VERIFICATION REPORT
CEP CARBON EMISSIONS PARTNERS S.A.

VERIFICATION OF THE
REDUCTION OF METHANE LEAKS ON THE GAS EQUIPMENT OF THE GAS DISTRIBUTION POINTS AND ON THE GAS ARMATURE, FLANGED, THREADED JOINTS OF THE GAS DISTRIBUTION PIPELINES OF PJSC "VOLYNGAS"

SECOND PERIODIC
FOR THE PERIOD OF 01/01/2008 – 30/06/2012

REPORT NO. UKRAINE-VER/0659/2012
REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Date of first issue: 21/09/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CEP Carbon Emissions Partners S.A.	Client ref.: Fabian Knodel

Summary:
Bureau Veritas Certification has made the 2nd periodic verification for the period of 01/01/2008-30/06/2012 of the "Reduction of methane leaks on the gas equipment of the gas distribution points and on the gas armature, flanged, threaded joints of the gas distribution pipelines of PJSC "Volyngas" project of CEP Carbon Emissions Partners S.A. located in the territory of Volyn region, Ukraine, and applying JI specific approach, 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 issued totalize 2 134 726 tonnes of CO_2 equivalent for the monitoring period from 01/01/2008 to 30/06/2012.

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/0659/2012	Subject Group: JI	
Project title: "Reduction of methane leaks on the gas equipment of the gas distribution points and on the gas armature, flanged, threaded joints of the gas distribution pipelines of PJSC "Volyngas"		
Work carried out by: Oleg Skoblyk – Team Leader, Climate Change Lead Verifier Volodymyr Kulish – Team Member, Climate Change Verifier		
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Oleksandr Kuzmenko – Technical Specialist		
Work approved by: Ivan Sokolov – Climate Change Operational Manager		
Date of this revision: 27/09/2012	Rev. No.: 02	Number of pages: 30

Bureau Veritas Certification Holding SAS

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1 INTRODUCTION

CEP Carbon Emissions Partners S.A. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project "Reduction of methane leaks on the gas equipment of the gas distribution points and on the gas armature, flanged, threaded joints of the gas distribution pipelines of PJSC "Volyngas" (hereafter called "the project") in the territory of Volyn region, 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.

The verification covers the period from January 1, 2008 to June 30, 2012.

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity 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 and 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:

Oleg Skoblyk
Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Volodymyr Kulish
Bureau Veritas Certification Team Member, Climate Change Verifier

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification Internal Technical Reviewer

Oleksandr Kuzmenko
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 19 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 CEP Carbon Emissions Partners 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/0598/2012 dated 17/08/2012, Guidance on criteria for baseline setting and monitoring, Host party criteria, 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 of 01/01/2008 – 30/06/2012, version 01 dated 14/09/2012 and version 02 dated 24/09/2012, and project as described in the determined PDD.

2.2 Follow-up Interviews

On 24/09/2012 Bureau Veritas Certification performed (on-site) interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of PJSC "Volyngas" and CEP Carbon Emissions Partners 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 "Volyngas"	➢ Organizational structure ➢ Responsibilities and authorities ➢ Training of personnel ➢ Quality management procedures and technologies ➢ Operation of equipment (logging) ➢ Metering equipment control ➢ Record keeping system, database
Consultant: CEP Carbon Emissions Partners 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 actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction 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, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 7 Corrective Action Requests and 3 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 aren't any remaining issues and FARs from previous verifications.

Response

The project was approved by the State Environmental Investment Agency of Ukraine (Letter of Approval No. 2557/23/7 dated 12/09/2012) and the Federal Office for the Environment of Switzerland (Letter of Approval No. J294-0485 dated 21/09/2012).

3.2 Project approval by Parties involved (90-91)

The project obtained approval by the Host party (Ukraine) - Letter of Approval No. 2557/23/7 issued by the State Environmental Investment Agency of Ukraine dated 12/09/2012, and written project approval by the party – buyer of the emission reduction units (Switzerland) - Letter of Approval No. J294-0485 issued by the Federal Office for the Environment of Switzerland (FOEN) dated 21/09/2012.
The abovementioned written approvals are unconditional.

The identified areas of concern as to the project approval by the parties involved, project participants' responses and BVC's conclusions are described in Appendix A to this report (refer to CAR 01, CAR 02).

3.3 Project implementation (92-93)

PJSC “Volyngas” is an enterprise that provides transportation and supply of natural gas to industrial enterprises (186), public-service facilities (4 249), and population (317 511 apartments and individual accommodation units) in cities and villages of Volyn region, Ukraine.

The structure of existing tariffs for gas transportation regulated by the state does not take into account the amortization and investment needs of gas distribution enterprises. This leads to a lack of financing for repair works and modernization of gas networks, purchase of proper technological equipment and components, and, as a result, contributes to the increase of methane leaks at PJSC “Volyngas” facilities.

The project activities consist in the reduction of methane leaks that occur as a result of faulty sealing of GDN components of PJSC “Volyngas” (gas equipment of GDPs (CGDPs) and gas fittings of gas pipelines).

Within the framework of the JI project in order to repair methane leaks at gas equipment and gas fittings two types of repairs are applied:

1. Complete replacement of old gas equipment and gas fittings with new units.
2. Replacement of sealing elements with the use of modern sealing materials, changing the common practice of maintenance and repair on the basis of paronite packing and gaskets made of cotton fibers with fatty treatment and asbestic and graphite filler.

The existing practice of maintenance and repair on the basis of paronite packing and gaskets made of cotton fibers with fatty treatment and asbestic and graphite filler does not give a long-lasting effect of methane leak reduction.

As a result of JI project activities, in addition to methane leak reductions, technical losses of natural gas decreased, a contribution was made to the improvement of environmental situation, and the risk of accidents and explosions was reduced.

According to the PDD version 02 the project boundary includes methane leak spots at gas distribution point (cabinet-type gas distribution point) gas equipment (pressure regulators, steamlined valves, filters etc.) and gas fittings (cranes, gate valves etc.) located at PJSC “Volyngas” gas distribution networks. The project boundary includes gas equipment of GDPs (CGDPs) (1 134 units) and gas fittings (1 519 units). During the current reporting monitoring period gas equipment of 452 GDPs (CGDPs) and 596 gas fitting units were repaired (replaced) in the framework of the project. The number of repaired (replaced) GDP (CGDP) gas equipment units and repaired (replaced) gas fittings of PJSC “Volyngas” gas

distribution pipelines under the project is provided in Table 2 of this report:

Table 2 Status of the project implementation

Period	Number of GDPs (CGDPs) where gas equipment was reparied (replaced)	Number of repaired (replaced) gas fittings at gas distribution networks
2008	171	228
2009	231	279
2010	20	25
2011	21	44
January 2012 – June 2012	9	20
Total	452	596

Project activities include:

- Implementation of Purposeful Examination and Technical Maintenance (PETM) of GDN components (gas equipment of GDPs (CGDPs) and gas fittings);
- Detection of methane leaks: leak monitoring system at all GDN components (gas equipment of GDPs (CGDPs), gas fittings) that are included in the project boundary including repaired methane leaks (elements of GDN repaired as part of the project activity);
- Repair of all leaks detected: repair of leaking GDN components within the project boundary varied from replacement of sealing elements by using new and modern materials to replacement of gas equipment units and gas fittings with new and modern ones.

Project activities of the current monitoring period (January 1, 2008 – June 30, 2012) also involve Purposeful Examination and Technical Maintenance (PETM) of all GDP (CGDP) gas equipment and gas fittings that were repaired (replaced) in addition to scheduled repairs in the whole JI project life.

According to the Monitoring Plan provided in the PDD Version 02, current repairs of gas equipment are carried out once a year, and maintenance is performed once per half-year.

Results of measurements of methane leaks at repaired (replaced) GDP (CGDP) equipment and gas fittings of PJSC “Volyngas” gas pipelines do not exceed the leaks that would have occurred in the absence of the project.

The project was in operation for the entire monitoring period – from 01/01/2008 to 30/06/2012.

The identified areas of concern as to the project implementation, project participants' responses and BVC's conclusions are described in Appendix A to this report (refer to CAR 03, CAR 04, CAR 05).

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.

For calculating the emission reductions key factors, such as sequence number of GDN component, Global Warming Potential of methane, number of activity (replacement/repair) at GDN component after the presence of APLNG was determined at such component, average mass fraction of methane in the natural gas, natural gas leak factor from GDN component in CLS, natural gas leak factor that corresponds to APLNG for GDN component, time of operation of GDN component under pressure from the beginning of monitoring period "y" to implementation of project activities (repair / replacement) that resulted in the repair of APLNG at such component, time of operation of GDN component under pressure from the moment of implementation of project activities (repair / replacement) that resulted in the repair of APLNG at such component to the end of the monitoring period "y", experience in implementing activities provided by the project, current practice that exists in this field in Ukraine, financial costs and background, legislation, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions, such as metering equipment – FT-02V1 gas leak indicators, information provided by equipment producers, data of the enterprise, "Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at the gas distribution networks" (registration number UkrNTI 0112U00A816 dated 2012) and IPCC 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.

The monitoring periods per component of the project are clearly specified in the monitoring report and do not overlap with those for which verifications were already deemed final in the past.

The identified areas of concern as to the compliance of the monitoring plan with the monitoring methodology, project participants' responses and BVC's conclusions are described in Appendix A to this report (refer to CAR 06, CAR 07).

3.5 Revision of monitoring plan (99-100)

Not applicable.

3.6 Data management (101)

The data and their sources, provided in the monitoring report, are clearly identified, reliable and transparent.

The implementation of data collection procedures is in accordance with the monitoring plan provided in the PDD, including the quality control and quality assurance procedures.
The function of the monitoring equipment, including its calibration status, is in order.
According to the current Law "On metrology and metrological activity", all metering equipment in Ukraine shall meet the specified requirements of relevant standards and is subject to periodic verification. Calibration of metering equipment is carried out in accordance with the national standards.
Equipment that requires calibration and is used in the monitoring of methane leaks:
• FT-02V1 gas leak detector. Intercalibration period is 1 year;

As a result of verification (calibration) a certificate confirming the technical serviceability of an equipment unit is issued.

The evidence and records used for the monitoring are maintained in a traceable manner.

Coordination of activities of all departments and services of PJSC "Volyngas" relating to the JI project implementation is carried out by the Working Team. The structure of the Working Team is shown in Figure 1.

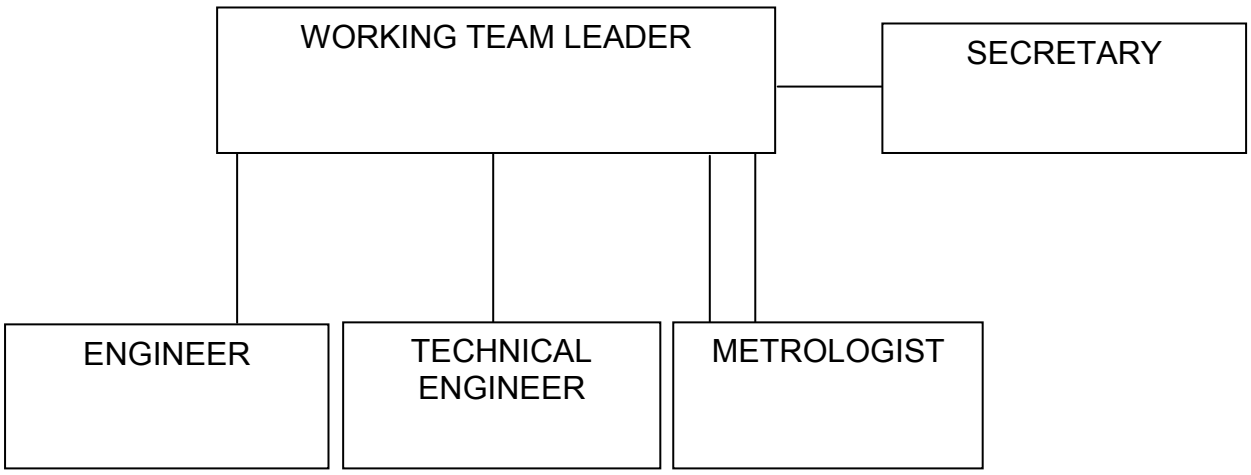

Figure 1 Structure of the Working Team

Working Team Leader draws up the plan of JI project activities and the amount of resources required based on the obtained information;
Working Team Engineer is responsible for organization of monitoring measurements and repair of leaks;
Working Team Technical Engineer is responsible for collection of all information and conduction of all necessary calculations under the monitoring plan;
Working Team Secretary is responsible for storage, archiving and making a back-up copy of project information.
Working Team Metrologist shall ensure the availability of calibrated metering devices and their maintenance.

All necessary data concerning GHG emission reduction monitoring is archived in paper and/or electronic form and kept till the end of the crediting period and for two years after the latest transaction with emission reduction units.

The Monitoring Report version 02 provides sufficient information on duties assigned, responsibility and authorities concerning implementation and undertaking of monitoring procedures, including data management. The verification team confirms the efficiency of the existing management and operational systems and considers them appropriate for reliable project monitoring.
The identified areas of concern as to data management, project participants' responses and BVC's conclusions are described in Appendix A to this report (refer to CL 01, CL 02, CL 03).

3.7 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 2nd periodic verification of the "Reduction of methane leaks on the gas equipment of the gas distribution points and on the gas armature, flanged, threaded joints of the gas distribution pipelines of PJSC "Volyngas" Project for the period from January 1, 2008 to June 30, 2012, which applies 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.

PJSC "Volyngas" management is responsible for the preparation of data which serve as the basis for estimation of GHG emission reductions. CEP CARBON EMISSIONS PARTNERS S.A. provides PJSC "Volyngas" with consultative support in the issues relating to organization of data collection and is responsible for developing the monitoring report based on the Project Monitoring Plan included in the final PDD version 02.

Bureau Veritas Certification verified the Project Monitoring Report version 02 for the reporting period of 01/01/2008 - 30/06/2012 as indicated below. 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.

Emission reductions achieved by the project for the period from 01/01/2008 to 30/06/2012 do not differ significantly from the amount predicted for the same period in the determined PDD. Emission reductions predicted in the determined PDD version 02 and actual emission reductions stated in the MR version 02 are provided in Table 3 of this report.

Table 3 Emission reductions predicted in the determined PDD version 02 and actual emission reductions stated in the MR version 02

Period	Estimated GHG emission reductions stated in the determined PDD, t CO_{2e}	Actual GHG emission reductions stated in the Monitoring report, t CO_{2e}
2008	404 946	363 112
2009	539 927	457 875
2010	539 927	516 784
2011	539 927	527 963
01/01/2012-30/06/2012	269 964	268 992
Total	2 294 691	2 134 726

The difference is explained by the fact that at the time of PDD writing it was impossible to obtain accurate data necessary for calculation of GHG emission reductions for the current monitoring period. To calculate the GHG emission reductions for the current monitoring period all the necessary information was given and this provided an opportunity to accurately determine the amount of emissions in the baseline and project scenarios. Amount of emission reductions for the period 01/01/2012-30/06/2012 provided in the determined PDD was calculated by dividing the total annual amount of emission reductions stated in the PDD by 12 (12 months) and multiplying by 6 (6 months).

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions, or 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, with a reasonable level of assurance, the following statement:

Reporting period: From 01/01/2008 to 30/06/2012

In the period from 01/01/2008 to 31/12/2008
Baseline emissions : 490 134 tonnes of CO_2 equivalent.
Project emissions : 127 022 tonnes of CO_2 equivalent.
Emission Reductions : 363 112 tonnes of CO_2 equivalent.

In the period from 01/01/2009 to 31/12/2009
Baseline emissions : 584 854 tonnes of CO_2 equivalent.
Project emissions : 126 979 tonnes of CO_2 equivalent.
Emission Reductions : 457 875 tonnes of CO_2 equivalent.

In the period from 01/01/2010 to 31/12/2010
Baseline emissions : 643 939 tonnes of CO_2 equivalent.

Project emissions	:	127 155	tonnes of CO_2 equivalent.
Emission Reductions	:	516 784	tonnes of CO_2 equivalent.

In the period from 01/01/2011 to 31/12/2011

Baseline emissions	:	655 112	tonnes of CO_2 equivalent.
Project emissions	:	127 149	tonnes of CO_2 equivalent.
Emission Reductions	:	527 963	tonnes of CO_2 equivalent.

In the period from 01/01/2012 to 30/06/2012

Baseline emissions	:	332 528	tonnes of CO_2 equivalent.
Project emissions	:	63 536	tonnes of CO_2 equivalent.
Emission Reductions	:	268 992	tonnes of CO_2 equivalent.

Total in the period from 01/01/2008 to 30/06/2012

Baseline emissions	:2	706 567	tonnes of CO_2 equivalent.
Project emissions	:	571 841	tonnes of CO_2 equivalent.
Emission Reductions	:2	134 726	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 leaks on the gas equipment of the gas distribution points and on the gas armature, flanged, threaded joints of the gas distribution pipelines of PJSC "Volyngas", version 02, as of 15/08/2012
/2/	Monitoring Report of the JI project "Reduction of methane leaks on the gas equipment of the gas distribution points and on the gas armature, flanged, threaded joints of the gas distribution pipelines of PJSC "Volyngas" for the period of 01/01/2008-30/06/2012, version 01, as of 14/09/2012
/3/	Monitoring Report of the JI project "Reduction of methane leaks on the gas equipment of the gas distribution points and on the gas armature, flanged, threaded joints of the gas distribution pipelines of PJSC "Volyngas" for the period of 01/01/2008-30/06/2012, version 02, as of 24/09/2012
/4/	Annex 1 "Registry of gas distribution points and gas fittings included into the project boundary of the JI project "Reduction of methane leaks on the gas equipment of the gas distribution points and on the gas armature, flanged, threaded joints of the gas distribution pipelines of PJSC "Volyngas"
/5/	Annex 2 "Registry of repairs of gas distribution points and gas fittings included into the project boundary of the JI project "Reduction of methane leaks on the gas equipment of the gas distribution points and on the gas armature, flanged, threaded joints of the gas distribution pipelines of PJSC "Volyngas" and "Registry of locations of GDN components included into the project boundary, under the pressure"
/6/	Determination Report of the JI project "Reduction of methane leaks on the gas equipment of the gas distribution points and on the gas armature, flanged, threaded joints of the gas distribution pipelines of PJSC "Volyngas", issued by Bureau Veritas Certification Holding SAS, No. UKRAINE-det/0598/2012 dated 17/08/2012
/7/	Letter of Approval No. 2557/23/7 issued by the State Environmental Investment Agency of Ukraine as of 12/09/2012
/8/	Letter of Approval No. J294-0485 issued by the Federal Office for the Environment (FOEN) of Switzerland dated 21/09/2012.
/9/	"Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at

	gas distribution networks" that was developed by the Institute of Gas of the National Academy of Sciences of Ukraine (registration number UkrNTI 0112U00A816 dated 2012)

Category 2 Documents:

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

/1/	Certificate of unserviceability No. VV-0800390 (PSK-50) dated 31/07/2008
/2/	Acceptance certificate of contractual works performed in November 2008 (installation of vent valves, gate valves, shut-off valves, back pressure valves, straight way valves at pipelines made of steel pipes with diameter of 25-100 mm)
/3/	Certificate of unserviceability No. VV-0800387(PSK-50) dated 31/07/2008
/4/	Certificate of unserviceability No. VV-0800351(PNK-200 gate valve) dated 23/06/2011
/5/	Acceptance certificate of contractual works performed in December 2011 (PKV-50 pressure valve installation) dated 19/12/2011
/6/	Acceptance certificate of contruction work performed in October 2011 (gas pressure regulator with a diameter of up to 50 mm) dated October 2011
/7/	Acceptance certificate of contruction work performed in December 2011 (gas pressure regulator with a diameter of up to 50 mm) dated December 2011
/8/	Acceptance certificate of contruction work performed in October 2011 (welding of flanges to steel pipelines with a diameter up to 50 mm, installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 25 mm) dated October 2011
/9/	Acceptance certificate of contruction work performed in December 2011 (laying of gas supply pipelines made of steel pipes with a diameter up to 100 mm, welding of flanges to steel pipelines with a diameter up to 100 mm) dated December 2011
/10/	Acceptance certificate of contruction work performed in December 2011 (welding of flanges to steel pipelines with a diameter up to 80 mm, installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 32 mm) dated December 2011
/11/	Acceptance certificate of contruction work performed in October 2011 (gas pressure regulator with a diameter of up to 50 mm) dated October 2011
/12/	Acceptance certificate of contractual works performed in 2008 (gas pressure regulator with a diameter of up to 100 mm, installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 100 mm, laying of gas supply pipelines made of steel pipes with a diameter up to 100 mm)
/13/	Acceptance certificate of contruction work performed in December 2011 (CGDP equipment installation) dated December 2011
/14/	Acceptance certificate of contruction work performed in October 2008 (CGDP

	replacement) dated October 2008
/15/	Acceptance certificate of contruction work performed in December 2010 (laying of gas supply pipelines made of steel pipes, installation of gas pressure reduction unit) dated December 2010
/16/	Acceptance certificate of contruction work performed in December 2011 (installation of safety valves with a diameter up to 50 mm, installation of gas pressure regulators up to 200 mm, installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 50 mm) dated December 2011
/17/	Acceptance certificate of contruction work performed in November 2011 (installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 100 mm, installation of gas pressure regulators up to100 mm, installation of filters to filter mechanical impurity in gas with a diameter up to 200 mm, installation of gas candles with a diameter up to 40 mm) dated November 2011
/18/	Acceptance certificate of contruction work performed in December 2011 (installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 100 mm, installation of gas pressure reduction unit, installation of gas candles with a diameter up to 40 mm) dated December 2011
/19/	Acceptance certificate of contruction work performed in December 2010 (installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 25 mm, installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 50 mm, ball valves up to 50 mm) dated December 2011
/20/	Acceptance certificate of contruction work performed in July 2011 (installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 100 mm) dated July 2011
/21/	Acceptance certificate of contruction work performed in December 2011 (gas pressure regulator with a diameter of up to 100 mm, RDH-80(N) pressure regulator, installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 100 mm) dated December 2011
/22/	Acceptance certificate of contruction work performed in December 2011 (installation of gas pressure regulators with a diameter up to 50 mm, DH-50 regulator) dated December 2011
/23/	Acceptance certificate of contruction work performed in June 2011 (installation of vent valves, gate valves, shut-off valves, stop valves, straight way valves at pipelines made of steel pipes with diameter up to 100 mm) dated June 2011
/24/	Acceptance certificate of contruction work performed in September 2011 (installation of gas pressure regulators with a diameter up to 50 mm, pressure regulator RDUK/V-50 at GDP) dated September 2011
/25/	Acceptance certificate of contractual works performed in August 2008 (CGDP capital repair) dated August 2008
/26/	Acceptance certificate of contractual works performed in December 2010 No.

	705 (CGDP replacement) dated December 2010
/27/	Acceptance certificate of contractual works performed in December 2010 No. 704 (CGDP replacement) dated December 2010
/28/	Calibration certificate on working instrument of measurement equipment No. 80469/22 (FP-11.2k gas analyzer) dated 16/05/2012
/29/	Passport of FP-11.2k gas analyzer
/30/	Certificate of state calibration No. 301107-50 (FP-11.2k gas analyzer) dated 30/10/2008
/31/	Certificate No. 1189 on verification of technical state after repair and maintenance/ license XB No. 145 (FTP 02 gas analyzer) dated 21/06/2012
/32/	Agreement on repair and maintenance of equipment No. 7 dated 16/01/2006
/33/	Calibration certificate on working instrument of measurement equipment No. 80140/28 (FP-11.k gas analyzer) dated 14/02/2012
/34/	Calibration certificate on working instrument of measurement equipment No. 84291/45 (FP-11.k gas analyzer) dated 10/11/2011
/35/	Calibration certificate No. 17257 (FP-11.k gas analyzer) dated 27/08/2010
/36/	Calibration certificate No. 17257 (FP-11.k gas analyzer) dated 05/11/2009
/37/	Photo of measurement work
/38/	Photo of installed equipment
/39/	Passport of measurement equipment (FP-11.k gas analyzer)

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/	Haliant S.R.	PJSC “Volyngas”	First Deputy Chairman of the management board
/2/	Denysuik V.S.	PJSC “Volyngas”	Engineer of production and technical department
/3/	Tkachuk M.H.	PJSC “Volyngas”	Head of gas supply system operation and development department
/4/	Ostrovetskyi A.O.	PJSC “Volyngas”	Engineer of production and technical department of the 2nd category
/5/	Sterniichuk A.V.	PJSC “Volyngas”	Head of metrology and standardization department
/6/	Repinetskyi S.O.	“CEP” LLC	Consultant of CEP Carbon Emissions Partners S.A.

APPENDIX A: COMPANY PROJECT 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	Draft Conclusion	Final 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. **CAR 01**. Please, state the numbers of the Letters of Approval and the dates of their issuance in Section A.2. of the MR. **CAR 02**. The number of the Determination report and date of its issuance are incorrect. Please, make the necessary corrections.	**CAR 01** **CAR 02**	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 in accordance with the PDD, which is listed on the UNFCCC JI website. According to the PDD version 02 the project boundary includes methane leak spots at gas distribution point (cabinet-type gas distribution point) gas equipment (pressure regulators, steamlined valves, filters etc.) and gas fittings (cranes, gate valves etc.) located at	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		PJSC "Volyngas" gas distribution networks. The project boundary includes gas equipment of GDPs (CGDPs) (1 134 units) and gas fittings (1 519 units). During the current reporting monitoring period gas equipment of 452 GDPs (CGDPs) and gas fitting (596 units) were repaired (replaced) in the framework of the project. Project activities of the current monitoring period (January 1, 2008 – June 30, 2012) also involve Purposeful Examination and Technical Maintenance (PETM) of all GDP (CGDP) gas equipment and gas fittings that were repaired (replaced) in addition to scheduled repairs in the whole JI project life. According to the Monitoring Plan provided in the PDD Version 02, current repairs of gas equipment are carried out once a year, and maintenance is performed once per half-year.		
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 01/01/2008-30/06/2012. **CAR 03.** The number of repaired / replaced GDPs (CGDPs) in the current monitoring period is incorrect in Section A.6. **CAR 04**. The current monitoring period is incorrect in Table 2 of Section A.6. **CAR 05**. Please, provide more detailed description of the project in Section A.3.	**CAR 03** **CAR 04** **CAR 05**	OK OK OK
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with	Yes, the monitoring was carried out in accordance with	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website.		
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 associated with the project taken into account, as appropriate?	For calculating the emission reductions key factors, such as sequence number of GDN component, Global Warming Potential of methane, number of activity (replacement/repair) at GDN component after the presence of APLNG was determined at such component, average mass fraction of methane in the natural gas, natural gas leak factor from GDN component in CLS, natural gas leak factor that corresponds to APLNG for GDN component, time of operation of GDN component under pressure from the beginning of monitoring period “y” to implementation of project activities (repair / replacement) that resulted in the repair of APLNG at such component, time of operation of GDN component under pressure from the moment of implementation of project activities (repair / replacement) that resulted in the repair of APLNG at such component to the end of the monitoring period “y”, experience in implementing activities provided by the project, current practice that exists in this field in Ukraine, financial costs and background, legislation, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.	**CAR 06**	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CAR 06. The amount of emission reductions for 2012 is not the difference between the baseline and project GHG emissions. Correct the discrepancy.		
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 07**. The data source for global warming potential is incorrect. Please, make the necessary corrections in the MR.	**CAR 07**	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 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.	OK	OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.	OK	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	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?			
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 already deemed final in the past?	N/a	N/a	N/a
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	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?			
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?	The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures.	OK	OK
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. **CL 01.** Please, provide a reference to the Law of Ukraine "On metrology and metrological activity" in Section B.1.2.	**CL 01**	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 monitoring plan?	The data collection and management system for the project is in accordance with the monitoring plan. The Verification Team confirms the effectiveness of 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 references in the MR. **CL 03**. Please, explain the abbreviations throughout the text of the MR.	**CL 02** **CL 03**	OK OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	JI PoA not verified?			
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 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;	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	− 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 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
109	Is the sampling plan available for	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	submission to the secretariat for the JISC.s ex ante assessment? (Optional)			
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, state the numbers of the Letters of Approval and the dates of their issuance in Section A.2. of the MR.	90	The project was approved by the State Environmental Investment Agency of Ukraine (Letter of Approval No. 2557/23/7 dated 12/09/2012) and the Federal Office for the Environment of Switzerland (Letter of Approval No. J294-0485 dated 21/09/2012). Necessary corrections were made in the MR version 02.	The issue is closed as relevant information was provided.
CAR 02. The number of the Determination report and date of its issuance are incorrect. Please, make the necessary corrections.	90	Determination Report No. UKRAINE-det/0598/2012 dated 17/08/2012.	Relevant corrections were made. The issue is closed.
CAR 03. The number of repaired / replaced GDPs (CGDPs) in the current monitoring period is incorrect in Section A.6.	93	During the current reporting monitoring period gas equipment of 452 GDPs (CGDPs) were repaired (replaced) in the framework of the project.	The issue is closed as relevant corrections were made.
CAR 04. The current monitoring period is incorrect in Table 2 of Section A.6.	93	Relevant corrections were made in Table 2, Section A.6 of the MR.	The issue is closed as relevant information was provided.

CAR 05. Please, provide more detailed description of the project in Section A.3.	93	Within the framework of the JI project in order to repair methane leaks at gas equipment and gas fittings two types of repairs are applied: - Complete replacement of old gas equipment and gas fittings with new units. - Replacement of sealing elements with the use of modern sealing materials, changing the common practice of maintenance and repair on the basis of paronite packing and gaskets made of cotton fibers with fatty treatment and asbestic and graphite filler.	The issue is closed as necessary information was provided.
CAR 06. The amount of emission reductions for 2012 is not the difference between the baseline and project GHG emissions. Correct the discrepancy.	95 (a)	The discrepancy was caused by the rounding in Annex F. Relevant corrections were made.	The issue is closed as relevant corrections were made.
CAR 07. The data source for global warming potential is incorrect. Please, make the necessary corrections in the MR.	95 (a)	IPCC Second Assessment Report: Climate Change 1995 (SAR) and approved COP. GWP for methane values are provided on UNFCCC web-site.	The source was verified. The issue is closed.
CL 01. Please, provide a reference to the Law of Ukraine "On metrology and metrological activity" in Section B.1.2.	101 (b)	Relevant reference is provided.	The issue is closed as relevant reference was provided.
CL 02. Please, check the numbering of tables and references in the MR.	101 (d)	Relevant corrections were made in the MR version 02.	The issue is closed as relevant corrections were made.
CL 03. Please, explain the abbreviations throughout the text of the MR.	101 (d)	Relevant explanations of the abbreviations was provided. Refer to the MR version 02.	The issue is closed as relevant explanation was provided.