



Industrie Service

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Verification Report

Overgas Inc. AD

Periodic Verification of JI Project

“Reduction of greenhouse gases by gasification of Sofia
municipality”

Overall Monitoring period 3: 01-01-2009 to 31-12-2009

(Second periodic year within JI crediting period 2008-2012)

Report No. 600500421

31 March 2010

TÜV SÜD Industrie Service GmbH
Carbon Management Service
Westendstrasse 199 - 80686 Munich - GERMANY

PERIODIC VERIFICATION

“Reduction of GHG by Gasification of Sofia Municipality”



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Report No.	Date of first issue	Version No.:	Revision date	No. of pages
600500421	16-03-2010	02	31-03-2010	14
Subject:			Second Periodic Verification	
Executing Operational Unit:				
TÜV SÜD Industrie Service GmbH, Carbon Management Service Westendstrasse 199 - 80686 Munich, Federal Republic of Germany				
Project Participant (client):				
1) Overgas Inc. AD, Philip Kutev Str. 5; 1407 Sofia, Bulgaria. 2) Kingdom of the Netherlands (Buyer country for emission reductions)				
Project Title			Reduction of GHG by Gasification of Sofia Municipality	
Monitoring period:			01-01-2009 to 31-12-2009	
First Monitoring Report (version/date)			Version 01 / 15-01-2010	
Final Monitoring Report (version/date)			Version 02 / 18-02-2010	
Summary:				
<p>The certification body “Climate and Energy” of TÜV SÜD Industrie Service GmbH has been ordered by Overgas Inc. AD to carry out the second periodic verification of the determined JI track 1 project “Reduction of GHG by Gasification of Sofia Municipality” that is registered by the Bulgarian DFP (see the following link: http://www.moew.government.bg/recent_doc/international/climate/Approved%20projects_tablica_EN_publikuvane.pdf).</p> <p>The project consists of internal gas installations for (industrial, public and domestic) users and gas distribution network installed in Sofia Municipality, which is used to switch to natural gas from liquid and solid fuels, and electricity used by the industry, public and administrative sites and households and increasing the energy efficiency of their combustion installations.</p> <p>The management of Overgas Inc. AD is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.</p> <p>A document review, followed by a site visit was conducted to verify the information submitted by the project participant regarding the present verification period. Based on the assessment carried out, the verifier confirms the following:</p> <ul style="list-style-type: none">the project has been implemented and operated in accordance with the description given in the registered PDD (version issued in April 2004).the project is implemented according to the implementation schedule as described in the registered PDD.The actual natural gas utilization was only 64% in total of the figure estimated in PDD. It is explained by lower connection rate and global financial crisis which is influencing it.the monitoring plan complies with the applied methodology and the monitoring has been carried out in accordance with the monitoring plan. <p>Installed equipment essential for generating emission reductions run reliably and the meters are calibrated appropriately. The project is generating emission reductions as a JI project.</p> <p>The verifier can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion refers to the project’s GHG emissions and resulting GHG emission reductions reported, both determined using the valid and registered project’s baseline, its monitoring plan and its associated documents.</p> <p>Overgas company is not participating in the Emissions Trading Scheme (ETS).</p> <p>Based on the information we have seen and evaluated, we confirm that the implementation of the project resulted in total 89 219 t CO_{2e} of ERUs during the verification period 01-01-2009 to 31-12-2009.</p>				

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Assessment Team Leader: Thomas Kleiser Assessment Team Members: Madis Maddison Trainees: Nelly Gromkova Georgios Agrafiotis	Veto Person: Certification Body responsible: Rachel Zhang (Deputy Head)
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Abbreviations

AIE	Accredited Independent Entity
BM	Build Margin
CAR	Corrective Action Request
CER	Certified Emission Reduction
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CO_{2e}	Carbon dioxide equivalent
CR / CL	Clarification Request
DNA	Designated National Authority
EF	Emission Factor
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
FAR	Forward Action Request
FSERF	Fuel Switch Emission Reduction Factor
FSR	Feasibility Study Report
DGHC	Gas Distribution Company
GDN	Gas Distribution Network
GHG	Greenhouse Gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
JI	Joint Implementation
JISC	JI Supervisory Committee
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NG	Natural Gas
NGO	Non-Governmental Organisation
OM	Operational Margin
PDD	Project Design Document
PP	Project Participant
sm³	Standard cubic meter, represents a standard m3 at 1.01325 bar and 293.15 K
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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Main Documents (referred to in this report)

Methodology (name / version)	Project specific methodology described in the PDD	
Scope	1 Energy industries	
Technical Area	1.2 Fossil energy sources and/or biogas and/or biomass (combustion, fuel switch, WHR)	
Registered PDD:	April 2004	
	Version	Date
Published Monitoring Report	01	15-01-2010
Revised Monitoring Report	02	18-01-2010
Project documentation link:	http://www.netinform.de/KE/Wegweiser/Guide22.aspx?ID=6879&Ebene1_ID=50&Ebene2_ID=1858&mode=5	

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1 INTRODUCTION

1.1 Objective

Overgas Inc. AD has commissioned an independent verification by TÜV SÜD Industrie Service GmbH of its determined JI track 1 project “Reduction of GHG by Gasification of Sofia Municipality”.

The objective of the verification work is to comply with the requirements of paragraph 62 of the JI guidelines. According to this assessment TÜV SÜD shall:

- ensure that the project activity has been implemented and operated as per the registered PDD “Reduction of GHG by Gasification of Sofia Municipality” dated April 2004, and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place,
- ensure that the published MR and other supporting documents provided are complete, verifiable and in accordance with applicable JI requirements,
- ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology,
- evaluate the data recorded and stored as per project specific methodology.

1.2 Scope

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the Accredited Independent Entity. The verification is based on the submitted monitoring report, the determined project design documents including its monitoring plan and determination report, previous verification reports, the applied monitoring methodology, relevant decisions, clarifications and guidance from the CMP and the EB/JISC and any other information and references relevant to the project activity's resulting emission reductions. These documents are reviewed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance and also against Bulgarian JI Guidelines.

Based on the requirements in the JI determination and verification manual from JISC 19, Annex 4, TÜV SÜD has applied a rule-based approach for the verification of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

The verification considers both quantitative and qualitative information on emission reductions.

The verification is not meant to provide any consultancy towards the client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the monitoring activities.

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1.3 GHG Project Description

Project activity:	“Reduction of GHG by Gasification of Sofia Municipality”
UNFCCC registration number:	N/A
Project Participants:	The Project Owner is Overgas Inc. AD (Philip Kutev Str. 5; 1407 Sofia, Bulgaria).
Location of the project:	GPS coordinates of Sofia Municipality: North 42.697439, East 23.326803.

The project aims at the reduction of greenhouse gases of Sofia municipality by switching to natural gas from liquid and solid fuels, heat and electricity used by the industry, public and administrative sites and households and increasing the energy efficiency of their combustion installations. According to the Project Design Document (PDD) the project foresees construction of 583 km steel and polyethylene gas distribution network (GDN) and more than 32 000 relevant facilities (combustion installations of the industrial, public and administrative, and residential end users) in Sofia Municipality. As per power point presentation by the PP from February 2010, by the end of 2009, 467.2 km GDN of steel and polyethylene gas pipelines with the respective facilities were constructed in Sofia Municipality. In 2009 the amount of natural gas delivered to the end users reached 81 133 thousand Nm³.

At the time of the verification the project was fully operational.

There is no chance of double counting of ERs generated from Overgas JI projects since the installations where the ERs are generated are clearly defined from the Bulgarian DFP in its register of approved JI projects.

2 METHODOLOGY

2.1 Verification Process

The verification process is based on the approach depicted in the Validation and Verification Manual.

Standard auditing techniques have been adopted for the verification process. The verification team performs first a desk review, followed by an on-site visit, which results in the formation of a protocol that includes all the findings. The next step involves the evaluation of the findings through direct communication with the PPs and then finally the preparation of the verification report. This verification report and other supporting documents then undergo an internal quality control by the CB “climate and energy” before submission to the Bulgarian DFP.

2.2 Verification Team

The appointment of the verification team takes into account the technical area(s), sectoral scope(s) and relevant host country experience required amongst team members for verifying the ER achieved by the project activity in the relevant monitoring period for this verification.

The verification team consisted of the following members:

Name	Qualification	Coverage of scope	Coverage of technical expertise	Host country experience
Thomas Kleiser	ATL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Madis Maddison	GHG-A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Georgios Agrafiotis	GHG- Trainee	<input checked="" type="checkbox"/>		
Nelly Gromkova	GHG-Trainee			<input checked="" type="checkbox"/>

Thomas Kleiser is a lead auditor for CDM and JI projects at TÜV SÜD Industrie Service GmbH and head of CDM/JI division within TÜV SÜD. In this position he is responsible for the implementation of validation and certification processes for GHG mitigation projects. He has participated in more than 90 CDM and JI project assessments.

Madis Maddison is specialized in auditing of greenhouse gas emission reduction projects. This experience he has gained (in co-operation with TÜV SÜD Industrie Service) in determination and verification of Joint Implementation (JI) projects in Estonia, Lithuania, Poland, Romania and Bulgaria. He has received training in the JI determination as well as CDM validation and verification process and applied successfully as GHG Auditor.

Georgios Agrafiotis is environmental engineer. He has work experience in the field of industrial environmental technology and protection and also in technical environmental projects. As GHG trainee he has been appointed scopes 1,5 and 13 as per UNFCCC definition.

Dr. Nelly Gromkova is a freelancer and TÜV SÜD GHG trainee. She carried out PhD thesis in Atmospheric Physics and is licensed as expert for Environmental Impact Assessment (EIA) and Integrated Pollution Prevention and Control (IPPC) Permit projects in Bulgaria. She has participated in all Bulgarian JI projects, which were under TÜV SÜD GHG assessment during last 3 years.



2.3 Review of Documents

The Monitoring Report version 01 submitted by the PP was made publicly available on the Net-inform website before the verification activities started.

http://www.netinform.de/KE/Wegweiser/Guide22.aspx?ID=6879&Ebene1_ID=50&Ebene2_ID=1858&mode=5

The published MR was assessed in the desk review with the aim to:

- verify the completeness of the data and the information presented in the MR,
- check the compliance of the MR with respect to the monitoring plan depicted in the registered PDD and verify that the applied methodology was carried out. Particular attention to the frequency of measurements, the quality of the metering equipment including calibration requirements, and the quality assurance and quality control procedures was paid,
- evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.
- During the verification a second version of the MR and of the ERs calculation was prepared.

A complete list of all documents reviewed is available in Annex 2 of this report.

2.4 On-site Assessment and follow-up Interviews

On 01 and 02-02-2010 TÜV SÜD performed a physical site inspection and on-site interviews with project stakeholders to:

- confirm the implementation and operation of the project,
- review the data flow for generating, aggregating and reporting the monitoring parameters,
- confirm the correct implementation of procedures for operations and data collection,
- cross-check the information provided in the MR documentation with other sources,
- check the monitoring equipment against the requirements of the PDD and the approved methodology, including calibrations, maintenance, etc.,
- review the calculations and assumptions used to obtain the GHG data and ER,
- identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.

A list of the persons interviewed during this verification activity is included in Annex 2.

2.5 Quality of Evidence to Determine Emission Reductions

Among several evidence items submitted, the following relevant and reliable evidence material have been used by the audit team during the verification process:

1. Monthly statements for delivery of natural gas by Bulgargas EAD to Sofiagas EAD in 2009, IRL#1 Annex 3;
2. Invoices for the ordered quantity of natural gas for November and December 2009, IRL#25 and IRL#27
3. Certificates of the natural gas delivered by Bulgargas EAD to Sofiagas EAD in 2009, IRL#1 Annex 4;
4. Credit note No 0000127407 for natural gas delivery, IRL#26;
5. Monthly acts for natural gas delivery to the four local heating plants, IRL#12;
6. Invoices for December 2009 of 1 local heating plant and 1 administrative user and 1 householder in Sofia, IRL#15;



7. November 2009 manual reading protocol, IRL#23.

Sufficient evidence covering the full verification period in the required frequency is available to validate the figures stated in the final MR. The source of the evidence will be discussed in chapter 3 of this report. Specific cross-checks have been done in cases that further sources were available. The monitoring report's figures were checked by the audit team against the raw data. The data collection system meets the requirements of the monitoring plan as per the methodology.

2.6 Resolution of Clarification and Corrective and Forward Action Requests

The objective of this phase of the verification process is to resolve any outstanding issues which require clarification for TÜV SÜD's positive conclusion of the achieved GHG emission reduction. The findings raised as Forward Action Requests (FAR#1...FAR#4) indicated in previous reports (determination/verification) were discussed during this phase and, issues raised in the FARs were resolved, during communications between the PP and TÜV SÜD.

Concerns raised in the desk review, the on-site audit assessments and the follow up interviews and the responses provided for the raised concerns are documented in Annex 1 (verification protocol) to guarantee the transparency of the verification process.

A Corrective Action Request is raised where TÜV SÜD identifies:

- non-conformities in monitoring and/or reporting with the monitoring plan and/or methodology;
- that the evidence provided is not sufficient to prove conformity;
- mistakes in assumptions, data or calculations that impair the ER;
- FARs stated during validation that are not solved until the on-site visit.

A Clarification Request is raised where TÜV SÜD does not have enough information or the information is not clear in order to confirm a statement or data.

A Forward Action Request is raised where TÜV SÜD identifies that monitoring and/or reporting require special attention or adjustments for the next verification period.

Information or clarifications provided as a response to a CAR, CL or FAR could also lead to a new CAR.

2.7 Internal Quality Control

As a final step of verification, the final documentation including the verification report and annexes have to undergo an internal quality control by the Certification Body (CB) “climate and energy”, i.e. each report has to be finally approved either by the Head of the CB or the Deputy (a Veto person can be used). In case one of these two persons is part of the assessment team, the approval can only be given by the person who is not a part of the assessment team. If the documents have been satisfactorily approved, the Request for Issuance is submitted to the Bulgarian DFP along with the relevant documents.



3 VERIFICATION RESULTS

In the following sections, the results of the verification are stated. The verification results relate to the project performance as documented and described in the final PDD and Monitoring Report (18-02-2010, version 2). The verification findings for each verification subject are presented below:

3.1 FARs from Previous Verification

The verification team confirms that all FARs (FAR#1...FAR#4) presented in the validation report and/or verification reports have been correctly addressed by the PPs.

3.2 Project Implementation in accordance with the registered Project Design Document

The project is implemented according to the description presented in the registered PDD. The verifier confirms, through the visual inspection that all physical features of the proposed JI project activity including data collecting systems and storage have been implemented in accordance with the registered PDD. The project activity is completely operational and the same has been confirmed on-site.

The construction of GDN has been implemented according to a time schedule provided in PDD (by the end of 2009 467.2 km which constitutes 80% of the planned Network until 2012). The actual natural gas utilization was 64% of the figure estimated in PDD. It is explained by lower connection rate and global financial crisis. None of this affects the additionality, scale or applicability of the project.

3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The monitoring plan is in accordance with the approved project specific methodology, applied by the proposed JI project activity. Neither a revision nor a deviation to the monitoring plan has been requested to the JISC.

3.4 Compliance of the Monitoring with the Monitoring Plan

The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD. All parameters were monitored and determined as per the Monitoring Plan.

The verification of the parameters required by the monitoring plan is provided as follows:

Data / Parameter:	Utilization of natural gas
Data unit:	1000 sm ³
Description:	The summarized consumption of natural gas read by the gas meters of end users
Source of data used:	The gas meter readings of the gas on-sites are performed by trained employees of GDC (inspectors) in presence of the client (only for institutional and industrial clients) as is described in the instruction. The meter readings are recorded in a protocol per region for all users per month. The equipment used has been calibrated according to the requirements of the approved monitoring plan.

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Means of verification/Comments:	The total consumption of each sector for been verified based on the IT system data (raw data) available on-site and no discrepancies have been found.
Cross-check	The sample readings of individual users were cross-checked from IT system file “Spravka_Prodajbi_Sofia_2009.xls” (IRL#30). The sample meter readings taken on-site were compared to respective records in IT system.

Data / Parameter:	Natural gas entered into the GDN
Data unit:	1000 sm ³
Description:	Monthly volumes of natural gas entered into the GDN
Source of data used:	The meter readings are recorded at 5 entry points by metering devices which are owned by the gas supplier Bulgargas. The readings are taken down at the first day of every month at 8:00 AM. The monthly act for total amount of gas delivery is signed by Bulgargas and GDC and received by Overgas. There are additional 2 entry points to supply four local district heating plants. This gas amount is measured at the entry to the plant by meters owned by GDC. The equipment used has been calibrated according to the requirements of the approved monitoring plan.
Means of verification/Comments:	The data was verified with monthly acts of gas delivery (IRL#1 Annex 3).
Cross-check	GDC has installed control meters to connection point which readings were used to cross-check the data on-site.

Data / Parameter:	LHVactual-monthly
Data unit:	kcal/m ³
Description:	Monthly values of average low heating value of the natural gas entered into GDN
Source of data used:	Natural Gas certificate issued by “Bulgartransgas EAD”. The data provided is an average value of several analysis made during the month. The equipment used has been calibrated according to the requirements of the approved monitoring plan. Bulgargas Holding’s laboratory is using certified equipment.
Means of verification/Comments:	The data was verified with monthly acts of gas delivery (IRL#1 Annex 3).
Cross-check	The values are in the same range with the certificates for another two Overgas JI projects: Veliko Tarnovo (Trigradie) and Varna.

3.5 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

All data has been available and all the parameters have been monitored in accordance with the registered monitoring plan.

The reported data have been cross-checked against other sources available as explained above in chapter 3.4.

The verifier confirms that the methods and formulae used to obtained the baseline, project and leakage emissions are appropriate. The same has been done in accordance with the methods and formulae described in the registered monitoring plan and applicable methodology.

The verifier confirms that the monitoring report includes all parameters and the monitored data at the intervals required by the methodology and PDD.

The verifier confirms that all the emission factors and default values (ex-ante values from PDD) have been correctly justified. All the emission factors and default values are explicitly mentioned in the monitoring report.



4 SUMMARY OF FINDINGS

The verifier can confirm that the published MR and related documents are complete and verifiable in accordance with the JI requirements. All the findings raised by the verification team, the responses by the PPs and the conclusion from the team are presented in Annex 1. The means of verification and resulting changes in the MR or related documents are identified in the following table:

CAR 1: The input values in calculation tool (worksheet “input data” cells G42 and G44) do not match the respective values in Excel File “Spravka_Prodajbi_Sofia_2009.xls”..
CAR 1, means of verification
Version 2/18 February 2010 of the calculation tool was sent to audit team for visual verification. The misprint was corrected.
CAR 1, changes in the MR or related documents
The input values in calculation tool (worksheet “input data” cells G42 and G44) were corrected in Version 2/18 February 2010 (IRL#32).
CAR 2: Provide in MR (and in Monitoring Manual) the overall scheme of metering the gas amount delivered to Sofiagas GDN from Bulgargas: locations of Bulgargas meters and control meters owned by Sofiagas.
CAR 2, means of verification
The overall scheme of metering the gas amount delivered to Sofiagas GDN from Bulgargas was annexed to MR (IRL#31 Annex 5) and sent to audit team for verification.
CAR 2, changes in the MR or related documents
The overall scheme of metering the gas amount delivered to Sofiagas GDN from Bulgargas was annexed to MR (IRL#31 Annex 5)
CAR 3: The revision number and issuing date shall be added to the calculation tool: both to the file name and to the calculation sheets.
CAR 3, means of verification
Version 2/18 February 2010 of the calculation tool was sent to audit team for visual verification.
CAR 3, changes in the MR or related documents
The version number 2 and issuance date 18.02.2010 were added to the file name and calculation sheet itself (IRL#32).
CAR 4: The Excel calculation tool/file shall be delivered in protected and unprotected format.
CAR 4, means of verification
Version 2/18 February 2010 of the calculation tool was sent to audit team for visual verification in protected and unprotected format.
CAR 4, changes in the MR or related documents
The formulae cells in ER calculation tools were locked (IRL#32).
CAR 5: Correct the Total value of “Corrected natural gas consumption” (column 4) in Table 7 in MR.
CAR 5, means of verification
The updated MR v2 document was sent to audit team for visual verification.
CAR 5, changes in the MR or related documents
The Table 7 was revised in Monitoring Report v2 (IRL#31).
CR 1: Clarify how, where and for how long the paper copies of original meter readings are archived.

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CR 1, means of verification
The explanation was given by PP that the original meter reading protocols are archived on paper copies in the GDC for three months.
CR 1, changes in the MR or related documents
No changes in the MR or related documents were made. The time period of 3 months was considered too short by audit team and FAR#1 was issued (see below).
CR 2: The amount of natural gas from annex 3 (Monthly statements for delivery of natural gas by Bulgargas EAD to Sofiagas EAD in 2009) is 62 767 thousand Nm³. The sum of values in column F51:F62 (Monitoring_Sofia.xls, sheet “Input data”) gives 80 890 thousand Nm³. Please, explain the difference.
CR 2, means of verification
The explanation was given by PP that the monthly statements presented in Annex 3 do not include the amounts of natural gas delivered to the THPs. The difference of 18 123 thousand m ³ is exactly the amount of natural gas delivered to the THPs. The amount of gas was presented in calculation tool worksheet “input data” in cell range C76:H82.
CR 2, changes in the MR or related documents
No changes in the MR or related documents were made.
CR 3: Provide copies of monthly invoices from Bulgargas about quantities of NG delivered to GDN for crosscheck purposes..
CR 3, means of verification
The document copies (IRL#12 and IRL#26) were provided to audit team for visual verification.
CR 3, changes in the MR or related documents
No changes in the MR or related documents were made.
CR 4: Clarify the Low Calorific Value in cell G52 (Monitoring_Sofia.xls, sheet “Input data”), because of differences between Bulgarian and English certificates for February – see Annex 4 - Certificates of Natural Gas_Sofia_en.pdf.
CR 4, means of verification
The explanation was given by PP that there is a misprint made by the translator. The actual value was verified from the original Bulgarian certificate (IRL#1 Annex 4).
CR 4, changes in the MR or related documents
No changes in the MR or related documents were made.
CR 5: Clarify the gas consumption values difference in MR and in Presentation on-site.
CR 5, means of verification
There was a misprint. See CAR#1.
CR 5, changes in the MR or related documents
See CAR#1.
FAR 1: The original meter reading protocols should be archived until the end of JI verification audit. Add the respective description to the Instruction.
FAR 1, means of verification
The PP agreed to keep the original meter reading protocols will be kept at the GDC until the end of the next verification audit. It will be verified during next periodic verification audit.
FAR 1, changes in the MR or related documents
No changes in the MR or related documents were made.



5 VERIFICATION STATEMENT

TÜV SÜD Industrie Service GmbH has performed the second periodic verification of the JI Track 1 project: “Reduction of GHG by Gasification of Sofia Municipality”. The verification is based on the currently valid documentation of the UN Framework Convention on Climate Change (UNFCCC).

The management of Overgas Inc. AD is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions on the basis set out within the project’s Monitoring Plan indicated in the registered PDD, dated April 2004 and the applied project specific methodology.

The verifier can confirm that:

- the development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan;
- the project is operated as planned and described in the project design document approved by the JISC;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements;
- the monitoring plan in Monitoring Report is as per the PDD and monitoring plan approved by the JISC;
- the monitoring plan in the approved PDD is as per the applied project specific methodology.
- Overgas company is not participating in the ETS.

Our opinion is based on the project’s GHG emissions and resulting GHG emission reductions reported, which have been both determined through the valid and registered project’s baseline, its monitoring plan and its associated documents.

Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: From 01-01-2009 to 31-12-2009

Verified emissions in the above reporting period:

Emission reductions: 89 219 t CO_{2e}

Munich, 31-03-2010

Munich, 31-03-2010

A handwritten signature in blue ink, appearing to read 'Rachel Zhang'.

Certification Body “climate and energy”
TÜV SÜD Industrie Service GmbH
(Rachel Zhang, Deputy Head of Certification
Body)

A handwritten signature in blue ink, appearing to read 'Thomas Kleiser'.

Assessment Team Leader
(Thomas Kleiser)

PERIODIC VERIFICATION
“REDUCTION OF GHG BY GASIFICATION OF SOFIA
MUNICIPALITY”



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Annex 1: verification protocol

Verification Protocol

Project Title: Reduction of GHG by gasification of Sofia Municipality
–2nd Periodic Verification

Date of Completion: 31.03.2010

Number of Pages: 28



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5. Compilation and Resolutions of CARs, CRs and FARs

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1. Project Activity Implementation

1.1. Technology

Project Location (s)			
	PDD Description	Verification Findings(or Results?)	Conclusion and IRL
Site Description / Address:	Sofia Municipality / 3, Moskovska str., 1000 Sofia	The PP is still Overgas Inc. AD as indicated in the PDD of April 2004. The site indicated in this PDD is still the same, namely Sofia Municipality	<input checked="" type="checkbox"/>
GSP coordinates:		Sofia Municipality: North 42.697439, East 23.326803	<input checked="" type="checkbox"/>
Technical Equipment – Main Components			
	PDD Description	Verification Findings (or Results?)	Conclusion and IRL
Equipment Description	Reconstruction of installation or construction of new installation of end user and Gas Distribution Network (including all equipment necessary for the operation of the GDN) to all users from the three consumer sectors.	Reconstruction of installation or construction of new installation of end users.	<input checked="" type="checkbox"/>
Component 1: Reconstruction of installation or construction of new installation of end user. Technical Features	Construction of internal installations for 135 industrial enterprises, 228 sites in the public and administrative sector and over 31 800 households	The kind of technical equipment depends on the kind of end user. For every new user that has been connected to the Gas Distribution Network (GDN) in 2009 appropriate technical equipment has been	<input checked="" type="checkbox"/>

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		<p>implemented.</p> <p>Spot checks were done of gas metering installations of:</p> <ul style="list-style-type: none"> • one industrial user; • two domestic users and • one District Heating Plant. 	
<p>Component 2: Gas Distribution Network (including all equipment necessary for the operation of the GDN) to all users from the three consumer sectors</p> <p>Technical Features</p>	<p>Construction of 583 km gas distribution network in Sofia Municipality</p>	<p>By the end of 2009, 467.2 km GDN of steel and polyethylene gas pipelines with the respective facilities were constructed in Sofia Municipality, which represents 80% of the planned for construction until the end of 2012.</p> <p>Spot check of AGDSs was not done, because Bulgargas (the owner of the station) refused the access for audit team.</p> <p>However according to Project Owner information all 5 stations have not been changed during the last verification period and measured standardized gas consumption is automatically transmitted to the OVERCOMM server in an hourly frequency.</p>	<input checked="" type="checkbox"/>
Operation Status during verification			
	Verification Findings		Conclusion and IRL
Approvals / Licenses	This subject has been verified during the first periodic verification.		<input checked="" type="checkbox"/>

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Actual Operation Status	Under construction <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	In operation <input checked="" type="checkbox"/>	
	Out of operation <input type="checkbox"/>	
	Reason and date (if out of operation):	
Remarks on Special Operational Circumstances During the Verification Period	According to the Overgas presentation “Joint implementation projects of Overgas” that has been handed over during the on-site Audit in Sofia, 467.2 km of Gas Distribution Network has been constructed until the end of 2009, representing 80% of the planned Network until 2012.	<input checked="" type="checkbox"/> (IRL- 6)

1.2. Organization

Project Participant (s)		
	Verification Findings	Conclusion and IRL
Entity / Responsible person:	Mrs. Stela Blagova the Director of Ecology and Sustainable Development Dept. of Overgas Inc. AD is in charge for the final approval of the MR.	<input checked="" type="checkbox"/>
CDM Project management:	The project management of the JI project is still performed by Overgas Inc. AD.	<input checked="" type="checkbox"/>

1.3. Quality Management System

General aspects of the Quality Management System		
	Verification Findings	Conclusion

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		and IRL
Quality Management Manual:	A QMS of Overgas Inc. AD is implemented but not yet certified. Project related procedures are in place, one of them is: “Instruction for elaboration of MRs on the JI projects of Overgas Inc. AD” from January 2009 which has been approved by Mr. Svetoslav Ivanov the Deputy Executive Director of Overgas Inc. AD. This document is treated as project and location specific monitoring manual. The manual is regarded to be suitable to ensure the quality of the Monitoring System.	<input checked="" type="checkbox"/> IRL-13
Responsibilities:	Directorate for QMS in Overgas Inc. AD. and Ecology and Sustainable Development Department of Overgas Inc. AD for the instruction. The ongoing validity can be confirmed by the Audit team.	<input checked="" type="checkbox"/>
Qualification and Training:	The key personal of Ecology and Sustainable Development Department of Overgas Inc. AD have passed trainings in the areas of EIA, QMS and Environment Management Systems and Carbon Trade. Thus, the key personal is deemed to be sufficiently qualified. Evidence for the training of the staff performing reading of gas meters has been demonstrated.	<input checked="" type="checkbox"/> IRL-29
Implementation of QM-system	see above for the “Quality Management Manual” In 2008-2009 internal audits were carried out.	<input checked="" type="checkbox"/>

1.4. Outstanding FARs from previous Verifications (or forwarded issues from the validation report)

Outstanding Requests from Previous Verifications	Summary of project owner response	Audit team Conclusion and IRL
Forward Action Request #1: An updated timeline of the project	Sofiagas EAD plans to construct 153 km of gas distribution network until the end of 2012 (20 km in	It will result in 620 km of GDN, which is 115% of the total length planned in PDD. However it

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Outstanding Requests from Previous Verifications	Summary of project owner response	Audit team Conclusion and IRL
implementation during the whole crediting period has to be presented for the next verification audit.	2010, 19 km in 2011 and 114 km in 2012).	will not result in increased amount of ERUs, because of the lower connection rate and gas consumption than expected. In contrary it is proving additionality in a more conservative way. Issue closed.
<u>Forward Action Request #2:</u> More detailed information about the data archiving has to be added to the instruction, e.g. the availability of a server for data storage and a back-up hard disk	All the information entered in the modules of the IT system is stored on a back-up hard drive at Sofiagas EAD. The data are subsequently recorded on servers and a back-up copy is made on a back-up server every day. A general description of the archiving procedure is presented in the Instruction and in the MR.	The description of data archiving is presented in MR (IRL-31) and in Instruction (IRL-13) and is sufficient. The system was verified during audit on-site visit. Issue closed
<u>Forward Action Request #3:</u> The procedure for the occurrence of events category a) or b) generally has to be added to the instruction. In such case the MR must include this information.	In case of failure or lack of calibration of a metering device, an average correction factor is applied for the determination of the consumption by the user. This factor is calculated using the consumption by similar users with similar metering devices in the same area or the consumption by the same user in the same month the previous year. A bilateral protocol stating the agreed consumption of natural gas is issued and signed by the consumer and a representative of the GDC. A general description of the activities performed in case of failure or lack of calibration of a metering device is presented in the Instruction. According to the Instruction cases will be referred to in the MR.	The description of procedure is provided in the MR (IRL-31) and in Instruction (IRL-13). Issue closed.
<u>Forward Action Request #4:</u>	In case the difference is higher than 2% on a monthly level, the respective personnel in the GDC analyses	The description of procedure is provided in

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Outstanding Requests from Previous Verifications	Summary of project owner response	Audit team Conclusion and IRL
Elaborate and add in project specific monitoring manual a new instruction for cases where more than 2% difference in measurements appears.	the possible reasons, which can be different time of reading of metering devices, big new sections of pipelines put into operation and others. If needed the necessary steps for overcoming the problems are undertaken. A general description is presented in the Instruction.	the MR (IRL-31) and in Instruction (IRL-13). Issue closed.

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2. Monitoring Plan Implementation

2.1. Parameters

Parameters					
Meth/tool	PDD	MR	Included in table	Compliance	Conclusion and IRL
- project specific methodology has been applied	The summarized consumption read by the gas meters of end users	Amounts of natural gas transmitted and delivered to the end users by sectors	§ 2.2 Table 1	Compliant with PDD and Monitoring Report	<input checked="" type="checkbox"/>
-	Average low heating value of the natural gas	Average low heating value of the natural gas	§ 2.4 Table 1	Compliant with PDD and Monitoring Report	<input checked="" type="checkbox"/>
-	The consumption of natural gas as per the readings of "Bulgar-gas" AD	Amounts of natural gas entered into the GDN	§ 2.2 Table 2	Compliant with PDD and Monitoring Report	<input checked="" type="checkbox"/>

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Parameters					
Meth/tool	PDD	MR	Included in table	Compliance	Conclusion and IRL
	gas meter				

2.2. Parameters measured directly with instruments in the field

Table 1

Parameter and instrumentation					
	PDD	Meth/Tool	MR	Verification Findings	Conclusion and IRL
Parameter title	The summarized consumption read by the gas meters of end users	- project specific methodology has been applied	Amounts of natural gas transmitted and delivered to the end users by sectors	Parameter title is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/>
Parameter ID (if available)	-	-	-	-	<input checked="" type="checkbox"/>
Data Unit	1000 sm3	-	1000 sm3	Parameter unit is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/>
Monitoring frequency (reading)	Monthly	-	Monthly	Monitoring reading frequency is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/>
Monitoring frequency (recording)	Monthly	-	Monthly	Monitoring re-	<input checked="" type="checkbox"/>

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				Recording frequency is consistent with PDD and Monitoring Report.	
	Technical aspects Detailed information about instrumentation has been initially verified during the Initial Verification.				Conclusion and IRL
	QA/QC aspects				Conclusion and IRL
Source of data	Type: The meter readings are recorded manually in a protocol per region for all users per month The distance meter reading system (based on GPRS) is under development.				<input checked="" type="checkbox"/> (IRL-11)
	Procedures: - Instruction including the sub instructions and procedures that are part of the QMS is available.(e.g. I10-6.3-102 and P6.3-102, respectively)				<input checked="" type="checkbox"/>
	Implementation of procedure: The gas meter readings of the gas on-sites are performed by trained employees of Sofiagas EAD (inspectors) in presence of the client (only for institutional and industrial clients) as is described in the instruction. The meter readings are recorded in a protocol per region for all users per month. Each institutional and industrial user receives a monthly statement about the amount of NG delivered which is signed by the user and Sofiagas EAD. As for residential users the reading personal of Sofiagas EAD is experienced to ensure that the readings are plausible for these users of minor and rather constant consumptions.				<input checked="" type="checkbox"/>
	Responsibility: The Director of Exploitation Dept GDC				<input checked="" type="checkbox"/>
Archiving of raw data and protection measures	All monitoring relevant electronic data are automatically stored on the back-up hard disc in office (and a back-up server in another location) twice a day. As protection measure paper copies are stored in the GDC.				<input checked="" type="checkbox"/> Forward Action

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	Clarification Request#1. Clarify how, where and for how long the paper copies of original meter readings are archived.	Request#1
Data transfer and protection of input data for calculations	<p>Monthly readings from Gas Meters of every client to be transformed manually by an authorized person from the GDC in the report module of the IT system (GDC Information Management System).</p> <p>Summarized Table for gas consumption by sectors to be generated manually by one click in an Excel File called "Spravka_Prodajbi_Sofia_2009.xls".</p> <p>The total annual consumption of each sector is manually transferred by an expert in the ESD department into the calculation tool (Excel File) "Monitoring_Sofia.xls", for 2009 in a respective column for this year.</p> <p>Corrective Action Request#1. The input values in calculation tool (worksheet "input data" cells G42 and G44) do not match the respective values in Excel File "Spravka_Prodajbi_Sofia_2009.xls".</p>	<input checked="" type="checkbox"/> IRL-32
	Quality of evidence	Conclusion and IRL
Completeness of data	Completeness has been verified on-site, since all data are included in the presented data.	<input checked="" type="checkbox"/>
Data verification	<p>Consistency of raw data with calculation tool:</p> <p>The total consumption of each sector for been verified based on the IT system data (raw data) available on-site and no discrepancies have been found.</p> <p>See Corrective Action Request#1.</p>	<input checked="" type="checkbox"/>
	Consistency of calculation tool with monitoring report: The data in the monitoring report is consistent with the calculation tool	<input checked="" type="checkbox"/>

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Crosscheck (if available)	The sample readings of individual users were cross-checked from IT system file "Spravka_Prodajbi_Sofia_2009.xls". The sample meter readings taken on-site were compared to respective records in IT system.	<input checked="" type="checkbox"/>
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Table 2

Parameter and instrumentation					
	PDD	Meth/Tool	MR	Verification Findings	Conclusion and IRL
Parameter title	The consumption of natural gas as per the readings of "Bulgargas" AD gas meter	- project specific methodology has been applied	Amounts of natural gas entered into the GDN	Parameter title is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/>
Parameter ID (if available)	-	-	-	-	<input checked="" type="checkbox"/>
Data Unit	1000 sm3	-	1000 sm3	Parameter unit is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/>
Monitoring frequency (reading)	Monthly	-	Monthly	Monitoring reading frequency is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/>
Monitoring frequency (recording)	Monthly	-	Monthly	Monitoring recording frequency is	<input checked="" type="checkbox"/>

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				consistent with PDD and Monitoring Report.	
	Technical aspects Detailed information about instrumentation has been initially verified during the Initial Verification.				Conclusion and IRL
	QA/QC aspects				Conclusion and IRL
Source of data	<p>Type: The meter readings are recorded at 5 entry points by metering devices which are owned by the gas supplier Bulgargas. The readings are taken down at the first day of every month at 8:00 AM.</p> <p>The monthly act for total amount of gas delivery is signed by Bulgargas and Sofiagas and received by Overgas.</p> <p>There are additional 2 entry points to supply four local district heating plants. This gas amount is measured at the entry to the plant by meters owned by Sofiagas.</p> <p><u>Corrective Action Request#2.</u> Provide in MR (and in Monitoring Manual) the overall scheme of metering the gas amount delivered to Sofiagas GDN from Bulgargas: locations of Bulgargas meters and control meters owned by Sofiagas.</p>				<input checked="" type="checkbox"/> IRL-31
	Procedures: - Instruction including the sub instructions and procedures that are part of the QMS is available (e.g. P8.1-011).				<input checked="" type="checkbox"/>
	<p>Implementation of procedure: The authorized person of Sofiagas EAD enters the readings into the IT system where they are stored and archived as is described in the instruction.</p> <p><u>Clarification Request#2.</u> The amount of natural gas from annex 3 (Monthly statements for delivery of natural gas by Bulgargas EAD to Sofiagas EAD in 2009) is 62 767 thousand Nm³. The sum of values in column F51÷F62 (Monitoring_Sofia.xls, sheet "In-</p>				<input checked="" type="checkbox"/>

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	put data”) gives 80 890 thousand Nm3. Please, explain the difference.	
	Responsibility: The Director of Production Dept GDC.	<input checked="" type="checkbox"/>
Archiving of raw data and protection measures	All monitoring relevant electronic data are automatically stored on the back-up server. As protection measure paper copies are stored in the GDC.	<input checked="" type="checkbox"/>
Data transfer and protection of input data for calculations	Gas amounts from monthly acts for total amount of gas delivery to be transformed manually by an authorized person from the GDC in the report module of the IT system (GDC Information Management System). The gas amount for each month is manually transferred by an expert in the ESD department into the calculation tool (Excel File) “Monitoring_Sofia.xls”, for 2009 in a respective column for this year. See Clarification Request#2.	<input checked="" type="checkbox"/>
	Quality of evidence	Conclusion and IRL
Completeness of data	Completeness has been verified on-site, since all data are included in the presented data.	<input checked="" type="checkbox"/>
Data verification	Consistency of raw data with calculation tool: The data was verified with monthly acts of gas delivery.	<input checked="" type="checkbox"/>
	Consistency of calculation tool with monitoring report: The data in the monitoring report is consistent with the calculation tool	<input checked="" type="checkbox"/>
Crosscheck (if available)	Sofiagas has installed control meters to connection points. The quantities could be cross-checked with invoices from Bulgargas. Clarification Request#3. Provide copies of monthly invoices from Bulgargas about	<input checked="" type="checkbox"/> IRL-25, -26, -27 -28

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	quantities of NG delivered to GDN for crosscheck purposes.	
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2.3. Parameters measured through sampling

Sampling information **Not applicable**

2.4. Parameters obtained through external sources and accounting data

Table 1

External sources and accounting information					
	PDD	Meth/Tool	MR	Verified	Conclusion and IRL
Parameter title	Average low heating value of the natural gas	- project specific methodology has been applied	Average low heating value of the natural gas	Parameter title is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/>
Parameter ID (if available)	LHV	-	LHV	Parameter ID is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/>
Data Unit	kcal/m3	-	kcal/m3	Parameter unit is consistent with PDD and Monitoring Re-	<input checked="" type="checkbox"/>

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			port.	
	Technical aspects			Conclusion and IRL
Description of Data / Data Refers to:	Calorific Heating Value of NG "LHVactual-monthly"			<input checked="" type="checkbox"/>
Date of Data:	Monthly			<input checked="" type="checkbox"/>
Gaps in data	Period: N/A, no gaps have occurred			<input checked="" type="checkbox"/>
	Default value used: N/A			<input checked="" type="checkbox"/>
	Justification: N/A			<input checked="" type="checkbox"/>
	QA/QC aspects			Conclusion and IRL
Source of data	Type: Natural Gas certificate issued by "Bulgartransgas EAD"			<input checked="" type="checkbox"/>
	Clarification Request#4. Clarify the Low Calorific Value in cell G52 (Monitoring_Sofia.xls, sheet "Input data"), because of differences between Bulgarian and English certificates for February – see Annex 4 - Certificates of Natural Gas_Sofia_en.pdf			
	Responsibility: The Director of Production Dept GDC			<input checked="" type="checkbox"/>
	Representativeness: The data provided is an average value of several analysis made during the month.			<input checked="" type="checkbox"/>
Reliability of Data Source:	Bulgargas Holding's laboratory is using certified equipment.			<input checked="" type="checkbox"/>
Is the Data up-to-date?	Yes, the data is always based on the analysis made during the month in question.			<input checked="" type="checkbox"/>
Archiving of raw data and protection measures	All monitoring relevant electronical data are automatically stored on the back-up server. As protection measure paper copies are stored in the GDC.			<input checked="" type="checkbox"/>
Data transfer and protection of input	The data from monthly certificates is transferred manually by an expert in the ESD department into calculation tool (Excel File) "Monitoring_Sofia.xls", for 2009, a respective			<input checked="" type="checkbox"/>

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data for calculations	column for this year.	
	Quality of evidence	Conclusion and IRL
Completeness of data	Completeness has been verified on-site, since all monthly data are included in the presented data.	<input checked="" type="checkbox"/>
Data verification	Consistency of raw data with calculation tool: The data was verified with monthly acts of gas delivery.	<input checked="" type="checkbox"/>
	Consistency of calculation tool with monitoring report: The data in the monitoring report is consistent with the calculation tool	<input checked="" type="checkbox"/>
Crosscheck (if available)	The values are in the same range with the certificates for another two Overgas JI projects: Veliko Tarnovo (Trigradie) and Varna.	<input checked="" type="checkbox"/>

2.5. Other parameters not included in the methodology/tool but included in the PDD

Other information **Not applicable**

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3. Data Processing and ER calculation

Description of data processing from transferred data to final results in the calculation tool		
Step	Description	Conclusion and IRL
Consistency	All abbreviations and units are consistent with the PDD and traceable to the raw data	<input checked="" type="checkbox"/>
Calculation Tool description	<p>The calculation method itself is simple, transparent and easy re-producible. All formulae, intermediate steps and constants are described transparently. They include correct units and are in compliance with the PDD. The issuing date and revision number are not indicated.</p> <p><u>Corrective Action Request#3.</u> The revision number and issuing date shall be added to the calculation tool: both to the file name and to the calculation sheets.</p>	<input checked="" type="checkbox"/>
Elimination of not plausible data (if applicable)	N/A	<input checked="" type="checkbox"/>
Transformation from useable data to input data for further calculation (if applicable)	N/A	<input checked="" type="checkbox"/>
Ex-ante data	<p>The used default values are fixed in the PDD, validated and there is no indication detected in order to have adjusted these default values. LHVdefault 34.000 GJ/1000 sm³ Correction factor for small users (less 25 m³/h) that do not have an electronic volume corrector installed</p>	<input checked="" type="checkbox"/>

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	(procedure I10-6.3-102). In Sofia the factors are: (i) for summer 1.00 and (ii) for winter 1.00.	
Default parameter	<p>The FSERF calculated in the PDD has been recalculated. The recalculation has been made using the official electricity emission factors for Bulgaria, approved and published by the Ministry of Environment and Waters (MOEW) for use in Joint Implementation projects under the Kyoto Protocol:</p> <p>Fuel Switch Emission Reduction Factor per 1000 m³ of NG for industrial sector: 0.96 tCO₂/1000 sm³ for year 2009</p> <p>Fuel Switch Emission Reduction Factor per 1000 m³ of NG for public and administrative sector: 0.69 tCO₂/1000 sm³ for year 2009</p> <p>Fuel Switch Emission Reduction Factor per 1000 m³ of NG for residential sector: 1.71 tCO₂/1000 sm³ for year 2009</p>	<input checked="" type="checkbox"/>
Formulae check	All formulae included in the calculation tool are in compliance with the PDD.	<input checked="" type="checkbox"/>
Rounding functions	N/A, no rounding functions are used	<input checked="" type="checkbox"/>
Calculation tool changes and protection measures	<u>Corrective Action Request#4.</u> The Excel calculation tool/file shall be delivered in protected and un-protected format.	<input checked="" type="checkbox"/>
Reported data	<p>The results of the calculation tool are consistent with these mentioned in the MR. ERs for 2009 are in both documents stated to be 89 219 tCO₂e, as a result of natural gas consumption of 81 132.982 thousand sm³.</p> <p><u>Corrective Action Request#5.</u> Correct the Total value of “Corrected natural gas consumption” (column 4) in Table 7 in MR.</p>	<input checked="" type="checkbox"/>

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4. Additional assessment

4.1. Internal Review

Description and performance of internal review		
	Description	Conclusion and IRL
Procedure	<p>The gas meter readings of the gas on-sites are performed by trained employees of Sofiagas EAD in presence of the client (only for institutional and industrial clients) as is described in the instruction. The meter readings are recorded in a protocol per region for all users per month. Each institutional and industrial user receives a monthly statement about the amount of NG delivered which is signed by the user and Sofiagas EAD. The authorized person of Sofiagas EAD enters the readings into the IT system where they are stored and archived as is described in the instruction (and see above under 2.1 and 2.2 Chapters). The procedure of signing includes already a cross check of the measured NG by the client.</p> <p>As for residential users the reading personal of Sofiagas EAD is experienced to ensure that the readings are plausible for these users of minor and rather constant consumptions.</p> <p>Another cross-check of the hourly measured NG consumptions is performed by comparing the sum of measured NG consumptions of all three sectors with the amount of NG entered in to the GDN that is measured automatically in the AGDS on a monthly basis. Furthermore, skilled persons of the maintenance and exploitation department double check the plausibility of the AGDS figures with the figures in the monthly statements issued by the public supplier Bulgargas EAD.</p> <p>The corrections of the NG consumption measured are performed by electronic volume correctors or by fixed factor who's calculation is explained in the sub instruction I10-6.3-102 and in the rules for working with the users and in Annex 2 of the PDD</p>	<input checked="" type="checkbox"/>
Documentation	The evidences that are available to show the performance of this procedure are as following:	<input checked="" type="checkbox"/>

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	<ul style="list-style-type: none"> - Instruction including the sub instructions and procedures that are part of the QMS is available.(e.g. I10-6.3-102 and P-6.3-102, respectively) - Monthly information on the statement of the GDN covering all single reading protocols - Protocol for reading of monthly consumptions of the region 	
Responsibilities	Mrs. Stela Blagova the Director of Ecology and Sustainable Development Dept. of Overgas Inc. AD is in charge for the final approval of the MR.	<input checked="" type="checkbox"/>

4.2. Peculiarities

Description of Peculiarities and unexpected Daily Events during the verification period		
	Description	Conclusion and IRL
Performance	<p>The performance of the monitoring system is deemed to be state of the art; a statement about is given in the following:</p> <ul style="list-style-type: none"> - Shut downs of consumers do not affect the monitoring system or the ERU calculation in principle. Only the consumption of this client is decreased for the respective month, but, this does not affect the readings of the devices. - In case of meter failure in the AGDS the NG meter of Bulgargas EAD can be used for the cross check of the monthly readings of the consumers. - As for leakages due to emergency cases see chapter 4.5. <p>Peculiarities that occurred in 2009, e.g. leakages as stated in the MR, have no impact on the final results since the ERUs are calculated on the base of the measured NG consumption of end users.</p>	<input checked="" type="checkbox"/>

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Documentation	All of the likely peculiarities have been clearly indicated and are traceable. The data treatment in such cases complies with the monitoring plan of the determined PDD and goes even beyond of it. See Instruction И1-П8.6-015 for elaboration of monitoring report on the joint implementation projects of Overgas Inc. AD.	<input checked="" type="checkbox"/>
Measures	-	<input checked="" type="checkbox"/>

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4.3. Further additional requirements

Description of additional requirements to be checked		
	Description	Conclusion and IRL
	No additional requirements are applicable as for the PDD.	<input checked="" type="checkbox"/>

4.4. Data Reporting

Description of the Monitoring Report		
	Comments and Results	Conclusion and IRL
Compliance with UNFCCC regulations	<p>The project is applying a project specific methodology approach. All requirements from the project specific methodology approach are fulfilled. The Monitoring Plan in the PDD and the Monitoring Report are consistent</p> <p>Monitoring report Version 2, 18 February 2010 (IRL#31) including Monitoring workbook for 2009 "Monitoring _Sofia_v2_18.02.2010_protected", Version: 2/18th February 2010 (IRL#32) is consistent with the PDD. (IRL#4)</p> <p>The verified period is from the 01.01.2009 until 31.12.2009.</p>	<input checked="" type="checkbox"/>
Completeness and Transparency	The project description and implementation is complete and transparently explained in the Monitoring Report.	<input checked="" type="checkbox"/>
Correctness	<p>All the reported data is correctly represented in the Monitoring report and Calculation Tool.</p> <p><u>Clarification Request#5.</u> Clarify the gas consumption values difference in MR and in Presentation on-site.</p>	<input checked="" type="checkbox"/>

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5. Compilation and Resolutions of CARs, CRs and FARs

Corrective Action Requests by audit team			
	Comments and Results	Ref	Conclusion and IRL
Issue	<u>Corrective Action Request#1</u> The input values in calculation tool (worksheet “input data” cells G42 and G44) do not match the respective values in Excel File “Spravka_Prodajbi_Sofiia_2009.xls”.	2.2	<input checked="" type="checkbox"/> IRL 8
Response	The correct values are presented in the file “Spravka_Prodajbi_Sofiia_2009.xls”. The values in the calculation tool is corrected in version 2 of the calculation tool and the MR.		
Assessment	The values are correct now.		
Issue	<u>Corrective Action Request#2</u> Provide in MR (and in Monitoring Manual) the overall scheme of metering the gas amount delivered to Sofiagas GDN from Bulgargas: locations of Bulgargas meters and control meters owned by Sofiagas.	2.2	<input checked="" type="checkbox"/> IRL 7
Response	The scheme is included in version 2 of the MR.		
Assessment	The scheme is provided as Annex 5 to MR. It is clear now that the gas is entered into GDN at 7 locations i Sofia.		
Issue	<u>Corrective Action Request#3</u> The revision number and issuing date shall be added to the calculation tool: both to the file name and to the calculation sheets.	3	<input checked="" type="checkbox"/> IRL 8
Response	The revision number and issuing date are added in version 2 of the calculation tool.		
Assessment	The revision number and issuing date are added: “Version 2/18 February 2010”		
Issue	<u>Corrective Action Request#4</u> The Excel calculation tool/file shall be delivered in protected and unprotected format.	3	<input checked="" type="checkbox"/>

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Corrective Action Requests by audit team			
Response	Version 2 of the calculation tool is delivered in protected and unprotected format.		IRL 8
Assessment	Version 2 of the calculation tool is delivered in protected and unprotected format.		
Issue	Corrective Action Request#5 Correct the Total value of “Corrected natural gas consumption” (column 4) in Table 7 in MR.	3	<input checked="" type="checkbox"/> IRL 7
Response	The value has been corrected in Version 2 of the MR.		
Assessment	The correct value is presented now.		
Clarification Requests by audit team			
	Comments and Results	Ref	Conclusion and IRL
Issue	<u>Clarification Request#1</u> Clarify how, where and for how long the paper copies of original meter readings are archived.	2.2	Forward Action Request#1
Response	The original meter reading protocols are archived on paper copies in the GDC for three months.		
Assessment	The clarification is sufficient, however the protocols should be archived at-least until the end of JI verification audit, to enable the review by auditors if requested so. <u>Forward Action Request#1.</u> The original meter reading protocols should be archived until the end of JI verification audit. Add the respective description to the Instruction.		
Issue	<u>Clarification Request#2</u> The amount of natural gas from annex 3 (Monthly statements for delivery of natural gas by Bulgargas EAD to Sofiagas EAD in 2009) is 62 767 thousand Nm3. The sum of values in column F51÷F62 (Monitoring_Sofia.xls, sheet “Input data”) gives 80 890 thousand Nm3. Please, explain the difference.	2.2	<input checked="" type="checkbox"/> IRL 7

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Corrective Action Requests by audit team			
Response	The monthly statements presented in Annex 3 do not include the amounts of natural gas delivered to the THPs. The difference of 18 123 thousand m ³ is exactly the amount of natural gas delivered to the THPs.		
Assessment	The issue is clear now. The THPs can be seen at Annex 5 to MR. See also Corrective Action Request#2.		
Issue	<u>Clarification Request#3</u> Provide copies of monthly invoices from Bulgargas about quantities of NG delivered to GDN for crosscheck purposes.	2.2	<input checked="" type="checkbox"/> IRL-25, -26, -27, -28
Response	Paper copies of the invoices as well as of the credit notes for November and December have been provided.		
Assessment	The copies of invoices were provided and used for the verification purposes.		
Issue	<u>Clarification Request#4</u> Clarify the Low Calorific Value in cell G52 (Monitoring_Sofia.xls, sheet "Input data"), because of differences between Bulgarian and English certificates for February – see Annex 4 - Certificates of Natural Gas_Sofia_en.pdf	2.4	<input checked="" type="checkbox"/>
Response	There is a misprint made by the translator. The actual value is the one in the original Bulgarian certificate, which is used in the calculation tool.		
Assessment	The explanation is sufficient. The right value is on the original document.		
Issue	<u>Clarification Request#5</u> Clarify the gas consumption values difference in MR and in Presentation on-site.	4.4	<input checked="" type="checkbox"/>
Response	There is a misprint. The actual values are presented in the Excel file "Spravka_Prodajbi_Sofia_2009.xls". See answer to CAR#1.		
Assessment	The mistake is corrected. Gas consumption values are correct now.		

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Forward Action Requests by audit team			
	Comments and Results	Ref	Conclusion and IRL
Issue	<u>Forward Action Request#1</u> The original meter reading protocols should be archived until the end of JI verification audit. Add the respective description to the Instruction.	5	<input checked="" type="checkbox"/>
Response	The original meter reading protocols will be kept at the GDC until the end of the next verification audit, which will be described in the Instruction.		
Assessment	Will be checked during next periodic verification		


PERIODIC VERIFICATION

“Reduction of GHG by Gasification of Sofia
Municipality”




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Annex 2: Information Reference List

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Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/Issuer	Additional Information (Relevance in JI Context)
1.	01/2010	MONITORING REPORT for the period 1st January 2009 – 31st December 2009 of the project: "Reduction of Greenhouse Gases by Gasification of Sofia Municipality", version 1, with Annexes 1÷4	Nikola Delev, Expert Assessments and Analyses Overgas Inc. AD	Approved by Stela Blagova, Director Ecology and Sustainable development Overgas Inc. AD
2.	01÷05/2009	Participant list of on-site interviews (LoP)	TÜV SÜD	
3.	01÷02/02/2010	<p>On-site interviews conducted by TÜV SÜD.</p> <p>Verification Team: Madis Maddison TÜV SÜD Industrie Service GmbH Nelly Gromkova local expert</p> <p>Interviewed Persions: Mrs. Stela Blagova Director Ecology and Sustainable Development Dept, Overgas Inc AD Mr. Kamen Simeonov Head of Ecological policy, assessment and projects Section; Overgas Inc. AD Mr. Nikola Delev Senior Expert Assessments and Analyses; Overgas Inc. AD Mrs Ivet Dimitrova Senior Expert JI projects Mrs. Dimitriyka Lavchieva Head of QMS Audit Section; Overgas Inc. AD Mr. Todor Marinov Director Metrological assurance; Overgas service AD Mr. Plamen Hitev Executive Director, Sofiagas EAD Mr. Petar Fildishev Director Exploitation, Sofiagas EAD</p>		
4.	04/2004	PDD "Reduction of Greenhouse Gases by Gasification of Sofia Municipality", version 01, with Appendixes 1÷14	Overgas Inc. AD	PDD

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5.	27/03/2009	Verification Report, Second Periodic Verification of the "Reduction of GHG by Gasification of Sofia Municipality"	TÜV SÜD	
6.	18/02/2010	Joint implementation projects of Overgas	Mrs. Ivet Dimitrova	Presentation
7.	01/02/2010	Monitoring report for 2009 of the project "Reduction of Greenhouse Gases by Gasification of Sofia Municipality"	Mr Nikola Delev	Presentation
8.	01/02/2010	Monitoring workbook for 2009 "Monitoring _Sofia"	Mr Nikola Delev	Excel file. ERU calculation tool
9.	01/02/2010	Overgas service AD technical services	Mr. Todor Marinov	Overgas Service Presentation
10.	01/02/2010	QMS of Overgas Inc. AD and GDC	Mrs. Dimitriyka Lavchiyska	Presentation
11.	01/02/2010	SCADA system (Power Point presentation)	Mr. Petar Fildishev	Presentation
12.	2009	33 Monthly acts for natural gas delivery to the four local heating plants	Overgas Inc. AD	
13.	01/2010	Instruction for elaboration of monitoring reports on the joint implementation projects of Overgas INC, part of QM System	Overgas Inc. AD	
14.	21/08/2009	Six Statements for control performed to identify and localize breaks of underground pipes	Overgas service AD	The checking was performed on the territory of Sofia municipality by EX-TEC SR5
15.	12/2009	Invoices for December 2009 of 1 local heating plant and 1 administrative user and 1 householder in Sofia	Issued by Sofiagas EAD	The meter readings of the users were cross checked

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16.	7/11/2008	Schedule for the year 2009 for control of volume correctors for the year 2009;	Sofiagas service AD	The schedule was prepared by Overgas service AD on the request and in collaboration with Overgas Sever EAD
17.	03/09/2008	Schedule for the year 2009 for control of diaphragm gas meters for the year 2009;	Sofiagas service AD	The schedule was prepared by Overgas service AD on the request and in collaboration with Overgas Sever EAD
18.	05/09/2008	Schedule for the year 2009 for control of roots and turbine gas meters for the year 2009	Sofiagas service AD	The schedule was prepared by Overgas service AD on the request and in collaboration with Overgas Sever EAD
19.	09/09/2009	Calibration certificate of Bulgargas diaphragm gas meters - check protocols No 058-12	Laboratory GMB-RO Plovdiv	
20.	2009	Meter check certificates of Bulgartrans gas electronic volume correctors No 129, 130, 160, 172, 173	UNISIST OOD Laboratory	
21.	2009	10 Domestic meter replacement protocols	Sofiagas EAD	
22.	2009	5 Industrial meter replacement protocols	Sofiagas EAD	
23.	2009	November 2009 manual reading protocol	Sofiagas EAD	
24.	20/05/2009	Diaphragm meter check protocol	Overgas service AD	

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Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/Issuer	Additional Information (Relevance in JI Context)
25.	11/2009	Two Invoices for the ordered quantity of natural gas for November 2009	Bulgargas EAD	Each one is for the half of the quantity.
26.	30/11/2009	Credit note No 0000127407 for natural gas delivery	Bulgargas EAD	<p>The credit note is being issued in case the invoiced quantity of natural gas is bigger than the consumed.</p> <p>The invoiced quantity natural gas minus the quantity in the credit note equals to the amount written in the monthly statement for November.</p>
27.	12/2009	Two Invoices for the ordered quantity of natural gas for December 2009	Bulgargas EAD	Each one is for the half of the quantity.

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28.	31/12/2009	Credit note No 0000128228 for natural gas delivery	Bulgargas EAD	The credit note is being issued in case the invoiced quantity of natural gas is bigger than the consumed. The invoiced quantity natural gas minus the quantity in the credit note equals to the amount written in the monthly statement for December.
29.	09-10/06/2009	5 Certificates for training of experts, performing gas meter readings	Issued by "Gastec BG" AD	
30.	01/02/2010	IT system Excel file "Spravka_Prodajbi_Sofia_2009.xls"	Overgas EAD	IT system file summarizing consumption of NG
31.	18/02/2010	MONITORING REPORT for the period 1st January 2009 – 31st December 2009 of the project: "Reduction of Greenhouse Gases by Gasification of Sofia Municipality", Version: 2/18th February 2010, with Annexes 1-5.	Nikola Delev, Expert Assessments and Analyses Overgas Inc. AD	Approved by Stela Blagova, Director Ecology and Sustainable development Overgas Inc. AD
32.	18/02/2010	Monitoring workbook for 2009 "Monitoring _Sofia_v2_18.02.2010_protected", Version: 2/18th February 2010	Mr Nikola Delev	Excel file. ERU calculation tool
33.	November 2009	Bulgarian National Allocation Plan for the period 2008 - 2010		

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Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/Issuer	Additional Information (Relevance in JI Context)
34.	September 2006	Bulgarian JI Guidelines		