VERIFICATION/CERTIFICATION REPORT

Final

"Shenyang Laohuchong LFG Power Generation Project"
in
China

Monitoring period: 01/04/2010 to 31/07/2011

Report N°2011-DG-138-MD
Revision N°1.1

VERIFICATION/CERTIFICATION REPORT

Project Title:	Country:	Estimated CERs (tCO_2e):
Shenyang Laohuchong LFG Power Generation Project	China	136,570 annual average
CDM Registration Reference N°:	**Monitoring period:**	**Certified CERs (tCO_2e):**
1906	01/04/2010 to 31/07/2011	107,353
Client:	**Client contact:**	
ASJA Renewables (Shenyang) Co., Ltd.	Mr. Alberto MANZONE	
Report No.:	**Revision:**	**Date of this report:**
2011-DG-138-MD	1.1	17/02/2012
Approved by (Final Report – DCI Director approval): Roberto Cavanna		**Date of approval:** 29/02/2012

Methodology

Number:	Version:	Title:	Scale	SS(s):
ACM0001	06 of 22/06/2007	Consolidated baseline methodology for landfill gas project activities - Consolidated monitoring methodology for landfill gas project activities	Large	13. Waste handling and disposal
ACM0002	06 of 19/05/2006	Consolidated baseline methodology for grid-connected electricity generation from renewable sources - Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources	Large	1. Energy industry

RINA Services S.p.A. (RINA), commissioned by ASJA Renewables (Shenyang) Co., Ltd, has verified of the greenhouse gas emission reductions reported for the project activity "Shenyang Laohuchong LFG Power Generation Project" in China, CDM Registration Reference N° 1906, for the period 01/04/2010 to 31/ 07/2011, with regard to the relevant requirements for CDM activities. The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable CDM requirements in order to be certified.

The project was validated by Det Norske Veritas Certification AS (DNV) (validation report N°2008-9050 issued on 30/06/2008) and it was registered on 25/12/2008 under the CDM registration reference N°1906.

The GHG emission reductions were calculated on the basis of the approved methodology ACM0001, version 06, "Consolidated baseline methodology for landfill gas project activities - Consolidated monitoring methodology for landfill gas project activities" of 22/06/2007 and ACM0002, version 06, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources - Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources" of 19/05/2006 and the monitoring plan included in the registered Project Design Document, version 03 of 16/06/2008.

In conclusion, it is RINA's opinion that the project activity "Shenyang Laohuchong LFG Power Generation Project", in China, as described in the Monitoring Report (MR2) version 02 of 19/01/2012, meets all relevant requirements for CDM activities and all relevant host Party criteria and correctly applies the baseline and monitoring methodology "ACM0001", "Consolidated baseline methodology for landfill gas project activities - Consolidated monitoring methodology for landfill gas project activities", version 06 of 22/06/2007 and ACM0002, version 06, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources - Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources" of 19/05/2006. Hence RINA is able to certify that the emission reductions from the project during the monitoring period 01/04/2010 to 31/07/2011 amount to 107,353 tCO_2e.

Work carried out by:

Jun Zhou – CDM Team leader

Tong Yan–Training Team Leader / CDM Verifier

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Work verified by (Final Report – CRT person responsible approval)

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Keywords:

Climate Change, Kyoto Protocol, Clean Development Mechanism, Verification

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Abbreviations

BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CH_4	Methane
CL	Clarification Request
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CRT	Coordination and Technical Control Staff
DCI	Certification Division of RINA Services Spa
DNA	Designated National Authority
DNV	DET NORSKE VERITAS CERTIFICATION AS
DOE	Designated Operational Entity
EB	Executive Board
ER	Emission Reductions
ERCS	Emission Reductions Calculation Spreadsheet
FAR	Forward Action Request
FDS	Factory Data Storage System
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
HV	High Voltage
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
LV	Low Voltage
MoV	Means of Verification
MP	Monitoring Period
MR	Monitoring Report
MR2	Monitoring Report for the second monitoring period from 01/04/2010 to 31/07/2011
NCPG	North East China Power Grid
NGO	Non-governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
PLC	Programmable Logic Control
PP(s)	Project Participant(s)
Ref.	Document Reference
RINA	RINA Services Spa
SS(s)	Sectoral Scope(s)
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

ASJA Renewables (Shenyang) Co., Ltd., a subsidiary and appointed by Asja Ambiente Italia S.p.A. /44/, has commissioned RINA to carry out the verification and certification of emission reductions reported for the registered "Shenyang Laohuchong LFG Power Generation Project" project in China, CDM Registration Reference N°1906, for the period 01/04/2010 to 31/07/2011.

This report summarizes the findings of the verification of the project, performed on the basis of UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The objective of the verification is to have an independent review ex post determination by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registered CDM project activity during a defined monitoring period. Certification is the written assurance by the DOE that, during a specific time period, a proposed CDM project activity achieved the reductions in anthropogenic emissions by sources of GHGs as verified.

The objective of this verification/certification was to verify and certify emission reductions reported for the "Shenyang Laohuchong LFG Power Generation Project" project in China for the period 01/04/2010 to 31/07/2011.

1.2 Scope

The verification scope is:

- to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- to verify that reported GHG emission data is sufficiently supported by evidence.

Verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable UNFCCC criteria for CDM in order to be certified.

UNFCCC criteria for CDM refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, and the subsequent decisions by the CDM Executive Board.

Verification is not meant to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring.

2 METHODOLOGY

Verification was conducted using RINA procedures in line with the requirements specified in the CDM M&P, the latest version of the CDM Validation and Verification Manual, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

The verification consisted of the following three phases:

- Desk review;
- On-site assessment:
- The resolution of outstanding issues and the issuance of the final verification report and certification.

The following sections outline each step in more detail.

2.1 Desk Review

The monitoring report (MR2), version 01 of 22/09/2011 and the revised monitoring report (MR2) version 02 of 19/01/2012 /02/, the emission reduction calculations provided in the form of a spreadsheet, “Shenyang ER 2nd verification”, version 01 of 22/09/2011 and version 02 of 19/01/2012 /29/, were assessed as part of the verification. In addition the Project Design Document (PDD) /01/ in particular the baseline estimations and the monitoring plan, the 1st verification report revision 1.2 of 04/03/2011/09/ and the validation report, revision 01 of 22/05/2008 /08/ for the project were reviewed.

The monitoring report (MR2) version 01 of 22/09/2011 /02/ was made publicly available on the CDM UNFCCC website on 19/10/2011.

The following table lists the documentation that was reviewed during the verification.

/01/	Asja Ambiente Italia S.p.A.: CDM-PDD for project activity “Shenyang Laohuchong LFG Power Generation Project” in China, version 03 of 16/06/2008
/02/	Asja Renewables (shenyang) Co., Ltd : Monitoring report (MR2) for project activity “Shenyang Laohuchong LFG Power Generation Project” in China, version 01 of 22/09/2011 and version 02 of 19/01/2012 related to the monitoring period 01/04/2010 to 31/07/2011
/03/	CDM Executive Board: Validation and Verification Manual, version 01. 2 of 30/07/2010
/04/	CDM Executive Board: Baseline and monitoring methodology “ACM0001”, “Consolidated baseline methodology for landfill gas project activities - Consolidated monitoring methodology for landfill gas project activities”, version 06 of 22/06/2007
/05/	CDM Executive Board: Baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources - Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources”, version 06 of 19/05/2006
/06/	CDM Executive Board: Guidelines for completing the monitoring report form (CDM-MR), version 01 of 28/05/2010
/07/	CDM Executive Board: Methodological “Tool to determine project emissions from flaring gases containing methane”, version 01 of 15/12/2006
/08/	Det Norske Veritas Certificaion AS (DNV): Registered validation report for ”Shenyang Laohuchong LFG Power Generation Project” in China, version 01 of 30/06/2008
/09/	RINA Services S.p.A.: 1st verification report of “Shenyang Laohuchong LFG Power Generation Project” in China, revision 1.2 of 04/03/2011
/10/	General Administration of Quality Supervision, Inspection and Quarantine of the People’s Republic of China, JJG 640-1994 verification regulation of differential pressure type flowmeter, dated 12/07/1994
/11/	General Administration of Quality Supervision, Inspection and Quarantine of the People’s Republic of China, JJG 678-2007 verification regulation of catalysis combustion type methane measuring device, dated 21/08/2007
/12/	Shanghai Hongtian Meter Factory, Certificate of thermal couples, dated 04/2009, 04/2010, 04/2011
/13/	Power Metrology Institute of Shenyang Power Supply Company, Calibration report of HV power meter SN: 8007472, dated 12/10/2008
/14/	ASJA Renewables (Shenyang) Co.,Ltd., Electricity Reading Records (F.POW.3 Power meter internal records), Electricity transation notes and Invoices for electricity quantity measured by HV power meter, dated from 04/2010 to 07/2011
/15/	Su Jiatun Agro electricity Bureau Calibration and Testing Center, Calibration report of LV power meter (dynamic) SN: 0103200014423, dated 19/02/2009
/16/	Su Jiatun Agro electricity Bureau Calibration and Testing Center, Calibration report of LV power meter (illumination) SN: 0103200019480, dated 05/01/2009
/17/	Su Jiatun Agro electricity Bureau, Electricity Reading Records (F.POW.3 Power meter

	internal records), Electricity transaction notes and Invoices for electricity quantity measured by LV power meters, dated from 04/2010 to 07/2011
/18/	Su Jiatun Agro electricity Bureau, Bills for electricity quantity measured by LV power meters, dated from 04/2010 to 07/2011
/19/	Liaoning Provincial Institute of Measurement, Calibration report of flow meter (main pipe) SN: 01726699, dated 17/09/2009 and 14/09/2010
/20/	Liaoning Provincial Institute of Measurement, Calibration report of flow meter (engine pipe) SN: 01746510, dated 17/09/2009 and 14/09/2010
/21/	Liaoning Provincial Institute of Measurement, Calibration report of flow meter (torch pipe) SN: 01746509, dated 17/09/2009 and 14/09/2010
/22/	Liaoning Provincial Institute of Measurement, Calibration report of fixed analyzer SN: 0708404, dated 18/09/2009 and 13/09/2010
/23/	ASJA Renewables (Shenyang) Co.,Ltd., Internal training refresher report, dated in 08/2010
/24/	Shandong JDEC, Specification of generator sets (1#, 2#, 3#), dated 09/2007
/25/	Nanjing Shunfeng, Torch certificate with model TOR-30-A1 and serial No. 70900126
/26/	Nanjing Shunfeng, Torch validation report, dated 18/10/2007
/27/	ASJA Renewables (Shenyang) Co.,Ltd., Management Manual, version 02, dated on 26/05/2009
/28/	General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China, JJG 596-1999 verification regulation of electrical energy meters with electronics, dated 21/10/1999
/29/	ASJA Renewables (Shenyang) Co.,Ltd., Emission reduction calculation spreadsheet for project activity "shenyang ER 2nd verification" (ERCS), version 01 of 22/09/2011 and version 02 of 19/01/2012
/30/	China National Accreditation Service for Conformity Assessment, Accreditation Certificate of Liaoning Provincial Institute of Measurement (No. CNAS L0954), dated 28/06/2007
/31/	China National Accreditation Service for Conformity Assessment, Accreditation Certificate of Power Metrology Institute of Shenyang Power Supply Company (No. CNAS L1064), dated 04/01/2007
/32/	Administration of Quality Supervision, Inspection and Quarantine of Shenyang, Certificate of Metrological Authorization for Su Jiatun Agro electricity Bureau Calibration and Testing Center, dated 11/01/2007
/33/	NDRC: China's Regional Gird Baseline Emission Factors Decided, Chinese language, dated 09/08/2007 http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=2193
/34/	ASJA Renewables (Shenyang) Co.,Ltd., Master-spreadsheet for Emission Reductions Calculation with sample data, version 01 of 22/09/2011
/35/	Economic and Trade Commission of P.R. China, DL/T448-2000 Technical administrative code of electric eneregy metering, dated 03/11/2000
/36/	IPCC: Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, http://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html 2006 IPCC Guidelines for National Greenhouse Gas Inventories, http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html
/37/	Environmental Protection Bureau of China, GB16889-1997 Standard for Polluction Control on the Landfill Site of Municipal Solid Waste, came into force on 01/01/1998
/38/	Environmental Protection Bureau of China, GB16889-2008 Standard for Polluction Control on the Landfill Site of Municipal Solid Waste, came into force on 01/07/2008
/39/	ASJA Renewables (Shenyang) Co.,Ltd., Plant Operation Log Records, dated from 04/2010

	to 07/2011
/40/	ASJA Renewables (Shenyang) Co.,Ltd., Raw Data Spreadsheet every 5 minutes and monthly Report, from 01/04/2010 to 31/07/2011
/41/	Rosemount, Product Data Sheet (Specifciation) for 285 Annubar Primary Element, 00813-0100-4028, Rev BR, Catalog 2006-2007
/42/	Rosemount, Product Data Sheet (Specification) for Rosemount 485 Annubar Primary, 00813-0100-4809, Rev EA, Catalog 2006-2007
/43/	Nanjing Analytic Instrument Company, Declaration of the main specification for gas analyzer type XGF4043 with Serial NO. 0708404, dated on 26/09/2007
/44/	ASJA Ambiente Italia S.p.A., Appointment letter to ASJA Renewables (Shenyang) Co.,Ltd., dated 25/05/2010
/45/	Jichai Green Energy Power Equipment Co., Ltd, Declaration of the installation of the 4# (SN: 11-05-116 and 5# (SN: 11-05-115) gas engines (generators) for “Shenyang Laohuchong LFG Power Generation Project”, dated on 20/11/2011
/46/	Su Jiatun Agro electricity Bureau, Declaration for grid connection time, dated 25/06/2010
/47/	Shenyang Power Supply Company, Grid connection agreement, dated 21/03/2008
/48/	ASJA Renewables (Shenyang) Co.,Ltd., Internal calibration report for fixed analyzers, dated from 04/2010 to 07/2011
/49/	ASJA Renewables (Shenyang) Co.,Ltd., Technical data of CPU 31X for Siemens S7, dated 06/2008
/50/	Beijing Rosemount Far East Instrument Co., Ltd., Declaration of Calibration of Annubar flowmeter, dated in 08/2011
/51/	ASJA Renewables (Shenyang) Co.,Ltd., Explanation of the Master-spreadsheet calculation, dated on 22/09/2011
/52/	INSPIRING SOFTWARE S.R.L., Inspiring declaration for FDS, dated 21/11/2007
/53/	Liaoning Power Grid Company, Power selling contract of 2010, dated 29/10/2010
/54/	Liaoning Power Grid Company, Power selling contract of 2011, dated 19/04/2011
/55/	ASJA Renewables (Shenyang) Co.,Ltd., F.SCH.1 for calibration schedule information, dated from 04/2010 to 07/2011
/56/	China Measurment Science Institute, Certificate for the standard gas cylinder (CH4-CO2) No. BW(QT10)0031, dated on 06/09/2010 and valid until 06/09/2011
/57/	Benxi Xite Gas Co., Ltd., Certificate for the standard gas cylinder (CH4-CO2) No. 02230, dated on 10/28/2009 and valid until 28/10/2010
/58/	China National Technical Supervise Bureau, Verification Regulation of Working Base Metal Thermocouple JJG351-1996, valid on 01/03/1997

2.2 On-site assessment

On 09/11/2011, RINA, visited Tashan Farm, Chenxiang Town, Su Jiatun district, Shenyang, Liaoning, P.R. China.. During the on-site assessment of the project RINA assessed the implementation and operation of the proposed project activity, reviewed the information flows for generating, aggregating and reporting the monitoring parameters, interviewed key personnel of the plant to confirm the operational and data collection procedures, cross-checked between information provided in the monitoring report and data plant, accessed the project equipment directly and checked the monitoring equipment including calibration performance, reviewed calculations and assumptions made in determining the GHG data and emission reductions, checked the quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

The key personnel interviewed and the main topics of the interviews are summarized in the table below.

	Date	Name and Role	Organization	Topic
/a/	09/11/2011	Liang Zhishun, General Manager	Shenyang Laohuchong Municipal Solid Waste Management Co.,Ltd.	Project activity description
/b/	09/11/2011	Alberto Manzone, Area Manager	ASJA Renewables (Shenyang) Co.,Ltd	Quality control and quality assurance procedures
/c/	09/11/2011	Li Wei, Senior Project Manager	ASJA Renewables (Shenyang) Co.,Ltd	Monitoring equipments
/d/	09/11/2011	Pan Libo, Technical Supervisor	ASJA Renewables (Shenyang) Co.,Ltd	Implementation status
/e/	09/11/2011	Diao Xianlan, CDM Project Manager	ASJA Renewables (Shenyang) Co.,Ltd	Monitoring records
/f/	09/11/2011	Wang Xia, Consulting Engineer	ASJA Renewables (Shenyang) Co.,Ltd	Monitoring records

2.3 Resolution of outstanding issues

The objective of this phase of the verification is to resolve any outstanding issues which need to be clarified for RINA's positive conclusion on the monitoring report and emission reductions.

To guarantee transparency a verification protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of verification and the results from verifying the identified criteria.

The verification protocol consists of three tables; the different columns in these tables are described in the figure below (see Figure 1). The completed verification protocol is enclosed in Appendix A to this report.

A corrective action request (CAR) is raised if one of the following occurs:

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

A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A forward action request (FAR) is raised during verification for actions if the monitoring and reporting require attention and/or adjustment for the next monitoring period.

CARs, CLs and FARs identified are included in the verification protocol in Appendix A of this report.

Figure 1 Verification protocol tables

Verification Protocol, Table 1 - Requirement checklist					
Checklist Question	**Ref.**	**MoV**	**Comments**	**Draft Conclusion**	**Final Conclusion**
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in seven different sections.	Makes reference to documents where the answer to the checklist question or item is found.	Explain how conformance with the checklist question is investigated. Examples are document review (DR), interview or any other follow-up actions (I), cross checking (CC) with available information relating to projects, (N/A) means not applicable.	The discussion on how the conclusion is arrived at and the conclusion on the compliance with checklist question so far.	OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements. For CAR, CL and FAR see the definitions above.	OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements.

Verification Protocol, Table 2 - Resolution of Corrective Action Requests and Clarification			
Corrective action requests and/or clarification requests	**Reference to Table 1**	**Response by project participants**	**Verification conclusion**
The CAR and/or CLs raised in table 1 are repeated here.	Reference to the checklist question number in Table 1 where the CAR or CL is explained.	The responses given by the project participants to address the CARs and/or CLs.	The verification team's assessment and final conclusion of the CARs and/or CLs.

Verification Protocol, Table 3 - Forward Action Requests		
Forward action request	**Reference to Table 1**	**Response by project participants** **Verification conclusion**
The FAR raised in table 1 is repeated here.	Reference to the checklist question number in Table 1 where the FAR is explained.	Response by the project participants on how forward action request will be addressed.

2.4 Internal quality control

All the revisions of the verification report before being to submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent RINA instructions.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme for CDM validation and verification.

2.5 Verification team and the technical reviewer(s)

The verification team and the technical reviewers consist of the following personnel:

Role/Qualification	Last Name	First Name	Country
Team Leader CDM	Zhou	Jun	China
Training Team Leader / CDM Verifier	Tong	Yan	China
Technical Expert CDM	Zheng	Xia	China
Technical Expert CDM	Xu	Li	China
Technical Expert	Hao	Mingxiang	China
Technical Reviewer	He	Qing	China
Technical Reviewer	Valoroso	Rita	Italy

3 VERIFICATION FINDINGS

The findings of the verification related to the monitoring period from 01/04/2010 to 31/07/2011 as documented and described in the monitoring report (MR2) version 02 of 19/01/2012 and previous version 01 of 22/09/2011 /02/ are stated in the following sections.

The verification requirements, the means of verification and the results from verifying the identified criteria are documented in more detail in the verification protocol in Appendix A.

3.1 Description of the project activity

The main information of the project is summarized in the table below.

Project Participant(s)	Shenyang Laohuchong Municipal Solid Waste Management Co.,Ltd. Asja Ambiente Italia S.p.A. ICF - International Clean Fund LLC
Project Title	Shenyang Laohuchong LFG Power Generation Project
Location of the project	Tashan Farm, Chenxiang Town, Su Jiatun District, Shenyang, Liaoning, P.R.China
Methodology(ies)	ACM0001, version 6, "Consolidated baseline methodology for landfill gas project activities - Consolidated monitoring methodology for landfill gas project activities" of 22/06/2007 ACM0002, version 6, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources - Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources" of 19/05/2006

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Sectoral Scope(s)	SS13 SS01	**RINA's Technical Area(s)**	13.1 Waste handling and disposal
Registered PDD	Revision 03 of 16/06/2008		
Date of registration	25/12/2008	**CDM Registration Reference N°**	1906
Starting date of the crediting period	25/12/2008		
Project's crediting period	25/12/2008 to 24/12/2018		
Monitoring period	01/04/2010 to 31/07/2011		
Project documentation link	http://cdm.unfccc.int/Projects/DB/DNV-CUK1214898000.95/view		

The purpose of the project is to capture and burn biogas for generating electricity at the Shenyang Laohuchong Municipal Solid Waste landfill in China. Based on two complementary activities, the extraction and flaring of landfill gas and the electricity generation and displacement to the grid, the implemented project will effect a reduction in greenhouse gas emissions through two different ways, i.e. the destruction of the methane and the reduction of a certain amount of fossil fuel used to generate electricity that will be substituted by the electricity generated in the biogas plant. Thus the project will contribute to the sustainable development of the area surrounding the landfill and the estimated emission reduction will be 1,365,700 tCO_2e in fixed crediting period of 10 years. The project is located at Tashan Farm, Chenxiang Town, Su Jiatun district, Shenyang, Liaoning, P.R. China and its geographic coordinates are 123° 34′ east longitude and 41° 33′ north latitude.

3.2 Remaining issues (FARs) from previous validation or verification

Based on the review of validation report and first verification report, no FARs was raised during the validation and the first periodic verification and there were no FARs to be addressed during this verification.

3.3 Project implementation

Based on the information available on UNFCCC website, the project has been registered on with the fixed crediting period from 25/12/2008 to 24/12/2018. The second verification covers the period from 01/04/2010 to 31/07/2011 which is consistent with aforementioned information. The start date of this monitoring period is 01/04/2010 which is after the first monitoring period (25/12/2008-31/03/2010) and the end date of this monitoring period is 31/07/2011 which is within the crediting period.
The project is designed to capture/burn biogas and generate electricity at the Shenyang Laohuchong Municipal Solid Waste Landfill. The whole process includes LFG collecting, pre-treatment, power generation and flare combustion system, the power plant is connected to local grid of NCPG. As per the designing scheme and described in the registered PDD/01/, the total installed power of 3MW (6*0.5MW LFG power generators) and two flares of 2,000Nm^3/h will be adopted for the implemented project. During the first monitoring period from 25/12/2008 to 31/03/2010, there were three generators and one flare installed and operated as per the first monitoring period verification report /09/.
RINA has performed a physical site visit on 09/11/2011 to verify the real implementation of the project against the description in its registered PDD /01/ and found that there were five generators (1#, 2#, 3#, 4# and 5#) and one flare in place of the power plant, of which two generators (2# and 3#) were on operation, one generator (1#) was under overhaul by manufacturer, the flare was on operation. The three generators have been put into commissioning since 04/03/2008 as per the declaration made by the local power company Su Jiatun Agro electricity Bureau/46/ while the flare has been put into

operation since 18/10/2007 as per the manufacturer's on-site flare validation report /26/. The type of the three generators (1#, 2# and 3#) is G12V190ZLDZ-2 /24/ and the type of the flare is TOR-30-A1 with the rated flow rate 2,000 Nm^3/h /25/, which are consistent with the registered PDD and the first verification report/01//09/. Two generators (4# and 5#) were newly installed during this second monitoring period. It was validated by the nameplate of the generators that the two were manufactured in 05/2011. By review of operation log records/39/ and the declaration made by the equipment manufacturer Jichai Green Energy Power Equipment Co., Ltd, who also provided installation service for the two generators/45/, it was found that the newly-installed two generators (4# and 5#) were completely installed on 15/09/2011 and not started commissioning by the end of this monitoring period. The type of the two generators (4# and 5#) is also G12V190ZLDZ-2, which is the same as the previous three generators (1#, 2# and 3#) and is consistent with the registered PDD/01/. Each capacity of the installed generators is 500kW and the total installed capacity is thus 500kW*6=3MW which is consistent with the registered PDD/01/. As described in the monitoring report (MR2) /02/ and based on the site visit, the electricity generated by the project is delivered to the NCPG /47/. Other facilities and equipment (the gas collection system and pre-treatment system, the blower, as well as the monitoring equipment) are also in place and operated by the PP as per the description in the registered PDD/01/. According to the operation records, no events occurred that impacted the applicability of the registered monitoring plan and methodology during the monitoring period. No change was observed on the physical and spatial configuration of the implemented project.
The methane combusted by the flare and gas engines, as well as the electricity supplied to and imported from the grid, from 01/04/2010 to 31/07/2011 of this monitoring period, were taken into consideration for emission reduction calculation.
RINA confirms that the implementation and operation of the project during this second monitoring period is consistent with the registered PDD; the information provided in the MR2 /02/ is also in accordance with the description of the registered PDD /01/.

3.4 Methodology for determining Emission Reductions.

According to the applied methodology ACM0001, version 06, "Consolidated baseline methodology for landfill gas project activities - Consolidated monitoring methodology for Landfill gas project activities" of 22/06/2007 and ACM0002, version 06, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources - Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources" of 19/05/2006 /04/ /05/ the emission reductions have been calculated base on the following formula:

$$ER_y=(MD_{project,y}-MD_{reg,y})*GWP_{CH4}+EL_{LFG,y}*CEF_{elec,B,y}-EL_{PR,y}*CEF_{elec,PR,y}+ET_{LFG,y}*CEF_{ther,BL,y}-ET_{PR,y}*CEF_{ther,PR,y}$$

$$MD_{project,y}=MD_{flare,y}+MD_{electricity,y}+MD_{thermal,y}$$

$$MD_{flare,y}=(LFG_{flare,y}*W_{CH4,y}*D_{CH4})-(PE_{flare,y}/GWP_{CH4})$$

$$MD_{electricity,y}=LFG_{electricity,y}*W_{CH4,y}*D_{CH4}$$

Where:

ER_y	Emission reductions, in tonnes of CO2 equivalents (tCO2e).
$MD_{project,y}$	The amount of methane that would have been destroyed/combusted during the year, in tonnes of methane (tCH4)
$MD_{reg,y}$	The amount of methane that would have been destroyed/combusted during the year in the absence of the project, in tonnes of methane (tCH_4)
GWP_{CH4},	Global Warming Potential value for methane, for the first commitment period is 21 (tCO_2e/tCH_4)
$EL_{LFG,y}$	Net quantity of electricity produced using LFG, which in the absence of the project activity would have been produced by power plants connected to the grid or by an on-site/off-site fossil fuel based captive power generation, during year y, in megawatt hours (MWh).
$CEF_{elecy,BL,y}$	CO_2 emissions intensity of the baseline source of electricity displaced (tCO_2e/MWh)
$ET_{LFG,y}$	The quantity of thermal energy produced utilizing the landfill gas, which in the absence of the project activity would have been produced from onsite/offsite fossil fuel fired

	boiler, during the year y (TJ). The project does not produce thermal energy utilizing the landfill, so this parameter is not monitored.
$CEF_{ther,BL,y}$	CO_2 emissions intensity of the fuel used by boiler to generate thermal energy which is displaced by LFG based thermal energy generation(tCO_2e/TJ). The project does not produce thermal energy from the landfill gas, so this parameter is not monitored
$EL_{PR,y}$	The amount of electricity generated in an on-site fossil fuel fired power plant or imported from the grid as a result of the project activity, measured using an electricity meter (MWh).
$CEF_{elec,y,PR,y}$	The carbon emissions factor for electricity generated in the project activity(tCO_2/MWh)
$ET_{PR,y}$	The fossil fuel consumption on site for the project activity in year y (tonne)
$EF_{fuel,,PR,y}$	CO_2 emissions factor of the fossil fuel used by the boiler to generate thermal energy for the project activity during year y. The project does not produce thermal energy from the landfill gas, so this parameter is not monitored.
$MD_{flare,y}$	Quantity of methane destroyed by flaring (tCH_4/y)
$LFG_{flare,y}$	Quantity of landfill gas flared during the year (Nm^3LFG/y)
$W_{CH4,y}$	Average methane fraction of the landfill gas as measured during the year (m^3CH_4/m^3LFG)
$D_{CH4,y}$	Density of methane (tCH_4/m^3CH_4)
PE_{CH4}	Project emissions from flaring of the residual gas stream (tCO_2/y)
$MD_{electriciity,y}$	Quantity of methane destroyed by the generation of electricity (tCH_4/y)
$LFG_{electricity,y}$	Quantity of landfill gas fed into electricity generator (Nm^3LFG/y)
$MD_{thermal,y}$	Quantity of methane destroyed by thermal energy production (tCH_4/y), This parameter is not required to be monitored since the project does not produce thermal energy utilizing the landfill gas.

As per the “Tool to determine project emissions from flaring gases containing methane”, version 01 /07/, the project emissions from flaring of a residual gas stream in landfills is calculated as:

$$PE_{flare,y} = \sum_{h=1}^{8760} TM_{RG,h} \times (1-\eta_{flare,h}) \times \frac{GWPCH4}{1000}$$

Where:

$PE_{flare,y}$	Project emissions from flaring of the residual gas stream(tCO_{2e}/y)
$TM_{RG,h}$	Mass flow rate of methane in the residual gas in the hour h (kg/h)
$\eta_{flare,h}$	Flare efficiency in hour h,
GWP_{CH4},	Global Warming Potential value for methane for the first commitment period is 21 tCO_2e/tCH_4)

$TM_{RG,h} = FV_{RG,h} * fv_{CH4,GR,h} * \rho_{CH4,n}$

$FV_{RG,h}$	Volumetric flow rate of the residual gas in dry basis at normal conditions in hour h (m^3/h)
$fv_{CH4,GR,h}$	Volumetric fraction of methane in the residual gas on dry basis in hour h
$\rho_{CH4,n}$	Density of methane at normal conditions (kg/m^3)

No leakage effects need to be accounted under ACM0001 version 06 /04/ and the registered PDD /01/.

The monitoring report MR2 /02/ and Emission reductions calculation spreadsheet (ERCS) /29/, as well as the Master-spreadsheet /34/ and the explanation of the Master-spreadsheet/51/ has been checked and RINA was able to confirm that the necessary formulas and explanation has been reported correctly and completely; the explanation/51/ has been made for the Master-spreadsheet for a clear understanding of the calculation.

3.4.1 Compliance of the monitoring plan with the monitoring methodology

During the second monitoring period from 01/04/2010 to 31/07/2011, the validated and registered monitoring plan was found to be in accordance with the applied methodology, ACM0001 version 06 and ACM0002 version 06 /04//05/. All the monitoring parameters, monitoring and calibration procedures follow the methodology requirements. No recommendation was made during this verification.

3.4.2 Compliance of monitoring with monitoring plan

During the second monitoring period, the monitoring plan and the applied methodology have been properly implemented and followed by the project participant. All parameters stated in the monitoring plan, the applied methodology and relevant EB decisions have been sufficiently monitored as well as the management and operation system, monitoring results, equipment accuracy and calibration requirements.

The following parameters have been monitored in accordance with the monitoring plan in the registered PDD /01/ and the monitoring report (MR2) /02/.

3.4.2.1 Data fixed ex-ante

DATA/PARAMETER	Source of data	Reported value for the project period	Assessment/Observation
GWP_{CH4} Global Warming Potential of methane	Revised 1996 IPCC Guideline for National Greenhouse Gas Inventory /36/	21tCO2e/tCH4	This is a default value as per the registered monitoring plan. This value has been not changed in the updated 2006 IPCC Guidelines for National Greenhouse Gas Inventories /36/
$\rho\ CH_{4,n,h}$ Density of methane gas at normal conditions	Tool to determine project emissions from flaring gases containing methane /07/	$0.0007168tCH_4/m^3CH_4$	This is a default value as per the registered monitoring plan.
$CEF_{elec,y}$	Data published by Chinese DNA/33/ and registered PDD/01/	1.05176 tCO2/MWh	This is a ex-ante fixed value for the crediting period as per the registered PDD. Therefore, it is not requested to monitor and recalculate during the first crediting period.
Local and national regulatory framework	Law and regulations about waste management systems in China: GB16889-1997 /37/, GB16889-2008 /38/	No impact on parameters monitored during the current crediting period.	The information though recorded annually, is used for changes to the adjustment factor or directly $MD_{reg,y}$ as per the registered monitoring plan.

3.4.2.2 Monitored data

<table>
<tr><td>DATA/PARAMETER</td><td>$LFG_{total,y}$</td></tr>
<tr><td>Data Unit</td><td>Nm^3</td></tr>
<tr><td>Description</td><td>Total amount of landfill gas captured</td></tr>
<tr><td>Source of data to be used</td><td>Monitoring records from the flow meter integrated with a temperature transmitter and a pressure transmitter to normalize the volume to a standard condition automatically.</td></tr>
<tr><td>Value data for the monitoring period</td><td>12,858,228</td></tr>
<tr><td>Measuring frequency</td><td>Continuously by the flow meter</td></tr>
<tr><td>Reporting frequency and recording procedure</td><td>The flow rate is measured continuously and recorded every 5 minutes by PLC system automatically. The data is aggregated hourly, daily, monthly and yearly, and archived electronically. The measuring and reporting frequency is in accordance with the registered monitoring plan and monitoring methodology.</td></tr>
<tr><td>Type of monitoring equipment</td><td><table>
<tr><td>Meter</td><td>Flow meter $LFG_{total,y}$</td></tr>
<tr><td>Type/Model</td><td>Annubar 485</td></tr>
<tr><td>Manufacturer</td><td>Rosemount</td></tr>
<tr><td>SN</td><td>01726699</td></tr>
<tr><td>Accuracy</td><td>±0.9%</td></tr>
</table></td></tr>
<tr><td>Is accuracy of the monitoring equipment as stated in the PDD?</td><td>The accuracy of the meter is in line with the national industrial standard JJG 640-1994 /10/, thus is accpeted.</td></tr>
<tr><td>Calibration frequency/interval</td><td><table>
<tr><td>Meter</td><td>Flow meter $LFG_{total,y}$</td></tr>
<tr><td>Calibration frequency</td><td>Less than once a year</td></tr>
<tr><td>Calibration Entity</td><td>Liaoning Provincial Institute of Measurement</td></tr>
<tr><td>Calibration date</td><td>17/09/2009
14/09/2010</td></tr>
<tr><td>Calibration Standard</td><td>JJG 640-1994</td></tr>
<tr><td>Validity period</td><td>17/09/2009-16/09/2010
14/09/2010-13/09/2011</td></tr>
</table></td></tr>
<tr><td>Is the calibration interval in line with the monitoring plan of the PDD?</td><td>Yes. the calibration interval is in line with the national industrial standard JJG 640-1994 /10/ which required yearly calibration. The calibration was conducted according to the project Management Manual/27/ which defined the calibration interval and is in line with the monitoring plan of the registered PDD.
The calibration certificates /19/ confirm the proper</td></tr>
</table>

	functioning of monitoring equipment and valid for the whole monitoring period.
How were the values in the monitoring report verified and cross-checked?	RINA has verified the data in the MR2 /02/ and the ERCS/29/ against the raw data /40/ on site and found to be correct. As per the registered PDD, the sum of the quantities fed to the flare(s), to the power plant(s) must be compared annually with the total quantity of methane generated. The lowest value of the two must be adopted. The calculation procedures were fully included in the spreadsheet template Master-spreadsheet /34/. And the calculation method employed was in accordance with the methodology and registered monitoring plan. The sum of the quantities fed to the flare, to the power plant was compared every 5 minutes with the total quantity of methane generated, thus it was confirmed conservative and appropriate. The logic settings of the Master-spreadsheet were verified as correct. The raw data imported into the Master-spreadsheet can reproduce the same results as the reported value in MR2 and detailed ERCS. In conclusion, the value of $LFG_{total,y}$ has been recorded as per the registered PDD and correctly employed in the calculation.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by flow meter integrated with a temperature transmitter and a pressure transmitter to normalize the volume to a standard condition automatically. The continuous basis signals generated by the flow meter is sent to the PLC and converted to the digital data. The digital data is recorded every 5 minutes and stored in the database in a Factory Data Storage System (FDS) connected to the PLC /52/. The FDS automatically puts the monitored data onto a spreadsheet for the calculation of the emission reductions follows the formula as per the methodology. The monitored data and the calculated ERs are aggregated hourly, daily, monthly and yearly in a standard format for reporting purposes. It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable, since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the monitoring period.

<table>
<tr><td>DATA/PARAMETER</td><td>$LFG_{flare,y}$</td></tr>
<tr><td>Data Unit</td><td>Nm^3</td></tr>
<tr><td>Description</td><td>Amount of landfill gas flared</td></tr>
<tr><td>Source of data to be used</td><td>Monitoring records from the flow meter integrated with a temperature transmitter and a pressure transmitter to normalize the volume to a standard condition automatically.</td></tr>
<tr><td>Value data for the monitoring period</td><td>5,212,888</td></tr>
<tr><td>Measuring frequency</td><td>Continuously by the flow meter</td></tr>
<tr><td>Reporting frequency and recording procedure</td><td>The flow rate is measured continuously and recorded every 5 minutes by PLC system automatically. The data is aggregated hourly, daily, monthly and yearly, and archived electronically. The measuring and reporting frequency is in accordance with the monitoring plan and monitoring methodology.</td></tr>
<tr><td>Type of monitoring equipment</td><td>
<table>
<tr><td>Meter</td><td>Flow meter $LFG_{flare,y}$</td></tr>
<tr><td>Type/Model</td><td>Annubar 285</td></tr>
<tr><td>Manufacturer</td><td>Rosemount</td></tr>
<tr><td>SN</td><td>01746509</td></tr>
<tr><td>Accuracy</td><td>±2%</td></tr>
</table>
</td></tr>
<tr><td>Is accuracy of the monitoring equipment as stated in the PDD?</td><td>The accuracy of the meter is in line with the national industrial standard JJG 640-1994 /10/, thus is accpeted.</td></tr>
<tr><td>Calibration frequency/interval</td><td>
<table>
<tr><td>Meter</td><td>Flow meter $LFG_{flare,y}$</td></tr>
<tr><td>Calibration frequency</td><td>Less than once a year</td></tr>
<tr><td>Calibration Entity</td><td>Liaoning Provincial Institute of Measurement</td></tr>
<tr><td>Calibration date</td><td>17/09/2009
14/09/2009</td></tr>
<tr><td>Calibration Standard</td><td>JJG 640-1994</td></tr>
<tr><td>Validity period</td><td>17/09/2009-16/09/2010
14/09/2010-13/09/2011</td></tr>
</table>
</td></tr>
<tr><td>Is the calibration interval in line with the monitoring plan of the PDD?</td><td>Yes. The calibration interval is in line with the national industrial standard JJG 640-1994 /10/ which required yearly calibration. The calibration was conducted according to the project Management Manual/27/ which defined the calibration interval and is in line with the monitoring plan of the registered PDD.
The calibration certificates /21/ confirm proper functioning of the monitoring equipment and valid for</td></tr>
</table>

	the whole monitoring period.
How were the values in the monitoring report verified and cross-checked?	RINA has verified the data in the MR2 /02/ and the ERCS/29/ against the raw data /40/ on site and found to be correct. As per the registered PDD, the sum of the quantities fed to the flare(s), to the power plant(s) must be compared annually with the total quantity of methane generated. The lowest value of the two must be adopted. The calculation procedures were fully included in the spreadsheet template Master-spreadsheet /34/. And the calculation method employed was in accordance with the methodology and registered monitoring plan. The sum of the quantities fed to the flare, to the power plant was compared every 5 minutes with the total quantity of methane generated, thus it was confirmed conservative and appropriate. The logic settings of the Master-spreadsheet were verified as correct. The raw data imported into the Master-spreadsheet can reproduce the same results as the reported value in MR2 /02/ and detailed ERCS /29/. In conclusion, the value of $LFG_{flare,y}$ has been recorded as per the registered PDD and correctly employed in the calculation.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by flow meter integrated with a temperature transmitter and a pressure transmitter to normalize the volume to a standard condition automatically. The continuous basis signals generated by the flow meter is sent to the PLC and converted to the digital data. The digital data is recorded every 5 minutes and stored in the database in a Factory Data Storage System (FDS) connected to the PLC. The FDS automatically puts the monitored data onto a spreadsheet for the calculation of the emission reductions follows the formula as per the methodology. The monitored data and the calculated ERs are aggregated hourly, daily, monthly and yearly in a standard format for reporting purposes. It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the monitoring period.

VERIFICATION/CERTIFICATION REPORT

DATA/PARAMETER	$LFG_{electricity,y}$
Data Unit	Nm^3
Description	Amount of landfill gas combusted in power plant
Source of data to be used	Monitoring records from the flow meter integrated with a temperature transmitter and a pressure transmitter to normalize the volume to a standard condition automatically.
Value data for the monitoring period	7,704,232
Measuring frequency	Continuously by the flow meter
Reporting frequency and recording procedure	The flow rate is measured continuously and recorded every 5 minutes by PLC system automatically. The data is aggregated hourly, daily, monthly and yearly, and archived electronically. The measuring and reporting frequency is in accordance with the monitoring plan and monitoring methodology.
Type of monitoring equipment	*Meter*: *Flow meter $LFG_{electricity,y}$* *Type/Model*: *Annubar 285* *Manufacturer*: *Rosemount* *SN*: *01746510* *Accuracy*: ±2%
Is accuracy of the monitoring equipment as stated in the PDD?	The accuracy of the meter is in line with the national industrial standard JJG 640-1994 /08/, thus is accpeted.
Calibration frequency/interval	*Meter*: *Flow meter $LFG_{electricity,y}$* *Calibration frequency*: *Less than once a year* *Calibration Entity*: *Liaoning Provincial Institute of Measurement* *Calibration date*: *17/09/2009*, *14/09/2010* *Calibration Standard*: *JJG 640-1994* *Validity period*: *17/09/2009-16/09/2010*, *14/09/2010-13/09/2011*
Is the calibration interval in line with the monitoring plan of the PDD?	Yes. the calibration interval is in line with the national industrial standard JJG 640-1994 /10/ which required yearly calibration. The calibration was conducted according to the project Management Manual/27/ which defined the calibration interval and is in line with the monitoring plan of the registered PDD. The calibration certificates /20/ confirm proper functioning of monitoring equipment and valid for the

	whole monitoring period.
How were the values in the monitoring report verified and cross-checked?	RINA has verified the data in the MR2 /02/ and the ERCS/29/ against the electrical records on site and found to be correct. As per the registered PDD, the sum of the quantities fed to the flare(s), to the power plant(s) must be compared annually with the total quantity of methane generated. The lowest value of the two must be adopted. The calculation procedures were fully included in the spreadsheet template Master-spreadsheet/34/. And the calculation method employed was in accordance with the methodology and registered monitoring plan. The sum of the quantities fed to the flare, to the power plant was compared every 5 minutes with the total quantity of methane generated, thus it was confirmed conservative and appropriate. The logic settings of the Master-spreadsheet were verified as correct. The raw data imported into the Master-spreadsheet can reproduce the same results as the reported value in MR2 /02/ and detailed ERCS/29/. In conclusion, the value of $LFG_{electricity,y}$ has been recorded as per the registered PDD and correctly employed in the calculation.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by flow meter integrated with a temperature transmitter and a pressure transmitter to normalize the volume to a standard condition automatically. The continuous basis signals generated by the flow meter is sent to the PLC and converted to the digital data. The digital data is recorded every 5 minutes and stored in the database in a Factory Data Storage System (FDS) connected to the PLC. The FDS automatically puts the monitored data onto a spreadsheet for the calculation of the emission reductions follows the formula as per the methodology. The monitored data and the calculated ERs are aggregated hourly, daily, monthly and yearly in a standard format for reporting purposes. It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable, since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the monitoring period.

<table>
<tr><td>DATA/PARAMETER</td><td>$W_{CH4,y}$</td></tr>
<tr><td>Data Unit</td><td>m^3 CH4/m^3 LFG</td></tr>
<tr><td>Description</td><td>Methane fraction in the landfill gas</td></tr>
<tr><td>Source of data to be used</td><td>Monitoring records from the gas analyzer</td></tr>
<tr><td>Value data for the monitoring period</td><td>About 50% (variable)</td></tr>
<tr><td>Measuring frequency</td><td>Continuously by the gas analyzer</td></tr>
<tr><td>Reporting frequency and recording procedure</td><td>The methane fraction is measured continuously and recorded every 5 minutes by PLC system automatically. The measuring and reporting frequency is in accordance with the monitoring plan and monitoring methodology.</td></tr>
<tr><td>Type of monitoring equipment</td><td><table>
<tr><td>Meter</td><td>Gas analyzer $W_{CH4,y}$</td></tr>
<tr><td>Type/Model</td><td>XGF-4043</td></tr>
<tr><td>Manufacturer</td><td>Nanjing Analytic Instrument Company</td></tr>
<tr><td>SN</td><td>0708404</td></tr>
<tr><td>Accuracy</td><td>⩽2%</td></tr>
</table></td></tr>
<tr><td>Is accuracy of the monitoring equipment as stated in the PDD?</td><td>The accuracy of the meter is in line with the national industrial standard JJG 678-2007 /11/, thus is accpeted.</td></tr>
<tr><td>Calibration frequency/interval</td><td><table>
<tr><td>Meter</td><td>Gas analyzer $W_{CH4,y}$</td></tr>
<tr><td>Cal bration frequency</td><td>Less than once a year</td></tr>
<tr><td>Calibration Entity</td><td>Liaoning Provincial Institute of Measurement</td></tr>
<tr><td>Calibration date</td><td>18/09/2009
13/09/2010</td></tr>
<tr><td>Calibration Standard</td><td>JJG 678-2007</td></tr>
<tr><td>Validity period</td><td>18/09/2009-17/09/2010
13/09/2010-12/09/2011</td></tr>
</table></td></tr>
<tr><td>Is the calibration interval in line with the monitoring plan of the PDD?</td><td>The meter is calibrated every year by an external authorized institution, which is compliance with the national industrial standard JJG 678-2007 /11/ which required yearly calibration. The calibration was conducted according to the project Management Manual/27/ which defined the calibration interval and is in line with the registered monitoring plan. According to the project Management Manual /27/, a monthly internal calibration of the gas analyzer was conducted regularly as per the manufacturer's recommendations. The internal calibration records /48/ were provided and checked to be correct as per</td></tr>
</table>

	the Management Manual /27/. The standard gas cylinder has been certified before calibration /56//57/ and the certificates of the gas were valid in the whole monitoring period. The calibration certificates /22/ and the internal calibration /48/ confirm proper functioning of monitoring equipment and valid for the whole monitoring period.
How were the values in the monitoring report verified and cross-checked?	RINA has verified the raw data employed in the calculation of emission reductions ERCS /29/ against the raw data /40/ on site and found to be correct. The value of methane content was used to calculate the methane quantities. The calculation method and procedures were checked to be correct and the logic settings in the Master-spreadsheet /34/ were also checked to be correct and can reproduce the same results. As per the registered monitoring plan /01/, in case of degassing installation operates for a short time without CH_4 signal, the average CH_4 content of the last 7 days will be used to determine as the methane content. During this monitoring period, the analyzer was disconnected from PLC with no CH_4 signals when conducting the monthly internal calibration (the plant was still on operation). It was confirmed by on site visit that the value of methane content in this failure case was recorded by the PLC as ZERO in the original database/40/. To be conservative on the calculation, the PP voluntarily did not claim any emission reductions sourced from the correction of the methane content for the above failure case in the MR2 /02/. It was confirmed that the emission reductions calculation in the ERSC version 02 /29/ included only the ER value based on the original data with the value of methane content as ZERO as recorded in case of failure. RINA ensured that the calculation is appropriate and conservative so that it can be accepted. In conclusion, the value of $W_{CH4,y}$ has been recorded as per the registered PDD and correctly employed in the calculation.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by gas analyzer. The continuous basis signals generated by the gas analyzer is sent to the PLC and converted to the digital data. The digital data is recorded every 5 minutes and stored in the database in a Factory Data Storage System (FDS) connected to the PLC. The FDS automatically puts the monitored data onto a spreadsheet/34/ for the calculation of the emission reductions follows the formula as per the methodology. The monitored data and the calculated ERs are aggregated hourly, monthly and yearly in a standard format for reporting purposes.

	It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the monitoring period.

DATA/PARAMETER	EL_{LFG}
Data Unit	MWh
Description	Net amount of electricity generated using landfill gas
Source of data to be used	Monitoring records from the power meter.
Value data for the monitoring period	11,168,400
Measuring frequency	Continuously by the power meter
Reporting frequency and recording procedure	The electricity is measured continuously and recorded every month. The data is aggregated monthly and yearly, and archived electronically. The measuring and reporting frequency is in accordance with the monitoring plan and monitoring methodology.
Type of monitoring equipment	*Meter*: *Electricity meter EL_{LFG}* *Type/Model*: *DSSD331-3* *Manufacturer*: *Changsha Weisheng* *SN*: *8007472* *Accuracy*: *0.5s*
Is accuracy of the monitoring equipment as stated in the PDD?	The accuracy of the meter is in line with the national industrial standard JJG 596-1999 /28/, thus is accpeted.
Calibration frequency/interval	*Meter*: *Electricity meter EL_{LFG}* *Calibration frequency*: *Once per 3 years* *Calibration Entity*: *Power Metrology Institute of Liaoning Electric Power Co., Ltd. Shenyang Power Supply Company* *Calibration date*: *12/10/2008* *Calibration Standard*: *JJG 596-1999* *Validity period*: *12/10/2008-11/10/2011*
Is the calibration interval in line with the monitoring plan of the PDD?	The meter is calibrated every 3 years as per the registered monitoring plan and the project Management manual/27/. According the national industrial standard DL/T 448-2000 /35/, the meter shall be calibrated every 5 years. RINA thus confirmed that the calibration of the meter is achieved by higher standard than the national standard DL/T448-2000 /35/ which is appropriate and in compliance with the registered monitoring plan. The calibration certificate /13/ confirms proper functioning of monitoring equipment and valid for the whole monitoring period.
How were the values in the monitoring report verified and cross-checked?	RINA has verified the data in the MR2 /02/ and the ERCS/29/ against the electrical records on site (the

	meter reading records /40/, the ETNs for the power sales, the invoices for the power sales /14/ by cross-checking and found to be correct. The lowest value of the three (1. The electricity amount based on meter reading records; 2. The electricity amount based on transaction bills and 3. The electricity amount based on transaction invoice) is adopted for the net amount of electricity generated using landfill gas in the calculation and MR2, which is appropriate and conservative. In conclusion, the EL_{LFG} has been recorded and employed as per the registered PDD.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by power meter. The data is read at the end of every month and settled between the project owner and the grid company with ETNs and invoices of power sales /14/ as per the power selling contract /53//54/. The monitored data are recorded monthly and aggregated monthly and yearly in a standard format for reporting purposes. It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the monitoring period.

<table>
<tr><td>DATA/PARAMETER</td><td>EL_{PR}</td></tr>
<tr><td>Data Unit</td><td>MWh</td></tr>
<tr><td>Description</td><td>Total amount of electricity consumed</td></tr>
<tr><td>Source of data to be used</td><td>Monitoring records from the power meters installed at the low-voltage side of the project site.</td></tr>
<tr><td>Value data for the monitoring period</td><td>Electricity Meter A: 587.765
Electricity Meter B: 0
Total: 587.765</td></tr>
<tr><td>Measuring frequency</td><td>Continuously by the power meter</td></tr>
<tr><td>Reporting frequency and recording procedure</td><td>The electricity is measured continuously and recorded every month. The data is aggregated monthly and yearly, and archived electronically. The measuring and reporting frequency is in accordance with the registered monitoring plan and monitoring methodology.</td></tr>
<tr><td>Type of monitoring equipment</td><td>
<table>
<tr><td>Meter</td><td>Electricity meter A EL_{PR}</td></tr>
<tr><td>Type/Model</td><td>DTSD482</td></tr>
<tr><td>Manufacturer</td><td>Shenyang Shishang</td></tr>
<tr><td>SN</td><td>0103200014423</td></tr>
<tr><td>Accuracy</td><td>1</td></tr>
</table>
<table>
<tr><td>Meter</td><td>Electricity meter B EL_{PR}</td></tr>
<tr><td>Type/Model</td><td>DTS51</td></tr>
<tr><td>Manufacturer</td><td>Longdian DianQi</td></tr>
<tr><td>SN</td><td>0103200019480</td></tr>
<tr><td>Accuracy</td><td>1</td></tr>
</table>
</td></tr>
<tr><td>Is accuracy of the monitoring equipment as stated in the PDD?</td><td>The accuracy of the meters is in line with the national industrial standard JJG 596-1999 /28/, thus is accpeted.</td></tr>
<tr><td>Calibration frequency/interval</td><td>
<table>
<tr><td>Meter</td><td>Electricity meter A EL_{PR}</td></tr>
<tr><td>Calibration frequency</td><td>Once per 3 years</td></tr>
<tr><td>Calibration Entity</td><td>Su Jiatun Agro Electricity Bureau Calibration and Testing Center</td></tr>
<tr><td>Calibration date</td><td>17/07/2006
19/02/2009</td></tr>
<tr><td>Calibration Standard</td><td>JJG 596-1999</td></tr>
<tr><td>Validity period</td><td>17/07/2006-16/07/2011
19/02/2009-18/02/2014</td></tr>
</table>
<table>
<tr><td>Meter</td><td>Electricity meter B EL_{PR}</td></tr>
<tr><td>Calibration frequency</td><td>Once per 3 years</td></tr>
<tr><td>Calibration Entity</td><td>Su Jiatun Agro</td></tr>
</table>
</td></tr>
</table>

	<table><tr><td></td><td>Electricity Bureau Calibration and Testing Center</td></tr><tr><td>Calibration date</td><td>04/01/2007 05/01/2009</td></tr><tr><td>Calibration Standard</td><td>JJG 596-1999</td></tr><tr><td>Validity period</td><td>04/01/2007-03/01/2012 05/01/2009-04/01/2014</td></tr></table>
Is the calibration interval in line with the monitoring plan of the PDD?	The meters are calibrated every 3 years, which is compliance with the registered monitoring plan and the project Management Manual/27/. According the national industrial standard DL/T 448-2000 /35/, the meter shall be calibrated every 5 years. RINA thus confirmed that the calibration of the meter is achieved by higher standard than the national standard DL/T448-2000 /35/ which is appropriate and in compliance with the monitoring plan. The calibration certificates /15//16/ confirm proper functioning of monitoring equipment and valid for the whole monitoring period.
How were the values in the monitoring report verified and cross-checked?	RINA has verified the data in the MR2 /02/ and the ERCS/29/ against the electrical records on site (the meter reading records /40/, the ETNs for the power purchase, the invoices for the power purchase /17//18/) by cross-checking and found to be correct. The meter readings were crosschecked with the ETNs and the invoices and found to be consistent. The electricity imported by the project activity was determined as 587.765MWh which covered the period from 13/03/2010 to 19/08/2011 (including the whole monitoring period from 01/04/2010 to 31/07/2011). The period selected is in conformance with the ETNs date. Therefore the value employed in the calculation is more conservative. In conclusion, the EL_{PR} has been recorded and employed as per the registered PDD.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by power meters. The data is read at the end of every month and settled between the project owner and the grid company with ETNs and invoices of power purchase /17//18/ as per the power selling contract /53//54/. The monitored data are recorded monthly and aggregated monthly and yearly in a standard format for reporting purposes. It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for	Not applicable since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the monitoring period.

deviation been approved?	

DATA/PARAMETER	T_{flare}
Data Unit	℃
Description	Temperature in Exhaust gas of enclosed flare
Source of data to be used	Monitoring records from the N-type thermocouple
Value data for the monitoring period	About 600℃ (variable)
Measuring frequency	Continuously by the N-type thermocouple
Reporting frequency and recording procedure	The temperature is measured continuously and recorded every 5 minutes by PLC system automatically. The measuring and reporting frequency is in accordance with the monitoring plan and monitoring methodology.
Type of monitoring equipment	

Meter	*N-type thermocouple T_{flare1}*
Type/Model	*WRMK-331*
Manufacturer	*Shanghai Hongtian Instrument Company*
Accuracy	±2.5℃

Meter	*N-type thermocouple T_{flare2}*
Type/Model	*WRMK-331*
Manufacturer	*Shanghai Hongtian Instrument Company*
Accuracy	±2.5℃

Meter	*N-type thermocouple T_{flare3}*
Type/Model	*WRMK-331*
Manufacturer	*Shanghai Hongtian Instrument Company*
Accuracy	±2.5℃

Is accuracy of the monitoring equipment as stated in the PDD?	The accuracy of the meter (*±2.5℃)* is in line with the national industrial standard JJG351-1996 /58/ as per the quality certificates/12/, thus is in line with the registered PDD.
Calibration frequency/interval	

Meter	*N-type thermocouple T_{flare1}*
Calibration frequency	*Annually replaced.*
Install/Replace date	02/05/2009
Validity period	03/05/2009-02/05/2010

Meter	*N-type thermocouple*

	<table><tr><td></td><td>T_{flare2}</td></tr><tr><td>*Calibration frequency*</td><td>*Annually replaced.*</td></tr><tr><td>*Install/Replace date*</td><td>15/04/2010</td></tr><tr><td>*Validity period*</td><td>16/04/2010-15/04/2011</td></tr></table> <table><tr><td>*Meter*</td><td>*N-type thermocouple* T_{flare3}</td></tr><tr><td>*Calibration frequency*</td><td>*Annually replaced.*</td></tr><tr><td>*Install/Replace date*</td><td>12/04/2011</td></tr><tr><td>*Validity period*</td><td>13/04/2011-12/04/2012</td></tr></table> The thermocouple was replaced by others on 02/05/2009, 15/04/2010 and 12/04/2011 /55/, which are in accordance with the registered PDD.
Is the calibration interval in line with the monitoring plan of the PDD?	The quality certificates /12/ confirm proper functioning of monitoring equipment and valid for the whole monitoring period. The replacement interval is in line with the monitoring plan of the registered PDD.
How were the values in the monitoring report verified and cross-checked?	As per the registered PDD, the flare efficiency will be determined by the temperature of the exhaust gas. The 5-minute raw data indicating the temperature above 500℃ on an hourly basis was verified. The logical settings to determine the flare efficiency in the Master-spreadsheet/34/ was checked and found to be correct and in line with the registered monitoring plan and the methodology. The results can be reproduced in the spreadsheet. In conclusion, the T_{flare} has been recorded as per the registered PDD and correctly employed in the calculation of the flare efficiency.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by the N-type thermocouple installed at the outlet of the flare. The continuous basis signals generated by the thermocouple is sent to the PLC and converted to the digital data. The digital data is recorded every 5 minutes and stored in the database in a Factory Data Storage System (FDS) connected to the PLC. The FDS automatically puts the monitored data onto a spreadsheet for the calculation of the flare efficiency follows the method as per the methodology. The monitored data are aggregated hourly, monthly and yearly in a standard format for reporting purposes. It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the	Not applicable, since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the

registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	monitoring period.

VERIFICATION/CERTIFICATION REPORT

DATA/PARAMETER	EWH
Data Unit	H
Description	Engine working hours of power plant
Source of data to be used	Monitoring records from the PLC (programmable logic controller)
Value data for the monitoring period	11,441
Measuring frequency	Continuously by the PLC
Reporting frequency and recording procedure	The working hour of the power plant is measured continuously for the group of engines, recorded every 5 minutes and archived electronically. The measuring and reporting frequency is in accordance with the monitoring plan and monitoring methodology.
Type of monitoring equipment	Type/Model: Siemens S7-300 Manufacturer: Siemens
Is accuracy of the monitoring equipment as stated in the PDD?	The time was recorded by the Siemens S7-300 which is sufficient accurate for the monitoring. As per the specification, the deviation per day of the device is <10 seconds /49/.
Calibration frequency/interval	The PLC is not required to be calibrated as per the registered monitoring plan /01/. The quality certificates confirm proper functioning of monitoring equipment.
Is the calibration interval in line with the monitoring plan of the PDD?	N/A No requirement by the manufacturer. The PLC was maintained in line with manufacturer recommendations.
How were the values in the monitoring report verified and cross-checked?	RINA has verified the data in the MR2 /02/ and the ERCS/29/ against the electrical records on site and found to be correct.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by the PLC. The data is recorded every 5 minutes and archived electronically. It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable, since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the monitoring period.

VERIFICATION/CERTIFICATION REPORT

DATA/PARAMETER	FWH
Data Unit	H
Description	Flare working hours
Source of data to be used	Monitoring records from the PLC (programmable logic controller
Value data for the monitoring period	11,532
Measuring frequency	Continuously by the PLC
Reporting frequency and recording procedure	The working hour of flare is measured continuously and recorded every 5 minutes and archived electronically. The measuring and reporting frequency is in accordance with the monitoring plan and monitoring methodology.
Type of monitoring equipment	Type/Model: Siemens S7-300 Manufacturer: Siemens
Is accuracy of the monitoring equipment as stated in the PDD?	The time was recorded by the PLC which is sufficient accurate for the monitoring. As per the specification, the deviation per day of the device is <10 seconds /49/.
Calibration frequency/interval	The PLC is not required to be calibrated as per the registered monitoring plan. The quality certificates confirm proper functioning of monitoring equipment.
Is the calibration interval in line with the monitoring plan of the PDD?	N/A No requirement by the manufacturer. The PLC was maintained in line with the manufacturer recommendations.
How were the values in the monitoring report verified and cross-checked?	RINA has verified the reported value in the MR2 /02/ and the ERCS/29/ against the electrical records on site and found to be correct.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by the PLC. The data is recorded every 5 minutes and archived electronically. It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the monitoring period.

DATA/PARAMETER	$PE_{flare,y}$
Data Unit	tCO_2e
Description	Emission caused by methane not being destroyed in the course of flaring
Source of data to be used	Monitored by the flow meter, the gas analyzer, the N-type thermocouple
Value data for the monitoring period	4,122.63
Comments	According to the methodology and registered PDD, the parameters should be monitored as per the "*Tool to determine project emissions from flaring gases containing methane*". The PP selected the default flare efficiency 90% in the registered PDD. All the required parameters $fv_{i,h}$, $FV_{RG,h}$ T_{flare} were monitored. No other flare operation parameters need to be monitored as per the specification of the flare system /25//26/. The monitoring of these parameters is specified in respective tables of this section. The logical settings to determine the flare efficiency and calculate the PE_{flare} in the Master-spreadsheet/34/ were checked and found to be correct and in line with the registered monitoring plan and the methodology. The results can be reproduced in the spreadsheet. RINA verified the reported value in the ERCS/29/ and in the MR2 /02/ against the results of PE_{flare} calculation in Master-spreadsheet and found to be correct. In conclusion, the PE_{flare} has been calculated as per the registered PDD.

<table>
<tr><td>DATA/PARAMETER</td><td>$fv_{CH4,RG,h}$</td></tr>
<tr><td>Data Unit</td><td>%</td></tr>
<tr><td>Description</td><td>Methane fraction in the landfill gas/exhaust gas</td></tr>
<tr><td>Source of data to be used</td><td>Monitoring records from the gas analyzer</td></tr>
<tr><td>Value data for the monitoring period</td><td>About 50% (Variable)</td></tr>
<tr><td>Measuring frequency</td><td>Continuously by the gas analyzer</td></tr>
<tr><td>Reporting frequency and recording procedure</td><td>The methane fraction is measured continuously and recorded every 5 minutes by PLC system automatically. The measuring and reporting frequency is in accordance with the monitoring plan and monitoring methodology.</td></tr>
<tr><td>Type of monitoring equipment</td><td><table>
<tr><td>Meter</td><td>Gas analyzer $fv_{CH4,RG,h}$</td></tr>
<tr><td>Type/Model</td><td>XGF-4043</td></tr>
<tr><td>Manufacturer</td><td>Nanjing Analytic Instrument Company</td></tr>
<tr><td>SN</td><td>0708404</td></tr>
<tr><td>Accuracy</td><td>⩽2%</td></tr>
</table></td></tr>
<tr><td>Is accuracy of the monitoring equipment as stated in the PDD?</td><td>The accuracy of the meter is in line with the national industrial standard JJG 678-2007 /11/, thus is accpeted.</td></tr>
<tr><td>Calibration frequency/interval</td><td><table>
<tr><td>Meter</td><td>Gas analyzer $fv_{CH4,RG,h}$</td></tr>
<tr><td>Calibrati n frequency</td><td>Less than once a year</td></tr>
<tr><td>Calibration Entity</td><td>Liaoning Provincial Institute of Measurement</td></tr>
<tr><td>Calibration date</td><td>18/09/2009
13/09/2010</td></tr>
<tr><td>Calibration Standard</td><td>JJG 678-2007</td></tr>
<tr><td>Validity period</td><td>18/09/2009-17/09/2010
13/09/2010-12/09/2011</td></tr>
</table></td></tr>
<tr><td>Is the calibration interval in line with the monitoring plan of the PDD?</td><td>The meter is calibrated every year by an external authorized institution, which is compliance with the national industrial standard JJG 678-2007 /11/ which required yearly calibration. The calibration was conducted according to the project Management Manual/27/ which defined the calibration interval and is in line with the registered monitoring plan.
According to the project Management Manual /27/, a monthly internal calibration of the gas analyzer was conducted regularly as per the manufacturer’s recommendations. The internal calibration records /48/ were provided and checked to be correct as per</td></tr>
</table>

	the Management Manual /27/. The standard gas cylinder has been certified before calibration /56//57/ and the certificates of the gas were valid in the whole monitoring period. The calibration certificates /22/ confirm proper functioning of monitoring equipment and valid for the whole monitoring period.
How were the values in the monitoring report verified and cross-checked?	RINA has verified the raw data employed in the calculation of emission reductions against the raw data /40/ on site and found to be correct. As per the registered PDD, the data is measured continuously with a gas analyzer on dry basis. RINA verified that the gas analyzer applied for the project monitors on dry basis which is in line with the registered PDD and the applied methodological Tool. RINA also verified the monitoring data and found that the gas monitored is always below 60℃, thus RINA considered the moisture can be neglected as per the Tool. The value of methane content was used to calculate the methane quantities. The calculation method and procedures were checked to be correct and the logic settings in the Master-spreadsheet /34/ were also checked to be correct and can reproduce the same results. As per the registered monitoring plan /01/, in case of degassing installation operates for a short time without CH_4 signal, the average CH_4 content of the last 7 days will be used to determine as the methane content. During the monitoring period, the analyzer was disconnected from PLC with no CH_4 signal when conducting the monthly internal calibration (the plant was still on operation). It was confirmed by on site visit that the value of methane content in this failure case was recorded by the PLC as ZERO (null as no signal) in the original database. To be conservative on the calculation, the PP voluntarily did not claim any emission reductions sourced from the correction of the methane content for the above failure case in the MR2 /02/. It was confirmed that the emission reductions calculation in the ERSC version 02 /39/ included only the ER value based on the original data with the value of methane content as ZERO as recorded in case of failure. RINA ensured that the calculation is appropriate and conservative so that it was accepted. In conclusion, the value of $fv_{CH4,RG,h}$ has been recorded as per the registered PDD and correctly employed in the calculation.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by gas analyzer. The continuous basis signals generated by the gas analyzer is sent to the PLC and converted to the digital data. The digital data is recorded every 5 minutes and stored in the database in a Factory

	Data Storage System (FDS) connected to the PLC. The FDS automatically puts the monitored data onto a spreadsheet/34/ for the calculation of the emission reductions follows the formula as per the methodology. The monitored data and the calculated ERs are aggregated hourly, monthly and yearly in a standard format for reporting purposes. It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the monitoring period.

<table>
<tr><td>DATA/PARAMETER</td><td>$FV_{RG,h}$</td></tr>
<tr><td>Data Unit</td><td>m^3/h</td></tr>
<tr><td>Description</td><td>Volumetric flow rate of the residual gas in dry basis at normal conditions in the hour h</td></tr>
<tr><td>Source of data to be used</td><td>Monitoring records from the flow meter integrated with a temperature transmitter and a pressure transmitter to normalize the volume to a standard condition automatically.</td></tr>
<tr><td>Value data for the monitoring period</td><td>Variable
The cumulative value during the monitoring period is 5,212,888 m^3</td></tr>
<tr><td>Measuring frequency</td><td>Continuously by the flow meter</td></tr>
<tr><td>Reporting frequency and recording procedure</td><td>The flow rate is measured continuously and recorded every 5 minutes by PLC system automatically. The data is aggregated hourly, daily, monthly and yearly, and archived electronically. The measuring and reporting frequency is in accordance with the monitoring plan and monitoring methodology.</td></tr>
<tr><td>Type of monitoring equipment</td><td><table><tr><td>Meter</td><td>Flow meter $FV_{RG,h}$</td></tr><tr><td>Type/Model</td><td>Annubar 285</td></tr><tr><td>Manufacturer</td><td>Rosemount</td></tr><tr><td>SN</td><td>01746509</td></tr><tr><td>Accuracy</td><td>±2%</td></tr></table></td></tr>
<tr><td>Is accuracy of the monitoring equipment as stated in the PDD?</td><td>The accuracy of the meter is in line with the national industrial standard JJG 640-1994 /10/, thus is accpeted.</td></tr>
<tr><td>Calibration frequency/interval</td><td><table><tr><td>Meter</td><td>Flow meter $LFG_{flare,y}$</td></tr><tr><td>Calibration frequency</td><td>Less than once a year</td></tr><tr><td>Calibration Entity</td><td>Liaoning Provincial Institute of Measurement</td></tr><tr><td>Calibration date</td><td>17/09/2009
14/09/2010</td></tr><tr><td>Calibration Standard</td><td>JJG 640-1994</td></tr><tr><td>Validity period</td><td>17/09/2009-16/09/2010
14/09/2010-13/09/2011</td></tr></table></td></tr>
<tr><td>Is the calibration interval in line with the monitoring plan of the PDD?</td><td>Yes. the calibration interval is in line with the national industrial standard JJG 640-1994 /10/ which required yearly calibration. The calibration was conducted according to the project Management Manual/27/ which defined the calibration interval and is in line with the monitoring plan of the registered PDD.
The calibration certificates/21/ confirm proper functioning of monitoring equipment and valid for the</td></tr>
</table>

	whole monitoring period.
How were the values in the monitoring report verified and cross-checked?	This parameter is monitored according to "*Tool to determine project emissions from flaring gases containing methane*". RINA has verified the data in the MR2 /02/ and the ERCS/29/ against the raw data /40/ on site and found to be correct. As per the tool, the monitoring shall ensure that the same basis (dry or wet) is considered and if the residual gas moisture is significant (temperature greater than 60℃), the measured flow rate of the residual gas that is usually referred to wet basis should be corrected to dry basis due to the fact that the measurement of methane is usually undertaken on a dry basis. RINA verified the monitoring system and found the same basis is considered in the measurement and through verifying the temperature of the landfill gas to the flare, it is confirmed that the temperature of the landfill gas to the flare is always below 60℃ during this monitoring period. In conclusion, the $FV_{RG,h}$ has been recorded as per the registered PDD and correctly employed in the calculation.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	RINA has verified the data management system on the project site and confirmed that: The data is continuously monitored by flow meter integrated with a temperature transmitter and a pressure transmitter to normalize the volume to a standard condition automatically. The continuous basis signals generated by the flow meter is sent to the PLC and converted to the digital data. The digital data is recorded every 5 minutes and stored in the database in a Factory Data Storage System (FDS) connected to the PLC. The FDS automatically puts the monitored data onto a spreadsheet for the calculation of the emission reductions follows the formula as per the methodology. The monitored data and the calculated ERs are aggregated hourly, monthly and yearly in a standard format for reporting purposes. It is verified that the data transfer and reporting is correct and in line with the registered PDD.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable since all the data has been correctly monitored, recorded and provided as per the ACM0001 version 06 and registered PDD for the monitoring period.

DATA/PARAMETER	Other Flare Operation Parameters
Data Unit	-
Description	Manufacturers specification of the flare
Comments:	According to the registered PDD, the operation conditions of the flare will be monitored according to the manufacturer's specification. RINA verified the specification of the flare/25//26/ and found that no other parameters are required to be monitored expect for the $FV_{RG,h}$ and the $T_{flare,y}$, which have been monitored and listed in this section. In conclusion, the parameter has been monitored as per the registered PDD.

The proposed project activity employed Annubar-type flow meters for monitoring of the parameters $LFG_{total,y}$, $LFG_{flare,y}$, $LFG_{electricity,y}$, $FV_{RG,h}$. Annubar-type flow meter is integrated with temperature transmitter and pressure transmitter to normalize the volume to a standard condition automatically. According to the manufacturer's (Rosemount) declaration about the calibration /50/, the temperature transmitter and pressure transmitter are integrated into Annubar-type flow meter inseparably; the meter shall be calibrated by a third qualified party through real flow method which covers the calibration of all integrated components; there is no need to calibrate the temperature and pressure transmitter separately. RINA thus cross-checked the calibration certificates /19//20//21/ and found that the meters have been calibrated by a third qualified party Liaoning Provincial Institute of Measurement under national calibration regulation JJG 640-1994 /10/ and real flow method has been taken in the calibration. Therefore RINA was able to confirm that the calibration of Annubar-type flow meter is in accordance with the manufacturer's instruction and complies with national calibration regulation, thus is in line with the registered monitoring plan.

In conclusion, RINA confirms that the monitoring has been implemented in full compliance with the registered monitoring plan /01/ and all the parameters listed in the registered monitoring plan have been sufficiently monitored. The monitored data have been verified and found complete and consistent by checking the whole procedure of data collection.

3.4.3 Accuracy of emission reduction calculations

The emission reductions reported in the MR2 /02/ and ERCS /29/ have been verified to be correct and in line with the registered PDD /01/. The emission reductions by the project activity for the monitoring period from 01/04/2010 to 31/07/2011 is equivalent to 107,353 tCO_2e, as reported in the monitoring report MR2 version 02 of 19/01/2012 /02/. The data presented in the MR2 /02/ was assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. Sufficient evidence was presented and verified by RINA for the reported emission reductions as listed in the above Section 3.4.2.2.

RINA also compared the actual emission reductions with the estimates in the registered PDD /01/ as follows:

The reported emission reductions are equivalent to 107,353 tCO_2e (on average 6,709.56 tCO_2e per month) during the monitoring period from 01/04/2010 to 31/07/2011 /02/. According to the registered PDD /01/, the estimated emission reductions are equivalent to 103,628 tCO_2 and 112,753 tCO_2 in year 2010 and year 2011 respectively, on average 9,015.88 tCO_2 per month. The reported emission reductions are 25.58% lower than the estimated average emission reductions.

Hence, RINA confirmed that the actual emission reductions reported during the monitoring period are less than the corresponding estimates in the registered PDD.

3.4.4 Management system and quality control

The CDM activity was managed in accordance with the registered monitoring plan /01/ and Management Manual /27/.

The monitoring and reporting of all parameters are in accordance with the well-established operational procedures in Management Manual/27/. The site visit confirmed that the management system for the CDM project is in place and can be traced, such as the organizational structure with responsibilities, monitoring procedure and monitoring management, calibration and maintenance, internal audit and competence criteria of CDM personnel involved in the CDM project.

4 VERIFICATION AND CERTIFICATION OPINION

RINA Service S.p.A (RINA) has performed verification of the emission reductions reported for the project activity "Shenyang Laohuchong LFG Power Generation Project" in China, CDM Registration Reference N° 1906, for the period 01/04/2010 to 31/ 07/2011, with regard to the relevant requirements for CDM activities.

The project participants of the "Shenyang Laohuchong LFG Power Generation Project" project are responsible for:

- the preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered project design document version 03 of 16/06/2008
- the development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project

It is the responsibility of RINA to express an independent verification opinion about the project's conformity with the requirements of paragraph 62 of the CDM modalities and procedures and on the reported greenhouse gas emission reductions from the project.

Based on documented evidence and corroborated by an on-site assessment RINA can confirm that:

- the project has been implemented and operated as per the registered PDD;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable CDM requirements;
- the monitoring is in place as per the applied baseline and monitoring methodology;
- the monitoring complies with the monitoring plan in the registered PDD;
- the monitoring plan in the registered PDD is as per the applied baseline and monitoring methodology.

It is RINA's opinion that the GHG emission reduction stated in the monitoring report (MR2) version 02 of 19/01/2012 for the "Shenyang Laohuchong LFG Power Generation Project" in China for the period 01/04/2010 to 31/07/2011 are fairly stated. The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodology "ACM0001", "Consolidated baseline methodology for landfill gas project activities - Consolidated monitoring methodology for landfill gas project activities", version 06 of 22/06/2007 and "ACM0002", "Consolidated baseline methodology for grid-connected electricity generation from renewable sources - Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources", version 06 of 19/05/2006 and the monitoring plan included in the registered Project Design Document, version 03 of 16/06/2008.

Hence RINA is able to certify that the emission reductions from the project during the monitoring period 01/04/2010 to 31/07/2011 amount to 107,353 tCO_2e.

Shanghai, 17/02/2012

Jun Zhou

CDM Team Leader

RINA (Shanghai) Quality and Technical Services Co., Ltd.

Genova, 29/02/2012

Paolo Teramo

Authorized officer signing for the DOE

RINA Services S.p.A.

APPENDIX A

VERIFICATION PROTOCOL

TABLE 1 REQUIREMENTS CHECK LIST

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
A	**Description of Project Activity**					
A.1	Title of the project activity, revision number and date of Monitoring Report	/01/	DR	The title of the proposed project is 'Shenyang Laohuchong LFG Power Generation Project'. The monitoring report for publication is version 01 dated 22/09/2011.		**OK**
A.2	Is the actual implementation and operation of the proposed project activity in accordance with the project activity in the registered PDD?	/01/ /06/ /09/ /39/	DR I	Yes, the project implementation and operation were checked during site visit including LFG collecting, pre-treatment, power generation and flare combustion systems. This is in accordance with registered PDD. By review of the project implementation documents and previous verfication report, it was validated that the project has started consturction on 01/07/2007; the LFG flaring system was put into operation on 18/10/2007 and LFG power generation system started operation on 04/03/2008. During the first monitoring period from 25/12/2008 to 31/03/2010, there were three generators (1#, 2# and 3#) and one flare installed and operated. By physical site visit on 09/11/2011, it was validated that there were five generators (1#, 2#, 3#, 4# and 5#) and one flare in place of the power plant, of which two generators (2# and 3#) were on operation, one generator (1#) was under overhaul by manufacturer, the		**OK**

[1] MoV: DR document review, I interview, CC cross checking

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				flare was on operation and other two generators (4# and 5#) were newly installed. It was validated by the nameplate of the generators that the new two were manufactured in 05/2011. By review of plant operation log records it was found that the newly-installed two generators (4# and 5#) were not started commissioning by the end of this monitoring period. The gas collection system, including the gas wells, pipelines and pre-treatment system, the CDM monitoring system and data collection system were all in place and operated well. *The PP is requested to desribe transparently the implimentation and operational satus of the project duiring this verification period in section B.1. of the monitoring report according to the monitoring report form(CDM-MR) version 01 dated on 28/09/2010, i.e. the installation, commissioning and operation of the two new generators identified during physical site visit, with documented evidence.*	~~**CAR1**~~	
A.3	Methodology applied for the registered project activity	/01/ /04/ /05/	DR	Two methodologies were used for the implemented project. They are: "ACM0001", "Consolidated baseline methodology for landfill gas project activities - Consolidated monitoring methodology for landfill gas project activities", version 06 of 22/06/2007 and "ACM0002", "Consolidated baseline methodology for grid-connected electricity generation from renewable sources - Consolidated monitoring methodology for zero-emissions grid-		**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				connected electricity generation from renewable sources", version 06 of 19/05/2006.		
B	**Monitoring**					
B.1	**Monitoring plan**					
B.1.1	Does the monitoring plan included in the registered CDM project activity comply with the applied methodology?	/01/ /04/ /05/	DR	Yes. No difference was found between the registered monitoring plan and applied methodology.		**OK**
B.1.2	Does the monitoring comply with the monitoring plan in the registered PDD?	/01/	DR I	Yes, the monitoring follows the monitoring plan which has been registered.		**OK**
B.2	**Data and parameters that are available at validation and that are not monitored**					
B.2.1	Which parameters were available at validation and how were they verified?	/01/ /04/ /05/ /07/ /08/ /37/ /38/	DR	1. GWP_{CH4} ($21tCO_{2e}/tCH_4$, Global Warming potential value for methane): IPCC Guideline for National Greenhouse Gas Inventory. 2. $\rho_{CH4,n,h}$ ($0.0007168\ tCH_4/m^3CH_4$): Density of methane gas at normal conditions as defined from 'tool to determine project emissions from flaring gases containing methane' 3. For electricity generation component, the following default values have been applied in the emission reductions calculation due to electricity generation component. The OM and BM are calculated ex-ante, so the CM Emission Faction of the North East China Power Grid (NCPG) is fixed over the crediting period: $1.05176tCO_2e/MWh$. All above parameters have been validated by validation DOE as described in registered validation report dated 22/05/2008. Local and national regulatory framework. This data has been		**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				determined ex-ante in the registered PDD and no new regulatory information issued during this monitoring period. Law and regulations about waste management systems in China: GB16889-1997, GB16889-2008, both of which have no impact on parameters by review of these document.		
B.3 Data and parameters monitored						
B.3.1	Data/Parameter monitored / Data unit / Description / Source of data to be used / Value data for the monitoring period.	/01/ /04/ /05/ /07/ /08/ /14/ /17/ /18/ /29/ /33/ /34/ /36/ /40/	DR I	1. $LFG_{total,y}$/Nm^3/Total amount of landfill gas captured/Flow meter 2. $LFG_{flare,y}$/Nm^3/Amount of landfill gas flared/Flow meter 3. $LFG_{electricity,y}$/Nm^3/Amount of landfill gas combusted in power plant 4. $W_{CH4,y}$/m^3CH_4/m^3LFG/Methane fraction in the landfill gas/Gas analyser/about 50% (variable) 5. EL_{LFG}/MWh/Net amount of electricity generated using landfill gas/Electricity meter/11,168,400 6. EL_{PR}/MWh/Total amount of electricity required to meet the project requirement/Electricity meters/578.765(meter A) and 0(meter B) 7. EWH/Hours/Engine working hours of power plant/Hour meter/11,417 8. FWH/Hours/Hour meter/11,508 9. $PE_{flare,y}$/tCO_2/Project emissions from flaring of the residual gas stream in year y/4,122.63. For this project, $PE_{flare,y}$ was calculated by $PE_{flare,y} = \sum_{h=1}^{8760} TM_{RG,h} \times (1-\eta_{flare,h}) \times \frac{GWPCH4}{1000}$ While $TM_{RG,h} = FV_{RG,h} * fv_{CH4,GR,h} * \rho_{CH4,n}$ $FV_{RG,h}$ and $fv_{CH4,GR,h}$ was described as		**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				following parameter 10 and 11. $\eta_{flare,h}$ is adopted as 90% if the temperature of the T_{flare} is above 500° for more than 40 minutes during the hour h, and manufacture's specification on proper operation of the flare are met continuously during the hour h; 50% if the temperature of the T_{flare} is above 500° for more than 40 minutes during the hour h, but manufacture's specification on proper operation of the flare are not met at any point in time during the hour h; 0% if the temperature of the T_{flare} is below 500° for more than 20 minutes during the hour h. 10. $fv_{CH4,RG,h}$/%/Volumetric fraction of methane in the residential gas on dry basis in hour h/Continuous gas analyser/about 50% (variable) 11. $FV_{RG,h}$/m^3/h/Volumetric flow rate of the residual gas in dry basis at normal conditions in the hour h/variable 12. T_{flare}/℃/Temperature in the exhaust gas of the enclosed flare/Thermocouple/about 600℃ (variable) The above information has been included in section D.1 of the MR. RINA crosschecked the original monitoring data, the Master-spreadsheet, the electricity purchases/sales invoices and sales bills, as well as the emission reductions calculation spreadsheet and found inconsistency between these data source and mistakes of the calculation. *The calculation of the cumulative parameters, i.e. Cumulative LFGtotal, LFGflare, LFGengine, EWH, FWH,*		

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				BWH in the table of "daily report" of the ER spreadsheet is incorrect that the parameter value in the day 01/04/2010 was not counted in the cumulative results. *The data employed in the ER calculation spreadsheet is not consistent with the relevant evidence, i.e. the data value of "Power meter A official end record" and "Power meter A losses" for the period 18/05/2010 to 18/06/2010 in table "Power purchase" of the spreadsheet are not consistent with the corresponding power invoice No. 01572398.* *The calculation of cumulative CERs in the ER calculation spreadsheet is not conservative, i.e. the round off method of the value for cumulative CERs in table "CERs" of the spreadsheet may cause extra CERs that not realized by the project.*	~~**CAR2**~~	
B.3.2	Is the measurement equipment described? Is the accuracy of the measurement equipment addressed and deemed appropriate?	/01/ /02/ /10/ /11/ /19/ /20/ /21/ /22/ /28/ /41/ /42/ /43/	DR	1. $LFG_{total,y}$: Annubar 485 flow meter (serial No. 01726699) with accuracy of ±0.9% which follow the measurement requirement of manufacturer specification and China national standard JJG640-1994. 2. $LFG_{flare,y}$:, the data was measured by flow meter (serial No. 01746509) with type of Annubar 285. The accuracy was ± 2% which follow the measurement requirement of manufacturer specification and China national standard JJG640-1994. 3. $LFG_{electricity,y}$: the data was measured by flow meter (serial No. 01746510) with type of Annubar 285. The accuracy		**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				was ± 2% which follow the measurement requirement of manufacturer specification and China national standard JJG640-1994. 4. $WC_{H4,y}$: data was measured by gas analyzer with type of XGF-4043 (serial No. 0708404). The accuracy was ±2% which follow the measurement requirement of China national standard JJG678-2007. 5. EL_{LFG}: data was measured by power meter (serial No. 8007472) with accuracy of 0.5s which follows the measurement requirement of China national standard JJG596-1999. 6. EL_{PR}: data was measured by power meters (serial No. 0103200014423 and 0103200019480) with accuracy of 1 which follows the measurement requirement of China national standard JJG596-1999. 7. EW_H: data was measured by Hour meter of PLC and no accuracy standard was required. 8. Flare working hours data was measured by Hour meter of PLC and no accuracy standard was required. 9. $PE_{flare,y}$: data was calculated as the sum of emissions based on the methane flow rate in the residual gas and flare efficiency. No direct measurement equipment and accuracy were applied. For this project, $PE_{flare,y}$ was calculated by $PE_{flare,y} = \sum_{h=1}^{8760} TM_{RG,h} \times (1-\eta_{flare,h}) \times \frac{GWPCH4}{1000}$ While $TM_{RG,h} = FV_{RG,h} * fv_{CH4,GR,h} * \rho_{CH4,n}$		

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				$FV_{RG,h}$ and $fv_{CH4,GR,h}$ was described as following parameter 10 and 11. $\eta_{flare,h}$ is adopted as 90% if the temperature of the T_{flare} is above 500° for more than 40 minutes during the hour h, and manufacture's specification on proper operation of the flare are met continuously during the hour h; 50% if the temperature of the T_{flare} is above 500° for more than 40 minutes during the hour h, but manufacture's specification on proper operation of the flare are not met at any point in time during the hour h; 0% if the temperature of the T_{flare} is below 500° for more than 20 minutes during the hour h. 10. $fv_{CH4,RG,h}$ data was measured by gas analyzer (serial No. 0708404) with type of XGF-4043. The accuracy was ±2% which follow the measurement requirement of China national standard JJG678-2007. 11. $FV_{RG,h}$,: data was measured by flow meter (serial No. 01746509) with type of Annubar 285. The accuracy was ±2% which follow the measurement requirement of manufacturer specification and China national standard JJG640-1994. 12. T_{flare}: Thermal couple with type of WRMK-331, the measuring range covers from 0-1300℃which follows the measurement requirement of manufacturer specification with the accredited certification No. 0109004.		
B.3.3	Are the requirements for maintenance and calibration of measurement equipment described and deemed	/01/ /02/ /10/	DR	1. $LFG_{total,y}$: Calibrations were conducted by National Northeast Metrology and Testing Center Liaoning		**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
	appropriate?	/11/ /12/ /13/ /15/ /16/ /19/ /20/ /21/ /22/ /35/		Provincial Institute of Measurement (accreditation No. (2007)01038 and (2007)01004) on 17/09/2009 and 14/09/2010, respectively; the validity covers the second monitoring period from 01/04/2010 to 31/07/2011. This follows the national standard JJG 640-1994, i.e. yearly calibration requirement. 2. $LFG_{flare,y}$: the calibrations were conducted by National Northeast Metrology and Testing Center Liaoning Provincial Institute of Measurement (accreditation No. (2007)01038 and (2007)01004) on 17/09/2009 and 14/09/2010, respectively; the validity covers the second monitoring period from 01/04/2010 to 31/07/2011. This follows the national standard JJG 640-1994, i.e. yearly calibration requirement. 3. $LFG_{electricity,y}$: calibrations were conducted by National Northeast Metrology and Testing Center Liaoning Provincial Institute of Measurement (accreditation No. (2007)01038 and (2007)01004) on 17/09/2009 and 14/09/2010, respectively; the validity covers the second monitoring period from 01/04/2010 to 31/07/2011. This follows the national standard JJG 640-1994, i.e. yearly calibration requirement. 4. $W_{CH4,y}$: calibrations were conducted by National Northeast Metrology and Testing Center Liaoning Provincial Institute of Measurement (accreditation No. (2007)01038 and (2007)01004) on 18/09/2009 and 13/09/2010, respectively; the validity covers the second monitoring period from		

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				01/04/2010 to 31/07/2011. This follows the national standard JJG 768-1996, i.e. yearly calibration requirement. 5. EL_{LFG}: calibrations were conducted by Shenyang Power Supply Company Electric Power Measurement Center (accreditation No. Faji (2005)004) on 12/10/2008; the validity covers the second monitoring period from 01/04/2010 to 31/07/2011. This follows the national standard JJG 596-1999 which requires calibration interval of at least once every 5 years. 6. EL_{PR}: calibrations were conducted on 19/02/2009 for Meter A with Serial NO. 0103200014423 and 05/01/2009 for Meter B with Serial NO. 0103200019480, respectively; the validity covers the second monitoring period from 01/04/2010 to 31/07/2011. This follows the national standard JJG 596-1999 which requires calibration interval of at least once every 5 years. 7. EWH: data was measured by Hour meter of PLC and no calibration was required. 8. Flare working hours data was measured by Hour meter of PLC and no calibration was required. 9. $PE_{flare,y}$: data was calculated as the sum of emissions based on the methane flow rate in the residual gas and flare efficiency. No direct measurement equipment and calibration were applied. 10. $fv_{CH4,RG,h}$ calibrations were conducted by National Northeast Metrology and Testing Center Liaoning		

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				Provincial Institute of Measurement (accreditation No. (2007)01038 and (2007)01004) on 18/09/2009 and 13/09/2010, respectively; the validity covers the second monitoring period from 01/04/2010 to 31/07/2011. This follows the national standard JJG 768-1996, i.e. yearly calibration requirement. 11. $FV_{RG,h}$,: calibrations were conducted by National Northeast Metrology and Testing Center Liaoning Provincial Institute of Measurement (accreditation No. (2007)01038 and (2007)01004) on 17/09/2009 and 14/09/2010, respectively; the validity covers the second monitoring period from 01/04/2010 to 31/07/2011. This follows the national standard JJG 640-1994, i.e. yearly calibration requirement. 12. T_{flare}: No calibration is required since the thermocouple was replaced every year which follows the requirement of "Tool to determine project emissions form flaring gases containing methane" *The monitoring report does not contain information on calibration of monitoring instruments, i.e. the calibration information of the pressure and temperature sensors integrated in the flow-meters.*	~~**CAR3**~~	
B.3.4	Is the monitoring frequency adequate for all monitoring parameters? Is it in line with the registered monitoring plan?	/01/ /02/ /04/ /17/ /18/ /40/	DR	The data for all monitoring parameters is measured continuously which follows the registered monitoring plan and ACM0001 version 06.		**OK**
B.3.5	Is the recording frequency adequate for all monitoring parameters? Is it in line with the registered monitoring	/01/ /02/	DR I	For EL_{LFG} and EL_{PR}, data was recorded every month which can be cross-		**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
	plan?	/04/ /17/ /18/ /40/		checked against sales receipts which follows the requirements of the registered monitoring plan and ACM0002 version 06 For other parameters, data are recorded every 5 minutes which follows the requirements of the registered monitoring plan and ACM0001 version 06. Besides, the monitored data are aggregated monthly and yearly for the only flare and for the group of the three engines (not for each engine).		
B.3.6	Does data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	/01/ /02/ /04/ /17/ /18/ /34/ /40/	DR I	As described in the registered PDD, all the equipments of the plant are connected through PLC that let the operator quickly check the unit's main variables through a user-friendly interface. The PLC will receive continuously the value of the parameters monitored on-site and automatically generate spreadsheets that will be achieved. The organization system has been established and the project manager will implement a document control system to ensure all the necessary data and documents available for emission reduction calculations. These can be confirmed by the on-site visit. RINA has verified the data management system on the project site and confirmed that: For methane component The data is continuously monitored by monitoring devices (flow meters, gas analyzer, and thermocouple) automatically. The continuous basis		**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				signals generated by the flow meter is sent to the PLC and converted to the digital data. The digital data is recorded every 5 minutes and stored in the database in a Factory Data Storage System (FDS) connected to the PLC. The FDS automatically puts the monitored data onto a spreadsheet for the calculation of the emission reductions follows the formula as per the methodology. The monitored data and the calculated ERs are aggregated hourly, daily, monthly and yearly in a standard format for reporting purposes. The sum of the quantities fed to the flare and to the power plant has been compared with the total quantity of methane generated every 5 minutes. The lowest value of the two was adopted as the methane destroyed by the project activity. This can be verified by site visit and accepted since it is more conservative, as confirmed with the calculation in Master-spreadsheet. For electricity component The data is continuously monitored by power meter. The data is read every month and settled between the project owner and the grid company with ETNs and invoices of power sales. The monitored data are recorded monthly and aggregated monthly and yearly in a standard format for reporting purposes. As per the ERCS, the minimum value between the bills, the readings and the invoices were taken into account for conservativeness. It is verified that the data transfer and		

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				reporting is correct and in line with the registered PDD.		
B.4 Monitoring of sustainable development indicators/environmental impacts						
B.4.1	Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host Country?	/01/	DR I	According to the approved methodologies ACM0001 and ACM0002 do not need to monitor the sustainable development indicators. Otherwise the monitoring of sustainable indicators is not required by DNA of China.		**OK**
B.4.2	Does the monitoring report provide for the collection and archiving of relevant data concerning environmental, social and economic impacts?	/01/ /02/	DR, I	DNA of China does not require collection and archiving of relevant data related to environmental, social and economic impacts. Environmental impacts will be monitored by local environmental authority.		**OK**
B.5 Management, quality assurance and quality control						
B.5.1	How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/01/ /04/ /05/	DR I	By physical site visit and interview with the monitoring staffs, it was confirmed that all the monitoring devices as described in the monitoring plan are in place of the project site and operated normally. The monitoring procedures and data collection procedures are in place of the Management Manual, also in line with the monitoring plan. All the data collected by the monitoring staff has been internally audited by the CDM monitoring chief and by the CDM monitoring manager. The presented documents and evidence are complete and traceable. Therefore the monitoring arrangements described in the monitoring plan are feasible within the project design.		**OK**
B.5.2	Are procedures identified for day-to-day record handling (including what records to keep, storage area of records	/01/ /04/ /05/	DR I	The procedures described in the monitoring plan have been implemented in the monitoring and data collection as		**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
	and how to process performance documentation)?			per the physical site visit and review of the records on the site. The day-to-day record handling were in place and can be recognized through the metering data records and the Factory Data Storage System (FDS) using PLC receives continuously the value of the parameters monitored on-site and automatically generate spreadsheets and the information archived was aggregated hourly, monthly and yearly in a standard format. The monitored data and monitoring sheets were copied to magnetic media and stored in the computer system. All the date will be kept until two years after the end of crediting period.		
B.5.3	Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified?	/01/ /04/ /05/	DR I	All the data collected by the monitoring staff has been internally audited by the CDM monitoring chief and by the CDM monitoring manager. The presented documents and evidence are complete and traceable.		**OK**
B.5.4	Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/01/ /04/ /05/	DR I	All the date will be kept until two years after the end of crediting period.		**OK**

TABLE 2 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
CAR 1 *The PP is requested to desribe transparently the implimentation and operational satus of the project duiring this verification period in section B.1. of the monitoring report according to the monitoring report form(CDM-MR) version 01 dated on 28/09/2010, i.e. the installation, commissioning and operation of the two new generators identified during physical site visit, with documented evidence.*	A.2	A description of the newly-installed two generators (4# and 5#) has been added in section B.1 of the up-to-date MR.	A description of the two newly-installed gas engines has been included in section B.1 of MR2. Two generators (4# and 5#) were newly installed during this second monitoring period. It was validated by the nameplate of the generators that the two were manufactured in 05/2011. By review of operation log records/39/ and the declaration made by the equipment manufacturer Jichai Green Energy Power Equipment Co., Ltd, who also provided installation service for the two generators/45/, it was found that the newly-installed two generators (4# and 5#) were completely installed on 15/09/2011, which is after this second monitoring period. Therefore RINA confirmed that the generators (4# and 5#) have been not operated during the period 01/04/2010 to 31/07/2011 and not generated emission reductions. The type of the two generators (4# and 5#) is G12V190ZLDZ-2, which is the same as the previous three generators (1#, 2# and 3#) and is consistent with the registered PDD. Hence CAR1 is closed.
CAR 2 *The calculation of the cumulative parameters, i.e. Cumulative LFGtotal, LFGflare, LFGengine, EWH, FWH, BWH in the table of "daily report" of the ER spreadsheet is incorrect that the parameter value in the day 01/04/2010 was not counted in the cumulative results.* *The data employed in the ER calculation*	B.3.1	The cumulative parameters= cumulative parameter value on 31/03/2010 - parameter value on 31/07/2011, hence, the parameter value in the day 01/04/2010 was counted in the cumulative results. The spreadsheet has been amended and the MR has also been updated accordingly.	By checking the original monitoring data, it was found that the value of these cumulative parameters was monitored and calculated at the point of the end of each time, e.g. the value on 31/03/2010 represents the value on 24:00 of 31/03/2010, which is also the start of the next time 00:00 of 01/04/2010. Therefore,

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
spreadsheet is not consistent with the relevant evidence, i.e. the data value of "Power meter A official end record" and "Power meter A losses" for the period 18/05/2010 to 18/06/2010 in table "Power purchase" of the spreadsheet are not consistent with the corresponding power invoice No. 01572398.			the cumulative value of paramters *LFGtotal, LFGflare, LFGengine, EWH, FWH, BWH* have been corrected in the updated MR2 and ERCS to include the value in Day 01/04/2010.
The calculation of cumulative CERs in the ER calculation spreadsheet is not conservative, i.e. the round off method of the value for cumulative CERs in table "CERs" of the spreadsheet may cause extra CERs that not realized by the project.		An error occurred in the ER calculation spreadsheet: the correct data value as per the power invoice No. 01572398. is 6,549, not 6,459. The spreadsheet has been amended and it is now correct, the MR has also been updated accordingly.	The ERCS has been corrected and the the data value of "Power meter A official end record" and "Power meter A losses" for the period 18/05/2010 to 18/06/2010 in table "Power purchase" of the spreadsheet was corrected from 6,459 to 6,549 to be consistent with the the corresponding power invoice No. 01572398. As a result, the total amount of electricity consumed has been changed from 578.765MWh to 587.765MWh and the emissions caused by electricity consumption has been changed from 608.72tCO2e to 618.19tCO2e (9.47tCO2e increased). The monitoring report MR2 has been updated and correctly reported the above values.
		The round off method was not correct: the spreadsheet has been amended, and the MR has also been updated accordingly.	The round off method of the value for cumulative CERs in table "CERs" has been changed in the updated ERCS and is in a conservative manner. As a result, 2tCO2e has been deducted and the corrected value has been reported in updated MR2. In summary, the total emission reductions

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
			has been recalculated in the ERCS and reported in updated MR2. The value has been changed from 107,365tCO2e to 107,353tCO2e, which correctly reflected the above corrections. Hence CAR2 is closed.
CAR 3 *The monitoring report does not contain information on calibration of monitoring instruments, i.e. the calibration information of the pressure and temperature sensors integrated in the flow-meters.*	B.3.3	In order to measure the monitoring parameter of LFG normalized flow in three points (main, engines and flare pipe) the Project Participants have chosen Rosemount Annubar 285 flow meters fully integrated with a temperature sensor and a pressure sensor (pls. refer to the table "Data to be collected or used to monitor emissions from the project activity, and how this data will be archived" in ACM0001 – ver.6 – ID no. 7."T" and 8."p"). The instrument, working as a whole system which accurately and simultaneously measures i) differential pressure, ii) static pressure and iii) process temperature to dynamically calculate a compensated LFG flow, automatically renders as its output an LFG flow normalized to the standard conditions. Furthermore, the declaration about the calibration issued by the manufacturer indicates that the most direct and effective calibration method is to install the flow meter in the pipe of the metrology lab (the third party), and calibrate it with the standard flow (calibration system for sonic nozzle is used commonly). Therefore, the instrument was calibrated as a whole system and successfully got	The proposed project activity employed According to the manufacturer's (Rosemount) declaration about the calibration /50/, the temperature transmitter and pressure transmitter are integrated into Annubar-type flow meter inseparably; the meter shall be calibrated by a third qualified party through real flow method which covers the calibration of all integrated components; there is no need to calibrate the temperature and pressure transmitter separately. RINA thus cross-checked the calibration certificates /19//20//21/ and found that the meters have been calibrated by a third qualified party Liaoning Provincial Institute of Measurement under national calibration regulation JJG 640-1994 /10/ and real flow method has been taken in the calibration. RINA confirmed that Annubar-type flow meters for monitoring of the parameters $LFG_{total,y}$, $LFG_{flare,y}$, $LFG_{electricity,y}$, $FV_{RG,h}$. Annubar-type flow meter is integrated with temperature transmitter and pressure transmitter to normalize the volume to a standard condition automatically. Therefore RINA was able to confirm that the calibration of Annubar-type flow meter is in accordance with the manufacturer's instruction and complies with national calibration

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
		calibration reports of the normalized flow by the metrology institute, and the result issued by the metrology institute has already considered the influence of the temperature sensor and the pressure sensor. And the explanation has been added into the up-to-date MR.	regulation, thus is in line with the registered monitoring plan. The description regarding the calibration has been included in the updated MR2. Hence CAR3 is closed.

TABLE 3 FORWARD ACTION REQUEST

Forward action request	Reference to Table 2	Response by project participants Verification Conclusion

RINA

CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra: *We declare that Mr/Mrs/Ms:*	**Jun Zhou**
è qualificato come[1]: *is qualified as:*	**CDM-TEC, CDM-VAL, CDM-VER, CDM-TL, CDM-FIN-EXP** **VCS-VAL, VCS-VER, VCS-TL** **GS-VAL, GS-VER, GS-TL** **SCS-VAL, SCS-VER, SCS-TL**
per le seguenti aree tecniche: for the following technical areas:	**1.2**

AREE TECNICHE **TECHNICAL AREAS**	**DESCRIZIONE DELL'AREA TECNICA** ***TECHNICAL AREA DESCRIPTION***	**SCOPO SETTORIALE** ***SECTORAL SCOPE***
1.2	Energy generation from renewable energy sources	1

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE ***REVISION***	**DATA** ***DATE***	**MOTIVAZIONI PER LA REVISIONE** ***REASON FOR THE REVISION***
0	12-10-2009	-
1	14-12-2009	Changes in module structure
2	29-04-2010	Annual Revision
3	18-10-2010	Changes in certificate module
4	17-03-2011	Changes due to new accreditation standard
5	13-06-2011	Annual Revision

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

[1] Legend:

VAL:	Validator	CDM: Clean Development Mechanism
VER:	Verifier	VCS : Verified Carbon Standard:
TEC:	Technical Expert	GS: Gold Standard
TL:	Team Leader	SCS: SocialCarbon Standard
FIN-EXP:	Financial Expert	JI: Joint Implementation
DET:	Determiner	

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RINA

CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra: *We declare that Mr/Mrs/Ms:*	**Yan Tong (Nitrix Tong)**
è qualificato come[1]: *is qualified as:*	**CDM-TEC, CDM-VAL, CDM-VER, CDM-TL**
per le seguenti aree tecniche: for the following technical areas:	**1.2, 13.1**

AREE TECNICHE **TECHNICAL AREAS**	**DESCRIZIONE DELL'AREA TECNICA** ***TECHNICAL AREA DESCRIPTION***	**SCOPO SETTORIALE** ***SECTORAL SCOPE***
1.2	Energy generation from renewable energy sources	1
13.1	Waste Handling and Disposal	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE ***REVISION***	**DATA** ***DATE***	**MOTIVAZIONI PER LA REVISIONE** ***REASON FOR THE REVISION***
0	10-09-2010	-
1	18-10-2010	Changes in certificate module
2	17-03-2011	Changes due to new accreditation standard
3	13-06-2011	Annual Revision
4	20-06-2011	Changes due to qualification updating to CDM validator
5	14-07-2011	Changes due to qualification updating to CDM verifier
6	29-11-2011	Changes due to qualification updating to CDM Team Leader

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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RINA

CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra: *We declare that Mr/Mrs/Ms:*	**Xia Zheng**
è qualificato come[1]: *is qualified as:*	**CDM-TEC, CDM-VER, CDM-VAL**
per le seguenti aree tecniche: for the following technical areas:	**1.2**

AREE TECNICHE **TECHNICAL AREAS**	**DESCRIZIONE DELL'AREA TECNICA** ***TECHNICAL AREA DESCRIPTION***	**SCOPO SETTORIALE** ***SECTORAL SCOPE***
1.2	Energy generation from renewable energy sources	1

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE ***REVISION***	**DATA** ***DATE***	**MOTIVAZIONI PER LA REVISIONE** ***REASON FOR THE REVISION***
0	13-06-2011	-
1	29-11-2011	Changes due to updating qualification as CDM validator and verifier

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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RINA

CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra: *We declare that Mr/Mrs/Ms:*	**Li Xu**
è qualificato come[1]: *is qualified as:*	**CDM-TEC, CDM-VAL, CDM-VER**
per le seguenti aree tecniche: for the following technical areas:	**1.2, 13.1**

AREE TECNICHE **TECHNICAL AREAS**	**DESCRIZIONE DELL'AREA TECNICA** ***TECHNICAL AREA DESCRIPTION***	**SCOPO SETTORIALE** ***SECTORAL SCOPE***
1.2	Energy generation from renewable energy sources	1
13.1	Waste Handling and Disposal	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE ***REVISION***	**DATA** ***DATE***	**MOTIVAZIONI PER LA REVISIONE** ***REASON FOR THE REVISION***
0	15-09-2011	-
1	13-02-2012	Updating qualification as CDM validator / verifier

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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RINA

CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra: *We declare that Mr/Mrs/Ms:*	**Ming Xiang Hao**
è qualificato come[1]: *is qualified as:*	**CDM-TEC**
per le seguenti aree tecniche: for the following technical areas:	**1.1, 1.3, 2.2**

AREE TECNICHE **TECHNICAL AREAS**	**DESCRIZIONE DELL'AREA TECNICA** ***TECHNICAL AREA DESCRIPTION***	**SCOPO SETTORIALE** ***SECTORAL SCOPE***
1.1	Thermal Energy generation from fossil fuel and biomass including thermal electricity from solar	1
1.3	Waste heat/gas/pressure recovered and utilization for power generation at manufacturing industries	1
2.2	Heat distribution	2

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE ***REVISION***	**DATA** ***DATE***	**MOTIVAZIONI PER LA REVISIONE** ***REASON FOR THE REVISION***
0	08/07/2011	-

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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RINA

CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra: *We declare that Mr/Mrs/Ms:*	**Qing He**
è qualificato come[1]: *is qualified as:*	**CDM-TEC, CDM-VAL, CDM-VER, CDM-TL**
per le seguenti aree tecniche: for the following technical areas:	**1.2, 13.1**

AREE TECNICHE **TECHNICAL AREAS**	**DESCRIZIONE DELL'AREA TECNICA** ***TECHNICAL AREA DESCRIPTION***	**SCOPO SETTORIALE** ***SECTORAL SCOPE***
1.2	Energy generation from renewable energy sources	1
13.1	Waste Handling and Disposal	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE ***REVISION***	**DATA** ***DATE***	**MOTIVAZIONI PER LA REVISIONE** ***REASON FOR THE REVISION***
0	18-10-2010	-
1	17-03-2011	Changes due to new accreditation standard
2	13-06-2011	Annual revision
3	20-06-2011	Changes due to qualification updating to CDM validator
4	14-07-2011	Changes due to qualification updating to CDM verifier
5	25-11-2011	Changes due to qualification updating to CDM TL

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra: *We declare that Mr/Mrs/Ms:*	**Rita Valoroso**
è qualificato come[1]: *is qualified as:*	**CDM-TEC, CDM-VAL, CDM-VER, CDM-TL, CDM-FIN-EXP VCS-VAL, VCS-VER, VCS-TL GS-VAL, GS-VER, GS-TL SCS-VAL, SCS-VER, SCS-TL**
per le seguenti aree tecniche: for the following technical areas:	**1.2, 13.1**

AREE TECNICHE **TECHNICAL AREAS**	**DESCRIZIONE DELL'AREA TECNICA** ***TECHNICAL AREA DESCRIPTION***	**SCOPO SETTORIALE** ***SECTORAL SCOPE***
1.2	Energy generation from renewable Energy sources	1
13.1	Waste Handling and Disposal	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE ***REVISION***	**DATA** ***DATE***	**MOTIVAZIONI PER LA REVISIONE** ***REASON FOR THE REVISION***
0	18-01-10	-
1	03-05-10	Annual Revision
2	18-10-10	Changes in certificate module
3	04-01-11	Removed TAs taken through the ETS/EPD verifications/validations
4	17-03-11	Changes due to new accreditation standard
5	14-07-11	Annual Revision

Il Responsabile di Schema
Scheme Manager

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Head of CRT

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