of this report is its use during the registration process as part of the CDM project cycle. TÜV SÜD can therefore not be held liable by any party for decisions made, or not made, based on the validation opinion beyond that purpose.

Munich, 10-12-2009

Thomas Kleiser

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

Beijing, 10-12-2009

Liu Xiaoyan

Xiaoyan Liu

Assessment Team Leader

Industrie Service

Annex 1: Validation Protocol

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
A. General description of small-scale project activity				
A.1. Title of the small-scale project activity				
A.1.1. Does the used project title clearly enable to identify the unique CDM activity?	1	The project is titled with the name of the project location and the type of the project. Hence, it can be clearly identified.	☑	☑
A.1.2. Are there any indication concerning the revision number and the date of the revision?	1, 49	The final PDD is indicated as version 4.0, dated 09/12/2009.	☑	☑
A.1.3. Is this consistent with the time line of the project's history?	1	Yes, the date of the revision is consistent with the time line of the project.	☑	☑
A.2. Description of the small-scale project activity				
A.2.1. Is the description delivering a transparent overview of the project activities?	1	The project is described transparently and the project activities described have been proven during on-site audit.	☑	☑
A.2.2. What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1 6-9	The project activity is to recover and utilize the methane emitted from the wastewater treatment facility to generate electricity. The following documents deliver evidences for the project activity: - EIA and EIA Approval - Feasibility Study - Project Approval from Ninghe County DRC These documents have been evidenced during the audit. **Clarification Requests No.1** Please provide Grid Connection Approval to the DOE.	CR1	☑
A.2.3. Is the information provided by these proofs consistent with the information provided by the PDD?	1 6-9	Yes, it is.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
A.2.4. Is all information presented consistent with details provided by further chapters of the PDD?	1 6-9	**Corrective Action Request No.1** A small inconsistency regarding the date of EIA between the PDD and EIA report has to be revised.	CAR1	☑
A.2.5. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance?	1	The proposed project is a wastewater methane recovery project and will avoid methane emission from the existing wastewater treatment system. The electricity generated by the project will partially displace the electricity generated by the fossil fuel-fired power plants. Without doubt, to implement the proposed project will deliver GHG emission reduction.	☑	☑
A.2.6. Is the brief explanation how the project will reduce greenhouse gas emission transparent and suitable?	1	Yes, the PDD clearly describes how to avoid an important volume of GHG.	☑	☑
A.3. Project participants				
A.3.1. Is the form required for the indication of project participants correctly applied?	1	The form is correctly applied. Tianjin TEDA Alcohol Co., Ltd and EcoSecurities Group plc are considered as project participants.	☑	☑
A.3.2. Is the participation of the listed entities or Parties confirmed by each one of them?	1, 25-27	**Open Issue** Please submit the LoAs issued by China and buyer country, together with MoC signed by the project participants to DOE before raising the request of registration.	Open Issue	☑
A.3.3. Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1	Yes, all information in the PDD regarding project participants and parties is consistent.	☑	☑
A.4. Technical description of the small-scale project activity				
A.4.1. *Location of the small-scale project activity*				

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
A.4.1.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1	The project location could be clearly identified according to the PDD. The Project is located in Ninghe Economic Development Zone, Tianjin Municipality, P.R.China. The geographic coordinates are clearly indicated. **Corrective Action Request No.2** A detailed map without any Chinese characters should be added in PDD.	CAR2	☑
A.4.1.2. How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?	1	Main power units have been installed and the expected commission date is November 2008. This has been proved by the auditor.	☑	☑
A.4.2. *Type and category(ies) and technology/measure of the small-scale project activity*				
A.4.2.1. To which type(s) does the project activity belong to? Is the type correctly identified and indicated?	1, 2	Type III, other project activities and Type I, Renewable Energy Projects Yes, it is indicated in section A.4.2 of the PDD.	☑	☑
A.4.2.2. To which category (ies) does the project activity belong to? Is the category correctly identified and indicated?	1, 2	Category III.H, Methane Recovery in Wastewater Treatment and Category I.D, Grid Connected Renewable Electricity Generation. Yes, it is indicated in section A.4.2 of the PDD.	☑	☑
A.4.2.3. Does the technical design of the project activity reflect current good practices?	1 11	The technical design of the project activity reflects current good practice. The equipment provider is experienced in gas-fired generation electricity fields in China.	☑	☑
A.4.2.4. Does the implementation of the project activity require any technology transfer from Annex-I-countries to the host country	1 11	The project uses domestic equipments and no technology transfer from Annex-I-countries.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
(ies)?				
A.4.2.5. Is the technology implemented by the project activity environmentally safe?	1 8, 9	The project has the approval from local environmental protection bureau, and during the visit the auditor corroborated that the project does not represent a risk for the environment. **Corrective Action Request No.3** According to the SSC-PDD guidelines, a statement of how environmentally safe this project is should be included in section A.4.2 of the PDD.	CAR3	☑
A.4.2.6. Is the information provided in compliance with actual situation or planning?	1	Yes, this has been verified during on-site visit..	☑	☑
A.4.2.7. Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	1	In common practice, methane generated in the anaerobic wastewater treatment is still released directly into the atmosphere and electricity generation is still coal-fired power plant. Hence, the project definitely would result in a better performance than the common practice.	☑	☑
A.4.2.8. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1 11	No, the project technology is a modern technology which is not expected to change.	☑	☑
A.4.2.9. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	1, 23	Yes, according to the project owner, the training will be implemented before the operation of the project. **Clarification Requests No.2** Please provide a scheduled training plan to the DOE.	CR2	☑
A.4.2.10. Is information available on the demand and requirements for training and maintenance?	1	See A.4.2.9	Open	☑
A.4.2.11. Is a schedule available for the im-	1	The project will be put into test operation in November 2008 and	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
plementation of the project and are there any risks for delays?	12	there is no risk for delay. A clear schedule for the implementation of the project was submitted and verified during on-site visit.		
A.4.3. *Estimated amount of emission reductions over the chosen crediting period*				
A.4.3.1. Is the form required for the indication of projected emission reductions correctly applied?	1	Yes. The form is correctly applied according to the PDD template.	☑	☑
A.4.3.2. Are the figures provided consistent with other data presented in the PDD?	1	Yes. It is consistent with section B.6.3 and B.6.4 in the PDD.	☑	☑
A.4.3.3. Are the figures consistent with the small-scale criteria for the used Type?	1, 2	Yes, the project activity directly emits less than 15 kilotonnes of carbon dioxide equivalent annually, emission reduction less than 60 kilotonnes of carbon dioxide equivalent annually and generates power to the extent of 1 MW. Hence the project qualifies as a small scale CDM project type I (renewable energy projects), category D (renewable electricity generation for a grid) and type III (other projects) category H (methane recovery in waste water treatment).	☑	☑
A.4.4. *Public funding of the small-scale project activity*				
A.4.4.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1	Yes. There is no public funding necessary; all costs are covered by private equity.	☑	☑
A.4.4.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	1	Yes. The statements are consistent with in the PDD.	☑	☑
A.4.5. *Confirmation that the small-scale project activity is not a debundled component of a large scale project activity*				

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>A.4.5.1. Is there a registered small-scale CDM project activity or an application to register another small-scale CDM project activity: with the following characteristics:</td><td>1, 3</td><td><table><tr><th>Debundling checklist</th><th>Yes / No</th></tr><tr><td>the same project participants?</td><td>No</td></tr><tr><td>In the same project category and technology/measure?</td><td>No</td></tr><tr><td>Registered within previous two years? Or in registration process?</td><td>No</td></tr><tr><td>Whose boundary is within 1 km of the project boundary of the small scale project activity under consideration?</td><td>No</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>A.4.5.2. If the answer to all the above question is ‘Yes’ then does the total size of the small scale project activity combined with previously registered small scale CDM project activity exceeds the limits of small scale CDM project activities?</td><td>1, 3</td><td>Not applicable.</td><td>☑</td><td>☑</td></tr>
<tr><td colspan="5">B. Application of a baseline and monitoring methodology</td></tr>
<tr><td colspan="5">B.1. Title and reference of the approved baseline and monitoring methodology applied to the small-scale project activity</td></tr>
<tr><td>B.1.1.1. Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?</td><td>1, 2</td><td>Yes. The approved methodology AMS.III.H(version 9) and AMS.I.D. (version 13) are used.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.1.1.2. Is the applied version the most recent one and / or is this version still applicable?</td><td>1, 2</td><td>Yes, the applied versions are applicable.</td><td>☑</td><td>☑</td></tr>
<tr><td colspan="5">B.2. Justification of the choice of the methodology and why it is applicable to the project activity</td></tr>
<tr><td>B.2.1. Is the applied methodology considered the</td><td>1, 2</td><td>The project process is to introduce methane recovery for electric-</td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
most appropriate one?		ity generation to an existing wastewater treatment system(a system with anaerobic reactor). This fits the applied methodologies' applicability criterions.		
Integrate the required amount of sub-checklists on the applicability criteria as given by the applied methodology and comment on at least every line answered with "No";				
B.2.1.1. Criterion 1: Project substitutes aerobic wastewater or sludge treatment systems with anaerobic systems with methane recovery and combustion.	1, 2	Applicability checklist / Yes / No / NA Criterion discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	☑	☑
B.2.1.2. Criterion 2: Project introduces anaerobic sludge treatment system with methane recovery and combustion to an existing wastewater treatment plant without sludge treatment.	1, 2	Applicability checklist / Yes / No / NA Criterion discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	☑	☑
B.2.1.3. Criterion 3: Project introduces methane recovery and combustion to an existing sludge treatment system.	1, 2	Applicability checklist / Yes / No / NA Criterion discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	☑	☑

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
B.2.1.4. Criterion 4: Project introduces methane recovery and combustion to an existing anaerobic wastewater treatment system such as anaerobic reactor, lagoon, septic tank or an on site industrial plant.	1, 2	Applicability checklist: Yes / No / NA Criterion discussed in the PDD? Yes Compliance provable? Yes Compliance verified? Yes	☑	☑
B.2.1.5. Criterion 5: Project introduces anaerobic wastewater treatment with methane recovery and combustion, with or without anaerobic sludge treatment, to an untreated wastewater stream.	1, 2	Applicability checklist: Yes / No / NA Criterion discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	☑	☑
B.2.1.6. Criterion 6: Project introduces sequential stage of wastewater treatment with methane recovery and combustion, with or without sludge treatment, to an existing wastewater treatment system without methane recovery.	1, 2	Applicability checklist: Yes / No / NA Criterion discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	☑	☑
B.2.1.7. Are the projected emission reductions less than or equal to 60,000 tonne CO_2 per annum?	1, 2	Applicability checklist: Yes / No / NA Criterion discussed in the PDD? Yes Compliance provable? Yes Compliance verified? Yes	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
B.3. Description of the project boundary				
B.3.1. Does the project boundary include physical, geographical site where the wastewater and sludge treatment takes place?	1, 2	Yes, the project boundary includes the physical, geographical site where the wastewater and sludge treatment takes place, the proposed project and North China Power Grid.	☑	☑
B.3.2. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?	1, 2	Yes, it was verified by the auditor.	☑	☑
B.4. Details of baseline and its development				
Integrate questions concerning the determination of the additionality as provided by the methodology applied or insert the module provided when applying the "additionality tool"; Replace blue text, if necessary				
B.4.1. Have all technically feasible baseline scenario alternatives to the project activity been identified and discussed by the PDD? Why can this list be considered as being complete?	1, 2	Not applicable for SSC projects.	☑	☑
B.4.2. Does the project identify correctly and excludes those options not in line with regulatory or legal requirements?	1, 2	Not applicable.	☑	☑
B.4.3. Have applicable regulatory or legal requirements been identified?	1, 2	Not applicable.	☑	☑
B.4.4. Baseline scenario selection:				

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
B.4.4.1. Scenario 1: the existing aerobic wastewater or sludge treatment system.	1, 2	Baseline scenario checklist: Yes / No / NA Scenario discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	☑	☑
B.4.4.2. Scenario 2: the existing sludge disposal system.	1, 2	Baseline scenario checklist: Yes / No / NA Scenario discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	☑	☑
B.4.4.3. Scenario 3: the existing sludge disposal system without methane recovery and combustion.		Baseline scenario checklist: Yes / No / NA Scenario discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	☑	☑
B.4.4.4. Scenario 4: the existing anaerobic wastewater treatment system without methane recovery and combustion.	1, 2	Baseline scenario checklist: Yes / No / NA Scenario discussed in the PDD? Yes Compliance provable? Yes Compliance verified? Yes	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.4.4.5. Scenario 5: the untreated wastewater being discharged into sea, river, lake, stagnant sewer or flowing sewer.</td><td>1, 2</td><td><table><tr><th>Baseline scenario checklist</th><th>Yes / No / NA</th></tr><tr><td>Scenario discussed in the PDD?</td><td>NA</td></tr><tr><td>Compliance provable?</td><td>NA</td></tr><tr><td>Compliance verified?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.4.4.6. Scenario 6: the existing anaerobic wastewater treatment system without methane recovery.</td><td>1, 2</td><td><table><tr><th>Baseline scenario checklist</th><th>Yes / No / NA</th></tr><tr><td>Scenario discussed in the PDD?</td><td>NA</td></tr><tr><td>Compliance provable?</td><td>NA</td></tr><tr><td>Compliance verified?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.4.5. Does the selected baseline scenario correspond to the selected project scenario as per section B.2 above?</td><td>1, 2</td><td>Yes, the selected baseline scenarios of the proposed project are the existing anaerobic wastewater treatment system without methane recovery and combustion and the continued operation of the existing power plants in North China Power Grid and the addition of new generation sources, which correspond with the project scenario.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.4.6. Is the identified baseline scenario in line with regulatory or legal requirements?</td><td>1, 2</td><td>Yes. There are no regulations /laws in China for recovering methane in the existing anaerobic wastewater treatment system.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.4.7. Does the PDD identify the most likely baseline scenario in absence of the project activity?</td><td>1, 2</td><td>See B.4.5.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.4.8. Is this identification supported by offi-</td><td>1, 2</td><td>See A.2.2.</td><td>Open</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
cial and/or verifiable documents (e.g. studies, web pages, certificates, etc?				
B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):				
Integrate questions concerning the determination of the additionality when applying the "additionality tool"; Replace blue text, if necessary				
B.5.1. In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?		Not applicable, because the applied methodology only takes into account information on additionality of the simplified modalities and procedures for SSC CDM project activities.	☑	☑
B.5.2. In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than CDM income?		Not applicable, see B.5.1	☑	☑
B.5.3. In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?		Not applicable, see B.5.1	☑	☑
B.5.4. In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?		Not applicable, see B.5.1	☑	☑
B.5.5. In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?		Not applicable, see B.5.1	☑	☑
B.5.6. In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for		Not applicable, see B.5.1	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
	the utilized data?				
B.5.7.	In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?		Not applicable, see B.5.1	☑	☑
B.5.8.	In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?		Not applicable, see B.5.1	☑	☑
B.5.9.	In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers?		Not applicable, see B.5.1	☑	☑
B.5.10.	Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD (step 4a)?		Not applicable, see B.5.1	☑	☑
B.5.11.	If similar activities are occurring: Is it demonstrated that in spite of these similarities the project activity would not be implemented without the CDM component (step 4b)?	1, 2	Not applicable, see B.5.1	☑	☑
B.5.12.	Is it appropriately explained how the approval of the project activity will help to overcome the economic and financial hurdles or other identified barriers (step 5)?	1, 2	Not applicable, see B.5.1	☑	☑
If the additionality tool has not been used please answer B.5.13 to B.5.18					

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.5.13. If the starting date of the project activity is before the date of validation, is evidence available to prove that incentive from the CDM was seriously considered in the decision to proceed with the project activity?</td><td>1, 2
6, 21</td><td>Yes, the CDM consideration was clearly defined in the Feadibility Study Report (page 62, dated August 2007). And a CDM consulting service contract was signed between Tianjin TEDA Alcohol Co.,Ltd and Beijing Lianheyoufa Energy Technology Co., Ltd on May 10th, 2007.
The above documents have been reviewed by the auditor.
<u>Clarification Requests No.3</u>
Please provide the English translation of CDM considering evidence to the DOE.</td><td>CR3</td><td>☑</td></tr>
<tr><td>B.5.14. Is a complete list of barriers developed that prevents the project activity to occur?</td><td>1, 2</td><td>Yes. The investment barrier is identified.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.5.15. Does this list include at least one of the following barriers?</td><td>1, 2</td><td><table><tr><th>Barrier</th><th>Discussed?</th><th>Verifiable?</th></tr><tr><td>Investment</td><td>Yes</td><td>Yes</td></tr><tr><td>Technological</td><td>No</td><td>NA</td></tr><tr><td>Due to prevailing practice</td><td>No</td><td>NA</td></tr><tr><td>Other</td><td>No</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.5.16. Does the discussion sufficiently take into account relevant national and/or sectoral policies?</td><td>1, 2
14</td><td>Yes. Economic Evaluation Measurements and Parameters of Constructive Project (Version 3) was taken into account as the evidence of the benchmark IRR.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.5.17. Is transparent and documented evidence provided on the existence and significance of these barriers?</td><td>1, 2
6,
13,
14</td><td><u>Corrective Action Request No. 4:</u>
Please explain why the IRR with CERs in the PDD are not consistent with the IRR value in the FSR.

A copy of the FSR including a partial translation of the cover</td><td>CAR4</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		page, the date of completion, all IRR input parameters, the benchmark value, the IRR result and any comments such as whether the project is feasible or not should be submitted to the DOE for further validation of the additionality. Based on Economic Evaluation Measurements and Parameters of Constructive Projects, 11% of the benchmark is for project IRR before tax, while 12% is for equity IRR after tax, please revise.A copy of benchmark evidence with necessary translation should be submitted to the DOE. IRR calculation sheet should not contain any irrelevant pages.		
B.5.18. Is it appropriately explained how the approval of the project activity will help to overcome the identified barriers?	1, 2	Yes. The approval of the project activity will help to make the project financially attractive. Without CDM revenue, the project owner is unlikely to construct this project.	☑	☑
B.6. Emissions reductions				
Integrate questions concerning methodological choices and selection of options, if necessary				
B.6.1. *Explanation of methodological choices*				
B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1, 2	The calculation of the emission reduction is applied according to the steps described in ACM0002: - Calculation of the Project Emissions - Calculation of the Baseline Emissions - Calculation of the Project Leakage - Calculation of the Emission Reduction These steps are described in a transparent manner.	☑	☑

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
B.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?	1, 2	Yes, the selection of options offered by AMS.III.H is correctly justified which has been verified during the on-site audit.	☑	☑
B.6.1.3. Determination of project emissions (Comment on any line answered "No")				
B.6.1.3.1. Component 1: emissions from electricity or diesel consumption.	1, 2	Project emission checklist: Yes / No Component discussed in the PDD? Yes Formulae correctly applied? N/A Recovered methane is used to produce electricity which will first meet the need of captive power. So an emission factor of zero is selected.	☑	☑
B.6.1.3.2. Component 2: emissions from degradable organic carbon in treated wastewater.	1, 2	Project emission checklist: Yes / No Component discussed in the PDD? Yes Formulae correctly applied? Yes	☑	☑
B.6.1.3.3. Component 3: emissions from anaerobic decay of final sludge.	1, 2	Project emission checklist: Yes / No Component discussed in the PDD? Yes Formulae correctly applied? NA The sludge of the project will be dewatered and then used as a kind of soil additive, so the emission from sludge is to be neglected.	☑	☑
B.6.1.3.4. Component 4: emissions from methane release in capture and flare systems.	1, 2	Project emission checklist: Yes / No Component discussed in the PDD? Yes	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Formulae correctly applied? — Yes		
B.6.1.3.5. Component 5: emissions from dissolved methane in treated wastewater.	1, 2	Project emission checklist — Yes / No Component discussed in the PDD? — Yes Formulae correctly applied? — NA	☑	☑
B.6.1.4. Are the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2	Yes, the formulae to determine the baseline emissions are correctly presented n chapter B.6.1 of the PDD.	☑	☑
B.6.1.5. Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2	Not applicable, because no equipment transfer of used technology from another activity or of existing equipment to another activity seems to be planned.	☑	☑
B.6.1.6. Are the formulae required for the determination of emission reductions correctly presented?	1, 2 15-19	Yes, it is.	☑	☑
B.6.2. *Data and parameters that are available at validation*				
B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?	1, 2	The list of parameters presented in chapter B.6.2 of the PDD is considered to be complete.	☑	☑
B.6.2.2. Comment on any line answered with "No"				
B.6.2.2.1. Parameter Title: $PE_{y,power}$ emissions from electricity or diesel consumption in the year "y"	1, 2	Data Checklist — Yes / No / NA Title in line with methodology? — NA	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td><table>
<tr><td>Data unit correctly expressed?</td><td>NA</td></tr>
<tr><td>Appropriate description of parameter?</td><td>NA</td></tr>
<tr><td>Source clearly referenced?</td><td>NA</td></tr>
<tr><td>Correct value provided?</td><td>NA</td></tr>
<tr><td>Has this value been verified?</td><td>NA</td></tr>
<tr><td>Choice of data correctly justified?</td><td>NA</td></tr>
<tr><td>Measurement method correctly described?</td><td>NA</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>B.6.2.2.2. Parameter Title:
$Q_{y,ww}$ volume of wastewater treated in the year “y” (m3)</td><td>1, 2</td><td><table>
<tr><th>Data Checklist</th><th>Yes / No / NA</th></tr>
<tr><td>Title in line with methodology?</td><td>Yes</td></tr>
<tr><td>Data unit correctly expressed?</td><td>Yes</td></tr>
<tr><td>Appropriate description of parameter?</td><td>Yes</td></tr>
<tr><td>Source clearly referenced?</td><td>Yes</td></tr>
<tr><td>Correct value provided?</td><td>Yes</td></tr>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Choice of data correctly justified?</td><td>Yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>Yes</td></tr>
</table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.2.3. Parameter Title:
$COD_{y,ww,treated}$– chemical oxygen demand of treated wastewater (tonnes/m3).</td><td>1, 2</td><td><table>
<tr><th>Data Checklist</th><th>Yes / No / NA</th></tr>
<tr><td>Title in line with methodology?</td><td>Yes</td></tr>
<tr><td>Data unit correctly expressed?</td><td>No</td></tr>
<tr><td>Appropriate description of parameter?</td><td>Yes</td></tr>
<tr><td>Source clearly referenced?</td><td>Yes</td></tr>
<tr><td>Correct value provided?</td><td>Yes</td></tr>
</table></td><td>CAR5</td><td>☑</td></tr>
</table>

<table>
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<tr><td></td><td></td><td>
<table>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Choice of data correctly justified?</td><td>Yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>Yes</td></tr>
</table>
<u>Corrective Action Request No. 5:</u>
The data unit is not consistent with the methodology, please revise.
</td><td></td><td></td></tr>
<tr><td>B.6.2.2.4. Parameter Title:
$B_{o,ww}$ methane producing capacity of the wastewater (IPCC default value for domestic wastewater of 0.21 kg CH4/kg.COD)</td><td>1, 2</td><td>
<table>
<tr><th>Data Checklist</th><th>Yes / No / NA</th></tr>
<tr><td>Title in line with methodology?</td><td>Yes</td></tr>
<tr><td>Data unit correctly expressed?</td><td>Yes</td></tr>
<tr><td>Appropriate description of parameter?</td><td>Yes</td></tr>
<tr><td>Source clearly referenced?</td><td>Yes</td></tr>
<tr><td>Correct value provided?</td><td>Yes</td></tr>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Choice of data correctly justified?</td><td>Yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>Yes</td></tr>
</table>
</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.2.5. Parameter Title:
$MCF_{ww,final}$ methane correction factor based on type of treatment and discharge pathway of the wastewater (fraction) (MCF Higher Value in table III.H.1 for sea, river and lake discharge i.e. 0.2)</td><td>1, 2</td><td>
<table>
<tr><th>Data Checklist</th><th>Yes / No / NA</th></tr>
<tr><td>Title in line with methodology?</td><td>Yes</td></tr>
<tr><td>Data unit correctly expressed?</td><td>Yes</td></tr>
<tr><td>Appropriate description of parameter?</td><td>Yes</td></tr>
<tr><td>Source clearly referenced?</td><td>Yes</td></tr>
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<tr><td>Choice of data correctly justified?</td><td>Yes</td></tr>
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<table>
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<tr><td>B.6.2.2.6. Parameter Title:
$S_{y,final}$– amount of final sludge generated by the wastewater treatment (tonnes).</td><td>1, 2</td><td><table><tr><td>Data Checklist</td><td>Yes / No / NA</td></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>NA</td></tr><tr><td>Correct value provided?</td><td>NA</td></tr><tr><td>Has this value been verified?</td><td>NA</td></tr><tr><td>Choice of data correctly justified?</td><td>NA</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.2.7. Parameter Title:
$DOC_{y,s,final}$– degradable organic content of the final sludge generated by the wastewater treatment.</td><td>1, 2</td><td><table><tr><td>Data Checklist</td><td>Yes / No / NA</td></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>NA</td></tr><tr><td>Correct value provided?</td><td>NA</td></tr><tr><td>Has this value been verified?</td><td>NA</td></tr><tr><td>Choice of data correctly justified?</td><td>NA</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.2.8. Parameter Title:
$MCF_{s,final}$– methane correction factor of the landfill that receives the</td><td>1, 2</td><td><table><tr><td>Data Checklist</td><td>Yes / No / NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
final sludge.		Title in line with methodology? NA Data unit correctly expressed? NA Appropriate description of parameter? NA Source clearly referenced? NA Correct value provided? NA Has this value been verified? NA Choice of data correctly justified? NA Measurement method correctly described? NA		
B.6.2.2.9. Parameter Title: DOC_F– fraction of DOC dissimi-lated to biogas.	1, 2	Data Checklist / Yes / No / NA Title in line with methodology? NA Data unit correctly expressed? NA Appropriate description of parameter? NA Source clearly referenced? NA Correct value provided? NA Has this value been verified? NA Choice of data correctly justified? NA Measurement method correctly described? NA	☑	☑
B.6.2.2.10. Parameter Title: F– fraction of CH_4 in landfill gas.	1, 2	Data Checklist / Yes / No / NA Title in line with methodology? NA Data unit correctly expressed? NA Appropriate description of parameter? NA Source clearly referenced? NA	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Correct value provided? NA Has this value been verified? NA Choice of data correctly justified? NA Measurement method correctly described?		
B.6.2.2.11. Parameter Title: $COD_{y,ww,untreated}$ Chemical oxygen demand of the wastewater entering the anaerobic treatment reactor/system with methane capture in the year "y" (tonnes/m3)	1, 2	Data Checklist: Yes / No / NA Title in line with methodology? NA Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided? Yes Has this value been verified? Yes Choice of data correctly justified? Yes Measurement method correctly described? Yes	☑	☑
B.6.2.2.12. Parameter Title: $MCF_{s,treatment}$ methane correction factor for the sludge treatment system that will be equipped with methane recovery and combustion (MCF Higher value of 1.0 as per table III.H.1	1, 2	Data Checklist: Yes / No / NA Title in line with methodology? NA Data unit correctly expressed? NA Appropriate description of parameter? NA Source clearly referenced? NA Correct value provided? NA Has this value been verified? NA Choice of data correctly justified? NA Measurement method correctly described? NA	☑	☑

<table>
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<tr><td>B.6.2.2.13. Parameter Title:
$S_{y,untreated}$ amount of untreated sludge generated in the year “y” (tonnes)</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>NA</td></tr><tr><td>Correct value provided?</td><td>NA</td></tr><tr><td>Has this value been verified?</td><td>NA</td></tr><tr><td>Choice of data correctly justified?</td><td>NA</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.2.14. Parameter Title:
$DOC_{y,s,untreated}$ Degradable organic content of the untreated sludge generated in the year y (fraction). It shall be measured by sampling and analysis of the sludge produced, and estimated ex-ante using the IPCC default values of 0.05 for domestic sludge (wet basis, considering a default dry matter content of 10 percent) or 0.09 for industrial sludge (wet basis, assuming dry matter content of 35 percent)</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>NA</td></tr><tr><td>Correct value provided?</td><td>NA</td></tr><tr><td>Has this value been verified?</td><td>NA</td></tr><tr><td>Choice of data correctly justified?</td><td>NA</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
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<tr><td>B.6.2.2.15. Parameter Title:
$MCF_{s,treatment}$ methane correction factor for the sludge treatment system that will be equipped with methane recovery and combustion (MCF Higher value of 1.0 as per table III.H.1)</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>NA</td></tr><tr><td>Correct value provided?</td><td>NA</td></tr><tr><td>Has this value been verified?</td><td>NA</td></tr><tr><td>Choice of data correctly justified?</td><td>NA</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.2.16. Parameter Title:
$[CH4]_{y,ww,treated}$ dissolved methane content in the treated wastewater (tonnes/m3). In aerobic wastewater treatment default value is zero, in anaerobic treatment it can be measured, or a default value of 10e-4 tonnes/m3 can be used</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>NA</td></tr><tr><td>Correct value provided?</td><td>NA</td></tr><tr><td>Has this value been verified?</td><td>NA</td></tr><tr><td>Choice of data correctly justified?</td><td>NA</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.2.17. Parameter Title:
$BE_{y,power}$ emissions on account of electricity or diesel consumed in the year “y” by the replaced aerobic</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
wastewater or sludge treatment system		Data unit correctly expressed? NA Appropriate description of parameter? NA Source clearly referenced? NA Correct value provided? NA Has this value been verified? NA Choice of data correctly justified? NA Measurement method correctly described? NA		
B.6.2.2.18. Parameter Title: $MCF_{ww,treatment}$ Methane correction factor for the existing wastewater treatment system to which the sequential anaerobic treatment step is being introduced (MCF lower value in Table III.H.1.)	1, 2	Data Checklist: Yes / No / NA Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided? Yes Has this value been verified? Yes Choice of data correctly justified? Yes Measurement method correctly described? Yes	☑	☑
B.6.3. *Ex-ante calculation of emission reductions*				
B.6.3.1. Is the projection based on the same procedures as used for future monitoring?	1, 2	As per the applied methodology, projection is based on removed COD and quantity of wastewater whereas the monitoring will measure actual biogas amount generated. This is in line with the methodology.	☑	☑
B.6.3.2. Are the GHG calculations documented	1, 2		☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
in a complete and transparent manner?	15-19 20	The latest emission factors issued by NDRC on August 9 2007 are be used.		
B.6.3.3. If there is more than one component of the project activity, then are emission reduction calculations provided separately for each component?	1, 2	Not applicable.	☑	☑
B.6.3.4. Is the data provided in this section consistent with data as presented in other chapters of the PDD?	1, 2	Yes, it is.	☑	☑
B.6.4. *Summary of the ex-ante estimation of emission reductions*				
B.6.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1, 2	Yes. The project will definitely result in fewer GHG emissions than the baseline scenario.	☑	☑
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1, 2	Yes, the form is correctly applied according to the PDD template.	☑	☑
B.6.4.3. If the project activity involves more than one component, is separate table included for each of the component.	1, 2	Not applicable.	☑	☑
B.6.4.4. Do these values comply with small-scale criteria for every year?	1, 2	Yes, the values do comply with the small-scale criterion(less than 60ktCO2e/year)	☑	☑
B.6.4.5. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1, 2	Yes, it is.	☑	☑
B.6.4.6. Is the data provided in this section in consistency with data as presented in	1,2	Yes, no contradiction.	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>other chapters of the PDD?</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="5">B.7. Application of the monitoring methodology and description of the monitoring plan</td></tr>
<tr><td colspan="5">B.7.1. Data and parameters monitored</td></tr>
<tr><td>B.7.1.1. Is the list of parameters presented in chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology?</td><td>1, 2</td><td>The list of parameters presented in chapter B.7.1 of the PDD is not complete.
<u>Corrective Action Request No. 6:</u>
The temperature, pressure and flow rate of the biogas should be monitored.

Please describe the monitoring methods and procedures of sludge application.

The parameter-Methane fraction of biogas is not used in ex-ante EF calculation. Please revise the description in chapter B.7.1.

The monitoring plan is not specific enough as a plan because e.g. there is no indication of number of meters and measuring points.</td><td>CAR6</td><td>☑</td></tr>
<tr><td colspan="5">B.7.1.2. Comment on any line answered with “No”</td></tr>
<tr><td>B.7.1.2.1. Parameter Title:
$Q_{y,ww}$-volume of wastewater treated (m^3).</td><td>1, 2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>NA</td></tr><tr><td>Correct value provided for estimation?</td><td>NA</td></tr><tr><td>Has this value been verified?</td><td>NA</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Correct reference to standards? NA Indication of accuracy provided? NA QA/QC procedures described? NA QA/QC procedures appropriate? NA		
B.7.1.2.2. Parameter Title: $S_{y,untreated}$-amount of untreated sludge generated (tonnes).	1, 2	Monitoring Checklist / Yes / No Title in line with methodology? NA Data unit correctly expressed? NA Appropriate description of parameter? NA Source clearly referenced? NA Correct value provided for estimation? NA Has this value been verified? NA Measurement method correctly described? NA Correct reference to standards? NA Indication of accuracy provided? NA QA/QC procedures described? NA QA/QC procedures appropriate? NA	☑	☑
B.7.1.2.3. Parameter Title: $S_{y,final}$-amount of final sludge generated by wastewater treatment (tonnes).	1, 2	Monitoring Checklist / Yes / No Title in line with methodology? NA Data unit correctly expressed? NA Appropriate description of parameter? NA Source clearly referenced? NA Correct value provided for estimation? NA	☑	☑

<table>
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<tr><td>QA/QC procedures described?</td><td>NA</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>NA</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>B.7.1.2.4. Parameter Title:
$COD_{y,ww,untreated}$-chemical oxygen demand of the wastewater entering the anaerobic treatment reactor/system with methane capture (tonnes/m^3).</td><td>1, 2</td><td><table>
<tr><th>Monitoring Checklist</th><th>Yes / No</th></tr>
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<tr><td>QA/QC procedures described?</td><td>NA</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>NA</td></tr>
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<tr><td>B.7.1.2.5. Parameter Title:
$COD_{y,ww,treated}$-chemical oxygen demand of the treated wastewater (tonnes/m^3).</td><td>1, 2</td><td><table>
<tr><th>Monitoring Checklist</th><th>Yes / No</th></tr>
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</table></td><td></td><td></td></tr>
<tr><td>B.7.1.2.6. Parameter Title:
$DOC_{y,s,untreated}$-degradable organic content of the untreated sludge generated (tonnes/m^3).</td><td>1, 2</td><td><table>
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<tr><td>Title in line with methodology?</td><td>NA</td></tr>
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<tr><td>B.7.1.2.7. Parameter Title:
$DOC_{y,s,final}$– degradable organic content of the final sludge generat-</td><td>1, 2</td><td><table>
<tr><th>Monitoring Checklist</th><th>Yes / No</th></tr>
<tr><td>Title in line with methodology?</td><td>NA</td></tr>
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<tr><td>B.7.1.2.8. Parameter Title:
$(CH4)_{y,ww,treated}$– dissolved methane content in the treated wastewater (tones/m^3).</td><td>1, 2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>NA</td></tr><tr><td>Correct value provided for estimation?</td><td>NA</td></tr><tr><td>Has this value been verified?</td><td>NA</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr><tr><td>Correct reference to standards?</td><td>NA</td></tr><tr><td>Indication of accuracy provided?</td><td>NA</td></tr><tr><td>QA/QC procedures described?</td><td>NA</td></tr><tr><td>QA/QC procedures appropriate?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.2.9. Parameter Title:</td><td>1, 2</td><td></td><td>☑</td><td>☑</td></tr>
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<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>Amount of biogas recovered (m^3).</td><td></td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table></td><td></td><td></td></tr>
<tr><td>B.7.1.2.10.Parameter Title:
Methane fraction of biogas.</td><td>1, 2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>See B.7.1.1.</td><td>Open</td><td>☑</td></tr>
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<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.7.1.2.11.Parameter Title:
Temperature of biogas (^{O}C).</td><td>1, 2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table>See B.7.1.1.</td><td>Open</td><td>☑</td></tr>
<tr><td>B.7.1.2.12.Parameter Title:
Pressure of biogas (kg/cm^2).</td><td>1, 2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr></table></td><td>Open</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		QA/QC procedures described? — No QA/QC procedures appropriate? — No See B.7.1.1.		
B.7.1.2.13. Parameter Title: Temperature in exhaust gas of flare (^{O}C).	1, 2	Monitoring Checklist — Yes / No Title in line with methodology? — NA Data unit correctly expressed? — NA Appropriate description of parameter? — NA Source clearly referenced? — NA Correct value provided for estimation? — NA Has this value been verified? — NA Measurement method correctly described? — NA Correct reference to standards? — NA Indication of accuracy provided? — NA QA/QC procedures described? — NA QA/QC procedures appropriate? — NA	☑	☑
B.7.1.2.14. Parameter Title: biogas flow rate	1, 2	Monitoring Checklist — Yes / No Title in line with methodology? — No Data unit correctly expressed? — No Appropriate description of parameter? — No Source clearly referenced? — No Correct value provided for estimation? — No Has this value been verified? — No Measurement method correctly described? — No	Open	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Correct reference to standards? — No Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No See B.7.1.1.		
B.7.1.2.15. Parameter Title: End use of final sludge generated.	1, 2	Monitoring Checklist — Yes / No Title in line with methodology? — Yes Data unit correctly expressed? — NA Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided for estimation? — NA Has this value been verified? — NA Measurement method correctly described? — No Correct reference to standards? — NA Indication of accuracy provided? — NA QA/QC procedures described? — Yes QA/QC procedures appropriate? — Yes	☑	☑
B.7.1.2.16. Parameter Title: Volumetric fraction of oxygen in the exhaust gas of the flare.	1, 2	Monitoring Checklist — Yes / No Title in line with methodology? — NA Data unit correctly expressed? — NA Appropriate description of parameter? — NA Source clearly referenced? — NA Correct value provided for estimation? — NA Has this value been verified? — NA	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td><table><tr><td>Measurement method correctly described?</td><td>NA</td></tr><tr><td>Correct reference to standards?</td><td>NA</td></tr><tr><td>Indication of accuracy provided?</td><td>NA</td></tr><tr><td>QA/QC procedures described?</td><td>NA</td></tr><tr><td>QA/QC procedures appropriate?</td><td>NA</td></tr></table></td><td></td><td></td></tr>
<tr><td>B.7.1.2.17.Parameter Title:
Concentration of methane in the exhaust gas of flare on dry basis and at Normal Temperature and Pressure (NTP).</td><td>1, 2</td><td><table><tr><td>Monitoring Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>NA</td></tr><tr><td>Correct value provided for estimation?</td><td>NA</td></tr><tr><td>Has this value been verified?</td><td>NA</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr><tr><td>Correct reference to standards?</td><td>NA</td></tr><tr><td>Indication of accuracy provided?</td><td>NA</td></tr><tr><td>QA/QC procedures described?</td><td>NA</td></tr><tr><td>QA/QC procedures appropriate?</td><td>NA</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td colspan="5">B.7.2. Description of the monitoring plan</td></tr>
<tr><td>B.7.2.1.Is the operational and management structure clearly described and in compliance with the envisioned situation?</td><td>1, 2</td><td><u>Corrective Action Request 7:</u>
An illustration of management structure should be added in PDD.</td><td>CAR7</td><td>☑</td></tr>
<tr><td>B.7.2.2.Are responsibilities and institutional arrangements for data collection and ar-</td><td>1, 2</td><td>Yes. Data will be recorded at the appropriate frequency and</td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
chiving clearly provided?		stored by the project developer. All data will be dept until two years after the end of crediting period.		
B.7.2.3. Does the monitoring plan provide current good monitoring practice?	1, 2	Yes. The monitoring plan provides current good monitoring practice. See B.7.1.1.	Open	☑
B.7.2.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	1, 2	Not applicable.	☑	☑
B.8. Date of completion of the application of the baseline study and monitoring methodology an the name of the responsible person(s)/entity(ies)				
B.8.1.1. Is there any indication of a date when the baseline was determined?	1, 2 36	Yes. The baseline was determined on 01/12/2008 according to the PDD.	☑	☑
B.8.1.2. Has dd/mm/yyyy format been used to indicate the date.	1, 2	Yes, it is.	☑	☑
B.8.1.3. Is this consistent with the time line of the PDD history?	1, 2	Ms. Shen Yunhuan, from EcoSecurities Group PLC is responsible for the application of the methodology.	☑	☑
B.8.1.4. Is the information on the person(s) / entity (ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1, 2	Yes, it is.	☑	☑
B.8.1.5. Is information provided whether this person / entity is also considered a pro-	1, 2	The mentioned entity is a project participant.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
ject participant?				
C. Duration of the project activity / crediting period				
C.1. Duration of the project activity				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1, 2 10, 11	The start of construction (29/01/2008) is indicated in the PDD as the project's start date and the operational lifetime is expected to be 10 years. **Corrective Action Request 8:** The starting date should be consistent with the date of the equipment purchase contract signed.	CAR8	☑
C.2. Choice of the crediting period and related information				
C.2.1. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1, 2	Yes, a fixed 10 years is chosen as the crediting period.	☑	☑
C.2.2. Has dd/mm/yyyy format been used to indicate the start date of the crediting period.	1, 2	Yes.	☑	☑
D. Environmental impacts				
D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts				
D.1.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved? If yes answer also D.1.2 to D.1.4	1, 2	Yes, EIA is a must in P. R. China for construction projects. The EIA of the proposed project was approved by Ninghe County EPB, dated January 29th, 2008. See A.2.4.	Open	☑
D.1.2. Has the analysis of the environmental impacts of the project activity been sufficiently	1, 2	Yes. The analysis of the environmental impacts mainly involved three aspects: atmospheric environment, noise and water envi-	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
described?	8, 9	ronment.		
D.1.3. Will the project create any adverse environmental effects?	1, 2 8, 9	Referring to the EIA and the approval of EIA, the project will create no negative environmental impacts.	☑	☑
D.1.4. Were transboundary environmental impacts identified in the analysis?	1, 2 8, 9	There is no trans-boundary impact described in EIA report or approval of EIA.	☑	☑
D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party				
D.2.1. Have the identified environmental impacts been addressed in the project design sufficiently?	1, 2 8, 9	Yes. According to the EIA and the approval of EIA, there is no adverse environmental impact from the project activity.	☑	☑
D.2.2. Does the project comply with environmental legislation in the host country?	1, 2 8, 9	Yes, the project is in conformity with the environmental legislation of P. R. China and the EIA has been approved by the authorized organization.	☑	☑
E. Stakeholders' comments				
E.1. Brief description how comments by local stakeholders have been invited and compiled				
E.1.1. Have relevant stakeholders been consulted?	1, 2 21	Yes. Questionnaires have been used to collect the comments of relevant stakeholders.	☑	☑
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	1, 2 21	**Corrective Action Request 9:** It should be described in the PDD which media has been used to invite the stakeholders.	CAR9	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
E.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1, 2 21	There are no regulations/laws in China for carrying out the stakeholder consultation process for this project activity.	☑	☑
E.1.4. Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1, 2 21	Yes. Confirmed with the detailed documents, the process is described in a complete and transparent manner. however, see E1.2	Open	☑
E.2. Summary of the comments received				
E.2.1. Is a summary of the received stakeholder comments provided?	1, 2	Yes, E.2. of the PDD gives a summary of stakeholder comments received during the meeting. E.2. mentions that the stakeholders are all supportive of this project and no negative comments have been received.	☑	☑
E.3. Report on how due account was taken of any comments received				
E.3.1. Has due account been taken of any stakeholder comments received?	1, 2	Referring to the PDD and filled questionnaires which were gathered from participants and reviewed by the validator on site, all stakeholder comments are positive.	☑	☑
F. Annexes 1 - 4				
F.1. Annex 1: Contact Information				
F.1.1. Is the information provided consistent with the one given under section A.3?	1, 2	Yes	☑	☑
F.1.2. Is the information on all private	1, 2	Yes. The project participants are: Tianjin TEDA Alcohol Co., Ltd	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
participants and directly involved Parties presented?		and EcoSecurities Group Plc.		
F.2. Annex 2: Information regarding public funding				
F.2.1. Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	1, 2	Yes. There is no public funding; all costs are covered by private equity.	☑	☑
F.2.2. If necessary: Is an affirmation available that any such funding from Annex-I-countries does not result in a diversion of ODA?	1, 2	Not applicable.	☑	☑
F.3. Annex 3: Baseline information				
F.3.1. If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1, 2	Yes. The input data to calculate OM and BM are provided in Annex 3.	☑	☑
F.3.2. Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1, 2 20	The data provided is verifiable. The data sources are China Electricity Yearbooks 2005-2007 and China Energy Statistics Yearbooks 2005-2007 and IPCC2006.	Open	☑
F.3.3. Does the additional information substantiate / support statements given in other sections of the PDD?	1, 2	Yes. The information supports statements given in section B.6.1, B6.2 and B6.3.	☑	☑
F.4. Annex 4: Monitoring information				
F.4.1. If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1, 2	No additional information is available in Annex 4.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
F.4.2. Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1, 2	See F.4.1.	☑	☑
F.4.3. Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1, 2	See F.4.1.	☑	☑

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Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
Corrective Action Request No.1 A small inconsistency regarding the date of EIA between the PDD and EIA report has to be revised.	A.2.4	Yes, EIA was finished in January 2008 and then approved. Section D.1 has been revised.	☑
Corrective Action Request No.2 A detailed map without any Chinese characters should be added in PDD.	A.4.1.1	OK, it has been added in Section A.4.1.4 of the PDD.	☑
Corrective Action Request No.3 According to the SSC-PDD guidelines, a statement of how environmentally safe this project is should be included in section A.4.2 of the PDD.	A.4.2.5	The project will use state-of-the-art but recognised technology in methane transmission and electricity generation. It has been stated in Section A.4.2 of the PDD that the project will be environmentally safe.	☑ The auditor has confirmed during on-site audit that there are no environmental risks.
Corrective Action Request No. 4: Please explain why the IRR with CERs in the PDD are not consistent with the IRR value in the FSR. A copy of the FSR including a partial translation of the cover page, the date of completion, all IRR input parameters, the benchmark value, the IRR result and any comments such as whether the project is feasible or not should be submitted to the DOE for further validation of the additionality. Based on Economic Evaluation Measure-	B.5.17	IRR without CDM were 6.38% in FSR. IRR without CDM and with CDM in the Calculator was 6.38% and 19.13% with and without CDM. The benchmark has been revised. All parameters and calculating process of the Calculator are same with the FSR. CER revenue in FSR is rough estimation while in the calculator, CER revenue is estimated according to the expected emission reduction. All required documents including the partial translated FSR, Benchmark IRR proof and IRR calculator have been provided to TÜV SÜD for review.	☑ All input data are from the FSR and the calculation is consistent with the FSR. This has been verified by the audit team.

ments and Parameters of Constructive Projects, 11% of the benchmark is for project IRR before tax, while 12% is for equity IRR after tax, please revise. A copy of benchmark evidence with necessary translation should be submitted to the DOE. IRR calculation sheet should not contain any irrelevant pages.			
Corrective Action Request No. 5: The data unit is not consistent with the methodology, please revise.	B.6.2.2.3	Yes, corrected in relevant part of PDD.	☑
Corrective Action Request No. 6: The temperature, pressure and flow rate of the biogas should be monitored. Please describe the monitoring methods and procedures of sludge application. The parameter-Methane fraction of biogas is not used in ex-ante EF calculation. Please revise the description in chapter B.7.1. The monitoring plan is not specific enough as a plan because e.g. there is no indication of number of meters and measuring points.	B.7.1.1	The flow meter will express gas flow in normalized cubic meters, therefore no separate monitoring of pressure (P) and temperature (T) of methane recovered is necessary to determine density.Parameter $Q_{y,fuelled}$ in Section B.7.1 has been revised with detailed explanation. Monitoring methods of sludge application has been further described in Section B.7.1. Methane fraction is used in the ex-post calculation and will have to be monitored, the description of ex-ante calculation has been deleted. The construction of site hasn't been finished yet, the project will apply all the requirements by the Methodology.	☑

Corrective Action Request 7: An illustration of management structure should be added in PDD.	B.7.2.1	A general management structure has been provided in Section B.7.2 of the PDD.	☑
Corrective Action Request 8: The starting date should be consistent with the date of the equipment purchase contract signed.		OK, revised in Section C.1.1 of PDD.	☑
Corrective Action Request 9: It should be described in the PDD which media has been used to invite the stakeholders.	E.1.2	The media has been indicated in the PDD.	☑
Clarification Requests No.1 Please provide Grid Connection Approval to the DOE.	A.2.2	**PPs' Reply 1:** The Grid Connection Approval is not issued yet, according to the project design and onsite validation, the electricity generated by the Project will substitute electricity supplied by the NCPG. We will send the Approval to TUV-SUD as soon as we get it and We hope that this will not delay the validation process of the Project. **PPs' Reply 2:** The approval has been provided to TÜV SÜD.	☑ The grid connection agreement has been submitted and verified. This issue was considered to be solved.
Clarification Requests No.2 Please provide a scheduled training plan to the DOE.	A.4.2.9	Yes, provided.	☑ The training plan has been submitted, see IRL No.23.
Clarification Requests No.3 Please provide the English translation of CDM considering evidence to the DOE.	B.5.13	Yes, translation of first page and sign page of CDM service contract and CDM relevant parts in FSR have been translated and provided to TÜV SÜD.	☑

Open Issue Please submit the LoAs issued by China and buyer country, together with MoC signed by the project participants to DOE before raising the request of registration.	A.3.2	**PPs' Reply 1:** We are in the process of applying Host Nation Approval and Annex 1 Letter of Approval, the three documents will be provided to TUV-SUD as soon as we get them. **PPs' Reply 2:** The above documents have been provided to TÜV SÜD.	☑ LoAs from China and UK and MoC have been submitted.

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

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

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Annex 2: Information Reference List

Reference No.	Document or Type of Information
1	Project Design Document for CDM project "Tianjin TEDA Sewage Methane Recovery Project", version 1.0, dated March 25th, 2008.
2	AMS III.H. "Methane Recovery in Wastewater Treatment" (Version 09) AMS-I.D "Grid connected renewable electricity generation" (Version 13) Tool to calculate the emission factor for an electricity system" (Version 01.1)
3	Appendix B of the simplified modalities and procedures for small-scale CDM project activities Appendix C of the simplified modalities and procedures for small-scale CDM project activities
4	Participant list of on-site interview, signed on May 16th 2008.
5	On -site interviews at the project site in Ninghe Economic Development Zone, Tianjin Municipality, P.R China., conducted on May 16th , 2008 by auditing team of TÜV SÜD: Validation team: Ms. Liu Xiaoyan CDM ATL TUV SUD China Interviewed persons: Mr. Han Changjun Tianjin TEDA Alcohol Co., Ltd Ms. Yang Zhen Tianjin TEDA Alcohol Co., Ltd Mr. Zhu Ning Tianjin TEDA Alcohol Co., Ltd Mr. Tian Weiran Beijing Lianheyoufa Energy Technology Co., Ltd Ms. Song Zhaojiayi Beijing Lianheyoufa Energy Technology Co., Ltd Ms. Shen Yunhuan EcoSecurities Group plc
6	Feasibility Study Report of Tianjin TEDA Sewage Methane Recovery Project, issued by Tianjin Lianhe Environmental Protection Engineering Design Co., Ltd, dated August 2nd, 2007.
7	Approval of Tianjin TEDA Sewage Methane Recovery Project, issued by Ninghe County DRC, dated January 25th, 2008.
8	Environmental Impact Assessment Report of Tianjin TEDA Sewage Methane Recovery Project (EIA in short), issued by Tianjin Environmental Protection Science Institute, dated January 2008.

Reference No.	Document or Type of Information
9	Approval of EIA of Tianjin TEDA Sewage Methane Recovery Project, issued by Ninghe County EPB, dated January29th, 2008.
10	Permission of Construction Start, Tianjin TEDA Alcohol Co., Ltd, dated January 29th, 2008
11	Purchase Contract of main power unit, signed with Shandong Shendong Power Machine Co., Ltd, dated August 28th, 2007.
12	Schedule of the implementation of the project, provided by Tianjin TEDA Alcohol Co., Ltd
13	Electricity Purchase Invoice showing the purchasing electricity price is 500RMB/MWh with VAT, issued by Tianjin Ninghe Power Supply Co., Ltd, dated April 17th, 2008
14	Benchmark evidence: Economic evaluation measurements and parameters of constructive projects(version 3), issued by NDRC & Ministry of Construction of China, dated 2006
15	Water Monitoring Report, issued by Tianjin Ninghe Environmental Protection Station, dated November 27th, 2007
16	Daily Wastewater Treatment Records of 2007
17	Operation Records of Wastewater Treatment of Tianjin TEDA Alcohol Co., Ltd
18	Wastewater Monitoring Records of Tianjin TEDA Alcohol Co., Ltd
19	IRR and EF calculation excel sheet
20	China Electricity Yearbooks 2003-2006 and China Energy Statistics Yearbooks 2003-2006
21	CDM Consulting Service Contract, signed with Beijing Lianheyoufa Energy Technology Co., Ltd, dated May 10th, 2007
22	Questionnaire sample of the stakeholder consultation
23	Training Plan of Tianjin TEDA Alcohol Co., Ltd, dated June 8th, 2008, submitted on June 18th, 2008
24	Grid Connection Agreement, signed with Tianjin Ninghe Power Supply Co., Ltd, dated June, 13th, 2008
25	MoC dated March 17th, 2009
26	NDRC LoA dated August 22nd, 2008
27	UK LoA dated April 7th, 2009
28	Baseline Emission Factors for Regional Power Grids in China" issued by NDRC, dated August 9th, 2007

Reference No.	Document or Type of Information
29	General Layout of the alcoholic plant
30	Construction Agreement signed by Ninghe County No.3 Construction Co., Ltd. and Tianjin TEDA Alcohol Co., Ltd. dated January 3rd, 2008.
31	Provisional Regulations of the People’s Republic of China on Enterprise Income Tax issued by State Council dated
32	Explanation of Stakeholder Consulting Process, issued by Tianjin TEDA Alcohol Co., Ltd, dated March 19th, 2009, the media to invite the stakeholders’ comments is the notice board.
33	ERPA signed with EcoSecurities International Limited dated October 21st, 2007
34	Interim Regulations of the People's Republic of China on Value-added Taxes issued by State Council of People’s Republic of China, implemented from January 1st, 2004, updated on November 10th, 2008
35	Provisional Regulations of the People's Republic of China on Enterprises’ Income Tax issued by State Council of People’ s Republic of China, issued on December 13th, 1993
36	Methane Chamber Construction Agreement signed with Tianjin Jinjianda Construction Engineering Co., Ltd, dated October 23th, 2007
37	Board Meeting Minute, theme: CDM application of the methane recovery project, Tianjin TEDA Alcohol Co., Ltd, dated August 20th, 2007
38	Agreement signed between the Tianjin TEDA Alcohol Co., Ltd and the nearby farmer regarding the sludge usage, dated June 5th, 2008.
39	Sludge Treatment Equipments Purchase Contract, signed with Jiangsu Wulong Machinery Co., Ltd, dated June 1st, 2006.
40	Technics of Organic Chemistry. published by Chemical Industry Press(CIP). 2005
41	Clarification on the benchmark for the alcohol production industry issued by China Association of Alcohol Industry, dated October 26th, 2009
42	Confirmation email from Professor Xinxiang Niu, dated October 27th, 2009
43	Notelet from Ninghe Development and Reform Committee, dated October 22th, 2009
44	Statement from Tianjin TEDA Alcohol Co., Ltd, dated October 22th, 2009
45	FSR of alcohol production expansion project, dated 2001

Reference No.	Document or Type of Information
46	http://chinaneast.xinhuanet.com/2005-04/19/content_4091817.htm http://bs.jl.gov.cn/BsWebCms/site/bscms/touzibaishan/news/n2820451087.html http://www.guosen.com.cn/webd/public/infoDetail.jsp?infoid=2735700 http://www.cyzsj.com/NewsShow.asp?id=515 http://www.sc.xinhuanet.com/content/2004-05/18/content_2838276.htm
47	Introduction of Alcohol methane recovery Project issued by Yuanxing County Liyuan Protein Processing Company, dated October 20th, 2009
48	Introduction of Zhangjiakou Changcheng Alcohol Production Co., Ltd Methane Recovery Project by Zhangjiakou Changcheng Alcohol Production Co., Ltd, dated October 20th, 2009
49	Project Design Document for CDM project “Tianjin TEDA Sewage Methane Recovery Project”, version 4.0, dated December 9th, 2009.