VERIFICATION REPORT
VEMA S.A.

VERIFICATION OF JI PROJECT

REDUCTION OF METHANE EMISSIONS AT FLANGED, THREADED JOINTS AND SHUT-DOWN DEVICES OF OJSC “KYIVGAS” EQUIPMENT

5th PERIODIC
FOR THE PERIOD OF 01/05/2011-31/07/2011

REPORT № UKRAINE-VER/0336/2011
REVISION № 02

BUREAU VERITAS CERTIFICATION

Date of first issue: 03/08/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: VEMA S.A.	Client ref.: Fabian Knodel

Summary:

Bureau Veritas Certification has made the 5th periodic verification of VEMA S.A. project "Reduction of methane emissions at flanged, threaded Joints and shut-down devices of OJSC "Kyivgas" equipment" , which is implemented in Kyiv, 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 Independent 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 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 and Forward Actions Requests (CR, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented according to determined changes. Installed equipment that is essential for generating emission reductions 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 without material errors, and the ERUs issued totalize 283 166 tons of CO_{2eq} for the monitoring period of 01/05/2011 - 31/07/2011.

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/0336/2011	Subject Group: JI	
Project title: "Reduction of methane emissions at flanged, threaded Joints and shut-down devices of OJSC "Kyivgas" equipment"		
Work carried out by: K. Zinevich – Team Leader O.Kuzmenko - Team member, technical specialist		
Work reviewed by: I.Sokolov – Internal technical reviewer V.Kobzar - Technical specialist		
Work approved by: Flavio Gomes – Operational Manager		
Дата цього видання: 05/08/2011	№ ред.: 02	Кількість сторінок: 31

☒ Не розповсюджувати без дозволу Замовника або відповідальної організації

☐ Обмежене розповсюдження

☐ Необмежене розповсюдження

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1 INTRODUCTION

VEMA S.A. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project «Reduction of methane emissions at flanged, threaded joints and shut-down devices of OJSC "Kyivgas" equipment, (hereafter called "the project") in Kyiv 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 May 1, 2011 to July 31, 2011.

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 and monitoring plan 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:

K. Zinevich
Bureau Veritas Certification, Team Leader, Climate Change Lead Verifier

O.Kuzmenko
Bureau Veritas Certification , Team member, technical specialist

This verification report was reviewed by:

I. 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, baseline, and monitoring plan, i.e. country Law, Project Design Document (PDD), Determination Report of the project issued by Bureau Veritas Certification

Holding SAS No. UKRAINE/0125/2010 as of 08/07/2010, 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 01/05/2011 to 31/07/2011, version 01 as of July 01, 2011 and version 02 as of July 04, 2011 and the project as described in the determined PDD.

2.2 Follow-up Interviews

On 03/08/2011 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 "Kyivgas" 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 «Kyivgas»	➢ 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 AIE 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.

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 6 Corrective Action Requests, and 1 Clarification Request.

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

3.1 Remaining CL and FARs from previous verifications

There are no any remaining CL and FAR from previous verifications.

3.2 Project approval by Parties involved (90-91)

The project obtained approval by the Host party (Ukraine) on 28/07/2010 (Letter of Approval #1121/23/7 issued by the National Environmental Investment Agency of Ukraine as of 28/07/2010) and written project

approval by the party – buyer of emission reductions units (Switzerland) (Letter of Approval # J294-0463 issued by the Federal Office for the Environment FOEN of Switzerland dated 23/07/2010).
The abovementioned written approvals are unconditional.

3.3 Project implementation (92-93)

PJSC "Kyivgas" is the company providing natural gas transportation and supply to industrial and domestic consumers as well as to population in the city of Kyiv.

The structure of current gas transport rates regulated by the government does not include depreciation and investment needs of gas distribution enterprises, which does not ensure receipt 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 "Kyivgas" facilities.

Application of JI project mechanisms provided by the Kyoto Protocol was planned before the beginning of implementation of this project.
Project activities include reduction of methane leakage which is the result of faulty sealing of ground and underground fittings implemented at the switch mechanisms (bolts, cocks, valves), flange and threaded joints of PJSC "Kyivgas" gas pipelines in the amount of 60 613pieces. Types and quantity of fittings are given in PDD version 03 and the Table 2 of this report:

Table 2 Number of pieces of fittings involved in the Project by types

No.	Type of devices (type of joint)	Quantity of devices, pcs.
1	Shut-down devices in gas wells– block valves (flanged joint)	6 447
2	Ground shut-down devices – block valves (flanged joint)	10 451
3	Electrical insulating flanges (flanged joint)	22 120
4	Underground shut-down devices of well-less plant - block valves (flanged joint)	3 739
5	Ground shut-down devices - cocks (threaded joint)	17 856
Total		**60 613**

Within the scope of the project for repair of equipment, for the purpose of methane leakage elimination, modern compacting materials are used,

replacing service and repair practice based on rubberized asbestos fabric and rubber gaskets, and compacting padding made of cotton fibre with fat soakage and asbestos graphite filler. This practice does not give long-term effect, which leads to additional methane leakage. In addition to reduction of methane leakage, the project activity will lead to reduction of technical leaks of natural gas (and thus, to reduction of financial costs), and will contribute to improvement of environmental situation, to reduction of the risk of accidents, especially for in-house gas pressure regulators and overground gas pipelines.
The project activity includes:

- Implementation of purposeful examination and technical maintenance (PETM) of all switch mechanisms (bolts, cocks, valves), flange and threaded joints – modern and the most economically effective practice, which allows not only detection of leaking areas, but also determination of leakage volume (i.e., potential volume of gas leakage 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 elimination of all leakages. This activity will include purchase and calibration of modern measuring equipment, appropriate training of employees, development of monitoring map for each switch mechanism, flange and threaded joint of gas distribution network, with the list of all equipment components to be regularly examined, creation of leakage data collection and storage system, and implementation of internal audit and quality system for elimination and accounting of methane leakage.
- Detection and measurement of leakage: Monitoring system of leakage at all switch mechanisms (bolts, cocks, valves), flange and threaded joints, including eliminated leakage (repaired components of equipment). Monitoring will be done on a regular basis (once per four days or once per week – depending on the type of equipment) by specially trained staff. Each component will be checked according to the monitoring map, and detected leakage will be duly marked with individual number; gas leakage volumes will be measured and registered in the database.
- Elimination of all detected leakages: repairs of leaking equipment under this project will vary from replacement of gaskets and wedge valves, use of new compactors or sealing materials, to capital repairs and replacement of the equipment. Repaired equipment components will be regularly checked as a part of a standard monitoring program (see above) to make sure they have not become the source of leakage again.

During 2005 – 2009 each of 60 613 switch mechanisms (bolts, cocks, valves), flange and threaded joints of gas pipelines of PJSC “Kyivgas” were modernized or repaired.

The tasks of current monitoring period (May 1, 2011 – July 31, 2011) is further accomplishment of purposeful examination and technical maintenance (PETM) of all switch mechanisms (bolts, cocks, valves), flange and threaded joints. Repaired in 2005-2009 equipment components are regularly checked during current monitoring period as a part of a standard monitoring program to make sure they have not become the source of leakage again.

Regular maintenance of equipment components according to the Monitoring Plan, provided in PDD version 03, is conducted once a year, technical maintenance - once per six month.
The resulting measurement volumes of methane leakage from repaired PJSC "Kiyivgas" pipelines equipment do not exceed the volumes of leakage, which were measured after the first repair of the equipment.

The project was in operation throughout the monitoring period - from 01/05/2011 to 31/07/2011.

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 ands pressure, volume of capacity, the concentration of methane in the sample, the time for 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 a calibrated measuring equipment (gas analyzer), 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 is clearly identified in the monitoring report and do not overlap with those for which verification has been made in the past and is considered final.

Identified problem areas of compliance of monitoring plan with monitoring methodology, project participants answers and conclusions of Bureau Veritas Certification are described in Annex A to this report (see CAR 01, CAR 02).

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:

1) Measurements of methane leakage value before the rehabilitation (hermetization) of the facility;
2) Measurements of methane leakage value after the rehabilitation (hermetization) of the facility;
3) Archiving and processing of obtained results.

To measure leakage volume of natural gas it was decided to use 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”. One of the problems incurred by using this method is difficult accounting of the volume of the fittings where measurements are done, and the initial air volume when 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 (0.87 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.

According to distribution of duties between the parties of the project the organization of monitoring measurements of methane leakage on flanged, threaded joints and shut-down devices of the PJSC "Kyivgas" equipment is undertaken by VEMA S.A. For this purpose VEMA S.A. concludes corresponding contracts with other companies on carrying out of such monitoring measurements. Thus, direct monitoring measurements are made by the personnel of these companies, but at presence and under control of PJSC "Kyivgas" and VEMA S.A. representatives. When carrying out monitoring measurements the parties of the project co-ordinate the activity through a working team specially created at PJSC "Kyivgas". Data of monitoring measurements of leakage are fixed and in the electronic form transferred to participants of the project for their further processing, carrying out of calculations and storage.

Coordination of work of all departments and services of PJSC “Kyivgas” relating to the project implementation is done by specially created Working team. Renewed structure of the Working team is approved by the order № 179 dated 04.05.2011 of the Chairman of the Board of PJSC “Kyivgas” Gorovyi S.O. The structure of the Working team is shown in the Figure 1.

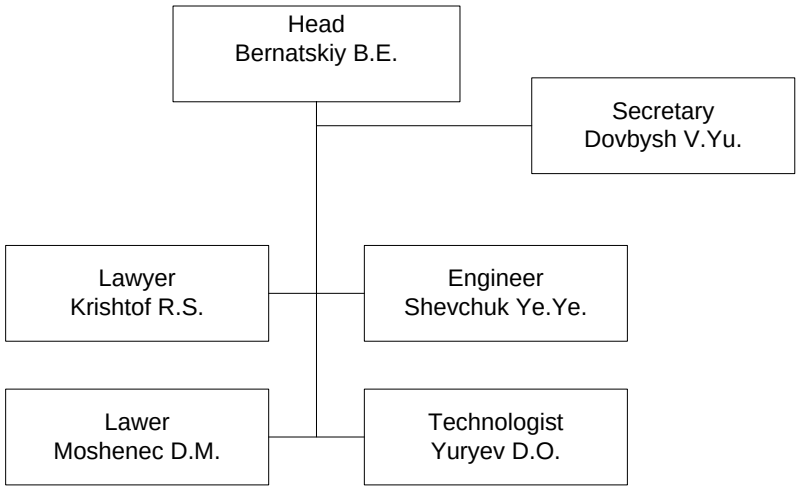

Figure 1 Structure of the Working team

Head of the Working team Bernatskiy B.E. is responsible for general management of the project and coordination of all actions of the parties, determines plan of measures under the Project and scope of resources required. Yuryev D.O. coordinates collection of all information provided for by the monitoring plan, and makes all necessary calculations. Archiving of all received information in the result of measurements and calculations is done under guidance of Dovbysh V.Yu. Technical

maintenance of the Project is carried out by Shevchuk Ye.Ye. Legal support of the Project is carried out by Krishtof P.S. and Moshenec D.M. The specially created working group of PJSC "Kiyivgas" provides the control over all parameters measurements, provided in the monitoring plan.

Regular maintenance (once a year) and technical maintenance (once a half year) of flanged, threaded joints and shut-down devices, according to distribution of duties between the project parties, are carried out by PJSC "Kyivgas".

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 group confirms the effectiveness of existing management system and operating system and considers them suitable for reliable monitoring of the project.
Identified problem areas of data management, project participants answers and conclusions of the Bureau Veritas Certification are described in Annex A to this report (see CAR 03, CAR 04, CAR 05, CAR 06, CAR 07, CL 01).

3.7 Verification regarding programs of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 5th periodic verification of the project "Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC “Kyivgas” Equipment” located in Kyiv, Ukraine for the period of May 1, 2011-July 31, 2011, 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 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 Vema S.A. 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 and Verification Plan indicated in the final PDD version 03. 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 01/05/2011-31/07/2011 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 01/05/2011 to 31/07/2011

Baseline emissions : 300 982 t CO_2 equivalents;
Project emissions : 17 816 t CO_2 equivalents;
Emission Reductions : 283 166 t CO_2 equivalents.

5 REFERENCES

Category 1 Documents:

Documents provided by Vema S.A. that relate directly to the GHG components of the project.

/1/ PDD, version 03, as of July 7, 2010

/2/ Monitoring Report, dated 01/05/2011-31/07/2011, version 01, as of August, 01 2011

/3/ Monitoring Report, dated 01/05/2011-31/07/2011, version 02, as of August, 05 2011

/4/ Determination Report of Bureau Veritas Certification Holding SAS dated July, 08 2010

/5/ Verification Report on early credits of Bureau Veritas Certification Holding SAS as of August, 03 2010

/6/ Verification Report 2008 of Bureau Veritas Certification Holding SAS as of August, 03 2010

/7/ Verification Report 2009 of Bureau Veritas Certification Holding SAS as of August, 03 2010

/8/ Verification Report for the period 01/01/2010-30/09/2010 Bureau Veritas Certification Holding SAS, as of October, 13 2010

/9/ Verification Report for the period 01/10/2010-30/04/2011 Bureau Veritas Certification Holding SAS, as of August, 03 2010

/10/ Letter of Approval issued by the National Environmental Investment Agency of Ukraine № 1121/23/7 dated 28/07/2010

/11/ Letter of Approval issued by the Swiss Federal Office for the Environment (FOEN) J294-0463 as of July, 23 2010

Category 2 Documents:

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

/1/ An Order on Working Team creation as of July, 29 2005

/2/ Preliminary investment agreement relating to the JI project

/3/ Register of shut-down devices, flanged and threaded joints, where the measurements of emissions were conducted

/4/ Program of baseline study of flanged, threaded joints and shut-down devices of OJSC “Kyivgas” equipment, elaborated by VEMA S.A.

/5/ Acts of state calibration of meters for 2005, 2006, 2007, 2008, 2009, 2010,2011:

- Portable gas analyzer EX-TEX® SR5
- Mercury temperature meter of glass type TL4

/6/ Photos of measurements taken at the shut-down device – wedge-gate valve at the address: Kyiv, Nemanska Str., 4, reg. No. 8297, code: 02-0191-03

/7/ Photos of measurements taken at the flanged joint at the address: Kyiv, Lyubomyrska Str., 15, reg. No. 27847, code: 03-0633-25

/8/ Photos of measurements taken at the flanged valve at the address: Kyiv, Mashynobudivelnykiv Str., 5, reg. No. 28658, code: 03-0676-05

/9/ Photos of measurements taken at the flanged valve at the address: Kyiv, Mashynobudivelnykiv Str., 8, code: 03-0676-14

/10/ Photo of portable gas analyzer EX-TEX® SR5

/11/ Passport of portable gas analyzer EX-TEX® SR5

/12/ Passport of mercury temperature meter of glass type TL4

/13/ Passport of manometer D-59H-100-1.0 6 kPa

/14/ Passport of timer «SOS пр-2b-2»

/15/ Order on providing changes to the structure of the working group for implementation of the projects aimed at green house gases anthropogenic emissions reduction dated 4th of May 2011, PJSC «Kyivgas»

/16/ Equipment leasing agreement between "Carbon Emission Partnership" LLC and Agrofirma "Agrosnabtreydinh" LLC, dated July 1, 2011

/17/ Certificate of delivery and acceptance of equipment in accordance with lease agreement dated 01/07/2011

/18/ Contract № 1, № 2, № 3, № 4, № 5 on provision of services of monitoring measurements of natural gas leakages volumes at flanged, threaded joints and shut-down devices of PJSC “Kyivgas” pipelines between "Carbon Emission Partnership" LLC and individuals dated March 30, 2011

/19/ Equipment leasing agreement between "Carbon Emission Partnership" LLC and OJSC "Odessagas", dated April 15, 2011

/20/ Certificate of delivery and acceptance of equipment in accordance with lease agreement dated 15/04/2011

/21/ Contract № 06/11 on provision of services between "Carbon Emission Partnership" LLC and VEMA S.A. dated 05/04/2011

/22/ Records of field measurements of natural gas leakages volumes at flanged, threaded joints and shut-down devices of PJSC “Kyivgas" pipelines, which were carried out on 18-22 July 2011

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/	Bernatskyy B.Ye.	PJSC «Kyivgas»	chief engineer
/2/	Shevchuk Ye.Ye.	PJSC «Kyivgas»	head engineer of the working team
/3/	Dovbysh V.Yu.	PJSC «Kyivgas»	secretary of the working team
/4/	Yuryev D.O.	PJSC «Kyivgas»	technologist of the working team
/5/	Gladkyi O.M.	PJSC «Kyivgas»	head of the working team
/6/	Yavtushenko P.V.	PJSC «Kyivgas»	deputy head of the working team

APPENDIX A: VERIFICATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

JI PROJECT VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
Project approvals by Parties involved					
90	Has the NFPs 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. Letters of Approval by both Parties were submitted to the secretariat on the final determination stage.	N/a	N/a	OK
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	N/a	N/a	OK
Project implementation					
92	Has the project been implemented in accordance with the PDD regarding which the determination has been	Yes, the project has been implemented in accordance with the PDD, which is	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	deemed final and is so listed on the UNFCCC JI website?	listed on the UNFCCC JI website. Project activities include reduction of methane leakage which is the result of faulty sealing of ground and underground fittings implemented at the switch mechanisms (bolts, cocks, valves), flange and threaded joints of gas pipelines of PJSC "Kyivgas" in the amount of 60 613 pieces. Types and quantity of fittings are given in the PDD version 03. During 2005 – 2009 each of 60 613 switch mechanisms (bolts, cocks, valves), flange and threaded joints of gas pipelines of PJSC "Kyivgas" were modernized or repaired. The tasks of 2010-2011 is further accomplishment of purposeful examination and technical maintenance			

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		(PETM) of all switch mechanisms (bolts, cocks, valves), flange and threaded joints. Repaired in 2005-2009 equipment components are regularly checked during current monitoring period as a part of a standard monitoring program to make sure they have not become the source of leakage again. According to Monitoring Plan in PDD version 3 the regular maintenance of the components is done once per year, technical maintenance – once per half year. The resulting measurement volumes of methane leakage from repaired PJSC "Kiyivgas" pipelines equipment do not exceed the volumes of leakage, which were measured after the first repair of the equipment.			

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
93	What is the status of operation of the project during the monitoring period?	The Project has been operational for the whole monitoring period, which is 01/05/2011 – 31/07/2011.	N/a	N/a	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, the monitoring was carried out 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.	**CAR 01.** A specific approach based on the approved by the Executive Committee of Clean Development Mechanism methodology AM0023 version 3.0 was used in the project when determining the baseline. Please provide reference to the methodology in the MR.	Required references were provided throughout the text of the MR of version 02.	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 as well as risks	To calculate the emission reductions such key factors as the rate of leakage for each leakage found, gas temperature ands pressure, volume of capacity, the concentration of methane in	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	associated with the project taken into account, as appropriate?	the sample, the time for 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.			
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	Yes, data sources used for calculating emission reductions or enhancements of net removals are clearly identified, reliable and transparent	**CAR 02.** Please specify the baseline, project emissions and emission reductions in t CO_2 equivalent.	Correction were made in the MR of version 02.	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
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 are used for calculating the emission reductions or enhancements of net removals, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.	N/a	N/a	OK
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	OK
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	OK
97 (b)	If the determination was conducted on	N/a	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?				
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 already deemed final in the past?	N/a	N/a	N/a	OK
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?	The monitoring plan was not reviewed by the project participants.	N/a	N/a	OK
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	OK
Data management					
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance	Yes, the implementation of data collection procedures is in accordance with the monitoring plan, including	**CAR 03.** Please, provide the description of data quality control	Description is provided in the MR version 02.	The issue is closed based on information,

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	procedures?	the quality control and quality assurance procedures.	procedure. **CAR 04**. Please provide information on the frequency/periodicity of recording of parameters to be monitored.		provided in the MR version 02.
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	Yes, the function of the monitoring equipment, including its calibration status is in order.	**CAR 05.** Please in the MR provide a detailed description by which device the monitoring measurement of methane was carried out. **CAR 06.** Please provide the passport of the portable gas analyzer EX-TEX ® SR5, mercury glass thermometer of TL4 type and manometer D-59N-100-6 1.0 kPa, which are indicated in the MR.	For monitoring leakage measurement a special installation for the quantitative measurement of methane leakage based on plastic container of known volume (0.87 m^3), package, plastic hose and pressure gauge was made. Passports for equipment were provided to verification team.	OK
101 (c)	Are the evidence and records used for	Yes, the evidence and	**CAR 07.** Please	The order was	The issue is

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	the monitoring maintained in a traceable manner?	records used for the monitoring are maintained in a traceable manner	provide order № 179 dated 04.05.2011 of the Chairman of the Board of PJSC "Kyivgas" Gorovyi S.O.	provided to the verification team	closed based on provided information.
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The data collection and management system for the project is in accordance with the monitoring plan. Verification team confirms the effectiveness of existing management system and operating system and considers them suitable for reliable monitoring of the project.	**CL 01.** Please check the numbering of tables and Figures in the MR.	Appropriate corrections were made in the MR version 02.	OK
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	N/a
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/a	N/a	N/a	N/a
103	Does the verification ensure the accuracy and conservativeness of the emission	N/a	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	reductions or enhancements of removals generated by each JPA?				
104	Does the monitoring period not overlap with previous monitoring periods?	N/a	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	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 selection shall be sufficiently representative of the JPAs in the JI Project. 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	N/a	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	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	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 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?	N/a	N/a	N/a	N/a
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	N/a

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
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	N/a

TABLE 2 RESOLUTION OF CLARIFICATION AND CORRECTIVE ACTION REQUESTS

Clarification and corrective action requests issued by the verification team	Ref to checklist question in Table 1	Summary of project participant's response	Verification team conclusion
CAR 01. A specific approach based on the approved by the Executive Committee of Clean Development Mechanism methodology AM0023 version 3.0 was used in the project when determining the baseline. Please provide reference to the methodology in the MR.	94	Required references were provided throughout the text of the MR version 02.	The references were checked, the ssue is closed.
CAR 02. Please specify the baseline, project emissions and emission reductions in t CO_2 equivalent.	95 (b)	Necessary corrections were made in the MR version 02.	The issue is closed based on making the necessary changes.
CAR 03. Please, provide the description of data quality control procedure.	101 (a)	Description of data quality control procedure was provided in the MR version 02.	The issue is closed based on making the necessary changes.
CAR 04. Please provide information on the frequency/periodicity of recording of parameters to be monitored.	101 (a)	Information on the frequency of monitoring parameters recorks was provided in the MR version 02.	Th issue is closed based on information provided in the MR version 02.

CAR 05. Please in the MR provide a detailed description by which device the monitoring measurement of methane was carried out.	101 (b)	For monitoring leakage measurement a special installation for the quantitative measurement of methane leakage based on plastic container of known volume (0.87 m^3), package, plastic hose and pressure gauge was made.	The issue is closed based on information provided in the MR version 02.
CAR 06. Please provide the passport of the portable gas analyzer EX-TEX ® SR5, mercury glass thermometer of TL4 type and manometer D-59N-100-6 1.0 kPa, which are indicated in the MR.	101 (b)	Passports of equipment were provided to the verification team.	The documents were reviewed, the issue is closed.
CAR 07. Please provide order № 179 dated 04.05.2011 of the Chairman of the Board of PJSC “Kyivgas” Gorovyi S.O.	101 (c)	The order was provided to the verification team	The issue is closed based on provided information.
CL 01. Please check the numbering of tables and Figures in the MR.	101 (d)	Appropriate corrections were made in the MR version 02.	The issue is closed based on the changes made.