DETERMINATION REPORT OJSC «ODESAGAS»

DETERMINATION OF THE "REDUCTION OF METHANE EMISSIONS AT FLANGED, THREADED JOINTS AND SHUT-DOWN DEVICES OF OJSC "ODESAGAS" EQUIPMENT"

REPORT NO. UKRAINE-0118/2010

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BUREAU VERITAS CERTIFICATION

DETERMINATION REPORT

Date of first issue:	Organizational unit:
15/05/2010	Bureau Veritas Certification Holding SAS
Client:	Client ref.:
OJSC “Odesagas”	Vitaliy Gerasimenko

Summary:
Bureau Veritas Certification has made the determination of the “Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC “Odesagas” Equipment” project of OJSC “Odesagas” located in Odesa and Odesa 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 12 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Executive Board, 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 AM0023 “Reduction of natural gas leakage at compressor or measurement gas line stations” version 03 and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.
On behalf of determination team Flavio Gomes, Bureau Veritas Certification Holding SAS Global Product Manager for Climate Change, approved final version of the Determination Report. Determination Report is signed by Ivan Sokolov authorized Bureau Veritas Certification Holding SAS Local product manager for Climate Change in Ukraine.

Report No.:	Subject Group:
UKRAINE-/0118/2010	JI
Project title: “Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC “Odesagas” Equipment”	
Work carried out by: Flavio Gomes – Team Leader, Lead Verifier Kateryna Zinevych – Team member, Verifier Oleg Skoblyk – Team member, Verifier	
Work verified by: Ivan Sokolov – Internal Technical Reviewer	

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18/04/2011	02	47

Indexing terms

Climate Change, Kyoto Protocol, JI, Emission Reduction, Determination

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Abbreviations

CAR	Corrective Action Request
CGDP	Cabinet Gas Distribution Post
CL	Clarification Request
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CH_4	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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1 INTRODUCTION

OJSC «Odesagas» has commissioned Bureau Veritas Certification to determinate the JI project “Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC “Odesagas” Equipment”.

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» manages 26 district gas distribution networks and infrastructures located at Odesa region and one in Odesa city implementing transportation and supply of natural gas to industries and households. Total length of distribution gas pipeline of high (12Mpa – 0,6 Mpa), middle (0,3 Mpa) and low (0,005 Mpa) pressure is 4579 km. 2625 km is at property of OJSC “Odesagas”. Average annual of transported gas reaches 2861718 thou. M3. The existing structure of gas transportation tariffs doesn’t consider amortization and development needs of gas companies. They suffer from lack of funds required for gas network repairs and upgrading, procurement of equipment,

spear parts and materials resulting in increase of gas leaks at OJSC «Odesagas» facilities.

Motivated by the Regulations on gas network safe operation in Ukraine based primarily on safety concerns, at the beginning of project in the year 2005 OJSC “Odesagas” just detects leaks using detectors with the purpose to avoid emergency and explosions. Measurement of leaks is not required, and measurement instruments are not available. Theoretical calculations of emission volume based on executed measurements of methane losses as a result of leakage at shutters and flanges’ connections for OJSC «Odesagas» are equal as 41 mln. m3 of estimate leaks per annum.

The project objective is reduction of natural gas (methane) leaks as a result of leakage at flanged, threaded joints and shut-down devices of OJSC “Odesagas” equipment in quantity of 11174. Within project scope, advanced sealant materials will be applied for repair of identified leaks to replace the current practice of maintenance and repair of networks, namely using rubberized asbestos fabric gaskets and cotton fiber stuffing with oil tightening with asbestos-graphite compound resulting in increased leaks and methane emissions into the atmosphere. In addition to reducing emissions, project reduces natural gas losses (therefore, financial losses) producing environmental benefits and contributing to safety requirements, and will reduce emergency risk, especially applied for household gas regulators and street surface facilities.

The project activity will involve:

- Introduction and use of directed inspection and maintenance (DI&M) at flanged, threaded joints and shut-down devices of OJSC “Odesagas” as the most advanced and efficient practice allowing both leak detection and measurement (i.e. quantification of gas losses) as a tool for justification efficient repairs and prioritization of leaks to be repaired as this is important at shortage of funds. This includes procurement of advanced leak detection and measurement equipment, training of staff, development of monitoring map for each gas station and gas distribution network, specifying list of equipment components to be examined on regular basis, , establishment of data-base for leak data collection and storage, and internal auditing and QA/QS system to eliminate and register methane leaks.

- Leak detection and measurement: leakage monitoring system at flanged, threaded joints and shut-down devices of OJSC “Odesagas” including eliminated leaks (repaired equipment components) will be implemented on a scheduled (once in four days or once a week – subject to equipment type; once for the year for equipment of apartments and houses) basis by specially trained staff. Each component will be surveyed, identified leaks will be tagged and their amounts will be measured and recorded in the database.

- Repair of all identified leaks: repairs of the equipment with leaks within the scope of this project will range from tightening of block valves and flanges, use of advanced sealants and stuffing to major overhaul and replacement of pressure regulators safety valves and piston rods. Repairs will be regularly surveyed as component of standard monitoring program (see above) to ensure they are not leak sources.

Project duration is not limited since the DI&M and monitoring programmes are aimed to become an integrated part of OJSC «Odesagas» production and business practices.

CO2e emission reductions will be claimed for period 22 years as per modalities and procedures of Joint Implementation Mechanism.

1.4 Determination Group

The determination team consists of the following personnel:

Flavio Gomes
Bureau Veritas Certification Team leader, Climate Change Lead Verifier

Kateryna Zinevych -
Bureau Veritas Certification Team member, Climate Change Verifier

Oleg Skoblyk -
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

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 **Corrective Action Request (CAR)** or a **Clarification Request (CL)** 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 sub-divided. 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 **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** 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 sub-divided. 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 **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** is used when the determination team has identified a need for further clarification.

Determination Protocol Table 4: Legal requirements				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
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 **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** is used when the determination team has identified a need for further clarification.

Determination Protocol Table 5: Resolution of Corrective Action and Clarification Requests			
Report clarifications and corrective action requests	**Ref. to checklist question in tables 1/2/3/4**	**Summary of project owner response**	**Determination conclusion**
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 06) submitted by OJSC «Odesagas» 17/03/2010 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 30/04/2010, version 07.

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

The determination findings presented in this report relate to the project as described in the PDD, revision 06.

2.2 Follow-Up Interviews

On 15/04/2010 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»	➢ Organizational structure. ➢ Responsibilities and authorities. ➢ Training of personnel. ➢ Quality management procedures and technology. ➢ Rehabilitation /Implementation of equipment (records). ➢ Metering equipment control. ➢ Metering record keeping system, database.
ITI Biotekhnika UAAN.	➢ Baseline methodology. ➢ Monitoring plan. ➢ Monitoring report. ➢ Deviations from PDD.

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.

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 (22 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, CAR4, CAR5, CAR6, CAR7, CAR8).

3.2 Baseline and Additionality

To measure and to calculate natural gas leaks there is an approved methodology under Clean Development Mechanism AM0023 Reduction of Natural Gas Emissions at Compressor or Measurement Stations of Gas Lines (http://cdm.unfccc.int).

Methodology 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.

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. 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 38 million m^3 per year.

According to the results of international experience and data received from the regions where this material has been already applied, modern sealing materils shall significantly reduce leak volumes at the gland-sealed shutters.

Moreover, because of the lack of up-to-date equipment for detection and measurement of leak volume, it is supposed that an effective program for detection and elimination of leaks could not be applied in the absence of the project. The Companies which were mainly motivated by the safety condition and could only detect the fact of leakage itself, but could not measure its volume.
In other words, we want to say the system for detection and elimination of leaks was not able to eliminate 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 related to the baseline and additionality are given in Table 5 below (See CAR9, CAR10).

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.

The adopted monitoring methodology has been chosen based on the following reasons:

- After detection and measurement of leakage at shut-off stations a detailed monitoring program will be developed for each flanged, threaded joints and shut-down devices.
- Monitoring will include emissions from newly detected leakage sources and control of already repaired equipment, where gas leakage was detected before.
- Under the JI project the group of OJSC Odesagas executed a Register of Gas Equipment (See Appendix C), which includes full information about all flanged, threaded joints and shut-down devices (shatters, valves) of the Project, and which is regularly updated upon reconstruction.

Outstanding questions connected with monitoring plan are given in Table 5 below (See CAR11, CAR12, CAR13, CL1).

3.4 Calculation of GHG Emissions

As per AM0023 ver.03, the baseline emission sources considered are inserted as appropriate.

As required under AM0023, the baseline emissions are calculated by Using the measurement method for leakage volume with the help of leak proof capacity, volume of methane leakage from one equipment can be calculated by the formula:

$FCH4,iB = Vbag * wsampleCH4,i * 3600 / ti$

Where:
$FCH4,P$ = Methane leakage through leak point i through leakage element before reconstruction (m^3/h);
$Vbag$ = Volume of leak proof tank for measurement (m^3);
$wsampleCH4,i$ = Concentration of methane in the leak sample i which is the difference of concentrations in the beginning and in the end of measurement (%);
ti = Average time of filling in the tank for leakage i after reconstruction (seconds)

Annual methane leakage is calculated by the formula:

$QyB = ConvFactor * \Sigma[FCH4B * Ti,y * 0.95] * GWPCH4 * 0.9$

Where:
QyP = Methane emissions for the period y, for equipment before reconstruction (tCO2equivalents).
ConvFactor = $м^3CH4$ -tCH4 conversion ratio at the standard temperatures and pressure (0 C and 101.3 kPa) it makes 0.0007168 $tCH4/м^3CH4$
URi = Factor taking into account uncertainty of measurement method;
Ti,y = Time (in hours) for respective component i, during which it worked during the period of consideration (monitoring period) y, taking into

account the methodology given above (e.g., deduction for non-accounted leaks)
GWPCH4 = Methane Global Warming Potential (21 tCO2eq/tCH4)
{} 0.9= Equipment Error Factor.
The detailed algorithms are described later under sections D.1.1.4 of the PDD.

As described in AM0023, the project emissions result due to Using the measurement method for leakage volume with the help of leak proof capacity, volume of methane leakage from one piece of equipment can be calculated by the formula:

FCH4,iP = Vbag * wsampleCH4,i * 3600 / ti

Where:
FCH4,P = Methane leakage through leak point i through leakage element after reconstruction (m³/h);
Vbag = Volume of leakproof tank for measurement (m³);
wsampleCH4,i = Concentration of methane in the leak sample i which is the difference of concentrations in the beginning and in the end of measurement (%);
ti = Average time of filling in the tank for leakage i after reconstruction (seconds)

Annual methane leakage is calculated by the formula:

QyP = ConvFactor *Σ[FCH4P * Ti,y * 0.95]*GWPCH4*0.9

Where:
QyP = Methane emissions for the period y, for equipment which passed reconstruction (tCO2equivalents).
ConvFactor = м³CH4 -tCH4 conversion ratio at the standard temperatures and pressure (0 C and 101.3 kPa) it makes 0.0007168 tCH4/м³CH4
URi = Factor taking into account uncertainty of measurement method;
Ti,y = Time (in hours) for respective component i, during which it worked during the period of consideration (monitoring period) y, taking into account the methodology given above (e.g., deduction for non-accounted leaks)
GWPCH4 = Methane Global Warming Potential (21 tCO2eq/tCH4)
{} 0.9= Equipment Error Factor.
With reference to this methodology, project does not lead to any leakage.

The estimated annual average of approximately 664390 tCO2e over the crediting period of emission reduction represents a reasonable estimation using the assumptions given by the project.
No outstanding issues were raised.

3.5 Environmental impacts

According to Ukrainian environmental norms natural gas emissions into the air are not considered polluting. Therefore no ecological permissions 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 SRUGCO norms will allow reduction to minimum of the probability of emergencies during the project implementation.

Transboundary effects from project activity according to their definition in the text of the Convention on Transboundary Pollution At Big Distances ratified by Ukraine are not supposed to take place.

Implementation of the Project does not provide for any harmful environmental impacts. No outstanding issues were raised.

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.ua) on 15/04/2010 and invited comments within 16/05/2010 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 Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC “Odesagas” Equipment” 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 analysis of investment and other barriers to determine that the project activity itself is not the baseline scenario.

By reduction of methane emissions at flanged, threaded joints and shut-down devices of OJSC "Odesagas" equipment the project is likely to result in reductions of GHG emissions. 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 (07) 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 Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment", Revision 06, 17/03/2010.
2 PPD "Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment", Revision 07, 30/04/2010.
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 Ukaine 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.

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/1/. Contract with ITI Biotekhnika UAAN.
/2/. An Order on Working Team creation
/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/. Certificate of state metrological certification mercury temperature meter of glass type ТЛ4, year 2005
/12/. Certificate of state metrological certification mercury temperature meter of glass type ТЛ4, year 2006
/13/. Certificate of state metrological certification mercury temperature meter of glass type ТЛ4, year 2007
/14/. Certificate of state metrological certification mercury temperature meter of glass type ТЛ4, year 2008
/15/. Certificate of state metrological certification mercury temperature meter of glass type ТЛ4, year 2009
/16/. Certificate of state metrological certification manometer Д-59Н-100-1.0 6 кПа, year 2005
/17/. Certificate of state metrological certification manometer Д-59Н-100-1.0 6 кПа, year 2006
/18/. Certificate of state metrological certification manometer Д-59Н-100-1.0 6 кПа, year 2007
/19/. Certificate of state metrological certification manometer Д-59Н-100-1.0 6 кПа, year 2008
/20/. Certificate of state metrological certification manometer Д-59Н-100-1.0 6 кПа, year 2009
/21/. Passport of gas analyzer EX-TEC® SR5.
/22/. Photos of gas analyzer EX-TEC® SR5.
/23/. Photos of measurement taken at the shut-down device at Odesa, 6th km of the Oviopolska road, № 5166, code 00-0414
/24/. Photos of measurement taken at the flanged joint at Odesa, Khimichesky blvrd, 78, № 5576, code 00-0811
/25/. Passport of mercury temperature meter of glass type ТЛ4
/26/. Passport of manometer Д-59Н-100-1.0 6 кПа
/27/. Passport of timer «СОС пр-2б-2»

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/ Yakiv Zatynaiko – lead engineer OJSC «Odesagas»

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/2/ Natalya Orlova – chief of production and technical department OJSC «Odesagas»

/3/ Sergiy Stryzhak – chief of department OJSC «Odesagas»

/4/ Dmytro Oks – chief of production and technical department OJSC «Odesagas»

/5/ Lyudmila Kulbida – engineer OJSC «Odesagas»

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APPENDIX A: DETERMINATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

Report No. Ukraine-0062/2009 rev. 01

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 CAR8. 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.

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		National Environmental Investment Agency of Ukraine 35, Urytskogo str., Ukraine Email: info.neia@gmail.com **Mr. Sergiy Orlenko** Head National Environmental Investment Agency of Ukraine Phone: +380445949111 Fax: +380445949115 Email: slorlenko@gmail.com Ministry of Climate and Energy Danish Energy Agency Amaliegade 44 DK-1256 Copenhagen K, Denmark Mr. Karim Arfaoui (kar@ens.dk) Phone: (45-33) 92 6700/6777 Fax: (45-33) 11 4743	
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur	Kyoto Protocol Article 6.1 (b)	OK	Table 2, Section B
3. The sponsor Party shall not acquire emission reduction units if it	Kyoto Protocol	OK	

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
is not in compliance with its obligations under Articles 5 & 7	Article 6.1 (c)		
4. 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	
5. 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	National Environmental Investment Agency of Ukraine	
6. 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.	
7. 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) tCO2-e. (compare http://unfccc.int/national_reports/initial_reports_under_the_kyoto_protocol/items/3765.php)	
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4	Marrakech Accords,	The designed system of the national registry has been	

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
	JI Modalities, §21(d)/24	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.	
9. 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	
10. 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	15 April 10 - 16 May 10	
11. 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. Implementation of this project will allow increasing safe	Table 2, section F

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		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.	
12. 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	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B
13. 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	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B
14. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
15. The project shall have an appropriate monitoring plan	Marrakech Accords, JI Modalities, §33(c)	OK	Table 2, Section D
16. 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

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A. General Description of the project					
A.1 Title of the project					
A.1.1. Is the title of the project activity presented?	1,2,3,4	DR	Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment	OK	OK
A.1.2. Is the current version number of the document presented?	1,2,3,4	DR	Revision 06 CAR 1. Define the scope of the project.	CAR1	OK
A.1.3. Is the date when the document was completed presented?	1,2,3,4	DR	Dated March 17, 2010	OK	OK
A.2. Description of the project					
A.2.1. Is the purpose of the project activity included?	1,2,3,4	DR	The project objective is reduction of natural gas (methane) leaks as a result of leakage at flanged, threaded joints and shut-down devices of OJSC "Odesagas" equipment in quantity of 11174.	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 CAR 2. Please describe the situation prior to the project start date. CAR 3. Please include description of the baseline scenario. CAR 4. Please include description of the project scenario. CAR 5. Please include project history.	CAR 2, CAR 3, CAR 4, CAR 5, CAR 6	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			CAR 6. Please present the proof that JI incentive was considered during project designing part.		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.3. Project participants					
A.3.1. Are project participants and Party(ies) involved in the project listed?	1,2,3,4	DR	Ukraine (Host Party): JSC «Odesagas» Switzerland: Vema S.A.	OK	OK
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
A.4. Technical description of the project					
A.4.1. Location of the project activity					
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	1,2,3,4	DR	See section A.4 PPD.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
project. (This section should not exceed one page)					
A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project					
A.4.2.1. Does the project design engineering reflect current good practices?	1,2,3	DR	See section A.4.2 PPD CAR 7. Please include project implementation schedule.	CAR 7	OK
A.4.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2,3	DR	See section A.4.2 PPD	OK	OK
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					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
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	Yes, the estimation of emission reductions over the crediting period is provided. See section A.4.3.1	OK	OK
A.4.3.3. Is it provided the estimated annual reduction for the chosen credit period in tCO_2e?	1,2,3,4	DR	Estimated annual reduction of emissions in the crediting period makes about 1990000 t CO_2-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	Yes, see section A.4.3.1.	OK	OK
A.5. Project approval by the Parties involved					
A.5.1. Are written project approvals by the Parties involved attached?	1,2,3,4	DR	CAR 8. There is no evidence of written project approvals by the Parties involved. Pending untill LoAs by Parties involved will be issued.	CAR8	OK
B. Baseline					
B.1. Description and justification of the baseline chosen					
B.1.1. Is the chosen baseline described?	1,2,3,4,6,7	DR	See clause B.1 PPD.	OK	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	OK	OK
B.1.3. Is it described how the methodology is applied in	1,2,3	DR	See clause B.1 PDD	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
the context of the project?	,4,6, 7				
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
B.1.5. Is all literature and sources clearly referenced?	1,2,3 ,4	DR	Yes, all the sources and literature is clearly referenced.	OK	OK
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.2.1. Is the proposed project activity additional?	1,2,3 ,4,6, 7	DR	See section B.2 PPD CAR 9. Please remove step 5 from the analysis of the additionality since it is not in the Tool ver.05.2 CAR 10. Please appropriately modify step 2 into part of step 3 as a financial barrier.	CAR9 CAR 10	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 incluede?	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	It is stated that continuation of the existing situation is the most likely baseline scenario.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
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 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.	OK	OK
B.3. Description of how the definition of the project boundary is applied to the project activity					
B.3.1. Are the project's spatial (geographical) boundaries clearly defined?	1,2,3,4	DR	Yes, boundaries are defined in the section B.3. of the PDD	OK	OK
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.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: • ITI «Biotekhnika» UAAN See Appendix 1 PPD	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
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
C. Duration of the small-scale project and crediting period					
C.1. Starting date of the project					
C.1.1. Is the project's starting date clearly defined?	1,2,3,4,5	DR	12/01/2005	OK	OK
C.2. Expected operational lifetime of the project					
C.2.1. Is the project's operational lifetime clearly defined in years and months?	1,2,3,4	DR	22 years/264 months	OK	OK
C.3. Length of the crediting period					
C.3.1. Is the length of the crediting period specified in years and months?	1,2,3,4	DR	Yes, refer to the section C.3.	OK	OK
D. Monitoring Plan					
D.1. Description of monitoring plan chosen					
D.1.1. Is the monitoring plan defined?	1,2,3,4,6	DR	Yes, refer to the section D.1. CAR 11. Please provide information concerning the storage of all documentation till the end of the project operational lifetime plus two years.	CAR 11	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	1,2,3,4,7	DR	See section D.1.1.1 PDD	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
will be archived.					
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 CAR 12. Please check the formula 2 because the factor taking into account uncertainty of measurement method is missing.	CAR 12	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. CAR 13. Please provide the formula explaining transformation of methane volume to the standard conditions.	CAR 13	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 CL 1. Please clarify why the average time of filling in the tank for leakage is considered to be after reconstruction while it is a baseline parameter. See also CAR 12, 13.	CL1	OK
D.1.7. Option 2 – Direct monitoring of emissions reductions from the project (values should be consistent with those in section E)	1,2,3,4	DR	N/A	OK	OK
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	1,2,3,4	DR	N/A	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
gas, source etc,; emissions/emission reductions in units of CO2 equivalent).					
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	See section D.1.5 PDD.	OK	OK
D.1.14. Is reference to the relevant host Party regulation(s) provided?	1,2,3,4	DR, I	Reference is provided. See section D.1.5.	OK	OK
D.1.15. If not applicable, is it stated so?	1,2,3,4	DR, I	Reference to section D.1.14 above	-	-
D.2. Qualitative control (QC) and quality assurance (QA) procedures undertaken for data monitored					
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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
D.3. Please describe of the operational and management structure that the project operator will apply in implementing the monitoring plan					
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.	OK	OK
D.4. Name of person(s)/entity(ies) establishing the monitoring plan					
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
E. Estimation of greenhouse gases emission reductions					
E.1.Estimated project emissions					
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.	OK	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	1,2,3,4,7	DR	See section D.1.1.2 PDD.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
category?					
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
E.2.Estimated leakage					
E.2.1. Are described the formulae used to estimate leakage due to the project activity where required?	1,2,3,4,7	DR	Leakage 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.	-	-
E.3.The sum of E.1 and E.2.					
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.	OK	OK
E.4.Estimated baseline emissions					
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.	OK	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	1,2,3,4,10	DR	See D.1.1.4 and E.4 PDD.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
category?					
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
E.5. Difference between E.4. and E.3. representing the emission reductions of the project					
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.	OK	OK
E.6. Table providing values obtained when applying formulae above					
E.6.1. Is there a table providing values of total CO_2 abated?	1,2,3,4	DR	Table is given in the section E.6 PDD.	OK	OK
F. Environmental Impacts					
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					
F.1.1. Has an analysis of the environmental impacts of the project been sufficiently described?	1,2,3,4	DR, I	Yes, see section F.1.1.	OK	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	See section F.1.1.	OK	OK
F.1.3. Are the requirements of the National Focal Point	1,2,3	DR, I	An authorized national body issued a letter of	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
being met?	,4		approval.		
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	Yes, see section F.1.1.	OK	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
G. Stakeholders' comments					
G.1. Information on stakeholders' comments on the project, as appropriate					
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	Section G.1 of PDD	OK	OK

Table 3 Baseline and Monitoring Methodologies: Own format

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Baseline Methodology					
1. 1. General					
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_4 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 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 *force majeure?*	1,2,3	DR, I	Baseline does not envisage earning ERUs for activity level decrease outside the project or due to *force majeure.*	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 above	-	-

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1.2. Additionality					
1.2.1. Was the additionality of the project activity demonstrated and assessed?	1,2,3	DR	See section B.2.1 above.	-	-
2. Monitoring Methodology					
2.1. Monitoring plan					
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

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
2.2. Quality Control (QC) and Quality Assurance (QA) Procedures					
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

Table 4 Legal requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Legal requirements					
1.1. Is the project activity environmentally licensed by the competent authority?	1,2,3	DR, I	See section F.1. of the PDD	OK	OK
1.2. Are there conditions of the environmental permit? In case of yes, are they already being met?	1,2,3	DR, I	See section F.1. of the PDD	OK	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 and 1.2 above	-	-

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
CAR 1. Define the scope of the project.	Table 2, questions A.1.2	Scope was defined in PDD Revision 07 (See section A. 1)	PDD Revision 07 has been checked. Corrective Action Request is closed.
CAR 2. Please describe the situation prior to the project start date.	Table 2, questions A.2.2	See corrected PDD revision 07.	PDD Revision 07 has been checked. Corrective Action Request is closed.
CAR 3. Please include description of the baseline scenario.	Table 2, question A.2.2.	See corrected PDD revision 07.	Corrective Action Request is closed.
CAR 4. Please include description of the project scenario.	Table 2, question A.2.2.	See corrected PDD revision 07.	PDD Revision 07 has been checked. Corrective Action Request is closed.
CAR 5. Please include project history.	Table 2, question A.2.2.	See corrected PDD revision 07.	Corrective Action Request is closed.
CAR 6. Please present the proof that JI incentive was considered during project designing part.	Table 2, question A.2.2.	See corrected PDD revision 07. the document was sent to the determination team.	Corrective Action Request is closed.
CAR 7. Please include project implementation	Table 2,	See corrected PDD revision 07.	PDD Revision 07 has been

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
schedule.	question A.4.2.1.		checked. Corrective Action Request is closed.
CAR 8. There is no evidence of written project approvals by the Parties involved.	Table 2, question A.5.1.	Letter of Approval #737/23/7 was issued by the National Environmental Investments Agency of Ukraine from 7th of June 2010. The Letter of Approval from the Ministry of Climate and Energy Danish Energy Agency #1602/1102-0041 was issued 1st of June 2010	Corrective Action Request is closed.
CAR 9. Please remove step 5 from the analysis of the additionality since it is not in the Tool ver.05.2	Table 2, question B.2.1.	See corrected PDD revision 07.	PDD Revision 07 has been checked. Corrective Action Request is closed.
CAR 10. Please appropriately modify step 2 into part of step 3 as a financial barrier.	Table 2, question B.2.1.	See corrected PDD revision 07.	PDD Revision 07 has been checked. Corrective Action Request is closed.
CAR 11. Please provide information concerning the storage of all documentation till the end of the project operational lifetime plus two years.	Table 2, question D.1.1.	The evidence was presented to the determination team.	PDD Revision 07 has been checked. Corrective Action Request is closed.
CAR 12. Please check the formula 2 because the factor taking into account uncertainty of measurement method is missing.	Table 2, question D.1.4.	See corrected PDD revision 07.	PDD Revision 07 has been checked. Corrective Action Request is closed.
CAR 13. Please provide the formula explaining transformation of methane volume to the standard conditions.	Table 2, question D.1.5.	See corrected PDD revision 07.	PDD Revision 07 has been checked. CAR was closed.

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
CL 1. Please clarify why the average time of filling in the tank for leakage is considered to be after reconstruction while it is a baseline parameter.	Table 2, question D.1.6.	See corrected PDD revision 07.	PDD Revision 07 has been checked. Corrective Action Request is 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.

Kateryna Zinevych, M. Sci. (environmental science)
Climate Change Verifier
Bureau Veritas Ukraine HSE Department project manager.
Kateryna Zinevych has graduated from National University of Kyiv-Mohyla Academy with the Master Degree in Environmental Science. She has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. She has undergone a training course on Clean Development Mechanism /Joint Implementation and she is involved in the determination/verification of 26 JI projects.

Oleg Skoblyk, Specialist (Power Management)
Climate Change Verifier
Bureau Veritas Ukraine HSE Department project manager.
Oleg Skoblyk has graduated from National Technical University of Ukraine 'Kyiv Polytechnic University" with specialty Power Management. He has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. Oleg Skoblyk has undergone intensive training on Clean Development Mechanism /Joint Implementation and he is involved in the determination/verification of 20 JI projects.

Report was reviewed by:

Ivan G. Sokolov, Dr. Sci. (biology, microbiology)
Internal Technical Reviewer, Climate Change Lead Verifier, Bureau Veritas Certification Holding SAS Local Climate Change Product Manager for Ukraine

Bureau Veritas Black Sea District Health, Safety and Environment 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 140 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 Development Mechanism /Joint Implementation Lead Verifier Training Course and he was involved in the determination/verification over 50 JI/CDM projects.ISO 9000 QMS Lead Auditor Training Course. He is Lead Tutor of the Clean