VERIFICATION REPORT VEMA S.A.

VERIFICATION OF THE JI PROJECT

REDUCTION OF METHANE EMISSIONS ON THE GAS EQUIPMENT OF GAS-DISTRIBUTING POINTS AND ON THE GAS ARMATURE OF GAS-DISTRIBUTING NETWORKS OF PJSC «MARIUPOLGAZ»

4TH PERIODIC
FOR THE PERIOD 01/03/2012-31/10/2012

REPORT № UKRAINE-VER/0791/2012
REVISION № 02

BUREAU VERITAS CERTIFICATION

Report No: UKRAINE-ver/0791/2012

VERIFICATION REPORT

Date of first issue:	Organizational unit:
08/11/2012	Bureau Veritas Certification Holding SAS
Client: VEMA S.A.	Client ref.: Fabian Knodel

Summary:

Bureau Veritas Certification has made the 4th periodic verification of VEMA S.A. project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of PJSC "Mariupolgaz" , which is implemented in Mariupol, Ukraine, and uses a specific approach to JI projects, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria (but for the crediting period) refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex post determination by the Accredited Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the monitoring report against project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification, Corrective Actions Requests, Forward Actions Requests (CR, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the ERUs totalize 248 765 tonnes of CO_2 equivalent for the monitoring period from 01/03/2012 to 31/10/2012 .

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: UKRAINE-ver/0791/2012	Subject Group: JI
Project title: "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of PJSC "Mariupolgaz"	
Work carried out by: Yeriomin V. – Team Leader, Climate Change Lead Verifier Kulish V.– Team member, Climate Change Verifier Kuzmenko O. - Team Member, Technical specialist	
Work reviewed by: Sokolov I. – Internal technical reviewer Kobzar V. – Technical specialist	
Work approved by: Sokolov I – Climate Change Operational Manager	

Дата цього видання:	№ ред.:	Number of pages:
15/11/2012	02	28

Bureau Veritas Certification Holding SAS

☒ No distribution without permission from the Client or responsible organizational unit

☐ Limited distribution

☐ Unrestricted distribution

Table of Contents *Page*

1 INTRODUCTION 4
1.1 Objective 4
1.2 Scope 4
1.3 Verification Team 4

2 METHODOLOGY 5
2.1 Review of Documents 5
2.2 Follow-up Interviews 6
2.3 Resolution of Clarification, Corrective and Forward Action Requests 6

3 VERIFICATION CONCLUSIONS 7
3.1 Remaining issues and FARs from previous verifications 7
3.2 Project approval by Parties involved (90-91) 8
3.3 Project implementation (92-93) 8
3.4 Compliance of the monitoring plan with the monitoring methodology (94-98) 11
3.5 Revision of monitoring plan (99-100) 12
3.6 Data management (101) 12
3.7 Verification regarding programmes of activities (102-110) 14

4 VERIFICATION OPINION 14

5 REFERENCES 16

APPENDIX A: PROJECT VERIFICATION PROTOCOL 19

1 INTRODUCTION

VEMA S.A. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of PJSC “Mariupolgaz”, (hereafter called “the project”) that is implemented in Mariupol city, Ukraine.

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

The verification covers the period from March 1, 2012 to October 31, 2012.

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity (AIE) of the monitored reductions in GHG emissions during defined verification period.

The objective of verification can be divided in Initial Verification and Periodic Verification.

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The verification scope is defined as an independent and objective review of the project design document, the project’s baseline study, monitoring plan, monitoring report and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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

1.3 Verification Team

The verification team consists of the following personnel:

V. Yeriomin

Bureau Veritas Certification, Team Leader, Climate Change Lead Verifier

V. Kulish

Bureau Veritas Certification, Team Member, Climate Change Verifier

O. Kuzmenko

Bureau Veritas Certification, Team Member, technical specialist

This verification report was reviewed by:

Ivan Sokolov

Bureau Veritas Certification, Internal Technical Reviewer

V. Kobzar

Bureau Veritas Certification, technical specialist

2 METHODOLOGY

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to the version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19th meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a JI project is expected to meet;
- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The completed verification protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by VEMA S.A. and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Approved CDM methodology, Determination Report of the project issued by Bureau Veritas Certification Holding SAS No. UKRAINE/det/0311/2011 as of 25/07/2011, Guidance on criteria for baseline setting and monitoring, Host

party criteria, the Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed.

The verification findings presented in this report relate to the Monitoring Report for the period from 01/03/2012 to 31/10/2012 , version 01 as of November 05, 2012, version 02 as of November 14, 2012 and the project as described in the determined PDD.

2.2 Follow-up Interviews

On 12/11/2012 Bureau Veritas Certification verification team visited the project implementation site and performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of PJSC «Mariupolgaz» and VEMA S.A. were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
PJSC «Mariupolgaz»	➢ Organizational structure ➢ Responsibilities and authorities ➢ Personnel training ➢ Quality control procedures and technology ➢ Equipment use (records) ➢ Metering equipment control ➢ Metering record keeping system, database
Consultant: VEMA S.A.	➢ Baseline methodology ➢ Monitoring plan ➢ Monitoring report ➢ Deviations from the PDD

2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to raise the requests for corrective and forward actions as well as clarification requests and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reductions calculation.

If the Verification Team, in assessing the monitoring report and supporting documents, identifies issues that need to be corrected,

clarified or improved with regard to the monitoring requirements, it should raise these issues and inform the project participants of these issues in the form of:

(a) Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;

(b) Clarification request (CL), requesting the project participants to provide additional information for the Verification Team to assess compliance with the monitoring plan

(c) Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

The Verification Team will make an objective assessment as to whether the actions taken by the project participants, if any, satisfactorily resolve the issues raised, if any, and should conclude its findings of the verification.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

3 VERIFICATION CONCLUSIONS

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 3 Corrective Action Requests, and 2 Clarification Requests.

The number between brackets at the end of each section corresponds to the DVM paragraph.

3.1 Remaining issues and FARs from previous verifications

There are no any remaining issues and FARs from previous verifications.

3.2 Project approval by Parties involved (90-91)

The project obtained approval by the Host party (Ukraine) - Letter of Approval №2402/23/7 issued by the State Environmental Investment Agency of Ukraine as of 05/09/2011; and written project approval by the party – buyer of emission reduction units (Switzerland) - Letter of Approval # J294-0485 issued by the Federal Office for the Environment (FOEN) of Switzerland dated 25/07/2011.
The abovementioned written approvals are unconditional.

3.3 Project implementation (92-93)

PJSC «Mariupolgaz» is the company providing natural gas transportation and supply to industrial consumers (205 companies), municipal services (1003 entreprises) and population (182 725 appartments and households) in the Mariupol city, Novoazovsk city, 7 urban villages, 56 villages of Novoazovskyi, Volodarsyi and Pershotravnevyi districts of Donetsk region.

The structure of current gas transport rates that are regulated by the government does not include depreciation and investment needs of gas distribution enterprises. This leads to the lack of funds for performance of necessary repair works and modernization of gas networks, purchase of appropriate engineering equipment and components, and also results in increase of natural gas leakage at the PJSC «Mariupolgaz» facilities.

Application of JI project mechanism provided by the Kyoto Protocol was planned before the beginning of the project implementation. For this purpose, a preliminary investment agreement relating to the Joint Implementation project between VEMA S.A. (Switzerland) and PJSC «Mariupolgaz» was signed in December 2004.

The purpose of the project is reduction of the natural gas leakage at gas-transport and gas-distribution infrastructure of PJSC «Mariupolgaz», which are the result of seal failures of gas equipment and gas fittings. The main sources of leakage, included into the project boundary are:

- gas equipment (reducing gears, valves, filters, switches, etc.), flanged and threaded connections in gas distributoin points (GDP) and cabinet-type gas distribution points (CGDP) of PJSC «Mariupolgaz»;
- gas fittings (faucets, bolts, valves, etc.), threaded and flanged connections at gas pipelines of PJSC «Mariupolgaz».

Total quantity of GDPs included in the project boundary is 138 units, CGDPs – 106 units, number of gas fittings at gas pipelines is 6481 units.

The main reason of natural gas leakage is failure of sealing elements of equipment as a result of action of temperature vibrations and moisture.

Basic component of natural gas, methane (92 - 95%), is a greenhouse gas. Repair of natural gas leakage will result in reductions of greenhouse gas emissions. As the leakage metering devices relate to methane the term natural gas leakage will be further replaced with the term “methane leaks”.

Within the framework of the JI project with the aim of repair of methane leaks at gas equipment and gas fittings three types of repairs are used:

1. Complete replacement of out-of-date and morally worn out gas equipment and gas fittings with new units;
2. Repair of gas equipment and gas fittings components;
3. Replacement of pressure-sealing elements by using modern sealing materials thus changing common practice of maintenance and repair that is based on using paronite gaskets, and sealing stuffing made of cotton fibres with fatty impregnation and asbestos-graphite filler.

The existing practice of repair and maintenance that is based on using paronite gaskets, and sealing stuffing made of cotton fibres with fatty impregnation and asbestos-graphite filler doesn’t provide for logn-term methane leak reduction effect.
In addition to reduction of methane leaks, the JI project activity will lead to reduction of technical leaks of natural gas and it will contribute to improvement of environmental situation, reduction of the risk of accidents and explosive situations.

The project activity includes:

- Implementation of purposeful examination and technical maintenance (PETM) of GDP (CGDP) gas equipment and gas fittings, flange and threaded joints – modern and the most economically effective practice, which allows not only for detection of leaking areas, but also determination of leakage volume (i.e., potential volume of gas loss reduction). This key information is required for substantiation of efficiency of repair works and priority choice of its objects, which is important under short financing for repair of all leaks. This activity includes purchase and calibration of modern measuring equipment, appropriate training of employees, monitoring of each unit of gas equipment and gas fittings, flange and threaded joints, creation of methane volume leakage data collection and storage system, and implementation of internal audit and quality assurance system for repair and accounting of methane leaks.

- Detection and measurement of methane leaks: the monitoring system of leakage at all GDP (CGDP) gas equipment, gas fittings (faucets, bolts, valves), flange and threaded joints, including

eliminated methane leaks (repaired components of equipment). The monitoring is carried out on a regular basis by specially trained staff. Detected leakage will be duly marked with individual number; methane leak volumes will be measured and registered in the database.

- Repair of all detected leaks: repairs of leaking gas equipment and gas fittings of gas distribution pipelines in the framework of this project vary from replacement of gaskets and the use of new materials of compactors at sealing materials to capital repairs and replacement of the gas equipment and gas fittings with new and modern ones. Repaired components of gas equipment and gas fittings of gas distribution pipelines are regularly checked as a part of a standard monitoring activity to make sure they have not become the source of leakage again.

The number of GDPs and CGDPs repaired as well as gas fittings repaired (replaced) under the project in each period is shown below:

Table 2 Number of GDPs and CGDPs repaired as well as gas fittings repaired (replaced) under the project in each period

Period	Number of GDPs and CGDPs, where gas equipment was repaired (replaced)	Number of gas fittings repaired (replaced)
2005	49	1 300
2006	97	2 590
2007	87	2 407
2008	-	28
2009	-	28
2010	5	68
2011	6	60
TOTAL	**244**	**6 481**

The project activities of the current monitoring period consisted in further accomplishment of purposeful examination and technical maintenance (PETM) of all GDP (CGDP) gas equipment and gas fittings that were repaired (replaced) within the entire duration of the JI project.
Gas equipment of GDPs (CGDPs) and gas fittings of gas pipelines that were repaired (replaced) in the previous periods are regularly checked as a part of a standard monitoring program to make sure they have not become the source of leaks again.

Routine repair of gas equipment according to the Monitoring Plan, provided in the PDD version 05, is conducted once a year, technical maintenance - once per six month.

The measured volumes of methane leaks from repaired (replaced) GDP (CGDP) gas equipment and gas fittings of PJSC "Mariupolgaz" pipelines do not exceed the volumes of leaks, which were measured after the first repair of the equipment.

The identified areas of concern as to the project implementation, project participants responses and Bureau Veritas Certification's conclusions are described in Appendix A to this report (refer to CAR 01).

3.4 Compliance of the monitoring plan with the monitoring methodology (94-98)

The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website.
To calculate the emission reductions such key factors as the rate of leakage for each leakage found, gas temperature and pressure, volume of capacity, the concentration of methane in the sample, the time during which the concentration of methane in the volume capacity reaches a certain level, experience in implementing measures envisaged by the project, the current practice that exists in Ukraine in this area, financial costs and the availability of expertise, legislation affecting the emissions in the baseline, level of activity on the project and the project emissions and risks associated with the project were taken into consideration.

Data sources used for calculating emission reductions, such as calibrated measuring equipment (gas analyzer), SOS pr-2b-2 stopwatch, mercury-in-glass thermometer of TL-4 type and flowmeter as well as IPCC and manufacturers information are clearly identified, reliable and transparent.

Emission factors, including default emission factors, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.
Monitoring periods for each project component are clearly defined in the monitoring report and do not overlap with those for which verification has been made in the past and is considered final.

The identified areas of concern as to the compliance of the monitoring plan with the monitoring methodology, project participants responses and Bureau Veritas Certification's conclusions are described in Appendix A to this report (refer to CAR 02, CAR 03, CL 01).

3.5 Revision of monitoring plan (99-100)

Not applicable.

3.6 Data management (101)

Data and their sources, which are contained in the monitoring report, are clearly defined, reliable and transparent.

Implementation of data collection procedures is carried out in accordance with the PDD monitoring plan, including quality control and quality assurance procedures.

Monitoring equipment function, including its calibration status, is in line with the requirements.
According to current legislation "On metrology and metrological activity", all measuring equipment in Ukraine must meet the specified requirements of relevant standards and is subject to a periodic verification. Calibration of measuring devices is conducted in accordance with national standards.

Actual data and records used for monitoring are duly verified.

Data collection and data management system of the project is in line with the PDD, the monitoring plan and consists of three parts:

- Measurements of methane leaks value before the repair (replacement) of gas equipment;
- Measurements of methane leaks value after the repair (replacement) of gas equipment;
- Archiving and processing of obtained results.

To measure leakage volume of natural gas the method based on the Calibrated Bag Technology described in the approved baseline methodology AM0023 "Leak reduction from natural gas pipeline compressor or gate stations" was used. One of the problems of using this method is difficult accounting of the volume of the fittings whereat measurements are carried out, and the initial air volume in the course of determining gas volume received in the bag.
To solve these problems a special installation was made on the basis of plastic container of known volume (0.11 m^3), package, plastic hose and pressure gauge.

In order to ensure successful implementation of the project and the credibility and verifiability of the emissions reductions achieved, the project must have a well-organized management system.

Parameter collection and processing, coordination of work of all departments and services of PJSC "Mariupolgaz" relating to the project implementation is carried out by a specially created Working team. The structure of the Working team is shown in the Figure 1.

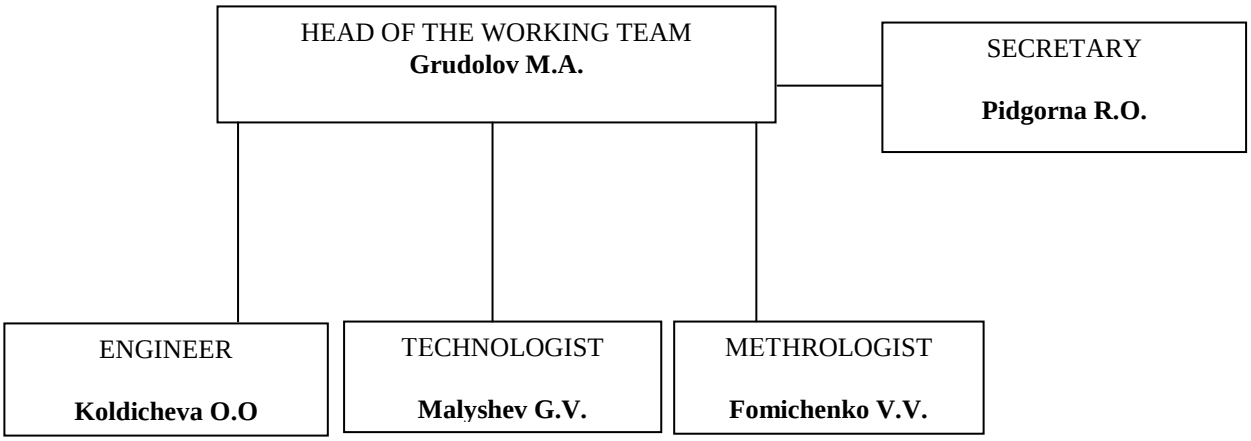

Figure 1 Structure of the Working team

Koldicheva O.O. is responsible for collection of all information envisaged in the monitoring plan and making all necessary calculations. Pidgorna R.O. is responsible for storage and archiving of all information obtained as a result of the measurements and calculations. On the basis of the obtained information Grudolov M.A., the leader of the working team, determines the plan of measures under the Project and the volume of necessary resources. Malyshev G.V. and Fomichenko V.V. who are responsible for conducting monitoring measurements of leakage and repair thereof, ensure that calibrated measuring equipment and technical support are in place.

Routine repair of GDP (CGDP) gas equipment is conducted once a year, technical maintenance - once per six month.

All the necessary information on monitoring of GHG emissions is stored in paper and/or electronic form and will be stored until the end of the crediting period and two years after the last transaction with emission reduction units.

The monitoring Report version 02 provides sufficient information about the intended role, responsibilities and authorities for implementing and maintaining monitoring procedures, including data management. Verification team confirms the effectiveness of existing management

system and operating system and considers them suitable for reliable monitoring of the project.
The identified areas of concern as to the data management, project participants responses and Bureau Veritas Certification's conclusions are described in Appendix A to this report (refer to CL 02).

3.7 Verification regarding programs of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 4th periodic verification of the project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of PJSC "Mariupolgaz" for the period from March 1, 2012 to October 31, 2012, which applies the JI Specific Approach. The verification was performed on the basis of UNFCCC criteria and Host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The verification consisted of the following three phases: i) desk review of the monitoring report against the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of PJSC "Mariupolgaz" is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring Plan indicated in the final PDD version 05. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification verified the Project Monitoring Report version 02 for the reporting period of 01/03/2012-31/10/2012 as indicated below. Bureau Veritas Certification confirms that the project is implemented as per determined changes. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions

reported and related to the approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: From 01/03/2012 to 31/10/2012

Baseline emissions	: 279 618	tonnes of CO_2 equivalent.
Project emissions	: 30 853	tonnes of CO_2 equivalent.
Emission Reductions	: 248 765	tonnes of CO_2 equivalent.

5 REFERENCES

Category 1 Documents:

Documents provided by the project participants that relate directly to the GHG components of the project.

/1/	The PDD of the JI project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of PJSC "Mariupolgaz", version 05, as of July 21, 2011
/2/	Determination Report of the JI project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of PJSC "Mariupolgaz", issued by Bureau Veritas Certification Holding SAS, № UKRAINE-det/0311/2011 dated 25/07/2011
/3/	Monitoring Report of the JI project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of PJSC "Mariupolgaz", version 01, dated November 05, 2012
/4/	Monitoring Report of the JI project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of PJSC "Mariupolgaz", version 02, dated November 14, 2012
/5/	Appendix A. Calculation of greenhouse gases emission reductions at gas equipment of gas-distributing points (cabinet-type gas-distributing points), on gas armature of gas-distributing networks of PJSC «Mariupolgaz » for 8 months (from March 01, 2012 to October 31, 2012)
/6/	Letter of Approval №2402/23/7 issued by the State Environmental Investment Agency of Ukraine as of 05/09/2011
/7/	Letter of Approval # J294-0485 issued by the Federal Office for the Environment (FOEN) of Switzerland dated July 25, 2011.

Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/	Manual of gas analyzer EX-TEC ® HS 680
/2/	Appearance of gas analyzer EX-TEC ® HS 680
/3/	Calibration certificate of gas analyzer EX-TEC ® HS 680
/4/	Appearance of thermometer TL-4
/5/	Passport of thermometer TL-4
/6/	Stopwatch and passport for the thermometer TL-4

/7/	Manual of manometer "D-59N-100-1.06 kPa"
/8/	Calibration certificate of manometer "D-59N-100-1.06 kPa"
/9/	Calibration certificate of the working device of the measuring equipment # 8226 valid as of 23/09/2010 (gas analyzer EX-TEC ® HS 680)
/10/	Manual of 9P2.832.012 RE (Barometers and domestic barometers)
/11/	Passport and intended use of the product (laboratory glass thermometer, designed to measure temperature in different areas, TLS, 4, TU 33.2-14307481-035:2005)
/12/	The device for measuring leaks in operation
/13/	Working gas analyzer
/14/	Stopwatch
/15/	General view of the GDS
/16/	Output latch at the GDS
/17/	Operational gauge at the GDS
/18/	Gas flow regulator at GDP
/19/	GDP maintenance logbook
/20/	The form of leak records
/21/	The act # 2537 of acceptance of work by January 2012 (replacement valves)
/22/	The act of acceptance of Project & Surviving products under the contract # 128/2012r/06/398-12 dated 04/26/2012 (reconstruction of GDP)
/23/	The act of acceptance of Project & Surviving products under the contract # 159/2012p/06/576-12 dated 30/05/2012 (reconstruction of GDP) dated 28/08/2012
/24/	The act of acceptance of Project & Surviving products under the contract # 30/2012p/06/301-12 dated 25/01/2012 (reconstruction of GDP) dated 30/03/2012
/25/	Metering Device Calibration Certificate No. 471 (aneroid barometer), valid until 04/07/2013
/26/	Metering Device Calibration Certificate No. 06/03-685 (stop-watch timer), valid until 29/05/2013
/27/	Metering Device Calibration Certificate No. 157 (mercury thermometer), valid until 23/03/2013
/28/	Photos of replaced project equipment

Persons interviewed:

List persons interviewed during the verification or persons that contributed with other information that are not included in the documents listed above.

	Name	Organization	Position
/1/	Veremyeyenko M.V.	PJSC «Mariupolgaz»	Executive general manager, member of the Working team

/2/	Hrudolov M.A.	PJSC «Mariupolgaz»	Chief Engineer, Head of the Working team
/3/	Malyshev, G.V.	PJSC «Mariupolgaz»	Deputy head of gas networks service, member of the Working team
/4/	Koldicheva O.O.	PJSC «Mariupolgaz»	Engineer of industrial and engineering department, member of the Working team
/5/	Podhorna R.O.	PJSC «Mariupolgaz»	Engineer of industrial and engineering department, member of the Working team
/6/	Belov E.V.	“CEP” LLC	Consultant of VEMA S.A.

APPENDIX A: PROJECT VERIFICATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

VERIFICATION PROTOCOL

Table 1. Check list for verification, according to the JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
90	Has the DFP of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	The project has been approved by both parties. The Letters of Approval were presented to the verification team.	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	OK	OK
Project implementation				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	Yes, the project has been implemented accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website. The purpose of the project is reduction of the natural gas leakage at gas-transport and gas-distribution	**CAR 01**	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		infrastructure of PJSC «Mariupolgaz», which are the result of seal failures of gas equipment and gas fittings. The main sources of leakage, included into the project boundary are: - gas equipment (reducing gears, valves, filters, switches, etc.), flanged and threaded connections in gas distributoin points (GDP) and cabinet-type gas distribution points (CGDP) of PJSC «Mariupolgaz»; - gas fittings (faucets, bolts, valves, etc.), threaded and flanged connections at gas pipelines of PJSC «Mariupolgaz». **CAR 01.** Please, provide information regarding the actions during monitoring period.		
93	What is the status of operation of the project during the monitoring period?	Project was operational for the whole monitoring period, which is 01/03/2012-31/10/2012 .	OK	OK
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	Yes, monitoring occured in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website.	OK	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals	For calculating the emission reductions such key factors as the rate of leakage for each leakage found, gas temperature and pressure, volume of capacity, the concentration of methane in the sample, the time during which the concentration of methane in the volume capacity reaches a certain level, experience in	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	as well as risks associated with the project taken into account, as appropriate?	implementing measures envisaged by the project, the current practice that exists in Ukraine in this area, financial costs and the availability of expertise, legislation affecting the emissions in the baseline, level of activity on the project and the project emissions as well as risks associated with the project were taken into account, as appropriate.		
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	Data sources used for calculating emission reductions, such as calibrated measuring equipment (gas analyzer), stop-watch timer "SOS pr-2b-2 ', mercury-in-glass thermometer of TL-4 type, flow meter, information from manufacturers and IPCC information, are clearly identified, reliable and transparent. **CAR 02.** Please, in Table 4, Section B.2.2. of the MR, specify the data source used to determine the global warming potential for methane. **CAR 03.** Amout of GHG emission is specified incorrectly in Table 1. **CL 01.** Please, provide the documentation confermed procedure of calibration of measuring equipments.	**CAR 02** **CAR 03** **CL 0 1**	OK
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	Yes, emission factors, including default emission factors, that were used for calculating the emission reductions or enhancements of net removals, were selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.	OK	OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals based	Yes, the calculation of emission reductions is based on conservative assumptions and the most plausible	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	on conservative assumptions and the most plausible scenarios in a transparent manner?	scenarios in a transparent manner.		
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	N/a	N/a	N/a
Applicable to bundled JI SSC projects only				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	N/a	N/a	N/a
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/a	N/a	N/a
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	already deemed final in the past?			
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	N/a	N/a	N/a
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	N/a	N/a	N/a
Data management				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	Implementation of data collection procedures, including procedures for quality control and quality assurance is in accordance with the monitoring plan.	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	Measuring equipment used for the project monitoring operates properly and is duly calibrated.	OK	OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	Yes, the evidence and records used for the monitoring are maintained in a traceable manner.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the	The data collection and management system of the project is in accordance with the monitoring plan. Verification team confirms the effectiveness of	**CL 02**	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitoring plan?	existing management system and operating system and considers them suitable for reliable monitoring of the project. **CL 02.** Please, check the numbering of Tables and Figures in the Monitoring report.		
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	N/a	N/a	N/a
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/a	N/a	N/a
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N/a	N/a	N/a
104	Does the monitoring period not overlap with previous monitoring periods?	N/a	N/a	N/a
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	N/a	N/a	N/a
Applicable to sample-based approach only				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as: − The types of JPAs; − The complexity of the applicable technologies and/or measures used; − The geographical location of each JPA; − The amounts of expected emission reductions of the JPAs being verified; − The number of JPAs for which emission reductions are being verified; − The length of monitoring periods of the JPAs being verified; and − The samples selected for prior verifications, if any?			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/a	N/a	N/a
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?			
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	N/a	N/a	N/a
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	N/a	N/a	N/a

TABLE 2 RESOLUTION OF CLARIFICATION AND CORRECTIVE ACTION REQUESTS

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR 01. Please, provide information regarding the actions during monitoring period.	92	Project measures for current monitoring period (March 01, 2012 – October 31, 2012) also involved subsequent Purposeful Examination and Technical Maintenance (PETM) of the whole gas equipment of GDP (CGDP) and gas armature, which were repaired (replaced) out of schedule for the whole period of JI project.	The information was provided, the issue is closed.
CAR 02. Please, in Table 4, Section B.2.2. of the MR, specify the data source used to determine the global warming potential for methane.	95 (b)	Necessary information was added to the MR version 02.	The issue is closed based on necessary changes made.
CAR 03. Amout of GHG emission is specified incorrectly in Table 1.	95 (b)	Necessary changes were made. See Table 1. Of MR version 02.	The issue is closed based on necessary changes made.

CL 01. Please, provide the documentation confermed procedure of calibration of measuring equipments	95 (b)	Relevant documentation was provided to verification teem.	The issue is closed based on documentation provided.
CL 02. Please, check the numbering of Tables and Figures in the Monitoring report.	101 (d)	The numbering was checked. Relevant corrections are made in the MR version 02.	The issue is closed based on the changes made.