
VERIFICATION AND CERTIFICATION REPORT

Carbon Resource Management Ltd Southern District Heating Network in Urumqi City

UNFCCC Reference Number: 4295

Monitoring Period 1: From 15/10/2011 to 31/12/2011

(First and Last days inclusive)

SGS Climate Change Programme

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Organisation:	Client:
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Summary:	
<p>SGS United Kingdom Ltd has performed the first periodic verification of the CDM project Southern District Heating Network in Urumqi City, with UNFCCC reference number of 4295 registration date of 20/06/2011 and crediting period from 15/10/2011 to 14/10/2021 (Fixed Crediting Period). The verification includes confirming the implementation of the revised monitoring plan (prior approval is not required) of the revised PDD Version 06.2 dated 16/09/2012 and the application of the monitoring methodology as per AM0058, Version 03.1 dated 31/07/2010. A site visit was conducted to verify the data submitted in the monitoring report. SGS confirms the following has been reviewed:</p> <ul style="list-style-type: none"> (a) The registered PDD, including the monitoring plan and the corresponding validation report; (b) Monitoring report, previous verification reports; (c) The applied monitoring methodology; (d) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board; (e) All information and references relevant to the project activity's resulting in emission reductions. <p>Southern District Heating Network in Urumqi City (referred to as the project hereinafter) is located in Urumqi City, Capital of Xinjiang Uygur Autonomous Region. The project activity has been constructed and implemented by Urumqi Heating Supply Co., Ltd. The technology employed by the project activity is a new primary district heating system to replace the existing isolated small heating system.</p> <p>The main heat source is the grid connected Combined Heat and Power (CHP) plant with 4×200 MW extraction condensing power units for cogeneration and the supplementary heat sources are four Heat-Only Boilers (HOB). The total heating supply capacity of the primary district heating network is 1,445 MW, in which 754 MW is from the CHP plant and 691 MW is from the four HOBs. The whole distribution network system replaced 142 small inefficient boiler houses. The total heating area of the project activity is 17,490,000 m² demanding 13,139,983 GJ heat annually, including 9,387,948 GJ from CHP plant (71%), 3,752,035GJ from the HOBs (29%). The main emission sources are the coal combustion in both CHP plant and HOB boilers. In the registered PDD, the average annual CO₂ emission reductions are estimated as 1,155,074 tCO₂e.</p> <p>SGS confirms that the project is implemented in accordance with the validated and registered Project Design Document. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 315,210 tCO₂e emission reductions during period 15/10/2011 up to 31/12/2011.</p>	
Subject:	
CDM Verification	
Verification Team:	
<p>Megnina Zhu Menggeng– Lead Assessor/Team Leader Assessor/Local Assessor (P.R.China)</p> <p>Yi Liao– Assessor/Sectoral Scope Expert (TA 1.1)</p> <p>Aidan Li Xinhang – Assessor/Local Assessor (P.R.China)</p>	<input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible 2organizational unit)

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CERs	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CHP	Combined Heat and Power
DCS	Distribution Control System
DNA	Designated National Authority
DOE	Designated Operational Entity
DRRs	Daily Reading Records
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
HOB	Heat Only Boiler
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MR	Monitoring Report
MMR	Monthly Measuring Records
MRR	Monthly Reading Records
PDD	Project Design Document
PP	Project Participant
RMP	Revised Monitoring Plan
SCADA	Supervisory Control and Data Acquisition
SGS	SGS United Kingdom Ltd
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
VVS	Validation and Verification Standards

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1. Introduction

1.1 Objective

SGS United Kingdom Ltd has been contracted by Carbon Resource Management Ltd. (one of the project participants of the project) to perform an independent verification of its CDM project Southern District Heating Network in Urumqi City. CDM projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Certified Emission Reductions (CERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The emissions report conforms with the requirements of the revised monitoring plan in the updated PDD and the approved methodology; and
- The data reported are complete and transparent.

1.2 Scope

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity. The verification is based on the validated and registered project design document and the monitoring report. The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

SGS has, based on the recommendations in the Validation and Verification Standard, employed a risk-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

Due professional care has been exercised and ethical conduct has been followed by the assessment team during the verification process. The verification report is a fair presentation of the verification activity.

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

1.3 Project Activity and Period Covered

This engagement covers emissions and emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the following project and period.

Title of Project Activity:	Southern District Heating Network in Urumqi City
UNFCCC Registration Number:	4295
Monitoring Period Covered in this Report:	From 15/10/2011 to 31/12/2011
Project Participants:	Urumqi Heating Supply Co., Ltd. (Host-China) Carbon Resource Management Ltd. (United Kingdom of Great Britain and Northern Ireland) Carbon Resource Management S.A. (Switzerland)
Location of the Project Activity:	Urumqi City, Xinjiang Province, People's Republic of China

The main heat source is the grid connected Combined Heat and Power (CHP) plant with 4×200 MW extraction condensing power units for cogeneration and the supplementary heat sources are four Heat-Only Boilers (HOB). The total heating supply capacity of the primary district heating network is 1,445 MW, in which 754 MW is from the CHP plant and 691 MW is from the four HOBs. The whole distribution network system replaced 142 small inefficient boiler houses. The total heating area of the project activity is 17,490,000 m² demanding 13,139,983 GJ heat annually, including 9,387,948 GJ from CHP plant (71%), 3,752,035GJ from the HOBs (29%). The main emission sources are the coal combustion in both CHP plant

and HOB boilers. In the registered PDD, the average annual CO₂ emission reductions are estimated as 1,155,074 tCO₂e.

2. Methodology

2.1 General Approach

SGS performs the verification work using a Periodic Verification Checklist prepared following the VVS. The Periodic Verification Checklist describes the verification approach and the sampling plan.

The checklist gives the assessment team a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

Using the Periodic Verification Checklist, SGS verified the implementation of the revised monitoring plan and the data presented in the Monitoring Report for the period in question. This involved a site visit and a desk review of the monitoring report. This verification report describes the findings of this assessment.

Only verification activities undertaken after the publication of the monitoring report on the UNFCCC CDM website were used as a basis for SGS to conclude our verification and submit a request for issuance of CERs to the Board.

2.2 Verification Team for this Assessment

Assessment Team	
Name	Role
Lenore Yin Lei	Lead Assessor/Team Leader (Previous)
Megnina Zhu Menggeng	Lead Assessor/Team Leader (Current) Assessor/Local Assessor (P.R.China)
Yi Liao	Assessor/ Sectoral Scope Expert (TA 1.1)
Aidan Li Xinhang	Assessor/Local Assessor (P.R.China)

2.3 Means of Verification

2.3.1 Review of Documentation

The validated PDD, the monitoring report submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached in section 8 of this report.

2.3.2 Site Visits

As part of the verification, the following on-site inspections have been performed by all members of the assessment team.

Location: Urumqi City, Xinjiang Uygur Autonomous Region, People's Republic of China	
Date: 19/03/2012 to 22/03/2012	
Coverage:	Source of Information / Persons Interviewed
1. Assessment of the implementation and operation of the project activity as per the registered PDD;	Zhu Hailei, Carbon Resource Management Ltd.
2. Review of information flows for generating, aggregating and reporting the monitoring parameters;	Zhang Lijun, Carbon Resource Management Ltd.
3. Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the monitoring plan.	Sun Yu Feng, Urumqi Heating Supply Co., Ltd.
4. A cross-check between information provided in the monitoring report and data from other sources such as logbooks and electricity and heat sales receipts;	Zhang Yanyong, Urumqi Heating Supply Co., Ltd.
5. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology;	Jiang Feng, Urumqi Heating Supply Co., Ltd.
6. Review of calculations and assumptions made in determining the GHG data and emission reductions;	Li Da, Huandian Hongyanchi Power Plant Co., Ltd.
7. Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.	Lu Qingshui, Urumqi Heating Supply Co., Ltd.
	Tian Guanghai, Urumqi Heating Supply Co., Ltd.

2.4 Reporting of Findings

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

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

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

- I. Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- II. Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- III. Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;

- IV. Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants

The verification process may be halted until this information has been made available to comply with the requirements of the CDM Executive Board. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

A clarification request (CL) will be raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

Corrective Action Requests and Clarification Requests are raised in the Periodic Verification Checklist. The Project Developer is given the opportunity to “close” outstanding CARs and respond to CLs.

Forward Action Requests (FARs) may be raised during verification for actions where the monitoring and reporting require attention and/or adjustment for the next verification period, which are for the benefit of future projects and future verification activities. These have no impact upon the completion of the verification activity.

All CARs, CLs and FARs for this verification period are included in this report.

2.5 Internal Quality Control

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

Technical Review Team

Technical Review Team	
Name	Role
Simon Zhao Xinguang	Technical Reviewer
Jumson Fu Qiang	Sectoral Scope Expert (TA 1.1)

3. Verification Findings

3.1 Project Implementation

Based on the project information available on the UNFCCC website, <http://cdm.unfccc.int/Projects/DB/BVQI1293180897.59/view>, the project was registered on 20/06/2011, and the crediting period is from 15/10/2011 to 14/10/2021 (Fixed ten-year crediting period). This is the 1st monitoring period. The starting date of this monitoring period is 15/10/2011, which matches the starting date of the crediting period. The end date of this monitoring period is 31/12/2011, which is within the crediting period. There are 78 monitoring days in the first monitoring period.

During the onsite visit and the period of verification findings raised, VVM version 01.2 (/61/) dated 30/07/2010 has been used as the verification guideline. In the final assessment stage, as per the requirement from the PPs, the VVS version 2.0 (/62/) dated 25/11/2011 has been applied by the assessment team for finalising the verification.

Following the specific requirements presented in the VVS version 2.0 para 226-228; compliance of the project implementation with the registered project design document has been verified by the assessment team during the first periodical verification.

The project was registered against the approved consolidated methodology AM0058 version 03.1 (/2/). The following has been checked to verify the applicability of the methodology to the project activity. The project is a new primary district heating network which supplies space heating to residential and commercial buildings without supplying heat to industrial production, in place of the small isolated heating network with inefficient boilers. The CHP plant of Huadian Hongyanchi Power Plant Co., Ltd. serves as the main heat sources and four HOB houses serves as the supplementary heat sources, and the entire physical feature can be clearly indentified. The power plant which supplies heat to the district heating network has been in operation for more than 3 years prior to the start of the project implementation. There was no heat extraction from the power plant prior to the implementation of the Project, which was confirmed at the validation stage and during the onsite visit for MP1. The coal fired CHP plant is connected to the Xinjiang power grid which is a part of Northwest China Power Grid. Diesel was used for the CHP plant start-up.

Issues identified:

Based on the applicable requirement of the applied methodology AM0058 Version 03.1, only one type of fuel (a maximum of 1% of auxiliary fuel may be used for start-up) can be used for the project activity. The assessment team verified the actual status of the fuel consumption. It was identified that diesel fuel has been applied as auxiliary fuel for CHP boiler start-up. **CL#5** is therefore raised requesting the PP to clarify whether the applied methodology is still applicable for the project activity.

Based on the PP's clarification, total consumed diesel oil in the first monitoring period is 39.94 tonnes and this value has been verified by the assessment team by checking the daily diesel consumption records presented in the monthly operation logbooks of CHP (/34/). In order to make a comparison with the coal consumed in this monitoring period, the value of consumed diesel oil has been converted to joules. Defaulted diesel NCV value 42.652 GJ/Tonne presented in the China Energy Statistical Yearbook (2012) (/35/) has been applied for conversion.

In estimation, the energy consumed for the auxiliary fuel diesel in MP1 is around 1,073.5GJ (39.94 tonnes x 42.652 GJ/Tonne). This is just around 0.0167% of the coal consumption in MP1 (10,189,577.86GJ), which is much lower than 1% percent. Therefore, the actual project implementation status in the first monitoring period is in line with the applicable requirement of the applied methodology AM0058. **CL#5** is therefore closed by the assessment team.

Therefore, the methodology ACM0058 version 03.1 is still applicable to the project activity.

The assessment team verified all the physical features of the project and the actual implementation status by means of the onsite visit and the document review. This is a district heating network project including multiple sites. The key physical component of the project mainly includes the following three parts. The first

part is the primary network, comprising a CHP plant of Huadian Hongyanchi Power Plant Co., Ltd. serving as the main heat sources and four HOB houses serving as the supplementary heat sources. The second part is the secondary network, including one pressure isolated heat exchange station and the main distribution network system and the heat pipeline network. The third part is the Tertiary network, comprised of three different kinds of building categories (Category 1: existing building area supplied by a sub-station that was connected to an existing isolated heat distribution network before the start of the project activity; Category 2: recently constructed buildings that are connected to sub-stations that replace old boiler houses treated as existing buildings; Category 3: new building areas, which are constructed after the start of the implementation of the project activity).

In accordance with EB54 Annex 34 "Guidelines for completing the Monitoring Report form (CDM-MR)" (/65/), the construction starting date and the commissioning start date of the project activity have been verified by the assessment team. Through document review, the assessment team identified that the MR, version 1.0 (/3/), reported the construction starting date 04/04/2005 is the date of signing the agreement of project construction (/8/). The Project Participants (PPs) were requested to further clarify which date was the construction starting date. At the same time, the assessment team could not identify the commissioning start date based on the supporting evidence provided by the PP. **CL#1** was therefore raised for requesting the PP to clarify the construction starting date and the commissioning start date of the project and to provide relevant supporting evidence. Specific clarification and relevant supporting evidence have been provided by the PP. The project construction starting date was revised to be 01/05/2005, which is in line with the official signed construction contract dated 04/04/2005 (/8/). CHP operation log sheet in October 2005 (/9/) serviced as supporting evidence to prove the project has been put into commissioning since 15/10/2005. Formal statement has been issued by the local heat supply management bureau (/10/) and the consistency of the information has been confirmed by the assessment team. Relevant descriptions and information in the MR section A.1 have been revised in an accurate and transparent manner. Through document review, information presented in the revised Monitoring Report version 2.1 is in line with the assessment team's verified results. **CL#1** is therefore closed.

According to the registered PDD, the main heat source is the Combined Heat and Power (CHP) plant with grid connected 4×200MW extraction condensing power units for cogeneration, and the four Heat-Only Boilers (HOB) are supplementary heat sources. The total heating supply capacity of the primary district heating network is 1,445 MW, in which 754MW is from the CHP plant and 691MW is from the four HOBs. The whole distribution network system replaced 142 small inefficient boiler houses. The assessment team verified the actual installed capacity and key technical parameters of the CHP plant and HOB houses against the information presented in the registered PDD section A.4.3. As per the registered PDD (/1/), the proposed heating area for the project activity is 17,490,000 m². Required annual heat supply amount is 13,139,983 GJ, around 79% of the heat needed to be supplied by the CHP plant and around 21% of heat need to be supplied by the HOBs. In the actual operation period, the PP applied the pooled operation of the multi-heat sources (/60/), and the four HOBs applied as the peak shaving boilers. Based on the measured off door ambient temperature and constant heat load, the operator from the heat supply company is responsible to operate the HOBs heat source based on the installed capacity (Xingfu HOB 174MW, Guangming 259MW, Xinsheng 72MW, Weihuliang 186MW). This monitoring period covered the period of early winter (average off-door ambient temperature was -10°C); the four HOBs houses were not operated as the supplementary heat source. Operation regulation and equipment system diagram (/15//16/) for the CHP and HOBs has been collected and verified by the assessment team. Verified information of CHPs and HOBs is consistent with the registered PDD.

Due to the specific topography (high altitude difference: 163m) of the south district in Urumqi city, the district heating network has been divided into two levels and the isolated heat exchange station has been installed between the two levels (level 1: altitude difference of 86m and level 2: altitude difference of 77m). Through the transmission mains (outlet water 150°C and backwater 70°C), the heat has been sent to the distribution pipelines connected with the substations (outlet water 130°C and backwater 70°C) to the block heating network. The master plan of the district heating system in Southern District Heating in Urumqi City (/11/) and the schematic diagram of the project activity (/12/) have been checked and verified by the assessment team. The primary network is 3.7 km long, and DN1200 (diameter 1.2m) pipeline has been applied in the transmission mains. Secondary network is 40.04 km long using minimum DN150 (0.15m) to

maximum DN1200 pipe in the distribution pipelines. Detailed information for the installed pipeline network has been presented in the schematic diagram of the project activity, and has been further checked through the onsite visit.

The assessment team verified the project implementation status as per the registered PDD and identified that the reported information of technical description and figure of the structure of the primary heating network and the heating energy flows presented in section A.4 of the MR version 1.0 could not clearly reflect the actual structure of the primary heating network and the heating energy flows. **CL#2** was therefore raised to request the PP to make relevant clarification on this issue. The VVS MR Template version 02.0 has been applied by the PP, in the revised MR, version 3.0 (VVS version); specific description related to the information of technical description has been reported in section B.1 'Description of the implemented registered project activity'. According to requirements presented in the EB66 Annex 20, the description of the installed technology (ies), technical process and equipment, include diagrams shall be included in section B.1 of the Monitoring Report. As per this requirement, the assessment team confirmed that the updated description of the technical description of the project clearly reflects the actual structure of the primary heating network and the heating energy flows. **CL#2** was therefore closed by the assessment team.

Based on the project information of pressure isolated heat exchange station, the number of installed plated heat exchanger is 10 as per the description in the registered PDD, version 06 dated 15/06/2011. During the onsite visit, the assessment team found the number of installed plated heat exchanger of the pressure isolated heat exchange station is 12. **CL#3** was therefore raised to require the PP to make relevant clarification on this issue. The PP clarified that this is a typo in the registered PDD. Through document review, the assessment team identified that during the feasibility study stage (July 2003) (/7/) and the preliminary project design stage (August 2004) (/19/); the number of designed installed plated heat exchanger is 12. During the actual project implementation stage, the PP purchased 12 plated heat exchangers and installed on the project site by the end of 2006. Relevant purchase records (/20/) have been provided to the assessment team. Based on the document review results, the assessment team identified that during the project preparation stage and the actual implementation stage, the number of plated heat exchanger is fixed to 12. Relevant documents should be validated by DOE during the validation stage which started since 2009 after the project was put into operation. Therefore, the assessment team considered the number of the plated heat exchanger in the registered PDD as a typo. A correction has been made by the PP in the revised PDD version 06.2 section A.4.3, Table A.4.3-4, dated 16/09/2012. Based on the VVS version 02.0 para 257-259, the assessment team verified the revised section and confirmed that the corrected information is an accurate reflection of the actual number of installed plated heat exchangers. And the corrected information accurately reflects the actual project information. **CL#3** is closed by the assessment team. Referring to the correction made in the PDD, please kindly refer to section 3.2.2 of this report.

The project activity required phased implementation. The number of designed substations is 193, among which 174 substations have been built and the remaining 19 substations would be built parallel with the development of the local area. Based on the confirmation on the status of the district heating system and capacity of Southern District Heating Network in Urumqi City issued by the Urumqi Heating Supply institution (/58/), the assessment team verified that there are 174 substations dispatched in the project sites to supply heat to the final customer and the present total heating area for the project activity is 16,250,100 m². The list of operated substations and relevant information for the start commissioning date (/17/) have been collected and verified by the assessment team. The implementation status reported in the MR, version 1.0 section B.1 has been verified against the actual status during the onsite visit.

As per the requirements presented in the EB54 Annex 34 (/65/), the Monitoring Report shall include relevant information on special events, for example overhaul times, downtimes of equipment, and exchange of equipments, etc.

The project activity consists of more than one site (including CHP plant, HOB boilers, district heating network and substations which are located in different places) and is implemented in phases. **CAR #4** was raised requesting the PP to provide information of the actual implementation status of the supplementary heat sources and relevant cease operation period of the HOB boilers and to further clarify the current progress of the CDM project activity achieved. The PP revised the MR and provided their response.

Based on the further clarification and relevant supporting documents (/21/) provided by the PP, the assessment team identified that during this monitoring period no special events (i.e. overhaul or breakdown of the main equipments which would stop running of the heat network) occurred.

At the same time, the PP stated that all the HOB boilers had not been put into operation during this monitoring period. This monitoring period covered the early winter, and the average off-door ambient temperature was -10°C, thus the four HOBs houses were not operated as the supplementary heat source. Information consistency has been confirmed by checking the operational logbooks for the four boiler houses (/21/).

The PP stated that 174 substations had been building up and the other 19 substations would be built in the following two years. The updated statement presented in the MR, version 2.1, is in line with the verified results of the assessment team. Relevant supporting evidence has been provided (/58/).

CAR #4 was closed by the assessment team. In the revised MR, version 3.0, the VVS MR template has been provided and detailed information related to the project implementation status has been reported in section B.1 of the final version of the MR.

The heat pipeline network monitoring and control system has been established by the project company. The SCADA system has been installed in the main control centre of the project company. Through the SCADA system, project operator can adjust and control the on-line heat transmission, also can check the project operation status. During the onsite visit, the assessment team checked the installed SCADA system and confirmed the system operated in a good condition. The implementation status of the SCADA system is in line with the registered PDD.

Furthermore, the project management system has been set up, including the CDM Development Manual (/26/) which includes CDM Monitoring and Management Procedures, Staff Training Plan, QA/QC procedures, data management and internal audit procedures and emergency plan. All of these procedures and plans are documented and the members of staff have access to the documents. The management and operational system is in place. The members of staff are well trained and qualified (/23/). The actual implementation status of the project management system has been checked and confirmed to be implemented in line with the registered PDD.

In line with paragraph 10(a) of Annex 68, EB 48 (/64/), the Monitoring Report, version 1.0, contains a comparison of the actual emission reduction claimed for this monitoring period with the estimate in the registered PDD. In the MR, version 1.0, the reported emission reduction for this monitoring period is 301,614 tCO₂e and corresponding estimated emission reduction for this monitoring period is 246,837 tCO₂e. The reported value of total emission reductions during the period from 15/10/2011 to 31/12/2011 is considered to be significantly higher than that estimated in the registered PDD for the same period. The Monitoring Report, version 1.0, did not provide an explanation on the significant increase in emission reductions. **CAR#15** was raised for requesting the PP to provide explanation on the significant increase in the emission reductions in the Monitoring Report as per the requirement from Annex 68 of EB 48 Meeting Report.

Based on the PP's justification and the nature of the project activity, the assessment team considered the original method which used to calculate the estimated emission reductions (234,565 tCO₂e = 78*1,097,647 tCO₂e/365) during current monitoring period not suitable for this project.

For the district heating project, the emission reductions are only generated in the heat supply season. In year 2011, the total estimated emission reduction is 1,097.647 tCO₂e.

In the registered version of the PDD page 28, the defined period of the heat supply season is 181 days (Based on the FSR for the project activity).

Daily BE_{HG,y} in year 2011 = 10,651tCO₂e (10,651tCO₂e = 1,927,999tCO₂e /181 days), only heating season (181days) has been included for baseline emission from heat generation.

The PP clarified that based on the FSR the electricity generation and fuel consumption is estimated based on the whole year, no distinction has been made in the heat supply season or no heat supply season. Therefore, the estimation for the baseline emission for the power generation and the project emission are estimated based on the whole year.

Daily BE_{EL,y} = 11,618 tCO₂e (11,618 tCO₂e = 4,240,675 tCO₂e / 365 days)

Daily PE_y = 13,893 tCO₂e (13,893 tCO₂e = 5,071,027 tCO₂e / 365 days)

Daily Leakage is Zero

Based on the estimation, the estimated daily emission reductions in 2011 is 8,376 tCO₂e (8,376 tCO₂e = 10,651 tCO₂e + 11,618 tCO₂e - 13,893 tCO₂e - 0).

The estimated emission reduction in this monitoring period is 653,328 tCO₂e (653,328 tCO₂e = 8,376 tCO₂e * 78 Days), which is higher than the final reported emission reductions (315,210 tCO₂e) in this monitoring period. Therefore, the assessment team considered that no increase in the estimated amount of the emission reductions in the first monitoring period. And the method to calculate the estimated emission reduction is accepted by the assessment team. Relevant information has also been updated in the updated MR, version 4.0, and verified to be correct. **CAR#15** is therefore closed by the assessment team.

According to EB66, Annex 20 "Guidelines for completing the Monitoring Report form (CDM-MR)", the assessment team verified the reported information presented in the MR section D "Data and Parameters". This section shall include values of the monitored parameters in this monitoring period for the purpose of calculating the emission reductions. **CAR#20** was raised by the assessment team. Relevant information has been reported in the MR, version 4.0, and verified to be correct. **CAR#20** is therefore closed.

3.2 Post registration changes

There are post registration changes to the project activity identified by the assessment team. Referring to VVS Section E Post Registration Changes and the EB 65 Annex 5 Appendix 1 of the CDM project standard (/63/), the assessment has been carried out by the assessment team. Detailed information please refers to the following paragraphs.

3.2.1 Temporary deviations from registered monitoring plan or applied methodology

There are no temporary deviations from the registered PDD or the applied methodology identified by the assessment team during this verification.

3.2.2 Corrections

Referring to the **CL#3**, the relevant information in the registered PDD has been corrected. Detailed information is presented in the following table:

Registered PDD Section	Revised PDD Section	Revision Description in the Revised PDD	Verified Results
Registered PDD version 06 Dated 15/06/2011 Table A.4.3.-4: Equipment information of pressure isolated heat exchange station (Page 9)	Revised PDD version 06.1 Dated 16/07/2012 (the version based on which CL#3 is closed out) and version 06.2 dated 16/09/2012 (final version) Table A.4.3.-4: Equipment information of pressure	Number of installed plated heat exchanger corrected to be 12.	As per the PS Appendix 1. Changes that do not require prior approval by the Executive Board. This correction is related to the change of number of components. The assessment team considered that this correction of the registered CDM project activity does not affect the design of the project activity. Prior approval is not required. As per the VVS para 257-259, the assessment team confirmed that the corrected information is an accurate reflection of actual project information. The number of installed

	isolated heat exchange station (Page 9)		plated heat exchanger reported in the revised PDD is inline with the onsite visit results. By cross check the specific information presented in the FSR, preliminary design report and the heat exchanger purchase contract, the information consistency has been confirmed.
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During the verification process, the assessment team identified that QA/QC procedure for monitoring the parameter $NCV_{i,y}$, is not included in the registered monitoring plan. **CL#18** is therefore raised and the PPs are required to clarify the compliance with the applied methodology.

By further review of the PP's clarification, the assessment team confirms that the QA/QC procedure has been implemented by the PP based on the requirement presented in the applied methodology. However, there is no specific QA/QC procedure involved in the registered monitoring plan for parameter $NCV_{i,y}$. The registered monitoring plan for parameter $NCV_{i,y}$ has been considered to be incomplete.

In order to resolve this issue, the PP corrected the registered PDD and provides specific QA/QC procedure in the revised monitoring plan as per the applied methodology and the actual implementation status.

This correction does not affect the design of the project activity and the monitoring system. The correction has been made to ensure the completeness of the monitoring plan. The assessment team considered that this correction meets the requirements of PS Appendix 1 and does not require prior approval by the Executive Board.

CL#18 is therefore closed by the assessment team.

Referring to the **CL#18**, relevant information for parameter $NCV_{i,y}$ in the registered PDD has been corrected. Detailed information presented in the following table:

Registered PDD Section	Revised PDD Section	Revision Description in the Revised PDD	Verified Results
Registered PDD version 06 Dated 15/06/2011 Section 7.1 (Page 56)	Revised PDD version 06.2 Dated 16/09/2012 Section 7.1 (Page 56)	Defaulted QA/QC information has been provided QA/QC procedures to be applied: Verify if the value is within the uncertainty range of the IPCC default values as provided in Table 1.2, Vol. 2 of the 2006 IPCC Guidelines. If the value falls below this range collect additional information from the testing laboratory to justify the outcome or conduct additional measurements. The laboratories should have ISO17025 accreditation or justify that they can comply with similar quality standards.	As per the PS Appendix 1. Changes that do not require prior approval by the Executive Board. This correction is related to the information being incomplete. The assessment team considered that this correction of the registered CDM project activity that does not affect the design of the project activity and monitoring system. Therefore, prior approval is not required. As per the VVS para 257-259, the assessment team confirms that the corrected information is an accurate reflection of actual project information. QA/QC procedure is inline with the applied methodology and the actual implementation status.

Furthermore, the PP also corrected the typo made in the PDD section 6.4 Summary of the ex-ante estimation of emission reductions:

Registered PDD Section	Revised PDD Section	Revision Description in the Revised PDD	Verified Results
Registered PDD version 06 Dated 15/06/2011 Section 6.4 (Page 52)	Revised PDD version 06.2 Dated 16/09/2012 Section 6.4 (Page 52)	1. Information Correction: Reversed baseline emission title and the project emission title. 2. Total amount of project emission and emission reductions estimation in ten years has been revised to be correct	As per the PS Appendix 1. Changes that do not require prior approval by the Executive Board. This correction is defined as a typographical error correction. The assessment team considered that this correction of the registered CDM project activity does not affect the design of the project activity. Therefore, prior approval is not required. As per the VVS para 257-259, the assessment team confirms that the corrected information is an accurate reflection of actual project information.

3.2.3 Permanent changes from registered monitoring plan or applied methodology

The accuracy of installed electricity meters used for monitoring parameter $EG_{PA,y}$ (Actual quantity of electricity supplied to the grid in the year 'y') is not in accordance with the registered monitoring plan. **CAR#6** was therefore raised by the assessment team.

During the onsite visit, the assessment team identified that 7 main meters and 7 backup meters have been installed by the power grid company. Only 6 meters' accuracy is in line with the requirement presented in the registered MP. For the rest 8 meters, the designed accuracy is lower than the registered MP requirement.

According to the PPA (/30/) signed between the CHP power plant and the Xinjiang Power Supply Bureau, the CHP power plant and the project owner has no right to settle or change the accuracy of the installed monitoring meters. On the other hand, the accuracy level of installed meters (with accuracy level 0.5% and 0.2%) in this project is in line with national standard DLT448-2000 (/31/). So the accuracy of the all installed main meters in this project is in line with the national requirements.

The assessment team defined that is a permanent change from the registered monitoring plan and the PP revised monitoring plan. The monitoring parameter ($EG_{PA,y}$) is used for calculating baseline GHG emissions, the difference between the accuracy level (0.3%) of the installed monitoring equipment and the accuracy prescribed by the registered monitoring plan will be deducted from the measured value. This is inline with the requirement of PS para 4 of Appendix 1. The assessment team considered prior approval by the Executive Board is not required.

Based on the requirement, the PP revised the monitoring plan and adjusted the value measured with the equipment for this monitoring period. The monitoring parameter $EG_{PA,y}$ is used for calculating baseline GHG emissions, the difference (0.3%) between the accuracy level of the installed monitoring equipments and the accuracy prescribed by the monitoring plan contained in the registered PDD is deducted from the measured value. The PPs decided to discount 0.3% of $EG_{PA,y}$ measured by electricity meters for conservation..

Revised Monitoring plan has been discussed in the following table.

Registered PDD Section	Revised PDD Section	Revision Description in the Revised PDD	Verified Results
Registered PDD version 06 Dated 15/06/2011 Section 7.1 Page 55 Annex 4 Monitoring Information Table 1 Technical specification of monitoring instruments Page 102	Revised PDD version 06.1 Dated 16/07/2012 (the version based on which CAR#6 is closed out) and version 06.2 dated 16/09/2012 (final version) Section 7.1 Page 55 Annex 4 Monitoring Information Table 1 Technical specification of monitoring instruments Page 102	<ul style="list-style-type: none"> ◆ In the MP in the revised PDD, the electricity meter accuracy level is extended range (from 0.5 to 0.2s) while in the registered PDD accuracy level is defined as 0.2s. ◆ $EG_{PA,y}$ will be discounted by 0.3% for conservativeness. 	<p>The electric meters are installed and controlled by the Xinjiang Power Supply Bureau and the project owner had no right to set the accuracy level of monitoring device.</p> <p>Furthermore, 0.3% of measured electricity supplied amount will be deducted from total $EG_{PA,y}$ for each monitoring period is a conservative solution for meter accurate level decrease.</p> <p>Based on the specific requirement presented in the VVS para. 263-266, the assessment team confirmed the following issue.</p> <p>This revision ensures compliance between the actual monitoring process and the revised monitoring plan, which is also in line with the applied methodology. Based on PS Appendix 1 para 4, a conservative discount factor (0.3%) has been applied to ensure the accuracy of the calculation of emission reductions will not be reduced.</p>

CAR#6 is therefore closed by the assessment team.

3.2.4 Changes to project design of registered project activity

There is no change to project design of the registered project activity identified by the assessment team during this verification or submitted to SGS by the Project Participants.

3.2.5 Changes to start date of crediting period

There is no change to the start date of crediting period submitted to SGS by the Project Participants during this verification.

3.3 Remaining Issues, CAR's, FAR's from Previous Validation or Verification

This is the first periodic verification. By means of reviewing the validation report (/5/), the assessment team identified one FAR remaining from the validation stage.

The FAR was raised during the validation stage: "The energy efficiency for power generation of Xinjiang Huadian Hongyanchi Power Plant should be monitored, if an actual efficiency higher than the design efficiency is discovered, the higher value should be used for determination of emission reductions."

Through document review, the assessment team identified that no specific justification related to the FAR

was provided in the Monitoring Report version 1.0, and information provided by the PP could not prove that the FAR has been resolved. **CAR#16** was therefore raised requesting the PP to clarify this issue and make the relevant revisions if necessary.

The PP clarified that no technical measure had been taken to improve the efficiency of the CHP plant. This statement has been proved by cross checking the formal statement (/32/) issued by the CHP plant. The CHP plant clarified that since the district heating project was put into operation on 15/10/2011 till present, no technical measure had taken to improve the efficiency of the CHP plant. During the first monitoring period, the efficiency 38.31% defined in the validation stage has been applied.

As per the registered monitoring plan, parameter $\eta_{BBL,ELB}$ has been defined as a monitoring parameter. If any technical measure has been taken in the following monitoring period and the efficiency has been increased by x%, the efficiency of the baseline power plant (38.31%) should also be increased by the same x%. According to the evidence provided by the CHP plant, since the commissioning of the CHP plant, no technical measure was taken to improve the efficiency of the CHP plant. So in this monitoring period, no technical measure was taken, the increase of the efficiency of the baseline power plant is deemed as 0%. The value which applied in the registered PDD is adopted in the Monitoring Report and this parameter would be monitored throughout the crediting period. The assessment team accepted that the PP uses the efficiency of 38.31% for the baseline emission calculation. **CAR#16** was closed by the assessment team. The FAR raised in the validation was closed in the first periodic verification, considering the efficiency of power plant has been defined as a formal monitoring parameter in the monitoring plan.

3.4 Compliance of the monitoring plan with the monitoring methodology

The project was registered against methodology AM0058 version 03.1(/2/). Based on the specific requirement presented in the VVS version 02.0 para 229-232: Compliance of the monitoring plan with the monitoring methodology including applicable tools. The assessment team verified the consistency of the monitoring plan and the applied monitoring methodology. All the parameters needed to be monitored in the methodology have been monitored in the monitoring plan of the revised PDD. The specific monitoring procedures and QA/QC procedures required by the applied methodology are also met in the monitoring plan.

During the assessment stage, the registered monitoring plan has been revised refer to the permanent change happened in the monitoring system. Detailed information has been discussed in section 3.2.3.

3.4.1 Status of the district heating system and capacity: Dates of commissioning and status of rated capacity of boilers

By means of document review, the assessment team verified the compliance of the RMP (included in the revised PDD version 06.2) with the applied monitoring methodology AM0058 version 03.1 as presented in the table below.

Revised PDD Version 06.2 Approved Methodology	Requirement in the applied monitoring methodology (AM0058 version 03.1)	Requirement in the RMP (revised PDD version 06.2 section B.7)	Conclusion on the compliance of the RMP with the applied monitoring methodology
Data/Parameter	Status of the district heating system and capacity	Status of the district heating system and capacity	Compliance with the applied methodology
Description	Dates of commissioning and status of rated capacity of boilers	Dates of commissioning and status of rated capacity of boilers	The description of monitoring parameter complies with the applied monitoring methodology.
Measured/Calculated /Default	Defined as monitored parameter	Defined as monitored parameter	The RMP complies with the applied monitoring methodology.
Source of data	The responsible heat or urban planning authority and the maps or schematic-plan diagrams of the district heating system obtained at the district heating	Schematic-plan diagrams of the southern district heating system obtained at Urumqi Heating Supply Co., Ltd. and the map of the southern district heating	The RMP complies with the applied monitoring methodology.

	company	system planning provided in FSR based on the urban construction plan by the responsible Urumqi Urban Planning Bureau	
Monitoring equipment	N/A	N/A	The RMP complies with the applied monitoring methodology.
Measuring/Reading/Recording frequency	Recorded at start of the project and whenever the newly installed substations start producing thermal energy	Recorded at start of the crediting period and whenever the newly installed substations start producing thermal energy	The RMP complies with the applied monitoring methodology.
Calculation method (if applicable)	N/A	N/A	The RMP complies with the applied monitoring methodology.
QA/QC procedures	Data gathered monthly to establish starting date for each substation and monthly status of the scope of the district heating system	Data gathered monthly to establish starting date for each substation and monthly status of the scope of the district heating system	The RMP complies with the applied monitoring methodology.

3.4.2 $Q_{\text{extracted},y}$: Quantity of heat extracted from the CHP plant during the year y

By means of document review, the assessment team verified the compliance of the RMP with the applied monitoring methodology AM0058 version 03.1 as presented in the table below.

Revised PDD Version 06.2 Approved Methodology	Requirement in the applied monitoring methodology (AM0058 version 03.1)	Requirement in the RMP (revised PDD version 06.2 section B.7)	Conclusion on the compliance of the RMP with the applied monitoring methodology
Data/Parameter	$Q_{\text{extracted},y}$	$Q_{\text{extracted},y}$	Compliance with the applied methodology
Description	Quantity of heat extracted from the cogeneration plant during the year y	Quantity of heat extracted from the CHP Plant during the year y	The description of monitoring parameter complies with the applied monitoring methodology.
Measured/Calculated/Default	Measured	Measured	The RMP complies with the applied monitoring methodology.
Source of data	Heat meter at supply side of heat exchanger	Heat meter at supply side of primary heat exchanger	The RMP complies with the applied monitoring methodology.
Monitoring equipment	Heat meter	Heat meter	The RMP complies with the applied monitoring methodology.
Measuring/Reading/Recording frequency	Hourly measurements, registered for the project at least on an annual basis	Hourly measurements, registered for the project on an annual basis.	The RMP complies with the applied monitoring methodology.
Calculation method (if applicable)	N/A	N/A	The RMP complies with the applied monitoring methodology and tool.
QA/QC procedures	The meter readings should be crosschecked against the meter readings of the point of heat supply as well as against heat invoices to district heating company. Moreover, the corresponding meters have to be subject to regular maintenance in order to ensure measurements with a low degree of uncertainty. Data to be stored electronically	The meter readings should be crosschecked against the meter readings of the point of heat supply as well as heat invoices to Urumqi Heating Supply Co., Ltd to ensure that the heat records are plausible and reliable. Moreover, the corresponding meters have to be subject to regular maintenance in order to ensure measurements with a low degree of uncertainty. Data	The RMP complies with the applied monitoring methodology.

	(database)	to be stored electronically (Excel database).	
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3.4.3 $Q_{HOB,y}$: Quantity of heat extracted from all heat only boiler houses during year y

By means of document review, the assessment team verified the compliance of the RMP with the applied monitoring methodology AM0058 version 03.1 as presented in the table below.

Revised PDD Version 06.2 Approved Methodology	Requirement in the applied monitoring methodology (AM0058 version 03.1)	Requirement in the RMP (revised PDD version 06.2 section B.7)	Conclusion on the compliance of the RMP with the applied monitoring methodology
Data/Parameter	$Q_{HOB,y}$	$Q_{HOB,y}$	Compliance with the applied methodology
Description	Quantity of heat extracted from all heat only/peak load boilers during the year y	Quantity of heat extracted from all heat only boiler houses during the year y	The description of monitoring parameter complies with the applied monitoring methodology.
Measured/Calculated /Default	Measured	Measured	The RMP complies with the applied monitoring methodology.
Source of data	Heat meter at supply side of any heat only boiler or peak load boiler	Heat meters at supply side of each heat only boiler house	The RMP complies with the applied monitoring methodology.
Monitoring equipment	Heat meter	Heat meters	The RMP complies with the applied monitoring methodology.
Measuring/Reading/ Recording frequency	Hourly measurements, registered for the project at least on an annual basis	Hourly measurements, registered for the project on an annual basis.	The RMP complies with the applied monitoring methodology.
Calculation method (if applicable)	N/A	N/A	The RMP complies with the applied monitoring methodology.
QA/QC procedures	The meter readings should be crosschecked against the meter readings of the point of heat supply as well as against heat invoices to district heating company. Moreover, the corresponding meters have to be subject to regular maintenance in order to ensure measurements with a low degree of uncertainty. Data to be stored electronically (database)	The meter readings should be crosschecked against the meter readings of the point of heat supply as well as heat invoices to Urumqi Heating Supply Co., Ltd to ensure that the heat records are plausible and reliable. Moreover, the corresponding meters have to be subject to regular maintenance in order to ensure measurements with a low degree of uncertainty. Data to be stored electronically (Excel database).	The RMP complies with the applied monitoring methodology.

3.4.4 $A_{j,i}$: Total carpet area of all the building in category j supplied by the substation i

By means of document review, the assessment team verified the compliance of the RMP with the applied monitoring methodology AM0058 version 03.1 as presented in the table below.

Revised PDD Version 06.2 Approved Methodology	Requirement in the applied monitoring methodology (AM0058 version 03.1)	Requirement in the RMP (revised PDD version 06.2 section B.7)	Conclusion on the compliance of the RMP with the applied monitoring methodology
Data/Parameter	$A_{j,i}$	$A_{j,i}$	Compliance with the applied methodology
Description	Total carpet area of all the	Total carpet area of all the	The description of monitoring

	building in category j supplied by substation i	building in category j supplied by substation i	parameter complies with the applied monitoring methodology.
Measured/Calculated /Default	Defined as monitored parameter	Defined as monitored parameter	The RMP complies with the applied monitoring methodology.
Source of data	Estimations available from actual measurement or local authorities	Estimations available from approved FSR for existing buildings and new buildings within the Urumqi Southern District Heating Network, which are originally from Urumqi Heating Supply Co., Ltd.	During the on site visit, the assessment team checked the data source for parameter $A_{j,i}$ and confirm that the estimation for the carpet area of existing buildings and new buildings have been presented in the FSR which are provided by Urumqi Heating Supply Co., Ltd, a local authorities. The RMP complies with the applied monitoring methodology.
Monitoring equipment	N/A	N/A	The RMP complies with the applied monitoring methodology.
Measuring/Reading/ Recording frequency	No specific requirement.	No specific requirement.	The RMP complies with the applied monitoring methodology.
Calculation method (if applicable)	N/A	N/A	The RMP complies with the applied monitoring methodology.
QA/QC procedures	No specific requirement.	No specific requirement.	The RMP complies with the applied monitoring methodology.

3.4.5 $Q_{i,y}$: Quantity of heat supplied from substation i to category j buildings

By means of document review, the assessment team verified the compliance of the RMP with the applied monitoring methodology AM0058 version 03.1 as presented in the table below.

Revised PDD Version 06.2 Approved Methodology	Requirement in the applied monitoring methodology (AM0058 version 03.1)	Requirement in the RMP (revised PDD version 06. 2 section B.7)	Conclusion on the compliance of the RMP with the applied monitoring methodology
Data/Parameter	$Q_{i,y}$	$Q_{i,y}$	Compliance with the applied methodology
Description	Quantity of heat supplied from sub-station i to category j buildings	Quantity of heat supplied from substation i to category j buildings	The description of monitoring parameter complies with the applied monitoring methodology.
Measured/Calculated /Default	Measured	Measured	The RMP complies with the applied monitoring methodology.
Source of data	On site measurements of heat meter at sub station	On site measurements of heat meters at substations	The RMP complies with the applied monitoring methodology.
Monitoring equipment	Heat Meter	Heat Meters	The RMP complies with the applied monitoring methodology.
Measuring/Reading/ Recording frequency	Hourly measurements, registered for the project at least on an annual basis	Hourly measurements, registered for the project on an annual basis.	The RMP complies with the applied monitoring methodology.
Calculation method (if applicable)	N/A	N/A	The RMP complies with the applied monitoring methodology.
QA/QC procedures	The meter readings should be cross-checked against the meter readings of the heat extracted from the power plant as well as against heat invoices to ensure that the heat records are plausible and reliable.	The sum of all heat meter readings of substations should be crosschecked against the heat meter readings of the heat extracted from the CHP and the heat extracted from HOBs as well as against heat invoices to	The RMP complies with the applied monitoring methodology.

	Moreover, the corresponding meters have to be subject to regular maintenance in order to ensure measurements with a low degree of uncertainty. Data to be stored electronically (database).	ensure that the heat records are plausible and reliable. Moreover, the corresponding meters have to be subject to regular maintenance in order to ensure measurements with a low degree of uncertainty. Data to be stored electronically (Excel database)	
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3.4.6 $EG_{PA,y}$: Actual quantity of electricity supplied to the grid in the year y

By means of document review, the assessment team verified the compliance of the RMP with the applied monitoring methodology AM0058 version 03.1 as presented in the table below.

Revised PDD Version 06.2 Approved Methodology	Requirement in the applied monitoring methodology (AM0058 version 03.1)	Requirement in the RMP (revised PDD version 06.2 section B.7)	Conclusion on the compliance of the RMP with the applied monitoring methodology
Data/Parameter	$EG_{PA,y}$	$EG_{PA,y}$	Compliance with the applied methodology
Description	Actual quantity of electricity supplied to the grid in the year y	Actual quantity of electricity supplied to the grid in the year y	The description of monitoring parameter complies with the applied monitoring methodology.
Measured/Calculated /Default	Measured	Measured	The RMP complies with the applied monitoring methodology.
Source of data	Electricity meter	Electricity meter at the CHP plant.	The RMP complies with the applied monitoring methodology.
Monitoring equipment	Electricity meter	Electricity meter (Accuracy from 0.5 to 0.2s)	The RMP complies with the applied monitoring methodology.
Measuring/Reading/ Recording frequency	Continuous	Continuous, annual registration	The RMP complies with the applied monitoring methodology.
Calculation method (if applicable)	N/A	N/A	The RMP complies with the applied monitoring methodology.
QA/QC procedures	No specific requirement.	Electricity meter readings of the CHP plant are crosschecked against electricity sale invoices available from the power grid company to ensure that the electricity records are reasonable and reliable. Moreover, the corresponding meters are subject to regular maintenance and calibration in order to ensure measurements with a low degree of uncertainty. Data to be stored electronically (Excel database).	The RMP complies with the applied monitoring methodology.

3.4.7 $FC_{i,j,y}$: Quantity of fuel coal combusted in process j during the year y

The assessment team conducted a document review on the applied methodology AM0058 version 03.1 (/2/) and applied tool of "Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion" Version 02 (/73/), the revised monitoring plan included in the revised PDD as presented in the tables below:

Revised PDD Version 06.2 Approved Methodology and tool	Requirement in the applied monitoring methodology (AM0058 version 03.1) and the applied tool ("Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion" version 02)	Requirement in the RMP (revised PDD version 06.2 section B.7)	Conclusion on the compliance of the RMP with the applied monitoring methodology and the applied tool
Data/Parameter	FC _{i,j,y} (Sourced from Applied Tool)	FC _{i,j,y} (PDD section B.7.1)	Compliance with the applied methodology
Description	Quantity of fuel type i combusted in process j during the year y (Sourced from Applied Tool)	Quantity of fuel coal combusted in process j during the year y (PDD section B.7.1)	The description of monitoring parameter complies with the applied monitoring methodology.
Measured/Calculated /Default	Defined as monitored parameter (Sourced from Applied Tool)	Defined as monitored parameter (PDD section B.7.1)	The RMP complies with the applied monitoring methodology.
Source of data	Onsite measurements	Onsite measurements of the quantity of coal consumed for the boiler houses in the CHP plant and the four HOB boiler houses	The RMP complies with the applied monitoring methodology.
Monitoring equipment	Use either mass or volume meters.	Use strap balance which onsite measuring the quantity of coal consumed for the boiler houses Based on the information presented in the PDD Annex 4 the following two volume meters have been involved in the monitoring system Electronic Strap balance & Electronic weighting balance	The RMP complies with the applied monitoring methodology.
Measuring/Reading/ Recording frequency	Continuously	Continuously	The RMP complies with the applied monitoring methodology.
Calculation method (if applicable)	N/A	N/A	The RMP complies with the applied monitoring methodology and tool.
QA/QC procedures	The consistency of metered fuel consumption quantities should be cross-checked by an annual energy balance that is based on purchased quantities and stock changes. Where the purchased fuel invoices can be identified specifically for the CDM project, the metered fuel consumption quantities should also be cross-checked with available purchase invoices from the financial records.	The consistency of metered fuel consumption quantities should be cross-checked by an annual energy balance that is based on purchased quantities and stock changes. Where the purchased fuel invoices can be identified specifically for the CDM project, the metered fuel consumption quantities should also be cross- checked with available purchase invoices from the financial records.	The RMP complies with the applied monitoring methodology.

3.4.8 $NCV_{i,y}$ *i = coal*: Weighted average net calorific value of fuel coal consumed in CHP and HOB Boiler House in year y

The assessment team conducted document review on the applied methodology AM0058 version 03.1 and applied tool of "Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion" Version 02, the revised monitoring plan included in the registered PDD as presented in the tables below:

Revised PDD Version 06.2 Approved Methodology and tool	Requirement in the applied monitoring methodology (AM0058 version 03.1) and the applied tool ("Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion" version 02)	Requirement in the RMP (revised PDD version 06.2 section B.7)	Conclusion on the compliance of the RMP with the applied monitoring methodology and the applied tool
Data/Parameter	NCV _{i,y} (Sourced from Applied Tool)	NCV _{i,y} (PDD section B.7.1)	Compliance with the applied methodology
Description	Weighted average net calorific value of fuel type i in year y (Sourced from Applied Tool)	Weighted average net calorific value of fuel coal consumed in CHP and HOB Boiler House in year y (PDD section B.7.1)	The description of monitoring parameter complies with the applied monitoring methodology.
Measured/Calculated /Default	Defined as monitored parameter (Sourced from Applied Tool)	Defined as monitored parameter (PDD section B.7.1)	The RMP complies with the applied monitoring methodology.
Source of data	As per the tool "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" 1. Values provided by the fuel supplier in invoices 2. Measurements by the project participants 3. Regional or national default values. 4. IPCC default values at the upper or lower limit whatever is more conservative of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories	This parameter will be monitored by the following options: 1.Values provided by the fuel supplier in invoices (preferred option) 2.Measurements by the project participants (or owner of CHP) If the option 1 is available, then the option 1 will be used, if option 1 is unavailable, then option 2 will be used; in this case, the NCV of the CHP will be monitored by its owner in accordance with relevant industrial standard.	The RMP complies with the applied monitoring methodology.
Monitoring equipment	No specific information	No specific information	The RMP complies with the applied monitoring methodology.
Measuring/Reading/ Recording frequency	Continuously	Continuously	The RMP complies with the applied monitoring methodology.
Calculation method (if applicable)	N/A	N/A	The RMP complies with the applied monitoring methodology and tool.
QA/QC procedures	Verify if the values under a), b) and c) are within the uncertainty range of the IPCC default values as provided in Table 1.2, Vol. 2 of the 2006 IPCC Guidelines. If the values fall below this range collect additional information from the testing laboratory to justify the outcome or conduct additional measurements. The laboratories in a), b) or c) should have ISO17025 accreditation or justify that they can comply with similar quality standards.	Verify if the value is within the uncertainty range of the IPCC default values as provided in Table 1.2, Vol. 2 of the 2006 IPCC Guidelines. If the value falls below this range collect additional information from the testing laboratory to justify the outcome or conduct additional measurements. The laboratories should have ISO17025 accreditation or justify that they can comply with similar quality standards.	The RMP complies with the applied monitoring methodology.

3.4.9 $EF_{CO_2,i,y}$, $i=coal$: Weighted average CO₂ emission factor of fuel type in year y

The assessment team conducted document review on the applied methodology AM0058 version 03.1 and applied tool of “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” Version 02, the revised monitoring plan included in the revised PDD as presented in the tables below.

Revised PDD Version 06.2 Approved Methodology and tool	Requirement in the applied monitoring methodology (AM0058 version 03.1) and the applied tool (“Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion” version 02)	Requirement in the RMP (revised PDD version 06.2 section B.7)	Conclusion on the compliance of the RMP with the applied monitoring methodology and the applied tool
Data/Parameter	$EF_{CO_2,i,y}$ (Sourced from Applied Tool)	$EF_{CO_2,i,y, i=coal}$ (PDD section B.7.1)	Compliance with the applied methodology
Description	Weighted average CO ₂ emission factor of fuel type i in year y (Sourced from Applied Tool)	Weighted average CO ₂ emission factor of fuel type in year y (PDD section B.7.1)	The description of monitoring parameter complies with the applied monitoring methodology.
Measured/Calculated /Default	Defined as monitored or default parameter (Sourced from Applied Tool)	Defined as default parameter (PDD section B.7.1)	The RMP complies with the applied monitoring methodology.
Source of data	<ul style="list-style-type: none"> a) Values provided by the fuel supplier in invoices b) Measurements by the project participants c) Regional or national default values d) IPCC default values at the upper or lower limit – whatever is more conservative of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories 	<p>IPCC default values, 2006</p> <p>Neither the value provided by the fuel supplier and the project participant nor the national default value is available, so as per the “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion”, 2006 IPCC default value as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories is used.</p>	<p>By interview of the relevant fuel suppliers (/72/), the assessment team confirms that the CO₂ emission factor of coal is not provided by coal suppliers through sales invoices. Based on our local and sectoral expertise, the assessment team identified that no CO₂ emission factor presented in the sales invoices in most projects in China, except for cases where specific requirements are raised by the coal purchasers.</p> <p>The assessment team also confirmed that no specific CO₂ emission factor were provided by the coal supplier by checking the coal purchase invoices(/50/) for the project collected during the verification and as a cross reference.</p> <p>Therefore, the assessment team confirmed that option a) is not applicable for this project.</p> <p>According to the Tool, option d) has been selected by the PP.</p> <p>The MP complies with the applied monitoring methodology.</p>
Monitoring equipment	N/A	N/A	The MP complies with the applied monitoring methodology.
Measuring/Reading/ Recording frequency	Any further revision of the IPCC Guidelines should be taken into account	Any further revision of the IPCC Guidelines should be taken into account	The MP complies with the applied monitoring methodology.
Calculation method (if applicable)	N/A	N/A	The MP complies with the applied monitoring methodology and tool.
QA/QC procedures	N/A	N/A	The MP complies with the applied monitoring methodology.

3.4.10 $\eta_{BL,EL}$: Efficiency of the power plant used prior to the start of the implementation of the project activity

Referring to the FAR raised during the validation stage, this parameter has been included in the monitoring plan. No specific monitoring requirement presented in the applied methodology.

Revised PDD Version 06.2 Approved Methodology	Requirement in the applied monitoring methodology (AM0058 version 03.1)	Requirement in the RMP (revised PDD version 06.1 section B.7)	Conclusion on the compliance of the RMP with the applied monitoring methodology
Data/Parameter	N/A	$\eta_{BL,EL}$ (PDD section B.7.1)	N/A
Description	N/A	Efficiency of the power plant used prior to the start of the implementation of the project activity (PDD section B.7.1)	N/A
Measured/Calculated /Default	N/A	Defined as monitoring parameter (PDD section B.7.1)	N/A
Source of data	N/A	Measured by the third party according to the manufacturer's procedures or taken from the manufacturer's specification.	N/A
Monitoring equipment	N/A	N/A	N/A
Measuring/Reading/ Recording frequency	N/A	If during the crediting period a technical measure is taken to improve efficiency of the CHP plant.	N/A
Calculation method (if applicable)	N/A	N/A	N/A
QA/QC procedures	N/A	N/A	N/A

3.5 Completeness and accuracy of Monitoring

3.5.1 Verification of monitoring of parameters

This is the first periodic verification; the actual monitoring process has been verified by the assessment team based on the requirement presented in the VVS version 02.0. para 233-236: compliance of monitoring with the monitoring plan. All parameters stated in the monitoring plan, including baseline emission parameters, project emission parameters and leakage parameters have been verified by the assessment team. The assessment team has also verified the information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored and relevant information and verification results have been presented in the following paragraphs. Management and operational system have also been checked.

Referring to the VVS version 02.0 para 205 (c), the accuracy of equipment used for monitoring is in accordance with the relevant guidance provided by the CDM Executive Board and is controlled and calibrated in accordance with the monitoring plan. The following issues have been identified by the assessment team through the onsite visit and the document review.

For baseline emission parameter $EG_{PA,y}$ (Actual quantity of electricity supplied to the grid in the year y), seven main electricity meters and seven backup electricity meters have been installed at the CHP site. The accuracy of the installed electricity meters applied for monitoring was not in accordance with the registered monitoring plan. **CAR#6** was therefore raised by the assessment team. After satisfactory response and the relevant supporting evidence has been provided and verified to be reliable. **CAR#6** was closed by the

assessment team and monitoring plan in the registered PDD has been revised and validated by the assessment team. Detailed information presented in the section 3.2.3.

Based on the specific requirement presented in the monitoring plan, calibration of the monitoring instruments will be carried out regularly by the authorized third party entity in line with standard calibration procedure. Through document review, the assessment team identified that calibration information for monitoring instruments is not included in the Monitoring Report, version 1.0. **CAR#7** was raised requesting the PP to report how the registered monitoring plan has been followed regarding the calibration of the monitoring instruments. Relevant information has been provided in the revised MR, version 2.1 Annex 2 'The monitoring equipments information', and checked by the assessment team against the calibration reports (/54/, /55/, /56/). Information consistency has been confirmed by the assessment team. The assessment team confirmed that the monitoring plan has been followed. **CAR#7** is therefore closed by the assessment team.

3.5.1.1 Status of the district heating system and capacity: Dates of commissioning and status of rated capacity of boilers

Dates of commissioning and status of rated capacity of boilers (Status of the district heating system and capacity) is monitored to reflect the project actual implementation status and the operation status of the installed substations.

Prior to the onsite assessment, the assessment team conducted a document review based on the applied methodology, the monitoring plan included in the registered PDD and the Monitoring Report, version 1.0, publicly available on the UNFCCC website. During the onsite visit, the assessment team checked the SCADA system and 19 substations selected through sampling (please refer to section "Summary of Sampling during Site Visit" below for more information), interviewed the staffs of Urumqi Heating Supply Co., Ltd. (the project owner), further reviewed the master plan of the district heating system in Southern District Heating Network in Urumqi City (/11/), the schematic diagram of the project activity (including the locations of the CHP plant, HOB houses, the pressure isolated heat exchange station, the district heating network, the 174 installed substations and the un-built 19 substations) (/12/) obtained at Urumqi Heating Supply Co., Ltd., the statement on the status of the district heating system and capacity of Southern District Heating Network in Urumqi City (including total carpet area of all the buildings in category 'j' supplied by the substation i) (/10/) issued by the responsible Urumqi Heat Supply Management Bureau reflecting the most updated status of the district heating system and capacity, and the emission reductions calculation spreadsheet, version 1.0. The compliance of the actual monitoring of the parameter: 'Status of the district heating system and capacity' with the requirement in the RMP is verified as below:

Monitoring Report, onsite checks RMP & Approved Methodology	Requirement in the RMP (revised PDD version 06.2 section B.7)	Implementation of the monitoring	Conclusion on the compliance of the monitoring with the RMP
Data/Parameter	Status of the district heating system and capacity	Status of the district heating system and capacity	The monitoring complies with the RMP.
Description	Dates of commissioning and status of rated capacity of boilers	Dates of commissioning and status of rated capacity of boilers	The monitoring complies with the RMP.
Measured/Calculated /Default	Measured	Measured	The monitoring complies with the RMP.
Source of data	Schematic-plan diagrams of the southern district heating system obtained at Urumqi Heating Supply Co., Ltd. and the map of the southern district heating system planning provided in FSR based on the urban construction plan by the responsible Urumqi Urban Planning Bureau	Information Reported in the Monitoring Report: Schematic-plan diagrams of the southern district heating system obtained at Urumqi Heating Supply Co., Ltd. and the map of the southern district heating system planning provided in	The monitoring complies with the RMP.

		FSR based on the urban construction plan by the responsible Urumqi Urban Planning Bureau. Information verified: Schematic diagram of the project activity (Including the locations of the CHP plant, HOB houses, the pressure isolated heat exchange station, the district heating network and total 174 installed substations and the un-built 19 substations) and Master plan of the district heating system in Southern District Heating Network in Urumqi City based on the urban construction plan provided by Urumqi Heat Supply Management Bureau.	
Monitoring equipment	N/A	N/A	The monitoring complies with the RMP.
Measuring/Reading/Recording frequency	Recorded at start of the crediting period and whenever the newly installed substations start producing thermal energy.	Information Reported in the Monitoring Report: Measuring continuously / Recording monthly Information verified: Measuring continuously / Recording monthly	The monitoring complies with the RMP.
Calculation method (if applicable)	N/A	N/A	The monitoring complies with the RMP.
QA/QC procedures	Data gathered monthly to establish starting date for each substation and monthly status of the scope of the district heating system	Information Reported in the Monitoring Report: Data gathered monthly to establish starting date for each substation and monthly status of the scope of the district heating system Information verified: The data is gathered monthly by the project owner based on the information available from catalogue references and the SCADA systems which remotely monitors and controls all the installed substations.	The monitoring complies with the RMP.

As per the information presented in the Monitoring Report, the status of the district heating system and capacity is sourced from the schematic-plan diagrams of the southern district heating system obtained at Urumqi Heating Supply Co., Ltd. and the map of the southern district heating system planning provided in FSR based on the urban construction plan by the responsible Urumqi Urban Planning Bureau and is measured continuously and recorded monthly. The assessment team verified that status of the district heating system and capacity is sourced from the master plan of the district heating system in Southern District Heating Network in Urumqi City, the schematic diagram of the project activity obtained at Urumqi Heating Supply Co., Ltd. and the statement on the status of the district heating system and capacity of Southern District Heating Network in Urumqi City and is recorded at start of the crediting period and whenever the newly installed substations start producing thermal energy.

The following issue was identified by the assessment team:

The status of the district heating system and capacity has been defined as a monitoring parameter as per the requirement in the applied monitoring methodology. The assessment team verified the supporting evidence of status of district heating system and capacity. On site checking has also been carried out by the assessment team against the verified information. The assessment team identified that in several operated substations, the manufacture date of installed heat exchangers are later than the recorded substation commissioning date. **CL#9** was therefore raised to require the PP to make relevant clarification for this issue.

Based on the PP's response and the formal statement issued by the Urumqi Heating Supply Co.,Ltd. (/37/) clarifying the reason why the manufacture dates of several installed heat exchangers are later than the recorded substation commissioning date, the assessment team noted that the routine maintenance has been carried out periodically in order to ensure the operation quality. Some installed equipments (e.g. heat exchanger) was replaced by new equipments after the commissioning of the substations. The clarification provided explained the situation identified by the assessment team during the onsite visit. The assessment team considered the clarification provided is reliable and acceptable. **CL#9** is therefore closed by the assessment team.

Furthermore, The reported commissioning dates of substations is based on the statistic records provided by the local heat supply planning authority, thus is considered as qualified third party evidence. The assessment team confirmed that the reported information is reliable.

Summary of Sampling during Site Visit

There are total 174 substations that have been installed and are operational at the time of this periodic verification. During the on-site assessment, the assessment team visited 19 heating substations out of total 174 by sampling. Taking into consideration the nature of the assessment work (to check the consistency between the reported information and the actual information) and based on the EB65 Annex 2 "Standard for Sampling and Survey for CDM project activities and Programme of Activities"(/67/) and the professional judgment of the assessment team, the sample size (number of substations to be visited) required to achieve a required level of reliability has been determined in the "Sampling Method for Site Visit for CDM.VER1299 MP1" (/69/).

As described in the PDD, 3 categories of building are indentified. However, the 3 building categories can be sorted into two types: existing buildings and new buildings, which is in accordance with the classification given in AM0058 version 03.1 for the calculation of baseline emissions from heat generation. It is indentified that 157 substations supply heat to existing buildings and 17 substations supply heat to new buildings. Based on article 5.2 Size of Sample of the International Accreditation Forum, Inc. (IAF) Mandatory Document for the Certification of Multiple Sites Based on Sampling issued by the IAF dated 20/11/2007 (/36/), the size of the sample (y) should be the square root of the number of remote sites (x), i.e. $y = \sqrt{x}$, rounded up to the whole number. Therefore, 14 substations that supply heat to existing buildings and 5 substations that supply heat to new buildings were determined by the assessment team as the sample size. Since the technology, the installed facilities and the monitoring equipments applied in all the substations are identical. The assessment team considered the selected sample is representative and the uncertainty level is low

The sample substations were chosen randomly from the list of all the operating substations (/17/). The assessment team documented the procedure for determining the sample size in the sample plan before the site visit, which is summarized as below:

Acceptance of data quality
a. Consistent with the Actual Status 100%.
b. Data inconsistency 0%.
Population: 174 substations
Sub-population 1: 157
Sub-population 2: 17
Actual selected Sample Size

Sub-population 1: 14 substations		
Sub-population 2: 5 substations		
Total 19 substations.		
Visited Substations:		
Sub-population	Substation Nr	Designated Number in PDD
1	14	I366
1	19	I380
1	26	I373
1	29	I331
1	31	I365
1	33	I371
1	51	I354
1	56	I404
1	77	I127
1	117	I225
1	122	I203
1	125	I232
1	148	I207
1	36	I340
2	159	I309
2	160	I310
2	161	I319
2	165	I328
2	172	I349

All 19 selected substations have been visited during the on-site assessment to verify the consistency of the reported information on the applied technology, installed equipments and heat meters, and the basic information of the substations (e.g. name, location, construction date, and operation date) with the actual status. Detailed information has been recorded in the random sample results (/69/); the assessment team confirms that reported information is reliable and acceptable.

19 substations were visited by the assessment team during onsite visit. The selection of the 19 substations used random sampling method. The assessment team confirmed that all the serial numbers of the heat meters installed at the 19 substations were consistent with those reported in the Monitoring Report and no error was identified in the serial numbers of the heat meters of these 19 randomly substations. Thus, the assessment team considers that the sample selected represents the entire population. The data provided for the rest of the 174 substations was also checked and found to be correct. The information of the monitoring instruments and their calibrations and the data monitored for all the 174 substations have been completely checked as per the information in the Monitoring Report and the Emission Reduction Calculation Spreadsheet. The information and data of the 174 substations have also been verified by the assessment team against the original records and calibration records of heat meters. The verification conclusion is based on the complete set of data of all 174 substations.

Baseline Emission Parameters

Baseline Emissions from heat generation

$$BE_{HG,y} = \sum_i \sum_{j \in 1} Q_{j,i,y} \cdot EF_{BL,HG,j,i} + \sum_i \sum_{j \in 2} Q_{j,i,y} \cdot EF_{BL,HG,j,i} + \sum_i \sum_{j \in 3} Q_{j,i,y} \cdot EF_{BL,HG,j,i}$$

Where,

$BE_{HG,y}$: Baseline emissions from the generation of heat during the year y;

$EF_{BL,HG,j,i}$: CO₂ emission factor for heat generation for category j connected to sub-station i in the absence of the project activity (this parameter is determined *ex ante* by two parameters from external source, CO₂ emission factor of the fossil fuel used in the absence of the project activity in the heat generation system corresponding to substation i ($COEF_{BL,HG,j,i}$) and energy efficiency of the heat supply system i that would be used in the absence of the project activity for buildings in category j ($\epsilon_{BL,HG,j,i}$), please refer to section 3.11.7 of this report for details).

$Q_{j,i,y}$: Quantity of heat supplied from sub-station i to buildings in category j in the year y; calculated as:

$$Q_{j,i,y} = \frac{A_{j,i}}{\sum_j A_{j,i}} \cdot Q_{i,y}$$

Where,

$A_{j,i}$: Total carpet area of buildings in category j connected to substation i;

$Q_{i,y}$: Measured quantity of heat supplied by substation i in year y (this is a baseline emissions parameter, please refer to section 3.5.1.5 of this report for details);

j: All categories included in the project boundary defined as combination of building type/technology of boiler/fuel used in boiler (categories are defined *ex ante* at validation in the registered PDD, please refer to section 3.1 of this report for details);

i: All substations included in the project boundary.

(a) For the cases where the category j consists of existing buildings (as per the definition provided in the registered PDD, please refer to section 3.1 of this report for details):

$$Q_{j,i,y} = \min \{ Q_{inst_cap,j,i}, Q_{j,i,y} \}$$

Where,

$Q_{j,i,y}$: Quantity of heat supplied from sub-station i to buildings in category j in the year y;

$Q_{inst_cap,j,i}$: Maximum quantity of heat that could have been supplied per year by existing boiler(s) supplying to category j building within the area supplied by sub-station i in the absence of the project activity, (GJ), where 'j' belongs to set of all categories of 'existing buildings' within the sub-station i (this parameter is determined *ex ante* by two parameters from external source, nameplate capacity value of the boiler supplying to building type j at sub-station i ($CAP_{j,i}$) and number of operational hours per year (T), please refer to section 3.11.3 of this report. for details);

(b) For the cases where the category j consists of new buildings (as per the definition provided in the registered PDD, please refer to section 3.1 for details):

If $Q_{extracted,y} < Q_{HOB,y}$, then $Q_{j,i,y} = 0$;

If $Q_{extracted,y} > Q_{HOB,y}$, then $Q_{j,i,y}$ is determined as per equation $Q_{j,i,y} = \frac{A_{j,i}}{\sum_j A_{j,i}} \cdot Q_{i,y}$.

Where,

$Q_{j,i,y}$: Quantity of heat supplied from sub-station i to buildings in category j in the year y;

$Q_{extracted,y}$: Quantity of heat extracted from the CHP plant during the year y (this is a baseline emissions parameter, please refer to section 3.5.1.2 of this report for details);

$Q_{HOB,y}$: Total quantity of heat extracted from all heat-only boilers supplying to the area covered by primary network during the year y (this is a baseline emissions parameter, please refer to section 3.5.1.3 of this report for details);

CO₂ emission factor for heating supply in the baseline

$EF_{BL,HG,j,i}$ is determined as follows:

$$EF_{BL,HG,j,i} = \frac{COEF_{BL,HG,j,i}}{\epsilon_{BL,HG,j,i}}$$

Where,

$COEF_{BL,HG,j,i}$: CO₂ emission factor of the fuel coal used in the absence of the project activity in the heat generation system corresponding to substation i (please refer to section 3.11.6 of this report for details).

$\epsilon_{BL,HG,j,i}$: Energy efficiency of the space heating boiler system i that would be used in the absence of the project activity for buildings in category j (please refer to section 3.11.7 of this report for details).

3.5.1.2 $Q_{extracted,y}$: Quantity of heat extracted from the CHP plant during the year y

Quantity of heat extracted from the CHP plant during the year y ($Q_{extracted,y}$) is a baseline emission parameter.

Prior to the on-site assessment, the assessment team conducted document review based on the applied methodology, the monitoring plan included in the registered PDD and the Monitoring Report version 1.0 publicly available on the UNFCCC website. During the on-site assessment, the assessment team visited the CHP plant, checked the installed heat meter, interviewed the staffs of the CHP plant, and further reviewed the heat purchase agreement (/33/), the daily reading records of $Q_{extracted,y}$ (DRR, /41/), the monthly monitoring records of $Q_{extracted,y}$ (MMR, /42/), the heat invoices of $Q_{extracted,y}$ (/43/), the electronic database of all monitoring data with specifications of the points of measurement, the variable name and description, the corresponding value and unit as well as the time of measurement covering the first monitoring period and the emission reduction calculation spreadsheet version 1.0. The compliance of the actual monitoring status of the monitoring of parameter $Q_{extracted,y}$ with the requirement in the RMP is verified as given in the table below:

Monitoring Report, onsite checks RMP & Approved Methodology	Requirement in the RMP (revised PDD version 06.2 section B.7)	Implementation of the monitoring	Conclusion on the compliance of the monitoring with the RMP
Data/Parameter	$Q_{extracted,y}$	$Q_{extracted,y}$	The monitoring complies with the RMP.
Description	Quantity of heat extracted from the CHP Plant during the year y	Quantity of heat extracted from the cogeneration plant during the year y	The monitoring complies with the RMP.
Measured/Calculated /Default	Measured	Measured	The monitoring complies with the RMP.
Source of data	Heat meter at supply side of primary heat exchanger	Information Reported in the Monitoring Report: Heat meter at supply side of primary heat exchanger Information Verified: Heat meter installed at supply side of	The monitoring complies with the RMP.

		<p>primary heat exchanger (One heat meter with SN: 191001Y457)</p> <p>(please refer to section 3.6 of this report for detailed information of the installed heat meter)</p> <p>CAR#17 was raised refer to the data inconsistency. After received the revised documents. CAR#17 was closed by the assessment team.</p>	
Monitoring equipment	Heat meter	Heat meter	The monitoring complies with the RMP.
Measuring/Reading/Recording frequency	Hourly measurements, registered for the project on an annual basis.	<p>Information Reported in the Monitoring Report:</p> <p>Hourly Measuring / Monthly Recording</p> <p>Information Verified:</p> <p>Continuously monitoring, hourly measurement, daily recording, monthly reporting</p>	The monitoring complies with the RMP.
Calculation method (if applicable)	N/A	N/A	The monitoring complies with the RMP.
QA/QC procedures	<p>The meter readings should be crosschecked against the meter readings of the point of heat supply as well as heat invoices to Urumqi Heating Supply Co., Ltd to ensure that the heat records are plausible and reliable. Moreover, the corresponding meters have to be subject to regular maintenance in order to ensure measurements with a low degree of uncertainty.</p> <p>Data to be stored electronically (Excel database).</p>	<p>No related information reported in the monitoring report version 1.0.</p> <p>Information Reported in the Monitoring Report:</p> <p>The quantity of heat extracted from the CHP Plant during the year y was crosschecked against the meter readings of the point of heat supply as well as heat invoices to Urumqi Heating Supply Co., Ltd to ensure that the heat records are plausible and reliable. Moreover, the corresponding meters have to be subject to regular maintenance in order to ensure measurements with a low degree of uncertainty. Data were stored in excel database.</p> <p>Information Verified:</p> <p>CAR#11 was raised by the assessment team with regard to the QA/QC procedures of parameter $Q_{extracted,y}$. After satisfactory response and relevant supporting evidence have been provided and verified to be reliable, CAR#11 was closed by the assessment team. Detailed information is presented in the following paragraphs.</p> <p>For detailed calibration information of the installed heat meter, please refer to section 3.6 of this report.</p> <p>The electronic database of all monitoring data with specifications of the points of measurement, the variable name and description, the corresponding value and unit as well as the time of measurement covering the first monitoring period is in place.</p>	The monitoring complies with the RMP

As per the information presented in the Monitoring Report, $Q_{\text{extracted},y}$ is monitored continuously by the heat meter installed at the supply side of the primary heat exchanger. The assessment team verified that $Q_{\text{extracted},y}$, as well as in and out flow temperatures and water flow in m^3 are continuously monitored and hourly measured by the heat meter installed at supply side of primary heat exchanger. The hourly measured values of $Q_{\text{extracted},y}$ are read and recorded manually in the DRR on daily basis with joint signatures of both representatives from the CHP plant and the project owner. The meter readings recorded in the signed DRRs are aggregated into the MMR on monthly basis and serve as the basis for issuing heat invoice. Complete sets of the DRRs, the MMRs and the heat invoices of $Q_{\text{extracted},y}$ covering the first monitoring period are in place.

The following issue was identified by the assessment team:

According to the monitoring plan included in the registered PDD, $Q_{\text{extracted},y}$ will be hourly measured and crosschecked against the meter readings of the point of heat supply as well as heat invoices to Urumqi Heating Supply Co., Ltd. **CAR#11** was raised requesting the PP to clarify how the monitoring plan is followed considering the crosscheck processes is not included in the monitoring report version 1.0.

Based on the clarification provided by the PP, the assessment team identified that during this monitoring period, the monitoring process including the data collection procedure and QA/QC procedure of parameter $Q_{\text{extracted},y}$ are in line with the requirements presented in the RMP. The heat supplier (the CHP plant) issued heat sales invoices to the Urumqi Heating Supply Co., Ltd (the project owner), and the values presented in the sales receipts have been applied to cross-check the monitored values. It was verified by the assessment team that no heat was supplied from the four HOB houses during the first monitoring period. Furthermore, the PP crosschecked the heat extracted from the CHP plant against the total amount of the heat supplied from substations covering the first monitoring period. The data comparison result showed that the sum of the final measured value of heat supplied from substation is 17.38% lower than the amount of heat extracted from the CHP plant. By means of the on-site visit, review of the heat purchase agreement signed between the project owner and the CHP plant and the heat supply agreements signed between the project owner and the end users (/59/), the assessment team confirmed that the heat supplied to the district heating system is only used for heating of buildings in residential and commercial sectors, not for industrial production process. By checking the specific national guideline CJJ 34-2010 Design code for city heating network (/60/) and based on sectoral expertise of the assessment team, it is considered that the 17.38% difference between the extracted point (for this monitoring period, refer to the heat extracted from the CHP plant) and the supply point (refer to the sum of heat supplied from substations) is due to the transmission loss and is reasonable. The value of $Q_{\text{extracted},y}$ that have been applied in the emission reductions calculation as presented in the final version of the Monitoring Report and the final version emission calculation spreadsheet is reliable and the cross check process is in line with the requirement in the RMP. **CAR#11** is closed by the assessment team.

During the assessment stage, it was identified that the reported monitoring results for parameter $Q_{\text{extracted},y}$ are inconsistent with the assessment team verified results. **CAR#17** is therefore raised by the assessment team. After the clarification and revised documents received, the final verified values for parameter $Q_{\text{extracted},y}$ is 3,956,152.00GJ. **CAR#17** has been closed by the assessment team.

3.5.1.3 $Q_{\text{HOB},y}$: Quantity of heat extracted from all heat only boiler houses during year y

Quantity of heat extracted from all heat only boiler houses during year y ($Q_{\text{HOB},y}$) is a baseline emission parameter.

Prior to the onsite assessment, the assessment team conducted document review based on the applied methodology, the monitoring plan included in the registered PDD and the monitoring report version 1.0 publicly available on the UNFCCC website. During the onsite assessment, the assessment team visited the HOB houses, checked the installed heat meters, interviewed the staffs at the HOB houses, and further reviewed the operation regulation (/18/) and operation logs (/21/) of the HOB houses, the MMRs of $Q_{\text{HOB},y}$ (/42/), the electronic database of all monitoring data with specifications of the points of measurement, the variable name and description, the corresponding value and unit as well as the time of measurement covering the first monitoring period and the emission reduction calculation spreadsheet, version 1.0. The

compliance of the actual monitoring of parameter $Q_{HOB,y}$ with the requirement in the RMP is verified as given in the table below:

Monitoring Report, onsite checks RMP & Approved Methodology	Requirement in the RMP (revised PDD version 06.2 section B.7)	Implementation of the monitoring	Conclusion on the compliance of the monitoring with the RMP
Data/Parameter	$Q_{HOB,y}$	$Q_{HOB,y}$	The monitoring complies with the RMP.
Description	Quantity of heat extracted from all heat only boiler houses during the year y	Quantity of heat extracted from all heat only/peak load boilers during the year y	The monitoring complies with the RMP.
Measured/Calculated /Default	Measured	Measured	The monitoring complies with the RMP.
Source of data	Heat meters at supply side of each heat only boiler house	Information Reported in the Monitoring Report Heat meter at supply side of each boiler houses Information Verified: Heat meters installed at supply side of the HOB houses (Three heat meters with SNs: 5302494, 6589907 and 6589908 at Xingfu HOB house, One heat meter with SN: 6807342 at Xinsheng HOB house, One heat meter with SN: 5302496 at Weihuliang HOB house, Three heat meters with SNs: 5303597, 5302495 and 6589909 at Guangming HOB house). For detailed information of the installed heat meters, please refer to section 3.6 of this report.	The monitoring complies with the RMP.
Monitoring equipment	Heat meter	Heat meters	The monitoring complies with the RMP.
Measuring/Reading/ Recording frequency	Hourly measurements, registered for the project on an annual basis.	Information Reported in the Monitoring Report Hourly Measuring / Monthly Recording Information Verified: Continuously monitoring, hourly measurement, monthly recording	The monitoring complies with the RMP.
Calculation method (if applicable)	N/A	N/A	The monitoring complies with the RMP.
QA/QC procedures	The meter readings should be crosschecked against the meter readings of the point of heat supply as well as heat invoices to Urumqi Heating Supply Co., Ltd to ensure that the heat records are plausible and reliable. Moreover, the corresponding meters have to be subject to regular maintenance in order to ensure measurements with a low degree of uncertainty.	No related information reported in MR version 1.0. Information Reported in the Monitoring Report The quantity of heat extracted from the HOBs in year y was crosschecked against the meter readings of the point of heat supply as well as heat invoices to Urumqi Heating Supply Co., Ltd to ensure that the heat records are plausible and reliable. Moreover, the corresponding meters have	

	Data to be stored electronically (Excel database).	<p>to be subject to regular maintenance in order to ensure measurements with a low degree of uncertainty. Data were stored in excel database.</p> <p>Information Verified:</p> <p>CAR#11 was raised by the assessment team with regards to the QA/QC procedures for parameter $Q_{HOB,y}$. After satisfactory response and relevant supporting evidence have been provided and verified to be reliable. CAR#11 was closed by the assessment team. Detailed information presented in the following paragraphs.</p> <p>For detailed calibration information of the installed heat meters, please refer to section 3.6 of this report.</p> <p>The electronic database of all monitoring data with specifications of the points of measurement, the variable name and description, the corresponding value and unit as well as the time of measurement covering the first monitoring period is in place.</p>	
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As per the information presented in the Monitoring Report, the heat is monitored continuously by the onsite heat meters and reported monthly at 24:00 of the last day of the month by trained staff of the project owner. The assessment team verified that $Q_{HOB,y}$ as well as the in and out flow temperatures and water flow in m^3 are continuously monitored and hourly measured by the heat meters installed at supply side of the HOB houses. The meter readings of $Q_{HOB,y}$ are recorded into the MMRs on monthly basis. A complete set of the MMR of $Q_{HOB,y}$ covering the first monitoring period is available.

The following issue was identified by the assessment team:

According to the monitoring plan included in the registered PDD, the monitoring parameter $Q_{HOB,y}$ will be hourly measured and crosschecked against the meter readings of the point of heat supply as well as heat invoices to Urumqi Heating Supply Co., Ltd. **CAR#11** was raised requesting the PP to clarify how the monitoring plan is followed considering the crosscheck processes is not included in the Monitoring Report, version 1.0.

It was verified by the assessment team that no heat was supplied from the HOB houses during the first monitoring period. Therefore the reported value for Q_{HOB} is 0 GJ and no heat invoice was issued by the heat supplier (the HOB houses) to the Urumqi Heating Supply Co., Ltd (the project owner). Therefore, no crosscheck process has been taken for the monitoring parameter Q_{HOB} in this monitoring period and **CAR#11** was closed by the assessment team.

3.5.1.4 $A_{j,i}$: Total carpet area of all the building in category j supplied by the substation i

Total carpet area of all the building in category j supplied by the substation i ($A_{j,i}$) is a baseline emission parameter.

Prior to the onsite assessment, the assessment team conducted document review based on the applied methodology, the monitoring plan included in the registered PDD and the Monitoring Report version 1.0 publicly available on the UNFCCC website. During the on-site assessment, the assessment team interviewed the staffs of Urumqi Heating Supply Co., Ltd, and further reviewed the statement on the status of the district heating system and capacity of Southern District Heating Network in Urumqi City (including total carpet area of all the building in category j supplied by the substation i) issued by Urumqi Heat Supply Management Bureau (the local heat planning authority) and the emission reduction calculation spreadsheet version 1.0. The compliance of the actual monitoring of parameter $A_{j,i}$ with the requirement in the revised monitoring plan is verified as given in the table below:

Monitoring Report, onsite checks RMP & Approved Methodology	Requirement in the RMP (revised PDD version 06.2 section B.7)	Implementation of the monitoring	Conclusion on the compliance of the monitoring with the RMP
Data/Parameter	$A_{j,i}$	$A_{j,i}$	The monitoring complies with the RMP.
Description	Total carpet area of all the building in category j supplied by substation i	Total carpet area of all the building in category j supplied by substation i	The monitoring complies with the RMP.
Measured/Calculated /Default	Measured	Measured	The monitoring complies with the RMP.
Source of data	Estimations available from approved FSR for existing buildings and new buildings within the Urumqi Southern District Heating Network, which are originally from Urumqi Heating Supply Co., Ltd.	Information Reported in the Monitoring Report Estimations available from approved FSR for existing buildings and new buildings within the Urumqi Southern District Heating Network, which are originally from Urumqi Heating Supply Co., Ltd. and confirmed by Urumqi Urban Planning Bureau. Information Verified: Estimations available from approved FSR for existing buildings and new buildings within the Urumqi Southern District Heating Network, which are originally from Urumqi Heating Supply Co., Ltd. and confirmed by the local heat supply planning authority	The monitoring complies with the RMP.
Monitoring equipment	N/A	N/A	The monitoring complies with the MP.
Measuring/Reading/ Recording frequency	No specific requirement.	No related information reported in the Monitoring Report.	Not applicable.
Calculation method (if applicable)	N/A	No related information reported.	Not applicable.
QA/QC procedures	No specific requirement.	No related information reported.	Not applicable.

As per the information presented in the Monitoring Report, the data of $A_{j,i}$ is sourced from estimations available from approved FSR for existing buildings and new buildings within the Urumqi Southern District Heating Network, which are originally from Urumqi Heating Supply Co., Ltd. and confirmed by Urumqi Urban Planning Bureau. The assessment team verified that the data of $A_{j,i}$ is sourced from the estimations available in the approved FSR for existing buildings and new buildings within the Urumqi Southern District Heating Network, which are originally from Urumqi Heating Supply Co., Ltd. and confirmed by the local heat supply planning authority. The data of $A_{j,i}$ is updated on monthly basis.

No issue was raised by the assessment team with regard to the monitoring of parameter $A_{j,i}$.

3.5.1.5 $Q_{i,y}$: Quantity of heat supplied from substation i to category j buildings

Quantity of heat supplied from substation i to category j buildings ($Q_{i,y}$) is a baseline emission parameter.

Prior to the onsite assessment, the assessment team conducted document review based on the applied methodology, the monitoring plan included in the registered PDD and the Monitoring Report, version 1.0,

publicly available on the UNFCCC website. During the onsite assessment, the assessment team visited 19 substations out of total 174 heating substations by sampling (please refer to Annex document “Sampling Method for Site Visit for CDM.VER1299 MP1” for details), checked the SCADA system, interviewed the staffs at the sampled substations, and further reviewed the MMRs of $Q_{i,y}$, the electronic database of all monitoring data with specifications of the points of measurement, the variable name and description, the corresponding value and unit as well as the time of measurement covering the first monitoring period and the emission reduction calculation spreadsheet, version 1.0. The compliance of the actual monitoring of parameter $Q_{i,y}$ with the requirement in the revised monitoring plan is verified as given in the table below:

Monitoring Report, onsite checks RMP & Approved Methodology	Requirement in the RMP (revised PDD version 06.2 section B.7)	Implementation of the monitoring	Conclusion on the compliance of the monitoring with the RMP
Data/Parameter	$Q_{i,y}$	$Q_{i,y}$	The monitoring complies with the RMP.
Description	Quantity of heat supplied from substation i to category j buildings	Quantity of heat supplied from substation i to category j buildings	The monitoring complies with the RMP.
Measured/Calculated /Default	Measured	Measured	The monitoring complies with the RMP.
Source of data	On site measurements of heat meters at substations	Information Reported in the Monitoring Report: On site measurements of heat meters at substations Information Verified: On site measurements of heat meters at substations (At each substation, one heat meter is installed at the supply side.) (please refer to section 3.6 of this report for detailed information of the installed heat meters)	The monitoring complies with the RMP.
Monitoring equipment	Heat Meter	Heat Meters	The monitoring complies with the RMP.
Measuring/Reading/ Recording frequency	Hourly measurements, registered for the project on an annual basis.	Information Reported in the Monitoring Report: Hourly Measuring / Monthly Recording Information Verified: Continuous monitoring, hourly measurement, monthly recording and reporting	The monitoring complies with the RMP.
Calculation method (if applicable)	N/A	N/A	The monitoring complies with the RMP.
QA/QC procedures	<p>The sum of all heat meter readings of substations should be crosschecked against the heat meter readings of the heat extracted from the CHP and the heat extracted from HOBs as well as against heat invoices to ensure that the heat records are plausible and reliable.</p> <p>Moreover, the corresponding meters have to be subject to regular maintenance in</p>	Information Reported in the Monitoring Report: The sum of all heat meter readings of substations has been crosschecked against the heat meter readings of the heat extracted from the CHP and the heat extracted from HOBs as well as against heat invoices to ensure that the heat records are plausible and reliable.	The monitoring complies with the RMP.

	<p>order to ensure measurements with a low degree of uncertainty.</p> <p>Data to be stored electronically (Excel database)</p>	<p>Moreover, the corresponding meters have been calibrated as per the requirement in the monitoring plan in order to ensure measurements with a low degree of uncertainty.</p> <p><i>Data to be stored electronically (Excel database)</i></p> <p>Information Verified:</p> <p>CAR#12 was raised by the assessment team with regard to the QA/QC procedure applied for parameter $Q_{i,y}$. After satisfactory response and relevant supporting evidence have been provided and verified to be reliable, CAR#12 was closed by the assessment team. Detailed information is presented in the following paragraphs.</p> <p>For detailed calibration information of the installed heat meters, please refer to section 3.6 of this report.</p> <p>An electronic database of all monitoring data with specifications of the points of measurement, the variable name and description, the corresponding value and unit as well as the time of measurement covering the first monitoring period is in place.</p>	
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As per the information presented in the Monitoring Report, $Q_{i,y}$ is monitored continuously by the heat meters at the substations and reported monthly at 24:00 of the last day of the month by the trained staff of the project owner. The assessment team verified that $Q_{i,y}$, as well as the in and out flow temperatures and water flow in m^3 are monitored continuously by the heat meters installed at the substations and are read and recorded manually in the MMR on monthly basis by the responsible staffs at the substations. $Q_{i,y}$ is also measured by the SCADA system on hourly basis. A complete set of the MMRs of $Q_{i,y}$ covering the first monitoring period is available.

The following issue was identified by the assessment team:

According to the registered monitoring plan, the monitoring parameter $Q_{i,y}$ will be hourly measured and crosschecked against the heat meter readings of the heat extracted from the CHP and the heat extracted from HOBs as well as heat invoices. **CAR#12** was raised requesting the PP to clarify how the registered MP is followed considering the cross check processes are not included in the MR ,version 1.0. At the same time, the reported monitoring results for parameter $Q_{i,y}$ are inconsistent with the assessment team verified results.

The PP clarified that the sum of all measured values of $Q_{i,y}$ has been crosschecked against the meter readings of the heat extracted from the CHP and the heat extracted from the HOB houses as well as the heat invoices. During this monitoring period, the heat extracted from the HOB houses is zero. The incorrect measured values of $Q_{i,y}$ reported in the Monitoring Report, version 1.0, have been corrected In the revised Monitoring Report, version 3.0, and the revised emission reductions calculation spreadsheet, version 3.0, which are consistent with the assessment team verified results. The data comparison results show that the sum of the final measured value of the heat supplied from the substations is 17.38% lower than the total amount of heat extracted from the CHP plant. By means of the onsite visit, review of the heat purchase agreement signed between the project owner and the CHP plant and the heat supply agreements signed between the project owner and the end users, the assessment team confirmed that the heat supplied to the district heating system is only used for heating of buildings in the residential and commercial sector, not for industrial production process. By checking the specific national guideline CJJ 34-2010 Design code for city heating network (/60/) and based on sectoral expertise of the assessment team, it is considered that the 17.38% difference between the extracted point (for this monitoring period, refer to the heat extracted from the CHP plant) and the supply point (refer to the sum of heat supplied from substations) is caused by the transmission loss and is reasonable. The values of $Q_{i,y}$ that have been applied in the emission reductions

calculation as presented in the final version of the Monitoring Report and the final version emission calculation spreadsheet are reliable and the cross check process is in line with the requirement in the revised monitoring plan. **CAR#12** is closed by the assessment team.

Baseline Emissions from the power generation

$$BE_{EL} = \min \{EG_{max,hist}; EG_{PA,y}\} \cdot EF_{BL,EL}$$

Where,

$BE_{EL,y}$: Baseline emissions from the generation of electricity during the year y;

$EG_{PA,y}$: Monitored actual quantity of electricity supplied to the grid in the year y (please refer to section 3.5.1.6 of this report for details);

$EG_{max,hist}$: Maximum historic annual amount of electricity supplied to the grid over the three most recent years prior to the start of the project activity (this parameter is determined *ex post* at validation, please refer to section 3.11.4 of this report for details)

$EF_{BL,EL}$: Baseline emission factor for the electricity production (this parameter is determined *ex ante* at validation, please refer to section 3.11.2 of this report for details), calculated as:

$$EF_{BL,EL} = \frac{44}{12} \cdot \frac{3.6}{1000} \cdot \frac{EF_{FF,BL,EL}}{NCV_{FF,BL,EL} \cdot \eta_{BL,EL}}$$

Where,

$EF_{FF,BL,EL}$ CO₂ emission factor for the fuel coal fired in the CHP plant used prior to the start of the implementation of the project activity;

$NCV_{FF,BL,EL}$ Net calorific value for fuel coal fired in the power plant used prior to the start of the implementation of the project activity;

$\eta_{BL,EL}$ Electricity supply efficiency of the Xinjiang Huadian Hongyanchi Power Plant used prior to the start of the implementation of the project activity. Default value discussed in section 3.11. of this report.

$$\frac{44}{12} * \frac{EF_{FF,BL,EL}}{NCV_{FF,BL,EL}} = 0.0997 \text{ t CO}_2/\text{GJ}$$

Defined as CO₂ emission factor of coal fired in the power plant used prior to the start of the implementation of the project activity, this value is sourced from IPCC default value at the upper limit of the uncertainty at a 95% confidence interval according to the AM0058 version 03.1.

In the registered PDD, $EF_{BL,EL}$ is calculated as 0.9369 tCO₂/MWh. Please refer to section 3.11.2 of this report for more detailed information.

3.5.1.6 $EG_{PA,y}$: Actual quantity of electricity supplied to the grid in the year y

Actual quantity of electricity supplied to the grid in the year y ($EG_{PA,y}$) is a baseline emission parameter.

Prior to the onsite assessment, the assessment team conducted document review based on the applied methodology, the monitoring plan included in the registered PDD and the Monitoring Report, version 1.0, publicly available on the UNFCCC website. During the onsite assessment, the assessment team visited the onsite substation of the CHP plant, checked the installed electricity meters, interviewed the staffs of the CHP plant, and further reviewed the grid connection agreement (/29/), the power purchase agreement (PPA, /30/), the DDRs of $EG_{PA,y}$ (/38/), the MMRs of $EG_{PA,y}$ (/39/), the electricity sales receipts of $EG_{PA,y}$ (/40/), the electronic database of all monitoring data with specifications of the points of measurement, the variable name and description, the corresponding value and unit as well as the time of measurement covering the first monitoring period and the emission reduction calculation spreadsheet version 1.0. The compliance of the actual monitoring status of the monitoring of parameter $EG_{PA,y}$ with the requirement in the revised monitoring plan is verified as given in the table below:

Monitoring Report, onsite checks RMP & Approved Methodology	Requirement in the RMP (revised PDD version 06.2 section B.7)	Implementation of the monitoring	Conclusion on the compliance of the monitoring with the RMP
Data/Parameter	EG _{PA,y}	EG _{PA,y}	The monitoring complies with the RMP.
Description	Actual quantity of electricity supplied to the grid in the year y	Actual quantity of electricity supplied to the grid in the year y	The monitoring complies with the RMP.
Measured/Calculated /Default	Measured	Measured	The monitoring complies with the RMP.
Source of data	Electricity meter at the CHP plant.	<p>Information Reported in the Monitoring Report</p> <p>Electricity meter at the CHP plant.</p> <p>Information Verified:</p> <p>Electricity meters installed at the output side of onsite substation of the CHP plant (14 electricity meters. There into, 7 are main meters and 7 are corresponding backup meters)</p> <p>(please refer to section 3.6 of this report for detailed information of the electricity meters)</p>	The monitoring complies with the RMP.
Monitoring equipment	Electricity meter (Accuracy from 0.5 to 0.2s)	Electricity meters (Accuracy from 0.5 to 0.2s)	The monitoring complies with the RMP.
Measuring/Reading/ Recording frequency	Continuous, annual registration	<p>Information Reported in the Monitoring Report</p> <p>Measuring continuously / Recording monthly</p> <p>Information Verified:</p> <p>Continuous measurement, daily recording, monthly reporting</p>	The monitoring complies with the RMP.
Calculation method (if applicable)	N/A	N/A	The monitoring complies with the RMP.
QA/QC procedures	<p>Electricity meter readings of the CHP plant are crosschecked against electricity sale invoices available from the power grid company to ensure that the electricity records are reasonable and reliable.</p> <p>Moreover, the corresponding meters are subject to regular maintenance and calibration in order to ensure measurements with a low degree of uncertainty.</p> <p>Data to be stored electronically (Excel database).</p>	<p>Reported in MR version 1.0.</p> <p>Cross check with the receipts of sales</p> <p>Information presented in the MR:</p> <p>Cross check with the receipts of sales</p> <p>Information Verified:</p> <p>CAR#10 was raised by the assessment team with regard to the QA/QC procedure applied for parameter EG_{PA,y}. After satisfactory response and relevant supporting evidence have been provided and verified to be reliable, CAR#10 was closed by the assessment team. Detailed information is presented in the following paragraphs.</p> <p>For detailed calibration information of the installed electricity meters, please refer to</p>	The monitoring complies with the RMP.

		<p>section 3.6 of this report.</p> <p>An electronic database of all monitoring data with specifications of the points of measurement, the variable name and description, the corresponding value and unit as well as the time of measurement covering the first monitoring period is in place.</p>	
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As per the information presented in the Monitoring Report, $EG_{PA,y}$ is continuously monitored by the power meters installed at the onsite substation. The report and invoices are issued monthly by the trained staff of CHP at 24:00 of the last day of the month. The assessment team verified that $EG_{PA,y}$ is continuously measured by the electricity meters installed at the output side of the onsite substation of the CHP plant. The values of $EG_{PA,y}$ are read and recorded manually in the DRR on daily basis by the responsible staff at the onsite substation of the CHP plant. The meter readings recorded in the DRRs are aggregated into the MRRs on monthly basis. The values of $EG_{PA,y}$ are read and recorded by the grid company as well through telecommunication following their own procedure. The meter readings from the grid company serve as the basis for issuing electricity sales receipts. Complete sets of the DRRs, the MRRs, and the electricity sales receipts of $EG_{PA,y}$ covering the first monitoring period are in place.

The following issue was identified by the assessment team:

According to the registered monitoring plan, the monitoring of parameter $EG_{PA,y}$ will be in continuous measurement and crosschecked against electricity sales invoices. **CAR#10** was raised requesting the PP to clarify how the registered MP is followed considering the crosscheck process is not included in the MR, version 1.0. At the same time, the reported monitoring results for parameter $EG_{PA,y}$ are inconsistent with the assessment team verified results.

The PP clarified that the electricity sales receipts (/40/) issued based on meter readings from the power grid company has been applied as cross check reference. And the incorrect measured value reported in the MR, version 1.0 has been revised to be 880,847.087MWh in the MR, version 3.0. Referring to **CAR #6** discussed in section 3.2.3 of this report, 0.3% of the measured value has been deducted from the measured results. The adjusted measured value is 878,204.546MWh. After cross checked with the electricity sales receipts, the most conservative value has been applied for the final ER calculation, confirmed by the assessment team by walking through the ER calculation spreadsheet, version 3.0. The final reported values for parameter $EG_{PA,y}$ is 878,204.546MWh. **CAR#10** is therefore closed out.

Project Emission Parameters

According to the methodology and the monitoring plan, the parameters of Quantity of fuel coal combusted in process j during the year y ($FC_{i,j,y}$), Weighted average net calorific value of fuel coal consumed in CHP and HOB Boiler House in year y ($NCV_{i,y}$ i= coal), Weighted average CO₂ emission factor of fuel type in year y ($EF_{CO2,i,y}$, i=coal) are used to calculate the project emission.

These emissions are calculated using the approved version of the “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” (Version 2.0), the formula used is shown as follows:

$$PE_y = \sum_j PE_{FC,j,y}$$

$$PE_{FC,j,y} = \sum_i FC_{i,j,y} \times COEF_{i,y}$$

$$COEF_{i,y} = NCV_{i,y} \times EF_{CO2,i,y}$$

$PE_{FC,j,y}$ Project CO₂ emissions from fuel coal combustion in process j during the year y (tCO₂/y);
 $FC_{i,j,y}$ Quantity of fuel type i (i=coal) combusted in process j (Xinjiang Huadian Hongyanchi Power Plant and the four HOBs) during the year y (t/y);

- $COEF_{i,y}$ The CO₂ emission coefficient of fuel type i in year y (tCO₂/t);
- i The fuel types combusted in process j during the year y, the CHP plant and the heat only boilers all consume coal;
- j Process j, j=a the CHP plant and j=b the heat only boilers respectively.
- $COEF_{i,y} = NCV_{i,y} \times EF_{CO_2, i,y}$
- $COEF_{i,y}$ The CO₂ emission coefficient of fuel coal in year y (tCO₂/tcoal);
- $NCV_{i,y}$ The net caloric value for fuel type i in process j in year y (GJ/t coal);
- $EF_{CO_2, i,y}$ B The weighted average CO₂ emission factor of fuel coal in year y (tCO₂/GJ); 2006 IPCC default value 0.0997tCO₂/GJ is used in the PDD according to "tool to calculate project or leakage CO₂ emissions from fossil fuel combustion"
- i The fuel types combusted in process j during the year y.

3.5.1.7 $FC_{i,j,y}$: Quantity of fuel coal combusted in process j during the year y

The assessment team conducted a document review on the applied methodology, the monitoring plan included in the registered PDD and monitoring report version 1.0 publicly available on the UNFCCC website. Electronic strap balances and Electronic weighting balances were installed to monitor the parameter. The value is continuously measured and recorded monthly.

During the on-site assessment, the assessment team visited the CHP plant, checked the installed Electronic strap balances and Electronic weighting balances, interviewed the staffs of the CHP plant, and further reviewed the Monitoring Parameter $FC_{i,j,y}$: Monthly Monitoring Reports of coal combusted by the CHP, measured by the strap balances installed (/46/). Monitoring Parameter $FC_{i,j,y}$: Monthly Monitoring Reports of coal delivered to the CHP, measured by the weigh bridge (/47/), Monitoring Parameter $FC_{i,j,y}$: Statement issued by the HOB houses for the zero coal combusted covering the first monitoring period (/48/), Coal purchase Invoice provided by the coal suppliers (/50/), Coal stock monthly record of the CHP Plant (/49/). The electronic database of all monitoring data with specifications of the points of measurement, the variable name and description, the corresponding value and unit as well as the time of measurement covering the first monitoring period and the emission reduction calculation spreadsheet version 1.0.

In the CHP, The assessment team identified that $FC_{i,j,y}$ (coal combusted) is measured by the installed Electronic strap balances at the entrance of the boilers. Electronic weighting balances have been installed at the entrance of the CHP plant to measure the coal delivered to the CHP plant. The values of $FC_{i,j,y}$ are read and recorded manually in the DRR on a daily basis by the responsible staffs of the CHP plant. The meter readings recorded in the DRRs are aggregated into MRR on monthly basis. Complete sets of MRRs of $FC_{i,j,y}$ covering the first monitoring period are in place. The monitoring equipments were calibrated under the requirement of the registered monitoring plan.

No fuel coal was combusted by the HOBs during the monitoring period according to the statement issued by the HOB houses (/48/). The value measured by the installed Electronic strap balances that was fuel coal combusted by the CHP was used to calculate the project emission. The Monthly Monitoring Reports of coal delivered to the CHP, measured by the weigh bridge (/47/), Coal purchase Invoice provided by the coal suppliers (/50/) and Coal stock monthly record of the CHP Plant (/49/) were used as cross check reference.

Monitoring Report, onsite checks RMP & Approved Methodology & Tool	Requirement in the RMP (revised PDD version 06.2 section B.7)	Implementation of the monitoring	Conclusion on the compliance of the monitoring with the RMP
Data/Parameter	$FC_{i,j,y}$ (PDD section B.7.1)	$FC_{i,j,y}$	The monitoring complies with the RMP.

Description	Quantity of fuel coal combusted in process j during the year y (PDD section B.7.1)	Quantity of fuel coal combusted in process j during the year y	The monitoring complies with the RMP.
Measured/Calculated /Default	Defined as monitored parameter (PDD section B.7.1)	Measured	The monitoring complies with the RMP.
Source of data	Onsite measurements of the quantity of coal consumed for the boiler houses in the CHP plant and the four HOB boiler houses	During the on site visit, the assessment team checked the monitoring equipments installed. The assessment team can confirm that the equipments are in place as the registered MP mentioned. The value is measured and recorded continuously. The parameter of Quantity of fuel coal combusted in process 'j' during the year 'y' was monitored. However, the reported monitoring results for parameter FC _{i,j,y} are inconsistent with the assessment team verified results. Therefore, CAR #13 was raised. After satisfactory response and relevant supporting evidence have been provided and verified to be reliable. CAR#13 was closed by the assessment team. Detailed information presented in the following paragraphs. The results show that the source of data is based on the onsite measurements of the quantity of coal consumed for the boiler houses in the CHP plant and the four HOB boiler houses.	The monitoring complies with the RMP.
Monitoring equipment	Use strap balance which onsite measuring the quantity of coal consumed for the boiler houses Based on the information presented in the PDD Annex 4 the following two volume meters have been involved in the monitoring system Electronic Strap balance & Electronic weighting balance	Electronic strap balances and Electronic weighting balances are installed to measure quantity of coal into the boilers in CHP plant and the four HOB boiler houses Calibration frequency: once per year	The monitoring complies with the RMP. (Note: The quality of coal delivered into the boilers and the four HOB boiler house was used to calculate the project emission. And the Electronic weighting balance is to measure the coal delivered into the CHP plant and four boiler house.)
Measuring/Reading/Recording frequency	Continuously	Continuously	The monitoring complies with the RMP.
Calculation method (if applicable)	N/A	Annually	N/A
QA/QC procedures	The consistency of metered fuel consumption quantities should be cross-checked by an annual energy balance that is based on purchased quantities and stock changes. Where the purchased fuel invoices can be identified specifically for the CDM project, the metered fuel consumption quantities should also be cross-	The consistency of metered coal consumption quantities would be cross-checked by a energy balance that is based on purchased quantities ,stock changes The measured values has been cross checked with Coal purchase Invoice provided by the	The monitoring complies with the MP.

	checked with available purchase invoices from the financial records.	coal suppliers.	
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The parameter of Quantity of fuel coal combusted in process 'j' during the year 'y' was monitored. However, the reported monitoring results for parameter $FC_{i,j,y}$ are inconsistent with the assessment team verified results. Therefore, **CAR #13** was raised.

Based on the applied Tool, the CO₂ emission from fossil fuel combustion in process are calculated based on the quantity of fuels combusted and the CO₂ emission coefficient of those fuels. For this project, the actual fuel combust has been continuously measured by the strap balances installed in the CHP plant and the HOB boiler houses. The monthly monitoring report (/46/) for the actual coal combusted in CHP has been provided. Actual coal delivered to the CHP plant measured by the weight bridge (/47/) and the coal purchase receipts (/50/) has been provided as cross check reference. During the first monitoring period, no coal combusted by the HOB houses and relevant statement (/48/) has been issued by each boiler house as supporting evidence. Final reported values presented in the MR and the ER spreadsheet has been verified to be correct. **CAR#13** is therefore closed by the assessment team.

Through checking the updated Monitoring Report, version 3.0, the following issue has been identified by the assessment team. According to the monitoring plan, the consistency of metered fuel consumption quantities is cross-checked by an annual energy balance that is based on purchased quantities and stock changes. **CL#19** was raised to require the PP clarify how the QA/QC procedures of $FC_{i,j,y}$ described in the monitoring plan have been followed.

As per the PP's clarification, the QA/QC procedure for monitoring parameter $FC_{i,j,y}$ have been implemented by the PP.

During the first monitoring period, only CHP consumed coal and supply the heat to the heat network. Total coal delivered to the CHP plant is 618,068.26 tonnes, this value is based on the weight bridge measured records. Total coal combusted in the CHP plant is 612,738.72tonnes, this value is based on the strap balance measured records. Taking into account the storage loss and water evaporating during the coal storage period, the stock changes have been considered to be acceptable. By cross checking the coal stock monthly record of the CHP Plant and interview relevant stuff in the CHP plant the assessment team considered the final reported values for $FC_{i,j,y}$ is acceptable. So the QA/QC procedures of $FC_{i,j,y}$ described in the monitoring plan have been followed.

Furthermore, Energy balance (Based on the energy input and out put) analysis has been provided by the PP and the detailed information has been provided in updated the MR Version 4.0 Annex 1 Energy Balance Analysis of the project and the detailed calculation process has been presented in the ER spreadsheet version 3.0. Detailed verified energy balance analysis for the coal combustion presented in below:

Energy Input: the total input energy in CHP plant is generated by the total consumed coal in the first monitoring period (Defined as $Q_{CHP,all}$)

$$Q_{CHP,all} = FC_{i,j,y} * NCV_{i,y,i=coal} = 10,189,577.86 \text{ GJ}$$

Energy Output: E_{CHP} is the electricity energy generated by the CHP in this monitoring period (Defined as E_{CHP}), Calculated by the quantity of electricity supplied to the grid by CHP (MWh) multiplied with 3.6.

$$E_{CHP} = \text{Generated Electricity (880,847.087 MWh)} * 3.6 = 3,161,536.36 \text{ GJ}$$

Efficiency of the power plant during this monitoring period is 31.03% ($E_{CHP}/Q_{CHP,all}$), this value is lower than the efficiency of the power plant defined in the validation stage (38.31%) and the assessment team confirmed that no other fossil fuel has been applied for power generation. Based on the analysis results, the assessment team further confirmed the reliability of the reported value of $FC_{i,j,y}$.

CL#19 is therefore closed by the assessment team.

3.5.1.8 $NCV_{i,y}$ $i = \text{coal}$: Weighted average net calorific value of fuel coal consumed in CHP and HOB Boiler House in year y

The assessment team conducted a document review on the applied methodology and the tool, the monitoring plan included in the registered PDD and Monitoring Report version 1.0 publicly available on the UNFCCC website. During the onsite assessment, the assessment team reviewed test Reports for $NCV_{i,y}$ of coal (For combusted coal) (/52/) issued by The Xinjiang Uygur Autonomous Region Product Quality Supervision and Inspection Academy (With ISO17025 Accreditation) accredited by China National Accreditation Service for Conformity Assessment CNAS L0718 (/53/)

The assessment team verified the compliance of the monitoring of monitoring of $NCV_{i,y}$ $i = \text{coal}$ with the MP as given below.

Monitoring Report, onsite checks RMP & Approved Methodology & Tool	Requirement in the RMP (revised PDD version 06.2 section B.7)	Implementation of the monitoring	Conclusion on the compliance of the monitoring with the RMP
Data/Parameter	$NCV_{i,y}$ $i = \text{coal}$ (PDD section B.7.1)	$NCV_{i,y}$ $i = \text{coal}$	The monitoring complies with the RMP
Description	Weighted average net calorific value of fuel coal consumed in CHP and HOB Boiler House in year y (PDD section B.7.1)	Weighted average net calorific value of fuel coal consumed in CHP and HOB Boiler House in year y	The monitoring complies with the RMP
Measured/Calculated /Default	Defined as monitored parameter (PDD section B.7.1)	Measured	The monitoring complies with the RMP
Source of data	This parameter will be monitored by the following options: 1.Values provided by the fuel supplier in invoices (preferred option) 2.Measurements by the project participants (or owner of CHP) If the option 1 is available, then the option 1 will be used, if option 1 is unavailable, then option 2 will be used; in this case, the NCV of the CHP will be monitored by its owner in accordance with relevant industrial standard.	As the values provided by the fuel supplier is unavailable, according to the registered PDD, the $NCV_{i,y}$ of the coal is monitored by authorized third party in accordance with relevant industrial standard.	OK. By interviewing the coal supplier, the assessment team confirmed that no $NCV_{i,y}$ value is given in the coal purchase invoices. Therefore, the option 1 is not available and option 2 is chosen, which is in line with the requirement of the tool and the registered monitoring plan. Detailed justification has been presented in the following paragraphs.
Monitoring equipment	No specific information	Not specified	The monitoring complies with the MP
Measuring/Reading/ Recording frequency	Continuously	The $NCV_{i,y}$ is measured for each fuel delivery, from which weighted average values could be generated.	OK The option 2 is chosen,
Calculation method (if applicable)	N/A	N/A	The monitoring complies with the RMP
QA/QC procedures	Verify if the value is within the uncertainty range of the IPCC default values as provided in Table 1.2, Vol. 2 of the 2006 IPCC Guidelines. If the value falls below this range collect additional information from the	During this monitoring period. The PP compared the measured value of coal with default value presented in the 2006 IPCC Volume 2 Energy Table 1.2 Default NCV and Lower and upper limited of the 95% confidence intervals.	The monitoring complies with the RMP

	<p>testing laboratory to justify the outcome or conduct additional measurements. The laboratories should have ISO17025 accreditation or justify that they can comply with similar quality standards.</p>	<p>The range applied for the comparison is from 5.5GJ/tonne to 32.2GJ/tonne. This range is including all the possible applied coal types for the project activity (Anthracite, coking coal, other Bituminous coal, sub-Bituminous Coal and Lignite). The results show that the reported NCV values of applied coal are fell within this range.</p> <p>However, in order to ensure the quality of measured results. The Xinjiang Uygur Autonomous Region Product Quality Supervision and Inspection Academy (With ISO17025 Accreditation) is responsible to test the NCV value for the coal combusted in the CHP plant.</p>	
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For this project, coal is used as fossil fuel in CHP plant and four HOB houses.

The reported monitoring results for parameter $NCV_{i,y}$ are inconsistent with the assessment team verified results. Therefore, **CAR #14** was raised.

Based on the on site visit results and the clarification provided by the PP, the actual monitoring process of $NCV_{i,y}$ presented in below.

In the actual monitoring stage, Coal purchase invoices are not applicable for the data sources for monitoring parameter $NCV_{i,y}$.

By interviewing the relevant fuel suppliers (/72/), the assessment team confirms that the coal NCV values are not provided by coal suppliers through sales invoices. Based on our local and sectoral expertise, the assessment team identified that no specific NCV values were presented in the sales invoices in most projects in China, except for cases where specific requirements are raised by the coal purchasers.

The assessment team also confirmed that no specific $NCV_{i,y}$ values were provided by the coal supplier by checking the coal purchase invoices(/50/) for the project collected during the verification. According to the "Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion", quantity of coal combusted ($FC_{i,j,y}$) and weighted average NCV of coal are monitored for identifying the project emission. It is more accurate for identifying the project emission that FC coal and NCV combustion are applied.

For this project, in order to ensure the quality of coal, the $NCV_{i,y}$ of coal has been measured by the qualified analytical entity hired by the CHP plant, responsible for testing the $NCV_{i,y}$ level of the delivered coal, and $NCV_{i,y}$ level of the final coal combusted by the boilers. Therefore, option 1 "Values provided by the fuel supplier in invoices" is not applicable in the actual monitoring process. Relevant test reports have been saved and provided by the PP.

In the data reporting process, the $NCV_{i,y}$ value is sourced from the record of the PPs (NCV test report issued by the qualified entity, then the CHP plant provided the records to the PP). Based on the monitoring plan, the option 2 has been applied during this monitoring period. Based on the definition presented in the Tool, this project emission calculation is based on the quantity of fuels combusted by the boilers, and the NCV value of combusted fuel, which is tested by the qualified entity before it is transmitted to the boilers. (Note: Not the tested NCV values of the coal delivered to the project site which is purchases by the CHP from the supplier).

The actual $NCV_{i,y}$ monitoring information has been provided by the CHP plant operator. Each batch of coal (combusted by the boilers) was randomly sampled in the strap balance and then be analyzed in the qualified analytical entity in accordance with relevant national guidance. Analytical records were archived and then aggregated to monthly records. Moreover, as part of the internal quality control procedures, coal sample is also randomly picked and then send to internal accredited lab in CHP plant for testing, the testing results from internal lab is used by CHP plant as a cross reference to ensure the test quality.

The monitoring of NCV is in compliance with the registered PDD. In the updated of the MR and the ER spreadsheet, the corrected $NCV_{i,y}$ values have been provided which is based on the test records for the coal combusted by the boilers. Through document review, the assessment team confirmed that the reported values are correct. **CAR#14** is therefore closed.

3.5.1.9 $EF_{CO_2,i,y}$, $i=coal$: Weighted average CO_2 emission factor of fuel type in year y

During current monitoring period, the IPCC 2006 default value has been applied as per the registered PDD.

Monitoring Report, onsite checks RMP & Approved Methodology & Tool	Requirement in the RMP (revised PDD version 06.2 section B.7)	Implementation of the monitoring	Conclusion on the compliance of the monitoring with the RMP
Data/Parameter	$EF_{CO_2,i,y}$, $i=coal$ (PDD section B.7.1)	$EF_{CO_2,i,y}$, $i=coal$ (PDD section B.7.1)	The monitoring complies with the RMP
Description	Weighted average CO_2 emission factor of fuel type in year y (PDD section B.7.1)	Weighted average CO_2 emission factor of fuel type in year y (PDD section B.7.1)	The monitoring complies with the RMP
Measured/Calculated /Default	Defined as default parameter (PDD section B.7.1)	Default.	The monitoring complies with the RMP
Source of data	IPCC default values, 2006 Neither the value provided by the fuel supplier and the project participant nor the national default value is available, so as per the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion", 2006 IPCC default value as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories is used.	IPCC 2006 default value at the upper limit of the uncertainty at a 95% confidence interval of 2006 IPCC Guidelines on National GHG Inventories. 0.0997 Tco ₂ /GJ is applied to calculate the project emission.	The monitoring complies with the RMP
Monitoring equipment	N/A	N/A	The monitoring complies with the RMP
Measuring/Reading/Recording frequency	Any further revision of the IPCC Guidelines should be taken into account	No further revision of the IPCC guidelines	The monitoring complies with the RMP
Calculation method (if applicable)	N/A	N/A	The monitoring complies with the RMP
QA/QC procedures	N/A	N/A	The monitoring complies with the MP

3.5.1.10 $\eta_{BL,EL}$: Efficiency of the power plant used prior to the start of the implementation of the project activity

According to the Validation Report (/5/), a FAR is left for the verification. The energy efficiency for power generation of Xinjiang Huadian Hongyanchi Power Plant should be monitored, if an actual efficiency higher than the design efficiency is discovered, the higher value should be used for determination of emission reductions. **CAR#16** was raised in this regard. After a satisfactory response and relevant supporting evidence have been provided and verified to be reliable. **CAR#16** was closed by the assessment team. Detailed information refers to the section 3.3 in the report.

Monitoring Report, onsite checks RMP & Approved Methodology	Requirement in the RMP (revised PDD version 06.2 section B.7)	Implementation of the monitoring	Conclusion on the compliance of the monitoring with the RMP
Data/Parameter	$\eta_{BL,EL}$ (PDD section B.7.1)	$\eta_{BL,EL}$ (PDD section B.7.1)	The monitoring complies with the RMP
Description	Efficiency of the power plant used prior to the start of the implementation of the project activity (PDD section B.7.1)	Efficiency of the power plant used prior to the start of the implementation of the project activity (PDD section B.7.1)	The monitoring complies with the RMP
Measured/Calculated /Default	Defined as monitoring parameter (PDD section B.7.1)	Default.	The monitoring complies with the RMP
Source of data	Measured by the third party according to the manufacturer's procedures or taken from the manufacturer's specification.	Measured by the third party according to the manufacturer's procedures or taken from the manufacturer's specification.	The monitoring complies with the RMP
Monitoring equipment	N/A	N/A	The monitoring complies with the RMP
Measuring/Reading/Recording frequency	If during the crediting period a technical measure is taken to improve efficiency of the CHP plant.	Referring to the CAR#16, The assessment team confirmed that during this monitoring period, no technical measure was taken, the increase of the efficiency of the baseline power plant is deemed as 0%.	The monitoring complies with the RMP
Calculation method (if applicable)	N/A	N/A	The monitoring complies with the RMP
QA/QC procedures	N/A	N/A	The monitoring complies with the RMP

Leakage

According to the methodology the project activity registered against, the leakage of the project activity is calculated as follows:

$$LE_y = LE_{EL,y} + LE_{FS,y}$$

Where:

- LE_y = Leakage emissions in the year y , (tCO₂e)
- $LE_{EL,y}$ = Leakage emissions from the decrease in the electricity supply to the grid during the year y , (Tco₂e)
- $LE_{FS,y}$ = Leakage emissions from fuel switch during the year y , (Tco₂e)

Requirement in AM0058 version 03.1	Requirement in the revised monitoring plan	Implementation of the revised monitoring plan	Verified Actual Monitoring
Calculate as the formulas mentioned above.	According to the registered PDD and the methodology of AM0058, only coal is used in both project activity and the baseline scenario without fuel switch, $LE_{FS,y}$ is not considered.	According to the registered PDD and the methodology of AM0058, only coal is used in both project activity and the baseline scenario without fuel switch, $LE_{FS,y}$ is not considered.	The actual status of the fuel consumption: It was identified that diesel fuel has been applied as auxiliary fuel for start-up. Therefore, CL #5 was raised. The final value of $LE_{FS,y}$ is 0 along with the CL#5 was closed. Detail information refers to the section 3.4.

Determination the value of $LE_{EL,y}$:

If

$$EG_{PA,y} < EG_{min,hist}$$

And

$$EF_{grid} > EF_{BL,EL}$$

Then

$$LE_{EL,y} = (EG_{min,hist} - EG_{PA,y}) \times (EF_{grid} - EF_{BL,EL})$$

Where:

- $LE_{EL,y}$ = Leakage emissions from the decrease in the electricity supply to the grid during the year y , (tCO₂e)
- $EG_{min,hist}$ = Minimum historic annual amount of electricity supplied to the grid over the three most recent years prior to the start of the project activity, (MWh)
- $EG_{PA,y}$ = Monitored actual quantity of electricity supplied by the project activity to the grid in the year y , (MWh)
- EF_{grid} = Emission factor of the electricity grid system (tCO₂/MWh)
- $EF_{BL,EL}$ = Baseline emission factor for the electricity production, as calculated in the baseline emissions section (tCO₂/MWh)

In all other cases $LE_{EL,y} = 0$.

Through the on site visit and by document review, the assessment team confirmed that the value of $LE_{EL,y}$ is 0. For key parameters of $EG_{min,hist}$, $EG_{PA,y}$, EF_{grid} and $EF_{BL,EL}$, please refer to the data presented in section of 3.9.

3.5.2 Verification of implementation of sampling plan

The project did not implement any sampling plan.

3.6 Accuracy of Equipment

Referring to the VVS version 02.0 para 237-243, the DOE shall determine whether the calibration of those measuring equipments that have an impact on the claimed emission reductions, and confirm the accuracy of equipment used for monitoring is in accordance with the relevant guidance provided by the CDM Executive Board and is controlled and calibrated in accordance with the monitoring plan. The following issues have been identified by the assessment team through on site visit and document review.

For baseline emission parameter $EG_{PA,y}$ (Actual quantity of electricity supplied to the grid in the year y), seven main electricity meters and seven backup electricity meters have been installed at the CHP site. The accuracy of installed electricity meters applied for use for monitoring is not in accordance with the registered monitoring plan. **CAR#6** is therefore raised by the assessment team. The PDD has been changed based on **CAR#6**. After satisfaction responses received and verified by the assessment team, **CAR#6** has been closed. Detailed information has been discussed in section 3.2.3.

Based on the specific requirement presented in the monitoring plan, calibration of the monitoring instruments will be carried out regularly by the authorized third party entity in line with standard calibration procedure. Through document review, the assessment team identified that calibration information for monitoring instruments is not included in the monitoring report version 1.0. **CAR#7** was raised requesting the PP to report how the registered monitoring plan has been followed regarding the calibration of monitoring instruments. After revision, relevant information has been provided in the MR, version 02.1, Annex 2 The monitoring equipments information have been checked by the assessment team against calibration reports. Information consistency has been verified. The assessment team confirmed that the monitoring plan has been followed.

CAR#7 is therefore closed by the assessment team.

Monitoring equipment	Electrical energy meter								
Monitoring parameter	EG _{PA,y}								
S/N	Power Line: ErBa	Main	200111z1 1u0076	Power Line: ErMan	Main	20070772 010048			
		Back up	20001000 4u0051		Back up	20070772 010047			
	Power Line: ErDong	Main	09090167 290037	Power Line: ErDa	Main	10030277 540026			
		Back up	09090167 290039		Back up	10030277 540030			
	Power Line: ErGong	Main	20040917 9U0207	Power Line: ErChi	Main	20070624 010096			
		Back up	20040917 9U0208		Back up	20070624 010099			
	Power Line: Pang	Main	20001000 4U0074						
		Back up	200111Z1 1U0006						
	Type	Electric Energy Meter							
	Accuracy Level	ErBa, ErGong & Pang 0.5; ErMan, ErDong & ErDa 0.2s; ErChi, 0.5S							
Calibration frequency requirement	Annually								
Calibration date	22/09/2011 (ErBa,ErMan, ErDong,ErDa, ErGong, ErChi) & 29/09/2011(Pang)								
Validity	Power Line: ErBa	Main	Valid from 22/09/201 1~21/09/2 012	Power Line: ErMan	Main	Valid from 22/09/201 1~21/09/2 012			
		Back up	Valid from 22/09/201 1~21/09/2 012		Back up	Valid from 22/09/201 1~21/09/2 012			
	Power Line: ErDong	Main	Valid from 22/09/201 1~21/09/2 012	Power Line: ErDa	Main	Valid from 22/09/201 1~21/09/2 012			

		Back up	Valid from 22/09/201 1~21/09/2 012		Back up	Valid from 22/09/201 1~21/09/2 012	
	Power Line: ErGong	Main	Valid from 22/09/201 1~21/09/2 012	Power Line: ErChi	Main	Valid from 22/09/201 1~21/09/2 012	
		Back up	Valid from 22/09/201 1~21/09/2 012		Back up	Valid from 22/09/201 1~21/09/2 012	
	Power Line: Pang	Main	Valid from 29/09/201 1 ~28/09/20 12				
		Back up	Valid from 29/09/201 1 ~28/09/20 12				
Are there delays in calibration?	No delay identified						
Calibration Entity	Xinjiang Electric Power Research Institute						
Accreditation Certificate for the calibration entity	Xinjiang Uygur Autonomous Region Bureau of Quality and Technical Supervision						

Monitoring equipment	Heat meter in the CHP Plant					
Monitoring parameter	$Q_{\text{extracted},y}$					
S/N	191001y457					
Type	Digital Heat Meter					
Accuracy Level	0.50%					
Calibration frequency requirement	Once every three years					
Calibration date	11/10/2011					
Validity	11/10/2011~10/10/2014					
Are there delays in calibration?	No delay identified					
Calibration Entity	Xinjiang Uygur Autonomous Region Institute of Measurement and Testing Technology					
Accreditation Certificate for the calibration entity	National Administration of Quality Supervision Inspection and quarantine					

Monitoring equipment	Heat meter				
Monitoring parameter	$Q_{\text{HOB},y}$				
S/N	Guangming Road	5302497	Xingfu Road	5302494	
		5302495		6589907	
		6589909		6589908	
				6362215	

	Xinsheng	6807342	Weihuliang	5302496
Type	Digital Heat Meter			
Accuracy Level	0.50%			
Calibration frequency requirement	Once every three years			
Calibration date	13/10/2011			
Validity	13/10/2011~12/10/2014			
Are there delays in calibration?	No delay identified			
Calibration Entity	Xinjiang Uygur Autonomous Region Institute of Measurement and Testing Technology			
Accreditation Certificate for the calibration entity	National Administration of Quality Supervision Inspection and quarantine			

Monitoring equipment	Heat meter			
Monitoring parameter	Q _{i,y}			
S/N	Meter 1#	6807417	Meter 88#	6807340
	Meter 2#	6807378	Meter 89#	6485616
	Meter 3#	6807439	Meter 90#	6485632
	Meter 4#	6553495	Meter 91#	6485612
	Meter 5#	6589903	Meter 92#	6807431
	Meter 6#	6807377	Meter 93#	6485615
	Meter 7#	6674650	Meter 94#	6807386
	Meter 8#	984001Y410	Meter 95#	6485628
	Meter 9#	MTH-6	Meter 96#	6485646
	Meter 10#	6807438	Meter 97#	6485636
	Meter 11#	6807330	Meter 98#	6485656
	Meter 12#	6988173	Meter 99#	6485619
	Meter 13#	6807362	Meter 100#	6807367
	Meter 14#	6807346	Meter 101#	6485631
	Meter 15#	6988172	Meter 102#	6988155
	Meter 16#	6807387	Meter 103#	6485644
	Meter 17#	6807385	Meter 104#	6485608
	Meter 18#	3020145	Meter 105#	6807339
	Meter 19#	6807422	Meter 106#	6807383
	Meter 20#	6807381	Meter 107#	6485643
	Meter 21#	6807413	Meter 108#	6485565
	Meter 22#	6807341	Meter 109#	6826894
	Meter 23#	6807332	Meter 110#	6485624
	Meter 24#	6988169	Meter 111#	6485610
	Meter 25#	6569903	Meter 112#	6807334
	Meter 26#	6807336	Meter 113#	6807348
	Meter 27#	6988140	Meter 114#	6826891
	Meter 28#	6807436	Meter 115#	6485605
	Meter 29#	6807379	Meter 116#	6485626
	Meter 30#	6807447	Meter 117#	6826895
	Meter 31#	6807453	Meter 118#	6485627
	Meter 32#	6807366	Meter 119#	6826948
	Meter 33#	6807345	Meter 120#	6485651
	Meter 34#	6807412	Meter 121#	6485655
	Meter 35#	6807454	Meter 122#	6826951
	Meter 36#	6807434	Meter 123#	6485653
	Meter 37#	6807440	Meter 124#	6807347
	Meter 38#	6807449	Meter 125#	6826949

	Meter 39#	6807420	Meter 126#	6826383
	Meter 40#	6988148	Meter 127#	6988144
	Meter 41#	6807337	Meter 128#	6988170
	Meter 42#	6807343	Meter 129#	6674655
	Meter 43#	ZR-E111	Meter 130#	6589906
	Meter 44#	6988142	Meter 131#	001301Y041
	Meter 45#	6674651	Meter 132#	8485647
	Meter 46#	6807423	Meter 133#	6807335
	Meter 47#	6807363	Meter 134#	6988151
	Meter 48#	6807370	Meter 135#	6674647
	Meter 49#	6485652	Meter 136#	6485637
	Meter 50#	6807424	Meter 137#	6826947
	Meter 51#	6807364	Meter 138#	6674649
	Meter 52#	6674644	Meter 139#	6485649
	Meter 53#	6988154	Meter 140#	6485658
	Meter 54#	6674652	Meter 141#	6826950
	Meter 55#	6807448	Meter 142#	6636794
	Meter 56#	6807344	Meter 143#	6485629
	Meter 57#	6553497	Meter 144#	6485606
	Meter 58#	6589905	Meter 145#	6485609
	Meter 59#	6674645	Meter 146#	6485630
	Meter 60#	6807384	Meter 147#	6826946
	Meter 61#	6485650	Meter 148#	6826953
	Meter 62#	6485645	Meter 149#	6485635
	Meter 63#	6674648	Meter 150#	6485625
	Meter 64#	6485621	Meter 151#	6988153
	Meter 65#	6485648	Meter 152#	6807416
	Meter 66#	6485654	Meter 153#	6589904
	Meter 67#	6988152	Meter 154#	6485633
	Meter 68#	6485640	Meter 155#	6485618
	Meter 69#	6485607	Meter 156#	984301Y410
	Meter 70#	6485623	Meter 157#	983801Y410
	Meter 71#	6485617	Meter 158#	983601Y410
	Meter 72#	6485622	Meter 159#	6807419
	Meter 73#	6485611	Meter 160#	6807437
	Meter 74#	6674653	Meter 161#	6807411
	Meter 75#	6485614	Meter 162#	6807452
	Meter 76#	6485613	Meter 163#	6807382
	Meter 77#	6807430	Meter 164#	6807442
	Meter 78#	6807435	Meter 165#	6807446
	Meter 79#	6485639	Meter 166#	6807433
	Meter 80#	6485620	Meter 167#	6554411
	Meter 81#	6485642	Meter 168#	6988143
	Meter 82#	6485634	Meter 169#	6807432
	Meter 83#	6807443	Meter 170#	6807441
	Meter 84#	6988139	Meter 171#	6807415
	Meter 85#	6485657	Meter 172#	6807333
	Meter 86#	6485638	Meter 173#	6674646
	Meter 87#	6485641	Meter 174#	6674656
Type	Digital Heat Meter			
Accuracy Level	0.50%			
Calibration frequency requirement	Once every three years			
Calibration date	13/10/2011			
Validity	13/10/2011~12/10/2014			
Are there delays in calibration?	No delay identified			
Calibration Entity	Xinjiang Uygur Autonomous Region Institute of Measurement and Testing Technology			

Accreditation Certificate for the calibration entity	National Administration of Quality Supervision Inspection and quarantine
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Monitoring equipment	Strap Balance					
Monitoring parameter	FC _{i,j,y}					
S/N	CHP	990601	Guangming Road HOB		PD040460	
		990602	Weihuliang HOB		PD030238	
	Xingfu Road HOB	P0040459	Xinsheng HOB		PD017480	
Type	Strap Balance					
Accuracy Level	0.5					
Calibration frequency requirement	Annually					
Calibration date	CHP	990601	08/10/2011	Guangmin g Road HOB	PD04 0460	10/10/2011
		990602	08/10/2011	Weihulian g HOB	PD03 0238	10/10/2011
	Xingfu Road HOB	P0040459	11/10/2011	Xinsheng HOB	PD01 7480	10/09/2011
Validity	CHP	990601	08/10/2011~07/10/2012	Guangmin g Road HOB	PD04 0460	10/10/2011~09/10/2012
		990602	08/10/2011~07/10/2012	Weihulian g HOB	PD03 0238	10/10/2011~09/10/2012
	Xingfu Road HOB	P0040459	11/10/2011~10/10/2012	Xinsheng HOB	PD01 7480	10/09/2011~09/09/2012
Are there delays in calibration?	No					
Calibration Entity	Xinjiang Electric Power Research Institute					
Accreditation Certificate for the calibration entity	Xinjiang Uygur Autonomous Region Bureau of Quality and Technical Supervision					

Monitoring equipment	Weight Bridge					
Monitoring parameter	FC _{i,j,y}					
S/N	CHP	161898	Guangming Road HOB		2011043	
		161899	Weihuliang HOB		406647	
	Xingfu Road HOB	2011059	Xinsheng HOB		2010095	
Type	Weight Bridge					
Accuracy Level	III					
Calibration frequency requirement	Annually					
Calibration date	CHP	161898	07/08/2011	Guangmin	20110	05/06/2011

				g Road HOB	43		
		161899	07/08/2011	Weihulian g HOB	40664 7	08/07/2011	
	Xingfu Road HOB	2011059	19/06/2011	Xinsheng HOB	20100 95	10/09/2011	
Validity	CHP	161898	07/08/2011~ 06/08/2012	Guangmin g Road HOB	2011 043	05/06/2011~ 04/06/2012	
		161899	07/08/2011~ 06/08/2012	Weihulian g HOB	4066 47	08/07/2011~ 07/07/2012	
	Xingfu Road HOB	2011059	19/06/2011~ 18/06/2012	Xinsheng HOB	2010 095	10/09/2011~ 09/09/2012	
Are there delays in calibration?	No						
Calibration Entity	Xinjiang Electric Power Research Institute						
Accreditation Certificate for the calibration entity	Xinjiang Uygur Autonomous Region Bureau of Quality and Technical Supervision						

3.7 Summary of compliance with the calibration frequency requirements for measuring instruments.

The calibration of the following measuring equipments has an impact on the claimed emission reductions: A. electricity meters, B.digital heat meters, C.strap balances and D.weigh bridges. As discussed in section 3.6 of this report, all metering equipments have been calibrated at the frequency specified in the RMP and no delay in calibration was identified during this monitoring period.

3.8 Accuracy of Emission Reduction Calculations

According to the VVS version 02.0 para 244 – 246, the accuracy of the emission reduction calculations has been verified by the assessment team. The calculation of emission reductions in the initial MR was found to be incorrect. 5 CARs were raised regarding the calculation of emission reductions. The brief discussion has been provided in the following table.

Findings Raised	Comments
CAR #10 for Monitoring Parameter $EG_{PA,y}$	Revised information has been verified to be corrected. CAR#10 has been closed by the assessment team.
CAR#12 for Monitoring Parameter $Q_{i,y}$	Revised information has been verified to be corrected. CAR#12 has been closed by the assessment team.
CAR#13 for Monitoring Parameter $FC_{i,j,y}$	Revised information has been verified to be corrected. CAR#13 has been closed by the assessment team.
CAR#14 for Monitoring Parameter $NCV_{i,y}$	Revised information has been verified to be corrected. CAR#14 has been closed by the assessment team.

CAR#17 for Monitoring Parameter $Q_{\text{extracted},y}$	Revised information has been verified to be corrected. CAR#17 has been closed by the assessment team.
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By checking the updated MR and ER spreadsheet, the assessment team confirms that the monitoring data for this monitoring period is complete and transparent. Appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed in the monitoring report. Assumptions, emission factors and default values that were applied in the calculations have been verified to be correct. The details of the reported and the verified values for all parameters are listed in section 4, 'Calculation of Emission Reductions'.

3.9 Quality of Evidence to Determine Emission Reductions

Critical parameters used for the determination of the Emission Reductions are discussed in section 3.4 above. All the data recorded is in compliance with the Monitoring Report.

3.10 Management and operational System and Quality Assurance

Management system and quality assurance procedures have been stipulated in the CDM Development Manual and CDM Monitoring and Management Procedures, and have been implemented during daily operation. An emergency plan is in place. The members of staff are well trained and qualified (/23//24/). These have been verified during the on-site visit and document review. Therefore the assessment team can confirm that the management system of the CDM project is in place, with the responsibilities properly identified and in place, and that QA/QC procedures are implemented.

3.11 Data from External Sources

The parameters listed as follows are the ex-ante determined value according to the methodology AM0058 version 03.1 and fixed for the first crediting period. All the values reported in the MR, version 03, are verified to be consistent with the value in the registered PDD.

3.11.1 $EF_{\text{grid},CM,y}$ Emission factor of the electricity grid system

Based on the information in the registered PDD (/1/), the description about the calculation of the leakage emission factor in the registered PDD, the leakage emission factor for the electricity generated due to the project activity is determined ex-ante and fixed in the crediting period. The value of leakage factor used in the Monitoring Report is 0.8712 tCO₂e/MWh, which is the same as the one in the registered PDD.

3.11.2 $EF_{BL,EL}$ Baseline emission factor for the electricity production

According to the description about the calculation of the baseline emission factor in the registered PDD, the baseline emission factor for the electricity generated due to the project activity is determined ex-ante and fixed in the crediting period. Ex-ante determined Emission Factor, 0.9363 (tCO₂e/MWh) is applied in this monitoring report version 1.0, which is not in line with the registered PDD with the value of 0.9369(Tco₂e/MWh). However, the right value is applied in the calculation process. **CAR #8** was raised. After satisfactory response has been provided, **CAR #8** is closed.

3.11.3 $CAP_{j,i}$ Nameplate capacity of existing boilers in category j at substation i

The capacity of existing boilers in category j at substation i are listed in table 1 of annex 3 in the registered PDD (/1/). In this monitoring period, there are 174 substations are approached into operation, the capacity of existing boilers in category j was clearly shown in the ER calculation spreadsheet (/4/).

3.11.4 $EG_{max,hist}$ Maximum historic annual amount of electricity generated by the power plant used over the three most recent years prior to the start of implementation of the project activity

According to the registered PDD (/1/), historic data of last 3 years (10/2002-09/2005) from the CHP plant, the maximum annual amount of electricity generated by the CHP power plant is 4,526,364MWh. By reviewing the original source of the data provided by the CHP plants, the value in the registered PDD can be confirmed.

3.11.5 $EG_{min,hist}$ Minimum historic annual amount of electricity generated by the power plant used over the three most recent years prior to the start of implementation of the project activity

According to the registered PDD (/1/), historic data for the last 3 years (10/2002-09/2005) from the CHP plant, the minimum annual amount of electricity generated by the CHP power plant is 1,916,680 MWh. By reviewing the original source of the data provided by the CHP plants, the value in the registered PDD can be confirmed.

3.11.6 $COEF_{BL,HG,j,i}$ CO₂ emission factor of the fuel coal used in the absence of the project activity in the heat generation system corresponding to substation i

The value of $COEF_{BL,HG,j,i}$ is sourced from the IPCC default value, 0.0997 Tco₂ /GJ is applied in the baseline emission calculation which consist with the registered PDD and the IPCC default value. Checking with values as provided in table 1.4 of Chapter 1 of vol. 2 (Energy) of 2006 IPCC Guidelines on National GHG Inventories, 0.0997Tco₂/GJ is confirmed to be correct.

3.11.7 $\epsilon_{BL,HG,j,i}$ Efficiency of the heating supply system that would have been used in the absence of the project activity for category j and substation i

In Table 3 of Annex 3 of the registered PDD (/1/), the value of $\epsilon_{BL,HG,j,i}$ is not reported. However, the value of $COEF_{BL,HG,j,i}$ is fixed in this monitoring period, and the calculation value of $EF_{BL,HG,j,i}$ is reported. According to the methodology of AM0058 Version 3.1 (/2/), the value of $\epsilon_{BL,HG,j,i}$ is used to determine $EF_{BL,HG,j,i}$ and the formula applied is as follows:

$$EF_{BL,HG,j,i} = \frac{COEF_{BL,HG,j,i}}{\epsilon_{BL,HG,j,i}}$$

Therefore, the assessment team draws an opinion that is applicable. The original value of $\epsilon_{BL,HG,j,i}$ is shown in the ER spreadsheet.

3.11.8 $\frac{44}{12} \cdot \frac{EF_{FF,BL,EL}}{NCV_{FF,BL,EL}}$ CO₂ emission factor of coal fired in the power plant used prior to the start of the implementation of the project activity

According to the registered PDD (/1/), default value at the upper limit of the uncertainty at a 95% confidence interval of 2006 IPCC Guidelines on National GHG Inventories is applied. Checking with the IPCC default value, 0.0997 Tco₂/GJ is applicable to calculate the baseline emission calculation.

3.11.9 Parameter : j Categories grouped by (i) type of buildings (new/existing), (ii) type of technology used and (iii) fuel type used in the absence of the project activity. For each category j, all connected buildings should be clearly identified.

The categories of all connected buildings are clearly identified in the registered PDD (/1/). Three types of the buildings are determined. Description in the registered PDD consistent with the methodology registered against. Therefore, the categories of the connected building are applicable.

4. Calculation of Emission Reductions

The Baseline Emissions (BE_y) are calculated as follows:

$$BE_y = BE_{HG,y} + BE_{EL,y}$$

BE_y Baseline emission during the year y, (tCO₂e);

$BE_{HG,y}$ Baseline emissions from the generation of heat during the year y (tCO₂e);

$BE_{EL,y}$ Baseline emissions from the generation of electricity during the year y (tCO₂e).

Parameters applied to calculate $BE_{HG,y}$ are presented in below.

Reported and Verified Parameters for $BE_{HG,y}$ calculation

Parameters	Reported Values in MR version 1.0	Verified Values in the MR version 4.0
$Q_{\text{extracted},y}$ (GJ)	3,921,602	3,956,152
$Q_{HOB,y}$ (GJ)	0	0
Total $Q_{i,y}$ (GJ)	3,250,926.59	3,250,926.61
$A_{j,l}$ (m ²)	Data reported in the ER spreadsheet version 1.0	Data reported in the ER spreadsheet version 4.0
$EF_{BL,HG,j,l}$ (tCO ₂ /GJ)	Data reported in the ER spreadsheet version 1.0	Data reported in the ER spreadsheet version 4.0
$COEF_{BL,HG,i,l}$ (tCO ₂ /GJ)	0.0997	0.0997
$\epsilon_{BL,HG,j,l}$ (%)	Data reported in the ER spreadsheet version 1.0	Data reported in the ER spreadsheet version 4.0
$CAP_{j,l}$ (MW)	Data reported in the ER spreadsheet version 1.0	Data reported in the ER spreadsheet version 4.0
T (hours)	1872 hours	1872 hours
$BE_{HG,y}$ (tCO ₂ e)	508,321	508,321

Parameters applied to calculate $BE_{EL,y}$ are presented in below.

Reported and Verified Parameters for $BE_{EL,y}$ calculation

Monitoring Parameter	Reported Values in MR version 1.0	Verified Values in the MR version 4.0
$EG_{PA,y}$ (MWh)	880,624.044	878,204.546
$EG_{\text{max,hist}}$ (MWh)	967,277.786	967,277.786
$EF_{BL,EL,i}$ (tCO ₂ /MWh)	0.9363	0.9369
$\frac{44}{12} * \frac{EF_{FF,BL,EL}}{NCV_{FF,BL,EL}}$ (tCO ₂ /GJ)	0.0997	0.0997
$\eta_{BL,EL}$ (%)	38.31%	38.31%
$BE_{EL,y}$ (tCO ₂ e)	825,041	822,789

$$BE_y = BE_{HG,y} + BE_{EL,y} = 508,321 \text{ tCO}_2\text{e} + 822,789 \text{ tCO}_2\text{e} = 1,331,110 \text{ tCO}_2\text{e}$$

The Project Emissions (PE_y) are calculated as follow:

$$PE_y = PE_{FC,j,y} = \sum F_{C,i,j,y} \times COEF_{i,y}$$

$PE_{FC,j,y}$ Project CO₂ emissions from fuel coal combustion in process j during the year y ;

$F_{C,i,j,y}$ Quantity of fuel type i (i=coal) combusted in process j (Xinjiang Huadian Hongyanchi Power Plant and the four HOBs) during the year y;

COEF_{i,y} The CO₂ emission coefficient of fuel type i in year y (tCO₂/t);
i The fuel types combusted in process j during the year y, the CHP plant and the heat only boilers all consume coal;
j Process j, j=a the CHP plant and j=b the heat only boilers respectively

Reported and Verified Parameters for PE_y calculation

Monitoring Parameter	Reported Values in MR version 1.0	Verified Values in the MR version 4.0
FC _{i,j,y} (ton)	618,068.26	612,738.72
Average NCV _{i,y} (GJ/ton)	N/A	16.63
EF _{CO2,i,y} (tCO ₂ /GJ)	0.0997	0.0997
COEF _{BL,HG,j,l} (tCO ₂ /GJ)	0.0997	0.0997
PE _y (tCO ₂ e)	1,031,748	1,015,900

Parameters applied to calculate the Leakage presented in below

$$LE_y = LE_{EL,y} + LE_{FS,y} \square \square$$

LE_y =Leakage emissions in the year y, (tCO₂e)

LE_{EL,y} =Leakage emissions from the decrease in the electricity supply to the grid during the year y, (tCO₂e)

LE_{FS,y} =Leakage emissions from fuel switch during the year y, (tCO₂e)

Reported and Verified Parameters for LE_y calculation

Monitoring Parameter	Reported Values in MR version 1.0	Verified Values in the MR version 4.0
EG _{PA,y} (MWh)	880,624.044	878,204.546
EG _{min,hist} (MWh)	1,916,680	1,916,680
EF _{BL, EL l} (tCO ₂ /MWh)	0.9363	0.9369
EF _{grid,CM,y} (tCO ₂ /MWh)	0.8712	0.8712
LE _{EL,y}	0	0

The total Emission Reductions (ER_y) is calculated as follows:

$$ER_y = BE_y - PE_y - LE_y = 1,331,110 \text{ tCO}_2\text{e} - 1,015,900 \text{ tCO}_2\text{e} - 0 \text{ tCO}_2\text{e} = 315,210 \text{ tCO}_2\text{e}$$



5. Recommendations for Changes in the Monitoring Plan

During current monitoring period the monitoring plan has been revised due to the permanent change of the accuracy of the monitoring equipment, detailed information please refer to section 3.2.

6. Overview of Results

Assessment Against the Provisions of Decision 17/CP.7:

Is the project documentation in accordance with the requirements of the registered PDD and relevant provision of decision 17/CP.7, EB decisions and guidance and the COP/MOP?

Yes. The results of the compliance assessment are recorded in the verification checklist which is used as an internal report only.

Have on-site inspections been performed that may comprise, inter alia, a review of performance records, interviews with project participants and local stakeholders, collection of measurements, observations of established practices and testing of the accuracy of monitoring equipment?

Yes. All members of the assessment team visited the sites and undertook interviews, collected data, audited the implementation of procedures, checked calibration certificates and checked data, inter alia.

The results of the site visit are recorded in the verification checklist which is used as an internal report only.

The evidences have been checked and collected. The final Monitoring Report is attached with this Verification Report.

Has data from additional sources been used? If yes, please detail the source and significance.

Yes. The following data are from external sources:

$EF_{grid,CM,y}$: Emission factor of the electricity grid system, $0.8712tCO_2e/MWh$, was determined using external sources at validation stage. $EF_{grid,CM,y}$ is ex-ante determined and fixed during the fixed crediting period. The significance is high and the risk is deemed low as it is fixed for this crediting period as per registered PDD;

$EF_{BL,EL}$: Baseline emission factor for the electricity production, $0.9369tCO_2e/MWh$, was determined using external sources at validation stage. $EF_{BL,EL}$ is ex-ante determined and fixed during the fixed crediting period. The significance is low and the risk is deemed low as it is fixed for this crediting period as per registered PDD;

$CAP_{j,i}$: Nameplate capacity of existing boilers in category j at substation i , the baseline information listed in the registered PDD. The significance is low and the risk is deemed low as it is fixed for this crediting period as per registered PDD;

$EG_{max,hist}$: Maximum historic annual amount of electricity generated by the power plant used over the three most recent years prior to the start of implementation of the project activity, $4,526,364MWh$, historic data of last 3 years (10/2002-09/2005). This is validated during validation step and reconfirmed during verification. The significance is low and the risk is deemed low as it is fixed during this crediting period as per registered PDD;

$EG_{min,hist}$: Minimum historic annual amount of electricity generated by the power plant used over the three most recent years prior to the start of implementation of the project activity, $1,916,680MWh$, historic data of last 3 years (10/2002-09/2005). This is validated during validation step and reconfirmed during verification. The significance is low and the risk is deemed low as it is fixed during this crediting period as per registered PDD;

$COEF_{BL,HG,j,i}$: emission factor of the fuel coal used in the absence of the project activity in the heat generation system corresponding to substation i , $0.0997tCO_2/GJ$, sourced from 2006 IPCC Guidelines on National GHG Inventories. The significance is low and the risk is deemed low as it is fixed during this crediting period as per registered PDD;

$\epsilon_{BL,HG,j,i}$: Efficiency of the heating supply system that would have been used in the absence of the project activity for category j and substation i , the baseline information had been validated. The significance is low and the risk is deemed low as it is fixed for this crediting period as per registered PDD;

$$\frac{44}{12} * \frac{EF_{FF,BL,EL}}{NCV_{FF,BL,EL}}$$

$NCV_{FF,BL,EL}$: CO₂ emission factor of coal fired in the power plant used prior to the start of the implementation of the project activity, 0.0997 tCO₂/GJ, sourced from 2006 IPCC Guidelines on National GHG Inventories. The significance is low and the risk is deemed low as it is fixed during this crediting period as per registered PDD;

Parameter j : j Categories grouped by (i) type of buildings (new/existing), (ii) type of technology used and (iii) fuel type used in the absence of the project activity. For each category j , all connected buildings should be clearly identified, 3 categories were identified in the registered PDD, the categories of all connected buildings are clearly identified. The significance is low and the risk is deemed low as it is fixed during this crediting period as per registered PDD.

Please review the monitoring results and verify that the monitoring methodologies for the estimation of reductions in anthropogenic emissions by sources have been applied correctly and their documentation is complete and transparent.

Yes. The monitoring methodology has been correctly applied and the Monitoring Report and supporting references are complete and transparent.

Have any recommendations for changes to the monitoring methodology for any future crediting period been issued to the project participant?

No.

Determine the reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CDM project activity, based on the data and information using calculation procedures consistent with those contained in the registered project design document and the monitoring plan.

The data used in anthropogenic emission reduction calculation is consistent with those contained in the registered PDD and monitoring plan. The emission reduction was 653,328tCO₂ for the period 15/10/2011 to 31/12/2011 as per the estimation made in the registered PDD. The actual emission reduction has been verified as 315,210 tCO₂ for the same period.

Identify and inform the project participants of any concerns related to the conformity of the actual project activity and its operation with the registered project design document. Project participants shall address the concerns and supply relevant additional information.

No such non conformity of the actual project activity and its operation with the registered project design document has been observed.

Post monitoring report on UNFCCC website

Yes, the Monitoring Report is available at ref.4295 on UNFCCC website:

<http://cdm.unfccc.int/Projects/DB/BVQI1293180897.59/view>

7. Verification and Certification Statement

SGS United Kingdom Ltd has been contracted by Carbon Resource Management Ltd to perform the verification of the emission reductions reported for the CDM project Southern District Heating Network in Urumqi City UNFCCC Ref Nr 4295 in the period from 15/10/2011 to 31/12/2011.

The verification is based on the validated and registered project design document and the Monitoring Report for this project. Verification is performed in accordance with section I of Decision 3/CMP.1, and relevant decisions of the CDM EB and CoP/MoP. The scope of this engagement covers the verification and certification of greenhouse gas emission reductions generated by the above project during the above mentioned period, as reported in Monitoring Report Version 4.0 dated 16/09/2012.

The management of Carbon Resource Management Ltd is responsible for the preparation, calculation and determination of GHG emission reductions from the project. The development and maintenance of records and reporting procedures are in accordance with the monitoring report.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period from 15/10/2011 to 31/12/2011 based on the reported emission reductions in the Monitoring Report Version 4.0 dated 16/09/2012 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, SGS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

SGS confirms that the project is implemented as described in the validated and registered project design documents. Based on the information we have seen and evaluated, we confirm the following:

Project Title:	Southern District Heating Network in Urumqi City
UNFCCC Reference Number:	4295
Registered PDD and Revised PDD Used for Verification:	Project Design Document, Version 06, dated 15/06/2011 Project Design Document, Version 06.2, dated 16/09/2012
Methodology Used for Verification:	AM0058 Version 03.1 dated 31/07/2010
Applicable Period:	From 15/10/2011 to 31/12/2011
Total GHG Emission Reductions Verified:	315,210 tCO₂e

Signed on behalf of the Verification Body by Authorized Signatory

Signature:



Name: Siddharth Yadav

Date: 14/11/2012

8. Document References

- /1/ Project Design Document, Version 06, dated 15/06/2011.
Revised Project Design Document, Version 06.1, dated 16/07/2012
Revised Project Design Document, Version 06.2, dated 16/09/2012 (Final Revised Version)
- /2/ AM0058 "Introduction of a new primary district heating system" version 03.1, dated 30/07/2010.
- /3/ Monitoring Report for the first monitoring period:

MR Version	Date of Revision	Main Changes and Reasons for Revision
Version 1.0	18/01/2012	Initial version for publishing on the UNFCCC website
Version 2.0	26/04/2012	MR revised in response to DOE findings: Revised section in the Monitoring Report Section A, Section B, Section C, Section D and Section E This version of MR has been revised based on the findings raised by the assessment team, specific justification for the actual implementation status has been provided by PP and relevant revision has been made to the reported monitoring parameters. Based on Version 2.0 of MR CAR#8 has been closed by the assessment team.
Version 2.1	08/06/2012	MR revised in response to DOE findings: Revised section in the Monitoring Report Section A, Section B, Section C, Section D and Section E Based on the further comments raised by the assessment team relevant revision has been made to the MR version 2.0. Specific justification for the actual implementation status has been provided by PP and relevant revision has been made to the reported monitoring parameters. Based on version 2.1 of MR CL#1 have been closed by the assessment team.
Version 3.0	27/08/2012	MR revised to the VVS template Revised section in the Monitoring Report Section A, Section B, Section C, Section D and Section E Based on the further comments raised by the assessment team relevant revision has been made to the MR version 2.1. Specific justification for the actual implementation status has been provided by PP and relevant revision has been made to the reported monitoring parameters. Based on version 3.0 of MR CL#2, CL#3, CAR#4, CL#5, CAR#6, CAR#7, CAR#9, CAR#10, CAR#11, CAR#12, CAR#13, CAR#14, CAR#16 and CAR#17 have been closed by the assessment team.
Version 4.0	16/09/2012	MR revised in response to DOE findings: Revised section in the Monitoring Report Section D and Section E The value of monitored parameter in monitoring period has been integrated in the monitoring report version 4.0 for the purpose of calculating emission reductions. Specific justification has been provided to section E.5

		Comparison of actual emission reductions. Based on version 4.0 of MR CAR#15, CL#18, CL#19, CAR#20 have been closed by the assessment team.
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- /4/ Emission Reduction Calculation Spreadsheet Version 1.0, dated 18/01/2012, version 2.0 dated 26/04/2012, Version 2.1 dated 08/06/2012 and Version 3.0, dated 27/08/2012, Version 4.0, dated 16/09/2012
- /5/ Validation Report of Southern District Heating Network in Urumqi City, issued by BV, Report No. BVC/CHINA-VAL/0085/2008, Revision No. 3, dated 02/12/2010.
- /6/ Project registration information on the UNFCCC website:
<http://cdm.unfccc.int/Projects/DB/BVQI1293180897.59/view>
- /7/ Feasibility Study Report of the project activity, Approval issued by Xinjiang Uygur Autonomous Region Development & Reform Commission. Issued in Dec 2003.
- /8/ Construction contract of pipe network, signed dated 04/04/2005 (Project start construction records)
- /9/ Document provided by PP is the CHP daily operation logbook on 15/10/2005. (Project commissioning date)
- /10/ Statement from local heat supply management bureau dated 30/03/2012. (Project commissioning date)
- /11/ Master plan of the district heating system in Southern District Heating Network in Urumqi City
- /12/ Schematic diagram of the project activity (Including the position of the CHP plant, HOB boilers, pressure isolated heat exchange station, the district heating network and total 174 installed substations and the unbuilt area for 19 substations).
- /13/ Project electricity connection schematic, with the location of the monitoring equipments. Provided by the CHP power plants.
- /14/ Project heat connection schematic, with the location of the monitoring equipments and all the substations. Provided by Project Owner.
- /15/ Operation regulation of boilers, steam turbines, generators and hot water circulating pumps at the CHP plant. Provided by the CHP power plants.
- /16/ Equipment system diagrams: four groups of CHP power generators. Provided by the CHP power plant
- /17/ List of heating substations with heat meters
- /18/ Operation Regulation of boilers at the four HOBs house
- /19/ The preliminary design report 04008-CHU, Issued in Aug 2004. Issued by Beijing Gas and Heating Engineering Design Institute.
- /20/ Heat exchanger purchase contract, Nr TC04A348, issued in 14/01/2005
- /21/ Operation Logs of CHP and four HOB houses for the first monitoring period
- /22/ Emergency plan for the project activity
- /23/ Training records of the staff: both in CDM and technical operation process
- /24/ Qualifications of the operators: Certificates of competence
- /25/ Electronic database of all monitoring data with specifications of the points of measurement, the variable name and description, the corresponding value and unit as well as the time of measurement. Covering the first monitoring period.
- /26/ CDM Manual Including
 - a. data management and document archive procedure
 - b. implementation standard of the MP
 - c. Organization Structure for the CDM project activity
 - d. Staff Training Plan
 - e. QA/QC procedure
- /27/ Internal Audit Report and Chinese version MR for this monitoring period
- /28/ Business License of Urumqi Heating Supply Co., Ltd. No. 650100000021751. Issued on 02/06/2008. Scope of business: Urban central heating, thermal engineering, design of the thermal heating and Management of the thermal heating system.
- /29/ Grid Connection Agreement, issued on 05/04/2011
- /30/ Power Purchase Agreement Issued on 26/01/2011 GF-2003-0511
- /31/ DL/T448-2000 Technical administrative code of electric energy metering
- /32/ Statement issued by the CHP power plant: No technical measure was taken to improve the efficiency of the CHP plant since 15/10/2005. Issued on 29/03/2012

- /33/ Heat Purchase Agreement, No: 2011-2-111, Dated 2011-10-20
- /34/ Quantity of diesel consumption which from the operation log of CHP, covering the first monitoring period
- /35/ China Energy Statistical Yearbook (2011) Compiled by Department of Energy Statistics, National Bureau of Statistics, People's Republic of China.
- /36/ IAF Mandatory Document for the Certification of Multiple Sites Based on Sampling issued by the International Accreditation Forum, Inc. (IAF) dated 20/11/2007
- /37/ Statement provided by Project Operator relate to clarify the commissioning start date of substations, issued in 04/06/2012
- /38/ Monitoring Parameter $EG_{PA,y}$: Daily Reading Records of all electronic meters involved and Logbooks of turbine generation.
- /39/ Monitoring Parameter $EG_{PA,y}$: Monthly Reading Records of all electronic meters involved.
- /40/ Monitoring Parameter $EG_{PA,y}$: Electricity sales receipt, such as Electricity Transaction Notes issued by the Grid Company and electricity invoices.
- /41/ Monitoring Parameters: $Q_{extracted}$ and Q_{HOB} : Daily Reading Records of heat meters installed in the CHP and HOBs
- /42/ Monitoring Parameters: $Q_{extracted}$ and Q_{HOB} : Monthly Monitoring Records of heat meters installed in the CHP and HOBs.
- /43/ Copy of invoice for heat supply
- /44/ Monitoring Parameter $Q_{i,y}$: Monthly Monitoring Records of heat meters installed in the substations
- /45/ Monitoring Parameter $Q_{i,y}$: Daily Reading Records of heat meters installed in the substations
- /46/ Monitoring Parameter $FC_{i,j,y}$: Monthly Monitoring Reports of coal combusted by the CHP, measured by the strap balances installed.
- /47/ Monitoring Parameter $FC_{i,j,y}$:Monthly Monitoring Reports of coal delivered to the CHP, measured by the weigh bridge
- /48/ Monitoring Parameter $FC_{i,j,y}$: Statement issued by the HOB houses for the zero coal combusted covering the first monitoring period.
- /49/ Coal stock monthly record of the CHP Plant
- /50/ Coal Purchased Invoices provided by the CHP plants
- /51/ NCV test records for the coal delivered to the CHP plants
- /52/ NCV test records for the coal combusted in the CHP plants.
- /53/ Accreditation of The Xinjiang Uygur Autonomous Region Product Quality Supervision and Inspection Academy, issued by the China National Accreditation Service for Conformity Assessment CNAS L0718
- /54/ Calibration certificates for all the electricity meters involved
- /55/ Calibration record of strap balance, electronic weighting balance
- /56/ Calibration records of the monitoring equipments of heat
- /57/ Accreditation certificate of the calibration entities
Accreditation of Xinjiang Electric Power Research Institute issued by Xinjiang Uygur Autonomous Region Bureau of Quality and Technical Supervision (Xin) Faji 2008 002
Accreditation of Xinjiang Uygur Autonomous Region Institute of Measurement and Testing Technology issued by National Administration of Quality Supervision Inspection and quarantine (Guo) Faji 2007 01018
- /58/ Status of the district heating system and capacity of Southern District Heating Network in Urumqi City issued by the Urumqi heating Supply institution
- /59/ Heat Supply contracts signed between the Urumqi Heating Supply Co., Ltd. and the final users (Residents in buildings)
- /60/ CJJ34-2010 Design code for city heating network, Issued on 23-07-2010
- /61/ Validation and Verification Manual, version 01.2, dated 30/07/2010.
- /62/ Validation and Verification Standard, version 2.0, dated 25/11/2011
- /63/ Clean Development Mechanism Project Standard, version 1.0,dated 25/11/2011
- /64/ EB48 Meeting Annex 68 Guidelines on completeness check of requests for issuance dated 17/07/2009
- /65/ EB54 Annex 34 Guidelines for completing the monitoring report form version 01 dated 28/05/2010
- /66/ EB66 Annex 20 Guidelines for completing the monitoring report form version 2.0 dated 02/03/2012
- /67/ EB65 Annex 2 " Standard for Sampling and Surveys for CDM project activities and Programme of Activities"
- /68/ Size of Sample of the International Accreditation Forum, Inc. (IAF) Mandatory Document for the Certification of Multiple Sites Based on Sampling issued by the IAF dated 20/11/2007
- /69/ Sampling Method for Site Visit for CDM.VER1299 MP1, including the sampling method and the

verified results of the status of the district heating system and capacity.

/70/ Statement from local Heat Supply Management Bureau refer the project start commissioning date

/71/ Statistics of implementation status from local heat supply management bureau

/72/ Interview Questionnaire provided by the Coal Suppliers

/73/ Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion Version 02

9. Findings Overview

	CARs	CLs	FARs
Total Number raised	14	6	0

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CL	Number:	CL #1	Reference:	VP Section 2
Lead Assessor Comment:			Date: 31/03/2012		
Based on the specific requirement presented in the VVM version 01.2 Para 195~198: Project implementation in accordance with the registered project design document The following issue has been identified MR version 1.0 Section A.1. Brief description of the project activity According to guideline EB54_Annex 34 "Guidelines for completing the Monitoring Report form (CDM-MR)", the construction start date, the commissioning start date have been verified. Through document review, the assessment team identified that the reported construction start date 04/04/2005 is the date of signing the agreement of project construction. Please further clarify which date is the construction start date. At the same time, assessment team can not identify the commissioning start date based on the supporting evidence provided by Project Participants (PP). CL#1 is therefore raised requesting PP to clarify this issue and provide relevant supporting evidence.					
Project Participant Response:			Date: 27/04/2012		
The relevant information is updated in the MR version 2.0 and supporting evidences have been submitted to DOE.					
Documentation Provided as Evidence by Project Participant:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Information Verified by Lead Assessor:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Reasoning for not Acceptance or Acceptance and Close Out:				07/05/2012	
Revised Monitoring Report Version 2.0 has been checked by the assessment team. According to the updated information presented in Section A.1. The construction start date has been revised to 01/05/2005. Please kindly provide relevant supporting evidence for further verify. Referring to the commissioning start date for the project activity, no specific justification and supporting evidence received from PP. The assessment team can not make further judgment for the reported information in MR version 2.0. CL#1 is remaining open to further clarification.					
Project Participant Response:			Date: 08/06/2012		
According to the construction contract, the construction start date should be 01/05/2005. And according to the operation log from CHP, the heat network started extracting heat since 15/10/2005, which is deemed as the commissioning start date of this project and the statement from local heat supply management bureau showed the commissioning start date is 15/10/2005 too.					
Documentation Provided as Evidence by Project Participant:					
Monitoring report version 2.1, dated 08/06/2012; Construction contract of pipe network, signed dated 04/04/2005; Document provided by PP is the CHP daily operation logbook on 15/10/2005; Statement from local heat supply management bureau dated 30/03/2012.					
Information Verified by Lead Assessor:					

Monitoring report version 2.1, dated 08/06/2012; Construction contract of pipe network, signed dated 04/04/2005; Document provided by PP is the CHP daily operation logbook on 15/10/2005; Statement from local heat supply management bureau dated 30/03/2012.					
Reasoning for not Acceptance or Acceptance and Close Out:					
Through document review, the assessment team confirmed that information relate to the project construction starting date (01/05/2005) have been revised to be in line with official signed construction contract as supporting evidence. CHP operation log sheet in October 2005 services as supporting evidence to prove the project has been put into commission since 15/10/2005. Formal statement has been issued by the local heat supply management bureau and the information consistency has been confirmed. Relevant descriptions and information in updated MR section A.1 have been revised in an accurate and transparent manner. Through document review, information presented in the monitoring report is in line with the assessment team verified results. CL#1 is therefore closed.					
Acceptance and Close out by Lead Assessor: Lenore Yin				Date: 20/06/2012	

Date:	31/03/2012		Raised by:	All members of the assessment team	
Type:	CL	Number:	CL #2	Reference:	VP Section 2
Lead Assessor Comment:				Date: 31/03/2012	
Based on the specific requirement presented in the VVM version 01.2 Para 195~198: Project implementation in accordance with the registered project design document The following issue has been identified MR version 1.0 A.4 Technical description of the project As per the specific requirement presented in the VVM Para.196, the assessment team verified the project implementation status in accordance with the registered PDD (project design document). Under technical support of sectoral scope expert, the assessment team verified all physical features of the proposed CDM project activity. Information of technical description and figure of structure of the primary heating network and the heating energy flows presented in the MR version 1.0 section A.4 can not clearly reflect the actual structure of the primary heating network and the heating energy flows. CL#2 is therefore raised to require PP to make relevant clarification of this issue.					
Project Participant Response:				Date: 27/04/2012	
The updated technical description is integrated in the MR version 2.0.					
Documentation Provided as Evidence by Project Participant:					
Revised Monitoring Report Version 2.0 Dated 26/04/2012					
Information Verified by Lead Assessor:					
Revised Monitoring Report Version 2.0 Dated 26/04/2012					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 07/05/2012	
Based on the PP's response, the assessment team checked the updated MR version 2.0. No specific revision has been made in section A.4. Based on the document review, the only revision made by PP is the figure of structure of the primary heating network and the heating energy flows. The revised figure is as same as the figure presented in MR version 2.0 section C. Therefore, PP is required to further clarify whether the project has been implemented as per the registered PDD. Information of technical description and figure of structure of the primary heating network and the heating energy flows presented in the MR version 1.0 section A.4 still can not clearly reflect the actual structure of the primary heating network and the heating energy flows. CL#2 is remaining open to further clarification.					
Project Participant Response:				Date: 08/06/2012	
To state the structure of the heat network and the heat energy flow direction, new description was integrated in the MR as following: In this project, three-level heating network was employed according to the complex geographical conditions					

and locations of the heat users.

The project consists of boiler thermal power system, heat supply and distribution network system, heat pipeline network monitoring and control system. The major equipment includes the primary station (primary heat exchange station), the steam extraction device and pipeline, the pressure isolated heat exchange station, substations, frequency variable and speed adjusted monitoring and control system.

1. Primary network

The primary network includes the heat supply source of Xinjiang Huadian Hongyanchi Power Plant Co. Ltd. which is the main heat source working throughout the whole heat supply season and the pipeline to the pressure isolated heat exchange station. The other four HOBs are the supplementary heat source for the heat network only working in the coolest days such as Jan and Feb.

The installed capacity of the heat sources and their heat power output

Name	Xinjiang Huadian Hongyanchi Power Plant Co., Ltd.	Xingfu Road Boiler House	Guangming Road Boiler House	Xinsheng Boiler House	Weihuliang Boiler House
Installed capacity	4×200MW extraction & condensing CHP units	6×29MW Heating boiler	1×29MW, 5×46MW Heating boiler	2×29MW, 1×14MW Heating boiler	2×70MW, 1×46MW Heating boiler
Heating capacity	754MW	174MW	259MW	72MW	186MW

In the CHP plant, steam is extracted from steam turbine by the steam devices and then the extracted steam is supplied to a primary heat exchange station installed in the CHP plant which is equipped with steam-water heat exchanger, and the heat is supplied to the heat network with heat water through a 3.7 km long DN1200 pipeline.

All the boilers installed in the HOBs are heat water boilers, so the heat from HOBs is supplied to the heat network with heat water through DN 150 up to DN1200 pipeline.

2. Secondary network

The pressure isolated heat exchange station, HOBs and the secondary network system from the pressure isolated heat exchange station to substations compose of the secondary network. Reason for adopting such two level heat supply mode is. DN 150 up to DN1200 pipelines were employed in the secondary network. To isolate the adverse impact of static water pressure due to high altitude difference (163 m) between the primary heat exchange station of CHP and the end users on the distribution pipeline and substations, the pressure isolated heat exchange station consisting of 12 plated heat exchangers has to be employed. It is installed in such a way so that their altitude difference from the CHP to the pressure isolated heat exchange station is 86 m and the rest altitude difference from the heat exchange station to the substation is 77 m accordingly.

This project is planned to install 193 substations, with total heat supply capacity 1445 MW. Within each substation, heat exchangers would be equipped in parallel and 174 substations installed till this monitoring period.

3. Tertiary network

The third level network includes pipelines from substation to end users and the monitoring system. The monitoring system is established for the heat pipeline network monitoring and control system, i.e. the main control center (MCC) had been set up at the dispatching center at the Company level; And the sub control center (SCC) was set up at the pressure isolated heat exchange station; While the local control and monitor station (LCM) is set up at the key branch point of the district heating network and at the substations. The computerized heating monitoring and control system (SCADA) was installed to implement on-line heat transmission and regulatory, based on off-door ambient temperature and users demand.

As the heat supply network is hot water system and the limit from the business scope of the project owner, only municipal heat users could be connect to the project and no industrial heat users.

Documentation Provided as Evidence by Project Participant:

Monitoring report version 2.1, dated 08/06/2012
the Schematic diagram of the project activity

Statement from local heat supply management bureau
Information Verified by Lead Assessor:
<p>Monitoring report version 2.1, dated 08/06/2012</p> <p>the Schematic diagram of the project activity</p> <p>Statement from local heat supply management bureau</p> <p>Project heat connection schematic, with the location of the monitoring equipments and all the substations. Provided by Project Owner.</p> <p>The master plan of the district heating system in Southern District Heating in Urumqi city</p> <p>Status of the district heating system and capacity of Southern District Heating Network in Urumqi City issued by the Urumqi heating Supply institution</p> <p>Operation regulation of boilers, steam turbines, generators and hot water circulating pumps at the CHP plant. Provided by the CHP power plants.</p> <p>Equipment system diagrams: four groups of CHP power generators. Provided by the CHP power plant</p> <p>Operation Regulation of boilers at the four HOBs houses</p> <p>GJJ1074-2010 Design code for city heating network, Issued on 23-07-2010</p>
Reasoning for not Acceptance or Acceptance and Close Out:
<p>By means of on site visit and document review. The assessment team identified that this is a district heating network project including multiple sites. The key physical component of the projects mainly includes the following three parts. The first part is the primary network, comprising a CHP plant of Huandian Hongyanchi Power Plant Co., Ltd. serving as the main heat sources and four HOB houses serving as the supplementary heat sources. The second part is the secondary Network, including one pressure isolated heat exchange station and the main distribution network system and the heat pipeline network. The third part is the Tertiary network, comprised by three different kinds of building category (Category 1: existing building area supplied by a sub-station that were connected to an existing isolated heat distribution network before the start of the project activity; Category 2: recently constructed buildings that are connected to sub-stations that replace old boiler houses treated as existing buildings; Category 3: new building area, which are constructed after the start of the implementation of the project activity). In the updated Monitoring report section A.4, detailed information relate to the actual stature of the primary heating network and heating energy flows have been provided by PP.</p> <p>In the actual implementation process, the main heat sources are delivered from the Combined Heat and Power (CHP) plant with grid connected 4×200MW extraction condensing power units for cogeneration plus four Heat-Only Boilers(HOB) as supplementary heat sources. The total heating supply capacity of the primary district heating network is 1,445 MW, in which 754MW is from the CHP plant and 691MW is from the four HOBs. The whole distribution network system replaced 142 small inefficient boiler houses. The assessment team verified the actual installed capacity and key technical parameters of the CHP plant and HOB boilers houses against the information presented in the registered PDD section A.4.3. As per the registered PDD, the proposed heating area for the project activity is 17,490,000 m². Required annual heat supply amount is 13,139,983 GJ, around 79% of the heat need to be supplied by the CHP plant and around 21% of heat need to be supplied by the HOBs.</p> <p>In the actual operation period, the PP applied the pooled operation of multi-heat sources, and four HOBs applied as the peak shaving boilers. Based on the measured off door ambient temperature and constant heat load, the operator from the heat supply company is responsible to operate the HOBs heat source base on the installed capacity (Xingfu HOB 174MW, Guangming 259MW, Xinsheng 72MW, Weihuliang 186MW). This monitoring period covered the period of early winter (average off-door ambient temperature is -10°C), four HOBs houses did not operated as the supplementary heat source. Operation regulation and equipment system diagram for the CHP and HOBs has been collected and verified by the assessment team. Verified information of CHPs and HOBs is consistent with the registered PDD.</p> <p>Due to the specific topography (high altitude difference: 163m) of the south district in Urumqi city, the district heating network has been divided into two levels and the isolated heat exchange station has been installed between the two levels (level 1: altitude difference 86m and level 2: altitude difference 77m). Through the</p>

transmission mains (outlet water 150°C and backwater 70°C), the heat has been sent to the distribution pipelines connected with the substations (outlet water 130°C and backwater 70°C) to the block heating network. The master plan of the district heating system in Southern District Heating in Urumqi city and the schematic diagram of the project activity have been checked and verified by the assessment team. The primary network is 3.7km long, and DN1200 (diameter 1.2m) pipeline has been applied in the transmission mains. Secondary network is 40.04km long using minimum DN150 to maximum DN1200 pipe in the distribution pipelines. Detailed information for the installed pipeline network has been presented in the schematic diagram of the project activity and further checked through on site visit.

Relevant heat monitoring system has been installed in the third level (Tertiary network), this level including all the installed substations and relevant pipeline to the end users (including 3 building category). Based on the project heat connection schematic, the assessment team identified that 174 substations has been installed and four substations has been installed in the level 1 (altitude difference 86m) and 170 substations has been installed in level 2 (altitude difference 77m). All the substations have been controlled and measured by PP simultaneously. The heat pipeline network monitoring and control system has been established by the project company. The SCADA system has been installed in the main control center of the project company. Through the SCADA system, project operator can adjust and control the on-line heat transmission, also can check the project operation status. During the on site visit, the assessment team checked the installed SCADA system and ensure the system operated in a good condition. The implementation status of the SCADA system is inline with the registered PDD.

After revision, the assessment team confirmed that revised Information of technical description is in line with the actual status. However, the figure of heating network in section A.4 is missing please kindly clarify the reason. Also please kindly provide the detailed technical parameters for all the key physical instruments. CL#2 still remains open.

Project Participant Response:	Date: 27/08/2012
The missing information has been integrated in the updated monitoring report	
Documentation Provided as Evidence by Project Participant:	
Monitoring report version 3.0, dated 27/08/2012	
Information Verified by Lead Assessor:	
Monitoring report version 3.0, dated 27/08/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	
The VVS MR template version 02.0 has been applied by PP, in the updated MR version 3.0 specific description relate to the information of technical description has been reported in section B.1 Description of the implemented registered project activity. According to the EB66 Annex 20, for the description of the installed technology(ies), technical process and equipment, include diagrams shall be included in section B.1 of the monitoring report. As per this requirement, updated description of the technical description of the project can clearly reflect the actual structure of the primary heating network and the heating energy flows. CL#2 is therefore closed by the assessment team.	
Acceptance and Close out by Lead Assessor: Lenore Yin	Date:27/08/2012

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CL	Number:	CL #3	Reference:	VP Section 2
Lead Assessor Comment:				Date: 31/03/2012	

<p>Based on the specific requirement presented in the VVM version 01.2 Para 195~198: Project implementation in accordance with the registered project design document</p> <p>The following issue has been identified</p> <p>Information presented in the PDD section A.4.3 against the actual implementation status.</p> <p>Based on the project information of pressure isolated heat exchange station, the number of installed plated heat exchanger is 10 as per the description in the PDD. During onsite visit, the assessment team found the number of installed plated heat exchanger of the pressure isolated heat exchange station is 12. Please make clarification on how the project is implemented as per the registered PDD.</p>	
Project Participant Response:	Date: 27/04/2012
<p>The number of isolated plated heat exchanger is 10 in the registered PDD but at the time of the site audit of validation, totally 12 exchangers are already installed according to the designation of a third party and 12 exchangers had been purchased based on the purchase agreement, which was validated by DOE during validation. So it's a typo in PDD and it should be 12 exchangers.</p>	
Documentation Provided as Evidence by Project Participant:	
N/A	
Information Verified by Lead Assessor:	
N/A	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 07/05/2012
<p>Based on the clarification provided by the PP, the number of installed plated heat exchanger of the pressure isolated heat exchange station in the registered PDD is inconsistent with the actual status. During the validation stage, 12 exchangers have already been installed and operated. PP considered the information inconsistency is due to a typo presented in the registered PDD.</p> <p>Since no specific supporting evidence provided by the designated third party to support PP's justification. The assessment team can not further verify this issue.</p> <p>CL#3 is remaining open to further clarification.</p>	
Project Participant Response:	Date: 08/06/2012
<p>According to the FSR, 12 exchangers should be installed for this project, and the preliminary design report compiled in Aug 2004 by the authorized third party also designed 12 exchangers. The purchase contract signed in Jan 2005 proved 12 exchangers purchased, and all the 12 exchangers were installed by the end of 2006 before the site visit of validation in 2009 and validated by DOE. So the number in PDD and validation report is just a typo.</p>	
Documentation Provided as Evidence by Project Participant:	
<p>Monitoring report version 2.1, dated 08/06/2012</p> <p>FSR Nr Re03002-Ke, Issued in July 2003.</p> <p>the preliminary design report 04008-CHU, Issued in Aug 2004.</p> <p>Heat exchanger purchase contract, Nr TC04A348, issued in 14/01/2005.</p>	
Information Verified by Lead Assessor:	
<p>Monitoring report version 2.1, dated 08/06/2012</p> <p>FSR Nr Re03002-Ke, Issued in July 2003.</p> <p>The preliminary design report 04008-CHU, Issued in Aug 2004. Issued by Beijing Gas and Heating Engineering Design Institute.</p> <p>Heat exchanger purchase contract, Nr TC04A348, issued in 14/01/2005</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	

<p>PP clarified that this is a typo in the registered PDD. Through document review, the assessment team identified that during the feasibility study (July 2003) and the preliminary project design stage (April 2002), the number of designed installed plated heat exchanger is 12. During the actual project implementation stage, the PP purchased 12 plated heat exchangers and installed on the project site by the end of 2006. Relevant purchase records have been provided to the assessment team. Based on the document review results, the assessment team identified that during the project preparation stage and actual implementation stage, the number of plated heat exchanger is 12. Relevant document should be validated by DOE during the validation stage which started since 2009 after the project put into operation. Therefore, the information presented in the PDD is a typo. Please kindly correct relevant information in the PDD. The corrected information should be an accurate reflection of actual project information.</p> <p>CAR#3 is pending for the revised PDD.</p>					
Project Participant Response:			Date: 27/08/2012		
<p>The right information of the plated heat exchanger has been integrated in the updated monitoring report. And the corrected information has been integrated in the revised PDD.</p>					
Documentation Provided as Evidence by Project Participant:					
<p>Monitoring report version 3.0, Dated 27/08/2012 Revised PDD version 06.1, Dated 16/07/2012</p>					
Information Verified by Lead Assessor:					
<p>Monitoring report version 3.0, Dated 27/08/2012 Revised PDD version 06.1, Dated 16/07/2012</p>					
Reasoning for not Acceptance or Acceptance and Close Out:					
<p>Correction is made by PP in the revised PDD version 06.1 section A.4.3, Table A.4.3-4, dated 16/07/2012. Based on the VVS version 02.0 Para 257~259, the assessment team verified revised section and confirmed that corrected information is an accurate reflection of actual number of installed plated heat exchanger. And the corrected information accurately reflects the actual project information. The CL#3 is closed by the assessment team.</p>					
Acceptance and Close out by Lead Assessor:			Date: 27/08/2012		
Lenore Yin					

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #4	Reference:	VP Section 2
Lead Assessor Comment:			Date: 31/03/2012		
<p>Based on the specific requirement presented in the VVM version 01.2 Para 195~198: Project implementation in accordance with the registered project design document</p> <p>The following issue has been identified</p> <p>MR version 1.0 B.1 Implementation status of the project activity</p> <p>1. According to EB54, Annex 34 "Guidelines for completing the Monitoring Report form (CDM-MR)" and the requirement presented in the VVM Version 01.2 Para 196~198, the project actual implementation status during the first monitoring period has been checked by the assessment team. As per the requirement presented in the EB54 Annex 34, monitoring report shall include relevant information on special events, for example overhaul times, downtimes of equipment, exchange of equipments, etc. CAR#4 is therefore raised by the assessment team.</p> <p>PP is also required to provide relevant clarification on the following issues:</p> <p>2. Actual implementation status of the supplementary heat sources and relevant cease operation period: HOB boilers;</p> <p>3. The project activities consist of more than one site (CHP plant, HOB boilers, district heating network and substations) and with phased implementation, please clarify the current progress of the proposed CDM project activity achieved.</p>					
Project Participant Response:			Date: 27/04/2012		

More information relating to implementation is integrated in the MR 2.0, such as the special events, implementation status and the current progress.	
Documentation Provided as Evidence by Project Participant:	
Revised Monitoring Report Version 2.0 dated 26/04/2012	
Information Verified by Lead Assessor:	
Revised Monitoring Report Version 2.0, dated 26/04/2012 Schematic diagram of the project activity Status of district heating system and capacity (area incl.)	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 07/05/2012
Based on the statement provided by the PP, the assessment team further checked updated information in the MR version 2.0 section B.1. Point 1 PP state that during this monitoring period, no events or situations occurred during this monitoring period. Please further clarify the definition of events and situations. Point 2. PP state that all the four HOBs were not put into operation during the first monitoring period. Please kindly provide relevant supporting document. Point 3. The project activities consists of more than one site (CHP plant, HOB boilers, district heating network and substations) and with phased implementation, PP state 174 substations have been build up and the other 19 substations would be built in the following two years. The updated statement presented in the MR version 2.0 is in line with the assessment team verified results. Relevant supporting evidence has been achieved. CAR#4 is remaining open to further clarification and revision.	
Project Participant Response:	Date: 08/06/2012
According to the operation log of CHP and HOBs, during this monitoring period, all main equipments worked smoothly and no special events or situations happened, that means no overhaul or breakdown of the main equipments which would stop running of the heat network. And according to the operation log of the four HOBs, during this monitoring period, all the four HOBs were not put into operation. There are 193 substations designed in the FSR and in PDD, and till the monitoring period, only 174 substations were built and other substations would be built in the coming years according to the developing plan of local heat supply management bureau.	
Documentation Provided as Evidence by Project Participant:	
Monitoring report version 2.1 dated 08/06/2012 operation logs of CHP and four HOBs, statistics of implementation status from local heat supply management bureau	
Information Verified by Lead Assessor:	
Monitoring report version 2.1 dated 08/06/2012 operation logs of CHP and four HOBs covering the first monitoring period statistics of implementation status from local heat supply management bureau	
Reasoning for not Acceptance or Acceptance and Close Out:	

<p>Point 1 Based on the further clarification and relevant supporting documents provided by PP, the assessment team identified that during this monitoring period no special events (i.e. overhaul or breakdown of the main equipments which would stop running of the heat network) happened.</p> <p>Point 2 At the same time, PP state that all the HOB boilers have not been put into operation during this monitoring period. This monitoring period covering the early winter, average off-door ambient temperature is -10°C), four HOBs houses did not operated as the supplementary heat source. Information consistency has been confirmed.</p> <p>Point 3 The project activities consists of more than one site (CHP plant, HOB boilers, district heating network and substations) and with phased implementation, PP state 174 substations have been build up and the other 19 substations would be built in the following two years. The updated statement presented in the MR version 2.1 is in line with the assessment team verified results. Relevant supporting evidence has been achieved. Relevant information provided by PP is in line with the assessment team verified results. Updated information presented in the MR section B.1 is also confirmed to be correct.</p> <p>CL#4 is therefore closed by the assessment team.</p>	
Acceptance and Close out by Lead Assessor: Lenore Yin	Date: 27/08/2012

Date:	31/03/2012		Raised by:	All members of the assessment team	
Type:	CL	Number:	CL#5	Reference:	VP Section 2
Lead Assessor Comment:				Date: 31/03/2012	
Based on the specific requirement presented in the VVM version 01.2 Para 202: Compliance of the monitoring plan with the monitoring methodology The following issue has been identified Based on the applicable requirement of the applied methodology AM0058 Version 03.1, only one type of fuel (a maximum of 1% of auxiliary fuel may be used for start-up) can be used for project activity. The assessment team verified the actual status of the fuel consumption. It was identified that diesel fuel has been applied as auxiliary fuel for start-up. CL#5 is therefore raised requesting PP to clarify whether the applied methodology is still applicable for the project activity.					
Project Participant Response:				Date: 27/04/2012	
According to the evidence from project site, the quantities of diesel as an auxiliary fuel to be used for start-up is no more than 1% of the total fuel which consumed by the project and it is the only auxiliary fuel, so PP believes that the applied methodology is still applicable for the project activity.					
Documentation Provided as Evidence by Project Participant:					
N/A					
Information Verified by Lead Assessor:					
N/A					
Reasoning for not Acceptance or Acceptance and Close Out:					
Please kindly provide the actual measured figure of consumed auxiliary fuel. Without supporting evidence and actual measured result. The assessment team can not provide any further verification for this issue. CL#5 is remaining open to further clarification.					
Project Participant Response:				Date: 08/06/2012	
As only CHP working as heat source during this monitoring period, no HOBs put into operation, according to the operation log of CHP, totally 39.94 tonnes diesel was consumed for CHP starting up. Considering the NCV of diesel from the latest China Energy Statistical Yearbook (2011), 42.652GJ/Tonne, the energy of consumed auxiliary fuel (diesel) is about 1,073.5GJ. According to the monitored data, the total consumed energy from coal in CHP during this monitoring period is about 10,189,577.86GJ. The energy of auxiliary fuel is just 0.0167% of the main coal consumption, so PP believes that the applied methodology is still applicable for the project activity.					
Documentation Provided as Evidence by Project Participant:					

Quantity of diesel consumption which from the operation log of CHP China Energy Statistical Yearbook (2011) Compiled by Department of Energy Statistics, National Bureau of Statistics, People's Republic of China.	
Information Verified by Lead Assessor:	
China Energy Statistical Yearbook (2011) Compiled by Department of Energy Statistics, National Bureau of Statistics, People's Republic of China.	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>During the on site visit, the assessment team identified that diesel oil has been applied as auxiliary fuel for start-up. Based on PP's clarification, the total consumed diesel oil is 39.94 tonnes. National public available NCV value for diesel oil has been applied. In estimation, the energy consumed for the auxiliary fuel diesel is around 1073.5GJ. This is just around 0.0167% of the coal consumption, which is lower than 1% percent. Relevant supporting documents did not provided to the assessment team, the final verification opinion is pending for the documents.</p> <p>The assessment team needs to confirm that the project has been implemented in line with the applied methodology and confirm coal has been consumed as the main fuel and a maximum of 1% of auxiliary fuel (diesel) have been used for start-up.</p> <p>CL#5 is pending for the supporting documents.</p>	
Project Participant Response:	Date: 27/08/2012
The operation log of CHP which included the consumption of diesel has been provide to DOE which could show that only quite a tiny quantity of auxiliary fuel (less than 0.02%) has been consumed and the methodology could be applied to this project.	
Documentation Provided as Evidence by Project Participant:	
Quantity of diesel consumption which from the operation log of CHP	
Information Verified by Lead Assessor:	
Quantity of diesel consumption which from the operation log of CHP China Energy Statistical Yearbook (2011) Compiled by Department of Energy Statistics, National Bureau of Statistics, People's Republic of China.	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>Based on PP's clarification, total consumed diesel oil in the first monitoring period is 39.94 tonnes and this value has been verified by the assessment team by checking the daily diesel consumption records presented in the monthly operation logbooks. In order to make a comparison with the coal consumed in this monitoring period, the value of consumed diesel oil has been converted to joule. Defaulted diesel NCV value 42.652 GJ/Tonne presented in the China Energy Statistical Yearbook (2012) has been applied for conversion. In estimation, the energy consumed for the auxiliary fuel diesel in MP1 is around 1,073.5GJ (39.94 tonnes x 42.652 GJ/Tonne). This is just around 0.0167% of the coal consumption in MP1 (10,189,577.86GJ), which is much lower than 1% percent. Therefore, the project actual implementation status in the first monitoring period is in line with the applicable requirement of the applied methodology AM0058. CL#5 is therefore closed by the assessment team.</p>	
Acceptance and Close out by Lead Assessor: Lenore Yin	Date:27/08/2012

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #6	Reference:	VP Section 2
Lead Assessor Comment:				Date: 31/03/2012	

<p>Based on the specific requirement presented in the VVM version 01.2 Para 205: Compliance of monitoring with the monitoring plan. The following issue has been identified The accuracy of installed electricity meters used for monitoring is not in accordance with the registered monitoring plan. Please kindly clarify the reason and take relevant action if necessary.</p>	
Project Participant Response:	Date: 27/04/2012
<p>There are totally 14 electricity meters were installed by the power grid company to monitor the electricity exchanges between the CHP and the power grid. Some of these meters' accuracy is in accordance with the monitoring plan and some not, but all the meters meet the requirements of PPA and local industrial standards. Both the installation and operations on the electricity meters are not under the control of PPs. During this monitoring period, all the meters were calibrated in a right manner and to be conservative, the difference between the accuracy level of the installed monitoring equipment and the accuracy prescribed by the applied methodology and/or the registered monitoring plan is deducted from the measured value.</p>	
Documentation Provided as Evidence by Project Participant:	
Revised Monitoring Report 2.0 dated 26/04/2012	
Information Verified by Lead Assessor:	
<p>Revised Monitoring Report 2.0 dated 26/04/2012 Photo evidence for the electricity meters installed in the CHP plant.</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>Based on the clarification provided by the PP, the assessment team considered that the actual monitoring process is not inline with the monitoring plan. Supporting evidence need to be provided by the CHP plant. At the same time, please include the detail calculation process for the deduction measure. PP is also need to clarify relevant monitoring process and ER calculation approach taken by PP is accurate and conservative. Without this information, the assessment team can not further verify this issue. CAR#6 is remaining open to further clarification.</p>	
Project Participant Response:	Date: 08/06/2012
<p>As the accuracy level of the installed electricity meters is lower than the description in monitoring plan, but these meters were calibrated in a right manner, based on the rules of CDM Project Standard (version 01.0), the difference between the accuracy level of the installed monitoring equipment and the accuracy prescribed by the applied methodology and/or the registered monitoring plan should be deducted from the measured value. Before the deduction, the monitored value of electricity was 880847.087MWh. The difference between the designed accuracy level and actual accuracy level is 0.3%, from 0.5% to 0.2%, and after the deduction the monitored value adopted in the monitoring report is 878204.546MWh, which would be used to calculate the baseline emission.</p>	
Documentation Provided as Evidence by Project Participant:	
<p>Monitoring report version 2.1 dated 08/06/2012 ER calculation spreadsheet version 2.1 dated 08/06/2012 PPA Calibration reports of electricity meters CDM PS (version 01.0) dated 25/11/2011</p>	
Information Verified by Lead Assessor:	
<p>Monitoring report version 2.1 dated 08/06/2012 ER calculation spreadsheet version 2.1 dated 08/06/2012 PPA Calibration reports of electricity meters CDM PS (version 01.0) dated 25/11/2011 MRRs for parameter EG_{PA,y} in MP1</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	

<p>According to the PPA signed between the project owner and the Xinjiang Power Supply Bureau, the CHP power plant and the project owner has no right to settle or change the accuracy of the installed monitoring meters.</p> <p>On the other hand, the accuracy level installed meters (with Accuracy level 0.5% and 0.2%) in this project is in line with national standard. So the accuracy of the all installed main meters in this project is in line with the national requirements. Based on the requirement of CDM PS version 01.0, PPs decided to discount 0.3% of $EG_{PA,y}$ measured by electricity meters for conservation.</p> <p>For this monitoring period, the measuring result is 880847.087MWh. 0.3% of $EG_{PA,y}$ has been discounted to calculate the emission reductions, and the final reported $EG_{PA,y}$ is 878204.546MWh. Revised calculation process in the ER spreadsheet.</p> <p>Monitoring plan should be revised together with the registered PDD. Please kindly revise the monitoring plan according to the requirement presented in the CDM PS Appendix 1 Para 4</p> <p>CAR#6 is pending.</p>	
Project Participant Response:	Date: 27/08/2012
<p>The clearer copy of PPA has been provide to DOE which could show that the accuracy level of the electricity meters had been set up in the PPA and out control of the PP.</p>	
Documentation Provided as Evidence by Project Participant:	
<p>PPA Revised PDD version 06.1 dated 16/07/2012</p>	
Information Verified by Lead Assessor:	
<p>PPA Revised PDD version 06.1 dated 16/07/2012 Revised MR version 3.0 dated 27/08/2012 DL/T448-2000 Technical administrative code of electric energy metering</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>During on site visit, the assessment team identified that 7 main meters and 7 backup meters have been installed by the power grid company. Only 6 meters' accuracy is in line with the requirement presented in the registered MP. For the rest 8 meters, the designed accuracy is lower than the registered MP requirement.</p> <p>According to the PPA signed between the CHP power plant and the Xinjiang Power Supply Bureau, the CHP power plant and the project owner has no right to settle or change the accuracy of the installed monitoring meters. On the other hand, the accuracy level of installed meters (with Accuracy level 0.5% and 0.2%) in this project is in line with national standard. So the accuracy of the all installed main meters in this project is in line with the national requirements.</p> <p>Based on the PS Appendix 1, the assessment team defined this is a permanent changes form the registered monitoring plan and the monitoring plan need to be revised. And based on the PS Appendix 1 Para 4, the assessment team considered prior approval by the Board is not required if PP adjust the value measured with the equipment as follows.</p> <p>Based on the requirement, PP revised the MP and adjusted the value measured with the equipment for this monitoring period. The monitoring parameter $EG_{PA,y}$ is used for calculating baseline GHG emissions, the difference (0.3%) between the accuracy level of the installed monitoring equipments and the accuracy prescribed by the applied registered MP is deducted from the measured value. PPs decided to discount 0.3% of $EG_{PA,y}$ measured by electricity meters for conservation. For this monitoring period, the measuring result for $EG_{PA,y}$ is 88,0847.087MWh. 0.3% of $EG_{PA,y}$ has been discounted to calculate the baseline emissions, and the final reported $EG_{PA,y}$ is 878,204.546MWh. Specific calculation process has been checked and confirmed to be correct.</p> <p>This revision made in the monitoring plan ensures compliance between the actual monitoring and the revised monitoring plan, which is also in line with the applied methodology. The specific requirement presented in the PS Appendix 1 Para 4 has been fulfilled.</p> <p>CAR#6 is therefore closed by the assessment team.</p>	
Acceptance and Close out by Lead Assessor: Lenore Yin	Date:27/08/2012

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #7	Reference:	VP Section 2
Lead Assessor Comment:				Date: 31/03/2012	
<p>Based on the specific requirement presented in the VVM version 01.2 Para 205: Compliance of monitoring with the monitoring plan and EB54 Annex 34.</p> <p>The following issue has been identified</p> <p>Based on the specific requirement presented in the monitoring plan: calibration of the monitoring instruments will be carried out regularly by the authorized third party entity in line with standard calibration procedure. Through document review, the assessment identified that calibration information for monitoring instruments is not included in the monitoring report version 1.0. CAR#7 was raised requesting PP to clarify this how the registered MP is followed considering the calibration process is not included in the MR version 1.0.</p>					
Project Participant Response:				Date: 27/04/2012	
The calibrations were implemented as the requirement of the registered monitoring plan and the detail information is integrated in the MR 2.0					
Documentation Provided as Evidence by Project Participant:					
Revised Monitoring Report Version 2.0, Dated 26/04/2012					
Information Verified by Lead Assessor:					
<ol style="list-style-type: none"> 1. Revised Monitoring Report Version 2.0, dated 26/04/2012 2. Calibration reports of Electricity meters (CHP) 3. Calibration reports of Electronic sharp balance (HOBs) 4. Calibration reports of Electronic weighing balance (CHP) 5. Calibration reports of Electronic weighing balance (HOBs) 6. Calibration reports of Heat meter (CHP) 7. Calibration reports of Heat meter (HOBs) 8. Calibration reports of Heat meter (heating substations) 9. List of heating substations with heat meters 					
Reasoning for not Acceptance or Acceptance and Close Out:					
<p>Relevant information has been provided in the updated MR Annex 2 The monitoring equipments information, and checked by the assessment team against calibration reports.</p> <p>Through document review, minor data inconsistency still existed in the MR version 2.0. Please kindly check the reported calibration information for the sharp balance installed in the Guangming road HOB boiler house, make relevant revision if necessary.</p> <p>CAR#7 is pending for PP's revision.</p>					
Project Participant Response:				Date: 08/06/2012	
There was a typo in the monitoring report on the information of sharp balance installed in the Guangming Road HOB, in the updated monitoring report, such typo is corrected.					
Documentation Provided as Evidence by Project Participant:					
Monitoring report version 2.1, dated 08/06/2012					
Information Verified by Lead Assessor:					

<ol style="list-style-type: none"> Monitoring report version 2.1, dated 08/06/2012 Calibration reports of Electricity meters (CHP) Calibration reports of Electronic sharp balance (HOBs) Calibration reports of Electronic weighing balance (CHP) Calibration reports of Electronic weighing balance (HOBs) Calibration reports of Heat meter (CHP) Calibration reports of Heat meter (HOBs) Calibration reports of Heat meter (heating substations) List of heating substations with heat meters 	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>Relevant information has been provided in the final version of MR Annex 2 The monitoring equipments information, and checked by the assessment team against calibration reports. Information consistency has been confirmed by the assessment team. The assessment team confirmed that the monitoring plan has been followed.</p> <p>CAR#7 is therefore closed by the assessment team.</p>	
Acceptance and Close out by Lead Assessor: Lenore Yin	Date: 20/06/2012

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #8	Reference:	VP Section 2
Lead Assessor Comment:				Date: 31/03/2012	
Based on the specific requirement presented in the VVM version 01.2 Para 208: Assessment of data and calculation of greenhouse gas emission reductions. The following issue has been identified In monitoring report version 1.0, reported baseline emission factor for the electricity production is 0.9363 tCO ₂ /MWh. This value is inconsistent with the registered PDD(0.9369 tCO ₂ /MWh). Please kindly clarify the reason and make relevant revision if necessary.					
Project Participant Response:				Date: 27/04/2012	
It's a typo in the monitoring report 1.0 and corrected in the monitoring report 2.0 to keep it in accordance with the value in the registered PDD.					
Documentation Provided as Evidence by Project Participant:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Information Verified by Lead Assessor:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Reasoning for not Acceptance or Acceptance and Close Out:					
Relevant revision has been made in the MR version 2.0. Through document review, the reported value for defaulted parameter EF _{BL,EL} is consistent with the registered PDD. CAR#8 is therefore closed by the assessment team.					
Acceptance and Close out by Lead Assessor: Lenore Yin				Date: 07/05/2012	

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CL	Number:	CL #9	Reference:	VP Section 3
Lead Assessor Comment:			Date: 31/03/2012		

<p>“Status of the district heating system and capacity” has been defined as a monitoring parameter as per the requirement in the applied monitoring methodology. The assessment team verified the supporting evidence of Status of district heating system and capacity. On site checking has also been carried out with the assessment team against verified information. The assessment team identified that in several operated substations, the manufacture date of installed heat exchangers are later than the recorded substation commissioning date. CL#9 is therefore raised to require PP to make relevant clarification for this issue.</p>	
Project Participant Response:	Date: 27/04/2012
<p>During the implementation of the project, the project owner keeps maintaining on the equipments in the substations, so when the plated heat exchangers of some substation need to be updated, there would be some of the exchangers manufactured after the commissioning date of the substation.</p>	
Documentation Provided as Evidence by Project Participant:	
N/A	
Information Verified by Lead Assessor:	
N/A	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>No specific evidence to support PP's clarification. The assessment team can not further verify this issue. CL#9 is remaining open to further clarification.</p>	
Project Participant Response:	Date: 08/06/2012
<p>Before the implementation of the district heating project, there were substations commissioning. After the district heating project started commissioning, some of the old substations and the equipments installed in such substations were merged into the district heating project. And during the operation of the project, necessary maintenance must be implemented to keep the substation working well. During the maintenance, if some equipment had some problem, project owner would repair it and if the problem couldn't be solved through repairmen, such equipment must be updated. So the date of the manufacturing of the equipment would be later or earlier than the commissioning date of the substation.</p>	
Documentation Provided as Evidence by Project Participant:	
Statement provided by Urumqi Heating Supply Co., Ltd.	
Information Verified by Lead Assessor:	
N/A	
Reasoning for not Acceptance or Acceptance and Close Out:	
No specific information provided by the PP, CL#9 still remain open.	
Project Participant Response:	Date: 27/08/2012
<p>During the operation of the project, necessary maintenance must be implemented to keep the substation working well and if needed, some equipment had to be updated. So the date of the manufacturing of the equipment could be later or earlier than the commissioning date of the substation. But the commissioning date of each substation provided to DOE is correct and in line with the reality which could be proved by the statement from local heat supply management bureau.</p>	
Documentation Provided as Evidence by Project Participant:	
Statement provided by Urumqi Heating Supply Co., Ltd.	
Information Verified by Lead Assessor:	
Statement provided by Urumqi Heating Supply Co., Ltd.	
Reasoning for not Acceptance or Acceptance and Close Out:	

Based on the clarification provided by PP and the formal statement issued by the Urumqi Heating Supply Co.,Ltd., The assessment team notified that the routine maintenance has been carried out periodically. In order to ensure the operation quality, some installed equipments (e.g. heat exchanger) has to be replaced by new equipments. This statement clarified the reason of the manufacture date of several installed heat exchangers are later than the recorded substation commissioning date. And the records of commissioning date of substations are collected by the local heat planning authority and considered as qualified third party evidence. The assessment team considered the clarification provided is reliable and acceptable. CL#9 is therefore closed by the assessment team.

Acceptance and Close out by Lead Assessor: Lenore Yin	Date: 28/07/2012
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Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #10	Reference:	VP Section 3
Lead Assessor Comment:				Date: 31/03/2012	
Based on the specific requirement presented in the VVM version 01.2 Para 208: Assessment of data and calculation of greenhouse gas emission reductions. The following issue has been identified According to the registered MP, the monitoring parameter of EG _{PA,y} will be continuous measurement and crosschecked against sales invoices. CAR#10 was raised requesting PP to clarify how the registered MP is followed considering the crosscheck process are not included in the MR version 1.0 At the same time, the reported monitoring results for parameter EG _{PA,y} are inconsistent with the assessment team verified results. Please clarify the reason and make relevant revision if necessary.					
Project Participant Response:				Date: 27/04/2012	
EG _{PA,y} was continuous measured and crosschecked against sales invoices. In the monitoring report 2.0, the right and conservative values are adopted in the MR 2.0.					
Documentation Provided as Evidence by Project Participant:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Information Verified by Lead Assessor:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Reasoning for not Acceptance or Acceptance and Close Out:					
Please kindly provide the transparent monitoring records for this parameter. At the same time, PP is also required to clarify the reason for data inconsistency. CAR#10 is remaining open to further clarification.					
Project Participant Response:				Date: 08/06/2012	
The parameter is monitored continuously by the electricity meters installed at the onsite substation, and the meters are read and recorded by the employees of the CHP plant. Every month, the power grid company would issue sales receipts based on these meter readings to the CHP. The monitoring of this parameter is in line with the description in monitoring plan. Due to the accuracy changing, the monitored value of this parameter was deemed as 878,204.546MWh, cross-checked with the sales receipts issued by power grid company, conservative value, 878,204.546MWh, was adopted in the calculating of baseline emission. In the monitoring report version 1.0, just value from sales receipts, 880,624.044MWh, was adopted, no cross-checking with the meter readings, and in the updated monitoring report, such mistake was corrected.					
Documentation Provided as Evidence by Project Participant:					
Monitoring report 2.1 dated 08/06/2012 Meter readings of electricity meters Sales receipts					
Information Verified by Lead Assessor:					
Monitoring report 2.1 dated 08/06/2012					
Reasoning for not Acceptance or Acceptance and Close Out:					

Relevant supporting evidences should be provided to the assessment team. Pending	
Project Participant Response:	Date: 27/08/2012
Updated monitoring report had integrated necessary information and relevant evidences had been provided to DOE.	
Documentation Provided as Evidence by Project Participant:	
Monitoring report 3.0, dated 27/08/2012 Meter readings of electricity meters from CHP	
Monitoring report 3.0, dated 27/08/2012 Meter readings of electricity meters from CHP	
Reasoning for not Acceptance or Acceptance and Close Out:	
PP clarified that the electricity sales receipts issued by the power grid company has been applied as cross check reference. And the incorrect value reported in the MR version 1.0 has been revised to be 880,847.087MWh. Referring to CAR #6 discussed in section 3.2.3. The 0.3% of the measured values has been deducted from the measured results. The final reported values is 878,204.546MWh, after cross check with the sales receipts the most conservative values have been chosen for final ER calculation. The final reported values form parameter EG _{PA,y} 878,204.546MWh. CAR#10 is therefore closed out.	
Acceptance and Close out by Lead Assessor: Lenore Yin	Date: 27/08/2012

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #11	Reference:	VP Section 3
Lead Assessor Comment:			Date: 31/03/2012		
Based on the specific requirement presented in the VVM version 01.2 Para 208: Assessment of data and calculation of greenhouse gas emission reductions. The following issue has been identified According to the registered MP, monitoring parameters of Q _{extracted,y} and Q _{HOB,y} will be hourly measured and crosschecked against the meter readings of the point of heat supply as well as heat invoices. CAR#11 was raised requesting PP to clarify how the registered MP is followed considering the crosscheck processes is not included in the MR version 1.0. Please clarify the reason and make relevant revision if necessary.					
Project Participant Response:			Date: 27/04/2012		
Q _{extracted,y} and Q _{HOB,y} are measured hourly and crosschecked against the meter readings as well as the heat invoices. In the monitoring report 2.0, the right and conservative values are adopted in the MR 2.0.					
Documentation Provided as Evidence by Project Participant:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Information Verified by Lead Assessor:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Reasoning for not Acceptance or Acceptance and Close Out:					
Based on the updated information presented in the MR version 2.0, the directed measured results and crosscheck process for Q _{extracted,y} and Q _{HOB,y} are not included in the MR version 2.0. At the same time, please kindly check the specific requirement presented in the applied methodology and registered monitoring plan. Before provide the final reply to the assessment team, please ensure that all PP understand the monitoring requirement for these two parameters. CAR#11 is remaining open to further clarification.					
Project Participant Response:			Date: 08/06/2012		

<p>The parameters are monitored continuously by the heat meters installed at the supply side of the CHP and HOBs. The meter in CHP will be read and recorded hourly and every month confirmed by the employees of the CHP plant and the project owner. The meters in HOBs will be read and recorded hourly and every month confirmed by the employees of the HOBs and the project owner. Every month, the heat supplier such as the CHP and HOBs would issue sales receipts which would be used to cross-check with the monitored value. The monitoring of the parameters is in line with the description in monitoring plan. To check the reliability of these values, in the monitoring report, these values were cross-checked with the output of the 174 substations and it could be found reliable.</p>	
Documentation Provided as Evidence by Project Participant:	
<p>Monitoring report version 2.1, dated 08/06/2012 Sales receipts from CHP and HOBs Meter readings of heat meters</p>	
Information Verified by Lead Assessor:	
<p>Monitoring report version 2.1, dated 08/06/2012 Sales receipts from CHP and HOBs Meter readings of heat meters</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>Please kindly provide relevant supporting documents to the assessment team. CAR#11 remaining open.</p>	
Project Participant Response:	Date: 27/08/2012
<p>During this monitoring period, only CHP plant worked as the heat resource and all the four HOBs were not put into operation. To check the reliability of these values, in the monitoring report, these values as the heat input of the heat network were cross-checked with the output of the 174 substations which is also the output of the heat network and it is found that the output of the heat network is lower than the input of the heat network, so it could be found reliable.</p>	
Documentation Provided as Evidence by Project Participant:	
<p>Monitoring report 3.0, dated 27/08/2012 Heat sales receipts from CHP ER calculation spreadsheet version 3.0, dated 27/08/2012</p>	
Information Verified by Lead Assessor:	
<p>Monitoring report 3.0, dated 27/08/2012 Heat sales receipts from CHP ER calculation spreadsheet version 3.0, dated 27/08/2012</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>Based on the clarification provided by PP, the assessment team identified that during current monitoring period. The monitoring process and the data collection procedure are in line with the requirement presented in the monitoring plan. The heat supplier (CHP plant) issued heat sales receipts to the Urumqi Heating Supply Co., Ltd (project owner), and the values presented in the sales receipts has been applied as cross-check reference with the monitored values. It was verified by the assessment team that no heat supplied from the HOB during the first monitoring period. Therefore, PP crosschecked the heat extracted from the CHP plant against the total amount of the heat supplied from substations covering the first monitoring period. The data comparison results show that the, the final amount of heat supplied form substation is 17.38% lower than the total amount of heat extracted from the CHP plant. During the on site visit, the assessment team confirmed that the heat supplied to the district heating system is only used for heating of buildings, not for industrial production process. Therefore, the assessment team considered that the 17.38% difference between the extracted point and the supply point is caused by the transmission loss. By checking the specific national guideline CJJ 34-2010 Design code for city heating network and consultant and input provided by the sectoral scope expert the assessment considered that the data presented in the final version of MR is</p>	

reliable and the cross check process is in line with the requirement presented in the revised monitoring plan. CAR#11 is therefore closed by the assessment team.					
Acceptance and Close out by Lead Assessor: Lenore Yin				Date: 27/08/2012	

Date:	31/03/2012		Raised by:	All members of the assessment team	
Type:	CAR	Number:	CAR #12	Reference:	VP Section 3
Lead Assessor Comment:				Date: 31/03/2012	
<p>Based on the specific requirement presented in the VVM version 01.2 Para 208: Assessment of data and calculation of greenhouse gas emission reductions.</p> <p>The following issue has been identified</p> <p>According to the registered MP, the monitoring parameters of $Q_{i,y}$ will be hourly measured and crosschecked against the heat meter readings of the heat extracted from the CHP and the heat extracted from HOBs as well as heat invoices. CAR#12 was raised requesting PP to clarify how the registered MP is followed considering the cross check process are not included in the MR version 1.0</p> <p>At the same time, the reported monitoring results for parameter $Q_{i,y}$ are inconsistent with the assessment team verified results.</p> <p>Please clarify the reason and make relevant revision if necessary.</p>					
Project Participant Response:				Date: 27/04/2012	
<p>$Q_{i,y}$ is measured hourly and crosschecked against the meter readings as well as the heat invoices. In the monitoring report 2.0, the right and conservative values are adopted in the MR 2.0.</p>					
Documentation Provided as Evidence by Project Participant:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Information Verified by Lead Assessor:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Reasoning for not Acceptance or Acceptance and Close Out:					
<p>Based on the updated information presented in the MR version 2.0, the directed measured results and crosscheck process for $Q_{i,y}$ are not included in the MR version 2.0. At the same time, please kindly check the specific requirement presented in the applied methodology and registered monitoring plan. Before provide the final reply to the assessment team, please ensure that all PP understand the monitoring requirement for this parameters.</p> <p>CAR#12 is remaining open to further clarification.</p>					
Project Participant Response:				Date: 08/06/2012	
<p>The parameter is monitored continuously by the heat meters installed at the supply side of the substations. The readings of the meters will be confirmed by the employees of the operator of the substations every month. The sales receipts based on these meter readings would be issued monthly and cross-checked with the monitored value. The monitoring of the parameters is in line with the description in monitoring plan. To check the reliability of the value, in the monitoring report, this parameter was cross-checked with the output of the he sources and it could be found reliable.</p>					
Documentation Provided as Evidence by Project Participant:					
N/A					
Information Verified by Lead Assessor:					
N/A					
Reasoning for not Acceptance or Acceptance and Close Out:					
Please kindly provide relevant supporting documents to the assessment team. CAR#12 remaining open.					
Project Participant Response:				Date: 27/08/2012	

<p>The parameter is monitored continuously by the heat meters installed at the supply side of the substations. The operator of the substations would read and record the meter readings every month. The sales receipts based on these meter readings would be issued monthly by the heat user centre which takes charge in operating and maintaining the substations and supplying heat to end user and cross-checked with the meter readings. The monitoring of the parameters is in line with the description in monitoring plan and the applied methodology. To check the reliability of the value, in the monitoring report, this parameter was cross-checked with the sum of meter readings of CHP. As the output of the heat network is lower than the input of the heat network, it could be found reliable.</p>	
<p>Documentation Provided as Evidence by Project Participant:</p>	
<p>Monitoring report 3.0, dated 27/08/2012 Heat sales receipts from CHP Sales receipts from heat user centre</p>	
<p>Information Verified by Lead Assessor:</p>	
<p>Monitoring report 3.0, dated 27/08/2012 Heat sales receipts from CHP Sales receipts from heat user centre</p>	
<p>Reasoning for not Acceptance or Acceptance and Close Out:</p>	
<p>In the revised MR and ER spreadsheet, the incorrect values have been revised to be correct. Measured records of $Q_{i,y}$ for each substations have been cross checked with the heat transaction notes (issued as heat supply evidence) issued by the Urumqi Heating Supply Co., Ltd. The total amount of $Q_{i,y}$ has been crosschecked against the heat meter readings of the heat extracted from the CHP and the heat extracted from the HOBs. During currently monitoring period, the heat extracted from the HOB houses is Zero. The data comparison results show that the, the final amount of heat supplied form substation is 17.38% lower than the total amount of heat extracted from the CHP plant. During the on site visit, the assessment team confirmed that the heat supplied to the district heating system is only used for heating of buildings, not for industrial production process. Therefore, the assessment team considered that the 17.38% difference between the extracted point and the supply point is caused by the transmission loss. By checking the specific national guideline CJJ 34-2010 Design code for city heating network and consultant and input provided by the sectoral scope expert the assessment considered that the data presented in the final version of MR is reliable and the cross check process is in line with the requirement presented in the revised monitoring plan. CAR#12 is closed by the assessment team.</p>	
<p>Acceptance and Close out by Lead Assessor: Lenore Yin</p>	<p>Date: 27/08/2012</p>

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #13	Reference:	VP Section 3
Lead Assessor Comment:				Date: 31/03/2012	
<p>Based on the specific requirement presented in the VVM version 01.2 Para 208: Assessment of data and calculation of greenhouse gas emission reductions. The following issue has been identified Monitoring parameter $FC_{i,j,y}$ Quantity of fuel coal combusted in process j during the year y: the reported monitoring results for parameter $FC_{i,j,y}$ are inconsistent with the assessment team verified results. Please clarify the reason and make relevant revision if necessary.</p>					
Project Participant Response:				Date: 27/04/2012	
<p>In monitoring report 1.0, wrong values were adopted as the quantity of coal combusted in process j, and in monitoring report 2.0, such mistake is corrected.</p>					
Documentation Provided as Evidence by Project Participant:					
Revised Monitoring Report Version 2.0, dated 26/04/2012					
Information Verified by Lead Assessor:					

Revised Monitoring Report Version 2.0, dated 26/04/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	
Please further clarify the data collection procedure and report the correct values for this parameter. At the same time, relevant data records and supporting evidence need to be provided. CAR#13 is remaining open to further clarification.	
Project Participant Response:	Date: 08/06/2012
This parameter is monitored continuously by the strap installed at the entrance of the boilers and the strap meter readings are recorded by the operator of the CHP and HOBs. Every month the monitored data would be reported to project owner. During this monitoring period, total 612,738.72tonnes coals were consumed in the CHP plant.	
Documentation Provided as Evidence by Project Participant:	
Monitoring report version 2.1, dated 08/06/2012 Record of coal consumption from CHP	
Information Verified by Lead Assessor:	
Monitoring report version 2.1, dated 08/06/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	
Pending for the supporting documents provided by PP. CAR#13 still remains open.	
Project Participant Response:	Date: 27/08/2012
The parameter is monitored continuously by the strap installed at the entrance of the boilers and the strap meter readings are recorded by the operator of the CHP. Every month the monitored data would be reported to project owner. The consistency of metered coal consumption quantities would be cross-checked by a balance that is based on purchased quantities and stock changes.	
Documentation Provided as Evidence by Project Participant:	
Monitoring report 3.0, dated 27/08/2012 Record of coal consumption from CHP Sales receipts of coal purchase from CHP Coal stock report from CHP	
Information Verified by Lead Assessor:	
Based on the applied Tool, the CO ₂ emission from fossil fuel combustion in process are calculated based on the quantity of fuels combusted and the CO ₂ emission coefficient of those fuels. For this project, the actual fuel combust has been continuously measured by the strap balances installed in the CHP plant and the HOB boiler houses. The monthly monitoring report for the actual coal combusted in CHP has been provided. Actual coal delivered to the CHP plant measured by the weight bridge and the coal purchase receipts has been provided as cross check reference. During the first monitoring period, no coal combusted by the HOB houses and relevant statement has been issued by each boiler house as supporting evidence. Final reported values presented in the MR and ER spreadsheet has been verified to be correct. CAR#13 is therefore closed by the assessment team.	
Acceptance and Close out by Lead Assessor: Lenore Yin	Date: 27/08/2012

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #14	Reference:	VP Section 3
Lead Assessor Comment:				Date: 31/03/2012	
Based on the specific requirement presented in the VVM version 01.2 Para 208: Assessment of data and calculation of greenhouse gas emission reductions. The following issue has been identified Monitoring parameter NCV _{i,y} Weighted average net calorific value of fuel coal consumed in CHP and HOB Boiler House in year y: the reported monitoring results for parameter NCV _{i,y} are inconsistent with the					

assessment team verified results. Please clarify the reason and make relevant revision if necessary.	
Project Participant Response:	Date: 27/04/2012
In monitoring report 1.0, wrong values were adopted as the weighted average net calorific value of coal combusted in process j, and in monitoring report 2.0, such mistake is corrected.	
Documentation Provided as Evidence by Project Participant:	
Revised Monitoring Report Version 2.0, dated 26/04/2012	
Information Verified by Lead Assessor:	
Revised Monitoring Report Version 2.0, dated 26/04/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	
Please further clarify the data collection procedure and report the correct values for this parameter. At the same time, relevant data records and supporting evidence need to be provided. CAR#14 is remaining open to further clarification.	
Project Participant Response:	Date: 08/06/2012
According to the registered PDD and the applied methodology, this parameter should be monitored by the following options: 1.Values provided by the fuel supplier in invoices (prefer option) 2.Measurements by the project participants (or owner of CHP) As no such values in the invoice supplied, the option 1 is not available. Then option 2 was used. In this case, the NCV of the coal from CHP or HOBs was monitored by its owner in accordance with relevant industrial standard. According to the regulations of the CHP and HOBs, before entering into boilers, coal from different suppliers must be mixed up to keep the NCV relatively stable. The CHP operator would sample everyday and when every 60000 tonnes coal were consumed, the collected samples would be sent to a third party's laboratory to measure the NCV of the coal according to relevant industrial standard by trained employees.	
Documentation Provided as Evidence by Project Participant:	
Monitoring report version 2.1, dated 08/06/2012 Regulations of CHP and HOBs NCV Measurement report from CHP Certification of employee who implement the NCV measurement	
Information Verified by Lead Assessor:	
Monitoring report version 2.1, dated 08/06/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	
Detailed information is pending for the supporting documents. CAR#14 still remaining open.	
Project Participant Response:	Date: 27/08/2012
According to the registered PDD and the applied methodology, this parameter should be monitored by the following options: 1.Values provided by the fuel supplier in invoices (prefer option) 2.Measurements by the project participants (or owner of CHP) As this parameter is related to the consumed coal quantities ($FC_{i,j,y}$) and before entering into boilers, coal from different suppliers must be mixed up to keep the NCV relatively stable, this parameters have no direct relationship with the purchased coal from the fuel supplier. The option 1 had to be abandoned. The CHP operator would sample everyday and when every 60,000 tonnes coal were consumed, the collected samples would be sent to a third party's laboratory to measure the NCV of the coal according to relevant industrial standard by trained employees.	
Documentation Provided as Evidence by Project Participant:	
Monitoring report 3.0, dated 27/08/2012 NCV Measurement report from a authorized third party	

Information Verified by Lead Assessor:	
<p>Monitoring report 3.0, dated 27/08/2012 NCV test report for the coal combusted in the CHP plant NCV test report for the coal delivered to the CHP plant</p>	
<p>Based on the on site visit results and the clarification provided by PP, the actual monitoring process of NCV_{i,y} presented in below.</p> <p>In the actual implementation stage, Coal purchase invoices are not applicable for the data sources for monitoring parameter NCV_{i,y}.</p> <p>By interview relevant fuel suppliers, the assessment team confirms that the coal NCV values are not provided by coal suppliers through sales invoices. Based on our local and sectoral expertise, the assessment team identified that no specific NCV values presented in the sales invoices in most projects in China except for cases where specific requirements are raised by the coal purchasers.</p> <p>The assessment team also confirmed that no specific NCV_{i,y} values were provided by the coal supplier by checking the coal purchase invoices for the project collected during the verification and as a cross reference, the assessment team also visited other similar registered CDM project PA5080 using the same methodology. For PA 5080, there are no NCV values issued in sales invoices by the coal supplier. Before the coal is delivered to the boilers, the different batches of coal are mixed for stabilizing the quality of the coal combusted. According to the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", quantity of coal combusted (FC_{i,j,y}) and weighted average NCV of coal are monitored for identifying the project emission. It is more accurate for identifying the project emission that FC coal and NCV combustion are applied.</p> <p>For this project, in order to ensure the quality of coal, the NCV_{i,y} of coal has been measured by the qualified analytical entity hired by the CHP plant, responsible for testing the NCV_{i,y} level of the delivered coal, and NCV_{i,y} level of the final coal combusted by the boilers. Therefore, option 1 "Values provided by the fuel supplier in invoices" is not applicable in the actual monitoring process. Relevant test reports have been saved by the PP.</p> <p>In the data reporting process, the NCV_{i,y} value is sourced from the record of PPs. Based on the monitoring plan, the option 2 has been applied during this monitoring period. Based on the definition presented in the TOOL, this project emission calculation is based on the quantity of fuels combusted by the boilers, and the NCV value of combusted fuel which PP test before it is transmitted to the boilers, (Note: Not the tested NCV values of the coal delivered to the project site which is purchases by the PP from the supplier).</p> <p>The actual NCV_{i,y} monitoring status has been provided by the CHP plant operator. Each batch of coal (combusted by the boilers) was randomly sampled in the strap balance and then be analyzed in the qualified analytical entity in accordance with relevant national guidance. Analytical records were archived and then aggregated to monthly records. Moreover, as part of the internal quality control procedures, coal sample is also randomly picked and then send to internal accredited lab for testing, the testing results from internal lab is used as a cross reference to ensure the test quality.</p> <p>The monitoring of NCV is in compliance with the registered PDD. In the updated of MR and ER spreadsheet, the corrected NCV_{i,y} values have been provided which is based on the test records for the coal combusted by the boilers. Through document review, the assessment team confirmed that the reported values is correct. CAR#14 is therefore closed.</p>	
Acceptance and Close out by Lead Assessor: Lenore Yin	Date:27/08/2012

Date:	31/03/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #15	Reference:	VP Section 2
Lead Assessor Comment:				Date: 31/03/2012	

Based on the specific requirement presented in the VVM version 01.2 Para 208: Assessment of data and calculation of greenhouse gas emission reductions. The following issue has been identified The reported value of total emission reductions during the period from 15/10/2011 to 31/12/2011 is higher than that estimated in the registered PDD for the same period. Please clarify the difference.	
Project Participant Response:	Date: 27/04/2012
The emission reductions of this project are generated during the heat supply season, so the average monthly emission reductions of the whole year are lower than the average monthly emission reductions during the heat season.	
Documentation Provided as Evidence by Project Participant:	
Revised Monitoring Report version 2.0 dated 26/04/2012	
Information Verified by Lead Assessor:	
Revised Monitoring Report version 2.0 dated 26/04/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	
Relevant clarification for the increase in the emission reductions has been presented in MR version 2.0 section E.6. Through reviewing this section, assessment team still has several enquiries for the PP's explanation. Point one: clarification relating to the seasonal variability of resource. According to the clarification provided by the PP, the increase of emission reduction is related to difference between the heat supply season and no heat supply season. Please provide relevant evidence and clarification to support this judgment. Point two: expound on prove through argument, the applied comparison method of the actual emission reduction claimed for this monitoring period with the estimation in the registered PDD is reasonable and accurate. CAR#15 is remaining open to further clarification.	
Project Participant Response:	Date: 08/06/2012
As a district heating project, the emission reduction of this project could only generated during the heat supply season. According to the registered PDD, the annual baseline emissions from the heat generation in 2011 are 1,927,999tCO ₂ e, generated within 183 days (according to local regulation, the heat supply season is from Oct 15 th to Apr 15 th of next year, 183 days), so the average daily baseline emissions from the heat generation should be about 10,535tCO ₂ e (10,535=1,927,999/183). The annual baseline emissions from the power generation in 2011 are 4,240,675tCO ₂ e, generated in the whole year, so the daily baseline emissions from the heat generation should be about 11,618 tCO ₂ e (11,618=4,240,675/365). The annual project emissions in 2011 are 5,071,027tCO ₂ e, generated in the whole year , so the daily project emissions are 13,893tCO ₂ e (13,893=5,071,027/365). As the leakage is zero, the daily emission reductions should be about 8,260tCO ₂ e (8,260=10,535+11618-13,893-0). According to the length of this monitoring period (78days), the estimated emission reductions during this monitoring period should be 644,280tCO ₂ e (644,280=8,260*78). The actual emission reductions during this monitoring period are 315,210tCO ₂ e, which is lower than the estimation in the registered PDD.	
Documentation Provided as Evidence by Project Participant:	
Monitoring report version 2.1 dated 08/06/2012	
Information Verified by Lead Assessor:	
Monitoring report version 2.1 dated 08/06/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	
PP clarified that due to the natural of the district heating project, the emission reduction of this project could only generated during the heat supply season. In the updated MR section E.5, PP re-calculated the estimated	

<p>emission reductions in this monitoring period. The calculation process has been verified by the assessment team. Detailed information presented in below:</p> <p>In Urumqi City, the heating season is from 15 October to 15 April (183days). In estimation, the average daily emission reductions in year 2011 is 8,260 tCO₂e (Daily ER 8,260 tCO₂e = BE_{HG,y} 10,535 tCO₂e + BE_{EL,y} 11,618tCO₂e - PE_y14,130tCO₂e tCO₂e – Leakage 0tCO₂e).</p> <p>Daily BE_{HG,y} = 10,535tCO₂e (10,535tCO₂e =1,927,999tCO₂e /183 days), only heating season has been included for baseline emission from heat generation, in Urumqi City the heating season is 183 days. Daily BE_{EL,y} = 11,618 tCO₂e (11,618 tCO₂e =4,240,675 tCO₂e /365 days) Daily PE_y = 13,893tCO₂e (13,893tCO₂e =5,071,027tCO₂e /365 days) Daily Leakage is Zero</p> <p>The estimated emission reduction in this monitoring period is 644,280tCO₂e (644,280tCO₂e =8,260tCO₂e *78Ddays), which is actual higher than the final reported emission reductions (315,210 tCO₂e) in this monitoring period. Therefore, the assessment team considered that no increase in estimates of the emission reductions in the first monitoring period. CAR#15 is therefore closed by the assessment team.</p>	
<p>Acceptance and Close out by Lead Assessor: Lenore Yin</p>	<p>Date: 20/06/2012</p>
<p>Lead Assessor Comment: (CAR#15 Reopen)</p>	<p>Date: 11/09/2012</p>
<p>Through further document review, the assessment team identified that the date of the heat supply season has not been defined in the PDD? And no specific information to prove the daily electricity generation and daily fuel consumption are similar during heat supply season and non heat supply season.</p> <p>In addition, no specific justification and supporting evidence provided to ensure the current emission reduction comparison method is reasonable.</p> <p>Please clarify why the applied estimated daily emission reduction is 8260 tCO₂e/day for heating season is reasonable.</p>	
<p>Project Participant Response:</p>	<p>Date: 16/09/2012</p>
<p>The estimated annual volume of emission reduction in 2011 of the registered PDD is 1,097,647tCO₂e. If the project wasn't a district heating project and had no heat supply season, the estimated emission reduction during this monitoring period (78 days) should be 234,565tCO₂e (234,565=1,097,647*78/365), which would be lower than the actual values achieved during this monitoring period. But as a district heating project, the emission reduction of this project could only generated during the heat supply season. In the registered PDD page 28, the heat supply season had been defined. According to the FSR, heat would be supplied only during the heat supply season (181 days), so the daily baseline emission analysis of heat supply is calculated as the annual volume divided by 181 days. In the FSR, the analysis on electricity generation and fuel consumption is based on the whole year, no heat supply season or non heat season is identified. So the analysis of the daily electricity generation and daily fuel consumption in the MR is just the average of the whole year volume. The annual baseline emissions from the heat supply in 2011 are 1,927,999tCO₂e, so the average daily baseline emissions from the heat generation should be about 10,651tCO₂e (10,651=1,927,999/181). The annual baseline emissions from the power generation in 2011 are 4,240,675tCO₂e, generated in the whole year, so the daily baseline emissions from the heat generation should be about 11,618 tCO₂e (11,618=4,240,675/365).</p> <p>The annual project emissions in 2011 are 5,071,027tCO₂e, generated in the whole year, so the daily project emissions are 13,893tCO₂e (13,893=5,071,027/365). As the leakage is zero, the daily emission reductions should be about 8,376tCO₂e (8,376=10,651+11618-13,893-0).</p>	
<p>Documentation Provided as Evidence by Project Participant:</p>	
<p>Monitoring report version 4.0 dated 16/09/2012 Revised PDD version 06.2, Dated 16/09/2012 FSR</p>	
<p>Information Verified by Lead Assessor:</p>	

<p>Monitoring report version 4.0 dated 16/09/2012 Revised PDD version 06.2, Dated 16/09/2012 FSR Issued in Dec 2003</p>	
<p>Reasoning for not Acceptance or Acceptance and Close Out:</p>	
<p>Based on PP's justification and the natural of the project activity, the assessment team considered the original method which used to calculate the estimated emission reductions ($234,565 \text{ tCO}_2\text{e} = 78 \times 1,097,647 \text{ tCO}_2\text{e}/365$) during current monitoring period is not suitable for this project.</p> <p>For the district heating project, the emission reduction only generated in the heat supply season. In year 2011, the total estimated emission reduction is 1,097.647 tCO₂e.</p> <p>In the registered version of PDD page 28, the defined period of the heat supply season is 181 days (Based on the FSR for the project activity).</p> <p>Daily $BE_{HG,y}$ in year 2011 = 10,651tCO₂e ($10,651\text{tCO}_2\text{e} = 1,927,999\text{tCO}_2\text{e} / 181 \text{ days}$), only heating season (181days) has been included for baseline emission from heat generation.</p> <p>PP clarified that based on the FSR the electricity generation and fuel consumption is estimated based on the whole year, no distinction has been made in the heat supply season or no heat supply season. Therefore, the estimation for the baseline emission for the power generation and the project emission are estimated based on the whole year.</p> <p>Daily $BE_{EL,y} = 11,618 \text{ tCO}_2\text{e}$ ($11,618 \text{ tCO}_2\text{e} = 4,240,675 \text{ tCO}_2\text{e} / 365 \text{ days}$)</p> <p>Daily $PE_y = 13,893\text{tCO}_2\text{e}$ ($13,893\text{tCO}_2\text{e} = 5,071,027\text{tCO}_2\text{e} / 365 \text{ days}$)</p> <p>Daily Leakage is Zero</p> <p>Based on the estimation, the estimated daily emission reductions is 8,376tCO₂e ($8,376 \text{ tCO}_2\text{e} = 10,651 \text{ tCO}_2\text{e} + 11,618 \text{ tCO}_2\text{e} - 13,893 \text{ tCO}_2\text{e} - 0$).</p> <p>The estimated emission reduction in this monitoring period is 653,328tCO₂e ($653,328 \text{ tCO}_2\text{e} = 8,376\text{tCO}_2\text{e} \times 78\text{Days}$), which is actual higher than the final reported emission reductions (315,210 tCO₂e) in this monitoring period. Therefore, the assessment them considered that no increase in estimates of the emission reductions in the first monitoring period. And the method to calculate the estimated emission reduction is accepted by the assessment team. Relevant information has also been updated in the updated MR version 4.0 and verified to be correct. CAR#15 is therefore closed by the assessment team.</p>	
<p>Acceptance and Close out by Lead Assessor: Lenore Yin</p>	<p>Date: 24/09/2012</p>

Remaining Issue from Validation Stage:

	CARs	CLs	FARs
Total Number raised	1	0	0

Type:	CAR#16	Number:	CAR#16	Reference:	Validation Report
Lead Assessor Comment:				Date: 31/03/2012	
FAR raised during the validation stage: “The energy efficiency for power generation of Xinjiang Huadian Hongyanchi Power Plant should be monitored, if an actual efficiency higher than the design efficiency is discovered, the higher value should be used for determination of emission reductions.” Through document review, the assessment team identified that no specific justification provided in the monitoring report version 1.0 relate to the FAR, and relevant information provided by the PP can not prove that the FAR has been resolved. Based on the specific requirement in VVM version 01.2 Para 190 (c), CAR#16 is therefore raised requesting PP to clarify this issue and make relevant revision if necessary.					
Project Participant Response:				Date: 27/04/2012	
During this monitoring period, no technical measure was taken to improve the efficiency of the CHP plant, and even since the commissioning of the CHP plant, no such measure was taken. So according to the applied methodology and the registered PDD, the same value of this parameter is adopted in the monitoring report and the FAR during the validation should be resolved.					
Documentation Provided as Evidence by Project Participant:					
N/A					
Information Verified by Lead Assessor:					
N/A					
Reasoning for not Acceptance or Acceptance and Close Out:					
No specific supporting evidence received from PP. The assessment team can not further verify this issue. CAR#16 is remaining open to further clarification.					
Project Participant Response:				Date: 08/06/2012	
According to the evidence provided by the CHP plant, during this monitoring period, no technical measure was taken to improve the efficiency of the CHP plant, and even since the commissioning of the CHP plant, no such measure was taken. So the value which applied in the registered PDD is adopted in the monitoring report and this parameter would be monitored throughout the crediting period and the FAR during the validation should be resolved.					
Documentation Provided as Evidence by Project Participant:					
Monitoring report version 2.1 dated 08/06/2012					
Information Verified by Lead Assessor:					
Monitoring report version 2.1 Statement issued by the CHP power plant: No technical measure was taken to improve the efficiency of the CHP plant since 15/10/2005. Issued on 29/03/2012 Operation and maintenance logs of CHP Plant covering this monitoring period					
Project Participant Response:				Date: 27/08/2012	

The supporting evidence had been supplied to DOE.	
Documentation Provided as Evidence by Project Participant:	
Monitoring report 3.0 Dated 27/08/2012 Statement issued by the CHP power plant: No technical measure was taken to improve the efficiency of the CHP plant since 15/10/2005. Issued on 29/03/2012 Operation and maintenance logs of CHP Plant covering this monitoring period	
Information Verified by Lead Assessor:	
Monitoring report 3.0 Dated 27/08/2012 Statement issued by the CHP power plant: No technical measure was taken to improve the efficiency of the CHP plant since 15/10/2005. Issued on 29/03/2012 Operation and maintenance logs of CHP Plant covering this monitoring period	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>PP clarified that no technical measure taken to improve the efficiency of the CHP plant. This statement has been proved by cross checking the formal statement issued by the CHP plant, the CHP plant clarified that since the district heating project put into operation on 15/10/2012 till present, no technical measure taken to improve the efficiency of the CHP plant. During the first monitoring period, the efficiency 38.31% defined in the validation stage has been applied.</p> <p>As pre the registered monitoring plan, parameter $\eta_{BBL,ELB}$ has been defined as a monitoring parameter. If any technical measure have been taken in the following monitoring period and the efficiency has been increased by x%, the efficiency of the baseline power plant (38.31%) should also be increased by the same x%. According to the evidence provided by the CHP plant, since the commissioning of the CHP plant, no technical measure was taken to improve the efficiency of the CHP plant. So in this monitoring period, no technical measure was taken, the increase of the efficiency of the baseline power plant is deemed as 0%. The value which applied in the registered PDD is adopted in the monitoring report and this parameter would be monitored throughout the crediting period. The assessment team accepted PP to use the efficiency 38.31% for baseline emission calculation. CAR#16 can be closed by the Assessment team. And the FAR raised in the validation was closed in the first periodic verification, considering the efficiency of power plant has been defined as a formal monitoring parameter in the monitoring plan.</p>	
Acceptance and Close out by Lead Assessor: Lenore Yin	Date: 27/08/2012

Date:	27/08/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #17	Reference:	VP Section 3
Lead Assessor Comment:				Date: 27/08/2012	
<p>The following issue has been identified Monitoring parameter $Q_{extracted,y}$: the reported monitoring results for parameter $Q_{extracted,y}$ are inconsistent with the assessment team verified results. Please clarify the reason and make relevant revision if necessary.</p>					
Project Participant Response:				Date: 27/08/2012	
<p>In the monitoring report 1.0, wrong value of $Q_{extracted,y}$ was adopted. This parameter is monitored by the heat meter installed at the supply side of primary heat exchanger of CHP, which is in line with the description in the registered PDD. In the updated MR version 3.0, right value from the meter readings of the heat meter is adopted, which is cross-checked with the heat sales receipts.</p>					
Documentation Provided as Evidence by Project Participant:					
Monitoring report 3.0, Dated 27/08/2012 Meter readings of the heat meter Sales receipts of the extracted heat from CHP					
Information Verified by Lead Assessor:					

Monitoring report 3.0, dated 27/08/2012 ER calculation spreadsheet version 3.0 dated 27/08/2012 Meter readings of the heat meter Sales receipts of the extracted heat from CHP	
Reasoning for not Acceptance or Acceptance and Close Out:	
Relevant supporting evidence has been collected by the assessment team and the final verified results for $Q_{\text{extracted},y}$ is 3,956,152.00GJ. Revised document has been confirmed to be correct. CAR#17 is therefore closed by the assessment team.	
Acceptance and Close out by Lead Assessor: Lenore Yin	Date: 27/08/2012

Date:	11/09/2012	Raised by:	All members of the assessment team		
Type:	CL	Number:	CL #18	Reference:	VP Section 3
Lead Assessor Comment:				Date: 11/09/2012	
For monitoring parameter $NCV_{i,y}$, considered the QA/QC procedure is not included in the monitoring plan. Please clarify the compliance with the applied methodology.					
CL#18 is therefore raised by the assessment team.					
Project Participant Response:				Date: 16/09/2012	
According to the QA/QC procedure of the methodology and relevant tool, the value of this parameter should be compared with the uncertainty range of the IPCC default values as provided in Table 1.2, Vol. 2 of the 2006 IPCC Guidelines. During the project implementation of this monitoring period, pp compared the measured value with this range (5.5 to 32.2GJ/tonne, according to IPCC 2006, the lower and upper limits of the 95 percent confidence intervals, values of possible kinds of coal such as Anthracite, Coking Coal, Other Bituminous Coal, Sub-Bituminous Coal and Lignite included) and found the value fell within it. But to be reliable, PP engaged a testing laboratory which has ISO17025 accreditation to issue the measuring report of this parameter to justify the outcome and the measurement.					
The QA/QC procedure is integrated in the updated PDD to make the monitoring plan more complete. As such correction to project information of a registered CDM project activity does not affect the design of the project activity, it does not require prior approval by the Board.					
Documentation Provided as Evidence by Project Participant:					
Monitoring report version 4.0 dated 16/09/2012 Revised PDD version 06.2, Dated 16/09/2012					
Information Verified by Lead Assessor:					
Monitoring report version 4.0 dated 16/09/2012 Revised PDD version 06.2, Dated 16/09/2012 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy. Table 1.2 Default Net Calorific Values and Lower and Upper Limits of the 95% confidence intervals.					
Reasoning for not Acceptance or Acceptance and Close Out:					
By further review PP's clarification, the assessment team confirm that the QA/QC procedure has been implemented by PP based on the requirement presented in the applied methodology. However, no specific QA/QC procedure involved in the registered monitoring plan for parameter $NCV_{i,y}$. The monitoring plan for parameter $NCV_{i,y}$ has been considered to be incomplete.					
In order to solve this issue, PP corrected the registered PDD and provides specific QA/QC procedure in monitoring plan as per the applied methodology and the actual implementation status.					
This correction does not affect the design of the project activity and no change in the monitoring system. The correction has been made to ensure the completeness of monitoring plan. The assessment team considered that this correction is meets the requirements of PS Appendix 1 and no not require prior approval by the board.					
CL#18 is therefore closed by the assessment team.					
Acceptance and Close out by Lead Assessor: Lenore Yin				Date: 24/09/2012	

Date:	11/09/2012	Raised by:	All members of the assessment team		
Type:	CAR	Number:	CAR #19	Reference:	VP Section 3
Lead Assessor Comment:			Date: 11/09/2012		
<p>Issued relate to the monitoring parameter $FC_{i,j,y}$</p> <p>According to the monitoring plan, the consistency of metered fuel consumption quantities is cross-checked by an annual energy balance that is based on purchased quantities and stock changes. The current energy balance is based on power generation efficiency. Please clarify how the QA/QC procedures of $FC_{i,j,y}$ described in the monitoring plan have been followed.</p>					
Project Participant Response:			Date: 16/09/2012		
<p>During this monitoring period, the procedure of QA/QC in the monitoring plan had been followed. As only CHP consumed coal and supplied heat to the heat network during this monitoring period, an energy balance had been implemented based on the coal consumption in CHP. The coal consumption is cross-checked with the purchased quantities and stock changes. During this monitoring period, 618,068.26tonnes were purchased and 612,738.72tonnes were consumed in the CHP. Considering about the storage loss and water evaporating, the stock changes during this monitoring period was found reliable and consistent. The percentage occupied by energy generated including heat generation ($Q_{\text{extracted},y}$) and electricity generation (E_{CHP}) of the sum of input energy $Q_{\text{CHP},\text{all}}$. The $Q_{\text{CHP},\text{all}}$ is the energy gained from the consumed coal in CHP during this monitoring period. This energy balance showed the energy output was about 69.85% of the energy input. So the QA/QC procedures of $FC_{i,j,y}$ described in the monitoring plan have been followed.</p>					
Documentation Provided as Evidence by Project Participant:					
<p>Monitoring report version 4.0 dated 16/09/2012</p> <p>Monitoring Parameter $FC_{i,j,y}$:Monthly Monitoring Reports of coal delivered to the CHP, measured by the weigh bridge</p> <p>Coal stock monthly record of the CHP Plant</p>					
Information Verified by Lead Assessor:					
<p>Monitoring report version 4.0 dated 16/09/2012</p> <p>Monthly Monitoring Reports of coal combusted by the CHP, measured by the strap balances installed.</p> <p>Monthly Monitoring Reports of coal delivered to the CHP, measured by the weigh bridge</p> <p>Coal stock monthly record of the CHP Plant</p>					
Reasoning for not Acceptance or Acceptance and Close Out:					
<p>As per the PP's clarification, the QA/QC procedure for monitoring parameter $FC_{i,j,y}$ have been implemented by PP.</p> <p>During the first monitoring period, only CHP consumed coal and supply the heat to the heat network. Total coal delivered to the CHP plant is 618,068.26 tonnes, this value is based on the weight bridge measured records. Total coal combusted in the CHP plant is 612,738.72tonnes, this value is based on the strap balance measured records. Taken into account of storage loss and water evaporating during the coal storage period, the stock changes have been considered to be acceptable. By cross checking the coal stock monthly record of the CHP Plant and interview relevant stuff in the CHP plant the assessment team considered the final reported values for $FC_{i,j,y}$ is acceptable</p> <p>During this monitoring period, the procedure of QA/QC in the monitoring plan had been followed. As only CHP consumed coal and supplied heat to the heat network during this monitoring period, an energy balance had been implemented based on the coal consumption in CHP. The coal consumption is cross-checked with the purchased quantities and stock changes. During this monitoring period, 618,068.26tonnes were purchased and 612,738.72tonnes were consumed in the CHP. Considering about the storage loss and water evaporating, the stock changes during this monitoring period was found reliable and consistent. The percentage occupied by energy generated including heat generation ($Q_{\text{extracted},y}$) and electricity generation (E_{CHP}) of the sum of input energy $Q_{\text{CHP},\text{all}}$. The $Q_{\text{CHP},\text{all}}$ is the energy gained from the consumed coal in CHP during this monitoring period. This energy balance showed the energy output was about 69.85% of the energy input. So the QA/QC procedures of $FC_{i,j,y}$ described in the monitoring plan have been followed.</p>					
Acceptance and Close out by Lead Assessor:			Date: 24/09/2012		
Lenore yin					

Date:	11/09/2012		Raised by:	All members of the assessment team	
Type:	CAR	Number:	CAR # 20	Reference:	VP Section 3
Lead Assessor Comment:				Date: 11/09/2012	
<p>Issue related to the Information presented in MR version 3.0: According to EB66, Annex 20 "Guidelines for completing the Monitoring Report form (CDM-MR)", the assessment team verified reported information presented the section D "Data and Parameters". This section shall include value of monitored parameter in monitoring period for the purpose of calculating emission reductions.</p>					
Project Participant Response:				Date: 16/09/2012	
<p>According to EB66, Annex 20 "Guidelines for completing the Monitoring Report form (CDM-MR)", the value of monitored parameter in monitoring period has been integrated in the monitoring report version 4.0 for the purpose of calculating emission reductions.</p>					
Documentation Provided as Evidence by Project Participant:					
Monitoring report version 4.0 dated 16/09/2012					
Information Verified by Lead Assessor:					
Monitoring report version 4.0 dated 16/09/2012					
Reasoning for not Acceptance or Acceptance and Close Out:					
Relevant information has been reported in the MR version 4.0 and verified to be correct. CAR#20 is therefore closed.					
Acceptance and Close out by Lead Assessor: Lenore Yin				Date: 22/09/2012	

10. Statement of Competence

Statement of Competence

Name: Lenore
Yin

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)

x

Technical Area(s): TA 1.2 Energy generation from renewable energy sources

2. Energy Distribution

Technical Area(s):

3. Energy Demand

Technical Area(s):

4. Manufacturing

Technical Area(s):

5. Chemical Industry

Technical Area(s):

6. Construction

Technical Area(s):

7. Transport

Technical Area(s):

8. Mining/Mineral Production

Technical Area(s):

9. Metal Production

Technical Area(s):

10. Fugitive Emissions from Fuels (solid, oil and gas)

Technical Area(s):

11. Fugitive Emissions from Production and

Consumption of Halocarbons and Sulphur Hexafluoride

Technical Area(s):

12. Solvent Use

Technical Area(s):

13. Waste Handling and Disposal

Technical Area(s):

14. Afforestation and Reforestation

Technical Area(s):

15. Agriculture

Technical Area(s):

Approved Member of Staff by:

Siddharth
Yadav

Date:

06/02/2012

Statement of Competence

Name: Yi Liao

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
Technical Area(s): TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity from solar	
TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	x
Technical Area(s): TA 13.1: Waste handling and disposal	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 15/02/2012

Statement of Competence

Name: Megnina
Zhu

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
Technical Area(s): TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 01/08/2012

Statement of Competence

Name: Aidan Li

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
Technical Area(s): TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 19/10/2012

Statement of Competence

Name: Simon
Zhao

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
Technical Area(s): TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth
Yadav

Date: 04/07/2012

Statement of Competence

Name: **Jumson Fu**

Status

- Lead Assessor	<input type="checkbox"/>	- Expert	<input checked="" type="checkbox"/>
- Assessor	<input type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input type="checkbox"/>	- Technical Reviewer	<input type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
Technical Area(s): TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity from solar	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s):	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input type="checkbox"/>
Technical Area(s):	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input type="checkbox"/>
Technical Area(s):	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by: **Siddharth Yadav** Date: **15/02/2012**

11. Photographic Evidence

Unique reference number:10030277540026

Parameter: $EG_{PA,y}$

Name of equipment: Main meter (ErDa)

Date: 20/03/2012



Unique reference number:09090167290037

Parameter: EG_{PA,y}

Name of equipment: Main meter (ErDong)

Date: 20/03/2012



Unique reference number:20070624010096

Parameter: EG_{PA,y}

Name of equipment: Main meter (ErHua)

Date: 20/03/2012



Unique reference number:200409179U0207

Parameter: EG_{PA,y}

Name of equipment: Main meter (ErGong)

Date: 20/03/2012



Unique reference number:200010004U0074

Parameter: EG_{PA,y}

Name of equipment: Main meter (Auxiliary Line) Date: 20/03/2012



Unique reference number: 2007077201048

Parameter: EG_{PA,y}

Name of equipment: Main meter (ErMan)

Date: 20/03/2012



Unique reference number: 200111Z11U0076

Parameter: EG_{PA,y}

Name of equipment: Main meter (ErBa)

Date: 20/03/2012



Unique reference number:10030277540030

Parameter: EG_{PA,y}

Name of equipment: Backup meter (ErDa)

Date: 20/03/2012



Unique reference number:09090167290039

Parameter: EG_{PA,y}

Name of equipment: Backup meter (ErDong)

Date: 20/03/2012



Unique reference number: 20070624010099

Parameter: $EG_{PA,y}$

Name of equipment: Backup meter (ErHua)

Date: 20/03/2012



Unique reference number: 200409179U0208

Parameter: $EG_{PA,y}$

Name of equipment: Backup meter (ErGong)

Date: 20/03/2012



Unique reference number: 200111Z11U0006 Parameter: EG_{PA,y}

Name of equipment: Backup meter (Auxiliary Line Date: 20/03/2012



Unique reference number: 2007077201047 Parameter: EG_{PA,y}

Name of equipment: Backup meter (ErMan) Date: 20/03/2012



Unique reference number:200010004U0051

Parameter: $EG_{PA,y}$

Name of equipment: Backup meter (ErBa)

Date: 20/03/2012

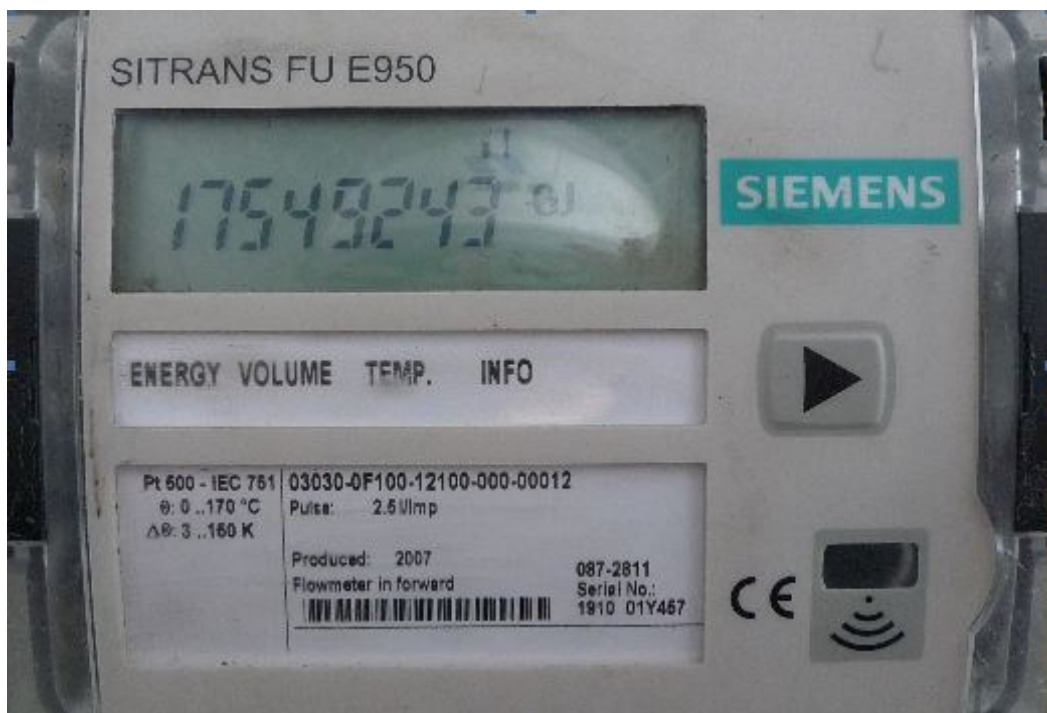


Unique reference number:1910 01Y457

Parameter: $Q_{extracted,y}$

Name of equipment: Main heat meter

Date: 20/03/2012



Unique reference number:5302496

Parameter: $Q_{HOB,y}$

Name of equipment: Main heat meter (HOB-Weihuliang)

Date: 20/03/2012

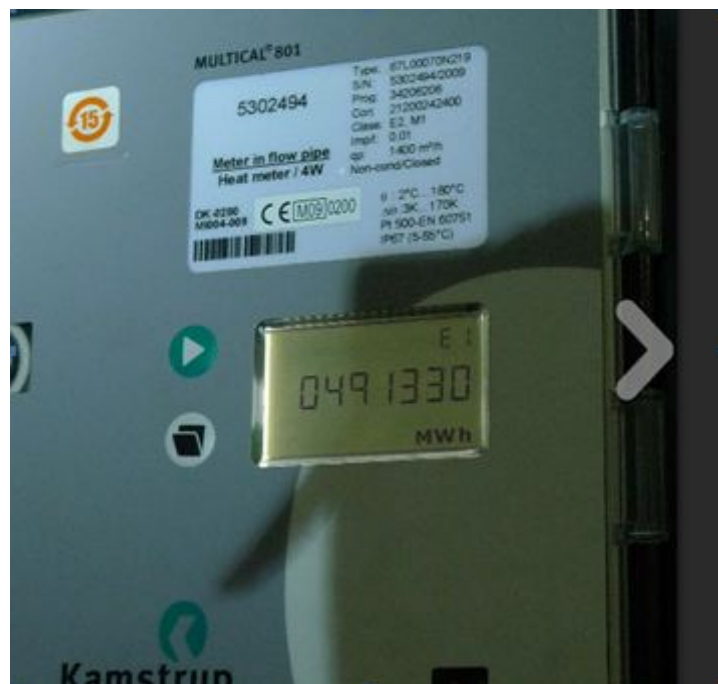


Unique reference number:5302494

Parameter: $Q_{HOB,y}$

Name of equipment: Main heat meter (Xifu Road)

Date: 20/03/2012

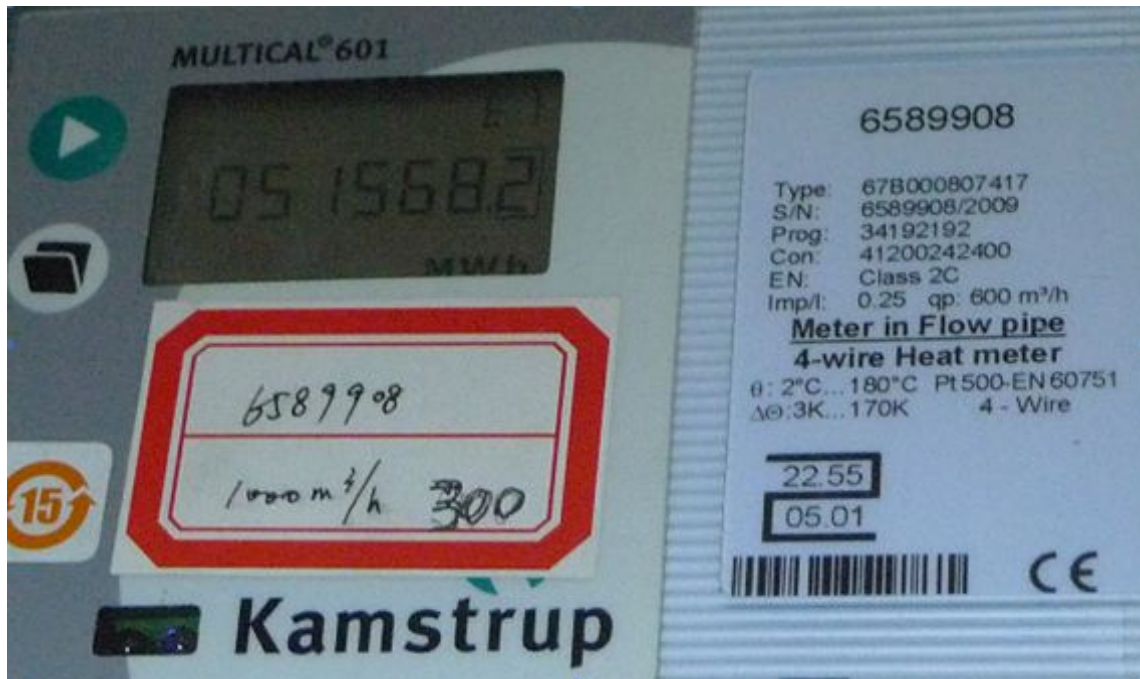


Unique reference number:6589908

Parameter: $Q_{HOB,y}$

Name of equipment: Main heat meter (Xifu Road)

Date: 20/03/2012



Unique reference number:6589908

Parameter: $Q_{HOB,y}$

Name of equipment: Main heat meter (Xifu Road)

Date: 20/03/2012



Unique reference number:6807430

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (De Long)

Date: 201/03/2012



Unique reference number:6807346

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Military Logistics) Date: 21/03/2012



Unique reference number:6807422

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Vocational University)

Date: 21/03/2012

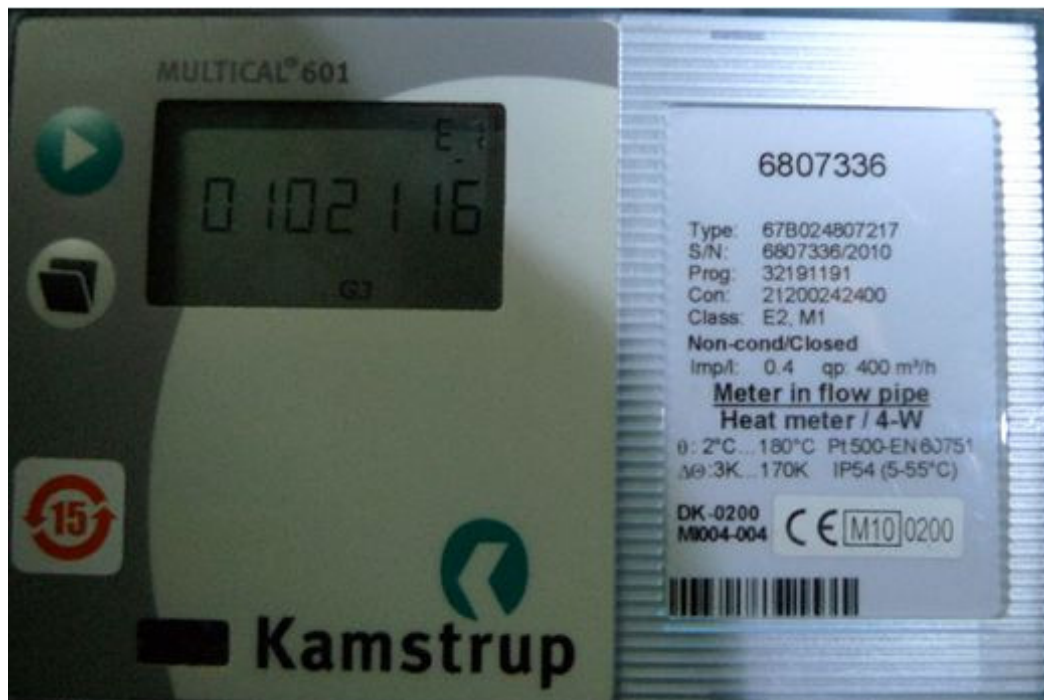


Unique reference number:6807336

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Military 3rd Guesthouse)

Date: 21/03/2012

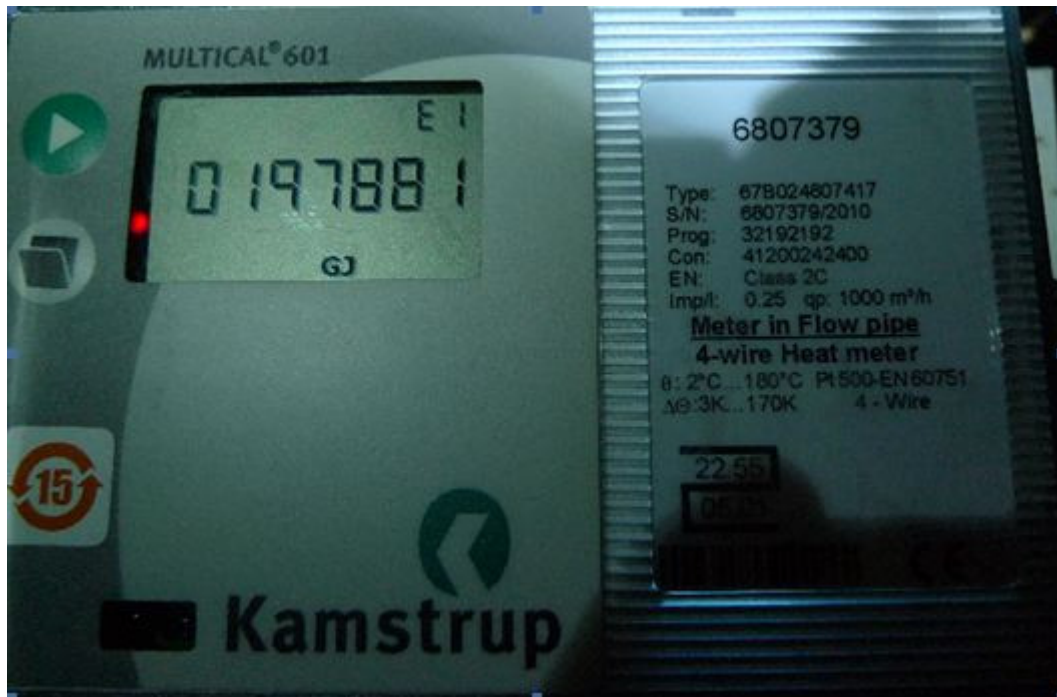


Unique reference number:6807379

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Foreign trade bureau)

Date: 21/03/2012

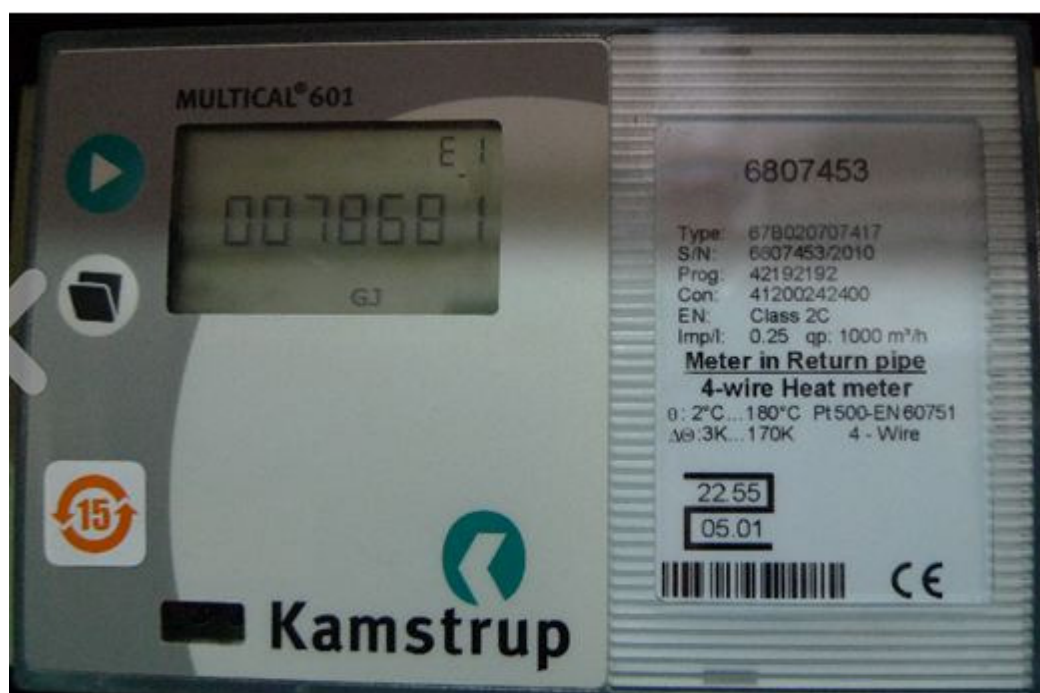


Unique reference number:6807453

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Qianjin Street)

Date: 21/03/2012



Unique reference number: 6807345

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Military 4th Guesthouse)

Date: 21/03/2012



Unique reference number: 6807434

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Professional Program School)

Date: 21/03/2012

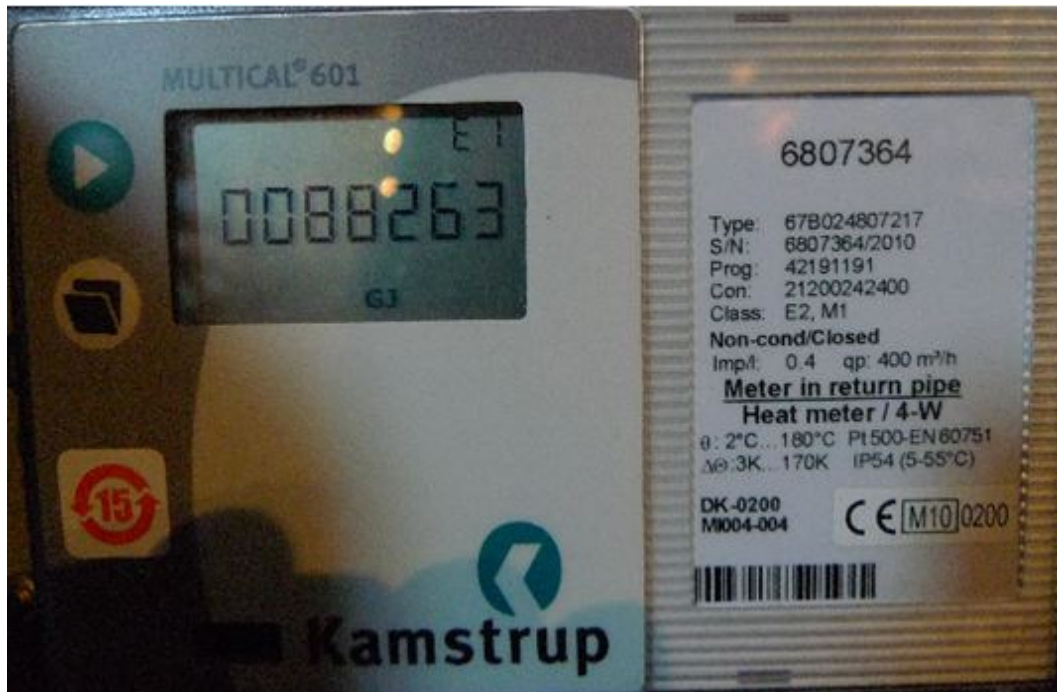


Unique reference number:6807364

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Light industry bureau)

Date: 21/03/2012



Unique reference number:6807344

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Beer Flower)

Date: 21/03/2012



Unique reference number:6826895

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Xiao Dong Liang)

Date: 21/03/2012



Unique reference number:6826951

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Renmin Opera)

Date: 21/03/2012



Unique reference number:6826949

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Horse Market)

Date: 21/03/2012



Unique reference number:6826953

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (1st Elementary School)

Date: 21/03/2012



Unique reference number:6807419

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Qingdao Hua Yuan)

Date: 21/03/2012



Unique reference number:6807437

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Jinkun)

Date: 21/03/2012



Unique reference number:6807411

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Qizheng)

Date: 21/03/2012



Unique reference number:6807446

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Hengchang)

Date: 21/03/2012

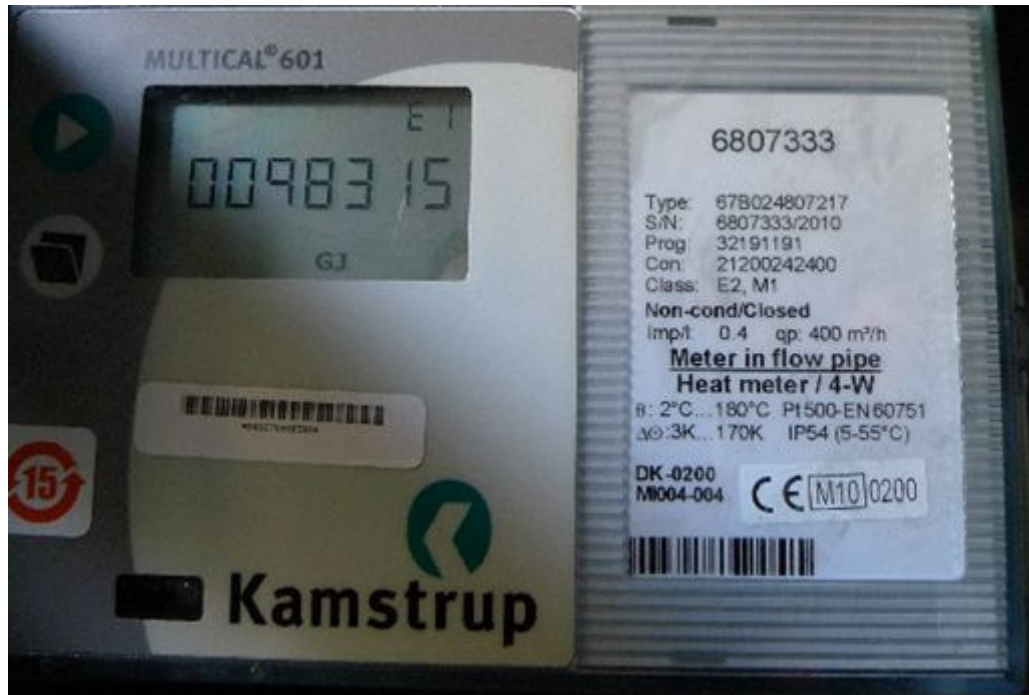


Unique reference number:6807446

Parameter: $Q_{i,y}$

Name of equipment: Heat meter (Xiyu Light industry)

Date: 21/03/2012



Unique reference number:161898

Parameter: $FC_{i,j,y}$

Name of equipment: Weighting balance (CHP)

Date: 20/03/2012



Unique reference number:161899

Parameter: $FC_{i,j,y}$

Name of equipment: Weighting balance (CHP)

Date: 20/03/2012



Unique reference number: 990601&990602

Parameter: $FC_{i,j,y}$

Name of equipment: Strap balance (CHP)

Date: 20/03/2012



Unique reference number:

Parameter: $FC_{i,j,y}$

Name of equipment: Weighting balance (HOB-Weihuliang)

Date: 20/03/2012



Unique reference number:

Parameter: $FC_{i,j,y}$

Name of equipment: Weighting balance (HOB-Xingfu Road)

Date: 20/03/2012



Unique reference number:

Parameter: $FC_{i,j,y}$

Name of equipment: Strap balance (HOB-Weihuliang)

Date: 20/03/2012



Unique reference number:

Parameter: $FC_{i,j,y}$

Name of equipment: Strap balance (HOB-Xingfu Road)

Date: 20/03/2012





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History

Version	EB Requirement	Nature of revision	Validity
Issue 6	VVS Version 02.0	Update to checklist to include VVS procedures	25 th May 2012
Issue 5.4	VVM Version 01.2	Update to checklist	24 th February 2011