



BUREAU  
VERITAS

# DETERMINATION REPORT OJSC «ODESAGAS»

## DETERMINATION OF THE REDUCTION OF NATURAL GAS EMISSIONS AT OJSC “ODESAGAS” GATE STATIONS AND GAS DISTRIBUTION NETWORKS.

REPORT No. UKRAINE-0062/2009

REVISION No. 03

BUREAU VERITAS CERTIFICATION



# DETERMINATION REPORT

Date of first issue: <b>26/12/2009</b>	Organizational unit <b>Bureau Veritas Certification Holding SAS</b>
Client: <b>OJSC «Odesagas»</b>	Client ref.: <b>Mr. Vitaliy Gerasimenko</b>

**Summary:**  
 Bureau Veritas Certification has made the determination of the «Reduction of natural gas leakages at the shut-off stations and natural gas networks of OJSC «Odesagas»» project of OJSC «Odesagas» located in Odesa city and Odesa region 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 the baseline and monitoring methodology developed according the Guidance on Criteria for Baseline Setting and Monitoring and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

Flavio Gomes, Bureau Veritas Certification Holding SAS Global Product Manager for Climate Change, approved final version of the Verification Report. Verification Report is signed by Ivan Sokolov authorized Bureau Veritas Certification Holding SAS Local product manager for Climate Change in Ukraine.

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Work carried out by: <b>Flavio Gomes – Team leader, Lead Verifier</b> <b>Nadiya Kaiiun – Team member, Lead Verifier</b> <b>Kateryna Zinevych – Team member, Verifier</b>		<input checked="" type="checkbox"/> No distribution without permission from the Client or responsible organisational unit
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### Abbreviations

CAR	Corrective Action Request
CGDP	Cabinet Gas Distribution Post
CL	Clarification Request
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CH <sub>4</sub>	Methane
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
FCCC	Framework Convention On Climate Changes
GDP	Gas Distribution Post
GHG	Green House Gas(es)
JI	Joint Implementation
JIP	Joint Implementation Projects
JISC	Joint Implementation Supervisory Committee
JSC	Joint-Stock Company
I	Interview
IE	Independent Entity
IETA	International Emissions Trading Association
MoV	Means of Verification
NG	Natural Gas
PDD	Project Design Document
PETM	Purposeful Examination and Technical Maintenance
PP	Project Participant
SP	Sub Project
UNFCCC	United Nations Framework Convention for Climate Change
UES	United Energy System



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Appendix A: Determination Protocol

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### 1 INTRODUCTION

OJSC «Odesagas» has commissioned Bureau Veritas Certification to determinate the JI project Improvement of the Reduction of natural gas emissions at OJSC “Odesagas” gate stations and gas distribution networks.

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, 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 meet 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 emission reduction 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 GHG Project Description

OJSC Odesagas is the company uniting gas supply facilities of 26 districts in Odesa region and gas supply facility in Odesa, and providing natural gas transportation and supply to industrial and domestic consumers. OJSC Odesagas controls 1917 gas-distribution posts, cabinet gas-distribution posts, among them 1851 (GDP, CGDP) are the OJSC Odesagas property. The structure of current gas transportation rates does not include depreciation and investment needs and costs of gas distribution enterprises, which does not ensure receipt of funds for performance of necessary repair works and modernization of gas networks, purchase of appropriate engineering equipment and

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components, and also results in increase of natural gas leakage at the infrastructure of OJSC Odesagas.

At the moment OJSC «Odesagas» only detects leakages with the help of detectors according to the Ukrainian Gas Supply System Safety Rules in order to avoid emergency and explosive situations. Measurement of the leakage volume, its registration and accounting are not performed, and appropriate measuring devices are missing. According to the conducted research leakage volume of natural gas for OJSC «Odesagas» can make 41 million m<sup>3</sup> per year.

The main goal of the project is reduction of natural gas (methane) leakages in gas distribution posts and in cabinet gas distribution posts. The main sources of leakage are junctions of the elements of gas-distribution posts and cabinet gas-distribution posts. Many connecting parts of GDP and CGDP require repair in the result of quick wear of compactor elements. Within the scope of the project for repair of GDP and CGDP equipment, for the purpose of leakage elimination, modern compacting materials will be used, replacing service and repair practice based on rubberized asbestos fabric and rubber gaskets, and compacting padding made of cotton fiber with fat soakage and asbestos graphite filler, which results in additional methane leakage, which is a greenhouse gas.

The project activity includes:

- Implementation of purposeful examination and technical maintenance (PETM) of gas-distribution posts and cabinet gas-distribution posts – modern and economically most efficient practice, which allows not only detection of leaking areas, but also determination of leakage volume (i.e., potential volume of gas leakage reduction. This is a key information for substantiation of types of repair and priority choice of its objects, which is important under short financing for elimination of all leakages. This activity will include purchase and calibration of modern measuring equipment, appropriate training of employees, development of monitoring map with the list of all equipment components to be regularly examined, creation of leakage data collection and storage system, and implementation of internal audit and quality system for elimination and accounting of methane leakage.
- Detection and measurement of leakage: monitoring system of leakages, including eliminated leakages (repaired equipment components) will be exercised on a regular basis (once in four days or once in a week, depending on the type of equipment) by specially trained personnel. Each component will be checked according to the monitoring map, and detected leakage will be duly marked with individual number; gas leakage volumes will be measured and registered in the database.
- Elimination of all detected leakages: repair of leaking junctions of GDP and CGDP elements within the scope of this project will vary from replacement of gaskets and wedge plugs, use of new sealants or compacting materials, to capital repair and replacement of safety valves of pressure regulators, piston rods, installation of natural gas gauges. Repaired GDP and CGDP equipment components will be

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regularly checked as a part of a standard monitoring program (see above) to make sure they have not become the source of leakage again.

Duration of the project is not limited, as PETM, monitoring and leakage elimination programs are aimed to become a part of work of OJSC «Odesagas». Reduction of emissions equivalent to CO<sub>2</sub> is stated for one period of crediting (18 years) according to modality and Joint Implementation Procedures.

### 1.4 Determination Group

The determination team consists of the following personnel:

Flavio Gomes

Bureau Veritas Certification      Team leader, Lead Climate Change Verifier

Nadiya Kaiiun

Bureau Veritas Certification      Team member, Leading Climate Change Verifier

Kateryna Zinevych -

Bureau Veritas Certification      Team member, Climate Change Verifier

Report was reviewed by:

Ivan Sokolov

Bureau Veritas Certification      Internal Technical Reviewer

## 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 Determination and Verification Manual (IETA/PCF). The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The determination protocol serves the following purposes:

It organizes, details and clarifies the requirements JI project is expected to meet;

It ensures a transparent determination process where the determinator will document how a particular requirement has been validated and the result of the determination.

The determination protocol consists of five tables. The different columns in these tables are described in Figure 1



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





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Determination Protocol Table 1: Mandatory Requirements			
Requirement	Reference	Conclusion	Cross reference
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), a <b>Corrective Action Request (CAR)</b> or a <b>Clarification Request (CL)</b> of risk or non-compliance with stated requirements. The CAR's and CL's are numbered and presented to the client in the Determination Report.	Used to refer to the relevant protocol questions in Tables 2, 3 and 4 to show how the specific requirement is determined. This is to ensure a transparent determination process.

Determination Protocol Table 2: Requirements checklist				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in several sections. Each section is then further subdivided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or section is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a <b>Corrective Action Request (CAR)</b> due to non-compliance with the checklist question. (See below). <b>Clarification Request (CL)</b> is used when the determination team has identified a need for further clarification.

Determination Protocol Table 3: Baseline and Monitoring Methodologies				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements of baseline and monitoring methodologies should be met. The checklist is organized in several sections. Each section is then further subdivided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or section is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a <b>Corrective Action Request (CAR)</b> due to non-compliance with the checklist question. (See below). <b>Clarification Request (CL)</b> is used when the determination team has identified a need for further clarification.

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<b>Determination Protocol Table 4: Legal requirements</b>				
<b>Checklist Question</b>	<b>Reference</b>	<b>Means of verification (MoV)</b>	<b>Comment</b>	<b>Draft and/or Final Conclusion</b>
The national legal requirements the project must meet.	Gives reference to documents where the answer to the checklist question or section is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a <b>Corrective Action Request (CAR)</b> due to non-compliance with the checklist question. (See below). <b>Clarification Request (CL)</b> is used when the determination team has identified a need for further clarification.
<b>Determination Protocol Table 5: Resolution of Corrective Action and Clarification Requests</b>				
<b>Report clarifications and corrective action requests</b>	<b>Ref. to checklist question in tables 1/2/3/4</b>	<b>Summary of project owner response</b>	<b>Determination conclusion</b>	
If the conclusions from the Determination are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Tables 2, 3 and 4 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the determination team should be summarized in this section.	This section should summarize the determination team's responses and final conclusions. The conclusions should also be included in Tables 2, 3 and 4, under "Final Conclusion".	

**Figure 1 Determination protocol tables**

### 2.1 Review of Documents

The Project Design Document (PDD version 05) submitted by OJSC «Odesagas» 07/11/2009 and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Project Design Document (JI-PDD), methodology, Kyoto Protocol, Clarifications on Determination Requirements to be Checked by an Independent Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, OJSC «Odesagas» revised the PDD and resubmitted it on 10/12/2009, version 06.

In order to close the last CAR considering project approval by the parties involved this revision (third) of the Determination Report was issued.

The determination findings presented in this report relate to the project as described in the PDD, revision 05.

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### 2.2 Follow-Up Interviews

On 26/11/2009 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review.

Representatives of OJSC «Odesagas» were interviewed (see References). The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

Interviewed organization	Interviews Topics
JSC «Odesagas»	<ul style="list-style-type: none"> <li>➤ Organizational structure.</li> <li>➤ Responsibilities and authorities.</li> <li>➤ Training of personnel.</li> <li>➤ Quality management procedures and technology.</li> <li>➤ Rehabilitation /Implementation of equipment (records).</li> <li>➤ Metering equipment control.</li> <li>➤ Metering record keeping system, database.</li> </ul>
ITI Biotekhnika UAAN.	<ul style="list-style-type: none"> <li>➤ Baseline methodology.</li> <li>➤ Monitoring plan.</li> <li>➤ Monitoring report.</li> <li>➤ Deviations from PDD.</li> </ul>

### 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.

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

## 3 DETERMINATION FINDINGS

In the following sections, the findings of the determination are stated. The determination findings for each determination subject are presented as follows:

- 1) The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Determination Protocol in Appendix A.
- 2) Where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the project objectives, a Clarification or Corrective Action Request, respectively, have been issued. 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 12 Corrective Action Requests and 12 Clarification Requests.

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3) The conclusions for determination subject are presented.

### 3.1 Project Design

Bureau Veritas Certification recognizes that OJSC «Odesagas» Project is helping country fulfill its goals of promoting sustainable development. The project is expected to be in line with host-country specific JI requirements.

The Project Scenario is considered additional in comparison to the baseline scenario, and therefore eligible to receive Emissions Reductions Units (ERUs) under the JI, based on an analysis, presented by the PDD, of investment, technological and other barriers, and prevailing practice.

The project design is sound and the geographical and temporal (18 years) boundaries of the project are clearly defined.

Outstanding issues related to project design are given in the Table 5 below (see CAR1, CAR2, CAR3, CAR7).

### 3.2 Baseline and Additionality

To measure and to calculate natural gas leaks there is an approved methodology under Clean Development Mechanism AM—23 Reduction of Natural Gas Emissions at Compressor or Measurement Stations of Gas Lines (<http://cdm.unfccc.int>).

Method AM0023/Revision 03 states that it can be applied for the projects for natural gas leak reduction at compressor, gas-distribution stations in the system of main gas lines, as well as for equipment of gas-distribution systems, including gas-pressure adjusting stations.

Lawfulness of using this methodology in this project arises from the following analysis.

According to Methodology AM0023/Revision 03 the following three conditions shall be fulfilled:

1. Companies – operators of gas-distribution networks do not use the system allowing systematic detection and elimination of methane leaks by the moment of project implementation;
2. Natural gas leaks can be detected and measured precisely;
3. Monitoring system can be implemented to make sure eliminated methane leaks will not occur again.

The Project fully complies with the second and the third conditions, and with the first condition subject to some notes given below.

Under the *first condition*, before the beginning of the project OJSC «Odesagas» only detects leakages with the help of detectors according to the Ukrainian Gas Supply System Safety Rules in order to avoid emergency and explosive situations.

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Measurement of the leakage volume, its registration and accounting are not performed, and appropriate measuring devices are missing. Theoretical calculations of leak volumes on the basis of approved natural gas leak limits for conditionally hermetic gas distribution system of OJSC «Odesagas» can made 10 million m<sup>3</sup> per year.

But the above-specified measures are not able to eliminate leaks during the period between the dates of regular checkups, and does not give an idea about real volumes of leaks mainly through using of old compacting materials. The project does not provide for more frequent checkups, but provides for using more up-to-date compacting material.

By the results of international experience and data from the regions where this material has been already used, Gore-Tex shall significantly reduce leak volumes at shutters with stuffing-box seals.

Moreover, through the lack of modern equipment for detection and measurement of leak volumes it is expected that effective program for detection and elimination of leaks could not be applied while the project was absent. The Companies which were mainly motivated by the safety condition could only detect the fact of leak, but could not measure its volume.

In other words, we want to emphasize that the system for detection and elimination of leaks of OJSC «Odesagas» was not able to eliminate leaks included to this Project.

Under the *second condition*, purchase of up-to-date equipment for detection and measurement of leak volume and actual measurement of leak volume at the shutters have shown that leaks can be detected and measured precisely subject to application of modern practices and equipment.

Under the *third condition*, implementation of stepped procedures, creation of comprehensive database and use of additional equipment will enable reliable monitoring of repaired shutters and detection of newly appeared leaks (See Annex 3 to Monitoring Plan). On-site training of personnel and quality control at all stages will allow accurate realization of Monitoring Plan.

There are only 2 options of pre conditions, which can be considered as possible and reliable alternatives for the Project

(a) Keeping the current system for detection and elimination of leaks

(b) Implementation of this Project not as JI project.

Option (a) fits the best of all the suggested and determined options, and makes a basic option against all basic considered options.

Outstanding questions connected with baseline and additionality are given in Table 5 below (See CAR4, CAR5, CAR6, CL1, CL2).

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### 3.3 Monitoring plan

The Project uses the approved consolidated monitoring methodology AM0023 ("Reduction of natural gas leaks at compressor or measurement stations of gas lines" (version 03)). Refer to section 3.2 above.

Outstanding questions connected with monitoring plan are given in Table 5 below (See CAR8, CAR9, CAR10, CL).

### 3.4 Calculation of GHG Emissions

Using the method of measuring leak volumes with the help of hermetic capacity, volume of methane leaks from one equipment can be calculated by the formula:

$$F_{CH_4,i} = V_{bag} * w_{sampleCH_4,i} * 3600 / t_i$$

Where:

$F_{CH_4}$  = Methane emissions through leaks and through leaking (m<sup>3</sup>/h);

$V_{bag}$  = Capacity of sealed tank for measurement (m<sup>3</sup>);

$w_{sampleCH_4,i}$  = Methane concentration in a sample of leak  $i$ , which is a difference of concentrations in the beginning and in the end of measurement (%);

$t_i$  = Average duration of tank filling for leak  $i$  after reconstruction (seconds)

Annual methane leaks are calculated by the formula:

$$Q_{yP} = ConvFactor * \Sigma [F_{CH_4} * T_{i,y} * (1 - UR_i)] * GWP_{CH_4} * 0.9$$

Where:

$Q_{yP}$  = Methane emissions for the period  $y$  for equipment (tCO<sub>2</sub>eq).

$ConvFactor$  = Conversion factor m<sup>3</sup>CH<sub>4</sub> into tCH<sub>4</sub>, at standard temperature and pressure (0 degree Celsius and 101.3 kPa) it makes 0.0007168 tCH<sub>4</sub>/m<sup>3</sup>CH<sub>4</sub>

$UR_i$  = Factor taking into account uncertainty of measurement method

$T_{i,y}$  = Hour (in hours) for respective component and during which it used to operate during the period under consideration (monitoring period)  $y$ , taking into account the methodology given above (for example, for calculation of incoming leaks)

$GWP_{CH_4}$  = Potential of Methane Global Warming (21 tCO<sub>2</sub>eq/tCH<sub>4</sub>)

0.9= Factor taking into account equipment error.

Total expected emission reductions of the Project:

For the period 2005-2007 – 350000 t CO<sub>2</sub> eq., average annual – 116666 t CO<sub>2</sub> eq

For the period 2008-2012 – 1990000 t CO<sub>2</sub> eq., average annual – 398000 t CO<sub>2</sub> eq.

For the period 2013-2022 pp. – 4600000 t CO<sub>2</sub> eq., average annual – 460000 t CO<sub>2</sub> eq.

Outstanding questions connected with GHG calculations are given in Table 5 below (See CL6, CL7, CL8, CL9).

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### 3.5 Environmental impacts

According to ecologic norms of Ukraine natural gas emissions into the air are not considered polluting. Therefore no ecologic permits are required. The only environmental impact is reduction of natural gas emissions into the air.

Implementation of this project will allow increasing safe operation of gas equipment, which in its turn will reduce probability of explosions or fires. Experience of OJSC «Odesagas» employees and observance of PBSGU norms will allow reduction to minimum of the probability of emergencies during the project implementation.

The project implementation does not provide for any harmful environmental impacts.

Outstanding questions connected with baseline and additionality are given in Table 5 below (See CAR11, CAR12, CAR10, CL11, CL12).

### 4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the modalities for the Determination of JI projects, the AIE shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available.

Bureau Veritas Certification published the project documents on the website (<http://www.bureauveritas.com/>) on 10/11/2009 and invited comments within 10/12/2009 by Parties, stakeholders and non-governmental organizations.

There are no comments from stakeholders.

### 5 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of Reduction of natural gas emissions at OJSC «Odesagas» gate stations and gas distribution networks Project. 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.

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

Reduction of natural gas emissions at OJSC “Odesagas” gate stations and gas distribution networks. An analysis of the investment and other barriers demonstrates that the proposed project activity is not a likely 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 review of the project design documentation (06) 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, meeting the expectations of interested parties.

The determination is based on the information made available to us and the engagement conditions detailed in this report

## 6 REFERENCES

### Category 1 Documents:

Documents provided by OJSC «Odesagas» that related directly to the GHG components of the project.

- 1 PPD Reduction of natural gas emissions at OJSC “Odesagas” gate stations and gas distribution networks, Revision 05, 04/10/2009.
- 2 PPD Reduction of natural gas emissions at OJSC “Odesagas” gate stations and gas distribution networks, Revision 06, 10/12/2009.
- 3 Guidelines for Users of the Joint Implementation Project Design Document Form/Version 03, JISC.
- 4 Glossary of JI terms/Version 01, JISC.
- 5 Guidance on criteria for baseline setting and monitoring. Version 01. JISC.
- 6 Tool for the demonstration and assessment of additionality. Version 05.2.
- 7 Reduction of natural gas leakage from compressors and shut-off stations/AM0023, Version 03.
- 8 Decree of Ukraine CM #206 dated 22 February 2006.
- 9 A Letter of Endorsement of National Environmental Investment Agency

### Category 2 Documents:

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

- /1/. Contract with ITI Biotekhnika UAAN.
- /2/. An Order on Working Team creation



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- /3/. Register of equipment of GRP OJSC «Odesagas»
- /4/. Recommendations on monitoring of methane leaks at gas distribution posts of OJSC «Odesagas»
- /5/. Gas analyzer passport EX-TEC® SR5.
- /6/. Certificate of state metrological certification EX-TEC® SR5, year 2005
- /7/. Certificate of state metrological certification EX-TEC® SR5, year 2006
- /8/. Certificate of state metrological certification EX-TEC® SR5, year 2007
- /9/. Certificate of state metrological certification EX-TEC® SR5, year 2008
- /10/. Certificate of state metrological certification EX-TEC® SR5, year 2009
- /11/. Inspection certificate of gas analyzer EX-TEC® SR5.
- /12/. Photos of gas analyzer EX-TEC® SR5.
- /13/. Photos of a plant for measurement of methane leaks volumes
- /14/. Photos of GDP 074 49, Liniya str., 22, Shevchenko str.
- /15/. Photos of GDP 027 11a, Golovna str.
- /16/. Photos of GDP 085 Kryzhanivka village, Veteraniv str.
- /17/. Photos of GDP 007 Ilinivka village, Kirova str.
- /18/. Photos of GDP 012 Avgustovka village, 8-a Kotovskogo str.
- /19/. Photos of CGDP 094 63, Spartakovska str.
- /20/. Photos of GDP 137 Gladkova str.
- /21/. Photos of GDP 060 13, Belynskogo str.
- /22/. Photos of CGDP 142 17/21, Liderovsky str.
- /23/. Photos of GDP 003 76a, Geroiv Stalingrada

### Persons interviewed:

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

- /1/ Vitaliy Gerasymenko – executive director OJSC «Odesagas»
- /2/ Yakiv Zatynaiko – lead engineer OJSC «Odesagas»
- /3/ Natalya Orlova – chief of production and technical department OJSC «Odesagas»
- /4/ Dmytro Oks – chief of production and technical department OJSC «Odesagas»
- /5/ Lyudmila Kulbida – engineer OJSC «Odesagas»
- /6/ Kateryna Burova – engineer OJSC «Odesagas»
- /7/ Sergiy Stryzhak – chief of department OJSC «Odesagas»
- /8/ Vyacheslav Ivchuk - lead engineer of Odesa inter-district administration
- /9/ Valeriy Yakimchuk - lead engineer of Berezovsky administration



## DETERMINATION REPORT

**APPENDIX A: DETERMINATION PROTOCOL**

BUREAU VERITAS CERTIFICATION HOLDING SAS

Report No. Ukraine-0062/2009 rev. 03

DETERMINATION REPORT – REDUCTION OF NATURAL GAS EMISSIONS AT OJSC “ODESAGAS” GATE STATIONS AND GAS DISTRIBUTION NETWORKS

**JI PROJECT DETERMINATION PROTOCOL****Table 1 Mandatory Requirements for Joint Implementation (JI) Projects**

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
1. The project shall have the approval of the Parties involved	Kyoto Protocol Article 6.1 (a)	See CAR3. After finishing of project determination report, the PDD and Determination Report will be presented to National Environmental Investments Agency of Ukraine for receiving of the Letter of Approval. The Letter of Approval from the country - investor will be provided after approval of project by Ukraine.	Table 2, section A.5.



## DETERMINATION REPORT

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		<p><u>National Environmental Investment Agency of Ukraine</u> 35, Urytskogo str. 03035 Kiev Ukraine Email: <a href="mailto:info.neia@gmail.com">info.neia@gmail.com</a></p> <p><b>Mr. Igor Lupaltsov</b> <b>Head</b> National Environmental Investment Agency of Ukraine Phone: +380 44 594 9111 Fax: +380 44 594 9115 Email: <a href="mailto:lupaltsov@ukr.net">lupaltsov@ukr.net</a></p> <p>Ministry of Climate and Energy Danish Energy Agency Amaliegade 44 DK-1256 Copenhagen K, Denmark</p> <p><a href="mailto:kar@ens.dk">Mr. Karim Arfaoui ( kar@ens.dk )</a></p> <p>Phone: (45-33) 92 6700/6777 Fax: (45-33) 11 4743</p>	
2. Emission reductions, or an enhancement of removal by sinks,	Kyoto Protocol	OK	Table 2, Section B

## DETERMINATION REPORT

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
shall be additional to any that would otherwise occur	Article 6.1 (b)		
<b>3.</b> The sponsor Party shall not acquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7	Kyoto Protocol Article 6.1 (c)	OK	
<b>4.</b> The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3	Kyoto Protocol Article 6.1 (d)	OK	
<b>5.</b> Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and procedures for the approval of JI projects	Marrakech Accords, JI Modalities, §20	<u>National Environmental Investment Agency of Ukraine</u>	
<b>6.</b> The host Party shall be a Party to the Kyoto Protocol	Marrakech Accords, JI Modalities, §21(a)/24	The Ukraine is a Party (Annex I Party) to the Kyoto Protocol and has ratified the Kyoto Protocol at April 12th, 2004.	
<b>7.</b> The host Party's assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts	Marrakech Accords, JI Modalities, §21(b)/24	This issue cannot be answered finally as it is out of the influence of the project participants. In the Initial Report submitted by Ukraine on 29. Dec. 2006 the AAUs are quantified with: 925 362 174.39 (x 5) tCO <sub>2</sub> -e. (compare <a href="http://unfccc.int/national_reports/initial_reports_under_the_ky">http://unfccc.int/national_reports/initial_reports_under_the_ky</a> )	



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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		<a href="#">oto_protocol/items/3765.php</a> )	
<b>8.</b> The host Party shall have in place a national registry in accordance with Article 7, paragraph 4	Marrakech Accords, JI Modalities, §21(d)/24	The designed system of the national registry has been outlined in the Initial Report (see link above). This issue is out of the influence of the project owner. The National Registry is not a direct requirement for project registration.	
<b>9.</b> Project participants shall submit to the independent entity a project design document that contains all information needed for the determination	Marrakech Accords, JI Modalities, §31	OK	
<b>10.</b> The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments	Marrakech Accords, JI Modalities, §32	16 July 09 - 16 Aug 09	
<b>11.</b> Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out.	Marrakech Accords, JI Modalities, §33 (d)	According to ecologic norms of Ukraine natural gas emissions into the air are not considered polluting. Therefore no ecologic permits are required. The only environmental impact is reduction of natural gas emissions into the air.	Table 2, section F

## DETERMINATION REPORT

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		<p>Implementation of this project will allow increasing safe operation of gas equipment, which in its turn will reduce probability of explosions or fires. Experience of OJSC «Odesagas» employees and observance of PBSGU norms will allow reduction to minimum of the probability of emergencies during the project implementation.</p> <p>The project implementation does not provide for any harmful environmental impacts.</p>	
<p><b>12.</b> The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project</p>	<p>Marrakech Accords, JI Modalities, Appendix B</p>	<p>OK</p>	<p>Table 2, Section B</p>
<p><b>13.</b> A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances</p>	<p>Marrakech Accords, JI Modalities, Appendix B</p>	<p>OK</p>	<p>Table 2, Section B</p>
<p><b>14.</b> The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to</p>	<p>Marrakech Accords,</p>	<p>OK</p>	<p>Table 2, Section B</p>



## DETERMINATION REPORT

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
force majeure	JI Modalities, Appendix B		
<b>15.</b> The project shall have an appropriate monitoring plan	Marrakech Accords, JI Modalities, §33(c)	OK	Table 2, Section D
<b>16.</b> A project participant may be: (a) A Party involved in the JI project; or (b) A legal entity authorized by a Party involved to participate in the JI project	JISC "Modalities of communication of Project Participants with the JISC" Version 01, Clause A.3	See CAR3. Conclusion is pending until Letters of Approval authorizing the project participants by Parties involved will be issued.	Table 2, Section A

## DETERMINATION REPORT

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>A. General Description of the project</b>					
<b>A.1 Title of the project</b>					
A.1.1. Is the title of the project activity presented?	1,2,3 ,4	DR	Reduction of natural gas leaks at shut-off stations and natural gas networks of OJSC «Odesagas»	OK	OK
A.1.2. Is the current version number of the document presented?	1,2,3 ,4	DR	Revision 06	OK	OK
A.1.3. Is the date when the document was completed presented?	1,2,3 ,4	DR	Dated December 10, 2009	OK	OK
<b>A.2. Description of the project</b>					
A.2.1. Is the purpose of the project activity included?	1,2,3 ,4	DR	The main goal of the project is reduction of natural gas (methane) leakages in gas distribution posts and in cabinet gas distribution posts, which will result in reduction of methane emissions into the air, which is a greenhouse gas	OK	OK
A.2.2. Is it explained how the proposed project activity reduces greenhouse gas emissions?	1,2,3 ,4	DR	See section A.2 PPD	OK	OK
<b>A.3. Project participants</b>					
A.3.1. Are project participants and Party(ies) involved in the project listed?	1,2,3	DR	Ukraine (Host Party): JSC «Odesagas»	OK	OK





## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	,4		Switzerland: Vema S.A.		



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.3.2. Are project participants authorized by a Party involved?	1,2,3 ,4	DR	See section A.3 PPD	OK	OK
A.3.3. The data of the project participants are presented in tabular format?	1,2,3 ,4	DR	See section A.3 PPD	OK	OK
A.3.4. Is contact information provided in annex 1 of the PDD?	1,2,3 ,4	DR	See section 1 PPD	OK	OK
A.3.5. Is it indicated, if it is the case, if the Party involved is a host Party?	1,2,3 ,4	DR	Ukraine (Host Party)	OK	OK
<b>A.4. Technical description of the project</b>					
<b>A.4.1. Location of the project activity</b>					
A.4.1.1. Host Party(ies)	1,2,3 ,4	DR	Ukraine	OK	OK
A.4.1.2. Region/State/Province etc.	1,2,3 ,4	DR	The project is located in Odesa region.	OK	OK
A.4.1.3. City/Town/Community etc.	1,2,3 ,4	DR	Odesa city and Odesa region	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)	1,2,3 ,4	DR	See section A.4 PPD.	OK	OK
<b>A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project</b>					
A.4.2.1. Does the project design engineering reflect current good practices?	1,2,3	DR	See section A.4.2 PPD	OK	OK
A.4.2.2. Does the project use state of the art	1,2,3	DR	See section A.4.2 PPD	OK	OK



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?					
A.4.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2,3	DR	During implementation of the project manufacturer and equipment used in detection and elimination of leaks can be replaced depending on appearance of more up-to-date and improved technologies and equipment at the market.	OK	OK
A.4.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1,2,3	DR	See section A.4.2 PPD	OK	OK
A.4.2.5. Does the project make provisions for meeting training and maintenance needs?	1,2,3	DR	See section A.4.2 PPD	OK	OK
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI 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.4.3.1. Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	1,2,3 ,4,5, 6	DR	See section A.2.2 PPD	OK	OK
A.4.3.2. Is it provided the estimation of emission reductions over the crediting period?	1,2,3 ,4	DR	Divide the table into the period before crediting 2005-2007, crediting period 2008-2012, and period after crediting 2013-2022. Give total amount and average amount for each period.	CAR1	OK



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.4.3.3. Is it provided the estimated annual reduction for the chosen credit period in tCO <sub>2</sub> e?	1,2,3 ,4	DR	Estimated annual reduction of emissions in the crediting period makes about 1990000 t CO <sub>2</sub> -equiv.	OK	OK
A.4.3.4. Are the data from questions A.4.3.2 to A.4.3.4 above presented in tabular format?	1,2,3 ,4	DR	It was not explained why the project will give reduction after the crediting period.	CAR2	OK
<b>A.5. Project approval by the Parties involved</b>					
A.5.1. Are written project approvals by the Parties involved attached?	1,2,3 ,4	DR	There is no evidence of written project approvals by the Parties involved. Pending until LoAs by Parties involved will be issued.	CAR3	OK
<b>B. Baseline</b>					
<b>B.1. Description and justification of the baseline chosen</b>					
B.1.1. Is the chosen baseline described?	1,2,3 ,4,6, 7	DR	See clause B.1 PPD. Appropriate arguments not provided.	CL1	OK
B.1.2. Is it justified the choice of the applicable baseline for the project category?	1,2,3 ,4,6, 7	DR	See clause B.1. PDD  See step 1. Differences from methodology AM0023 were not described.	CAR4	OK
B.1.3. Is it described how the methodology is applied in the context of the project?	1,2,3 ,4,6, 7	DR	See clause B.1 PDD	OK	OK
B.1.4. Are the basic assumptions of the baseline methodology in the context of the project activity presented (See Annex 2)?	1,2,3 ,4,5, 6	DR	See clause B.1 PDD	OK	OK



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.1.5. Is all literature and sources clearly referenced?	1,2,3 ,4	DR	Please, provide references to the source of information about annual amount of methane emissions.	CL2	OK
<b>B.2. Description of how the anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the JI project</b>					
B.2.1. Is the proposed project activity additional?	1,2,3 ,4,6, 7	DR	See section B.2 PPD  Cost of saved methane was not calculated. It is economic benefit.  Choice of Gore-Tex material and fittings manufacturers (if compared to other ones) was not explained.	CAR5  CAR6	OK  OK
B.2.2. Is the baseline scenario described?	1,2,3 ,4	DR	See section B.2 PDD	OK	OK
B.2.3. Is the project scenario described?	1,2,3 ,4	DR	See section B.1 and B.2 PDD	OK	OK
B.2.4. Is an analysis showing why the emissions in the baseline scenario would likely exceed the emissions in the project scenario included?	1,2,3 ,4,5	DR	See section A.2.2 above	OK	OK
B.2.5. Is it demonstrated that the project activity itself is not a likely baseline scenario?	1,2,3 ,4,6	DR	Is it stated that continuing operation is the most likely baseline scenario?	OK	OK
B.2.6. Are national policies and circumstances relevant to the baseline of the proposed project activity summarized?	1,2,3 ,4	DR	There are no other programs except for this Project and other projects implemented under the mechanism established in the	OK	OK



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			article 6 of Kyoto Protocol to UN Framework Convention On Climate Change, implemented in Ukraine for direct detection and elimination of natural gas leaks in gas distribution networks. The Project provides for using modern technologies and equipment for detection and measurement of natural gas leaks. This equipment and its use is rather new.		



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>B.3. Description of how the definition of the project boundary is applied to the project activity</b>					
B.3.1. Are the project's spatial (geographical) boundaries clearly defined?	1,2,3 ,4	DR	Please mark on the picture the objects of determination.	OK	OK
<b>B.4. Further baseline information, including the date of baseline setting and the name(s) of the person(s)/entity(ies) setting the baseline</b>					
B.4.1. Is the date of the baseline setting presented (in DD/MM/YYYY)?	1,2,3 ,4	DR	20/09/2005	OK	OK
B.4.2. Is the contact information provided?	1,2,3 ,4	DR	Names/titles of persons/organizations who determine baseline: <ul style="list-style-type: none"> <li>• ITI «Biotekhnika» UAAN</li> </ul> See Appendix 1 PPD	OK	OK
B.4.3. Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2,3 ,4	DR	See Appendix 1 PPD.	OK	OK
<b>C. Duration of the small-scale project and crediting period</b>					
<b>C.1. Starting date of the project</b>					
C.1.1. Is the project's starting date clearly defined?	1,2,3 ,4,5	DR	12/01/2005	OK	OK
<b>C.2. Expected operational lifetime of the project</b>					
C.2.1. Is the project's operational lifetime clearly defined in years and months?	1,2,3 ,4	DR	18 years/216 months	OK	OK



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>C.3. Length of the crediting period</b>					
C.3.1. Is the length of the crediting period specified in years and months?	1,2,3 ,4	DR	Please give all periods in years and months.	CAR7	OK
<b>D. Monitoring Plan</b>					
<b>D.1. Description of monitoring plan chosen</b>					
D.1.1. Is the monitoring plan defined?	1,2,3 ,4,6	DR	Add register of equipment of gas distribution posts as references.	CAR8	OK
D.1.2. Option 1 – Monitoring of the emissions in the project scenario and the baseline scenario.	1,2,3 ,4,7	DR	See section D.1 PDD	OK	OK
D.1.3. Data to be collected in order to monitor emissions from the project, and how these data will be archived.	1,2,3 ,4,7	DR	See section D.1.1.1 PDD	OK	OK
D.1.4. Description of the formulae used to estimate project emissions (for each gas, source etc,; emissions in units of CO2 equivalent).	1,2,3 ,4	DR	See section D.1.1.2 PDD	OK	OK
D.1.5. Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary, and how such data will be collected and archived.	1,2,3 ,4	DR	See section D.1.1.3 PDD. Please explain whether reduction of methane volume to standard conditions is provided for.	CL3	OK
D.1.6. Description of the formulae used to estimate baseline emissions (for each gas, source etc,; emissions in units of CO2 equivalent).	1,2,3 ,4,9, 11	DR	See section D.1.1.4 PDD	OK	OK
D.1.7. Option 2 – Direct monitoring of emissions reductions from the project (values should be	1,2,3	DR	N/A	OK	OK





## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
consistent with those in section E)	,4				
D.1.8. Data to be collected in order to monitor emission reductions from the project, and how these data will be archived.	1,2,3 ,4	DR	N/A	OK	OK
D.1.9. Description of the formulae used to calculate emission reductions from the project (for each gas, source etc,; emissions/emission reductions in units of CO2 equivalent).	1,2,3 ,4	DR	N/A	OK	OK
D.1.10. If applicable, please describe the data and information that will be collected in order to monitor leakage effects of the project.	1,2,3 ,4,6	DR	N/A	OK	OK
D.1.11. Description of the formulae used to estimate leakage (for each gas, source etc,; emissions in units of CO2 equivalent).	1,2,3 ,4	DR	Methodology AM0023 does not provide for leaks..	OK	OK
D.1.12. Description of the formulae used to estimate emission reductions for the project (for each gas, source etc,; emissions in units of CO2 equivalent).	1,2,3 ,4	DR	See section D.1.4 PDD	OK	OK
D.1.13. Is information on the collection and archiving of information on the environmental impacts of the project provided?	1,2,3 ,4	DR, I	Information about information collection and archiving on environmental impacts of the project was not provided (See section D.1.5 PDD).	CAR9	OK
D.1.14. Is reference to the relevant host Party regulation(s) provided?	1,2,3 ,4	DR, I	Please provide references to appropriate direction(-s) of host party.	CL4	OK
D.1.15. If not applicable, is it stated so?	1,2,3	DR, I	Reference to section D.1.14 (CL4) above	-	-



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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	,4				



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>D.2. Qualitative control (QC) and quality assurance (QA) procedures undertaken for data monitored</b>					
D.2.1. Are there quality control and quality assurance procedures to be used in the monitoring of the measured data established?	1,2,3 ,4	DR	See section D.2 PDD.	OK	OK
<b>D.3. Please describe of the operational and management structure that the project operator will apply in implementing the monitoring plan</b>					
D.3.1. Is it described briefly the operational and management structure that the project participants(s) will implement in order to monitor emission reduction and any leakage effects generated by the project activity	1,2,3 ,4	DR	See section D.3 PDD.  Diagram of data and information flow was not displayed.	CAR10	OK
<b>D.4. Name of person(s)/entity(ies) establishing the monitoring plan</b>					
D.4.1. Is the contact information provided?	1,2,3 ,4	DR	JSC «Odesagas» ITI Biotekhnika UAAN See Appendix 1 PPD.	OK	OK
D.4.2. Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2,3 ,4	DR	See Appendix 1 PPD.	OK	OK
<b>E. Estimation of greenhouse gases emission reductions</b>					
<b>E.1. Estimated project emissions</b>					



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
E.1.1. Are described the formulae used to estimate anthropogenic emissions by source of GHGs due the project?	1,2,3 ,4,7	DR	See section D.1.1.2 PDD.  Please explain how information submitted in this section is agreed with the table at the page 9 PDD.	CL5	OK
E.1.2. Is there a description of calculation of GHG project emissions in accordance with the formula specified in for the applicable project category?	1,2,3 ,4,7	DR	See section D.1.1.2 PDD.	OK	OK
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	1,2,3 ,4	DR	See section D.1.1.2 PDD.	OK	OK
<b>E.2. Estimated leakage</b>					
E.2.1. Are described the formulae used to estimate leakage due to the project activity where required?	1,2,3 ,4,7	DR	Leak is not expected.	OK	OK
E.2.2. Is there a description of calculation of leakage in accordance with the formula specified in for the applicable project category?	1,2,3 ,4	DR	See E.2.1 above.	-	-
E.2.3. Have conservative assumptions been used to calculate leakage?	1,2,3 ,4,7	DR	See E.2.1 above.	-	-
<b>E.3. The sum of E.1 and E.2.</b>					
E.3.1. Does the sum of E.1 and E.2 represent the project activity emissions?	1,2,3 ,4	DR	See section E.3 PDD.  Submit the data received in section E.3. in	CL6	OK



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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			the form of a table.		



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>E.4. Estimated baseline emissions</b>					
E.4.1. Are described the formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category?	1,2,3 ,4	DR	See D.1.1.4 and E.4 PDD.  Submit the data received in section E.4. in the form of a table.	CL7	OK
E.4.2. Is there a description of calculation of GHG baseline emissions in accordance with the formula specified in for the applicable project category?	1,2,3 ,4,10	DR	See D.1.1.4 and E.4 PDD.	OK	OK
E.4.3. Have conservative assumptions been used to calculate baseline GHG emissions?	1,2,3 ,4	DR	See D.1.1.4 and E.4 PDD.	OK	OK
<b>E.5. Difference between E.4. and E.3. representing the emission reductions of the project</b>					
E.5.1. Does the difference between E.4. and E.3. represent the emission reductions due to the project during a given period?	1,2,3 ,4	DR	See E.5 PDD.  It is necessary to match received data with the data in table at page 9.	CL8	OK
<b>E.6. Table providing values obtained when applying formulae above</b>					
E.6.1. Is there a table providing values of total CO <sub>2</sub> abated?	1,2,3 ,4	DR	Table is given in the section E.6 PDD.  Section E does not give a formula for evaluation of emissions.	CL9	OK



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>F. Environmental Impacts</b>					
<b>F.1. Documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party</b>					
F.1.1. Has an analysis of the environmental impacts of the project been sufficiently described?	1,2,3 ,4	DR, I	There is a hazard of explosion and fire, which also carries negative environmental impact. To be discussed.	CAR11	OK
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is and EIA approved?	1,2,3 ,4	DR, I	Please, clarify if are any requirements for an Environmental Impact Assessment (EIA)?	CL10	OK
F.1.3. Are the requirements of the National Focal Point being met?	1,2,3 ,4	DR, I	An authorized national body issued a letter of approval.	OK	OK
F.1.4. Will the project create any adverse environmental effects?	1,2,3 ,4	DR, I	Adverse environmental effects are not expected.	OK	OK
F.1.5. Are transboundary environmental considered in the analysis?	1,2,3 ,4	DR, I	Transboundary effects are not considered (no effect can be deduced only). Please, explain why the project has no transboundary impact.	CAR12	OK
F.1.6. Have identified environmental impacts been addressed in the project design?	1,2,3 ,4	DR, I	See section F of the PDD. Adverse environmental effects are not expected.	OK	OK
<b>G. Stakeholders' comments</b>					
<b>G.1. Information on stakeholders' comments</b>					



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>on the project, as appropriate</b>					
G.1.1. Is there a list of stakeholders from whom comments on the project have been received?	1,2,3 ,4,8	DR	Section G.1 of PDD	OK	OK
G.1.2. The nature of comments is provided?	1,2,3 ,4	DR	Section G.1 of PDD	OK	OK
G.1.3. Has due account been taken of any stakeholder comments received?	1,2,3 ,4	DR	A summary of project has been submitted to Kramatorsk City Council at the stage of the PDD development. The response of the City Council is attached in Annex 4 of the PDD.	OK	OK



## DETERMINATION REPORT

Table 3 Baseline and Monitoring Methodologies: Own format

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>1. Baseline Methodology</b>					
<b>1. 1. General</b>					
1.1.1. Does the baseline cover emissions from all gases, sectors and source categories listed in Annex A, and anthropogenic removals by sinks, within the project boundary?	1,2,3	DR,I	Section B.3 of the PDD establishes project boundaries. Only CH <sub>4</sub> emissions are taken into account by the project.	OK	OK
1.1.2. Is baseline established on a project-specific basis and/or using a multi-project emission factor?	1,2,3	DR, I	A multi-project emission factor is used for baseline establishing.	OK	OK
1.1.3 Is baseline established in a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data sources and key factors?	1,2,3	DR, I	See clauses B.1.1 (CL1), B.1.2 (CAR4), B.1.5 (CL2) above	-	-
1.1.4 Is baseline established taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector?	1,2,3	DR	Applicable local laws and regulations are taken into account. Economic situation in the project sector is taken into account (Sections B.1. and B.2. of the PDD)	OK	OK
1.1.5 Is baseline established in such a way that ERUs cannot be earned for decreases in activity levels outside the project activity or due to <i>force majeure</i> ?	1,2,3	DR, I	Baseline does not envisage earning ERUs for activity level decrease outside the project or due to <i>force majeure</i> .	OK	OK
1.1.6 Is baseline established taking account of uncertainties and using conservative assumptions?	1,2,3	DR, I	See items E.1.3 (CL13) above	-	-



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>1.2. Additionality</b>					
1.2.1. Was the additionality of the project activity demonstrated and assessed?	1,2,3	DR	See section B.2.1 above.	-	-
<b>2. Monitoring Methodology</b>					
<b>2.1. Monitoring plan</b>					
2.1.1. Is a monitoring plan included?	1,2,3	DR, I	Yes, monitoring plan is included.	OK	OK
2.1.2. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimating or measuring anthropogenic emissions by sources and/or anthropogenic removals by sinks of greenhouse gases occurring within the project boundary during the crediting period?	1,2,3	DR, I	Refer to section D.1.1.1 of PDD	OK	OK
2.1.3. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining the baseline of anthropogenic emissions by sources and/or anthropogenic removals by sinks of greenhouse gases within the project boundary during the crediting period?	1,2,3	DR, I	Refer to section D.1.1.3 of PDD	OK	OK
2.1.4. Does the monitoring plan provide for the identification of all potential sources of, and the collection and archiving of data on increased anthropogenic emissions by sources and/or reduced anthropogenic removals by sinks of greenhouse gases outside the project boundary that are significant and reasonably attributable to the project during the crediting period?	1,2,3	DR	Increase of anthropogenic emissions outside the project boundary that are significant and reasonably attributable to the project during the crediting period is not anticipated.	OK	OK
2.1.5. Does the project boundary encompass all	1,2,3	DR	Significant anthropogenic emissions by sources	OK	OK



## DETERMINATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
anthropogenic emissions by sources and/or removals by sinks of greenhouse gases under the control of the project participants that are significant and reasonably attributable to the JI project?			and/or removals by sinks of greenhouse gases under the control of the project participants are not envisaged by the project. Validated onsite.		
2.1.6. Does the monitoring plan provide for the collection and archiving of information on environmental impacts, in accordance with procedures as required by the host Party, where applicable?	1,2,3	DR	No adverse environmental impacts are foreseen. Validated onsite.	OK	OK
2.1.7. Does the monitoring plan provide for quality assurance and control procedures for the monitoring process?	1,2,3	DR	See section D.2 table 12 of the PDD	OK	OK
2.1.8. Does the monitoring plan provide for procedures for the periodic calculation of the reductions of anthropogenic emissions by sources and/or enhancements of anthropogenic removals by sinks by the proposed JI project, and for leakage effects, if any?	1,2,3	DR, I	The monitoring plan provides formulae for the periodic calculation of the reductions of anthropogenic emissions (see section D.1.1.2.). Leakage is not applicable.	OK	OK
2.1.9. Does the monitoring plan provide for documentation of all steps involved in the calculations?	1,2,3	DR I	The monitoring plan provide for documentation of all steps involved in the calculations. See section D.	OK	OK
<b>2.2. Quality Control (QC) and Quality Assurance (QA) Procedures</b>					
2.2.1. Did all measurements use calibrated measurement equipment that is regularly checked for its functioning?	1,2,3	DR, I	Control of the measuring equipment is implemented and followed, that was validated onsite.	OK	OK
2.2.2 Is frequency of monitoring the parameters defined?	1,2,3	DR, I	Frequency of monitoring the parameters is defined.	OK	OK

## DETERMINATION REPORT

Table 4 Legal requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>1. Legal requirements</b>					
1.1. Is the project activity environmentally licensed by the competent authority?	1,2,3	DR, I	Please clarify in PDD if the project activity environmentally is licensed by the competent authority.	CL11	OK
1.2. Are there conditions of the environmental permit? In case of yes, are they already being met?	1,2,3	DR, I	Please clarify in PDD, if there are conditions for ecologic permission.	CL12	OK
1.3. Is the project in line with relevant legislation and plans in the host country?	1,2,3	DR, I	See items 1.1 (CL11) and 1.2 (CL12) above	-	-

## DETERMINATION REPORT

**Table 5 Resolution of Corrective Action and Clarification Requests**

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
<b>Corrective Action Request 1 (CAR1):</b> Divide the table into the period before crediting 2005-2007, crediting period 2008-2012, and period after crediting 2013-2022. Give total amount and average amount for each period.	Table 2, questions A.4.3.2	Respective corrections have been added to PDD Revision 06 (See section A.4.3.1)	PDD Revision 06 has been checked. Corrective Action Request is closed.
<b>Corrective Action Request 2 (CAR2):</b> It is not explained why the project will give reductions after the crediting period	Table 2, questions A.4.30.4	Operation of the system of leakage detection and elimination, and further maintenance of tightness of equipment created under the Project does not have any time limitation. Therefore the Project will give reductions of methane emissions after termination of crediting period. See PDD Revision 06, section A.4.3.1.	PDD Revision 06 has been checked. Corrective Action Request is closed.
<b>Corrective Action Request 3 (CAR3):</b> There is no evidence of written project approvals by the Parties involved Remains unsolved by the time of issuance of letters of approval by the Parties involved	Table 2, question A.5.1.	Letter of Approval #1566/23/7 was issued by the National Environmental Investments Agency of Ukraine from 25 <sup>th</sup> of December 2009. The Letter of Approval from the Ministry of Climate and Energy Danish Energy Agency #1602/1102-0023 was issued 21 <sup>st</sup> of December 2009	Corrective Action Request is closed.

## DETERMINATION REPORT

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
<p><b><u>Corrective Action Request 4 (CAR4):</u></b> See step 1. Differences from methodology AM0023 were not described</p>	Table 2, question B0.1.2.	The difference of suggested methodology from original methodology AM0023 lies in the methodology of methane leakage volumes. Measurement method for methane leak volumes, used in this Project, is described in Step 3 and Appendix 3 of this PDD. See PDD Revision 06, section B.1.	PDD Revision 06 has been checked. Corrective Action Request is closed.
<p><b><u>Corrective Action Request 5 (CAR5):</u></b> The cost of saved methane was not calculated. It is economic benefit.</p>	Table 2, question B0.20.1.	Currently available Procedure for Rates Formation approved by the National Commission For Energy Market Adjustment does not allow receiving benefits in case of reduction of natural gas leaks. The whole economic burden is connected with natural gas leaks is transferred to the end consumer of natural gas. See PDD Revision 06, section B.2.	Corrective Action Request is closed.
<p><b><u>Corrective Action Request 6 (CAR6):</u></b> Choice of Gore-Tex and fittings manufacturers (if compared to other ones) is not grounded</p>	Table 2, question B.2.1.	Materials and shut-off and adjustment fittings used in this Project are the best ones from the point of view of leak tightness, performance quality and used technical solutions, out of all materials represented at the Ukrainian market. Important characteristics considered in choice	Corrective Action Request is closed.

## DETERMINATION REPORT

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
		of equipment were availability of spare parts in Ukraine.	
<b><u>Corrective Action Request 7 (CAR7):</u></b> Submit all periods in years and months	Table 2, question C.3.1.	18 years/216 months	PDD Revision 06 has been checked. Corrective Action Request is closed.
<b><u>Corrective Action Request 8 (CAR8):</u></b> Add Register of Equipment of gas distribution posts as references	Table 2, question D.1.1.	Register of Equipment of Gas Distribution Posts is given in Appendix C	Appendix C has been verified. Corrective Action Request is closed.
<b><u>Corrective Action Request 9 (CAR9):</u></b> Information about information collection and archiving on environmental impacts of the project was not provided (See section D.1.5. PDD)	Table 2, question D.1.13.	Implementation of this Project does not provide for any negative environmental impact (See section F). Therefore data collection on environmental impacts of the Project is not required. There are no laws or normative documents in Ukraine requiring collection of such information. See PDD Revision 06, section D.1.5.	PDD Revision 06 has been checked. Corrective Action Request is closed.
<b><u>Corrective Action Request 10 (CAR10):</u></b> Diagram of data and information flow was not displayed	Table 2, question D.3.1.	Sergiy Oleksandrovych Stryzhak and Lyudmyla Andriyivna Kulbida are responsible for collection of all information provided for by monitoring plan, and for making all necessary settlements. Archiving of all received information in the result of measurements and settlements is done under guidance of Kateryna Sergiyivna Burova. The head of working team (Nataliya Genadiyivna Orlova) on the basis of received information	PDD Revision 06 has been checked. Corrective Action Request is closed.

## DETERMINATION REPORT

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
		determines plan of measures under the Project and scope of resources required. Technical maintenance of the Project is carried out by Dmytro Moyseyovych Oks and Yevgen Viktorovych Kurkin.	
<b><u>Corrective Action Request 11 (CAR11):</u></b> There is a hazard of explosion and fire, which also carries negative environmental impact. To be discussed.	Table 2, question F.1.1.	Implementation of this project will allow increasing safe operation of gas equipment, which in its turn will reduce probability of explosions or fires. Experience of OJSC «Odesagas» employees and observance of SRUGCO norms will allow reduction to minimum of the probability of emergencies during the project implementation.	PDD Revision 06 has been checked. Corrective Action Request is closed.
<b><u>Corrective Action Request 12 (CAR12):</u></b> Transboundary effects are not considered (no effect can be deduced only). Please, explain why the project has no transboundary impact	Table 2, question F.1.5.	Transboundary effects from project activity according to their definition in the text of the Convention on Transboundary Pollution At Big Distances ratified by Ukraine will not take place.	PDD Revision 06 has been checked. Corrective Action Request is closed.
<b><u>Clarification Request 1 (CL1):</u></b> Appropriate arguments were not submitted	Table 2, question B.1.1.	Appropriate arguments are given in clause B.2 of PDD Revision 06.	PDD Revision 06 has been checked. CL was closed.
<b><u>Clarification Request 2 (CL2):</u></b> Please give references to the source of information on annual amount of methane emissions	Table 2, question B.1.5.	Information on evaluation of annual emissions is given in Appendix B.	Appendix B has been verified. CL was closed.
<b><u>Clarification Request 3 (CL3):</u></b>	Table 2,	Formula for reduction of methane leak volume	PDD Revision 06 has been



## DETERMINATION REPORT

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
Please explain whether reduction of methane volumes to standard conditions is provided for	question D.1.5.	is given in Appendix 3 PDD Rev.06	checked. CL was closed.
<b>Clarification Request 4 (CL4):</b> Please give references to respective directions of Host Party	Table 2, question D.1.14.	There are no laws or norms in Ukraine regulating ecologic impact of such project on environment.	PDD Revision 06 has been checked. CL was closed.
<b>Clarification Request 5 (CL5):</b> Please explain how information given in this section is agreed with the table at the page 9 of PDD	Table 2, question E.1.1.	Respective adjustments and specifications were made to PDD Revision 06 (See section E.6.)	PDD Revision 06 has been checked. CL was closed.
<b>Clarification Request 6 (CL6):</b> Please give data received in section E.3. in the form of a table	Table 2, question E.3.1.	Received data are given in table 5 of section E.6.	PDD Revision 06 has been checked. CL was closed.
<b>Clarification Request 7 (CL7):</b> Please give data received in section E.4. in the form of a table	Table 2, question E.4.1.	Received data are given in table 5 of section E.6.	PDD Revision 06 has been checked. CL was closed.
<b>Clarification Request 8 (CL8):</b> It is necessary to agree data with the table data on page 9	Table 2, question E.5.1.	Respective corrections have been made. See PDD Revision 06	PDD Revision 06 has been checked. CL was closed.
<b>Clarification Request 9 (CL9):</b> Section E does not contain a formula for evaluation of emissions	Table 2, question E.6.1.	All formulae used for evaluation of emissions reductions are given in section D. References to respective clauses are given (See section E)	PDD Revision 06 has been checked. CL was closed.
<b>Clarification Request 10 (CL10):</b> Please clarify if there are no requirements to	Table 2, question	Natural gas pumping does not require any ecologic permits or licenses	CL was closed.



## DETERMINATION REPORT

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
environmental impact assessment (EIA)	F.1.2.		
<b>Clarification Request 11 (CL11):</b> Please clarify if project activity is licensed by respective environmental body.	Table 4, question 1.1. from control list	Natural gas pumping does not require any ecologic permits or licenses	CL was closed.
<b>Clarification Request 12 (CL12):</b> Please explain in PDD if there are any requirements for ecologic permission	Table 4, question 1.2. from control list	Natural gas pumping does not require any ecologic permits or licenses	CL was closed.



## Appendix B: Verifiers CV's

**Flavio Gomes**

Lead Verifier

Flavio Gomes is a Chemical and Safety Engineer graduated from «UNICAMP – Universidade Estadual de Campinas», with a MSc title in Civil Engineer (Sanitation). He spent four years at RIPASA Pulp and Paper as Environmental Process Engineer. He is, since 2006 the Global Manager for Climate Change. Previously and since 1997, he was senior consultant for Bureau Veritas Consulting in fields of Environment, Health, Safety, Social Accountability and Sustainability audit and management systems. He also acted as Clean Development Mechanism verifier, and Social/Environmental Report auditor, in the name of Bureau Veritas Certification. Flavio is pursuing this PhD on Energy Management at the Imperial College – London.

**Nadiya Kaiiun, M. Sci. (environmental science)**

Climate Change Lead Verifier

Bureau Veritas Ukraine HSE Department project manager.

She has graduated from National University of Kyiv-Mohyla Academy with the Master Degree in Environmental Science. She is a Lead auditor of Bureau Veritas Certification for Environment Management System (IRCA registered). She performed over 15 audits since 2008. She has undergone intensive training on Clean Development Mechanism /Joint Implementation and she is involved in the validation of 6 JI projects.

**Kateryna Zinevych, M. Sci. (environmental science)**

Climate Change Verifier

Bureau Veritas Ukraine HSE Department project manager.

She has graduated from National University of Kyiv-Mohyla Academy with the Master Degree in Environmental Science. She is a Lead auditor of Bureau Veritas Certification for Environment Management System (IRCA registered). She performed 6 audits since March of 2009. She has undergone intensive training on Clean Development Mechanism /Joint Implementation and she is involved in the validation of 3 JI projects.

Report was reviewed by:

**Ivan G. Sokolov, Dr. Sci. (biology, microbiology)**

Climate Change Lead Verifier.

Bureau Veritas Ukraine HSE Department manager.

He has over 25 years of experience in Research Institute in the field of biochemistry, biotechnology, and microbiology. He is a Lead auditor of Bureau Veritas Certification for Environment Management System (IRCA registered), Quality Management System (IRCA registered), Occupational Health and Safety Management System, and Food Safety Management System. He performed over 130 audits since 1999. Also he is Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and Lead Tutor of the IRCA registered ISO 9000 QMS Lead Auditor Training Course. He has undergone intensive



training on Clean Development Mechanism /Joint Implementation and he is involved in the validation of 3 JI projects.