DETERMINATION REPORT
VEMA S.A.

DETERMINATION OF THE
Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz"

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BUREAU VERITAS CERTIFICATION

DETERMINATION REPORT

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13/09/2012	Bureau Veritas Certification Holding SAS
Client:	**Client ref.:**
VEMA S.A.	Fabian Knodel

Summary:

Bureau Veritas Certification has made the determination of the "Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz" project of VEMA S.A. located in the Autonomous Republic of Crimea and the Black Sea shelf and the Azov Sea shelf, Ukraine 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 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 determination scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and 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 determination report and opinion. The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the determination process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies Guidance on criteria for baseline setting and monitoring and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

Report No.:	Subject Group:
URKAINE-det/0697/2012	JI

Project title:
Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz"

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Bureau Veritas Certification Holding SAS

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1 INTRODUCTION

VEMA S.A. has commissioned Bureau Veritas Certification to determine its JI project "Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz" (hereafter called “the project”) in in the Autonomous Republic of Crimea and the Black Sea shelf and the Sea of Azov shelf, Ukraine.

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

1.1 Objective

The determination serves as project design verification and is a requirement of all projects. The determination is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project’s compliance with relevant UNFCCC and host country criteria are determined in order to confirm that the project design, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Determination is a requirement for all JI projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emissions reductions units (ERUs).

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 determination 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 determination is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Determination team

The determination team consists of the following personnel:

Oleg Skoblyk

Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Vladimir Kulish
Bureau Veritas Certification Team Member, Climate Change Lead Verifier

Denys Pishchalov
Bureau Veritas Certification Team Member, Financial specialist

This determination report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

Vasiliy Kobzar
Bureau Veritas Certification, Technical expert

2 METHODOLOGY

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

In order to ensure transparency, a determination 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 determination and the results from determining the identified criteria. The determination protocol serves the following purposes:

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

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

2.1 Review of Documents

The Project Design Document (PDD) submitted by VEMA S.A. and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for users of the joint

implementation project design document form, Guidance on criteria for baseline setting and monitoring, Kyoto Protocol, Clarifications on Determination Requirements to be Checked by an Accredited Independent Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, VEMA S.A. revised the PDD version 01 dated August 20, 2012 and resubmitted it on September 21, 2012 as version 02.

The determination findings presented in this report relate to the project as described in the PDD versions 01 and 02.

2.2 Follow-up Interviews

On 25/09/2012 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 NJSC "Chornomornaftogaz" 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
NJSC "Chornomornaftogaz"	➢ Project History ➢ Project approach ➢ Project boundary ➢ Schedule of implementation ➢ Organizational Structure ➢ Responsibilities and obligations ➢ Training ➢ Quality control procedures and technologies ➢ Modernization / installation of equipment (records) ➢ Control over metering equipment ➢ The system of keeping records of measurements, the database ➢ Technical Documentation ➢ Monitoring Plan and procedures ➢ Permits and licenses ➢ Environmental Impact Assessment ➢ Answers of stakeholders
VEMA S.A.	➢ Baseline methodology ➢ Monitoring Plan ➢ Additionality proofs ➢ The calculations of emission reductions ➢ Project design ➢ Legal issues relating to the project ➢ Environmental Impacts ➢ Approval of the host party

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination 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 project design.

Corrective Action Request (CAR) is issued, where:

(a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;

(b) The JI requirements have not been met;

(c) There is a risk that emission reductions cannot be monitored or calculated.

The determination team may also issue Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable JI requirements have been met.

The determination team may also issue Forward Action Request (FAR), informing the project participants of an issue that needs to be reviewed during 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 PROJECT DESCRIPTION

The main purpose of the Joint Implementation Project (hereinafter - JIP) entitled "Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz" (NJSC "Chornomornaftogaz") is reduction of direct methane emissions by implementation of innovative gas pipeline repair methods of the natural gas production, storage, preparation and transportation system.

"Chornomornaftogaz" was established in 1979 as a production association for the development of hydrocarbon resources of the Black Sea and the Sea of Azov.
"Chornomornaftogaz", National Joint Stock Company for the production and transportation of oil and gas, is the legal successor of the production

association "Chornomornaftogazprom", created by the order of the Ministry of Gas Industry of the USSR on October 20, 1978 № 209-org.
In 1998 the production association was reorganized into NJSC "Chornomornaftogaz".

Project scenario of regarded JI project is based on the implementation of innovative repair methods that allow repair of gas pipelines with identified defects by using of detachable sleeves and rings between the gas pipeline, which is under repair and the sleeve and the further introduction of a special high-pressure self-hardening composition (sealant) in the space formed between the outer pipeline surface and inner surface of the sleeve.
According to the baseline scenario it is planed further implementation of current instructions and regulations in the repair of gas pipelines which requires to stop the operation of gas pipeline separating it by tap group at the ends, and gas discharge into the atmosphere. Only after the discharge of natural gas into the atmosphere it is allowed to perform any repair work on the gas pipeline, which involves removing part of the pipeline containing defects and welding the new part.
Historical details of the project:

14/05/2004 – commencement date when NJSC "Chornomornaftogaz" started implementation project measures in introducing innovative methods of gas pipelines repair with identified defects.

09/02/2004 – Project design document development for the project activities.

12/09/2012 – The State Environmental Investment Agency of Ukraine issued a Letter of Endorsement № 2554/23/7.

Determination protocol of the project contains CARs and CLs for PDD versions 01 and 02.

4 DETERMINATION CONCLUSIONS

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

The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Determination 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 Determination Protocol in Appendix A. The determination of the

Project resulted in 27 Corrective Action Requests and 6 Clarification Requests.

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

4.1 Project approvals by Parties involved (19-20)

The project “Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz" has already obtained endorsement from the government of Ukraine, namely a Letter of Endorsement No. 2554/23/7 issued by the State Environmental Investment Agency of Ukraine dated 12/09/2012.
Bureau Veritas Certification received this letter from the project participants and does not doubt its authenticity.
Upon completion of the Determination Report the project design document will be submitted to the State Environmental Investment Agency of Ukraine for receiving a Letter of Approval.

As the project has no approval by the Parties involved, CAR 11 remains pending and will be closed after report finalizing (see Appendix A).
The identified areas of concern as to the project approval by the Parties involved, project participants response and BVC’s conclusion are described in Appendix A to the Determination Report (refer to CAR 11).

4.2 Authorization of project participants by Parties involved (21)

The participation for each of the legal entities listed as project participants in the PDD will be authorized by the Parties involved, through the written Letters of Approval (from the government of Ukraine as the host party and other party involved – country-participant). Refer to CAR 11 of this report.

4.3 Baseline setting (22-26)

The PDD explicitly indicates that using a methodology for baseline setting and monitoring developed in accordance with the requirements of Appendix B of the JI Guidelines (hereinafter referred to as “specific approach”) was the selected approach for setting the baseline (in accordance with paragraph 11 of the Guidance on criteria for baseline setting and monitoring (Version 03)).

In order to set the baseline the formulas based on "Methodology of Evaluation of GHG Sequestration Daring New Gas Supply Grids Building According to JI Projects under Kyoto Protocol to UN Framework Convention on Climate Change" were used.

The PDD provides a detailed theoretical description in a complete and transparent manner, as well as justification, that the baseline is established:

(a) By listing and describing the following plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one:
    a. Continuation of the current situation, without the JI project implementation.
    b. Proposed project activity without the use of the JI mechanism.

(b) Taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, agricultural sector expansion plans, and the economic situation in the project sector. In this context, the following key factors that affect a baseline are taken into account:
    a. The role of energy sector is absolute and crucial for Ukraine. Power sector is a political factor of sovereignty in Ukraine. Ukrainian economy is considered to be one of the most energy intensive in the world in terms of the consumption of primary energy per a gross domestic product unit. On March 15, 2006 the Cabinet of Ministers of Ukraine adopted “Energy Strategy of Ukraine till 2030”. The Energy strategy considers exploration of non-traditional and renewable energy sources as a significant factor in increasing the level of energy safety, decrease of energy anthropogenic affect on environment and counteractions against global climate change.
    b. Most natural gas transportation and supply companies currently working in Ukraine operate of equipment installed back in the Soviet era.

    c. The current practice of detection and repair of natural gas losses and, correspondingly, methane emissions complies with the current legislation of Ukraine. The legislation permits the loss of natural gas and, correspondingly, methane emissions in the course of natural gas transportation. The standards set only the frequency of inspection of equipment by gas distribution organizations to detect losses of natural gas. The practice of natural gas loss detection at NJSC "Chornomornaftogaz" meets the standards. The control of

compliance with norms shall be performed by annual inspections by authorized bodies.

d. The current Ukrainian system of formation of tariffs for natural gas supply does not include an investment component for gas infrastructure development. According to the Law "On fundamentals of natural gas market functioning" NJSC "Chornomornaftogaz" is not obliged and is unmotivated to implement new equipment at its own expense. In addition, state investment programs in most cases are targeted at administrative and organizational implementations.
e. The state support in the sphere of natural gas transportation and supply is available in accordance with funds provided by the State Budget of Ukraine for the corresponding year.
f. The project scenario requires attracting significant additional funds. Such investment is characterized by a significant payback period and high investment risks, that is why it is not attractive for investors.
g. Ukraine already implements JI projects in the sphere of heat supply ("Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine") by selling emission reduction units.

The PDD provides a detailed description in a complete and transparent manner, as well as justification, that the baseline was duly set.

The methods of calculation used to determine the expected and actual baseline emissions, are sufficiently described in sections E and D of the PDD, respectively.
The identified areas of concern as to the baseline setting, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 12 – CAR 16, CL 04).

4.4 Additionality (27-31)

The most recent version of the "Tool for the demonstration and assessment of additionality" approved by the CDM Executive Board was used in accordance with the JI specific approach, defined pursuant to paragraph 9 (a) of the "Guidance on criteria for baseline setting and monitoring", version 03. All explanations, descriptions and analyses are made in accordance with the selected tool or method.

The PDD provides a justification of the applicability of the approach with a clear and transparent description, as per item 4.3 above.

The developer of the project proved that anthropogenic emissions under the project are lower than the emissions that would take place in the absence of the project activity.
Additionality proofs are provided.
Three plausible and realistic alternative scenarios of the project were identified:

- Alternative 1.1: Continuation of the current situation, without the JI project implementation.
- Alternative 1.2: Proposed project activity without the use of the JI mechanism.

and the mandatory compliance of the scenarios with the legislation and legal acts was demonstrated.
According to the "Tool for the demonstration and assessment of additionality" (Version 06.0.0) investment analysis and common practice analysis were used in the PDD to justify additionality of the project.
Thus, the overall conclusion is that the project activity meets the criteria of additionality, is not a baseline scenario and is additional.
Additionality is demonstrated appropriately as a result of the analysis using the approach chosen.
The identified areas of concern as to the additionality, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 17, CAR 18).

4.5 Project boundary (32-33)

The project boundary, which is defined in the PDD and in accordance with the specific approach, includes 752,575 km gas pipeline, listed in Annex 2 to the "Protocol meeting of the central inventory commission of National Joint Stock Company "Chornomornaftogaz". On the results of the inventory of state-owned property that is not subject to inventory and not included in the statutory fund and used for transportation, storage, distribution of gas (oil), using functions of which features National Joint Stock Company "Naftogaz of Ukraine" transferred for use and accounted for the balance of State Joint Stock Company "Chornomornaftogaz" from 28.03.2012. The project boundary encompasses all anthropogenic emissions by sources of greenhouse gases (GHGs) that are:

(i) Under the control of the project participants.

(ii) Reasonably attributable to the project such as:

- direct methane emissions direct methane emissions in the traditional methods of gas pipelines repair;

(iii) Significant, i.e., as a rule of thumb, would by each source account on average per year over the crediting period for more than 1 per cent of the annual average anthropogenic emissions by sources of GHGs, or exceed an amount of 2,000 tonnes of CO_2 equivalent, whichever is lower.

The delineation of the project boundary and the gases and sources included are appropriately described and justified in the PDD

4.6 Crediting period (34)

The PDD states the starting date of the project as the date when NJSC "Chornomornaftogaz" started implementation of the project activities on introduction of innovative methods of gas pipeline repair with identified defects, and the starting date is 14/05/2004, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 16 years or 192 months – from January 1, 2005 to December 31, 2020.

The PDD states the length of the crediting period in years and months, which is 16 years or 192 months, and its starting date of the crediting period is 01/01/2008, which is the date the first emission reductions are expected to be generated by the project.

The PDD states that the crediting period for the issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project.

The PDD states that the extension of its crediting period beyond 2012 is subject to the host Party approval, and the estimates of emission reductions or enhancements of net removals are presented separately for those until 2012 and those after 2012 in all relevant sections of the PDD.

The identified areas of concern as to the crediting period, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 19).

4.7 Monitoring plan (35-39)

The PDD, in its monitoring plan section, explicitly indicates that JI specific approach was selected.

The monitoring plan describes all relevant factors and key characteristics that will be monitored, and the period in which they will be monitored, in

particular also all decisive factors for the control and reporting of project performance, such as reporting forms, the operating structure and management structure of the enterprise, that will be applied when implementing the monitoring plan.

The monitoring plan specifies the indicators, constants and variables that are reliable (i.e. provide consistent and accurate values), valid (i.e. be clearly connected with the effect to be measured), and that provide a transparent picture of the emission reductions to be monitored such as: Inner diameter of a particular gas pipeline section, length of a particular gas pipeline section, average natural gas pressure of a particular gas pipeline section, natural gas compressibility factor depends on its temperature and pressure, correction factor for a gas pipeline purging, methane concentration (CH4) in 1m3 of natural gas, methane Global warming potential, average natural gas temperature of a particular gas pipeline section i, that would be isolated and discharged from gas.

The monitoring plan draws on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring" developed by the JISC, as appropriate, among which: baseline emissions (BE_y), project emissions (PE_y), methane Global warming potential (GWP_{xx}).

According to the Guidelines for users of the JI PDD form, revision # 04, the described approach to monitoring clearly states:

(i) Data and parameters that are not monitored throughout the crediting period, but are determined only once, and that are available already at the stage of PDD development:

$D^2_{b,lot,NG}$	Inner diameter of a particular gas pipeline section in monitoring period «y» baseline scenario, m
$L^y_{b,lot,NG}$	Length of a particular gas pipeline section in monitoring period «y» baseline scenario, m
$P^y_{b,lot,NG,real}$	Average natural gas pressure of a particular gas pipeline section in monitoring period «y» baseline scenario, MPa
$Z^y_{b,lot,NG,issue,real}$	Natural gas compressibility factor depends on its temperature and pressure in monitoring period «y» baseline scenario, dimensionless
$k^y_{b,lot,NG,blow}$	Correction factor for a gas pipeline purging in monitoring period «y» baseline scenario, dimensionless

(ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once, but that are not already available at the stage of PDD development: none.

(iii) Data and parameters that are monitored throughout the crediting period, such as:

W_{b,lot,CH_4}^{y}	Methane concentration (CH4) in 1m3 of natural gas in monitoring period «y» baseline scenario, %
GWP_{CH_4}	Methane Global warming potential in monitoring period «y» baseline scenario, t CO2e/ t CH4
$T_{b,lot,NG,real}^{y}$	Average natural gas temperature of a particular gas pipeline section i, that would be isolated and discharged from gas, K

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording, such as data archiving in hard copy and electronic form.

The most objective and cumulative factor that provides a clear picture of whether the emission reductions took place is the fact of GHG emission reductions due to reduction of direct methane emissions by implementation of innovative gas pipeline repair methods of the natural gas production, storage, preparation and transportation system. It can be defined as the difference between baseline GHG emissions and GHG emissions after the project implementation.

The monitoring plan elaborates all algorithms and formulae used for the estimation/calculation of baseline emissions and project emissions such as:

Formulae used to estimate project emissions (for each gas, source etc.; emissions in units of CO_2 equivalent):

GHG emissions in the project scenario are absent.

$$PE_p^y = 0 \quad (1)$$

PE_p^y- total CO2 emissions in monitoring period *«y»* in the project scenario, (t CO2eq);
[y] - index corresponding to monitoring period;
[p] - index corresponding to project scenario.

Formulae used to estimate baseline emissions (for each gas, source etc.; emissions in units of CO_2 equivalent):

GHG emissions in the baseline scenario in period *y* are calculated according to the following formula:

$$BE_b^y = \sum_{n=1}^{N} BE_{b,lot}^y \quad (2)$$

BE_b^y- total CO2 emissions in monitoring period «y» in the baseline scenario, (t CO2eq);

$BE_{b,lot}^y$- CO2 emissions caused by repairs of a particular gas pipeline section in monitoring period «y» in the baseline scenario, (t CO2eq).

$$BE_{b,lot}^y = FC_{b,lot,NG}^y * W_{b,lot,CH_4}^y * ConvFactor * GWP_{CH_4} \quad (3)$$

$FC_{b,lot,NG}^y$ – volume of natural gas that would be discharged into the atmosphere during repairs at a particular gas pipeline section, in monitoring period «y» in the baseline scenario, (ths m3);

W_{b,lot,CH_4}^y – methane concentration (CH4) in 1m3 of natural gas in monitoring period «y» baseline scenario, %;

ConvFactor - factor of conversion m3 CH4 into t CH4 at standard temperature and pressure (20 ^{0}C, 0.1013 MPa) is 0.000668, t CH4 / m3 CH4;

GWP_{CH_4} - methane global warming potential in monitoring period «y» baseline scenario, т CO2-екв/т CH4;

$$FC_{b,lot,NG}^y = FC_{b,lot,NG,issue}^y + FC_{b,lot,NG,blow}^y \quad (4)$$

$FC_{b,lot,NG,issue}^y$ – volume of natural gas that would be discharged into the atmosphere during repairs at a particular gas pipeline section, in monitoring period «y» in the baseline scenario, (ths m3);

$FC_{b,lot,NG,blow}^y$ – volume of natural gas that would be used for gas pipeline purging, in monitoring period «y» in the baseline scenario, (ths m3);

$$FC_{b,lot,NG,issue}^y = \frac{\pi D_{b,lot,NG}^2}{4} \cdot L_{b,lot,NG}^y \cdot \frac{P_{b,lot,NG,real}^y \cdot T_{b,lot,NG,st}^y}{P_{b,lot,NG,st}^y \cdot T_{b,lot,NG,real}^y \cdot Z_{b,lot,NG,issue,real}^y} \cdot 10^{-3} \quad (5)$$

π - Pi number;

$D_{b,lot,NG}^2$ - inner diameter of a particular gas pipeline section in monitoring period «y» baseline scenario, m;

$L_{b,lot,NG}^y$ - length of a particular gas pipeline section in monitoring period «y» baseline scenario, m;

$P_{b,lot,NG,real}^y$ - average natural gas pressure of a particular gas pipeline section in monitoring period «y» baseline scenario, MPa;

$T_{b,lot,NG,real}^y$ - average natural gas temperature of a particular gas pipeline section i, that would be isolated and discharged from gas, K;

$T_{b,lot,NG,st}^y$ - temperature at standard conditions, in monitoring period «y» in the baseline scenario is 293.15 K;

$P_{b,lot,NG,st}^y$ - pressure at standard conditions, in monitoring period «y» in the baseline scenario is 0,101325 MPa;

$Z_{b,lot,NG,issue,real}^y$ - natural gas compressibility factor depends on its temperature and pressure in monitoring period «y» baseline scenario, dimensionless;

10^{-3} – compressibility transfer m^3 in ths m^3

$$FC^{y}_{b,lot,NG,blow} = 0{,}0036 \cdot \frac{\pi D^2_{b,lot,NG}}{4} \cdot L^{y}_{b,lot,NG} \cdot \frac{P^{y}_{b,lot,NG,st} + P^{y}_{b,lot,NG,real}}{T^{y}_{b,lot,NG,st} + T^{y}_{b,lot,NG,real}} \cdot k^{y}_{b,lot,NG,blow} \cdot 10^{-3}, \quad (6)$$

π - Pi number;

$D^2_{b,lot,NG}$ - inner diameter of a particular gas pipeline section in monitoring period «y» baseline scenario, m;

$L^{y}_{b,lot,NG}$ - length of a particular gas pipeline section in monitoring period «y» baseline scenario, m;

$P^{y}_{b,lot,NG,real}$ - average natural gas pressure of a particular gas pipeline section in monitoring period «y» baseline scenario, MPa;

$T^{y}_{b,lot,NG,real}$ - average natural gas temperature of a particular gas pipeline section i, that would be isolated and discharged from gas, K;

$T^{y}_{b,lot,NG,st}$ - temperature at standard conditions, in monitoring period «y» in the baseline scenario is 293.15 K;

$P^{y}_{b,lot,NG,st}$ - pressure at standard conditions, in monitoring period «y» in the baseline scenario is 0,101325 MPa;

$k^{y}_{b,lot,NG,blow}$ - correction factor for a gas pipeline purging in monitoring period «y» baseline scenario, dimensionless;

10^{-3} – compressibility transfer m^3 in ths m^3.

[y] - index corresponding to monitoring period;

[lot] - index corresponding to a separate section of the gas pipeline;

[b] - index corresponding to baseline scenario;

[real] - index corresponding to real conditions;

[st] - index corresponding to standard conditions;

[issue] - index corresponding to natural gas in a gas pipeline;

[blow] - index corresponding to natural gas volume used for gas pipeline purging;

[NG] - index corresponding to natural gas;

[CH_4] - index corresponding to methane.

Formulae used to calculate emission reductions from the project (for each gas, source etc.; emissions/emission reductions in units of CO_2 equivalent):

Emission reductions resulting from the project activity are calculated using the following formula:

$$ER^{y} = BE^{y}_{b} - PE^{y}_{p} \quad (7)$$

ER^{y} - emission reductions achieved as a result of the project activity, in period «*y*», (t CO_2e);

PE^{y}_{p} - total methane emissions from equipment after the repair or replacement, in period «*y*», (t CO_2e);

BE^{y}_{b} - total methane emissions from equipment before the repair or replacement, in period «*y*», (t CO_2e);

[y] - index corresponding to monitoring period;
[b] - index corresponding to baseline scenario;
[p] - index corresponding to project scenario.

Exel file Supporting document 1 contains a calculation of baseline and project emissions as well as emission reductions for each year of the reporting period.

The monitoring plan presents the quality assurance and control procedures for the monitoring process, which are sufficiently described in tabular form in Sections D.1.1.1., D.1.1.3. and D.2 of the PDD. This includes, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. To implement the project a working team was established. It consists of engineer, technologist, methrologist, and secretary report to the head of the working team. The engineer of the working team is responsible for collection of information envisaged in the monitoring plan. The secretary of the working team is responsible for storage and archiving of all information obtained as a result of the measurements and calculations. On the basis of the obtained information the head of the working team, determines the plan of measures under the Project and the volume of necessary resources. Additionally, the comprehensive description of monitoring procedure and organization chart of JI project management team at NJSC “Chornomornafogas” is presented in the figure 12 and Annex 3 of the PDD.

The monitoring plan provides a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources (e.g. official statistics, expert judgment, proprietary data, commercial and scientific literature etc.) but not including data that are calculated with equations

The monitoring plan indicates that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.

The identified areas of concern as to the monitoring plan, project participants response and BVC’s conclusion are described in Appendix A to the Determination Report (refer to CAR 20 - CAR 26; CL 06).

4.8 Leakage (40-41)

The PDD appropriately describes an assessment of the potential leakage of the project and appropriately explains which sources of leakage are to be calculated, and which can be neglected.

According to the selected specific approach used in this JI project, there are no potential sources of leakage from the project activity.

All emissions from combustion of diesel fuel are included in the potential project emissions because the combustion takes place at fields and is included in the project boundary.

4.9 Estimation of emission reductions or enhancements of net removals (42-47)

The PDD indicates assessment of emissions in the baseline scenario and in the project scenario as the approach chosen to estimate the emission reductions generated by the project.

The PDD provides the ex ante estimates of:

(a) Emissions for the project scenario which are 0 tons of CO2eq in 2005-2007 0 tons of CO2eq in 2008-2012, 0 tons of CO2eq in 2013-2020;

(b) Leakage is not expected in the project boundary;

(c) Emissions for the baseline scenario (within the project boundary), which are 2 796 010 tons of CO2eq in 2005-2007, 5 649 616 tons of CO2eq in 2008-2012, 10 486 696 tons of CO2eq in 2013-2020;

(d) Emission reductions adjusted by leakage (based on (a)-(c) above), which are 2 796 010 tons of CO2eq in 2005-2007, 5 649 616 tons of CO2eq in 2008-2012, 10 486 696 tons of CO2eq in 2013-2020;

The estimates referred to above are given:

(a) On an annual basis;

(b) From 01/01/2005 to 31/12/2020, covering the whole crediting period;

(c) On a source-by-source basis;

(d) For each GHG gas, which is CO_2;

(e) In tonnes of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol.

The formula used for calculating the estimates referred above, are given in section 4.7. All formulae are consistent throughout the PDD.

For calculating the estimates referred to above, such key factors as the Ukrainian environmental legislation and other national legislation, as well as key relevant factors such as availability of funds for implementation of measures envisaged by the project, prices that are set by the state, modern technology and the ability to implement know-how in the gas supply sector, 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 the estimates referred to above, such as documents and archival data of the enterprise, standards and statistical forms, results of periodic verifications are clearly identified, reliable and transparent.

The estimation referred to above is based on conservative assumptions and the most plausible scenarios in a transparent manner.

The estimates referred to above are consistent throughout the PDD.

The annual average of estimated emission reductions or enhancements of net removals over the crediting period is calculated by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period, and multiplying by twelve.

Detailed algorithms of calculations and their results are described in sections D, E and Supporting documents to the PDD.

The identified areas of concern as to the estimation of emission reductions, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 34, CAR 27).

4.10 Environmental impacts (48)

Sections F.1. and F.2. of the PDD provide information about documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party.

NJSC "Chornomornaftogaz" independently performs complex of exploration and drilling operations on Azov-Black Sea shelf, industrial construction, arrangement of offshore deposits, production, transportation and storage of natural gas and liquid hydrocarbons. These production activities and production facilities whereat such activities take place, represent environmental hazard, so ensurance of environmental safety and compliance with environmental legislation is an integral part of all directions of these activities.
Based on the document review and the site visit, according to Ukrainian environmental regulations the natural gas emissions into the atmosphere are not considered as contamination. Therefore, no special environmental permits for the transportation and supply of natural gas are required.

The PDD states detailed description of the information of protection and rational use of water resources, land protection and waste management, air protection. The references to the national legislation are provided in the section F.

The general environmental impact opinion derived via the provided assessment is that the project will have a positive environmental impact and its foreseeable emergency negative impacts will be insignificant and easily repaired. Moreover, the project activity will cause no harmful transboundary impacts.

Transboundary impacts due to the project activity according to their definition in the text of "Convention on long-range transboundary pollution", ratified by Ukraine, will not take place.

The PDD provides conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party.

The identified areas of concern as to the environmental impacts, project participants response and BVC's conclusion are described in Appendix A to the Determination Report.

4.11 Stakeholder consultation (49)

Since the project activities do not imply any negative environmental impact and negative social effect, special public discussions were not necessary. Consultations with stakeholders were held at meetings with local authorities.

There have been numerous publications of NJSC "Chornomornaftogaz" employees in specialized and high profile national magazines. Information about work on direct methane emissions reduction at gas pipeline system at NJSC "Chornomornaftogaz" is covered on the official website, as well as on the sites of information agencies.

As a result, no negative comments toward project implementation were received.

Relevant information on stakeholder comments is included in the section G of the project design documents and justified by the documents of NJSC “Chornomornaftogaz” that completed in accordance with Ukrainian statutory requirements.

4.12 Determination regarding small scale projects (50-57)

Not applicable.

4.13 Determination regarding land use, land-use change and forestry (LULUCF) projects (58-64)

Not applicable.

4.14 Determination regarding programmes of activities (65-73)

Not applicable.

5 SUMMARY AND REPORT OF HOW DUE ACCOUNT WAS TAKEN OF COMMENTS RECEIVED PURSUANT TO PARAGRAPH 32 OF THE JI GUIDELINES

No comments, pursuant to paragraph 32 of the JI Guidelines, were received.

6 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the "Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz" Project in Ukraine. The determination 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 determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of

outstanding issues and the issuance of the final determination report and opinion.

Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides investment analysis and common practice analysis, to determine that the project activity itself is not the baseline scenario.

Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The determination revealed one pending issue related to the current determination stage of the project: the issue of the written approval of the project by the host Party (Ukraine). If the written approval by the host Party is awarded, it is our opinion that the project as described in the Project Design Document, Version 02 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria as well as project stakeholders expectations.

The review of the project design documentation (version 02) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.
The determination is based on the information made available to us and the engagement conditions detailed in this report.

7 REFERENCES

Category 1 Documents:
Documents provided by VEMA S.A. that relate directly to the GHG components of the project.

/1/	The PDD "Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz", version 01 dated 20/08/2012
/2/	The PDD "Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz", version 02 dated 21/09/2012
/3/	Supporting document 1. Calculation of GHG emission reductions under the project "Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz"
/4/	Supporting documents 2. Investment analysis of the JI project "Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz"
/5/	Letter of Endorsement No.2554/23/7 issued by the State Environmental Investment Agency of Ukraine dated 12/09/2012
/6/	Guidelines for users of the JI PDD form. Version 04, JISC
/7/	Tool for the demonstration and assessment of additionality, version 06.0.0.
/8/	The Kyoto Protocol
/9/	Marrakesh Agreement, JI Methods
/10/	National inventory of greenhouse gas anthropogenic emissions by sources and removals by sinks in Ukraine for the period of 1990-2010
/11/	Third National Communication of Ukraine on climate change under the Kyoto Protocol
/12/	Fourth National Communication of Ukraine on climate change under the Kyoto Protocol
/13/	Fifth National Communication of Ukraine on climate change under the Kyoto Protocol

/14/	JI guidelines. Appendix to decision 9/CDM.1.
/15/	JI Determination and Verification Manual, Version 01
/16/	Guidance on criteria for baseline setting and monitoring, JISC. Version 03.

Category 2 Documents:
Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/	Technical certificate № 1 for the installation of composite reinforcing bands PPS (Main pipeline Simferopol-Sevastopol). 2004
/2/	"Technical Report № 1-2004. On the results of a comprehensive nondestructive testing of NJSC "Chornomornaftogaz" gas pipeline 2004 "
/3/	Technical certificate № 1 for the installation of composite reinforcing bands PPS (Main pipeline Simferopol-Sevastopol). 2005
/4/	"Technical Report № 1-2005. On the results of a comprehensive nondestructive testing of NJSC "Chornomornaftogaz" gas pipeline 2005 "
/5/	Technical certificate № 1 for the installation of composite reinforcing bands PPS (Main pipeline Simferopol-Sevastopol). 2006
/6/	"Technical Report № 1-2006. On the results of a comprehensive nondestructive testing of NJSC "Chornomornaftogaz" gas pipeline 2006 "
/7/	Technical certificate № 1 for the installation of composite reinforcing bands PPS (Main pipeline Simferopol-Sevastopol). 2007
/8/	"Technical Report № 1-2007. On the results of a comprehensive nondestructive testing of NJSC "Chornomornaftogaz" gas pipeline 2007 "
/9/	Technical certificate № 1 for the installation of composite reinforcing bands PPS (Main pipeline Simferopol-Sevastopol). 2008
/10/	"Technical Report № 1-2008. On the results of a comprehensive nondestructive testing of NJSC "Chornomornaftogaz" gas pipeline 2008 "
/11/	Technical certificate № 1 for the installation of composite reinforcing bands PPS (Main pipeline Simferopol-Sevastopol). 2009
/12/	"Technical Report № 1-2009. On the results of a comprehensive nondestructive testing of NJSC "Chornomornaftogaz" gas pipeline 2009 "

/13/	Technical certificate № 1 for the installation of composite reinforcing bands PPS (Main pipeline Simferopol-Sevastopol). 2010
/14/	"Technical Report № 1-2010. On the results of a comprehensive nondestructive testing of NJSC "Chornomornaftogaz" gas pipeline 2010 "
/15/	Technical certificate № 1 for the installation of composite reinforcing bands PPS (Main pipeline Simferopol-Sevastopol). 2011
/16/	"Technical Report № 1-2011. On the results of a comprehensive nondestructive testing of NJSC "Chornomornaftogaz" gas pipeline 2011 "
/17/	Technical certificate № 1 for the installation of composite reinforcing bands PPS (Main pipeline Simferopol-Sevastopol). 2012
/18/	"Technical Report № 1-2012. On the results of a comprehensive nondestructive testing of NJSC "Chornomornaftogaz" gas pipeline 2012 "
/19/	NJSC "Chornomornaftogaz" month report, 2004 (gas devices FLOUTYEK-TM)
/20/	NJSC "Chornomornaftogaz" month report, 2005 (gas devices FLOUTYEK-TM)
/21/	NJSC "Chornomornaftogaz" month report, 2006 (gas devices FLOUTYEK-TM)
/22/	NJSC "Chornomornaftogaz" month report, 2007 (gas devices FLOUTYEK-TM)
/23/	NJSC "Chornomornaftogaz" month report, 2008 (gas devices FLOUTYEK-TM)
/24/	NJSC "Chornomornaftogaz" month report, 2009 (gas devices FLOUTYEK-TM)
/25/	NJSC "Chornomornaftogaz" month report, 2010 (gas devices FLOUTYEK-TM)
/26/	NJSC "Chornomornaftogaz" month report, 2011 (gas devices FLOUTYEK-TM)
/27/	NJSC "Chornomornaftogaz" month report, 2012 (gas devices FLOUTYEK-TM)

Persons interviewed:

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

	Name	Organization	Position
/1/	A.Lavreka	NJSC "Chornomornaftogaz"	Head of pipeline management
/2/	O. Ochkan	NJSC	Head of production and

		"Chornomornaftogaz"	technical service of pipeline management
/3/	N.Djelilov	NJSC "Chornomornaftogaz"	Head of line-operational service of pipeline management
/4/	K.Sereda	NJSC "Chornomornaftogaz"	Head of production and technical management department
/5/	O.Grin	NJSC "Chornomornaftogaz"	Head of production management
/6/	D. Palamarchyk	LLC «CEP»	Consultant of VEMA S.A.

APPENDIX A: COMPANY PROJECT DETERMINATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
Guidelines for Users of the JI PDD form Section A General description of the project				
A.1. Title of the project				
A.1	Is the title of the project presented?	The title is presented. The title of the project is "Reduction of direct methane emissions by implementation of innovative repair methods at technological equipment of Public Joint Stock Company "National Joint Stock Company "Chornomornaftogaz".	OK	OK
A.1	Is the sectoral scope to which the project pertains presented?	**CAR 01.** Please specify the Sectoral scope.	**CAR 01**	OK
A.1	Is the current version number of the document presented?	The current version of the document: PDD, Version 02 dated 21/09/2012. See Section A.1.	OK	OK
A.1	Is the date when the document was created presented?	The date when the document was created: 21/09/2012.	OK	OK
A.2. Description of the project				
A.2	Is the purpose of the project included with	The purpose of the Joint Implementation (JI) Project is	**CAR 02**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting date of the project b) Baseline scenario and c) Project scenario (expected outcome, including a technical description)?	reduction of direct methane emissions by implementation of innovative gas pipeline repair methods of the natural gas production, storage, preparation and transportation system. The project provides for the implementation of innovative repair methods that allow repair of gas pipelines with identified defects by using of detachable sleeves and rings between the gas pipeline, which is under repair and the sleeve and the further introduction of a special high-pressure self-hardening composition (sealant) in the space formed between the outer pipeline surface and inner surface of the sleeve. Detailed information on the baseline and project scenarios with technical description is given in Sections A.2 and A.4.2. of the PDD. **CAR 02.** Please provide more detailed information about the situation existing prior to the project in Section A.2.		
A.2	Is the history of the project (incl. its JI component) briefly summarized?	The project history is summarized in the section A.2 of the PDD. Information regarding JI component of the project, including JI prior consideration is presented as well. **CAR 03.** Please, provide information on the Letter of Endorsement in the description of the project history.	**CAR 03**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
A.3. Project participants				
A.3	Are project participants and Party (ies) involved in the project listed?	The parties involved in the project are: NJSC "Chornomornaftogaz" (Ukraine, the Host party), VEMA S.A. (Switzerland).	OK	OK
A.3	Is the data of the project participants presented in tabular format?	The data of the project participants is presented in tabular format.	OK	OK
A.3	Is contact information provided in Annex 1 of the PDD?	Contact information on NJSC "Chornomornaftogaz" is provided in Annex 1 of the PDD.	OK	OK
A.3	Is it indicated, if it is the case, that the Party involved is a host Party?	Ukraine is the Host Party.	OK	OK
A.4 Technical description of the project				
Location of the project				
A.4.1.1	Host Party(ies)	Ukraine is the Host Party.	OK	OK
A.4.1.2	Region/State/Province etc.	The Autonomous Republic of Crimea and the shelf plates of the Black Sea and the Sea of Azov, Ukraine	OK	OK
A.4.1.3	City/Town/Community etc.	The JI project includes all administrative and territorial units in wherein elements of the gas transportation system NJSC "Chornomornaftogaz" are located.	OK	OK
A.4.1.4	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page).	Information about location is given in Section A.4.1.4 of the PDD.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
A.4.2. Technologies to be employed, or measures, operations or actions to be implemented by the project				
A.4.2	Are the technology (ies) to be employed, or measures, operations or actions to be implemented by the project, including all relevant technical data and the implementation schedule described?	PDD Section A.4.2 provides the description of the main stages of the project implementation, the annual project activities schedule, some relevant technical data relating to main equipment to be implemented as well as project activities. Project design represents the current cutting-edge practice. **CAR 04**. Please, provide more detailed information on innovative repair methods, in Section A.4.2. **CAR 05.** Please, provide information on pipeline defect repair with the use of two layer sleeve method. **CAR 06.** Please, check the numbering of figures in Section A.4.2 of and make corresponding corrections. **CL 01.** Please, provide clarification on high-pressure injection when space is filled with sealant if special requirements needed. **CL 02.** Please, provide information on gas pipeline repair If the pipe section contains out-of-flat elements. **CL 03.** Please, provide clarification on possibility to use not highly qualified staff .	**CAR 04** **CAR 05** **CAR 06** **CL 01** **CL 02** **CL 03**	OK OK OK OK OK OK
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				
A.4.3	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	Under normal operation of large and relatively aged pipeline system several hundred cases of pipe corrosion or other types of pipe wall deficiency are diagnosed annually, only innovative methods of gas pipeline repair allow to achieve safe operation and ensure long-term defect removal. Due to introduction of innovative methods of gas pipeline repair, the need to stop the operation of the pipeline and the gas discharging to the atmosphere prior to the repair eliminates, thereby reducing greenhouse gas emissions to the baseline scenario. **CAR 07.** Please, provide the section A.4.3 format as provided version 04 of the "Guidelines for users of the Joint Implementation Project design document form."	OK	OK
A.4.3	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period is provided in Section A.4.3.1. of the PDD. **CAR 08.** Table 2, PDD Section A.4.3.1, provides for wrong length of the crediting period.	**CAR 08**	OK
A.4.3	Is it provided the estimated annual reduction for the chosen credit period in	**CAR 09.** In Section A.4.3.1., in the Table, providing the estimated amount of emission reductions for the period	**CAR 09**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	tCO_2e?	following the first commitment period (2013-2020), state the total estimated amount of emission reductions over the credit period in tonnes of CO_2 equivalent.		
A.4.3	Are the data from questions above presented in tabular format?	Information on the crediting period, the period before and after the crediting period is presented in tabular format. See PDD (Version 02) Tables 2, 3, 4 Section A.4.3.1.	OK	OK
A.4.3.1. Estimated amount of emission reductions over the crediting period				
A.4.3.1	Is the length of the crediting period Indicated?	The length of the crediting period is indicated in the PDD Section A.4.3.1. and Section C.	OK	OK
A.4.3.1	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO_2 equivalent provided?	Total as well as annual and average annual emission reductions in tonnes of CO_2 equivalent are provided in accordance with the calculated values in the tables of Section A of PDD and the Supporting Documents. **CAR 10**. Please, provide a link to the Excel file with the calculations.	**CAR 10**	OK
Project approvals by Parties				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	**CAR 11**. The project has no approval of the Host party and the country-participant. To obtain the Letter of Approval the final Determination report must be submitted to the State Environmental Investment Agency of Ukraine that includes this Determination Protocol and the list of sources of Reference Information.	**CAR 11**	Pending

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		A Letter of Approval of other party involved – country participant is also not obtained at the current stage of the Project. **CAR 11** will be closed after the Letters of Approval are issued by the Parties involved.		
19	Does the PDD identify at least the host Party as a "Party involved"?	The Host Party involved is Ukraine.	OK	OK
19	Has the DFP of the host Party issued a written project approval?	Reference to **CAR 11.**	**CAR 11**	Pending
20	Are all the written project approvals by Parties involved unconditional?	Reference to **CAR 11.**	**CAR 11**	Pending
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: − A written project approval by a Party involved, explicitly indicating the name of the legal entity? or − Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?	Party involved 1: Ukraine (the host Party), legal entity is NJSC "Chornomornaftogaz". Party involved 2: Switzerland, legal entity is VEMA S.A. The project participants will be authorized in accordance with the relevant project approvals. Pending **CAR 11**	**CAR 11**	Pending
Baseline setting				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
22	Does the PDD explicitly indicate which of the following approaches is used for identifying the baseline? − JI specific approach − Approved CDM methodology approach	The chosen baseline is described in Section B.1 of the PDD. A specific JI approach is used for setting the baseline.	OK	OK
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	The choice of the applicable baseline for the project is justified; detailed theoretical description is provided in section B.1 of PDD version 02. **CAR 12.** Please, provide the reference to Guidance on criteria for baseline setting and monitoring Version 03 in Section B.1. **CAR 13.** Please specify the full name of the methodology on which formulas for calculations of the baseline scenario were used.	**CAR 12** **CAR 13**	OK OK
23	Does the PDD provide justification that the baseline is established: (a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? − Are key factors that affect a baseline taken into account?	The PDD provides detailed, full and transparent description and justification that the baseline is established: (a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one: - Alternative 1.1: Continuation of the current situation, without the JI project implementation. - Alternative 1.2: Proposed project activity without the use of the JI mechanism.	**CAR 14**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure? (f) By drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring", as appropriate?	(b) By taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, agricultural sector expansion plans, and the economic situation in the project sector. In this context, the following key factors that affect a baseline are taken into account: - The role of energy sector is absolute and crucial for Ukraine. Power sector is a political factor of sovereignty in Ukraine. Ukrainian economy is considered to be one of the most energy intensive in the world in terms of the consumption of primary energy per a gross domestic product unit. On March 15, 2006 the Cabinet of Ministers of Ukraine adopted "Energy Strategy of Ukraine till 2030". The Energy strategy considers exploration of non-traditional and renewable energy sources as a significant factor in increasing the level of energy safety, decrease of energy anthropogenic affect on environment and counteractions against global climate change. - Most natural gas transportation and supply companies currently working in Ukraine operate of equipment installed back in the Soviet era.		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		- The current practice of detection and repair of natural gas losses and, correspondingly, methane emissions complies with the current legislation of Ukraine. The legislation permits the loss of natural gas and, correspondingly, methane emissions in the course of natural gas transportation. The standards set only the frequency of inspection of equipment by gas distribution organizations to detect losses of natural gas. The practice of natural gas loss detection at NJSC "Chornomornaftogaz" meets the standards. The control of compliance with norms shall be performed by annual inspections by authorized bodies. - The current Ukrainian system of formation of tariffs for natural gas supply does not include an investment component for gas infrastructure development. According to the Law "On fundamentals of natural gas market functioning" NJSC "Chornomornaftogaz" is not obliged and is unmotivated to implement new equipment at its own expense. In addition, state investment programs in most cases are targeted at administrative and organizational implementations.		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		- The state support in the sphere of natural gas transportation and supply is available in accordance with funds provided by the State Budget of Ukraine for the corresponding year. - Ukraine already implements JI projects in the sphere of heat supply ("Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine") by selling emission reduction units. (c) In a transparent manner with regard to the choice of JI approach and assumptions, parameters, data sources and key factors for identifying initial conditions listed in tabular format in Section B.1. (d) By taking into account of uncertainties and using conservative assumptions (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure (f) By drawing on the list of standard variables. The baseline is set; the description is given in Section B of the PDD. **CAR 14.** Please, provide relevant conclusion after the		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		description of all plausible baseline scenarios.		
24	If selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?	The baseline assumptions of the developed JI specific approach are clearly described in full in Section B.1 of the PDD version 02. **CAR 15**. The table in section B.1. of the PDD for methane concentration (CH_4) in $1m_3$ of natural gas provides references on National inventory report of anthropogenic greenhouse gas emissions by sources and removals by sinks in Ukraine in 1990-2009 when correct reference is National inventory report of anthropogenic greenhouse gas emissions by sources and removals by sinks in Ukraine in 1990-2010. Please, make the necessary corrections. **CAR 16.** Please, in table for natural gas compressibility factor depends on its temperature and pressure state the measurement/monitoring frequency. **CL 04.** Please provide reference on Programme "Creation and organization of production of drilling, oil and gas production, oil treatment equipment and technology for the construction of oil and gas pipelines with scientific and technical part until 2010"	**CAR 15** **CAR 16** **CL 04**	OK OK OK
25	If a multi-project emission factor is used,	No multi-project emission factor is used in the PDD.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	does the PDD provide appropriate justification?			
CDM methodology approach only				
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals (b) Provision of traceable and transparent information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances has additionality (c) Application of the most recent version of the "Tool for the demonstration and assessment of additionality. (allowing for a two-month grace period) or any other	The PDD indicates that the project scenario is not a part of the established baseline scenario. It is also stated that the project will lead to emission reductions. Additionality of the project activity is demonstrated in PDD Section B.2 using the "Tools for the demonstration and assessment of additionality" (Version 06.0.0). **CAR 17.** The reference to the Tool for the demonstration and assessment of additionality, Versdion 6.0.0 reference to version 5.2. Please, provide the relevant reference. **CAR 18.** Please provide information on spent funds in dollars or euros.	**CAR 17** **CAR 18**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	method for proving additionality approved by the CDM Executive Board".			
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	Detailed analysis described in Sections A.4.3, B.1 and B.2, shows that emissions of the baseline scenario are likely to exceed emissions of the project scenario due to the implementation of project activities.	OK	OK
29 (b)	Are additionality proofs provided?	Yes. Refer to Section B.2. of the PDD.	OK	OK
29 (c)	Is the additionality demonstrated appropriately as a result?	The fact that the project activity itself is not the baseline scenario is clearly demonstrated in Sections A.2, B.1, B.2 of the PDD.	OK	OK
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	All explanations, descriptions and analyses are made in accordance with the newest version of the "Tools for the demonstration and assessment of additionality". (Version 06.0.0)	OK	OK
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable				
Project boundary (applicable except for JI LULUCF projects)				
JI specific approach only				
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are:	The project boundary defined in the PDD encompasses all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	(ii) Reasonably attributable to the project such as: - direct methane emissions in the traditional methods of gas pipelines repair; (iii) Significant, i.e., as a rule of thumb, would by each source account on average per year over the crediting period for more than 1 per cent of the annual average anthropogenic emissions by sources of GHGs, or exceed an amount of 2,000 tonnes of CO_2 equivalent, whichever is lower.		
32 (b)	Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above?	Project boundary is defined on the basis of case-by-case assessment of different emission sources.	OK	OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart if it is possible?	The project boundary is presented in a graphic and tabular forms and are understandable enough.	OK	OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the	All gases and sources included are explicitly stated. See Section B of PDD.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	project are appropriately justified?			
Approved CDM methodology approach only_Paragraph 33_ Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	According to the Guidelines for users of JI PDD form (version 04) the starting date of the project is the date when the implementation or construction or real action of the project begins. The starting date of the project is identified and specified in Section C. 1 of the PDD. Starting date of the project is 14/05/2004, when NJSC "Chornomornaftogaz" started implementation of the project activities on introduction of innovative methods of gas pipeline repair with identified defects.	OK	OK
34 (a)	Is the starting date after 2000?	The starting date is after 2000.	OK	OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	The expected operational lifetime of the project in years and months is 16 years, or 192 months, from 01/01/2008 to 31/12/2027.	OK	OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	The length of the crediting period is stated in years and months in Section C.3. **CAR 19.** The number of months of the crediting period is incorrect.	**CAR 19**	OK
34 (c)	Is the starting date of the crediting period before or after the date of the first emission	The starting date of the crediting period is the date when the first emission reduction unitss are expected	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	reductions or enhancements of net removals generated by the project?	to be generated, namely 01/01/2008.		
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	Generation of ERUs relates to the first commitment period of 5 years (January 1, 2008 – December 31, 2012).	OK	OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	The PDD states that the prolongation of the crediting period beyond 2012 is subject to approval of the host party and estimation of emission reductions is presented separately for those until 2012 and those after 2012 in the relevant sections of PDD. If after the first commitment period under the Kyoto protocol, the Kyoto protocol is prolonged, the crediting period under the project will be prolonged by 8 years/96 months until December 31, 2020.	OK	OK
Monitoring Plan				
35	Does the PDD explicitly indicate which of the following approaches is used? − JI specific approach − Approved CDM methodology approach	The proposed project uses a JI specific approach based on the JI requirements in accordance with paragraph 9 (a) of the JI Guidance on criteria for baseline setting and monitoring, version 03.	OK	OK
JI specific approach only				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
36 (a)	Does the monitoring plan describe: − All relevant factors and key characteristics subject to monitoring? − The period in which they will be monitored? − All critical factors for the control and reporting of project performance?	The monitoring plan specifies all key factors for the control and reporting on project performance: quality control (QC) and quality assurance (QA) procedures; operational and management structures that will be applied when implementing the monitoring plan. **CAR 20.** Please, provide description of parameter $T^{y}_{b,lot,NG,real}$ in Section D.1.1.3. **CAR 21.** The data source for GWP_{CH_4} parameter is incorrect. **CAR 22**. Check the data unit for the parameters of formula (6).	**CAR 20** **CAR 21** **CAR 22**	OK OK OK
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	The monitoring plan specifies indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancement of net removals to be monitored. Data to be monitored are presented in section D of the PDD. **CAR 23.** Please, check data units of monitoring data and parameters in Sections D.1.1.1 and D.1.1.3 of the PDD in accordance with the formulae. **CL 05.** Please provide the information on how the data necessary for determination will be stored after the last transfer of ERUs under the project.	**CAR 23** **CL 05**	OK OK
36 (b)	If default values are used:	Default values are provided in the table of Annex 3 to	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	− Are accuracy and reasonableness carefully balanced in their selection? − Do the default values originate from recognized sources? − Are the default values supported by statistical analyses providing reasonable confidence levels? − Are the default values presented in a transparent manner?	the PDD. They originate from recognized sources and are presented in a transparent manner.		
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	The monitoring plan clearly indicates how the values are to be selected and justified.	OK	OK
36 (b) (ii)	For other values, − Does the monitoring plan clearly indicate the precise references from which these values are taken? − Is the conservativeness of the values provided justified?	**CAR 24**. Please, number all formulae in Section D of the PDD. **CAR 25**. All the values of baseline and project emissions as well as emission reductions under the project are to be stated in tonnes of CO_2 equivalent. Please, make the relevant corrections in the formulae provided in Section D.	**CAR 24** **CAR 25**	OK OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	Refer to section D of the PDD.	OK	OK
36 (b)	Are International System Units (IS units)	IS units are used for certain parameters.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
(iv)	used?			
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	Relevant data necessary for determining the baseline scenario for anthropogenic emissions of greenhouse gases within the project boundary are presented in table D.1.1.3. of the PDD.	OK	OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	The use of parameters, coefficients and variables are consistent between the baseline and monitoring plan.	OK	OK
36 (c)	Does the monitoring plan draw on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring"?	The monitoring plan is set taking into account the "Guidance on criteria for baseline setting and monitoring".	OK	OK
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus	The monitoring plan clearly distinguishes three types of data and parameters. Refer to Section D.1. of the PDD. (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination. (ii) Data and parameters that are monitored throughout the crediting period. (iii) Data and parameters that are not monitored throughout the crediting period, but are determined	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	remain fixed throughout the crediting period), but that are not yet available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	only once (and thus remain fixed throughout the crediting period), but that are not yet available at the stage of determination are absent.		
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	In tables of parameters provided in section D.1.1.1. of the PDD the time of monitoring (frequency) and the source of data to be used, as well as recording method are indicated for all the monitored parameters and data.	OK	OK
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	All algorithms and formulae used for the estimation of baseline and project emissions are indicated and explained in the PDD. The description of formulae is provided in Section D of the PDD	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Refer to section 36 (f) of this table.	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts etc. are used.	OK	OK
36 (f)	Are all equations numbered?	See **CAR 24.**	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
(iii)				
36 (f) (iv)	Are all variables with units indicated defined?	Yes. Refer to section D of the PDD.	OK	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	Yes, algorithms/procedures comply with state norms and are conservative.	OK	OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	Uncertainty in parameters used is low taking into account the algorithms of data monitoring.	OK	OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net removals of the baseline ensured?	There is consistency between the elaboration on the baseline scenario and procedure for calculating the baseline emissions in the monitoring plan and in tables.	OK	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	The formulae used in the PDD are sufficiently described.	OK	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Monitoring under the project does not require changes in existing accounting and data collection system existing at NJSC "Chornomornaftogaz".	OK	OK
36 (f) (vii)	Are references provided as necessary?	All necessary references are provided.	OK	OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	All key assumptions are explained in a transparent manner.	OK	OK
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such	N/A	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	uncertainty is to be addressed?			
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	To ensure conservativeness of parameters constant routine calibration of measuring equipment is carried out and the latest editions of the regulatory and technical documentation is used. In the absence of the latest editions of the regulatory and technical documentation their previous versions will be used.	OK	OK
36 (g)	Does the monitoring plan identify a national or international monitoring standard if such standard has to be and/or is applied to certain aspects of the project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?	The monitoring plan was set according to national norms and standards.	OK	OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	Yes	OK	OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made	Inspection (calibration) of recording and measuring equipment is carried out in accordance with manuals of the manufacturer, approved methodologies on verification/calibration of measuring equipment as well as according to the national standards of Ukraine. **CAR 26.** In Section D.2. of the PDD provide	**CAR 26**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	available upon request?	information on parameter $T^{y}_{b,lot,NG,real}$.		
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	Detailed operational and management structures are given in Section D.3 to the PDD. **CL 06**. Please, provide information about the entity that determined the monitoring plan.	**CL 06**	OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	Monitoring under the project does not require any changes in existing accounting system and data collection procedure.	OK	OK
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	Tables in Sections D.1.1.1 and D.1.1.3 provide compilation of all data needed to monitor project and baseline emissions.	OK	OK
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	Data to be monitored and required for determination will be kept for two years after the last transfer of ERUs under the project.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	Yes, formulas based on "Methodology of Evaluation of GHG Sequestration Daring New Gas Supply Grids Building According to JI Projects under Kyoto Protocol to UN Framework Convention on Climate Change" are used for setting the baseline scenario. The selected elements and combinations with additional elements that were additionally developed by the project participants are in line with requirements of paragraph 36 above.	OK	OK
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable				
Applicable to both JI specific approach and approved CDM methodology approach				
39	If the monitoring plan indicates overlapping monitoring periods during the crediting period: (a) Is the underlying project composed of clearly identifiable components for which emission reductions or enhancements of removals can be calculated independently? (b) Can monitoring be performed independently for each of these components (i.e. the data/parameters monitored for one component are not dependent on/effect data/parameters to be monitored for another component)?	No periods to overlap during the crediting period are expected.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(c) Does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met? (d) Does the monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the conditions mentioned in (a)-(c) are met?			
Leakage				
JI specific approach only				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	According to the JI specific approach, there aren't any potential sources of leakage due to the project activities.	OK	OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	The PDD states that there isn't any leakage.	OK	OK
Approved CDM methodology approach only_Paragraph 41_Not applicable				
Estimation of emission reductions or enhancements of net removals				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
42	Does the PDD indicate which of the following approaches it chooses? (a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions	In the PDD the approach of estimation of emissions in the baseline scenario and in the project scenario is indicated. **CAR 27.** Please, check the numbering of tables in Section E of the PDD and make corresponding corrections.	**CAR 27**	OK
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the project boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?	PDD provides estimates of: (a) Emissions in the project scenario (Section E.1) (b) Leakage (Section E.2) (c) Emissions in the baseline scenario (Section E.4) (d) Emission reductions adjusted by leakage (Section E.6).	OK	OK
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable?	N/A	N/A	N/A

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(c) Emission reductions or enhancements of net removals adjusted by leakage?			
45	For both approaches in 42 (a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tonnes of CO_2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formulae used for calculating the estimates in 43 or 44 consistent throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the emissions or	(a) Estimates in 43 are given on the periodic basis, in tonnes of CO_2 equivalent, on a source-by-source basis, before, during and after the crediting period. (b) The formulae used in PDD are consistent. (c) Key factors influencing baseline emissions and activity level of the project and risks associated with the project are taken into account, as appropriate. (d) Data sources used to calculate the estimates are clearly identified, reliable and transparent. (e) Emission factors were not used. (f) Estimation in 43 is based on conservative assumptions and the most plausible scenario in a transparent manner. (g) Estimates in 43 are consistent throughout the PDD. (h) The annual average of estimated emission reductions are calculated correctly (by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period and multiplying by twelve).	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	net removals as well as risks associated with the project taken into account, as appropriate? (d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent? (e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?			
46	If the calculation of the baseline emissions	Baseline emission level is calculated using the specific	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	or net removals is to be performed de facto, does the PDD include an illustrative forecasted emissions or net removals calculation?	approach employing elements of "Methodology of Evaluation of GHG Sequestration Daring New Gas Supply Grids Building According to JI Projects under Kyoto Protocol to UN Framework Convention on Climate Change". Forecasted emissions calculation is clearly provided in the PDD.		
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				
Environmental impacts				
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	The environmental impacts of the project have been sufficiently described	OK	OK
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to Supporting Documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	Positive opinions and relevant permits received by the project from the number of government agencies evidence that the proposed project activity will have comprehensive positive impact on various aspects of activity of the local community, and that decisions that were made were transparent and independent to the extent required by the Ukrainian law.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
Stakeholder consultations				
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	NJSC "Chornomornaftogaz" informed the community through the official website, as well as the sites of information agencies mass media. All comments received were positive. No negative comments on the project have been reported.	OK	OK
Determination regarding small-scale projects (additional elements for assessment)				
Determination regarding land use, land-use change and forestry projects (additional/alternative elements for assessment)				
Determination regarding programmes of activities (additional/alternative elements for assessment)				

TABLE 2 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICTION REQUESTS

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 01. Please specify the Sectoral scope.	A.2	Sectoral scope: Sector 10 - Fugitive emissions from fuels (solid, oil and gas)	The relevant information is provided, the issue is closed.
CAR 02. Please provide more detailed information about the situation existing prior to the project in Section A.2.	A.2	For the last 20 years the company NJSC "Chornomornaftogaz" has lack of investment to ensure a radical reconstruction of the gas pipeline system. The current funding is sufficient only to keep safe operation and for emergency needs for the operation and regular service of gas pipeline system.	The relevant information is provided, the issue is closed.
CAR 03. Please, provide information on the Letter of Endorsement in the description of the project history.	A.2	12/09/2012 – The State Environmental Investment Agency of Ukraine issued a Letter of Endorsement № 2554/23/7.	The information on a Letter of Endorsement is providedin section A.2 of the PDD version 2.
CAR 04. Please, provide more detailed information on innovative repair methods, in Section A.4.2.	A.4.2	The project provides for the implementation of innovative repair methods that allow repair of gas pipelines with identified defects by using of detachable sleeves and rings between the gas pipeline, which is under repair and the sleeve and the	The information is provided in Section A.4.2, the issue is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		further introduction of a special high-pressure self-hardening composition (sealant) in the space formed between the outer pipeline surface and inner surface of the sleeve.	
CAR 05. Please, provide information on pipeline defect repair with the use of two layer sleeve method.	A.4.2	The application is similar to the previously described method, with the exception that first four stacked rings (3) is firmly mounted on the pipeline on both sides of the damaged area (2) and welded (glued or soldered) so to form two ring gasket (10). Then split sleeve mounted and welded or soldered. After that, the gaskets (10) are filled with sealant under pressure to create a high-quality sealing space between the pipeline and the clutch. After hardening sealant, this space is filled with the sleeve.	The information is provided in Section A.4.2, the issue is closed.
CAR 06. Please, check the numbering of figures in Section A.4.2 of and make corresponding corrections.	A.4.2	The table numbering is verified. The necessary corrections were made.	The corrections were made, the issue is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 07. Please, provide the section A.4.3 format as provided version 04 of the "Guidelines for users of the Joint Implementation Project design document form."	A.4.2	The information is provided according to the "Guidelines for users of the Joint Implementation Project design document form" version 04.	The corrections were made, the issue is closed.
CAR 08. Table 2, PDD Section A.4.3.1, provides for wrong length of the crediting period.	A.4.3	The length of the crediting period is 3 years (2005-2007).	The corrections were made, the issue is closed.
CAR 09. In Section A.4.3.1., in the Table, providing the estimated amount of emission reductions for the period following the first commitment period (2013-2020), state the total estimated amount of emission reductions over the credit period in tonnes of CO_2 equivalent.	A.4.3	The total estimated amount of emission reductions over the crediting period (2013-2020) is 10 486 696 CO_2 equivalent.	The corrections were made, the issue is closed.
CAR 10. Please, provide a link to the Excel file with the calculations.	A.4.3.1	More detailed information is provided in the Supporting Document 1.	Relevant references were provided, the issue is closed.
CAR 11. The project has no approval of the Host party and the country-participant.	19	To obtain the Letter of Approval the final Determination report that includes this Determination Protocol and the list of sources of Reference Information must be submitted to the State Environmental Investment Agency of Ukraine. The Letter of Approval of other country involved – country-participant has not been obtained so far as well.	**CAR 11** shall be closed after the issuing of the Letter of Approval by the involved Parties.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 12. Please, provide the reference to Guidance on criteria for baseline setting and monitoring Version 03 in Section B.1.	23	The relevant reference to Guidance on criteria for baseline setting and monitoring Version 03 is provided in Section B.1.	The necessary references were made, the issue is closed.
CAR 13. Please specify the full name of the methodology on which formulas for calculations of the baseline scenario were used.	23	Formulas based on "Methodology of Evaluation of GHG Sequestration Daring New Gas Supply Grids Building According to JI Projects under Kyoto Protocol to UN Framework Convention on Climate Change" were used in the calculations of the baseline scenario.	The issue is closed as necessary information was provided.
CAR 14. Please, provide relevant conclusion after the description of all plausible baseline scenarios.	23	The analysis of all the alternatives described above shows that Alternative 1.1. is the most plausible one and Alternative 1.2 is the least plausible.	The relevant conclusion is presented, the issue is closed.
CAR 15. The table in section B.1. of the PDD for methane concentration (CH_4) in $1m_3$ of natural gas provides references on National inventory report of anthropogenic greenhouse gas emissions by sources and removals by sinks in Ukraine in 1990-2009 when correct reference is National inventory report of anthropogenic greenhouse gas emissions by sources and removals by sinks	24	For methane concentration (CH_4) in $1m_3$ of natural gas National inventory report of anthropogenic greenhouse gas emissions by sources and removals by sinks in Ukraine in 1990-2010 is used. Refer to PDD version 02.	The necessary references were made, the issue is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
in Ukraine in 1990-2010. Please, make the necessary corrections.			
CAR 16. Please, in table for natural gas compressibility factor depends on its temperature and pressure state the measurement/monitoring frequency.	24	Natural gas compressibility factor depends on its temperature and pressure is set once at the beginning of the project	The issue is closed as necessary information were provided.
CAR 17. The reference to the Tool for the demonstration and assessment of additionality, Versdion 6.0.0 reference to version 5.2. Please, provide the relevant reference.	28	The reference was cheked. The corrections were made.	The corrections were made, the issue is closed.
CAR 18. Please provide information on spent funds in dollars or euros.	28	The information is provided. Refer to Section B.2 PDD.	The corrections were made, the issue is closed.
CAR 19. The number of months of the crediting period is incorrect.	34(c)	The information is provided.	The relevant corrections were made, the issue is closed.
CAR 20. Please, provide description of parameter $T^{y}_{b,lot,NG,real}$ in Section D.1.1.3.	36(a)	Average natural gas temperature of a particular gas pipeline section i, that would be isolated and discharged from gas	The relevant corrections were made, the issue is closed.
CAR 21. The data source for GWP_{CH_4} parameter is incorrect.	36(a)	The data source for GWP_{CH_4} parameter is corrected. The datd source used – IPCC.	The relevant corrections were made, the issue is closed.
CAR 22. Check the data unit for the parameters of formula (6).	36(a)	The data units for the parameters were checked. Relevant corrections were made.	The relevant corrections were made, the issue is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 23. Please, check data units of monitoring data and parameters in Sections D.1.1.1 and D.1.1.3 of the PDD in accordance with the formulae.	36(b)	The units of measurement of monitoring data and parameters are verified, corrections made in Sections D.1.1.1 and D.1.1.3 of the PDD.	The corrections are accepted, the issue is closed.
CAR 24. Please, number all formulae in Section D of the PDD.	36 (b) (ii)	All the formulae, presented in Section D of the PDD version 02, were numbered.	The issue is closed based on necessary changes made.
CAR 25. All the values of baseline and project emissions as well as emission reductions under the project are to be stated in tonnes of CO_2 equivalent. Please, make the relevant corrections in the formulae provided in Section D.	36 (b) (ii)	All amounts of baseline and project emissions and emission reductions resulting from the project are expressed in tonnes of CO_2 equivalent. Ref. to the PDD version 02.	The issue is closed based on necessary changes made.
CAR 26. In Section D.2. of the PDD provide information on parameter $T^{y}_{b,lot,NG,real}$	36 (i)	Data source NLSC "Chernomornaftogas" compiled with the software FLOWHOST based on data from gas devices FLOUTYEK-TM, gas devices FLOUTYEK-TM are regularly calibrated according to the procedures of quality management, the Law of Ukraine "On metrology and metrological activity"	The information is provided, the issue is closed.
CAR 27. Please, check the numbering of tables in Section E of the PDD and make corresponding corrections.	42	The table numbering in Section E. is verified. The necessary corrections were made.	The corrections were made, the issue is closed.
CL 01. Please, provide clarification on high-	A.4.2	If special requirements are necessary	The explanation was provided, the

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
pressure injection when space is filled with sealant if special requirements needed.		for high-pressure injection, the sealant can be pre-mixed with filler to prevent leakage through the connection. For details ref. to Section A.4.2 of the PDD version 02.	issue is closed.
CL 02. Please, provide information on gas pipeline repair If the pipe section contains out-of-flat elements.	A.4.2	If the pipe section contains out-of-flat elements e.g. welding seam, which hinders tight contact of inner sleeve and repaired pipe a grove is made to accommodate such out of-flat-element. Similarly to methods described above, the space between inner and main sleeve is filled with self-hardening compound under pressure.	The issue is closed as the necessary explanations were provided.
CL 03. Please, provide clarification on possibility to use not highly qualified staff .	A.4.2	The repair process using this technology usually takes about 25 minutes, the sealant dries up quickly, and after 2 hours the repair operation is completed. Errors in assembly work are excluded, as technology and the uniqueness of the results of each stage setting excludes the impact of subjective factors, and allows to use not highly qualified staff.	The issue is closed as the necessary explanations were provided.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CL 04. Please provide reference on Programme "Creation and organization of production of drilling, oil and gas production, oil treatment equipment and technology for the construction of oil and gas pipelines with scientific and technical part until 2010"	A.4.2	Relevent reference was provided.	The relevant reference is provided, the issue is closed.
CL 05. Please provide the information on how the data necessary for determination will be stored after the last transfer of ERUs under the project	36 (b)	Data to be monitored and required for determination and subsequent verification will be archived and stored at NJSC "Chornomornaftogaz" for two years after the transfer of emission reduction units generated by the project.	The explanation is accepted, the issue is closed.
CL 07. Please, provide information about the entity that determined the monitoring plan.	36 (j)	It is written in Section D.4. that VEMA S.A. and NJSC "Chornomornaftogaz" determined the monitoring plan. Contact information on the project participants is presented in Annex 1.	The issue is closed as necessary corrections were made.