DETERMINATION REPORT

CEP CARBON EMISSIONS PARTNERS

DETERMINATION OF THE JI PROJECT

Reduction of natural gas leaks at the gas distribution networks of PJSC "Ternopilgaz"

REPORT NO. UKRAINE-DET/0538/2012

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BUREAU VERITAS CERTIFICATION

DETERMINATION REPORT

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Client:	**Client ref.:**
CEP Carbon Emissions Partners	Fabian Knodel

Summary:

Bureau Veritas Certification has made the determination of the "Reduction of natural gas leaks at the gas distribution networks of PJSC "Ternopilgaz" project of CEP Carbon Emissions Partners located in the cities and towns of Ternopil region, 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:
UKRAINE-DET/0538/2012	JI

Project title:
"Reduction of natural gas leaks at the gas distribution networks of PJSC "Ternopilgaz"

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1 INTRODUCTION

CEP Carbon Emissions Partners has commissioned Bureau Veritas Certification to determine the JI project ”Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz” (hereafter called “the project”) located in the territory of cities and towns of Ternopilregion and the territories adjoining the city, 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 Determinationteam

The determination team consists of the following personnel:

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

Vasyl Kobzar
Bureau Veritas Certification Team Member, Technical Specialist

This determination report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification Internal Technical Reviewer

Volodymyr Kulish
Bureau Veritas Certification Technical Specialist

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, consisting of two tables, is enclosed in Appendix A to this report.

2.1 Review of Documents

The Project Design Document (PDD) submitted by CEP Carbon Emissions Partners 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, approved CDM methodology and/or 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, CEP Carbon Emissions Partners revised the PDD version 01 dated 25/05/2012 and resubmitted the PDD as version 02 dated 04/06/2012, PDD version 03 dated 25/06/2012 and PDD version 04 dated 11/10/2012.

The determination findings presented in this report relate to the project as described in the PDD versions 01, 02, 03 and 04.

2.2 Follow-up Interviews

On 11/07/2012 Bureau Veritas Certification Determination team performed (on-site) interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of PJSC "Ternopilgaz" and CEP Carbon Emissions Partners were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1Interview topics

Interviewed organization	Interview topics
PJSC «Ternopilgaz»	➢ Project history ➢ Project approach ➢ Project boundary ➢ Implementation Schedule ➢ Organizational structure ➢ Responsibilities and authorities ➢ Training of personnel ➢ Quality management procedures and technology ➢ Modernization /installation of equipment (records) ➢ Metering equipment control ➢ Metering record keeping system, database ➢ Technical documents ➢ Plan and procedures of monitoring ➢ Permissions and licenses ➢ Environmental impact assessment ➢ Stakeholders' responses
CEP Carbon Emissions Partners	➢ Baseline methodology ➢ Monitoring plan ➢ Proof of additionality ➢ Emission reduction calculations ➢ Project design ➢ Legal issues related to the project ➢ Environmental impact ➢ Approval by 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 (CR), 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 purpose of the project ”Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz” is reduction of methane leaks at gas transport and gas distribution infrastructure of PJSC “Ternopilgaz”, which are the result of faulty sealing of gas equipment and fittings. The basic sources of leaks are elements of distribution pipelines, included into the project boundary, namely:

- gas equipment (pressure regulators, valves, filters, break switches, etc.), located at gas distribution points (GDPs) and cabinet-type gas distribution points (CGDPs) of PJSC “Ternopilgaz”;
- gas fittings (faucets, valve gates, screw valves, etc.), located at gas pipelines of PJSC “Ternopilgaz”.

The project boundary encompasses 1465 GDPs (CGDPs) and 4636 gas fitting units at gas pipelines.

The main reason of methane leaks is failure of sealing elements of equipment caused by temperature fluctuations and moisture. Basic component of natural gas is methane (92 - 95%), which is greenhouse gas. Repair of methane leaks will result in a reduction of greenhouse gas emissions.
PJSC "Ternopilgaz" is an enterprise that provides transportation and supply of natural gas to industrial enterprises (97), public-service households (5085), and population (236 515 apartments and individual households) in cities and towns of Ternopil region, Ukraine.

The structure of existing tariffs for gas transportation and distribution regulated by the state does not take into account a number of seasonal needs of gas distribution companies. In particular, a great deal of maintenance work is carried out in spring and summer with minimum financial resources due to low gas consumption. In winter, with certain financial resources availale, the weather conditions make the maintenance complicated.

Project activities are aimed at the reduction of methane leaks that occur as a result of faulty sealing of gas equipment of GDPs (CGDPs) and gas fittings of PJSC "Ternopilgaz" gas pipelines.

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

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

The existing practice of maintenance and repair on the basis of paronite packing and gaskets made of cotton fibers with fatty treatment and asbestic and graphite filler does not give a long-lasting effect of methane leak reduction.
As a result of JI project activities, in addition to methane leak reductions, technical losses of natural gas will decrease, a contribution will be made to the improvement of environmental situation, and the risk of accidents and explosions will be reduced.
Project activities will include:

- Implementation of Purposeful Examination and Technical Maintenance (PETM) of GDN components (gas equipment of GDPs (CGDPs) and gas fittings);
- Detection of methane leaks: leak monitoring system at all GDN components (gas equipment of GDPs (CGDPs), gas fittings) that are

included in the project boundary and including repaired methane leaks (elements of GDN repaired as part of the project activity);
- Repair of all leaks detected: repair of leaking GDN components within the project boundary will vary from replacement of sealing elements by using new and modern materials to replacement of gas equipment units and gas fittings with new and modern ones.

The main cause of methane leaks is failure of sealing elements of equipment caused by temperature fluctuations and moisture. Basic component of natural gas is methane (92 - 95%), which is greenhouse gas. Repair of methane leaks will result in a reduction of greenhouse gas emissions. Hereinafter, for determination of natural gas leaks the term "methane leaks" is also used, since leak measurements refer to methane.
The project was initiated in March 2005:
02/2005 an inspection of all GDP components of PJSC "Ternopilgaz"(GDP (CGDP) gas equipment, and gas fittings). Based on these data a Registry of leaking points of the project was drawn up.
02/02/2005 – ORELAC GmBH (Liechtenstein) and PJSC «Ternopilgaz» signed the Memorandum of Understanding relating to the JI project. It was also stipulated in the Memorandum, that ORELAC GmBH had to develop the emission monitoring programme and the JI Project Design Document (PDD) (the starting date of the project).
February 04, 2005 – at PJSC "Ternopilgaz" a Working Team was created in order to ensure implementation of the JI project Monitoring plan.
February 11, 2005 – PJSC "Ternopilgaz" agreed the draft PDD of the project (version 01), which included a program of monitoring of emissions.
02/2005 – the start of inspection and repair works at GDP (CGDP) gas equipment and gas fittings, flanged and threaded joints of gas distribution networks of PJSC «Ternopilgaz».
April 19, 2011 – obtaining of a Letter of Endorsement № 1028/23/7 from the State Environmental Investment Agency of Ukraine.
Determination protocol of the project contains CARs and CRs for PDD versions 01, 02, 03 and 04.

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 and Corrective 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 34 Corrective Action Requests and 7 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 natural gas leaks at the gas distribution networks of PJSC "Ternopilgaz" has already obtained endorsement from the government of Ukraine, namely a Letter of Endorsement No.1028/23/7 issued by the State Environmental Investment Agency of Ukrainedated 19/04/2012.

Bureau Veritas Certification received this letter from the project participants and does not doubt its authenticity.

After the Determination Report is complete, the Project Design Documents will be submitted to the State Environmental Investment Agency of Ukraine to receive a Letter of Approval.

Since the project has not been approved by the Host Party, CAR 17 is pending and will be closed after the report is completed (see Appendix A).

The identified areas of concern as to the project approval by the Parties, project participants responses and BVC's conclusion are described in Appendix A to the Determination report (refer to CAR 17).

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 through written Letters of Approval (from the Government of Switzerland, as the country – project participant, and from Ukraine, as the Host Party). Refer to CAR 17.

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)).

The proposed project applies a JI specific approach based on the JI Guidance on criteria for baseline setting and monitoring, Version 03 and the "Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at gas distribution networks" dated 30/04/2012 that was developed by the Institute of Gas of the National Academy of Sciences of Ukraine to set the baseline. Project

participants selected the calculation method for estimation of GHG emission reductions.
The Methodology is based on approved Clean Development Mechanism methodology AM0023 version 4.0 and takes into account the specifics of methane leak detection and repair activity in Ukraine.
This Methodology is designed for development of the projects aimed at methane leak reduction at technological equipment of gas distribution networks and is applicable to project activities that reduce methane leaks by implementing investment activities, which would not be implemented under the existing company practice, i.e. methane leaks would not be repaired.

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 system of leak detection and repair;
   b. Implementation of this Project without the application of JI mechanism.

(b) Taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, gas supply 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.

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 PJSC "Ternopilgaz" meets the standards. The control of compliance with norms shall be performed by annual inspections by authorized bodies.

c. 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.

d. The current Ukrainian system of formation oftariffs 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” PJSC “Ternopilgaz” 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 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.

f. Ukraine already implements JI projects in the sphere of natural gas transportation and supply “Reduction of methane emissions at flanged, threaded Joints and shut-down devices of OJSC “Kyivgas” equipment”, “Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC “Odesagas” Equipment”, “Reduction of natural gas emissions at OJSC “Odesagas” gate stations and gas distribution networks”) by selling emission reduction units.

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

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 responses and BVC's conclusion are described in Appendix A to the Determination report (refer to CAR 18 - CAR 25).

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 according to the JI specific approach determined as per paragraph9 (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 the amount of project anthropogenic emissions is lower than the emissions that would occur in the absence of project activity.
Additionality proofs are provided.
Two plausible and realistic alternative scenarios of the project were identified:

- Alternative 11.: Continuation of the current system of leak detection and repair;
- Alternative 1.2.: Implementation of this Project without the application of 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) barrier 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 properly, as a result of the analysis using the selected approach.

The identified areas of concern as to the additionality, project participants responses and BVC's conclusion are described in Appendix A to the Determination report (refer toCAR 26 – CAR 28).

4.5 Project boundary (32-33)

The project boundary defined in the PDD, which according to the specific approach is outlined by the territory of cities and towns of Ternopil region and includes GDN components included in the JI project boundary on the

basis of Agreement on the use of state property that is not subject to privatization № 04/01-850 dated 28/12/2001, encompasses all anthropogenic emissions by sources of greenhouse gases (GHGs) that are:

(i) Under the control of the project participants, such as:
- technological natural gas losses during scheduled repair of gas pipelines;

(ii) Reasonably attributable to the project, such as:
- methane leaks at gas fittings of house distribution networks;

(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:

- leaks at gas equipment (pressure relief valves, gate valves, filters, etc.) of gas distribution points (cabinet-type gas distribution points);
- methane leaks at gas fittings (faucets, slide valve, etc.), located at gas distribution networks of PJSC "Ternopilgaz".

Only leaks of type (iii) are included in the project boundary.

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

The identified areas of concern as to the project boundary, project participants responses and BVC's conclusion are described in Appendix A to the Determination report (refer to CAR 29).

4.6 Crediting period (34)

The PDD states the starting date of the project as the date on which the Memorandum of Understanding relating to the JI Project between ORELAC GmBH and PJSC «Ternopilgaz» was signed, and the starting date is 02/02/2005, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 12 years and 11 months, or 155 months from 11/02/2005 to 31/12/2017.

The PDD states the length of the crediting period in years and months, which is 12 years and 11 months, or 155 months, and its starting date is 14/02/2005, which is the date when the first project activities at gas pipelines of PJSC "Ternopilgaz" were implemented and when the first emission reductions are expected to be generated.

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's 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 responses and BVC's conclusion are described in Appendix A to the Determination report (refer to CAR 30).

4.7 Monitoring plan (35-39)

The PDD, in its monitoring plan section, explicitly indicates that the 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 operational 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. are clearly connected with the effect to be measured), and that provide a transparent picture of the emission reductions or enhancements of net removals to be monitored such as: sequence number of GDN component, Global Warming Potential of methane, number of activity at GDN component after the presence of leak was determined at such component, average mass fraction of methane in the natural gas, Natural gas leak factors for GDN component where the project activity lead/did not lead to emission reduction in the reporting monitoring period, operation time of GDN component before/after replacement because of leak detection.

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), Global Warming Potential(GWP_{xx}).

According to Guidance for users of JI PDD forms, version 01, described approach to monitoring clearly and accurately specifies:

a) 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 the PDD development:

i	Sequence number of GDN component (GDP (CGDP), gas fittings of gas pipeline) included in the project boundary

b) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of PDD development: absent.

c) Data and parameters that are monitored throughout the crediting period:

h	Number of activity (replacement / repair) at GDN component after the presence of APLNG was determined at such component
W_y	Average mass fraction of methane in the natural gas in period "y" in the project scenario
$K^g_{i,h}$	Natural gas leak factor from GDN component in CLS
K^n_i	Natural gas leak factor that corresponds to APLNG for GDN component
$H^g_{i',h,y}$	Time of operation of GDN component under pressure from the beginning of monitoring period "y" to implementation of project activities (repair/replacement) that resulted in the repair of APLNG at such component
$H^n_{i",h,y}$	Time of operation of GDN component under pressure from the moment of implementation of project activities (repair/replacement) that resulted in the repair of APLNG at such component to the end of the monitoring period "y"
GWP_{CH_4}	Global Warming Potential of methane

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording, such as data archiving by using accounting and statistical software.
The most objective and cumulative factor that provides a clear picture of whether the emission reductions took place is the fact of GDN component replacement. It can be determined by means of the calculation method that is based on the use of data on methane leaks from GDN components that are formed from the standard values of methane emissions for each GDN component and data obtained through statistical processing of results of actual measurements of methane leaks before and after activities aimed at leak repair.

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):

Greenhouse gas emissions in the project scenario according to a specific approach to Joint Implementation projects (calculations by using the tabular method of the Methodology) are calculated according to the formula:

$$PE_y = GWP_{CH_4} \cdot ConvFactor \cdot W_y \cdot P_y \quad (1)$$

where:

PE_y – greenhouse gas emissions in period «y», in the project scenario (t CO_2eq);

GWP_{CH_4} – global warming potential of methane (tCO_2eq/tCH_4);

W_y – Average mass fraction of methane in the natural gas in period «y», in the project scenario (%);

P_y – volume of natural gas leaks into the atmosphere in period «y», in the project scenario (m^3 natural gas);

$ConvFactor$ – Conversion factor to convert methane leaks from volume units to weight units (t CH_4/ m^3 CH_4). Under normal conditions defined as 0 degree Celsius and 0.1013 MPa, $ConvFactor$ = 0.0007168 (t CH_4/ m^3 CH_4).

[y] – index that corresponds to monitoring period;

[CH_4] – index that corresponds to methane.

Emissions of natural gas in the atmosphere caused by leaks from gas transportation networks are calculated according to the formula:

$$P_y = \sum_{h \in H_{i'}} \sum_{i' \in I'} K^g_{i'h} \cdot H^g_{i'hy} + \sum_{h \in H_{i''}} \sum_{i'' \in I''} K^g_{i''h} \cdot H^n_{i''hy} \quad (2)$$

$K^g_{i'h}$ – natural gas leak factor for GDN component i' that is in CLS (i.e. corresponds to SPLNG) in period «y», in the project scenario (m^3/h) ;

$K^g_{i''h}$ – natural gas leak factor that corresponds to APLNG for GDN component i'' in period «y», in the project scenario (m^3/h);

$H^g_{i'hy}$ – Time of operation of GDN component under pressure from the beginning of monitoring period “y” to implementation of project activities

(repair / replacement) that resulted in the repair of APLNG at such component (h);

$H^{n}_{i"hy}$ – Time of operation of GDN component under pressure from the moment of implementation of project activities (repair / replacement) that resulted in the repair of APLNG at such component to the end of the monitoring period "y" (h);

[*y*] – index that corresponds to monitoring period;

[*i'*] – index that corresponds to a number of GDN component, which is in a set of elements *I' (I' + I')' = I*, where I is a set that includes all GDN components that are in the project boundary) where the project activities did not result in any emission reductions (there was no replacement / repair of components) in the reporting monitoring period;

[*i''*] – index that corresponds to a number of GDN component, which is in a set of elements *I'' (I' + I')' = I*, where I is a set that includes all GDN components that are in the project boundary) where the project activities resulted in emission reductions (there was replacement / repair of components) in the reporting monitoring period;

[*h*] – index that corresponds to a number of activity under the project at GDN component, if more than one activity was carried out at reporting component in the monitoring period (where H is a set, which includes all activities in the project scenario at GDN component in the monitoring period);

[*g*] – index that corresponds to SPLNG;

[*n*] – index that corresponds to APLNG.

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

Greenhouse gas emissions in the baseline scenario according to a JI specific approach (which is calculated by using the tabular method of the Methodology) are calculated according to the formula:

$$BE_y = GWP_{CH_4} \cdot ConvFactor \cdot W_y \cdot B_y \quad (3)$$

Where:

BE_y – greenhouse gas emissions in period «y», in the baseline scenario (t CO_2eq);

GWP_{CH_4} – global warming potential of methane (tCO_2eq/tCH_4);

W_y – Average mass fraction of methane in the natural gas in period «y», in the project scenario (%);

B_y – volume of natural gas leaks into the atmosphere in period «y», in the baseline scenario (m^3 natural gas);

ConvFactor – Conversion factor to convert methane leaks from volume units to weight units (t CH_4/ m^3 CH_4). Under normal conditions defined as 0 degree Celsius and 0.1013 MPa, *ConvFactor* = 0.0007168 t CH_4/ m^3 CH_4.

[*y*] – index that corresponds to monitoring period;
[CH_4] – index that corresponds to methane.

Emissions of natural gas in the atmosphere caused by leaks from gas transportation networks are calculated according to the formula:

$$B_y = \sum_{i' \in I'} \sum_{h \in H_{i'}} K^g_{i'h} \cdot H^g_{i'hy} + \sum_{i'' \in I''} \sum_{h \in H_{i''}} K^n_{i''} \cdot H^n_{i''hy}; \quad (4)$$

Where:
$K^g_{i',h}$– natural gas leak factor for GDN component i' that is in CLS (i.e. corresponds to SPLNG) in period «y», in the baseline scenario (m^3/h);
$K^n_{i''}$– natural gas leak factor that corresponds to APLNG for GDN component i'' in period «y», in the baseline scenario (m^3/h);
$H^g_{i'hy}$ – Time of operation of GDN component in CLS under pressure in period «y», in the baseline scenario (h);
$H^n_{i''hy}$ – Time of operation of GDN component from the moment when project activities (repair / replacement) that resulted in the repair of APLNG were implemented to the end of monitoring period «y» (h);
[*y*] – index that corresponds to monitoring period;
[*i'*] – index that corresponds to a number of GDN component, which is in a set of elements *I' (I' + I')' = I*, where I is a set that includes all GDN components that are in the project boundary) where the project activities did not result in any emission reductions (there was no replacement / repair of components) in the reporting monitoring period;
[*i''*] – index that corresponds to a number of GDN component, which is in a set of elements *I'' (I' + I')' = I*, where I is a set that includes all GDN components that are in the project boundary) where the project activities resulted in emission reductions (there was replacement / repair of components) in the reporting monitoring period;
[*h*] – index that corresponds to a number of activity under the project at GDN component, if more than one activity was carried out at reporting component in the monitoring period (where H is a set, which includes all activities in the project scenario at GDN component in the monitoring period);
[*g*] – index that corresponds to SPLNG;
[*n*] – index that corresponds to APLNG.

Formulae used to estimate leakage (for each gas, source etc.; emissions in units of CO_2 equivalent):
According to a JI specific approach based on the Joint Implementation requirements in accordance with paragraph 9 (a) of the JI Guidance on

criteria for baseline setting and monitoring, Version 03, the "Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at gas distribution networks" that was developed by the Institute of Gas of the National Academy of Sciences of Ukraine and on the basis of elements of approved CDM methodology AM0023 version 4.0 no leakage is expected.

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

Reduction of GHG emissions under the Project in period "y" (ER_y) is calculated by the formula:

$$ER_y = BE_y - PE_y; \quad (5)$$

where:

ER_y - Total GHG emission reduction generated by the in period y, t CO_2eq;

PE_y - Project GHG emissions in period y, t CO_2eq;

BE_y - Baseline GHG emissions in period y, t CO_2eq;

[illegible] - Monitoring period.

The monitoring plan presents the quality assurance and control procedures for the monitoring process, which are sufficiently described in tabular form in sections of the PDD D.2. and D.3. 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. Collection of all the key parameters required for monitoring and calculation of GHG emission reductions are continuously carried out according to the practice, established at PJSC "Ternopilgaz". Monitoring of the project does not require any changes in the existing and data collection and accounting system.

On the whole, the monitoring plan reflects good monitoring practices appropriate to the project type.

The monitoring plan provides, 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 (e.g. official statistics, expert judgment, proprietary data, IPCC, 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 responses and BVC's conclusion are described in Appendix A to the Determination report (refer to CAR 31-CAR 33; 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 a JI specific approach based on the Joint Implementation requirements in accordance with paragraph 9 (a) of the JI Guidance on criteria for baseline setting and monitoring, Version 03, the "Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at gas distribution networks" that was developed by the Institute of Gas of the National Academy of Sciences of Ukraine and on the basis of elements of approved CDM methodology AM0023 version 4.0 no leakage is expected.

The identified areas of concerning as to the leakage, project participants responses and BVC's conclusion are described in Appendix A to the Determination report (refer to CL 07).

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 or enhancement of net removals generated by the project.

The PDD provides the forecasted estimates of:

(a) Emissions or net removals for the project scenario (within the project boundary), which are 477 162 tons of CO_2eq for 2005-2007, 795 270 tons of CO_2eq for 2008-2012, 795 270 tons of CO_2eq for 2013-2017;

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

(c) Emissions or net removals for the baseline scenario (within the project boundary), which are 1 190 921 tons of CO_2eq for 2005-2007, 4 024 178 tons of CO_2eq for 2008-2012, 4 194 120 tons of CO_2eq for 2013-2017;

(d) Emission reductions or enhancements of net removals adjusted by leakage (based on (a)-(c) above), which are 713 759 tons of CO_2eq for 2005-2007, 3 228 908 tons of CO_2eq for 2008-2012, 3 398 850 tons of CO_2eq for 2013-2017.

The estimates referred to above are given:

(a) On an annual basis;

(b) From 14/02/2005 to 31/12/2017, covering the whole crediting period;

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

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

(e) 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.

The formulae 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, key factors, e.g. the Ukrainian environmental legislation and other national legislation, as well as key relevant factors such as availability of funds for implementation of the project activities, tariffs established by the state, modern technology and the possibility of know-how implementation in gas supply sector influencing the baseline emissions or removals 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 archive data of the enterprise, standards and statistical forms, results of periodic inspections of meters are clearly identified, reliable and transparent.
Natural gas leak factor for GDN component that is in CLS ($K^{g}_{i,h}$) and natural gas leak factor that corresponds to APLNG for GDN component i" ($K^{n}_{i"}$) were selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

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 or enhancements of net removals over the crediting period by the total months of the crediting period, and multiplying by twelve.

Detailed algorithms of calculation and their results are described in Sections B, E and supporting documents to the PDD.

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

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.

The PDD states that according to the environmental standards of Ukraine, natural gas emissions into the air are not considered polluting(CMU Resolution dated 29/11/2001 No.1598 "On approval of the list of the most popular and dangerous pollutants, which emissions into the atmosphere are subject to regulation"). Therefore no environmental permissions are required for natural gas transportation and supply.
According to the PDD the only environmental impact is reduction of natural gas emissions into the atmosphere.

Implementation of this project will increase the safety of operation of gas distribution networks, which, in turn, will reduce the probability of explosions or fires.

No transboundary impacts from the project activity, according to their definition in the text of the "Convention on long-range tansboundary pollution" ratified by Ukraine, will take place.

Project implementation does not provide for any harmful environmental impacts.

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.

4.11 Stakeholder consultation (49)

Consultations were conducted with the specialists of the Institute of General Energy of NAS of Ukraine. No comments from Stakeholders were received. The project activity doesn't provide for any negative impact on the environment or negative social effect.

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 natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz” 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 participants used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides barrier 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. 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 04 dated 11/10/2012 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

The review of the project design documentation (version 04 dated 11/10/2012) 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 byCEP Carbon Emissions Partnersthat relate directly to the GHG components of the project.

/1/	PDD ”Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz”, version 01 dated 25/05/2012;
/2/	PDD ”Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz”, version 02 dated 04/06/2012;
/3/	PDD ”Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz”, version 03 dated 25/06/2012;
/4/	PDD ”Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz”, version 04 dated 11/10/2012;
/5/	Supporting document 1 “Registry of gas distribution points, gas fittings included in the project boundary of Joint Implementation Project ”Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz”
/6/	Supporting document 2 “Calculation of GHG emission reductions of Joint Implementation Project “Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz”
/7/	Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at gas distribution networks" that was developed by the Institute of Gas of the National Academy of Sciences of Ukraine (registration number UkrNTI 0112U00A816 dated 2012);
/8/	Report on the scientific and technical work "Development of methodological fundamentals of reducing greenhouse gas emissions by repairing above-standard leaks of natural gas at gas distribution networks," Gas Institute of NAS of Ukraine;
/9/	Letter of Endorsement № 1028/23/7 dated 19/04/2012issued by the State Environmental Investment Agency of Ukraine;
/10/	Guidelines for users of the JI PDD form, version 01, JISC;
/11/	Clean Development Mechanism methodology AM0023 version 4.0 “Leak detection and repair in gas production, processing, transmission, storage and distribution systems and in refinery facilities”;
/12/	Tool for the demonstration and assessment of additionality, Version 06.0.0;
/13/	Kyoto Protocol;
/14/	Marrakech Agreement, JI methods;
/15/	National inventory of greenhouse gas anthropogenic emissions by sources and removals by sinks in Ukraine for the period of 1990-2009;

/16/	Third National Communication of Ukraine on climate change under the Kyoto Protocol
/17/	Fourth National Communication of Ukraine on climate change under the Kyoto Protocol
/18/	Fifth National Communication of Ukraine on climate change under the Kyoto Protocol
/19/	Law of Ukraine "On the fundamentals of the natural gas market functioning";
/20/	Law of Ukraine "On Pipeline Transport";
/21/	Order of the Ministry of Fuel and Energy Industry of Ukraine "On approval of methods for detection of specific losses, technological and production losses of natural gas during gas transportation in gas distribution networks;
/22/	JI Guidelines. Annex to Resolution 9/CDM.1.;
/23/	Determination and verification manual, version 01;
/24/	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/	Agreement № 04/01-850 on the use of state property that is not subject to privatization dated 28/12/2001
/2/	Additional Agreement # 2 to Agreement № 04/01-850 on the use of state property that is not subject to privatization dated 27/12/2006
/3/	Agreement # 14/1063/08 on the transfer of right to the use of state property that is not subject to privatization dated 31/12/2008
/4/	Agreement # 14/328/10 on prolongation of Agreement # 14/1063/08 dated 31/12/2008 dated 23/074/2010
/5/	Emission reductions purchase agreement relating to the Joint Imlementation project concluded between PJSC “Ternopilgaz” and Orelac GmBh.
/6/	Memorandum of Understanding relating to the JI project concluded between OJSC on gas supply and gasification “Ternopilgaz” and Orelac GmBh.
/7/	Registry of GDNs (CGDNs) at PJSC “Ternopilgaz” 2005-2009
/8/	Registry of GDNs (CGDNs) at PJSC “Ternopilgaz” dated 01/01/2010
/9/	Information about the volume of gas transportation, volume of above-standart gas losses and volume of production and technical losses (Form 1)

/10/	Information on measuring equipment for detection and measurement of gas leak volume at PJSC "Ternopilgaz" (Form 4)
/11/	Order on creation of working team on control of natural gas leaks at equipment of gas distribution networks № 15 dated 04/02/2005
/12/	Order on changing the line-up of the working team on control of the natural gas leaks at equipment of gas distribution networks under the JI project № 253 dated 30/12/2011
/13/	Admission commitee certificate on commissioning of completed construction facility dated 24/05/2009
/14/	Admission commitee certificate on commissioning of completed construction facility dated 14/09/2010
/15/	Admission commitee certificate on commissioning of completed construction facility dated 11/06/2006
/16/	Admission commitee certificate on commissioning of completed construction facility dated 29/06/2005
/17/	Acceptance certificate of construction works performed in June 2011
/18/	Certificate of commissioning of gas control unit with RDG-50VM regulator dated 27/12/2007
/19/	Certificate of commissioning of gas control unit with RDUK-2Du regulator dated 18/12/2006
/20/	Acceptance certificate of gas control unit PHRSh-22-2-02-U1with pressure regulator RBI-23-12
/21/	Acceptance certificate of gas control unit PHRSh-22-2-02 with pressure regulator FEX-FEXS
/22/	Admission comitee certificate of commissioning of completed construction facility dated 25/09/2009
/23/	Acceptance certificate of completed construction facility of gas supply system dated 29/10/2008
/24/	Acceptance certificate of completed construction facility of gas supply system dated 10/10/2005
/25/	Certificate of commissioning of gas control unit with gas pressure regulator RTHT-50V type dated 18/08/2011
/26/	Certificate of commissioning of gas control unit with regulator RDUK 2Du dated 15/08/2005
/27/	Certificate of commissioning of gas control unit with regulator RDUK-2Du dated 20/03/2006
/28/	Certificate of commissioning of gas control unit with regulator RDH-50VM dated 17/12/2007
/29/	Certificate of commissioning of gas control unit with gas pressure regulator RDH-50V dated 24/11/2008
/30/	Certificate of commissioning of PHRSh 60-2-U2 with pressure regulator RDH-50V dated 15/01/2010
/31/	Capital assets Delivery and Acceptance certificate of gas supply

	facility (gas pipelines and equipment on its) dated 13/07/2009
/32/	Acceptance certificate of cabinet gas control unit with pressure regulators RDBK-50 dated 06/06/2007
/33/	Acceptance certificate of cabinet gas control unit with pressure regulators RDSK-50 dated 28/06/2008
/34/	Acceptance certificate of cabinet gas control unit PHRSh 60-2-U1 with pressure regulators RTHT-50N dated 30/09/2011
/35/	Information on replacement of GDP and CGDP equipment in period 2005-2011 dated 05/06/2012
/36/	Capital assets Delivery and Acceptance certificate dated 21/12/2005
/37/	Passport CGDP # 03-59
/38/	Passport of gas control unit # 33
/39/	Passport of gas control unit # 4 # 161291700320100024
/40/	Passport of gas control unit #1612903003201000014
/41/	Passport of gas control unit # 1612903003201000028
/42/	Passport of technical condition of the gas pipeline # 39
/43/	Passport of gas control unit # 4 # 161291500320100002
/44/	Passport of gas control unit # 6
/45/	Passport of gas control unit # 161290300420200053
/46/	Passport of gas control unit # 161290300420200063
/47/	Passport of gas control unit # 161290300320100009
/48/	Passport of gas control unit # 161290300320100011
/49/	Passport of gas control unit # 1612903003201000023
/50/	Certificate on works which were performed in the process of measurment equipment repair.
/51/	Acceptance certificate of works performed in June 2009
/52/	Acceptance certificate of works performed in November 2010
/53/	Acceptance certificate of works performed in July 2010
/54/	Acceptance certificate of completed construction gas supply facility dated 04/02/2009
/55/	Certificate of technological works performed at CGDP and GDP
/56/	Calibration certificate of operational measuring device (annunciator (explosimeter) thermochemical STKh-17-6) dated 30/03/2009
/57/	Calibration certificate of operational measuring device (gas annunciator-analyser “Dozor-S-P”) dated 21/02/2011
/58/	Calibration certificate of operational measuring device (annunciator (explosimeter) thermochemical STKh-17-6) dated 06/02/2007
/59/	Calibration certificate of operational measuring device (annunciator (explosimeter) thermochemical STKh-17-80) dated 11/08/2008
/60/	Certificate on conducting the reconstruction of GDP # 161291700320100024 (replacement of RDUK regulators with NORVAL regulators) in 2009

/61/	Certificate on CGDP instalation (regulators RD-50) in 2008
/62/	Certificate on CGDP installation (regulator RD-50) at Sichynskoho Str. # 161291700420200113 in 2007
/63/	Certificate on CGDP installation (regulator RDSK-50) Tovstenke village, # 161291700420200111 in 2006
/64/	Registry of gas distribution points and the gas fittings of Joint Implementation Project ”Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz”.

Persons interviewed:
List of 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/	Karavanskyi V.O.	PJSC «Ternopilgaz»	Deputy of Chairman of the Management Board
/2/	Hutyi V.I.	PJSC «Ternopilgaz»	Head of production and technical department
/3/	Yasyn V.M.	PJSC «Ternopilgaz»	Engineer of production and operational department
/4/	Tsebak V.M.	PJSC «Ternopilgaz»	Deputy of Head of logistics department
/5/	Huzovskyi O.S	PJSC «Ternopilgaz»	Engineer – metrologist of the II category
/6/	Repinetskyi S.O.	“CEP” LLC	Consultant of CEP Carbon Emissions Partners

APPENDIX A: COMPANY PROJECT DETERMINATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

Checklist for determination according to the 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 of the project is presented: «Reduction of natural gas leaks at the gas distribution networks of PJSC «Ternopilgaz»	OK	OK
A.1	Is the sectoral scope to which the project pertains presented?	Sectoral scope: Sector 10. Fugitive emissions from fuels (solid, oil and gas).	OK	OK
A.1	Is the current version number of the document presented?	The current version of the document: PDD version 04 dated 11/10/2012. See Section A.1.	OK	OK
A.1	Is the date when the document was created presented?	The date when the document was created: 11/10/2012.	OK	OK
A.2. Description of the project				
A.2	Is the purpose of the project included with a concise, summarizing explanation (max. 1-2 pages) of the:	The purpose of the project ”Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz” is reduction of methane leaks at gas	**CL 01**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	a) Situation existing prior to the starting date of the project b) Baseline scenario and c) Project scenario (expected outcome, including a technical description)?	transport and gas distribution infrastructure of PJSC "Ternopilgaz", which are the result of faulty sealing of gas equipment and fittings. The basic sources of leaks are elements of distribution pipelines, included into the project boundary, notably: - gas equipment (pressure regulators, valves, filters, break switches, etc.), located at gas distribution points (GDPs) and cabinet-type gas distribution points (CGDPs) of PJSC "Ternopilgaz"; - gas fittings (faucets, valve gates, screw valves, etc.), located at gas pipelines of PJSC "Ternopilgaz". Detailed information on the baseline and project scenarios as well as their technical description is provided in Sections A.2 and A.4.2. of the PDD. **CL 01.** Please, provide information on the causes of methane leaks to be repaired under the project.		
A.2	Is the history of the project (incl. its JI component) briefly summarized?	**CAR 01**. Please, provide information about the starting date of the project. **CAR 02**. Please, indicate the number of the Letter of	**CAR 01** **CAR 02** **CL 02**	OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		Endorsement from SEIAU. **CL 02**. Please, provide appropriate documentary evidence of the fact that ORELAC GmBH assigned its rights and obligations to CEP Carbon Emissions Partners S.A.		
A.3. Project participants				
A.3	Are project participants and Party (ies) involved in the project listed?	Parties involved in the project: PJSC «Ternopilgaz» (Ukraine – the Host Party), ORELAC GmBH (Liechtenstein), CEP Carbon Emissions Partners S.A. (Switzerland).	OK	OK
A.3	Is the data of the project participants presented in tabular format?	The data on project participants are given in tabular form.	OK	OK
A.3	Is contact information provided in Annex 1 of the PDD?	Contact information on PJSC «Ternopilgaz», ORELAC GmBH and CEP Carbon Emissions Partners S.A. is provided in Annex 1 to the PDD. **CAR 03.** Tables in Annex 1 must comply with the requirements of the JI PDD form, version 01. **CAR 04.** Please, provide information on who represents ORELAC GmBH.	**CAR 03** **CAR 04**	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				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
A.4.1.1	Host Party(ies)	Ukraine is the Host Party.	OK	OK
A.4.1.2	Region/State/Province etc.	Cities and towns of Ternopil region, Ukraine	OK	OK
A.4.1.3	City/Town/Community etc.	The Project is located in the territory of cities and settlements of Berezhanskyi, Borshchivskyi, Buchatskyi, Husiatynskyi, Zalishchytskyi, Zbarazkyi, Zborivskyi, Kozivskyi, Kremenetskyi, Lanovetskyi, Monastyrskyi, Pidvolochyskyi, Pidhaietskyi, Terebovlianskyi, Ternopilskyi, Chortkivskyi, Shumskyi districts of Ternopil region, Ukraine.	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. **CAR 05.** The name of supporting document 1. is incorrect. Please, make all necessary corrections.	**CAR 05**	OK
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 installed as well as project activities to be implemented in the framework of the project. Project design represents the current cutting-edge practice.	**CAR 06** **CAR 07** **CAR 08** **CAR 09** **CAR 10** **CAR 11** **CL 03** **CL 04**	OK OK OK OK OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		CAR 06. Please, provide information on specifications of STKh-17 gas leak detector. **CAR 07**. Please, provide information on PETM program components of gas distribution networks. **CAR 08**. The period of preparation of the primary registry of gas distribution points and gas fittings is not stated in the implementation schedule. **CAR 09**. Please, in Section A.4.2 state whether it is planned to replace the project equipment or not. **CAR 10**. Please, provide information on whether the implemented equipment complies with general international practice. **CAR 11**. Please, provide information on possible personnel training relating to the project activity, if any. **CL 03**. Please, provide the full name of Methodology which is the basis for the developed JI specific approach. **CL 04**. Please, provide information on how the replacing of shut-off and control valves will be	**CL 05**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		conducted. **CL 05.** Please, provide referencese to the sealant STSTs 7338-90, 5152-84, 10330-76 in Section A.4.2.		
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI 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)	The project activity includes: - repair (replacement) of GDP (CGDP) gas equipment, gas fittings of PJSC "Ternopilgaz" gas pipelines with the use of modern sealing materials and modern equipment of European producers and their analogues of national production; - monitoring of methane leaks aimed at the detection of methane leaks caused by sealing failures; - further renewal of leakproofness at GDN components of PJSC "Ternopilgaz". **CAR 12.** Please, provide information on how the greenhouse gas emission reductions will be achieved.	**CAR 12**	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 13**. Tables in Section A.4.3.1. shall comply with	**CAR 13** **CAR 14** **CAR 15** **CAR 16**	OK OK OK OK

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. **CAR 14**. The crediting period is defined incorrectly in the name of Table 2. Section A.4.3.1. **CAR 15**. Estimated average annual GHG emission reduction is calculated incorrectly in Table 3 Section A.4.3.1. **CAR 16**. Please, state the total estimated amount of emission reduction and the average estimated emission reduction over the crediting period in Table 4. Section A.4.3.1.		
A.4.3	Is it provided the estimated annual reduction for the chosen crediting period in tCO_2e?	The estimated annual emission reductions for the first commitment period in tCO_2e are provided; the estimated annual emission reductions for the periods before and after the first commitment period within the project are also provided.	OK	OK
A.4.3	Are the data from questions above presented in tabular format?	The data are presented in tabular format, for the first commitment period and for the periods before and after the first commitment period. Refer to the PDD (Version 03) 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	Total as well as annual and average annual emission	OK	OK

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	and average annual emission reductions in tonnes of CO_2 equivalent provided?	reductions in tonnes of CO_2 equivalent are provided in accordance with the calculated values in the tables of Section A4.3.1 of PDD and the Supporting documents. Refer to **CAR 15**, **CAR 16.**		
Project approvals by Parties				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	**CAR 17**. The project has no approval of the Host Party and the country – participant. To obtain the Letter of Approval the final Determination report together with this Determination Protocol and the list of sources of Reference Information must be submitted to the State Environmental Investment Agency of Ukraine. A Letter of Approval of Switzerland as the country-participant is also not obtained at the current stage of the Project. **CAR 17** will be closed after the Letters of Approval are issued by the Host Party and the country-participant.	**CAR 17**	Pending
19	Does the PDD identify at least the host Party as a "Party involved"?	The Host Party involved in project is Ukraine.	OK	OK
19	Has the DFP of the host Party issued a written project approval?	Reference to **CAR 17**	**CAR 17**	Pending

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20	Are all the written project approvals by Parties involved unconditional?	Reference to **CAR 17**	**CAR 17**	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 PJSC «Ternopilgaz». Party involved 2: Liechtenstein, legal entity is ORELAC GmBH. Party involved 3: Switzerland, legal entity is CEP Carbon Emissions Partners S.A. The project participants will be authorized in accordance with the relevant project approvals. **CAR 17** is pending.	**CAR 17**	Pending
Baseline setting				
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 JI specific approach is used for setting the baseline. **CAR 18.** The latest version of the Guidance on criteria for baseline setting and monitoring is version 03, while the PDD states that version 02 was used. Please, use the latest versions of documents for the JI	**CAR 18**	OK

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		PDD development.		
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 category is sufficiently justified; detailed theoretical description is provided in section B.1 of the PDD version 04. **CAR 19**. The name of Methodology which was developed by the Institute of gas of NAS of Ukraine for the calculation of this type of project is incorrect.	**CAR 19**	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? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors?	The PDD provides detailed, full and transparent description and justification that the baseline is established by: (a) Identifying plausible future scenarios and choosing the most plausible one. As a result of evaluation of several alternatives the most plausible of them have been identified and will be used as a baseline: - Alternative 1.1: Continuation of existing practice of leak detection and repair; - Alternative 1.2: The project activities without the use of the Joint Implementation mechanism. (b) Taking into account key factors such as for example technological requirements to the gas supply in Ukraine, Ukrainian environmental legislation and other	**CAR 20**	OK

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	(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?	national legislation, and key relevant factors, such as the ability of financing of construction and reconstruction of gas distribution system, tariffs for gas supply, availability of local technologies and methods of the project, skills and experience in implementing similar projects; (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) 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 20**. The name of the company that is the owner of the project is not correct in Section B.1., in the description of correspondence of the project with terms of the Specific approach.		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
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 The baseline assumptions of the developed JI specific approach are clearly described in full in Section B.1 of the PDD version 04. **CAR 21.** Please, check the indexes in description of formulae of Section B.1. **CAR 22.** Please, provide a more detailed description of the method to determine the level of greenhouse gas emission reductions. **CAR 23**. The factor to convert volume units to weight units for natural gas leaks is incorrect. Please, make the necessary corrections. **CAR 24**. In Table of Section B.1. provide information on the QC/QA procedures (to be) applied for the parameter GWP_{CH_4}. **CAR 25.** Frequency of measurement/monitoring for parameter GWP_{CH_4} is specified incorrectly.	**CAR 21** **CAR 23** **CAR 24** **CAR 25**	OK OK OK OK
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	In order to set the baseline the following factors are used: K_{ih}^{g} – natural gas leak factor for GDN component i' that is in CLS and $K_{i''}^{n}$ – natural gas leak factor that corresponds to APLNG for GDN component i''.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		Data source that was (will be) used: "Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at gas distribution networks"		
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	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 Section B.2. PDD by using the "Tool for the demonstration and assessment of additionality", version 06.0.0. **CAR 26**. The name of Alternative 1.2. in Section B.1. does not comply with the name of the same alternative in Section B.2. Please, make the appropriate corrections. **CAR 27.** It is indicated in Section B.2. that lack of financial incentives is described in step 2, while the investment analysis is not used in step 2 to justify additionality as barrier analysis is used. **CAR 28**. Please, provide more detailed information on	**CAR 26** **CAR 27** **CAR 28**	OK OK OK

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	(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 method for proving additionality approved by the CDM Executive Board".	additional costs for the project.		
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?	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 latest version of the "Tool 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				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	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, such as: - technological natural gas losses during scheduled repair of gas pipelines; (ii) Reasonably attributable to the project, such as: - methane leaks at gas fittings of house distribution networks; (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: - leaks at gas equipment (pressure relief valves, gate valves, filters, etc.) of gas distribution points (cabinet-type gas distribution points); - methane leaks at gas fittings (faucets, slide valve, etc.), , located at gas distribution	**CAR 29**	

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		networks of PJSC "Ternopilgaz". Only methane leaks of type (iii) are included in the project boundary. **CAR 29.** Please, provide information on equipment that is included in the project boundary.		
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 figure (Figure 4) and is understandable enough; so there is no need to provide its description in tabular form.	OK	OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	All gases and sources included are explicitly stated. See Section B of the PDD.	OK	OK
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	According to the Guidelines for users of JI PDD form (version 01) the starting date of the project is the date	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	implementation or construction or real action of the project will begin or began?	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. The starting date of the project is 02/02/2005, which is the date when the Memorandum of Understanding relating to the JI project was signed by ORELAC GmBH and PJSC "Ternopilgaz".		
34 (a)	Is the starting date after 2000?	The starting date of the project 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 12 years and 11 months, or 155 months, from February 11, 2005 to December 31, 2017.	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 Section C.3. **CAR 30.** Please, in Section C.3. of the PDD jusify the starting date of the crediting period.	**CAR 30**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
34 (c)	Is the starting date of the crediting period before or after the date of the first emission reductions or enhancements of net removals generated by the project?	Refer to **CAR 30**.	OK	OK
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 the PDD. If after the first commitment period under the Kyoto protocol its validity is prolonged, the crediting period under the project will be prolonged by 5 years or 60 months until December 31, 2017.	OK	OK
Monitoring Plan				

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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 Guidance on criteria for baseline setting and monitoring, version 03.	OK	OK
JI specific approach only				
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 decisive 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.	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 enhancements of net removals to be monitored. Data to be monitored are presented in Section D of the PDD. **CL 06.** Please, provide information on the storage of data needed for the monitoring activity. **CAR 31.** Parameter GWP_{CH_4} does not pertain to the list of data and parameters which are not monitored throughout the crediting period, but are determined	**CL 06** **CAR 31**	OK OK

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		only once, which is available at the time of PDD development.		
36 (b)	If default values are used: − 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?	Default values are provided in the table of Annex 3 to the PDD. They originate from recognized sources and are presented in a transparent manner.	OK	OK
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?	Monitoring plan clearly specifies which values should be chosen 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?	The monitoring plan clearly indicates the precise references from which the default values are taken. The conservativeness of the values provided is justified.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
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) (iv)	Are International System Units (IS units) used?	IS units are used for certain parameters.	OK	OK
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 of anthropogenic emissions of greenhouse gases within the project boundary is 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 is 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 established taking into account the latest version of "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	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	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), 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 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?	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 only once (and thus remain fixed throughout the crediting period), but that are not yet available at the stage of determination, such data 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.1 of the PDD	OK	OK

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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) (iii)	Are all equations numbered?	**CAR 32.** Please, check the numbering of formulae in Section D of the PDD.	**CAR 32**	OK
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

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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 any changes in the existing data accounting and data collection system of PJSC "Ternopilgaz".	OK	OK
36 (f) (vii)	Are references provided as necessary?	All necessary references to the rules and regulatory documents of the Host Party 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 uncertainty is to be addressed?	N/A	OK	OK
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?	Equipment for measuring calorific value of natural gas transported in GDN of PJSC "Ternopilgaz" is calibrated in accordance with the quality control procedures.	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	The monitoring plan was set according to national norms and standards.	OK	OK

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	reference as to where a detailed description of the standard can be found?			
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 available upon request?	Inspection (calibration) of metering and measuring devices is carried out in accordance with manuals of the manufacturer, approved methodologies on inspection/calibration of measuring devices as well as according to the national standards of Ukraine.	OK	OK
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	**CAR 33**. Please, include information on functions/powers of Coordinator in Section D.3. of the PDD.	**CAR 33**	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	The monitoring plan includes the following sections: 1. The program of the initial monitoring measurements of methane leaks at the gas equipment of GDPs (CGDPs), gas fittings of PJSC "Ternopilgaz" gas distribution networks.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	applied?	2. Monitoring map of methane leaks at the gas equipment of GDPs (CGDPs), gas fittings of PJSC "Ternopilgaz" gas distribution networks. 3. Methodology of methane leak detection. 4. Guidance on monitoring measurement data collection and storage.		
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 D.1.1.1 and D.1.1.3 provide a 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
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	Yes, selected elements of approved CDM methodology are used for setting the baseline scenario. The selected elements and combinations together with additional elements that were additionally developed by the project participants are in line with requirements of	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	with elements supplementary developed by the project participants in line with 36 above?	paragraph 36 above.		
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)? (c) Does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the	Periods will not overlap in the crediting period.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	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 a JI specific approach based on the Joint Implementation requirements in accordance with paragraph 9 (a) of the JI Guidance on criteria for baseline setting and monitoring, Version 03, the "Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at gas distribution networks" that was developed by the Institute of Gas of the National Academy of Sciences of Ukraine and on the basis of elements of approved CDM methodology AM0023 version 4.0 no leakage is expected.	OK	OK
40 (b)	Does the PDD provide a procedure for an	**CL 07.** Please, provide a reasonable justification for the	**CL 07**	OK

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	ex ante estimate of leakage?	absence of the leakage under the project.		
Approved CDM methodology approach only_Paragraph 41_Not applicable				
Estimation of emission reductions or enhancements of net removals				
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	The PDD states the approach of assessment of emissions in the baseline scenario and in the project scenario. **CAR 34.** Please, correct Table 7. of the PDD according to the Guidelines for users of the JI PDD form.	**CAR 34**	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 ex ante 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:	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
	(a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (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	(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 the baseline emissions and the activity level of the project and the project emissions are taken into account, as appropriate. (d) Data sources used to calculate the estimates are clearly identified, reliable and transparent. (e) Emission factors are taken from identified sources. (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	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	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 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?	period by the total months of the crediting period and multiplying by twelve).		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(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 or net removals is to be performed de facto, does the PDD include an illustrative forecasted emissions or net removals calculation?	The baseline level of emissions is determined on a basis of the specific approach that is based on the "Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at gas distribution networks" and approved Clean Development Mechanism methodology AM0023 version 4.0 "Leak detection and repair in gas production, processing, transmission, storage and distribution systems and in refinery facilities". Calculations of the estimated emissions are clearly presented in the PDD.	OK	OK
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	The EIA of the project was sufficiently described 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
	environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	Implementation of this project will improve safety of operation of gas distribution networks, which in turn will reduce the likelihood of explosions or fires.		
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 Accompanying documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	The project doesn't provide for any negative impacts on the environment.	OK	OK
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?	There was consultation with specialists of the Institute of General Energetics of the National Academy of Sciences of Ukraine. Comments of the stakeholders were not received. Activities under the project do not provide for any negative impacts on the environment or negative social effect.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(c) A description on whether and how the comments have been addressed?			
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 determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 01. Please, provide information about the starting date of the project.	A.2	February 2, 2005 – ORELAC GmBH (Liechtenstein) and PJSC «Ternopilgaz» signed the Memorandum of Understanding relating to the JI project. It was also stipulated in the Memorandum, that ORELAC GmBH had to develop the emission monitoring programme and the JI Project Design Document (PDD) (the starting date of the project). Refer to the PDD version 04.	Information on the starting date of the project is provided. The issue is closed.
CAR 02. Please, indicate the number of the Letter of Endorsement from SEIAU.	A.2	A Letter of Endorsement № 1028/23/7 from the State Environmental Investment Agency of Ukraine.	The necessary information was provided in Section A.2 in the PDD, version 03. The issue is closed.
CAR 03. Tables in Annex 1 must comply with the requirements of the JI PDD form, version 01.	A.3	Tables in Annex 1 to the PDD are corrected.	The issue is closed as the relevant corrections were made.
CAR 04. Please, provide information on who represents ORELAC GmBH.	A.3	ORELAC GmBH is represented by Mister Bukhel Emil Markus, Director. Relevant information is presented in Annex 1 to the PDD version 04.	The information is checked, the issue is closed.
CAR 05. The name of supporting document 1. is incorrect. Please, make all necessary	A.4.1.4	Supporting document 1 “Registry of	The necessary corrections were

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
corrections.		gas distribution points, gas fittings included in the project boundary of Joint Implementation Project ”Reduction of natural gas leaks at the gas distribution networks of PJSC “Ternopilgaz”	made, the issue is closed.
CAR 06. Please, provide information on specifications of STKh-17 gas leak detector.	A.4.2	Information relating to the technical characteristics of the STKh-02V1 gas leak detector is provided in Section A.4.2. of the PDD version 04.	The information is provided. The issue is closed.
CAR 07. Please, provide information on PETM program components of gas distribution networks.	A.4.2	PETM of gas distribution networks includes: • studying of baseline conditions – when using measuring devices described above; • registration of the results and determination of priority in repair of leaks, which ensures the highest efficiency of this work upon scarcity of means for repair. • data analysis and evaluation of reduction of natural gas losses and volumes of emission reduction. • development of plan of future inspections, and further monitoring of GDN components included into the project boundary, including those	The information is provided in Section A.4.3. The issue is closed

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		where leaks had already been repaired within the framework of the project.	
CAR 08. The period of preparation of the primary registry of gas distribution points and gas fittings is not stated in the implementation schedule.	A.4.2	Drawing up of the primary registry of gas distribution points and gas fittings included into the project boundary (GDP (CGDP) gas equipment, gas fittings, threaded and flanged connections of gas pipelines) – January – March 2005.	The information is provided in the corresponding section. The issue is closed.
CAR 09. Please, in Section A.4.2 state whether it is planned to replace the project equipment or not.	A.4.2	On codition of proper maintenance no replacement of equipment implemented in the framework of the project is expected during the project period.	The issue is closed as information was checked.
CAR 10. Please, provide information on whether the implemented equipment complies with general international practice.	A.4.2	Equipment meets all criteria of the existing modern general practice.	The information is provided, the issue is closed.
CAR 11. Please, provide information on possible personnel training relating to the project activity, if any.	A.4.2	Training of employees and specialists of PJSC “Ternopilgaz” will take place in accordance with practice that existed prior to the project, and in case of necessity, such as lack of skills for operating the equipment that is implemented in the framework of the project activities, equipment manufacturers will conduct briefings and training, as stipulated in contracts	The information is provided, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		for the purchase of equipment.	
CAR 12. Please, provide information on how the greenhouse gas emission reductions will be achieved.	A.4.3	Reduction of methane leaks will result from project activity that will lead to reduction of emissions of methane that is a greenhouse gas.	The issue is closed as the relevant information was stated.
CAR 13. Tables in Section A.4.3.1. shall comply with Guidelines for users of the JI PDD form.	A.4.3	The appropriate corrections under the requirements of the Guidelines for users of the JI PDD form were made.	Corrections are made, the issue is closed.
CAR 14. The crediting period is defined incorrectly in the name of Table 2. Section A.4.3.1.	A.4.3	Table 2. Estimated amount of emission reductions in the period before the first commitment period (2005-2007).	The issue is closed on the basis of corrections made.
CAR 15. Estimated average annual GHG emission reduction is calculated incorrectly in Table 3 Section A.4.3.1.	A.4.3	Total average estimated amount of emission reduction in the crediting period (2008-2012) is 645 782 t of CO2 equivalent.	The corrections were made, the issue is closed.
CAR 16. Please, state the total estimated amount of emission reduction and the average estimated emission reduction over the crediting period in Table 4. Section A.4.3.1.	A.4.3	Total estimated amount of emission reduction and the average estimated emission reduction over the crediting period are provided in PDD version 04.	The information was provided, the issue is closed.
CAR 17. The project has no approval of the Host Party and the country – participant.	19	To obtain the Letter of Approval the final Determination report together with this Determination Protocol and the list of sources of Reference Information must be submitted to the State Environmental Investment	The issue will be closed after the Letters of Approval are issued by the Host Party and the country-participant.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		Agency of Ukraine. A Letter of Approval from Switzerland as the country-participant is also not obtained at the current stage of the Project.	
CAR 18. The latest version of the Guidance on criteria for baseline setting and monitoring is version 03, while the PDD states that version 02 was used. Please, use the latest versions of documents for the JI PDD development.	22	For setting the baseline (measurement and calculation of methane leaks) the proposed project uses a specific approach based on the requirements to JI projects according to paragraph 9 (a) of the JI Guidance on criteria for baseline setting and monitoring, Version 03.	The corrections are made, the issue is closed.
CAR 19. The name of Methodology which was developed by the Institute of gas of NAS of Ukraine for the calculation of this type of project is incorrect.	23	"Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at gas distribution networks". Relevant corrections are made in Section B.1. of the PDD version 04.	Corrections are made, the issue is closed.
CAR 20. The name of the company that is the owner of the project is not correct in Section B.1., in the description of correspondence of the project with terms of the Specific approach.	23	Information relating to the first condition: before the beginning of the project PJSC «Ternopilgaz» provided only the detection of leaks by means of gas detectors in accordance with Ukrainian Gas Supply System Safety Rules in order to avoid emergency	The issue is closed as the appropriate corrections were made.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		and explosive situations. The appropriate corrections were made in the PDD version 04.	
CAR 21. Please, check the indexes in description of formulae of Section B.1.	24	The indexes are checked, the corrections are made.	Verified. The issue is closed.
CAR 22. Please, provide a more detailed description of the method to determine the level of greenhouse gas emission reductions.	24	In accordance with the Methodology, the level of emission reductions is determined in the following order: 1. The current practice of natural gas losses detection and repair activities is assessed and described. 2. Clear and transparent criteria are established to identify whether the detection and repair of methane leaks would also have occurred in the absence of the project activity. 3. The time schedules for replacement of equipment in the absence of the project activity are determined. 4. Data on leaks are collected during the project implementation. 5. The effectiveness of leak repair is checked during monitoring. 6. Emission reductions are calculated ex-post based on data collected in the previous steps.	The issue is closed as the necessary information was provided.
CAR 23. The factor to convert volume units	24	*ConvFactor* – Conversion factor to	The issue is closed as relevant

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
to weight units for natural gas leaks is incorrect. Please, make the necessary corrections.		convert methane leaks from volume units to weight units (t CH_4/m^3 CH_4). Under normal conditions defined as 0 degree Celsius and 0.1013 MPa, = 0.0007168 (t $/m^3$). The appropriate corrections were made in the PDD version 04.	corrections were made.
CAR 24. In Table of Section B.1. provide information on the QC/QA procedures (to be) applied for the parameter GWP_{CH_4} .	24	In case the value of GWP_{CH_4} changes baseline and project scenario will be recalculated according to new values. The necessary information was provided in the PDD version 04.	The information is provided, the issue is closed.
CAR 25. Frequency of measurement /monitoring for parameter GWP_{CH_4} is specified incorrectly.	24	Throughout the crediting period. Relevant corrections were made in the PDD version 04.	The issue is closed as corrections were made.
CAR 26. The name of Alternative 1.2. in Section B.1. does not comply with the name of the same alternative in Section B.2. Please, make the appropriate corrections.	28	Alternative 1.2: Implementation of this Project without use of JI mechanism.	The issue is closed, the corrections were made.
CAR 27. It is indicated in Section B.2. that lack of financial incentives is described in step 2, while the investment analysis is not used in step 2 to justify additionality as barrier analysis is used.	28	Lack of financial incentives as described in step 3 is typical not only for PJSC "Ternopilgaz" but for other companies that operate the gas distribution network of mean and low	The corrections were made, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		pressure in Ukraine.	
CAR 28. Please, provide more detailed information on additional costs for the project.	28	Additional costs for the project implementation include the cost of: - purchase and use of modern measuring devices for methane emission detection (gas detectors AZ 7291, SENSIT Trak-It III CGI, or FT-02B1, gas analyzers of EX-TEC or Variotec type); - purchase of modern, more expensive sealing materials of different types; - replacement of old types of GDN components with new equipment of European producers; - personnel training, realization of direct prophylactic overview and technical maintenance; - systematic collection of data and data management; - systematic and long-term control of efficiency of detected natural gas leak repairs.	The issue is closed, the information is provided.
CAR 29. Please, provide information on equipment that is included in the project boundary.	32 (a)	Full list of gas distribution points and cabinet gas distribution points (1465 units), gas fittings (4636 units) which are included in the Project boundary are shown in the supporting document	The information is provided, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		1. JI specific approach. Relevant information is presented in the PDD version 04.	
CAR 30. Please, in Section C.3. of the PDD jusify the starting date of the crediting period.	34(c)	The starting date of the crediting period is the date when the first project measures at gas pipelines of PJSC "Ternopilgaz" were carried out and when the first GHG emission reductions are expected to be generated, namely February 14, 2005.	The justification is provided, the issue is closed.
CAR 31. Parameter GWP_{CH_4} does not pertain to the list of data and parameters which are not monitored throughout the crediting period, but are determined only once, which is available at the time of PDD development.	36 (b)	Corresponding corrections were made in Section D.1 of the PDD version 04.	The corrections are accepted, the issue is closed.
CAR 32. Please, check the numbering of formulae in Section D of the PDD.	36 (f) (iii)	The numbering was checked. Refer to the PDD version 04.	The issue is closed as relevant corrections were made.
CAR 33. Please, include information on functions/powers of Coordinator in Section D.3. of the PDD.	36 (i)	Coordinator is responsible for storage, archiving and making a backup copy of information under the project.	The information is provided, the issue is closed.
CAR 34. Please, correct Table 7. of the PDD according to the Guidelines for users of the JI PDD form.	42	The Table was corrected in accordance with the Guidelines for users of the JI PDD form.	The issue is closed as relevant corrections were made.
CL 01. Please, provide information on the causes of methane leaks to be repaired	A. 2	The main cause of methane leaks is failure of sealing elements of	The issue is closed as necessary clarifications were provided.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
under the project.		equipment caused by temperature fluctuations and moisture. Basic component of natural gas is methane, which is a greenhouse gas. Information is provided in Section A.2. of the PDD.	
CL 02. Please, provide appropriate documentary evidence of the fact that ORELAC GmBH assigned its rights and obligations to CEP Carbon Emissions Partners S.A.	A. 4.3	The Agreement between ORELAC GmBH and CEP Carbon Emissions Partners S.A. on transfer of rights and obligations was provided for consideration of the determination team.	The issue is closed as the corresponding explanation was provided.
CL 03. Please, provide the full name of Methodology which is the basis for the developed JI specific approach.	A.4.2	For calculation of amount of methane leaks the JI Specific Approach is used. "Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at gas distribution networks" developed by the Institute of Gas of the National Academy of Sciences of Ukraine.	The reference is provided, the issue is closed
CL 04. Please, provide information on how the replacing of shut-off and control valves will be conducted.	A.4.2	Within the framework of the Project it is also planned to replace old GDP (CGDP) gas equipment as well as shut-off and control valves of the USSR production with the equipment and shut-off and control valves of	The clarification is provide, the issue is closed

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		European producers and their analogues of national production. Detailed information is provided in Section A.4.2 of the PDD version 04.	
CL 05. Please, provide referencese to the sealant STSTs 7338-90, 5152-84, 10330-76 in Section A.4.2.	A. 4.2	Relevant references were provided, the issue closed.	The references were provided. The issue is closed.
CL 06. Please, provide information on the storage of data needed for the monitoring activity.	36 (b)	Project data and documents in paper and/or electronic form shall be stored till 31/12/2019 pursuant to Orders No. 29/1 dated 07/02/2005 and No 352 dated 10/11/2011 issued by the management board of PJSC "Ternopilgaz".	The issue is closed as the corresponding clarification was provided.
CL 07. Please, provide a reasonable justification for the absence of the leakage under the project.	40 (b)	According to a JI specific approach based on the Joint Implementation requirements in accordance with paragraph 9 (a) of the JI Guidance on criteria for baseline setting and monitoring, Version 03, the "Methodology for calculation of greenhouse gas emission reductions achieved by above-standard natural gas leak repair at gas distribution networks" dated 30/04/2012 that was developed by the Institute of Gas of the National Academy of Sciences of Ukraine and on the basis of elements	The issue is closed as the corresponding justification was provided.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		of approved CDM methodology AM0023 version 4.0 no leakage is expected.	