



Industrie Service

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Verification Report

Periodic Verification of JI Project

“Reduction of greenhouse gases by gasification of Sofia
municipality (Overgas Inc. AD)”

Overall Monitoring period 4: 01-01-2010 to 31-12-2010

(Third periodic verification within JI crediting period 2008-2012)

Report No. 600500540

21 March 2011

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

Report No.	Date of first issue	Version No.:	Revision date	No. of pages
600500540	02-03-2011	2	21-03-2011	15
Subject:			Third Periodic Verification within JI crediting period 2008-2012	
Executing Operational Unit:				
TÜV SÜD Industrie Service GmbH, Carbon Management Service Westendstrasse 199 - 80686 Munich, Federal Republic of Germany				
Project Participant (client):				
Overgas Inc. AD, Philip Kutev Str. 5; 1407 Sofia. Kingdom of the Netherlands (No specific company is mentioned. Contract for ERUs is between Overgas Inc. AD and the Kingdom of Netherlands).				
Project Title			Reduction of GHG by Gasification of Sofia Municipality	
Monitoring period:			01-01-2010 to 31-12-2010	
First Monitoring Report (version/date)			Version 01 / 12-01-2011	
Final Monitoring Report (version/date)			Version 03 / 23-02-2011	
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 third 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_tablca_EN_publicuvane.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 62% 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</p>				

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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.

Overgas company is not participating in the Emissions Trading Scheme (ETS).

Based on the information we have seen and evaluated, we confirm that the implementation of the project resulted in total 90 529 t CO_{2e} of ERUs during the verification period 01-01-2010 to 31-12-2010.

Assessment Team Leader:

Olena Maslova

Assessment Team Members:

Madis Maddison (Verifier)

Georgios Agrafiotis (Verifier and project manager)

Technical Reviewer:

Thomas Kleiser

Certification Body responsible:

Rachel Zhang (Deputy Head)



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
DVM	Determination and Verification Manual

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	12-01-2011
Revised Monitoring Report	03	23-02-2011
Project documentation link:	http://www.netinform.de/KE/Wegweiser/Guide22.aspx?ID=7175&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 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 JI guidelines 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.



1.3 GHG Project Description

Project activity:	"Reduction of GHG by Gasification of Sofia Municipality"
UNFCCC registration number:	BG1000151
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 on-site interviews from February 2010 conducted by verifier, by the end of 2010, 486.4 km GDN of steel and polyethylene gas pipelines with the respective facilities were constructed in Sofia Municipality. In 2010 the amount of natural gas delivered to the end users reached 83 474 thousand Nm³.

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

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 area	Coverage of financial aspect	Host country experience
Olena Maslova	ATL	<input checked="" type="checkbox"/>		N/A	
Madis Maddison	V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
Georgios Agrafiotis	V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	<input checked="" type="checkbox"/>

Olena Maslova is an auditor (Determiner / Verifier) in the "Carbon Management Service" department of TÜV SÜD Industrie Service GmbH in Munich, Germany. She is chemical engineer and host country expert for projects in Ukraine and Commonwealth of Independent States. Due to her further master degree at the university of applied science in the Federal Republic of Germany she is also familiar with Germany's current environmental legislation. Olena Maslova specializes in the assessment of JI projects in the sector of chemical industries and waste handling and disposal. In this project she functioned as auditor and project manager.

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. He is Auditor (determiner and verifier) for JI (renewable resources and waste handling and disposal) and voluntary projects.

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=7175&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.

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 07 and 08-02-2011 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 2010, IRL#21;
2. Monthly acts for natural gas delivery to the local heating plants 2010, IRL#10;
3. Certificates of the natural gas delivered by Bulgartrngas EAD to Sofiagas EAD in 2010, IRL#22;
4. Invoices for 2010 of local heating plants, administrative users and households, IRL#12;
5. Manual reading protocols, IRL#17.

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) indicated in previous reports (determination/verification) were discussed during this phase and, issue raised in the FAR was resolved, during communications between the PP and TÜV SÜD. However it produced the next FAR which shall be checked during next verification audit (see also §3.1).

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 (CAR) 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 (CR) 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 (FAR) 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 JISC 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 (23-02-2011, version 3). The verification findings for each verification subject are presented below:

3.1 FARs from Previous Verification

The verification team confirms that the FAR presented in the validation report and/or verification reports was correctly addressed by the PPs.

However during the on-site interviews it was discovered that this procedure was not known for Sofiagas personnel and documents were archived only for one year and not for three years as required by procedure. The new FAR was generated for implementation of the procedure.

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 2010 486.4 km which constitutes 83% of the planned Network until 2012). The actual natural gas utilization was 62% 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.
Means of verification/Comments:	The total consumption of each sector has been verified based on the IT system data (raw data) available on-site and no discrepancies were found.
Cross-check	The sample readings of large NG users were cross-checked from monthly consumption protocols (IRL#10) and from IT system file "Spravka_Sofia_2010.xls". The consumption of residential users was crosschecked from samples of manual reading protocols (samples for May 2010). No discrepancies were identified.

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#21).
Cross-check	GDC has installed control meters to connection point which readings were used to cross-check the data on-site. No significant discrepancies were identified.

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 certificates of gas delivery (IRL#22).
Cross-check	The values were crosschecked with monthly reports of gas entering Bulgaria and issued by Bulgargas.

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.

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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: Include the description of project implementation progress into the MR.
CAR 1, means of verification
Version 3/23 February 2011 of the MR was sent to audit team for visual verification. The total length of GDN given there was verified interviewing of Sofiagas personnel during on-site visit.
CAR 1, changes in the MR or related documents
The description of project implementation progress is included into the new version 3 of the MR (Monitoring_Report_Sofia_ver3_23-02-2011.pdf) (IRL#7).
CAR 2: Provide in MR 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#7) 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#7)
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 3/23 February 2011 of the calculation tool was sent to audit team for visual verification.
CAR 3, changes in the MR or related documents
The version number 3 and issuance date 23.02.2011 were added to the file name and to cover page of calculation sheet (IRL#8).
CAR 4: Correct the decimal places in sheet "input data" table for Natural gas consumption for all months for year 2010 to match the Table 3 in MR.
CAR 4, means of verification
Version 3/23 February 2011 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 decimal places were corrected and numbers in calculation tool (IRL#8).
CAR 5: Replace the text (in chapter 8.2 in MR) "In 2009 the low heating value..." to text "In 2010 the low heating value..."
CAR 5, means of verification
Version 3/23 February 2011 of the MR was sent to audit team for visual verification.
CAR 5, changes in the MR or related documents
The text (in chapter 8.2 in MR) was respectively corrected in Monitoring Report v3 (IRL#7).
CR 1: Provide copies of monitoring reports of the quality of NG entering Bulgaria for year 2010.
CR 1, means of verification

The documents (IRL#23) were provided to audit team for visual verification.
CR 1, changes in the MR or related documents
No changes in the MR or related documents were made.
CR 2: Clarify why the total emission reduction in the claim period 2008 – 2012 is in Calculation tool 736 473 tCO ₂ e and 728 590 tCO ₂ e in MR Chapter 1.
CR 2, means of verification
The explanation was given by PP that the value presented in Chapter 1 of the MR is taken from the original PDD. The Value in the Calculation tool is recalculated with the official and actual electricity emission factors for Bulgaria, approved and published by the Ministry of Environment and Water (MOEW) for use in Joint Implementation projects under the Kyoto Protocol following a Correction Action Request from the Second Periodic Verification.
CR 2, changes in the MR or related documents
No changes in the MR or related documents were made.
FAR 1: The documented procedure to archive raw monitoring data at least three years shall be implemented in GDN Sofiagas.
FAR 1, means of verification
The PP agreed to keep the original meter reading protocols will be kept at the GDC at least for three years. 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 third 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 01-01-2010 to 31-12-2010

Verified emissions in the above reporting period:

Emission reductions: 90 529 t CO_{2e}

Munich, 21-03-2011

Munich, 21-03-2011


Certification Body "climate and energy"
TÜV SÜD Industrie Service GmbH


Assessment Team Leader



Annex 1: Verification Protocol

Verification Protocol

Project Title: Reduction of GHG by gasification of Sofia Municipality
—4th Periodic Verification

Date of Completion: 21.03.2011

Number of Pages: 26



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Verification Protocol

Project Title: Reduction of GHG by gasification of Sofia Municipality
—4th Periodic Verification

Date of Completion: 21.03.2011

Number of Pages: 26



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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. All 5 stations have not been changed during the last verification period and measured standardized gas consumption is automatically transmitted to the OVER-COMM server in an hourly frequency. Spot check of AGRS#4 was done on-site.	<input checked="" type="checkbox"/>
Component 1: Reconstruction of installation or construction of new installation of end user.	Construction of internal installations for 135 industrial enterprises, 228 sites in the public and administrative sector and over	No of end user by sectors (31.12.2010): • Industrial 63	<input checked="" type="checkbox"/>

Verification Protocol

Project Title: Reduction of GHG by gasification of Sofia Municipality
—4th Periodic Verification

Date of Completion: 21.03.2011

Number of Pages: 26



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Technical Features	31 800 households	<ul style="list-style-type: none"> Public and administrative 309 Residential 14 341 <p>The type of technical equipment depends on the end user. For every new user that has been connected to the Gas Distribution Network (GDN) in 2010 appropriate technical equipment has been implemented.</p> <p>Spot checks were done of gas metering installations of:</p> <ul style="list-style-type: none"> two industrial users; four domestic users and one public user. 	<ul style="list-style-type: none"> Public and administrative 309 Residential 14 341 	
Component 2: Gas Distribution Network (including all equipment necessary for the operation of the GDN) to all users from the three consumer sectors	Construction of 583 km gas distribution network in Sofia Municipality.	<p>Corrective Action Request#1. Include the description of project implementation progress into the MR.</p> <p>Total length of constructed GDN by the end of 2010 was 486,4 km.</p>	<p>Corrective Action Request#1. Include the description of project implementation progress into the MR.</p> <p>Total length of constructed GDN by the end of 2010 was 486,4 km.</p>	<input checked="" type="checkbox"/>
Technical Features				
Operation Status during verification				
Approvals / Licenses	Verification Findings			Conclusion and IRL
Actual Operation Status	This subject has been verified during the first periodic verification.			<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/> Under construction <input checked="" type="checkbox"/> In operation <input type="checkbox"/> Out of operation Reason and date (if out of operation):			<input checked="" type="checkbox"/> IRL#19

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		<input checked="" type="checkbox"/>
Remarks on Special Operational Circumstances During the Verification Period	<p>According to the Overgas presentation "Joint implementation projects of Overgas" that has been handed over during the on-site Audit in Sofia, 519 km of Gas Distribution Network has been constructed until the end of 2010, representing 89% of the planned Network until 2012.</p> <p>No major breakdowns or other peculiarities took place during 2010. However there have been 105 small size accidents on the network.</p>	<input checked="" type="checkbox"/> IRL#19

1.2. Organization

Project Participant (s)		
	Verification Findings	Conclusion and IRL
Entity / Responsible person:	<p>Director of Ecology and Sustainable Development Dept. of Overgas Inc. AD is in charge for the final approval of the MR.</p> <p>The business model is under reconstruction in Overgas. The new process descriptions are not approved yet.</p>	<input checked="" type="checkbox"/> IRL#7
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	
	Conclusion
Verification Findings	

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		and IRL
Quality Management Manual:	<p>A QMS of Overgas Inc. AD is implemented but not yet certified. Project related procedures are in place, one of them is:</p> <p>"Instruction for elaboration of MRs on the JI projects of Overgas Inc. AD" from January 2009 which was approved by Mr. Svetoslav Ivanov the Deputy Executive Director of Overgas Inc. AD.</p> <p>This document is treated as project and location specific monitoring manual.</p> <p>The manual is regarded to be suitable to ensure the quality of the Monitoring System.</p>	<input checked="" type="checkbox"/> IRL#5
Responsibilities:	<p>Directorate for QMS in Overgas Inc. AD, and Ecology and Sustainable Development Department of Overgas Inc. AD for the instruction.</p> <p>The ongoing validity can be confirmed by the Audit team.</p>	<input checked="" type="checkbox"/>
Qualification and Training:	<p>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.</p> <p>Thus, the key personal is deemed to be sufficiently qualified.</p> <p>Evidence for the training of the staff performing reading of gas meters has been demonstrated.</p>	<input checked="" type="checkbox"/>
Implementation of QM-system	<p>In 2008-2009 internal audits were carried out. In 2010 up-date of procedures and instructions were carried out based on the findings of the audit.</p>	<input checked="" type="checkbox"/>

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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
<p><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.</p>	<p>The original meter reading protocols are archived in GDC. Instruction V-03.01.00-3 for the readings of the metering devices from 19.07.2010 includes rules for the preparation of the original metering protocols. Procedure П-03.00.00-1 for quality records management defines a period of three years for archiving of all working documents.</p>	<p>The description of standard procedure is sufficient and it is needed to implement it (IRL#5). Interview with personnel showed that original meter reading protocols are archived for only one year. Forward Action Request#1. The documented procedure to archive raw monitoring data at least three years shall be implemented in GDN Sofiagas. <input checked="" type="checkbox"/></p>

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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"/> IRL#4 IRL#7
-	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"/> IRL#4 IRL#7
-	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"/> IRL#4 IRL#7

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

2.2. Parameters measured directly with instruments in the field

Table 1

Parameter and instrumentation					
Parameter title	PDD	Meth/Tool	MR	Verification Findings	Conclusion and IRL
	The summarized consumption read by the gas meters of end users	- project specific methodology has been applied	The total annual natural gas consumption by the end users by sectors	Parameter title is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/> IRL#4 <input checked="" type="checkbox"/> IRL#7
Parameter ID (if available)	-	-	-	-	<input checked="" type="checkbox"/> IRL#4 <input checked="" type="checkbox"/> IRL#7
Data Unit	1000 sm3	-	1000 sm3	Parameter unit is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/> IRL#4 <input checked="" type="checkbox"/> IRL#7
Monitoring frequency (reading)	Monthly	-	Monthly	Monitoring reading frequency is consistent with PDD and	<input checked="" type="checkbox"/> IRL#4

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	Monthly	-	Monthly	Monitoring Report.	IRL#7
Monitoring frequency (recording)	Monthly	-	Monthly	Monitoring recording frequency is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/> IRL#4 IRL#7
	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.				<input checked="" type="checkbox"/> IRL#9
	Procedures: - Instruction including the sub instructions and procedures that are part of the QMS is available.(e.g. И10-6.3-102, И03.01.00-3 and П03.01.00-1)				<input checked="" type="checkbox"/>
	Implementation of procedure: The meter readings are recorded manually or electronically downloaded in a protocol per region for all users per month. 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. Electronic collection is performed for only 7 "smart" meters. This system is under development.				<input checked="" type="checkbox"/>

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	Responsibility: The Director of Exploitation of GDN Dept.in GDC.	<input checked="" type="checkbox"/> IRL#5
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 for one year (see Forward Action Request#1).	<input checked="" type="checkbox"/> IRL#5
Data transfer and protection of input data for calculations	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). Summarized Table for gas consumption by sectors to be generated manually by one click in an Excel File called "Spravka_Sofia_2010.xls". The total annual consumption of each sector is manually transferred by an expert in the ESD department into the calculation tool (Excel File) "Annex 4 - Monitoring_Sofia_24Jan_protected.xls", for 2010 in a respective column for this year.	<input checked="" type="checkbox"/> IRL#5
	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"/> IRL#9
Data verification	Consistency of raw data with calculation tool: 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.	<input checked="" type="checkbox"/> IRL#5
	Consistency of calculation tool with monitoring report: The data in the monitoring report is consistent with the calculation tool	<input checked="" type="checkbox"/> IRL#5 IRL#8
Crosscheck (if available)	The sample readings of large NG users were cross-checked from monthly consumption protocols and from IT system file "Spravka_Sofia_2010.xls".	<input checked="" type="checkbox"/>

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	The consumption of residential users was crosschecked from samples of manual reading protocols (samples for May 2010). No discrepancies were identified.	IRL#5 IRL#10 IRL#12 IRL#17
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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	Natural gas consumption	Parameter title is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/> IRL#4 IRL#7
Parameter ID (if available)	-	-	-	-	-
Data Unit	1000 sm3	-	1000 sm3	Parameter unit is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/> IRL#4 IRL#7
Monitoring frequency (reading)	Monthly	-	Monthly	Monitoring reading frequency is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/> IRL#4 IRL#7
Monitoring frequency (recording)	Monthly	-	Monthly	Monitoring recording frequency is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/> IRL#4

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				consistent with PDD and Monitoring Report.	IRL#7
	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>Corrective Action Request#2. Provide in MR 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> <p>Procedures: - Instruction including the sub instructions and procedures that are part of the QMS is available (e.g. П 03.00.00-2).</p> <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>Responsibility: The Director of Exploitation of GDN Dept.in GDC.</p>				<p>✓</p> <p>✓</p> <p>✓</p>

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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) "Annex 4 - Monitoring_Sofia_24Jan_protected.xls", for 2010 in a respective column for this year.	<input checked="" type="checkbox"/> IRL#8
	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. No discrepancies were identified.	<input checked="" type="checkbox"/> IRL#21
	Consistency of calculation tool with monitoring report: The data in the monitoring report is consistent with the calculation tool	<input checked="" type="checkbox"/> IRL#7 IRL#8
Crosscheck (if available)	GDC has installed control meters to connection point which readings were used to cross-check the data on-site. No significant discrepancies were identified.	<input checked="" type="checkbox"/> IRL#18

2.3. Parameters measured through sampling

Sampling information Not applicable

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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"/> IRL#4 <input checked="" type="checkbox"/> IRL#7
Parameter ID (if available)	LHV	-	LHV	Parameter ID is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/> IRL#4 <input checked="" type="checkbox"/> IRL#7
Data Unit	kcal/m ³	-	kcal/m ³	Parameter unit is consistent with PDD and Monitoring Report.	<input checked="" type="checkbox"/> IRL#4 <input checked="" type="checkbox"/> IRL#7
Technical aspects					
Description of Data / Data Refers to:	Calorific Heating Value of NG "LHVactual-monthly"				
Date of Data:	Monthly				
Gaps in data	Period: N/A, no gaps have occurred				
					<input checked="" type="checkbox"/>

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	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 certificates issued by "Bulgartransgas EAD".	<input checked="" type="checkbox"/> IRL#22
	Responsibility: The Director of Exploitation of GDN Dept.in 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 electronic data are automatically stored on the back-up server of the analysing laboratory. As protection measure paper copies are stored in the GDC.	<input checked="" type="checkbox"/>
Data transfer and protection of input data for calculations	The data from monthly certificates is transferred manually by an expert in the ESD department into calculation tool (Excel File) "Monitoring_Sofia.xls", for 2010, a respective column for this year.	<input checked="" type="checkbox"/> IRL#8
	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"/> IRL#8

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Data verification	Consistency of raw data with calculation tool: The data was verified with monthly acts of gas delivery.	<input checked="" type="checkbox"/> IRL#21
	Consistency of calculation tool with monitoring report: The data in the monitoring report is consistent with the calculation tool	<input checked="" type="checkbox"/> IRL#7 IRL#8
Crosscheck (if available)	Overgas Inc is monitoring the quality of NG entering Bulgaria on a daily basis. <u>Clarification Request#1.</u> Provide copies of monitoring reports of the quality of NG entering Bulgaria for year 2010.	<input checked="" type="checkbox"/> IRL#23

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

Other information Not applicable

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"/> IRL#8
Calculation Tool description	The calculation method itself is simple, transparent and easy re-producible. All formulae, intermediate steps and constants are described transparently. They include correct units	<input checked="" type="checkbox"/> IRL#8

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	and are in compliance with the PDD. The issuing date and revision number are not indicated. Corrective Action Request#3. The revision number and issuing date shall be added to the calculation tool: both to the file name and to the calculation sheets. Corrective Action Request#4. Correct the decimal places in sheet "input data" table for Natural gas consumption for all months for year 2010 to match the Table 3 in MR.	
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	The used default values are fixed in the PDD, validated and there is no indication detected in order to have adjusted these default values. LHV default 34.000 GJ/1000 sm ³ Correction factor for small users (less 25 m ³ /h) that do not have an electronic volume corrector installed (procedure W10-6.3-102). In Sofia the factors are: (i) for summer 1.00 and (ii) for winter 1.00.	<input checked="" type="checkbox"/> IRL#4 IRL#8
Default parameter	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: Fuel Switch Emission Reduction Factor per 1000 m ³ of NG for industrial sector: 0.96 tCO ₂ /1000 sm ³ for year 2010 Fuel Switch Emission Reduction Factor per 1000 m ³ of NG for public and administrative sector: 0.70 tCO ₂ /1000 sm ³ for year 2010 Fuel Switch Emission Reduction Factor per 1000 m ³ of NG for residential sector: 1.64 tCO ₂ /1000 sm ³ for year 2010	<input checked="" type="checkbox"/> IRL#4 IRL#8

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	year 2010	
Formulae check	All formulae included in the calculation tool are in compliance with the PDD.	<input checked="" type="checkbox"/> IRL#4 IRL#8
Rounding functions	N/A, no rounding functions are used	<input checked="" type="checkbox"/> IRL#8
Calculation tool changes and protection measures	Calculation Tool is provided in two versions: (i) with all the cells protected and (ii) unprotected version for auditors use.	<input checked="" type="checkbox"/> IRL#8
Reported data	The results of the calculation tool are consistent with these mentioned in the MR. ERs for 2010 are in both documents stated to be 90 529 tCO ₂ e, as a result of natural gas consumption of 84 126.174 thousand sm ³ .	<input checked="" type="checkbox"/> IRL#7 IRL#8

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4. Additional assessment

4.1. Internal Review

Description and performance of internal review		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 Chapters 2.1 and 2.2). 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> <p>MR is reviewed and checked for errors by another employee in ESD. The translations to English are compared to the original.</p>	<input checked="" type="checkbox"/> IRL#5
Documentation	<p>The evidences that are available to show the performance of this procedure are as following:</p> <ul style="list-style-type: none"> - M1-178.6-015 standardised procedure description 	<input checked="" type="checkbox"/>

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	<ul style="list-style-type: none"> - Monthly information on the statement of the GDN covering all single reading protocols - Protocol for reading of monthly consumptions of the region. 	
Responsibilities	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"/> IRL#5

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. <p>Peculiarities that occurred in 2010, 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"/> IRL#19
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"/> IRL#4

4.4. Data Reporting

Description of the Monitoring Report	
	Comments and Results
Description of the Monitoring Report	Conclusion and IRL
Compliance with UNFCCC regulations	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 Monitoring report Version 3, 23 February 2010 including Monitoring workbook for 2010 "Annex 4 - Monitoring_Sofia_23Feb2011_protected.xls" is consistent with the PDD. The verified period is from the 01.01.2010 until 31.12.2010.
Completeness and Transparency	The project description and implementation is not complete and transparently explained in the Monitoring Report. See Corrective Action Request#1
Correctness	All the reported data is correctly represented in the Monitoring report and Calculation Tool.

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	<p><u>Corrective Action Request#5:</u> Replace the text (in chapter 8.2 in MR) "In 2009 the low heating value..." to text "In 2010 the low heating value..."</p> <p><u>Clarification Request#2:</u> Clarify why the total emission reduction in the claim period 2008 – 2012 is in Calculation tool 736 473 tCO₂e and 728 590 tCO₂e in MR Chapter 1.</p>	
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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	Corrective Action Request#1 Include the description of project implementation progress into the MR.	1.1	<input checked="" type="checkbox"/> IRL#7	
Response	The description of project implementation progress is included into the new version 3 of the MR (Monitoring_Report_Sofia_ver3_23-02-2011.pdf).			
Assessment	The total length of constructed GDN by the end of 2010 is given in MR. The issue is closed.			
Issue	Corrective Action Request#2 Provide in MR 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 overall scheme of metering the gas amount delivered to Sofiagas GDN from Bulgargas is presented in Annex 5 of the new version 3 of the MR (Monitoring_Report_Sofia_ver3_23-02-2011.pdf/Annex 5 - Block scheme of the natural gas supply to the GDN of Sofiagas EAD.pdf).			
Assessment	The overall scheme is provided as an attachment to MR. The issue is closed			
Issue	Corrective Action Request#3 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 to the calculation tool: both to the file name and to the calculation sheets presented together with the new version 3 of the MR (Monitoring_Report_Sofia_ver3_23-02-2011.pdf).			

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Assessment	The revision number and issuance data are added to the file name and cover page of calculation sheet. The issue is closed.			
Issue	Corrective Action Request#4 Correct the decimal places in sheet "input data" table for Natural gas consumption for all months for year 2010 to match the Table 3 in MR.	3		<input checked="" type="checkbox"/> IRL#8
Response	The decimal places in sheet "input data" table for Natural gas consumption are corrected to match the Table 3 in MR of the new version 3 of the MR (Monitoring_Report_Sofia_ver3_23-02-2011.pdf).			
Assessment	The decimal places are corrected and numbers in calculation tool and MR match. The issue is closed.			
Issue	Corrective Action Request#5 Replace the text (in chapter 8.2 in MR) "In 2009 the low heating value..." to text "In 2010 the low heating value..."	4.4		<input checked="" type="checkbox"/> IRL#7
Response	The correction in the text is done the new version 3 of the MR (Monitoring_Report_Sofia_ver3_23-02-2011.pdf)			
Assessment	The misprint was corrected. The is closed.			
Clarification Requests by audit team				
Comments and Results		Ref		
Issue	Clarification Request#1 Provide copies of monitoring reports of the quality of NG entering Bulgaria for year 2010.	2.4		<input checked="" type="checkbox"/> IRL#23
Response	Copies of certificates for the quality of the NG entering Bulgaria for year 2010 are presented in the file: Monthly_certificates_entrance_of_Bulgaria_2010.zip			
Assessment	The copies of monitoring reports of the quality of NG entering Bulgaria were provided. Cross-check of LHV of NG with respective data given in MR did not show any significant discrepancies. The issue is clarified.			

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Issue	Clarification Request#2 Clarify why the total emission reduction in the claim period 2008 – 2012 is in Calculation tool 736 473 tCO ₂ e and 728 590 tCO ₂ e in MR Chapter 1.	4.4	<input checked="" type="checkbox"/>
Response	The value presented in Chapter 1 of the MR is taken from the original PDD. The Value in the Calculation tool is recalculated with the official and actual electricity emission factors for Bulgaria, approved and published by the Ministry of Environment and Water (MOEW) for use in Joint Implementation projects under the Kyoto Protocol following a Correction Action Request from the Second Periodic Verification.		
Assessment	The issue is clarified.		
Forward Action Requests by audit team			
	Comments and Results	Ref	Conclusion and IRL
Issue	Forward Action Request#1 The documented procedure to archive raw monitoring data at least three years shall be implemented in GDN Sofiagas.	1.4	<input checked="" type="checkbox"/>
Response	Procedure П-03.00.00-1 for quality records management defines a period of three years for archiving of all working documents. This procedure will be applied if Sofiagas also for the archiving of raw monitoring data.		
Assessment	The procedure is described sufficiently. Implementation will be checked during next verification.		



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.	12/01/2011	MONITORING REPORT for the period 1st January 2010 – 31st December 2010 of the project: "Reduction of Greenhouse Gases by Gasification of Sofia Municipality", version 1, with Annexes 1-5	Kamen Simeonov, Overgas Inc. AD	First published version
2.	07-08/02/2011	Participant list of on-site interviews (LoP)	TÜV SÜD	
3.	07-08/02/2011	<p>On-site interviews conducted by TÜV SÜD.</p> <p>Validation Team: Madis Maddison</p> <p>Interviewed Persons: Mr. Svetoslav Ivanov Ms. Stela Blagova Mr. Ivan Mastikov Mr. Kamen Simeonov Mr. Nikola Delev Ms. Nadejda Manolova Mr. Marin Marinov Ms. Elizabet Georgijeva Mr. Petar Fildishev Mr. Angel Stoyanov</p> <p>TÜV SÜD Industrie Service GmbH</p> <p>Deputy Executive Director, Overgas Inc AD Director Ecology and Sustainable Development Dept, Overgas Inc AD Head of Section, Overgas Inc. AD Head of Ecological policy, assessment and projects Section; Overgas Inc. AD Senior Expert Assessments and Analyses; Overgas Inc. AD Business analyst, Overgas Inc. AD Operational management, Overgas Inc. AD Metrological assurance; Overgas service AD Sales Manager, Sofiagas EAD Meter reading inspector, 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
5.	01/2010	Instruction for elaboration of monitoring reports on the joint implementation projects of Overgas INC, part of QM Manual	Overgas Inc. 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)
6.	31/03/2010	Verification Report, Second Periodic Verification of the "Reduction of GHG by Gasification of Sofia Municipality"	TÜV SÜD	Previous Verification Report
7.	23/02/2011	MONITORING REPORT for the period 1st January 2010 – 31st December 2010 of the project: "Reduction of Greenhouse Gases by Gasification of Sofia Municipality", version 3, with Annexes 1+5	Kamen Simeonov, Overgas Inc. AD	Final version
8.	01/02/2010	Monitoring workbook "Annex 4 - Monitoring_Sofia_ver3_23Feb2011_protected.xls"	Kamen Simeonov, Overgas Inc. AD	Excel file, ERU calculation tool
9.	02/2011	IT system Excel file "Spravka__Sofia_2010.xls"	Overgas Inc. AD	IT system file summarizing consumption of NG
10.	2010	Monthly acts for natural gas delivery to the local heating plants	Sofagas EAD	Crosscheck of consumption data
11.	2010	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
12.	2010	Invoices for 2010 of local heating plants, administrative users and households	Issued by Sofagas EAD	The meter readings of the users were cross checked
13.	2010	Summary schedule for checking of correctors and meters for year 2010	Overgas Service AD	The schedule was prepared by Overgas service AD on the request and in collaboration with Overgas Sofia EAD
14.	2009	Calibration certificates of Bulgargas gas meters	Bulgargas EAD	

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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)
15.	2009	Meter check certificates of Bulgartrans gas meters	Bulgargas EAD	
16.	2010	Meter replacement protocols for year 2010	Sofiagas EAD	
17.	2010	Manual reading protocol	Sofiagas EAD	Cross-check of gas consumption
18.		Reading protocols of control meters installed at the connection points to Bulgargas network	Sofiagas EAD	for cross-check of quantity of NG entering GDN
19.		Peculiarity (accident) report for year 2010	Overgas Inc. AD	
20.	09/04/2010	Certificates for training of experts, performing gas meter readings	Sofiagas EAD	
21.	2010	Monthly acts/ statements for natural gas delivery for year 2010	Bulgargas EAD	Verification of quantity of NG entering GDN
22.	2010	Monthly certificates of the natural gas delivered by Bulgartransgas	Bulgartransgas	Verification of NG LHV
23.	2010	Monthly reports of gas entering Bulgaria	Bulgartransgas	Crosscheck of NG LHV
24.	November 2009	Bulgarian National Allocation Plan for the period 2008 - 2010		
25.	September 2006	Bulgarian JI Guidelines		