TÜVRheinland®

SUSTAINABILITY VALIDATION REPORT

for the GS - CDM Project Activity

Biogas Utilization Project in Zhejiang Jingxing Paper Joint Stock Co. Ltd.

in

P. R. China

Report No. 01 997 9105061560

Version No. 03, 2011-12-29

TÜV Rheinland (China) Ltd.

I. Project description:

Project title:	Biogas Utilization Project in Zhejiang Jingxing Paper Joint Stock Co. Ltd.
Host Country:	P.R.China
Methodology:	AMS-III.H Version 15 and AMS-I.F Version 01 ☐ Large Scale ☒ Small Scale
Annual average emission reductions (estimate):	60.577 tCO_2e/yr

GHG reducing measure/technology: Methane avoidance and displacing fossil-uel based electricity supply through biogas recovery

Party	Project Participants	Party considered a project participant
P.R.China	Zhejiang Jingxing Paper Joint Stock Co. Ltd.	No
Switzerland	Swiss Carbon Assets Ltd.	No

II. Validation:

Contract party: Swiss Carbon Assets Ltd.

Validation Team:

Role	Full name	Appointed for Sectoral Scopes	Affiliation
Team Leader	Mr. MA Libo	1.1,1.2,4.5	TÜV Rheinland (China) Ltd.
Team Member	Mr. ZHU Jiang	1.1,1.2,4.5	TÜV Rheinland (China) Ltd.
Team Member	Ms. SUN Na	1.2,13.1	TÜV Rheinland (China) Ltd.
Technical Reviewer	Mr. Walter TANG	1,2,3	TÜV Rheinland (China) Ltd.

Validation Phases:
- ☒ Desk Review
- ☒ Follow up interviews
- ☒ Resolution of outstanding issues

Validation Status:
- ☐ Corrective Actions / Clarifications Requested
- ☒ Full Approval and Submission for Registration
- ☐ Rejected

III. Validation Report:

Report No.:	Current revision No.:	Date of current revision:	Date of first issue:
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Final approval:	Released on:	Designated Operational Entity (DOE):
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Abbreviations

Explain any abbreviations that have been used in the report here.

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
ECPG	East China Power Grid
EIA	Environmental Impact Assessment
ER	Emission Reduction
GHG	Greenhouse Gas(es)
GS	Gold Standard
GWP	Global Warming Potential
I	Interview
IETA	International Emission Trade Association
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
kW	Kilo Watt
kWh	Kilo Watt Hours
LoA	Letter of Approval
LoI	Letter of Intent
MP	Monitoring Plan
NCV	Net Calorific Value
NDRC	National Development and Reform Commission of P. R. China
NGO	Non-governmental Organization
ODA	Official Development Assistance
OM	Operating Margin
PDD	Project Design Document
t	Tonne
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-added Tax
WWT	Wastewater Treatment

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1 REVIEWED DOCUMENTATION

The following table outlines the documentation reviewed during the validation:

/1/ Swiss Carbon Assets Ltd., Gold Standard (GS) Passport, 15 July 2010 (initial version), 5 December 2011 and 23 December 2011 (final version).

/2/ Swiss Carbon Assets Ltd., Local Stakeholder Consultation Report, 3 September 2010 (initial version), 27 September 2011 and 26 December 2011(final version).

/3/ Gold Standard Requirements and Toolkit (with its Annexes), Version 2.1, 1 July 2009.

/4/ National Development and Reform Commission of the People's Republic of China, Letter of Approval original English version (Ref no.:2737), November 2010.

/5/ Swiss DNA, Letter of Approval (Ref. no.: G514-3487), 23 December 2010.

/6/ Swiss Carbon Assets Ltd., Memorandum of Understanding (MoU) between The Gold Standard Foundation & Swiss Carbon Assets Ltd., 2 August 2010.

/7/ Swiss Carbon Assets Ltd., Project Design Document of Biogas Utilization Project in Zhejiang Jingxing Paper Joint Stock Co. Ltd. , Version 02.2 of 13 July 2011.

/8/ Swiss Carbon Assets Ltd., IRR and Emission reduction calculation spreadsheets, 15 July 2011.

/9/ Swiss Carbon Assets Ltd. and Zhejiang Jingxing Paper Joint Stock Co. Ltd. , Modalities of Communication Form (MoC), 28 March 2011.

/10/ CDM Executive Board, Simplified modalities and procedures for small-scale clean development mechanism project activities

/11/ CDM Executive Board, Simplified baseline and monitoring methodology AMS-III.H, Version 15, *Methane Recovery in Wastewater Treatment*, EB 55 Annex 34, 30th July 2010.

/12/ CDM Executive Board, Simplified baseline and monitoring methodology AMS-I.F, Version 01, *Renewable electricity generation for captive use and mini-grid*, EB 54 Annex 5, 28th May 2010.

/13/ CDM Executive Board, Clean Development Mechanism Validation and Verification Manual, Version 1.2.

/14/ CDM Executive Board, Guidelines on assessment of debundling for SSC project activities, Version 03.

/15/ CDM Executive Board: Tool to calculate the emission factor for an electricity system, version 02.

/16/ CDM Executive Board, Tool to determine project emissions from flaring gases containing methane version 1, EB28 annex 13, 15th December 2006.

/17/ CDM Executive Board, Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site (version 05), EB55 annex 18, 30 July 2010.

/18/ CDM Executive Board, Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion (version 02), EB 41 annex 11, 2nd August 2008.

/19/ CDM Executive Board, Guidelines for Objective Demonstration and Assessment of Barriers, Version 01.

/20/ CDM Executive Board, Guidelines on the demonstration and assessment of prior consideration of the CDM, Version 04, EB 62 annex 13.

/21/ CDM Executive Board, Guidelines on the Assessment of Investment Analysis (Version 05), EB 62 annex 5.

/22/ CDM Executive Board, Previous Ruling Related to the Appropriateness of Benchmark For Project Activities Utilizing Waste Heat/Waste Gas for Power Generation (Version 01), EB 51 Annex 59, 4 December 2009.

/23/ CDM Executive Board, Guideline for The Reporting and Validation of Plant Load Factors, Version 01 (EB 48/Annex 11), 17th July 2009.

/24/ CDM Executive Board, Glossary of CDM Terms, Version 05.

/25/ CDM Executive Board, Non binding best practice examples to demonstrate additionality for SSC project activities, Version 01, EB 55, Annex 34

Project information,

/26/ China CEC Engineering Co., Ltd, Feasibility Study Report of the Project, August 2008.

/27/ Pinghu City Economic and Business Trade Bureau, Project Approval Notification, 26th August 2008.

/28/ Jiaxing City Qiushi Environmental Engineering Consulting Co., Ltd., Environmental Impact Assessment (EIA) Report Table, November 2008.

/29/ Pinghu City Environmental Protection Bureau, EIA Approval, 21st November 2008.

/30/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Business Licence.

/31/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Organization structure.

/32/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Plant layout.

/33/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Board Resolution, 10th September 2008.

/34/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Emission Reduction Purchase Agreement, 11th May 2009.

/35/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., CDM Notification Form to China DNA, 9th June 2009.

/36/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Plant Operation Manual.

/37/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Local Stakeholder Survey Records, May 2010.

/38/ Pinghu Xincheng Certified Public Accountants Co., Ltd., Audit Report for the Project (Ref. no. PingXinZhuanShen[2010]No.152), 8 November 2010.

/39/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Purchase Contract of Biogas Pocket, 23 July 2009.

/40/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Purchase Contract of Biogas Generators (Model No. 500GFW) and Cooling System, 22 August 2009.

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/42/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Contract for Key Equipment, Process Design and Technical Service of 20,000 Nm^3/d Biogas Sulphur Removal System, 13 December 2008.

/43/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Construction Contract, 6 January 2009.

/44/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Measurement Campaign of November 2008.

/45/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Statistics Operational Records of the Wastewater Treatment Plant in Year 2010.

/46/ Zhejiang Province Price Bureau, Tariff Notification within Zhejiang Provincial Grid (Ref. ZheJiaDian[2008]24), 30 June 2008.

/47/ Zhejiang Province Price Bureau, Tariff Notification within Zhejiang Provincial Grid (Ref. ZheJiaShang[2009]285), 19 November 2009.

/48/ Financial Department of Zhejiang Jingxing Paper Joint Stock Co. Ltd., Statistics O&M Cost for Biogas Generation Project in Year 2010, 30 May 2011.

/49/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Statistics of Electricity Generation of Biogas Engines in 2010.

/50/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Invoice for sulphur sale, 17 October 2010.

/51/ Shengli Power Machinery Co. Ltd. and Zibo Diesel Engine New Energy Co. Ltd. Clarification for the technical lifetime of the biogas engines, 23 May 2011.

/52/ Paques Environmental Technology (Shanghai) Co., Ltd., Clarification for the technical lifetime of the desulfurization system and anaerobic reactors, 23 May 2011 and 11 October 2010.

/53/ State Environmental Protection Bureau, Integrated wastewater discharge standard (GB8978-1996), implemented since 1 January 1998.

/54/ Zhejiang Jingxing Paper Joint Stock Co. Ltd., Sludge disposal agreement, 17 June 2007.

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/55/ National Development and Reform Commission (NDRC) of China and the Ministry of Construction, Economic Assessment Method and Parameters for Construction Project version 03, 2006.

/56/ State Council of the People's Republic of China, Provisional VAT Regulations, 10th November 2008.

/57/ Chinese Government, Enterprise Income Tax Law, 16th March 2007.

/58/ State Tax Administration, Deduction Guidance on Revenue Tax, 16th May 2000.

/59/ State Council, Implementation Rules for Law of the People's Republic of China on Enterprise Income Tax, Promulgated by Decree No. 512 of the State Council of the People's Republic of China, 6 December 2007. (http://www.gov.cn/zwgk/2007-12/11/content_830645.htm)

/60/ Chinese DNA, Notice on Publishing 2009 Baseline Emission Factors for Regional Power Grids in China, 2 July 2009. （http://qhs.ndrc.gov.cn/qjfzjz/t20090703_289357.htm）

/61/ Chinese DNA, Notice on Publishing 2010 Baseline Emission Factors for Regional Power Grids in China, 20 December 2010. (http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2552.pdf)

/62/ National Development and Reform Commission (NDRC) of China and the Ministry of Construction, Economic Assessment Method and Parameters for Construction Project version 03.

/63/ UNEP Risø Centre, CDM Project Pipeline, 1 June 2011.

From 13 October 2010 to 15 October 2010, the Validation Team of TÜV Rheinland has performed personal interviews with representatives of the project owner and local authorities at Pinghu City, Zhejiang Province. The main topics of the interviews were:

- permits and approvals
- status of project implementation
- project training plan
- project site conditions and
- local stakeholder consultation process, and
- IRR and baseline emission calculation.

	Date	Name/Title	Organization	Topic
/i/	2010-10-14	- Mr. GE Haihua / General Manager - Mr. SHEN Shouxian / Assistant General Manager - Mr. ZHANG Aiqi / Deputy Manger of Administration Department	Zhejiang Jingxing Paper Joint Stock Co. Ltd.	- Project management structure - CDM consideration - Applied technology - Approval status by the host country - Sustainable development issues - Baseline identification - Project financing - Monitoring plan - Training plan - Environmental impacts - Stakeholder consultation process
/ii/	2010-10-14	- Ms. HUANG Dafei / Head of Implementation - Mr. SUN Mingming / Project Manager	Swiss Carbon Assets Ltd.	- Baseline identification - Investment analysis - CDM consideration - Monitoring issue
/iii/	2010-10-14	- Mr. Wu Huibin	Environment Protection Bureau of Pinghu City	- Environmental impact - Wastewater treatment status - Stakeholder consultation
/iv/	2010-10-14	- Mr. LU Jinsong	Economic and Business Trade Bureau of Pinghu City	- Project approval - Sustainable development issue
/v/	2010-10-14	- Mr. CHEN Xiangdong	Local resident	- Job opportunities - Environmental impact

2 PROJECT ELIGIBILITY

The proposed project involves installation of a biogas-capturing device and a biogas-based electricity generation system in the existing wastewater treatment systems at the paper mill of Zhejiang Jingxing Paper Joint Stock Co. Ltd., which has two production lines with total paper production capacity of 600,000 tons per year. The Zhejiang Jingxing Paper Joint Stock Co. Ltd. has two wastewater treatment plants (i.e. Plant 1 and Plant 2) with annual capacity of 5,100,000 tonnes, in which the anaerobic digesters integrated generate 13,000~15,000m^3 of biogas everyday. The biogas collected from the anaerobic digesters will be combusted for

electricity generation through four units of 500kW biogas engine according to the Feasibility Study Report (FSR)/26/ and registered PDD/7/. The amount of biogas captured but not used in the biogas-fired generators will be open flaring. The Project consists of biogas recovery system, biogas purification device, and power generation system. The project activity is expected to supply 10,914MWh of electricity per year, displacing fossil fuel based electricity from the grid.

The project has been registered as a CDM project by the Executive Board (EB) of the UNFCCC on 28 July 2011 with the registration reference number of 5042.

The project applies the "*AMS-III.H. Methane Recovery in Wastewater Treatment*" (Version 15)/11/ and "*AMS-I.F Renewable electricity generation for captive use and mini-grid"* (Version 01)/12/. The methodology applicability identified in PDD Section B.2 has been validated to be in accordance with the AMS-III.H. Version 15 paragraph 1~13 and AMS-I.F. Version 01 paragraph 1~11.

The host country is P.R. China, which ratified the Kyoto Protocol on 30 August 2002 and meets all relevant participation requirements in CDM. The Project will achieve greenhouse gas (GHG) emission reductions by the destruction of methane through biogas collection and combustion/flare, as well as displacing fossil-fuel based electricity from the Eastern China Power Grid (ECPG). The estimated GHG emission reduction of the Project is calculated to be average 60,577 tCO_2e per year over the fixed 10-year crediting period.

As per Toolkit 1.2c/3/, the Project is a 'methane recovery and utilization for electricity generation' project and the electricity is for on-site consumption only displacing the same amount electricity from the grid. Therefore, the project activity will reduce emission of CH_4 by biogas capture and utilization and CO_2 by replacing equivalent electricity from the fossil based grid.

As per the FSR, the project activity is designed to fully utilize the biogas captured for electricity generation at 100%, which is greater than 65% as specificed for biogas project in Toolkit Annex C/3/ . Furthermore, as stated in GS passport Section G, the utilization ratios of biogas captured will be monitored over the monitoring period.

According to the PDD/7/, the project does not receive any public funding. An ODA declaration is presented in the Annex 1 of the Gold Standard (GS) Passport/1/ based on the ODA Declaration Template in the Annex D of Toolkit version 2.1, in which the project developer has declared the project's non-use of ODA.

The project applies for Gold Standard under the retroactive project cycle since the construction of the project has been finished and the project has also been registered as a CDM project by the Executive Board of the UNFCCC.

3 DEVIATIONS IN GHG EMISSION REDUCTION ESTIMATION

According to the validated PDD/7/, the project applies the approved baseline and monitoring methodology for small-scale CDM project activities AMS-III.H, Version 15-*Methane Recovery*

in Wastewater Treatment and AMS-I.F, Version 01- *Renewable electricity generation for captive use and mini-grid/11//12/*, which are the most recent version of the methodology available at the time of first submission of the project activity for Gold Standard (i.e. 30 July 2010) in line with the GS Requirement III.f.1/3/.

- Baseline emissions

As per paragraph 18 of AMS.III.H version 15/11/, in determining baseline emissions, historical records of at least one year or a measurement campaign in the baseline wastewater systems for at least 10 days prior to the project implementation shall be used. As reflected in the emission reduction calculation spreadsheets/8/, data records of a measurement campaign of 30 days (i.e. from 1 November to 30 November 2008) have been provided and the average value has been applied in the calculations, and the result has been multiplied by 0.89 to account for the uncertainty range (30% to 50%) in line with paragraph 19 (a) of AMS.III.H Version 15.

As per Paragraph 17 of AMS III.H Version 15, baseline emissions are calculated as follows:

$$BE_{methane,y} = \{BE_{power,y} + BE_{ww,treatment,y} + BE_{s,treatment,y} + BE_{ww,discharge,y} + BE_{s,final,y}\}$$

$BE_{methane,y}$ Baseline emissions due to methane avoidance in year y (tCO_2e)
$BE_{power,y}$ Baseline emissions from electricity or fuel consumption in year y (tCO_2e)
$BE_{ww,treatment,y}$ Baseline emissions of the wastewater treatment systems affected by the project activity in year y (tCO_2e)
$BE_{s,treatment,y}$ Baseline emissions of the sludge treatment systems affected by the project activity in year y (tCO_2e)
$BE_{ww,discharge,y}$ Baseline methane emissions from degradable organic carbon in treated wastewater discharged into sea/river/lake in year y (tCO_2e)
$BE_{s,final,y}$ Baseline methane emissions from anaerobic decay of the final sludge produced in year y (tCO_2e)

The project activity is only involving a biogas capture and utilization system without doing any changes to the existing wastewater treatment and sludge treatment system. Therefore, only $BE_{ww,treatment,y}$ needs to be considered as baseline emissions for the project activity, which should be calculated as follows

$$BE_{ww,treatment,y} = \sum_i Q_{ww,i,y} * COD_{removed,i,y} * MCF_{ww,treatment,BL,i} * B_{o,ww} * UF_{BL} * GWP_{CH4}$$

$Q_{ww,i,y}$ Volume of wastewater treated in baseline wastewater treatment system i in year y (m^3)
$COD_{removed,i,y}$ Chemical oxygen demand removed by baseline treatment system i in year y (tonnes/m_3), measured as the difference between inflow COD and the outflow COD in system i
$MCF_{ww,treatment,BL,i}$ Methane correction factor for baseline wastewater treatment systems i (MCF value for Anaerobic reactor without methane recovery is 0.8 as per table III.H.1)
$B_{o,ww}$ Methane producing capacity of the wastewater (IPCC value of 0.25 kg CH_4/kg COD)
UF_{BL} Model correction factor to account for model uncertainties (0.89)
GWP_{CH4} Global Warming Potential for methane (value of 21)

As per paragraph 14 of AMS-I.F. Version 01/12/, baseline emissions for Type I component are the product of the amount of electricity displaced by the renewable generating unit and an emission factor. For the project activity, the electricity generated from biogas recovery displaces the equivalent electricity supply from the ECPG. Therefore, the emission factor of ECPG will be calculated as per the procedures provided in AMS-I.D. in line with pargraph 14 of of AMS-I.F. Version 01.

As per AMS I.F version 01 paragraph 14: Baseline emissions for other systems are the product of amount electricity displaced with the electricity produced by the renewable generating unit and an emission factor:

$$BE_y = ER_y = EG_{BL,y} * EF_{CO2,y}$$

$EG_{BL,y}$ Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year *y* (MWh)
$EF_{CO2,y}$ Emission factor (tCO_2/MWh)

As per the FSR, $EG_{BL,y}$ has been appropirately estimated with the methane generation, gas engines's efficiency and the NCV of the methane, which is assessed to be appropriate in Table 1. The emission factor of ECPG has been calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the *Tool to calculate the emission factor for an electricity system version 02/15/*. The OM and BM data is calculated in line with China DNA's guidelines dated on 20/12/2010/61/. Considering the CM emission factor of ECPG is 0.7690 tCO_2/MWh and total annual on-grid output is 10,914 MWh, the emission reductions, which equals to the baseline emissions, are thus ex-ante estimated as 8,392 tCO_2 annually.

According to the GS Toolkit Sections 2.1 and 3.5.1/3/, the validation team confirms that the most conservative baseline scenario is selected, and the methodology that results in lowest baseline emissions is used.

- Project emissions

As per Paragraph 27 of ASM III.H Version 15, the project activity emissions due to methane avoidance are calculated as follows :

$$PE_{methane,y} = \langle PE_{power,y} + PE_{ww,treatment,y} + PE_{s,treatment,y} + PE_{ww,discharge,y} + PE_{s,final,y} + PE_{fugitive,y} + PE_{biomass,y} + PE_{flaring,y} \rangle$$

$PE_{methane,y}$ Project activity emissions due to methane avoidance in the year "*y*" (tCO_2e)
$PE_{power,y}$ Emissions from electricity or fuel consumption in the year *y* (tCO_2e).
$PE_{ww,treatment,y}$ Methane emissions from wastewater treatment systems affected by the project activity, and not equipped with biogas recovery, in year *y* (tCO_2e).
$MCF_{ww,treatment,PJ,k}$ Methane correction factor for project wastewater treatment system *k*
$COD_{removed,P,J,k,y}$ Chemical oxygen demand removed by project wastewater treatment system *k* in year *y* (t/ m_3) measured as the difference between inflow COD and the outflow COD in system *k*

$PE_{s,treatment,y}$ Methane emissions from sludge treatment systems affected by the project activity, and not equipped with biogas recovery, in year *y* (tCO_2e).

$PE_{ww,discharge,y}$ Methane emissions from degradable organic carbon in treated wastewater in year *y* (tCO_2e).

$PE_{s.final,y}$ Methane emissions from anaerobic decay of the final sludge produced in year *y* (tCO_2e).

$PE_{fugitivie,y}$ Methane emissions from biogas release in capture systems in year *y*, calculated as per paragraph 28 (tCO_2e)

$PE_{biomass,y}$ Methane emissions from biomass stored under anaerobic conditions

$PE_{flaring,y}$ Methane emissions due to incomplete flaring in year *y* as per the "Tool to determine project emissions from flaring gases containing methane"(tCOe)

As described in the validation report, wastewater treatment plant remains unchanged regardless of the construction and implementation of the project activity. Therefore, *emissions from fossil-fuel consumptions of existing wastewater treatment system,* $PE_{ww,treatment,y}$ and $PE_{ww,discharge,y}$ should not be taken into account.

Only electricity consumption from the newly intalled facilities (i.e. biogas recovery system, sulphur removal system and power generation system) should be taken into account for calculation of $PE_{power,y}$.

$PE_{s,treatment,y}$ and $PE_{s.final,y}$ should not be considered since the sluge treatment is unaffected by the project activity as sludge is disposed in a controlled landfill, which is the same as in the baseline scenario.

$PE_{biomass,y}$ are all not applicable for the project activity as no biomass has been stored under anaerobic conditions .

The methane emissions from biogas release in capture systems (i.e. $PE_{fugitivie,y}$) is calculated as per paragraph 28 of AMS-III.H version 15. $PE_{fugitive,s,y}$ should not be considered as the sluge treatment is not affected by the project activity. $PE_{fugitive,ww,y}$ is calculated as follows:

$$PE_{fugitive,ww,y} = (1 - CFE_{ww}) \cdot MEP_{ww,treatment,y} \cdot GWP_{CH4}$$

CFE_{ww} Capture efficiency of the biogas recovery equipment in the wastewater treatment systems (a default value of 0.9 shall be used)

GWP_{CH4} Global Warming Potential for methane (value of 21 is used)

$MEP_{ww,treatment,y}$ Methane emission potential of wastewater treatment systems equipped with biogas recovery system in year *y* (tonnes) which is calculated according to the equation below:

$$MEP_{ww,treatment,y} = Q_{ww,y} * B_{o,ww} * UF_{PJ} * \sum_{k} COD_{removed,PJ,k,y} \cdot MCF_{ww,treatment,PJ,k}$$

$Q_{ww,y}$ Volume of wastewater treated in the year y (m)

$B_{o,ww}$ Methane producing capacity of the wastewater (IPCC default value for domestic wastewater of 0.25kg CH4/kg COD)

$COD_{removed,PJ,k,y}$ The chemical oxygen demand removed by the treatment system *k* of the project activity equipped with biogas recovery in the year *y* (tonnes/m_3)

$MCF_{ww,treatment,PJ,k,y}$ Methane correction factor for the project wastewater treatment system *k* equipped with biogas recovery equipment

UF_{PJ} Model correction factor to account for model uncertainties (1.12)

The methane emissions due to incomplete flaring (i.e. $PE_{flaring,y}$) are calculated as per the "*Tool to determine project emissions from flaring gases containing methane*"/16/ :

$$PE_{flare,y} = \sum_{i-l}^{8760} TM_{RG,h} * (1 - \eta_{flare,h}) * \frac{GWP_{CH_4}}{1000}$$

$PE_{flare,y}$: Project emissions from flaring of the residual gas stream in a year *y*; tCO_2e

$TM_{RG,h}$ Mass flow rate of methane in the residual gas in the hour *h*; kg/h

$\eta_{flare,}$ Flare efficiency in hour *h;* h

$$TM_{RG,h} = FV_{RG,h} * fv_{CH_4,RG,h} * p_{CH_4,n}$$

$TM_{RG,h}$ Mass flow rate of methane in the residual gas in the hour *h*; kg/h

$FV_{RG,h}$ Volumetric flow rate of the residual gas in dry basis at normal conditions in hour *h;* Nm^3/h

$fv_{CH4,RG,h}$ Volumetric fraction of methane in the residual gas on dry basis in hour *h*;

$\rho_{CH4,n}$ Density of methane at normal conditions (0.7168 Kg/Nm^3)

- Project leakage

As per methodology AMS-III.H, the leakage effect is not relevant to the proposed project activity as no transfer of used technology occurs due to the project activity.

As per methodologies AMS-I.F and AMS-I.D, the leakage effects are not relevant to the proposed project as no transfer of the used energy generating equipments occurs due to the project activity.

According to the GS Toolkit Sections 2.1 and 3.5.1/3/, the validation team checked also the assumption statements, calculation procedures and parameters applied from the reference documents in the estimation of baseline emissions. It is considered that there is no material uncertainty over the numerical data. The information is verifiably presented in the validated PDD/7/ with a sufficient degree of detail and transparency, so that the estimation of baseline emissions can be reproduced. The validation team checked that full transparency is applied with regard to the selected data based on the prerogative of conservativeness.

4 GOLD STANDARD CRITERIA ON ADDITIONALITY

According to Gold Standard, the project proponent is required to use one of the UNFCCC or Gold Standard approved additionality tools. As per the registered PDD, the evaluation of the project additionality is based on the *Attachment A to the Appendix B of the Simplified Modalities and Procedures for Small-scale CDM Project Activities/25/*, which is considered up-to-date and reliable at the time of registration as a CDM project (i.e. 28 July 2011).

As noted in the PDD/7/, the investment barrier was selected, and the application of benchmark analysis is carried out. The proposed project shall only generate revenue from the electricity saving. If the project is carried out without CDM support, the project IRR is 6.0% before tax, which is lower than the benchmark IRR of 13%, as stipulated in the benchmark reference *Economic Assessment Method and Parameters for Construction*

Project version 03/55/, and makes the proposed project financially unattractive. If with CERs revenue, the project IRR is improved to 20.38%.

In summary, the validation team confirms that the guidelines and tools applied for the demonstration of additionality are correct, reliable and also updated at the time of registration as a CDM project. The calculation of the project IRR is confirmed to be conservative. The project activity can be considered as "not the most financially attractive" option. According to the clause 111 of the CDM VVM/13/, the project activity without any CDM revenue is proven as additional and the project activity would not have occurred anyway due to the investment barrier.

5 SUSTAINABILITY ASSESSMENT

'Do no harm" assessment

As indicated in the GS Passport, the 'Do no harm" assessment was carried out by the project proponent. According to the GS Toolkit Section 2.4.1/3/, the "Do no harm" assessment is based on the safeguarding principles of the UNDP in four aspects: Human Rights, Labor Standards, Environmental Protection and Anti-Corruption.

The potential risks alongside the safeguarding principles and the special guidance for proposed biogas recovery projects are listed in the Section F.1 of the GS Passport/1/. The "Do no harm" assessment is carried out according FSR/26/, EIA/28/ and relevant national laws.

The project activity was implemented inside the wastewater treatment plant which was owned by the same project owner. No resettlement is required for local residents and this is confirmed by onsite inspection. No significant impacts have been identified in the EIA report table/28/. The noise emerging from the biogas engines will be mitigated by installing silencer. Further, it was verified durign onsite assessment the control room and workshops on the project site were isolated from noise. According to the EIA, the level of noise is compliance with environmental regulations, which was confirmed by the local environmental official/iii/.

Therefore, the validation team considers that the "Do no harm" assessment has been based on accurate information, with all the reference sources indicated in the revised GS Passport.

Sustainable Development matrix

Detailed assessment has been applied to establish the sustainable development matrix in Section F.2 of the GS Passport/1/. Reference sources have been provided for the descriptions of all the indicators. According to GS Toolkit Section 2.4 and Annex I/3/, the validation of sustainable development (SD) matrix is tabulated below:

Indicator	Score in GS Passport	Validation Team's Opinion
Air quality	0	The validation team has reviewed the Page 19 of the EIA report table/28/, the emissions are compliance with local

		environment regulations and does not result in negative impact to the local air quality.
Water quality and quantity	0	As per Page 15 of the EIA report table/28/, no wastewater will be generated by the project except sewage water from employees. The sewage producing amount is about 272 m^3 per year and will be treated by sewage water treatment plant. The disposed swege will meet the GB8978-1996 and will not impact the local water quality. The proposed project utilized the biogas to generate electricity. Only small quantity of water is used for normal operation of the biogas engines. As demonstrated in the EIA report table, the project will not impact the local water environment, including the water quantity.
Soil condition	0	As per the Page 16 of the EIA report table, the implementations of the project activity will produce small amount of sulphur. However, all the sulphur will be recycled according to the onsite interview with the project owner. Therefore, it does not involve any final discharge of the solid waste.
Other pollutants	0	As per the EIA report table, the silencers have been installed to mitigation the noise impacts and the noise level will be in compliance with local regulations.
Biodiversity	0	The project will not impact the local biodiversity because the project site is located in an existing paper plant.
Quality of employment	0	As confirmed by onsite assessment, the biogas recovery plant was operated under centralized control system which was located at seperate office from the power planthouse. Although the quality of employment was improved, a neutral score was scored and deemed conservatvie.
Livelihood of the poor	0	The project will supply additional job opportunites to local people. As the job opportunity is limited, no significant change compared to the baseline is caused by the project in this category in accordance with the requirements stipulated in the GS Toolkits/3/. Thus the score for “Livelihood of the poor” is confirmed to be “0”.
Access to affordable and clean energy services	0	The project activity uses clean energy source (i.e. biogas recovery) to generate electricity and would increase the share of clean energy in the local power supply, the electricity is delivered to the grid and would not directly increase its access by the local people. Therefore, the “Access to affordable and

		clean energy services" is scored zero and deemed appropriate.
Human and institutional capacity	+	According to FSR Page 27/26/, 10 employees will be employed. Further, the project owner has employed female and special training has been provided. Therefore, the "Human and institutional capacity" is scored positive and deemed appropriate.
Quantitative employment and income generation	+	According to the project owner, both temporary and permanent employments are created during the construction and operation periods of the proposed project. In total 10 people are employed permanently by this project. The proposed project would bring positive impact on the local residents especially those employed ones working at the plant. Therefore, the score for "Quantitative employment and income generation" is confirmed to be "+".
Balance of payments and investment	0	It was confirmed that the project was 100% finaced by self-owned equity and all the main generating equipment are domestically produced. The project will not impact the paper plant's producing capacity or import equipment from abroad, therefore these issues will not impact the balance of payments. Therefore, the score is "0".
Technology transfer and technological self-reliance	+	According to the interview with the local official, the proposed project is the only one paper plant installed with biogas recovery facilities[1]. Further, regular trainings and workshops are provided to the employees to improve the application of the biogas power plant. Therefore, the project activity brings positive impacts to the indicator of "Technology Transfer and Technological Self-reliance".

The project has used the sustainable development assessment matrix as required by the Gold Standard. The total score obtained is "+3", based on the above validation of sustainable development indicators. The scoring in each section is summarized below:

- **Environment** indicators all score neutral;
- **Social development** scores a subtotal of +1 (from positive impact of "Human and institutional capacity"), while other indicators all score neutral;
- **Economic and technological development** scores a subtotal of +2 (from positive impacts of "Quantitative employment and income generation", and "Technology transfer and technological self-reliance"), while other indicators all score neutral.

[1] http://www.hengdazhipin.com/shyz/post/101.html

6 ENVIRONMENTAL IMPACT ASSESSMENT

The environmental impact of the Project has been reported in Section D of the PDD. The environmental impacts of the project were sufficiently assessed by means of an Environmental Impact Assessment Form. The environmental impact assessment (EIA) for the Project was carried out by Zhejiang City Qiushi Environmental Engineering Consulting Co., Ltd. and was approved by the Environment Protection Bureau of Pinghu City on 21 November 2008/29/.

The project site is located within the existing wastewater treatment plant and no land expropriation is needed. The conclusion of the EIA of the Project has been described in the PDD. According to the environmental impact assessment required by the host country, China, it can be verified that the impacts are not considered significant.

In addition, the project operation has improved the local air quality by avoiding direct emissions of the biogas according to local resident/v/ through onsite interview. No environmental complaint was received since the project commences its construction according to onsite interview.

7 GOLD STANDARD CRITERIA FOR STAKEHOLDER CONSULTATION

As per the PDD/7/ and GS Passport/1/, a physical consultation meeting was carried out near the project site during at June 15th, 2010, in which opinions from local stakeholders were collected and possible risks incurred by the Project activity were mitigated. In total, there are 24 participants attend the meeting, and 24 questionnaires were filled-in and collected. There were no single negative comments received and all positive impact of the implementations of the project activity was specified.

Stakeholder feedback round was performed based on the interviews to the stakeholders listed on the participants list in Stakeholder Consultation Report/2/ in August 2011. 24 interviews were processed by the project participants, and there was no negative comment received from that. The project participants explained to the stakeholders that the project activity will be implemented according to the EIA report and continuously contribute to the local sustainable development.

No question/comment was raised during the stakeholder consultation meeting. After the meeting, the participants filled out questionnaires. Relevant records of both two stakeholder consultations, including the meeting agenda, photos, signed attendance list and completed questionnaires, have been confirmed valid. A summary of the second round of stakeholder consultation has been described in Section E.2 of the GS Passport.

8 PRE-FEASIBILITY ASSESSMENT

The project proponent has applied fast-track options as confirmed in the Memorandum of Understanding (MoU)/4/ signed between The Gold Standard Foundation & Swiss Carbon Assets Ltd. on 2 August 2010. As demonstrated above, the project is a small-scale biogas

project under CDM rules. Based on the validation results in Section 2 of this report, the validation team confirms the relevant GS eligibility criterions of the proposed project have been fulfilled.

9 SUSTAINABILITY MONITORING PLAN

The monitoring of the project activity consists of the monitoring of the emission reductions and the monitoring of the contribution to sustainable development. The monitoring of emission reductions is described in the PDD according to the AMS-III.H, Version 15 and AMS-I.F, Version 01/11//12/. The sustainability monitoring plan is included in the GS Passport as per the requirements in the GS Toolkit Annex I. According to GS Toolkit 2.4.3, all non-neutral indicators must be monitored, and any indicators that were neutralized (i.e. originally scored negative, but now score neutral due to a suitable mitigation measure) must also be included. Moreover, any sensitive issue brought up during the stakeholder consultation must also be included. In the end, four indicators are included in the monitoring plan, including three indicators which score "+" in the SD Matrix and one eligibility criteria (i.e., Ratio of biogas consumed by the generators). The validation of monitored indicators is tabulated as follows:

No.	Indicator	Validation Team's Opinion
1.	Ratio of biogas consumed by the generators	As per the validated PDD/7/, the biogas uitlized and flared will be continiously monitored. Therefore, it is reasonble that the ratio of biogas consumed by the generators is continuosly monitored.
2.	Human and institutional capacity	The validation team agrees that the number of female employee is suitable monitoring parameters.
3.	Quantitative employment and income generation	The validation team agrees that "employment created" and "income generation of the employees" are two suitable monitoring parameters as they can reflect the actual amount of employment opportunities created by the project monitoring and the improvement of income generation.
4.	Technology transfer and technological self-reliance	The validation team agrees the technical training of biogas for energy, monitoring, operation and maintenance is suitable parameter to be monitored for "Technology transfer and technological self-reliance".

In conclusion, the validation team considers that all the chosen parameters are relevant to sustainable development indicators and the sustainable monitoring plan is feasible.

10 VALIDATION OPINION

The Swiss Carbon Assets Ltd. has commissioned the DOE TÜV Rheinland (China) Ltd. to perform a validation of the GS CDM Project Activity "Biogas Utilization Project in Zhejiang Jingxing Paper Joint Stock Co. Ltd.". The validation is based on the information made available to the validation team, and the validation engagement only covered the project components detailed in this report. The validation team of TÜV Rheinland would not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

According to the GS requirements and toolkit Version 2.1, the chosen parameters and the justification of scores have been fully demonstrated in the SD Matrix and the corresponding sustainability monitoring plan. The additionality of the project is demonstrated in the PDD according to the requirements of the UNFCCC for CDM projects. The validation team has checked that the project correctly applies AMS-III.H, Version 15-*Methane Recovery in Wastewater Treatment* and AMS-I.F, Version 01- *Renewable electricity generation for captive use and mini-grid*. Further, the AMS-III.H, Version 15 and AMS-I.F, Version 01 are the most recent version of the methodology available at the time of first submission of the project activity for Gold Standard (i.e. 30 July 2010), which is in line with the GS Requirement III.f.1. The total emission reductions from the project are estimated to be on the average 60,577 tCO_2e/yr over the fixed 10-year crediting period.

In summary, the validation team concludes that the GS-CDM Project Activity "Biogas Utilization Project in Zhejiang Jingxing Paper Joint Stock Co. Ltd." in the P. R. China, as described in the PDD Version 02.2 of 13 July 2011 and GS Passport of 23 December 2011 meets all relevant requirements of the Gold Standard version 2.1 for the GS CDM project activities. The DOE therefore requests the registration of the project as a GS-CDM project activity.

Appendix A

SUSTAINABILITY VALIDATION PROTOCOL

- FOR GOLD STANDARD PROJECTS -

Biogas Utilization Project in Zhejiang Jingxing Paper Joint Stock Co. Ltd.
In
P. R. China

REPORT NO. 01 997 9105061560

Table 1: Validation requirements (based on the GS Toolkit, GS Requirements and their relevant Annexes)					
Checklist question	**Ref.**	**MoV***	**Findings, comments, references, data sources**	**Draft conclusion**	**Final conclusion**
1. Project Eligibility					
1.1 Has the correct project size been selected?	/1//7/	DR	Yes, the installed capacity of the biogas engines is totally 2MW, which is below the 15MW. The project is qualified as small-scale project under CDM rules.		OK
1.2 Does a written statement (e.g. in the PDD) clearly describe that the project is not a de-bundled part of a large or small scale project?	/1/	DR I	Yes, it is confirmed that the project is not a de-bundled part of a large or small scale project.		OK
1.3 If there is an applicable cap-and-trade scheme in the project's host country, has an arrangement been made to cancel allowances in the applicable scheme?	/1/	DR I	Not applicable since the proposed project has not involved in any applicable cap-and-trade scheme in China.		OK
1.4 Does the project clearly demonstrate its eligibility under Gold Standard?	/1//2//3/	DR	CL1 Please refer to GS Passport Section C.3, the PP should justify the eligible project activity as per Toolkit 1.2c. CL2 Please refer to GS Passport Section C.5, the start date of construction is not correct. Please revise it as per the validated PDD.	~~CL1~~ ~~CL2~~	OK (Refer to Table 2)

* MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

1.5	Does the project reduce an applicable GHG?	/1//2//3/	DR	Yes.		OK
1.6	Does the project clearly demonstrate that no ODA has been used under the condition that the credits coming out of the project are transferred to the donor country?	/1//2//3/	DR	Yes. According to Annex 2 of the PDD, the project does not receive any public funding. An ODA declaration is presented in the Annex 1 of the Gold Standard (GS) Passport based on the ODA Declaration Template in the Annex D of Toolkit version 2.1, in which the project developer has declared the project's non-use of ODA.		OK
1.7	Does the project apply the correct project cycle (regular vs. prefeasibility assessment)?	/1//2//3/	DR	Yes. The project applies for Gold Standard under the retroactive project cycle since the construction of the project has been finished.		OK
1.8	Is the project being registered under any other certification scheme for the same or overlapping crediting periods?	/1//2//3/	DR www	The project has been registered as CDM project since 28 July 2011 as per the UNFCCC website. The project has not claimed any other certification scheme and no overlapping crediting period was identified. (http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1311661043.38/view)		OK
2.	**Deviations in GHG Emission Reduction Estimation (Gold Standard Conservativeness Principle)**					
2.1	Has the baseline scenario been constructed in a conservative manner (i.e. assumptions are made explicitly and choices are substantiated)?	/1//2//3/	DR	Yes.		OK

2.2	Does the PDD use the latest version of the methodology and the latest interpretation form the EB at the time of first submission to the GS?	/1//2//3/	DR	No, the PDD uses AMS-III.H Version 15 and AMS-I.F. Version 01, which are not the latest as per EB website. The AMS-III.H. Version 15 was valid until 8 December 2010. The AMS-I.F Version 01 was valid until 16 June 2011. CL3 It should be clearly stated in the GS Passport Section H.2 on which version of the methodology is applied. Further, please clarify why the AMS-I.F. is not referred.	~~CL3~~	OK (Refer to Table 2)
2.3	Does the PDD describe the baseline methodology?	/1//2//3/	DR	Yes.		OK
2.4	Does the PDD describe the quantified baseline scenario?	/1//2//3/	DR	Yes.		OK
2.5	Does the PDD include and overview of the current and known future legally binding regulatory instruments and assess whether the project would be implemented anyway because of these?	/1//2//3/	DR	Yes.		OK
2.6	Does the PDD provide evidence based on which "common practice" of the technology used can be assessed?	/1//2//3/	DR	No, the "common practice" analysis is not required for small scale projects under CDM rules.		OK
2.7	Does the PDD address leakage issues as part of the baseline and project boundary?	/1//2//3/	DR	Yes.		OK

2.8 Does the project apply the methodology that results in the lowest baseline emission?	/1//2//3/	DR	Yes.		OK
2.9 Are all likely baseline scenarios developed and quantified in the PDD?	/1//2//3/	DR	Yes.		OK
2.10 Are there any material uncertainties over the numerical data sets applied (e.g. generator efficiencies, and fuel types and resulting emission factors, etc.)?	/1//2//3/	DR	No, there is no material uncertainty over the numerical data sets applied.		OK
2.11 Is there a systematic referencing to publicly available information or to expert or expert opinions?	/1//2//3/	DR	Yes.		OK
2.12 Is information verifiably presented with a sufficient degree of detail and transparency?	/1//2//3/	DR	Yes.		OK
2.13 Is it fully transparent from the PDD which sets of data were selected based on the prerogative of conservativeness?	/1//2//3/	DR	Yes.		OK
2.14 Does the PDD include full references to sources of data used?	/1//2//3/	DR	Yes.		OK
2.15 Are data uncertainties clearly stated, if possible, with associated margins of error?	/1//2//3/	DR	Not applicable.		OK
3. Gold Standard Criteria on Additionality					

3.1	Has the PP selected and applied the correct tool for demonstrating additionality?	/1//2//3/	DR	Yes, the Additionally of the Project is demonstrated by using the investment barrier analysis in line with Attachment A of Appendix B to the Simplified Modalities and Procedures for Small-scale CDM Project Activities.		OK
3.2	Is the line of argumentation used by the PP to demonstrate additionality correct?	/1//2//3/	DR	Yes.		OK
3.3	Are the references used to demonstrate additionality up-to-date and reliable?	/1//2//3/	DR	Yes.		OK
3.4	Has the PP compared the proposed project activity with normal practice in the region (especially if similar projects have already been implemented on a commercial basis in the region)?	/1//2//3/	DR	Not applicable since common practice analysis is not required fro small scale CDM projects under CDM rules.		OK
3.5	Are assumptions (qualitative or quantitative) used to demonstrate additionality conservative?	/1//2//3/	DR	Yes.		OK
4.	**Sustainability Assessment**					
4.1	Is "Do no harm" assessment based on accurate information?	/1//2//3/	DR	Yes.		OK
4.2	Has a sustainable development matrix been developed? If yes, is it prepared according to the guidance under GS Toolkit Section 2.4.2, Table 3.2 and Annex I?	/1//2//3/	DR	Yes.		OK

4.3	Is the matrix based on existing sources of information (data from existing reports, results from stakeholder consultation, experiences with similar projects in similar situations, expert judgement if data are unavailable or are of poor quality, etc)?	/1//2//3/	DR	CL4 As for the indicator of "Soil Condition", the impacts of sludge disposal should be discussed. CL5 It should be clarified with supporting evidence on how the noises impacts from the biogas generation facilities were effectively reduced. CL6 The supporting evidence should be provided for justification of the indicators of "Human and Institutional Capacity", "Quantitative employment and income generation" and "Technology Transfer and Technological Self-reliance".	~~CL4~~ ~~CL5~~ ~~CL6~~	OK (Refer to Table 2)
4.4	Are data and expert opinions presented in a sufficient degree of detail and transparency? Are they verifiable?	/1//2//3/	DR	Please refer to 4.3.	~~CL4~~ ~~CL5~~ ~~CL6~~	OK (Refer to Table 2)
4.5	Are data uncertainties clearly stated with associated margins of error?	/1//2//3/	DR	No data uncertainty was identified in the GS Passport.		OK
4.6	Is 'scoring' reproducible and verifiable?	/1//2//3/	DR	Yes.		OK
4.7	Are at least two of the sub-totals (categories) positive? Is the third sub-total at least neutral?	/1//2//3/	DR	Please refer to 4.3.	~~CL4~~ ~~CL5~~ ~~CL6~~	OK (Refer to Table 2)

4.8 Is there a clear explanation on 'how the matrix was completed together with the stakeholders'?	/1//2//3/	DR	CL7 Please provide a clear explanation on "how the matrix was completed together with the stakeholders".	~~CL7~~	OK (Refer to Table 2)
5. Environmental Impact Assessment					
5.1 Does the project activity conform to host country (local, regional or national) requirements concerning environmental impact assessment?	/1//2//3/	DR	Yes, the EIA report table was accomplished Jiaxing City Qiushi Environment Engineering Consulting Co., Ltd. in November 2008 and was subsequently approved by Pinghu City Environment Protection Bureau on 21 November 2008.		OK
5.2 For micro-scale projects, is there an owner declaration that guarantees that the project complies with local environmental regulations?	/1//2//3/	DR	Not applicable since the project is not micro-scale project.		OK
6. Gold Standard Criteria for Stakeholder Consultation					
6.1 Stakeholder Consultation					
6.1.1 Have PPs fulfilled the GS requirements, set out in GS Toolkit Section 2.6 and 2.11, regarding stakeholder consultation?	/1//2//3/	DR I	Yes, the stakeholder consultation records and lo have been reviewed and the GS Toolkit Section 2.6 and 2.11 is fulfilled.		OK
6.1.2 Has an Invitation tracking table been filled out?	/1//2//3/	DR I	Yes.		OK

6.1.3 Are copies of invitations published/sent out available?	/1//2//3/	DR I	CAR1 The total number of the questionnaires in the GS Passport is 30. However, only 23 questionnaires have been provided. The outcome analysis of the questionnaires shall also be clarified on how it is accounted.	~~CAR1~~	OK (Refer to Table 2)
6.1.4 Is a non-technical summary included in the Local Stakeholder Consultation report?	/1//2//3/	DR I	Yes.		OK
6.1.5 Is a participant list available?	/1//2//3/	DR I	Yes.		OK
6.1.6 Are stakeholder evaluation forms available?	/1//2//3/	DR I	Yes.		OK
6.1.7 Are minutes of the meeting(s) available?	/1//2//3/	DR I	Yes.		OK
6.1.8 Has due account been made on comments received?	/1//2//3/	DR I	Yes.		OK
6.1.9 If stakeholders required a revisit of the sustainable development assessment, has this been done?	/1//2//3/	DR I	No, the stakeholders did not require revisit of sustainable development assessment.		OK
6.1.10 Is the consolidated sustainable development matrix presented based on own 'preliminary' scoring and the matrix from the outcome of the blind stakeholder exercise?	/1//2//3/	DR	Yes.		OK
6.2 Stakeholder Feedback Round					

6.2.1 Is there evidence clearly showing that the latest version of the complete PDD (including the EIA, if applicable) was made publicly available for a period of two months prior to completion of the validation in a readily accessible form?	/1//2//3/	DR www	The latest version of the complete PDD is still undergoing completeness check by the UNFCCC secretariat. The proposed project has been listed with GS869 on the GS website. https://gs1.apx.com/mymodule/mypage.asp		OK
6.2.2 Is there evidence clearly showing that the non-technical summary of the project (in appropriate local language(s)) was made publicly available for a period of two months prior to completion of the validation in a readily accessible form?	/1//2//3/	DR	Idem.		OK
6.2.3 Is there evidence clearly showing that all relevant supporting information (if available, in appropriate local language(s)) was made publicly available for a period of two months prior to completion of the validation in a readily accessible form?	/1//2//3/	DR	Idem.		OK
6.2.4 Does the Passport include a description of the procedure followed to invite comments, including addressing all the details of the oral hearing such as place, date, participants, language, local or national GS NGO supporters, etc.?	/1//2//3/	DR	CL8 The GS Passport should describe the procedure followed to invite comments, including addressing the details of the oral hearing such as place, date, participants, language, local or national GS NGO supporters.	~~CL8~~	OK (Refer to Table 2)

6.2.5 Does the Passport include all written or oral comments received?	/1//2//3/	DR	Idem	~~CL8~~	OK (Refer to Table 2)
6.2.6 Does the Passport include the argumentation on whether or not comments are taken into account and the respective changes to the project design?	/1//2//3/	DR	No negative comments have been received during the stakeholder consultation meeting.		OK
7. Pre-Feasibility Assessment					
7.1 Has the feedback from GS been followed-up?	/1//2//3/	DR I	No feedback from GS has been identified during the validation process.		OK
8. Sustainability Monitoring Plan					
8.1 Are chosen parameters relevant to the indicators?	/1//2//3/	DR	Please refer to 4.3.	~~CL4~~ ~~CL5~~ ~~CL6~~	OK (Refer to Table 2)
8.2 Is the sustainability monitoring plan unambiguous about who will monitor with what frequency?	/1//2//3/	DR	Please refer to 4.3.	~~CL4~~ ~~CL5~~ ~~CL6~~	OK (Refer to Table 2)
8.3 Is there any concern regarding the feasibility of the plan?	/1//2//3/	DR	Please refer to 4.3.	~~CL4~~ ~~CL5~~ ~~CL6~~	OK (Refer to Table 2)

Table 2: List of Requests for Corrective Action (CAR) and Clarification (CL)			
Observation (CAR/CL)	**Reference**	**Summary of project owner response**	**Validation team conclusion**
CAR1 The total number of the questionnaires in the GS Passport is 30. However, only 23 questionnaires have been provided. The outcome analysis of the questionnaires shall also be clarified on how it is accounted.	6.1.3	There were 24 questionnaires received during the Stakeholder Consultation meeting. Relevant paragraph in Gs passport on p9 has been revised accordingly.	OK. The 24 questionnaires have been received. The GS Passport has been revised. The CAR is therefore closed.
CL1 Please refer to GS Passport Section C.3, the PP should justify the eligible project activity as per Toolkit 1.2c.	1.4	The analysis of project eligibility has been added in GS passport Section C.3 as Toolkit 1.2c and Toolkit Annex C.	OK. It is revised. The CL is therefore closed.
CL2 Please refer to GS Passport Section C.5, the start date of construction is not correct. Please revise it as per the validated PDD.	1.4	The start date of the construction has been revised in GS passport Section C.5 p7. Feb. 4th. 2009 is the start date of the construction and it is correspondingly in line with the validated PDD.	OK. It is revised and consistent with the validated PDD. The CL is therefore closed.
CL3 It should be clearly stated in the GS Passport Section H.2 on which version of the methodology is applied. Further, please clarify why the AMS-I.F. is not referred.	2.2	The version of the methodology used in for the project has been added in GS Passport Section H.2 p20, and it is also in line with the validated PDD.	OK. It is revised. The CL is therefore closed.
CL4 As for the indicator of “Soil Condition”, the impacts of sludge disposal should be discussed.	4.3 4.4 4.7 8.1~8.3	The discussion in terms of sludge disposal has been added in GS Passport Section F.2 on p14. As the sludge disposal remain unchanged during the project scenario. There is no additional solid waste (except for very limited amount of living waste) generated	OK. It is revised. The CL is therefore closed.

		from the project activity. Therefore, we score this indicator as “0”.	

CL5 It should be clarified with supporting evidence on how the noises impacts from the biogas generation facilities were effectively reduced.	4.3 4.4 4.7 8.1~8.3	The description of noise has been revised in GS Passport Section F.2 p14. There are mainly two ways to reduce the level of noise: a. silencers were installed to reduce the level of noise (EIA p16, 17,21); b. the workshops are isolated as observed during the site validation. As per the EIA and monitoring report of noise in 2009 and 2010, the level of noise is compliance with local environmental regulations. Therefore, the PP concluded that the impact of the noise is limited, and this indicator is scored as "0".	OK. It is revised. The CL is therefore closed.
CL6 The supporting evidence should be provided for justification of the indicators of "Human and Institutional Capacity", "Quantitative employment and income generation" and "Technology Transfer and Technological Self-reliance".	4.3 4.4 4.7 8.1~8.3	According to the information provided by the forum of the paper industry (http://www.hengdazhipin.com/shyz/post/101.html), the project participant applied biogas power plant that is defined as an adoption a new technology to unproven circumstances in Pulp&Paper Industry. Additionally, regular trainings and workshops are provided to the employees (including two female) to enhance of the application of the biogas power plant, and trainings shall include operation and maintenance, monitoring, information about the technology of biogas for energy, etc. Therefore, the PP concluded that	OK. The clarification is acceptable and It is revised in the GS Passport. The CL is therefore closed.

		the adaptation of the project activity gives positive impacts to the indicator of "Technology Transfer and Technological Self-reliance". As for the indicator "Human and Institutional Capacity" and "Quantitative employment and income generation", payroll of the employees (10 employees) hired for the project activity has been provided, and it shows that two female are included in the list. Therefore, the PP concluded that the project activity gives positive impacts these indicators. The descriptions of these three indicators in GS Passport Section F.2 p15, 16 has been revised accordingly.	

CL7 Please provide a clear explanation on “how the matrix was completed together with the stakeholders”.	4.8	Three SD Matrix were filled: **1.** The PP filled one SD matrix with their opinions on the indicators; **2.** The Stakeholders filled one SD Matrix according to their knowledge **3.** A consensus score will be reached by the intensive discussions between PP and stakeholders. Detailed information can also be found in Stakeholder Consultation Report p22.	OK. It is revised. The CL is therefore closed.
CL8 The GS Passport should describe the procedure followed to invite comments, including addressing the details of the oral hearing such as place, date, participants, language, local or national GS NGO supporters.	6.2.4 6.2.5	The information regarding to the details of the physical Stakeholder Consultation Meeting is addressed in the Stakeholder Consultation Report Section B and C.	OK. It is revised. The CL is therefore closed.