DETERMINATION REPORT

VEMA S.A.

DETERMINATION OF THE

"Reduction of greenhouse gases emissions by gasification of Mariupol city"

REPORT №UKRAINE-DET/0443/2012

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

DETERMINATION REPORT

Date of first issue: 07/05/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: VEMA S.A.	Client ref.: Fabian Knodel

Summary:

Bureau Veritas Certification has made the determination of the "Reduction of greenhouse gases emissions by gasification of Mariupol city" project of VEMA S.A. located in Mariupol city and the territories of Donetsk region adherent to the city, Ukraine, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The determination scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final determination report and opinion. The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

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

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

Report No.: UKRAINE-det/0443/2012	Subject Group: JI	
Project title: "Reduction of greenhouse gases emissions by gasification of Mariupol city"		
Work carried out by: Yulia Pylnova – Team Leader, Climate Change Lead Verifier Kateryna Zinevych – Team Member, Climate Change Lead Verifier		☒ No distribution without permission from the Client or responsible organizational unit
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer		☐ Limited distribution
Work approved by: Ivan Sokolov - Operational Manager		☐ Unrestricted distribution
Date of this revision: 14/05/2012	Rev. No.: 02	Number of pages: 76

Bureau Veritas Certification Holding SAS

Table of Contents *Page*

1 INTRODUCTION

VEMA S.A. has commissioned Bureau Veritas Certification to determine its JI project “Reduction of greenhouse gases emissions by gasification of Mariupol city” (hereafter called “the project”) located in Mariupol city and the territories of Donetsk region adherent to the city, Ukraine.

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

1.1 Objective

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

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document, the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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

1.3 Determination team

The determination team consists of the following personnel:

Yulia Pylnova
Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Kateryna Zinevych
Bureau Veritas Certification Team Member, Climate Change Lead Verifier

This determination report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification Internal 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 version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of determination and the results from determining the identified criteria. The determination protocol serves the following purposes:

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

The completed determination protocol consists of two tables and is enclosed in Appendix A to this report.

2.1 Review of Documents

The Project Design Document (PDD) submitted by VEMA S.A and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for users of the joint implementation project design document form, Approved CDM methodology and/or Guidance on criteria for baseline setting and monitoring, Kyoto Protocol, Clarifications on Determination Requirements to be Checked by an Accredited Independent Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, VEMA S.A. revised the PDD version 01 dated 16/01/2012 and resubmitted it on 16/02/2012 as version 02 and 26/04/2012 as version 03. The determination findings presented in this report relate to the project as described in the PDD versions 01, 02 and 03.

2.2 Follow-up Interviews

On 03/05/2012 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of PJSC

"Mariupolgaz" and VEMA S.A. were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1. Interview topics

Interviewed organization	Interview topics
PJSC "MARIUPOLGAZ"	➢ Project History ➢ Project approach ➢ Project boundary ➢ Schedule of implementation ➢ Organizational Structure ➢ Responsibilities and obligations ➢ Training ➢ Quality control procedures and technologies ➢ Modernization / installation of equipment (records) ➢ Control of metering equipment ➢ The system of keeping records of measurements, the database ➢ Technical Documentation ➢ Monitoring Plan and procedures ➢ Permits and licenses ➢ Environmental Impact Assessment ➢ Stakeholders comments
VEMA S.A.	➢ Baseline methodology ➢ Monitoring Plan ➢ Additionality proofs ➢ The calculations of emission reductions ➢ Project design ➢ Legal issues relating to the project ➢ Environmental Impacts ➢ Approval of the host party

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

Corrective Action Request (CAR) is issued, where:

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

(b) The JI requirements have not been met;

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

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

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

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

3 PROJECT DESCRIPTION

The main purpose of the project is reduction of greenhouse gas emissions by changing the structure of fuel consumption in Mariupol city and the territories adherent to the city by replacing solid and liquid fuels with natural gas. The project provides for the construction and expansion of gas distribution systems (GDS) of Mariupol city and the territories adherent to the city, which will also improve the energy efficiency of thermal power generation due to the transition of existing heat-generating systems to natural gas. The project that is initiated by PJSC "Mariupolgaz" will result in the reduction of greenhouse gas (GHG) emissions into the atmosphere and will improve the environmental situation in the region.

The main sphere of PJSC "Mariupolgaz" activity is natural gas distribution, transportation and supply. PJSC "Mariupolgaz" is an enterprise that provides transportation and supply of natural gas for industrial consumers (205 enterprises), housing and communal consumers (1003 facilities) and population (182 725 apartments and individual households) in Mariupol, Novoazovsk, 7 urban villages, 56 villages of Novoazovskyi, Volodarskyi and Pershotravnevyi districts of Donetsk Region.

Mariupol system of gas supply is a municipal property of Mariupol territorial community provided by Mariupol City Council for the use and administration to PJSC "Mariupolgaz".

In addition, PJSC "Mariupolgaz" designs, constructs and repairs underground and above-ground gas pipelines, maintains boiler houses, installs inner-building gas equipment and meters etc. as a part of its core activities.

One of the main objectives of PJSC "Mariupolgaz" is uninterrupted and safe gas supply to consumers in Mariupol city and the territories adherent to the city, as well as the implementation of advanced solutions for the economical use of natural gas. For the implementation of the above, special attention is paid to the improvement of quality of maintenance of gas supply systems, timely overhaul thereof, gas pipelines protection from

electrochemical corrosion and other damage. The Company uses modern reliable technologies of well-known national and foreign producers in order to ensure stable and safe operation of the gas supply system and maintain the desired working gas pressure.
However, the structure of existing tariffs for gas transportation regulated by the state does not take into consideration amortization and investment needs of gas distribution companies. This hinders the flow of sufficient funds for the purposes of repair, modernization and development of gas networks, procurement of appropriate technological equipment and components.
The project involves expansion of the territorial gas supply system, which includes construction and reconstruction of the gas distribution networks (GDN) and related equipment. The project provides for modernization of the fuel consumption system of Mariupol city and the territories adherent to the city by means of transition of heat-generating systems to natural gas and transferring the consumers from centralized to individual heating and hot water supply systems, which, in turn, will lead to the use of more efficient and environmentally friendly fossil fuel (natural gas), improvement of the quality of heating and hot water supply services, reduction of thermal energy consumption due to increased efficiency of individual systems in comparison with the centralized ones.
In general, the project activity is aimed at:

- Ensuring of the natural gas supply to end users by means of the construction and reconstruction of gas distribution networks(gasification);
- Replacement of solid and liquid fuels with natural gas;
- Increase in heat energy consumption efficiency;
- Greenhouse gas emission reductions under the Joint Implementation (JI) Mechanism.

The project implementation will be carried out in three main sectors of Mariupol city and the territories adherent to the city: industrial, social and administrative. Nowadays, natural gas consumption does not enjoy strong demand in Mariupol city and the territories adherent to the city. First of all, this is due to the lack of an extensive gas distribution network that would meet gas demand of consumers of industrial and energy, social (household) and administrative sectors.

01/12/2003– PJSC “Mariupolgaz” started to implement measures on gas distribution system expansion in Mariupol city and territories of Donetsk region adherent to the city as part of the Joint Implementation Project.
12/12/2011– preparation and submission of the project proposal relating to justification of anthropogenic GHG emission reductions to the State Environmental Investment Agency of Ukraine.
19/04/2012 – the State Environmental Investment Agency of Ukraine issued Letter of Endorsement No.1030/23/7 for the project “Reduction of greenhouse gases emissions by gasification of Mariupol city”.

The determination protocol contains CARs and CLs relating to the PDD versions 01, 02 and 03.

4 DETERMINATION CONCLUSIONS

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

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

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in 38 Corrective Action Requests and 8 Clarification Requests and 1 Forward Action Request.

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

4.1 Project approvals by Parties involved (19-20)

The project “Reduction of greenhouse gases emissions by gasification of Mariupol city” has already obtained support of the government of Ukraine, namely a Letter of Endorsement №1030/23/7 dated 19/04/2012 issued by the State Environmental Investment Agency of Ukraine.
Bureau Veritas Certification received this letter from the Project Participants and has no doubts in its authenticity.

After completion of Determination Report the project documentation will be submitted to the State Environmental Investment Agency of Ukraine for obtaining a Letter of Approval.
As the project has no approval by the Host Party, FAR 01 remains pending and will be closed after report finalizing (see Appendix A).
The identified areas of concern as to project approvals by the Parties, project participants response and Bureau Veritas Certification’s conclusion are described in Appendix A to the Determination Report (refer to FAR 01).

4.2 Authorization of project participants by Parties involved (21)

The participation for each of the legal entities listed as project participants in the PDD is authorized by Parties involved, which are also listed in the PDD, through written Letters of Approval (from the government of Switzerland, as the country-investor, and from the government of Ukraine, as the host party). See Section 4.1 of this report.

4.3 Baseline setting (22-26)

The PDD explicitly indicates that using a methodology for baseline setting and monitoring developed in accordance with appendix B of the JI guidelines (hereinafter referred to as JI-specific approach) was the selected approach for identifying the baseline (in accordance with paragraph 11 of the Guidance on criteria for baseline setting and monitoring for JI projects, version 03).

To set the baseline a specific approach based on approved methodology ACM0009 «Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas - Version 3.2» was used.

Due to a large number of consumers, their wide variety in terms of sectors, and absence of data on types of heat-generating units, in accordance with conservative principles and based on approved methodology ACM0009 version 3.2 “Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas”, the efficiency factors indicated in the PDD were used for heat-generating units.

Those factors exceed substantially the efficiency factors of heat-generating units used by consumers prior to the project (described above), which leads to a decrease in calculated GHG emission reductions, which complies with conservative principles.

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

(a) By listing and describing the following plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one:

   a. Scenario in which the company continues its current practice, without the JI project.

   b. Scenario in which the project activities are implemented without the Joint Implementation mechanism.

(b) 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. In this context, the following key factors that affect a baseline are taken into account:

   a. The role of energy sector is absolute and crucial for Ukraine. Power sector is a political factor of sovereignty in Ukraine. Ukrainian economy is considered to be one of the most energy intensive in the world in terms of the consumption of

primary energy per a gross domestic product unit. On March 15, 2006 the Cabinet of Ministers of Ukraine adopted “Energy Strategy of Ukraine till 2030”. The Energy strategy considers exploration of alternative and renewable energy sources as a significant factor in increasing the level of energy safety, decrease of energy anthropogenic effect on environment and counteractions against global climate change.

b. In the framework of the existing market model for the supply of fossil fuels, the effective competition among producers and suppliers of fuel can’t be achieved; this market model can’t also provide for the competitive fuel pricing, which would stimulate providers to improve efficiency and increase investment in the energy sector. Existing market mechanisms and targeted administrative measures don’t provide the necessary modernization and upgrading of the existing energy carrier transportation systems. The situation is becoming particularly critical given the growth of the need for fossil fuel in the near future, the lack of which represents a threat to safe operation of local heating and hot water supply systems, electricity generation systems.

c. Existing tariffs for natural gas supply are regulated by the state and do not include depreciation and investment needs of natural gas suppliers. This situation leads to a constant shortage of funds and the inability of timely capital repair of equipment, ensuring equipment operation, investment in modernization and development of the infrastructure.

d. The current Ukrainian system of formation of the tariff for natural gas does not include an investment component for the development of gas distribution networks. According to the Law “On principles of the natural gas market functioning” PJSC «Mariupolgaz» is not obliged and it is unmotivated to build new gas distribution systems at its own expense. In addition, state investment programs in most cases are targeted at administrative and organizational implementations.

e. State support in the field of natural gas transportation and supply is provided in amounts of funds provided by the law of Ukraine on State Budget of Ukraine for the relevant year.

f. The project scenario requires attracting significant additional funds. Such investment is characterized by a significant

payback period and high investment risks, that is why it is not attractive for investors.

g. Ukraine is already implementing JI projects in the sphere of natural gas transportation and supply ("Reduction of greenhouse gases emissions by gasification of Odesa region", "Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Kyivgaz", "Reduction of natural gas emissions at OJSC "Odesagas" gate stations and gas distribution networks")

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

The methods of calculation used to determine the estimated and actual baseline emissions, are sufficiently described in Sections E and D of the PDD, respectively.
The identified areas of concern as to baseline setting, project participants response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination report (refer to CAR 17 – CAR 25).

4.4 Additionality (27-31)

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

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

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

- Alternative 1.1: Continuation of the current practice without the JI project implementation.
- Alternative 1.2: The project activities without the Joint Implementation mechanism.

and mandatory compliance of the scenarios with the laws and legal acts was demonstrated.

According to the "Tool for the demonstration and assessment of additionality" (Version 06.0.0) investment analysis and common practice analysis were used in the PDD to justify additionality of the project.
Thus, the overall conclusion is that the project activity meets the criteria of additionality, is not a baseline scenario and is additional.
Additionality is demonstrated appropriately, as a result of the analysis, which is used by the approach chosen.
The identified areas of concern as to additionality, project participants response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination report (refer to CAR 26, CAR 27; CL 05).

4.5 Project boundary (32-33)

The project boundary defined in the PDD, which in accordance with the specific approach is delineated by the physical, geographical site of the unified gas supply system of PJSC "Mariupolgaz" (gas networks and gas supply facilities of settlements, gas pipelines, GDP, GDS, GDI, pressure regulators, gas supply systems of communal and industrial enterprises, gas supply to buildings and structures, etc.) and encompasses all anthropogenic emissions by sources of greenhouse gases (GHGs) that are:

(i) Under the control of the project participants, such as:
- CO_2 emissions from fossil fuel combustion in heat-generating units caused by the use of the old energy carrier supply system by consumers;
- CO_2 emissions from fossil fuel combustion in heat-generating units caused by the use of the new energy carrier supply system by consumers.

(ii) Reasonably attributable to the project, such as:
- CO_2 leaks caused by natural gas combustion by gas turbine units in the process of natural gas transportation to end consumers;
- CH_4 leaks in the process of gas transportation by gas transportation networks.

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

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

4.6 Crediting period (34)

The PDD states the starting date of the project as the date when PJSC "Mariupolgaz" started to implement measures on gas distribution system expansion in Mariupol city and territories adherent to the city within the framework of the Joint Implementation Project, and the starting date is 01/12/2003 which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 17 years, or 204 months, from January 1, 2004, to December 31, 2020.

The PDD states the length of the crediting period in years and months, which is 17 years, or 204 months, and the date on which first emission reductions are expected to be generated was taken as the starting date of the crediting period, namely January 1, 2004.

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

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

The identified areas of concern as to crediting period, project participants response and Bureau Veritas Certification's conclusion are described in Appendix A to the Determination Report (refer to CAR 28, CAR 29).

4.7 Monitoring plan (35-39)

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

The monitoring plan describes all relevant factors and key characteristics that will be monitored, and the period in which they will be monitored, in particular also all decisive factors for the control and reporting of project performance, such as reporting forms, the operating structure and management structure of the enterprise, that will be applied when implementing the monitoring plan.

The monitoring plan specifies the indicators, constants and variables that are reliable (i.e. provide consistent and accurate values), valid (i.e. be clearly connected with the effect to be measured), and that provide a transparent picture of the emission reductions or enhancements of net removals to be monitored such as: total amount of natural gas combusted by consumers; extension of gas distribution systems built as part of the

project; net calorific value of natural gas; net calorific value of fossil fuel used before the gasification; carbon emission factor in the course of natural gas combustion; carbon oxidation factor in the course of natural gas combustion; carbon emission factor in the course of combustion of fossil fuel used before the gasification; carbon oxidation factor in the course of combustion of fossil fuel used before the gasification; default methane emission factor at technological equipment and at end consumer's place; default methane emission factor in the course of natural gas transportation and distribution; reduced GHG emission factor in the course of natural gas transportation to end consumers.

The monitoring plan draws on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring" developed by the JISC, as appropriate: baseline emissions (BE_y), project emissions (PE_y), CH_4 emission factor ($EF_{CH4,y}$), global warming potential (GWP_{XX}).

According to the guidelines for users of the JI PDD forms, revision # 04, the described approach to monitoring plan explicitly and clearly distinguishes:

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

$\eta_{BL,i}$	Efficiency of stationary coal or fuel oil combustion at "*i*" consumer's place, relative units
$\eta_{PJ,i}$	Efficiency of stationary natural gas combustion at "*i*" consumer's place, relative units

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

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

$FC_{NG,i,y}$	Total volume of natural gas combusted in period "y" by consumer "*i*", ths m^3
$L_{PJ,y}$	Length of gas distribution systems constructed in the framework of the project, ths km
$NCV_{NG,y}$	Net calorific value of natural gas, GJ/ ths m^3
$NCV_{FF,y}$	Net calorific value of fossil fuel of "FF" type, GJ/t (Fuel of

	«FF» type means coal, fuel oil)
$EF_{C,NG,y}$	Carbon emission factor for natural gas combustion, t/TJ
$OXID_{NG,y}$	Carbon oxidation factor for natural gas combustion, relative units
$EF_{C,FF,y}$	Carbon emission factor for fossil fuel of "FF" type combustion. (Fuel of «FF» type means coal, fuel oil), t/TJ
$OXID_{C,FF,y}$	Carbon oxidation factor for fossil fuel of "FF" type combustion, relative units
$EF_{CH_4,los1,y}$	Default methane emission factor for natural gas transportation and distribution, t CH_4e/ths km
$EF_{CH_4,los2,y}$	Default methane emission factor at technological equipment and at end consumer's place, t CH_4e/PJ
$EF_{CO_2,GTU,y}$	Adjusted GHG emission factor for natural gas transportation to end consumers, t CO_2e/ths m^3
GWP_{CH4}	Global warming potential for methane, t CO_2e/t CH_4

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording, such as data storage through accounting software.

The most objective and cumulative factor that provides a clear picture of whether the emission reduction took place is the fact of GHG emission reduction through replacement of fossil fuel with natural gas. It can be determined as the difference between baseline emissions and GHG emissions after the project implementation.

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

Formulae used to estimate project emissions (for each gas, source, etc.; emissions in units of CO_2 equivalent, t CO_2e):

$$PE_y = \sum_{i=1}^{I} PE_{i,y}, \text{ where:} \quad (1)$$

PE_y - total greenhouse gas (GHG) emissions from fossil fuel combustion caused by the use of the new energy supply system by consumers, in period *y*, in the baseline scenario (t CO_2e);

$PE_{i,y}$ - GHG emissions from fossil fuel combustion caused by the use of the new energy supply system by consumer *i*, in period *y*, in the baseline scenario tCO_2e);

$[y]$ - index that corresponds to monitoring period;

$[i]$ - index that corresponds to consumer
$[I]$ - index that corresponds to the total number of consumers

$$PE_{i,y} = \frac{FC_{NG,i,y} \cdot NCV_{NG,y} \cdot EF_{CO_2,NG,y}}{1000}, \text{where:} \quad (2)$$

$FC_{NG,i,y}$ - natural gas combusted by consumer *i*, in period *y*, in the project scenario (ths m^3);
$NCV_{NG,y}$ - net calorific value of natural gas (GJ/ths m^3);
$EF_{CO_2,NG,y}$ - default carbon dioxide emission factor for stationary combustion of natural gas, in the project scenario (t CO_2 /TJ);
1000 - GJ to TJ conversion coefficient (GJ/TJ)
$[NG]$ - index that corresponds to natural gas;
$[y]$ - index that corresponds to monitoring period;
$[i]$ - index that corresponds to consumer.

$$EF_{CO_2,NG,y} = EF_{C,NG,y} \cdot OXID_{NG,y} \cdot 44/12, \text{where:} \quad (3)$$

$EF_{C,NG,y}$ - carbon emission factor for natural gas combustion (t C/TJ);
$OXID_{NG,y}$ - carbon oxidation factor for natural gas combustion (relative units);
$44/12$ - stoichiometric ratio between the molecular weight of carbon dioxide and carbon (t CO_2 /t C);
$[NG]$ - index that corresponds to natural gas;
$[y]$ - index that corresponds to monitoring period.

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

$$BE_y = \sum_{i=1}^{I} BE_{i,y}, \text{where:} \quad (4)$$

BE_y - total greenhouse gas (GHG) emissions from fossil fuel combustion caused by the use of the old energy supply system by consumers, in period *y* in the baseline scenario (t CO_2e);
$BE_{i,y}$ - GHG emissions from fossil fuel combustion caused by the use of the old energy supply system by consumer *i*, in period *y* in the baseline scenario (t CO_2e).

$[y]$ - index that corresponds to monitoring period;

$[i]$ - index that corresponds to consumer

$$BE_{i,y} = \frac{FC_{FF,i,y} \cdot NCV_{FF,y} \cdot EF_{CO_2,FF,y}}{1000}, \text{where:} \quad (5)$$

$FC_{FF,i,y}$ - total FF-type fossil fuel that would have been combusted by consumer *i*, in period *y*, in the baseline scenario (t);

$NCV_{FF,y}$ - net calorific value of FF-type fossil fuel (GJ/t);

$EF_{CO_2,FF,y}$ - default carbon dioxide emission factor for stationary combustion of FF-type fossil fuel, in the baseline scenario (t CO_2 /TJ);

1000 – GJ to TJ conversion coefficient (GJ/TJ)

$[y]$ - index that corresponds to monitoring period;

$[FF]$ - index that corresponds to fossil fuel type;

$[i]$ - index that corresponds to consumer.

$$FC_{FF,i,y} = FC_{NG,i,y} \cdot \frac{NCV_{NG,y} \cdot \eta_{PJ,i}}{NCV_{FF,y} \cdot \eta_{BL,i}}, \text{where:} \quad (6)$$

$FC_{NG,i,y}$ - natural gas combusted by consumer *i*, in period *y*, in the project scenario (ths m3);

$NCV_{NG,y}$ - net calorific value of natural gas (GJ/ths m3);

$NCV_{FF,y}$ - net calorific value of FF-type fossil fuel (GJ/t);

$\eta_{PJ,i}$ - efficiency of stationary natural gas combustion at the site of consumer *i;*

$\eta_{BL,i}$ - efficiency of stationary coal or fuel oil combustion at the site of consumer *i;*

$[y]$ - index that corresponds to monitoring period;

$[BL]$ - index that corresponds to the baseline scenario;

$[PJ]$ - index that corresponds to the project scenario

$[NG]$ - index that corresponds to natural gas;

$[FF]$ - index that corresponds to type of fossil fuel;

$[i]$ - index that corresponds to consumer.

$EF_{CO_2,FF,y} = EF_{C,FF,y} \cdot OXID_{FF,y} \cdot 44/12$, where: (7)

$EF_{C,FF,y}$ - carbon emission factor for FF-type fossil fuel combustion (t C/TJ);

$OXID_{FF,y}$ - carbon oxidation factor for FF-type fossil fuel combustion (relative units);

$44/12$ - stoichiometric ratio of molecular weight of carbon dioxide to carbon (t CO_2 /t C);

$[y]$ - index that corresponds to monitoring period;

$[FF]$ - index that corresponds to fossil fuel type.

Formulae used to estimate leaks (for each gas, source etc.; emissions in units of tCO_2 equivalent):

$LE_y = LE_{CO_2,los,y} + LE_{CO_2,GTU,y}$, where: (8)

$LE_{CO_2,los,y}$ - methane leaks at technological equipment and at end consumer's place in period *y*, in the project scenario (t CO_2e);

$LE_{CO_2,GTU,y}$ - GHG leaks due to combustion of gas fuel by gas turbine units in the course of transportation of natural gas to end consumers (t CO_2e);

$[y]$ - index that corresponds to monitoring period;

$[los]$ - index that corresponds to methane leaks from technological equipment and at end consumers' place

$[GTU]$ - index that corresponds to leaks from gas fuel combustion in gas turbine units during the transportation of gas to end consumers.

$LE_{CO_2,los,y} = LE_{CO_2,los1,y} + LE_{CO_2,los2,y}$, where: (9)

$LE_{CO_2,los1,y}$ - GHG leaks from methane leaks at technological equipment in period *y*, in the project scenario (t CO_2e);

$LE_{CO_2,los2,y}$ - GHG leaks from methane leaks at equipment of end consumers in period *y*, in the project scenario (t CO_2e);

$[y]$ - index that corresponds to monitoring period;

$[los1]$ - index that corresponds to methane leaks from technological equipment

$[los2]$ - index that corresponds to methane leaks at end consumers' place

$$LE_{CO_2,los1,y} = \sum L_{PJ,y} \cdot EF_{CH_4,los1,y} \cdot GWP_{CH_4}$$, where: (10)

$L_{PJ,y}$ - length of gas distribution systems constructed in the framework of the project (ths km);

$EF_{CH_4,p,los1,y}$ - default methane emission factor for natural gas transportation and distribution (t c_{H_4} /ths km);

GWP_{CH4} - global warming potential for methane; determined according to the ipcc recommendations, (tco_2e/tch_4).

$[y]$ - index that corresponds to monitoring period;

$[los1]$ - index that corresponds to methane leaks from technological equipment

$[PJ]$ - index that corresponds to project scenario

$$LE_{CO_2,los2,y} = \frac{\sum_1^i FC_{NG,i,y} \cdot NCV_{NG,y} \cdot EF_{CH_4,los2,y} \cdot GWP_{CH_4}}{10^6}$$, where: (11)

$\sum_1^i FC_{NG,i,y}$ - total natural gas consumption in period *y* by consumers (ths m^3);

$NCV_{NG,y}$ - net calorific value of natural gas (GJ/ths m^3);

$EF_{CH_4,los2,y}$ - default methane emission factor at technological gas equipment at end consumers place (t CH_4/PJ).

GWP_{CH4} - global warming potential for methane, t CO_2e/t CH_4; determined according to the IPCC recommendations, (tCO_2/tCH_4);

10^6 – GJ/PJ conversion coefficient (GJ/PJ)

$[y]$ - index that corresponds to monitoring period;

$[NG]$ - index that corresponds to natural gas

[*i*] – index that corresponds to consumer

$[los2]$ - index that corresponds to methane leaks at end consumers' place

$[I]$ - index that corresponds to the total number of consumers.

$$LE_{CO_2,GTU,y} = \frac{\sum_1^i FC_{NG,i,y} \cdot EF_{CO_2,GTU,y}}{1000}$$,where: (12)

$\sum_1^i FC_{NG,i,y}$ - total natural gas combusted in period *y* by consumer *i* (ths m^3);

$EF_{CO_2,GTU,y}$ - reduced GHG emission factor in the course of natural gas transportation to end consumers (t CO_2e/ths m^3).
$[GTU]$- index that corresponds to leaks from gas fuel combustion in gas turbine units during the transportation of natural gas to end consumers.
$[y]$ - - index that corresponds to monitoring period;
$[NG]$ - index that corresponds to natural gas
[i] – index that corresponds to consumer

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

Quantity of Emission Reduction Units (ER), t CO_2e:
$ER_y = BE_y - PE_y - LE_y$, where: (13)

BE_y - total greenhouse gas (GHG) emissions caused by the use of the old energy supply system by consumers, in period *y* in the baseline scenario (t CO_2e);
PE_y - total greenhouse gas (GHG) emissions caused by the use of the new energy supply system by consumers, in period *y*, in the project scenario (t CO_2e);
LE_y - GHG leaks caused by the use of the new energy supply system by consumers, in period *y*, in the project scenario (t CO_2e);
$[y]$ - index that corresponds to monitoring period.

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

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. Collection of all the key parameters necessary for monitoring and calculation of greenhouse gases emissions reduction are constantly carried out according to the practice, established in PJSC “Mariupolgaz”. Monitoring under the project does not require changes in existing data accounting and collection system.

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

The monitoring plan provides, in tabular form, a complete compilation of the data that need to be collected for its application, including data that

are measured or sampled and data that are collected from other sources (e.g. official statistics, expert judgment, proprietary data, IPCC, commercial and scientific literature etc.) but not including data that are calculated with equations.

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

The identified areas of concern as to the monitoring plan, project participants' response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination Report (refer to CAR 30 – CAR 35; CL 06, CL 07).

4.8 Leakage (40-41)

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

According to the specific approach based on approved methodology ACM0009 "Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas," Version 3.2, the PDD defines the following types of leakage:

- methane leaks at technological equipment and at end consumer's place;
- GHG leaks in the process of combustion of natural gas by gas turbine units for transportation of natural gas to end consumers.

Leaks associated with fossil fuel supply to the consumer under the baseline scenario are excluded from calculations because they are beyond the project developer's control.

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

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

The PDD provides the ex ante estimates of:

(a) Emission reductions from the project (within the project boundary), which are 131 504 tonnes of CO_2e in 2004-2007, 447 214 tonnes of CO_2e in 2008-2012, 795 096 tonnes of CO_2e in 2013-2020;

(b) Leakage (within the project boundary), which are 16 778 tonnes of CO_2e in 2004-2007, 51 944 tonnes of CO_2e in 2008-2012, 88 624 tonnes of CO_2e in 2013-2020;

(c) Emissions for the baseline scenario (within the project boundary), which are 263 544 tonnes of CO_2e 2004-2007, 848 049 tonnes of CO_2e in 2008-2012, 1 507 912 tonnes of CO_2e in 2013-2020;

(d) Emission reductions adjusted by leakage (based on (a)-(c) above), which are 115 262 tonnes of CO_2e in 2004-2007, 348 891 tonnes of CO_2e in 2008-2012, 624 192 tonnes of CO_2e in 2013-2020.

The estimates referred to above are given:

(a) On an annual basis;

(b) From 01/01/2004 to 31/12/2020, covering the whole crediting period;

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

(d) For each GHG, i.e. CH_4 and CO_2;

(e) In tonnes of CO_2 equivalent using global warming potentials defined by Decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol.

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

For calculating the estimates referred to above, key factors, e.g. the Ukrainian environmental legislation and other national legislation, as well as key relevant factors such as availability of funds for implementation of measures envisaged by the project, tariffs that are set by the state, modern technology and the ability to implement know-how in gasification sphere, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating the estimates referred to above, such as documents and archival data of the enterprise, standards and statistical forms, results of annual meter readings, etc. are clearly identified, reliable and transparent.

Emission factors, such as carbon emission factor for natural gas combustion ($EF_{C,NG,y}$), carbon emission factor for fossil fuel combustion

($EF_{C,FF,y}$), adjusted GHG emission factor for natural gas transportation to end consumer ($EF_{CO_2,GTU,y}$), default methane emission factor for natural gas transportation and distribution ($EF_{CH_4,los1,y}$), default methane emission factor at technological gas equipment at end consumers place $EF_{CH_4,los2,y}$ were selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

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

The estimates referred to above are consistent throughout the PDD.

The annual average of estimated emission reductions over the crediting period are calculated by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period, and multiplying by twelve.

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

The identified areas of concern as to the evaluation of emission reductions, project participants' response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination Report (refer to CAR 36, CAR 37)

4.10 Environmental impacts (48)

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

The PDD provides conclusion and all references to supporting documentation of an environmental impact assessment that meets basic requirements stated in the State Building Norms of Ukraine A.2.2-1-2003, "Structure and content of environmental impact assessment (EIA) in the process of design and construction of plants, buildings and structures".

PJSC "Mariupolgaz" has the necessary EIA for all the gas distribution network projects in accordance with the legislation of Ukraine. EIA of the projects is developed by subcontracting project-assembling organizations and is provided in the sections of reconstruction project document of PJSC «Mariupolgaz».

According to the PDD, facilities included in the project boundaries meet all standards and requirements of the Laws of Ukraine "On air protection" and "On Environmental Protection», and the SSR -96 "Planning and development of human settlements", are environmentally safe and do not make any negative impact on the environment.

Overall, the impact of the project ”Reduction of greenhouse gases emissions by gasification of Mariupol city” on the environment during the construction work can be assessed as permissible, because the impact is temporary. Project facilities are not included in the list of activities and facilities of environmental hazard.

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

The problem issues revealed as to environmental impacts, comments of project participants and the opinion of Bureau Veritas Certification are described in Annex A of the Determination Report (refer to CAR 38, CL 08).

4.11 Stakeholder consultation (49)

In pursuance of requirements of Art. 18 of the Law of Ukraine "On planning and development of areas" and Art. 11 of the Law of Ukraine "On ecological expertise", PJSC «Mariupolgaz» informs the public through local media on the implementation of territory planning.
All comments relating to the project implementation were positive. No negative comments were received.

4.12 Determination regarding small scale projects (50-57)

Not applicable.

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

Not applicable.

4.14 Determination regarding programmes of activities (65-73)

Not applicable.

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

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

6 DETERMINATION OPINION

Bureau Veritas Certification has performed the determination of the project «Reduction of greenhouse gases emissions by gasification of Mariupol city" in Ukraine. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final determination report and opinion.

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

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

The determination revealed one pending issue related to the current determination stage of the project: the written approval of the project by the host Country (Ukraine) wasn't obtained. If the written approval by the host Country is awarded, it is our opinion that the project as described in the Project Design Document, Version 03 dated 26/04/2012 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

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

7 REFERENCES

Category 1 Documents:

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

/1/	PDD «Reduction of greenhouse gases emissions by gasification of Mariupol city", version 01 dated 16/01/2012
/2/	PDD «Reduction of greenhouse gases emissions by gasification of Mariupol city", version 02 dated 16/02/2012
/3/	PDD «Reduction of greenhouse gases emissions by gasification of Mariupol city", version 03 dated 26/04/2012
/4/	Supporting Document 1.1 «Calculation of GHG emission reductions under the project "Reduction of greenhouse gases emissions by gasification of Mariupol city"
/5/	Supporting Document 1.2 «Calculation of GHG emission reductions under the project "Reduction of greenhouse gases emissions by gasification of Mariupol city"
/6/	Supporting Document 1.3 «Calculation of GHG emission reductions under the project "Reduction of greenhouse gases emissions by gasification of Mariupol city"
/7/	Supporting Document 2 "Investment analysis"
/8/	Supporting Document 3 "Determination of average gas boiler efficiency rate"
/9/	Letter of Endorsement # 1030/23/7 dated 19/04/2012 issued by the State Environmental Investment Agency of Ukraine
/10/	Guidelines for users of the JI PDD form. Version 04, JISC
/11/	ACM0009 "Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas," Version 3.2
/12/	"Tool for the demonstration and assessment of additionality", Version 06.0.0
/13/	The Kyoto Protocol

/14/	Marrakech Accords, JI Methods
/15/	National inventory report on emissions by sources and removals of greenhouse gases in Ukraine for the period of 1990-2009
/16/	Ukraine's Third National Communication on Climate Change under the Kyoto Protocol
/17/	Ukraine's Fourth National Communication on Climate Change under the Kyoto Protocol
/18/	Ukraine's Fifth National Communication on Climate Change under the Kyoto Protocol
/19/	The decree of NERC of Ukraine No.983 of 04/09/2002, Kyiv, "On approval of the Calculation Methodology for tariffs for natural gas transportation and supply for gas supply and gasification enterprises"
/20/	Law of Ukraine "On metrology and metrological activity"
/21/	Law of Ukraine "On basics of natural gas market functioning"
/22/	Law of Ukraine "On atmospheric air protection"
/23/	Law of Ukraine "On environmental protection"
/24/	Law of Ukraine "On state statistics"
/25/	Law of Ukraine "On waste"
/26/	Law of Ukraine "On territory planning and development"
/27/	Law of Ukraine "On environmental impact assessment"
/28/	JI Guidelines. Annex to Decision 9/CMP.1.
/29/	JI Guidance for determination and verification, version 01
/30/	Guidance on criteria for baseline setting and monitoring, JISC. Version 03

Category 2 Documents:

Documents provided to VEMA S.A. that relate directly to the GHG components of the project.

/1/	Decree No.576 on annual inventory of state property being at disposal of the National Joint Stock Company "Naftohaz Ukrainy", dated 29/12/2010
/2/	Decree No.229 on approval of results of inventory of state property being at disposal of the National Joint Stock Company "Naftohaz Ukrainy", dated 15/06/2010
/3/	Annex 2 to the Decree No.576 of the Ministry of Fuel and Energy dated 29/12/2010
/4/	Resolution No.1U/13-218 "On moving to the balance sheet of the Open Joint Stock Company "Mariupolgaz" of 7086 m long high-pressure gas pipelines from Kasianivka village to Makedonivka village, a 8535 m long low-pressure gas pipeline, a GDP (one unit), a cathode station KSS-600", dated 26/12/2003
/5/	Resolution No.5/3-198 "On taking into municipal public property of gas pipelines in Azov-Kiltse, Novoselivka villages in Prymorskyi district and moving them to the balance sheet of the Open Joint Stock Company "Mariupolgaz" dated 27/06/2006
/6/	Resolution No.5/5-401 "On appointment of holder of the books" dated 26/09/2006
/7/	Resolution No.5/6-761 "On taking into municipal public property of medium-pressure gas pipelines to residential buildings at: 76 Chopin Ln., 62, 62a, 50, 51b, 7, 70, 56, 49 Druhyi Kalchyk St., 33b Timiriazev St., 37 Lesia Ukrainka St., 139 Taganrozka St., 19 Sportyvna St., Zarichna St., Talakhivka village, Mariupol cty, and on moving them to the balance sheet of the Open Joint Stock Company "Mariupolgaz" dated 21/10/2006
/8/	Resolution No.5/7-940 «On taking into municipal public property of constructed facilities" dated 28/11/2006
/9/	Resolution No.5/9-1284 «On taking into municipal public property of gas pipelines in villages Staryi Krym, Uspenivka and moving them to the balance sheet of the Open Joint Stock Company "Mariupolgaz" dated 20/02/2007
/10/	Resolution No.5/9-1285 «On taking into municipal public property of constructed facilities" dated 20/02/2007
/11/	Resolution No.U/10-105 "On moving gas pipelines to the balance sheet of the specialized operational enterprise Open Joint Stock Company "Mariupolgaz" dated 26/10/2007
/12/	Resolution No.U/11-91 "On taking into public property of Chervonoarmiiske village council of abandoned gas pipelines in Chervonoarmiiske village, and their charge-free moving to the balance sheet of OJSC "Mariupolgaz" dated 19/12/2007
/13/	Resolution No.U/15-138 "On charge-free moving to the balance sheet of OJSC "Mariupolgaz" of GDP outdoor gas pipelines from public property of the Novokrasnivka village council" dated 08/11/2007
/14/	Resolution No.U/17-150 "On charge-free moving to the balance sheet of OJSC "Mariupolgaz" of high-pressure gas pipeline of Sedovo-Vasylivka village, Novoazovsk district" dated 25/12/2008

/15/	Resolution No.5/18-243 “On transfer of outdoor gas pipelines to OJSC "Mariupolgaz" dated 19/10/2007
/16/	Resolution No.U/19/354 “On charge-free moving to the balance sheet of gas pipelines and equipment from OJSC “Illich Iron & Steel Works" with further moving thereof to the balance sheet of specialized enterprise OJSC “Mariupolgaz” with further transfer into state property as assets not subject to privatization" dated 04/07/2008
/17/	Resolution No.У/20-201 “On charge-free moving to the balance sheet of gas pipelines and equipment from OJSC “Illich Iron & Steel Works" with further moving thereof to the balance sheet of specialized enterprise OJSC “Mariupolgaz” with further transfer into state property as assets not subject to privatization" dated 09/09/2008
/18/	Resolution No.5/23-4154 «On taking into municipal public property of constructed facilities" dated 29/07/2008
/19/	Resolution No.5/24-1 “On moving gas pipelines to the balance sheet of the specialized operational gas supply and gasification enterprise OJSC “Mariupolgaz” dated 18/07/2008
/20/	Resolution No.У/24-409 “On charge-free moving to the balance sheet of gas pipelines and structures from OJSC “Illich Iron & Steel Works" with further moving thereof to the balance sheet of specialized enterprise OJSC “Mariupolgaz” with further transfer into state property as assets not subject to privatization" dated 24/12/2008
/21/	Resolution No.5/25-1127 “On charge-free moving to the balance sheet of OJSC “Mariupolgaz” of a low-pressure gas pipeline at 111a Vidradna St., Illichivske village, Pershotravensk district” dated 17/07/2009
/22/	Resolution No.5/31-5197 «On taking into municipal public property of constructed facilities" dated 14/04/2009
/23/	Resolution No.5/34-5493 «On taking into municipal public property of constructed facilities" dated 07/07/2009
/24/	Resolution No.У/36-268 “On charge-free transfer of medium-pressure gas pipeline of Kalchyk village, Volodarskyi district" dated 19/01/2009
/25/	Resolution No.5/36-5942 “On charge-free taking into municipal public property of low-pressure gas pipeline at Sverdlov St., from Pavlov St. to building 94, which is owned by “Gazlob” cooperative" dated 27/10/2009
/26/	Resolution No.5/36-5949 «On taking into municipal public property of constructed facilities" dated 27/10/2009
/27/	Resolution No.5/41-6294 «On taking into municipal public property of constructed facilities" dated 23/02/2010
/28/	Resolution No.5/61-681 “On taking to the balance sheet of Urzuf village council of a gas pipeline” dated 26/08/2010
/29/	Resolution No.28/5-220 “On transfer of gas pipeline at Kalinin St., Sartana settlement” dated 25/11/2008
/30/	Resolution No.421 “On moving to the balance sheet of low-pressure gas pipeline expenses at Stadionna St., Sadky-1 village, Mariupol city” dated 15/10/03
/31/	Resolution No.527 «On taking into municipal public property of medium-

	pressure gas pipelines: from GDP-24 to Guramishvili St. along Syvaska St. and along Gaydar St., Levanevskyi St., Osypenko St., Briullov St., Parkovyi settlement, Stadionna St., Sadky-1 settlement, and transfer thereof to the balance sheet of the Open Joint-Stock Company "Mariupolgaz", dated 18/12/03
/32/	Resolution No.668 «On taking into municipal public property of outdoor gas pipelines: medium-pressure pipeline from K. Liebknecht St. along Marynska Balka to Kazantsev St; low-pressure pipelines along Lobachevskyi St., Zheldormost St. and Zaslonov Ln.; and transfer thereof to the balance sheet of the Open Joint-Stock Company "Mariupolgaz", dated 18/05/2004
/33/	Resolution No.1094 «On taking into municipal public property of gas pipelines in Kamensk settlement: medium-pressure pipelines from insertion point to gas control point, cabinet gas control point ShGRP-32-2N; low-pressure pipelines from gas control point to residential buildings of security campus No. 1, 2, 3, 4, 6; internal gas pipeline of residential houses No. 1, 2, 3, 4, 6; and transfer thereof to the balance of the Open Joint-Stock Company "Mariupolgaz", dated 09/06/2005
/34/	Resolution No.1280 «On taking into municipal public property of gas pipelines: in settlements Troitske, Azov-Kiltse, Parkove, Novoselivka, Pishchane, Sartana, to boiler house of the football stadium in Prymorskyi district: to residential building No.45 along Profinterna St. and по вул.Профінтерна та thereof to the balance of the Open Joint-Stock Company "Mariupolgaz", dated 16/09/2005
/35/	Resolution No.1580 «On taking into municipal public property of a medium-pressure gas pipeline to residential building No. 277 along Chervonoflotska St. in Mariupol city; a restored low-pressure pipeline to residential buildings No.21, 23, 25 along Sevastopolska St. in Mariupol city and moving thereof to the balance of the Open Joint-Stock Company "Mariupolgaz", dated 15/12/2005
/36/	Act No. 179 of acceptance of a gas pipeline into operation in Makedonivka village dated 10/10/2003
/37/	Act of acceptance of a gas pipeline into operation in Makedonivka dated January 2004
/38/	Act of acceptance of constructed gas supply facility in 2006
/39/	Act of acceptance of constructed gas supply facility dated 16/04/2007
/40/	Act of acceptance of constructed gas supply facility in Azov-Kiltse settlement in 2007
/41/	Act No.281 of acceptance of a gas pipeline into operation in Mariupol city dated 18/12/2003
/42/	Act of acceptance of a gas pipeline into operation in Mariupol city dated April 2003
/43/	Act of the working team of acceptance of constructed building, structure, premises dated 24/09/2007
/44/	Act of acceptance of constructed gas supply facility dated 2006
/45/	Act of the working team of acceptance of constructed building, structure, premises dated 24/09/2007
/46/	Act of acceptance of constructed gas supply facility dated September 2006
/47/	Act of acceptance of constructed gas supply facility dated August 2006

/48/	Act of acceptance of constructed gas supply facility dated December 2008
/49/	Act of acceptance of constructed gas supply facility dated July 2007
/50/	Act of acceptance of constructed gas supply facility dated 23/07/2008
/51/	Act of acceptance of constructed gas supply facility dated September 2007
/52/	Act of acceptance of constructed gas supply facility dated 17/01/2008
/53/	Act No.257 of acceptance of gas pipeline to operation dated 30/11/2009
/54/	Act of acceptance of constructed gas supply facility dated 01/07/2009
/55/	Act of acceptance of gas pipeline to operation dated 16/11/2004
/56/	Act of acceptance of gas pipeline to operation dated November 2004
/57/	Act of acceptance of constructed gas supply facility dated 22/05/2007
/58/	Act of acceptance of constructed gas supply facility dated 09/03/2006
/59/	Act of acceptance of gas supply system dated 15/12/2009
/60/	Act of acceptance of constructed gas supply facility dated 05/05/2009
/61/	Act of acceptance of constructed gas supply facility dated 30/11/2007
/62/	Act No.256 Про of acceptance of constructed gas supply facility dated 26/11/2008
/63/	Act of acceptance of constructed gas supply facility dated 19/11/2007
/64/	Act of the working team of acceptance of constructed building, structure, premises dated 12/05/2005
/65/	Act of acceptance of constructed gas supply facility dated 17/06/2009
/66/	Act of the state engineering commission on serviceability status of constructed facility dated 20/08/2005
/67/	Act of the working team of acceptance of constructed of building, structure, premise dated 03/09/2007
/68/	Act of acceptance of constructed unit of gas supply system dated 30/05/2008
/69/	Act of acceptance of constructed unit of gas supply system dated 17/04/2007
/70/	Act of the working team of acceptance of constructed of building, structure, premises dated 24/09/2007
/71/	Act of gas pipeline acceptance into operation dated 30/12/2003
/72/	Act of gas pipeline acceptance into operation dated 10/11/2003
/73/	Act of gas pipeline acceptance into operation dated 13/12/2003
/74/	Act of acceptance of constructed unit of gas supply system from October 2007
/75/	Act of acceptance of gas pipeline dated 08/06/2010
/76/	Act of acceptance of constructed unit of gas supply system dated 28/02/2007
/77/	Act of gas pipeline acceptance into operation dated 28/01/2005
/78/	Act of gas pipeline acceptance into operation dated 12/01/2004
/79/	Act of gas pipeline acceptance into operation dated 22/10/2004
/80/	Act of gas pipeline acceptance into operation dated 05/10/2004
/81/	Act of gas pipeline acceptance into operation dated 08/10/2004
/82/	Act of acceptance of constructed unit of gas supply system dated 17/05/2007
/83/	Act of gas pipeline acceptance into operation dated 29/12/2004
/84/	Act of acceptance of constructed unit of gas supply system dated 25/10/2006
/85/	Act of acceptance of constructed unit of gas supply system from October 2006
/86/	Act of acceptance of constructed unit of gas supply system dated 27/07/2007
/87/	Act of acceptance of constructed unit of gas supply system dated 04/05/2007

/88/	Act of acceptance of constructed unit of gas supply system dated 02/10/2005
/89/	Act of acceptance of constructed unit of gas supply system dated 24/11/2006
/90/	Act of gas pipeline acceptance into operation dated 14/11/2003
/91/	Act of acceptance of constructed unit of gas supply system dated 20/10/2006
/92/	Act of acceptance of constructed unit of gas supply system dated 11/01/2008
/93/	Act of gas pipeline acceptance into operation dated 26/11/2004
/94/	Act of the working team of acceptance of constructed building, structure, premises dated 27/02/2007
/95/	Act of acceptance of constructed unit of gas supply system dated 16/04/2007
/96/	Act of acceptance of constructed unit of gas supply system dated 12/04/2007
/97/	Act of the working team of acceptance of constructed building, structure, premises dated 09/04/2007
/98/	Act of the working team of acceptance of constructed building, structure, premises dated 16/05/2007
/99/	Act of acceptance of constructed unit of gas supply system dated 01/07/2009
/100/	Act of gas pipeline acceptance into operation dated 28/12/2005

Persons interviewed:

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

	Name	Organization	Title
/1/	Veremieienko M.V.	PJSC "Mariupolgaz"	General Director, Working Team Member
/2/	Hrudolov M.A.	PJSC "Mariupolgaz"	Chief Engineer, Working Team Leader
/3/	Malyshev H.V.	PJSC "Mariupolgaz"	Deputy Head of Gas Network Service, Working Team Member
/4/	Koldycheva O.O.	PJSC "Mariupolgaz"	Engineer of Technical Engineering Department, Working Team Member
/5/	Podhorna R.O.	PJSC "Mariupolgaz"	Engineer of Technical Engineering Department, Working Team Member
/6/	Pohosov O.H.	LLC “CEP”	VEMA S.A. Consultant

APPENDIX A: COMPANY PROJECT DETERMINATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
Guidelines for Users of the JI PDD form Section A General description of the project				
A.1. Title of the project				
A.1	Is the title of the project presented?	The title is presented. The title of the project is "Reduction of greenhouse gases emissions by gasification of Mariupol city".	OK	OK
A.1	Is the sectoral scope to which the project pertains presented?	Sectoral scope: Sector 3 - Energy consumption	OK	OK
A.1	Is the current version number of the document presented?	The current version of the document: PDD, Version 03 dated 26/04/2012. See Section A.1.	OK	OK
A.1	Is the date when the document was created presented?	The date when the document was created: 26/04/2012.	OK	OK
A.2. Description of the project				
A.2	Is the purpose of the project included with a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting	The main purpose of the project is to reduce GHG emissions by changing the structure of fuel consumption in Mariupol city of Ukraine's Donetsk region and territories adherent to the city through	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	date of the project b) Baseline scenario and c) Project scenario (expected outcome, including a technical description)?	replacement of solid and liquid fuels with natural gas. The project provides for the construction and expansion of gas distribution systems (GDS) of Mariupol city and the territories adherent to the city, which will also improve the energy efficiency of thermal power generation due to the transition of existing heating systems to natural gas. The Project that is initiated by PJSC "Mariupolgaz" will result in the reduction of greenhouse gas emissions into the atmosphere and will improve the environmental situation in the region. Detailed information on the baseline and project scenarios with technical description is given in Sections A.2 and A.4.2. of the PDD.		
A.2	Is the history of the project (incl. its JI component) briefly summarized?	**CAR 01.** Please provide more detailed information about the history of the project (including its JI component) as well as the documents confirming this information as Accompanying ones. **CAR 02.** Please provide the date when development of project design documents for the JI project "Reduction of greenhouse gases emissions by gasification of Mariupol city" started.	**CAR 01** **CAR 02**	OK OK
A.3. Project participants				
A.3	Are project participants and Party (ies)	Parties involved in the project: PJSC "Mariupolgaz"	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	involved in the project listed?	(Ukraine - the host party) and VEMA S.A. (Switzerland).		
A.3	Is the data of the project participants presented in tabular format?	The data of the project participants is presented in tabular format.	OK	OK
A.3	Is contact information provided in Annex 1 of the PDD?	Contact information is provided in Annex 1 of the PDD. **CAR 03.** Please provide contact information of the Swiss party (VEMA S.A.).	**CAR 03**	OK
A.3	Is it indicated, if it is the case, that the Party involved is a host Party?	Ukraine is the Host Party.	OK	OK
A.4 Technical description of the project				
Location of the project				
A.4.1.1	Host Party(ies)	Ukraine is the Host Party.	OK	OK
A.4.1.2	Region/State/Province etc.	Donetsk region, Ukraine	OK	OK
A.4.1.3	City/Town/Community etc.	Mariupol city, Novoazovsk city, 7 urban-type settlements and 56 villages of Novoazovskyi, Volodarskyi, and Pershotravnevyi regions of Donetsk region, Ukraine.	OK	OK
A.4.1.4	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page).	Information about location is given in Section A.4.1.4 of the PDD. **CAR 04.** Please provide detailed information about facilities included in the project and the details of their physical location.	**CAR 04**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
A.4.2. Technologies to be employed, or measures, operations or actions to be implemented by the project				
A.4.2	Are the technology (ies) to be employed, or measures, operations or actions to be implemented by the project, including all relevant technical data and the implementation schedule described?	PDD Section A.4.2 provides the description of the main stages of the project implementation, the annual project activities schedule, some relevant technical data relating to main equipment to be installed as well as project activities. Project engineering represents the current cutting-edge practice. **CAR 05**. Please provide information on specifications of pipes used for natural gas transportation via gas distribution systems of PJSC "Mariupolgaz". **CAR 06.** Please specify manufacturers of gas valves used in the project. **CAR 07.** Please provide specifications and information on new metering devices. **CAR 08.** Please provide the project schedule in tabular form with indication of start dates and end dates for each activity and stage. **CAR 09.** Please provide links to web-sites of manufacturers whose equipment will be used in the project. **CAR 10.** Please provide the translation of the schematic components of Figure 8 presented in PDD	**CAR 05** **CAR 06** **CAR 07** **CAR 08** **CAR 09** **CAR 10** **CAR 11** **CAR 12** **CAR 13** **CL 01** **CL 02** **CL 03** **CL 04**	OK OK OK OK OK OK OK OK OK OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		Section A.4.2 into the Ukrainian language. **CAR 11.** Please provide information on the length of the project pipeline. **CL 01.** Please provide evidence and explanation of guarantees that the measures implemented under the project activity are not a part of the maintenance program will be guaranteed. **CL 02.** Please provide explanation to Figure 6 in PDD text in the corresponding section. **CL 03.** Please define the factors of emission reduction due to gasification of Donets region. **CL 04.** Please provide explanations to geographic information system (GIS) technology as well as information on its application by PJSC "Mariupolgaz". **CAR 12.** The project provides for the installation of cathodic protection plants, which is indicated in Section A.4.2. of the PDD. Please provide more details on the application of this equipment. **CAR 13**. Please provide information about the reasons why the proposed measures will not be implemented without the project activity, taking into account national and/or sectoral policies and circumstances.		
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				
A.4.3	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	The project provides for the construction and expansion of gas distribution systems (GDS) of Mariupol city and the territories adherent to the city. According to the baseline scenario, heat-generating units of end consumers will continue running at solid and liquid fuel. Such energy resources are characterized by high factor of greenhouse gas emissions in the stationary combustion. The project implementation will promote the transition from solid, liquid fuels to more sustainable fuel - natural gas, which will lead to significant reductions in greenhouse gas emissions. Increase in energy efficiency of heat-generating units after gasification will promote decrease in energy consumption, leading to greenhouse gas emission reductions.	OK	OK
A.4.3	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period is provided in Section A.4.3.1. of the PDD. **CAR 14.** The length of the crediting period indicated in PDD is 17 years while the calculation is provided for only 9 years. Please make corresponding amendments. **CAR 15.** In Section A.4.3.1. there are incorrect	**CAR 14** **CAR 15** **CAR 16**	OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		references to Section E and Supporting Documents. Please provide the correct references. **CAR 16.** Length of the crediting period specified in Table 2, Section A.4.3.1, is incorrect. Please make the correction.		
A.4.3	Is it provided the estimated annual reduction for the chosen credit period in tCO_2e?	The estimated annual reduction for the first commitment period in tCO_2e is provided, as well as the estimated annual reduction for the period before and after the first commitment period within the project. Reference to **CAR 14**.	Pending decision.	OK
A.4.3	Are the data from questions above presented in tabular format?	Information for the credit period and after the credit period is presented in tabular format. See PDD (Version 03) Tables 2, 3 and 4, Section A.4.3.1.	OK	OK
A.4.3.1. Estimated amount of emission reductions over the crediting period				
A.4.3.1	Is the length of the crediting period Indicated?	The length of the crediting period is indicated in the PDD Section A.4.3.1. and Section C.	OK	OK
A.4.3.1	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO_2 equivalent provided?	Total as well as annual and average annual emission reductions in tonnes of CO_2 equivalent are provided in accordance with the calculated values in the tables of Section A of PDD and the Supporting Documents.	OK	OK
Project approvals by Parties				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	**FAR 01**. The project has no approval of the Host Party and the investing country. To obtain the Letter of Approval the final Determination	**FAR 01**	Pending decision.

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		report must be submitted to the State Environmental Investment Agency of Ukraine that includes this Determination Protocol and the list of sources of Reference Information. A Letter of Approval of Switzerland as the investing country is not obtained at the current stage of the Project either. **FAR 01** will be closed after the Letter of Approval is issued by the Party involved.		
19	Does the PDD identify at least the host Party as a "Party involved"?	The Host Party involved is Ukraine.	OK	OK
19	Has the DFP of the host Party issued a written project approval?	Reference to **FAR 01.**	**FAR 01**	Pending
20	Are all the written project approvals by Parties involved unconditional?	Reference to **FAR 01.**	**FAR 01**	Pending
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: − A written project approval by a Party involved, explicitly indicating the name of the legal entity? or − Any other form of project participant	Party involved 1: Ukraine (the host Party), legal entity is PJSC "Mariupolgaz". Party involved 2: Switzerland, legal entity is VEMA S.A. The project participants will be authorized in accordance with the relevant project approvals. Pending **FAR 01**	**FAR 01**	Pending

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	authorization in writing, explicitly indicating the name of the legal entity?			
Baseline setting				
22	Does the PDD explicitly indicate which of the following approaches is used for identifying the baseline? − JI specific approach − Approved CDM methodology approach	The chosen baseline is described in Section B.1 of the PDD. A specific JI approach is used for setting the baseline. **CAR 17.** Please indicate in PDD whether elements of the approved CDM methodologies for setting the baseline were used.	**CAR 17**	OK
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	The choice of the applicable baseline for the project is justified; detailed theoretical description is provided in section B.1 of PDD version 03. **CAR 18**. Please include more detailed description of the approach used to set the baseline.	**CAR 18**	OK
23	Does the PDD provide justification that the baseline is established: (a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? − Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to	The PDD provides detailed, full and transparent description and justification that the baseline is established by: (a) Identifying plausible future scenarios and choosing the most plausible one. As a result of evaluation of several alternatives the most plausible of them have been identified and will be used as a baseline: - Alternative 1.1: Continuation of existing practice, without the JI project.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure? (f) By drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring", as appropriate?	- Alternative 1.2: The project activities without the use of the Joint Implementation mechanism. (b) Taking into account key factors such as for example technological rules of the sector, Ukrainian environmental legislation and other national legislation, and key relevant factors, such as the ability of financing of construction and reconstruction of gas distribution system, tariffs for gas supply, availability of local technologies and methods of the project, skills and experience of implementing similar projects (c) In a transparent manner with regard to the choice of JI approach and assumptions, parameters, data sources and key factors for identifying initial conditions listed in tabular format in Section B.1. (d) Taking into account of uncertainties and using conservative assumptions (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure (f) By drawing on the list of standard variables. The baseline is set; the description is given in Section B of the PDD.		
24	If selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting	The baseline assumptions of the developed JI specific approach are clearly described in full in Section B.1 of the PDD version 03.	**CAR 19** **CAR 20**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?	**CAR 19.** Please add correct description of parameters $NCV_{NG,y}$ and $NCV_{FF,y}$ through the PDD. **CAR 20.** The value of $\eta_{BL,y}$ parameter is incorrect. Please provide correct value for the parameter according to the data source and make corrections of calculations in Supporting Documents. **CAR 21.** Please provide the correct description of $EF_{CH_4,los1,y}$ and $EF_{CH_4,los2,y}$ parameters in Section D.1 of the PDD. **CAR 22**. Annex 2 must include a summary of key elements. Please add relevant information in Annex 2. **CAR 23.** Please add information on CO_2 emission factors for FF type fossil fuel combustion to Annex 2. **CAR 24.** Some designations of parameters and data do not correspond to the list of standard variables presented in Annex B of the "Guidance on criteria for baseline setting and monitoring". Please make corresponding corrections of Section B of PDD. **CAR 25.** Index "*i*" has two different descriptions in the	**CAR 21** **CAR 22** **CAR 23** **CAR 24** **CAR 25**	OK OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		PDD: - index of elementary fuel combustion process at consumer's place; - index of consumer. Please choose one description.		
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	When setting baseline the following factors are used: CO_2 emission factor in the course of fossil fuel of "FF" type combustion (Fuel of «FF» type means coal, fuel oil). Source of data (to be) used "National inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases in Ukraine for 1990-2009"	OK	OK
CDM methodology approach only				
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals (b) Provision of traceable and transparent	The PDD indicates that the project scenario is not a part of the established baseline scenario. It is also stated that the project will lead to emission reductions. Additionality of the project activity is demonstrated in PDD Section B.2 using the "Tools for the demonstration and assessment of additionality" (Version 06.0.0). **CAR 26.** Parameter identifier of the discount rate does not comply with the list of standard variables, which are presented in Appendix B to the "Guidelines on criteria for baseline setting and monitoring." Please make the	**CAR 26** **CAR 27**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances has additionality (c) Application of the most recent version of the "Tool for the demonstration and assessment of additionality. (allowing for a two-month grace period) or any other method for proving additionality approved by the CDM Executive Board".	corrections. **CAR 27.** In the section devoted to demonstrating additionality the developer states that a methodological guidelines for the demonstration and assessment of additionality (hereinafter the Additionality guidelines) were used. Additionality assessment does not follow the example which was set by Additionality guidelines. Therefore, the section relating to additionality assessment should be duly changed.		
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	Detailed analysis described in Sections A.4.3, B.1 and B.2, shows that emissions of the baseline scenario are likely to exceed emissions of the project scenario due to the implementation of project activities.	OK	OK
29 (b)	Are additionality proofs provided?	Yes. Refer to Section B.2. of the PDD.	OK	OK
29 (c)	Is the additionality demonstrated appropriately as a result?	The fact that the project activity itself is not the baseline scenario is clearly demonstrated in Sections A.2, B.1, B.2 of the PDD. **CL 05.** Please specify whether there are any mandatory government programs or policy which	**CL 05**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		provide for reconstruction and modernization of the rail transportation system.		
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	All explanations, descriptions and analyses are made in accordance with the newest version of the "Tools for the demonstration and assessment of additionality". (Version 06.0.0)	OK	OK
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable				
Project boundary (applicable except for JI LULUCF projects)				
JI specific approach only				
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	The project boundary defined in the PDD encompasses all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants, such as: - CO_2 emissions from fossil fuel combustion in heat-generating units due to the use of the old energy supply system by the consumers - CO_2 emissions from fossil fuel combustion in heat-generating units due to use of the new energy supply system by the consumers (ii) Reasonably attributable to the project, such as: - CO_2 leaks due to combustion of natural gas by gas turbine units in the course of transportation		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		of natural gas to end consumers - CH_4 leaks in the course of gas transportation by gas transportation networks (iii) Significant, i.e., as a rule of thumb, would by each source account on average per year over the crediting period for more than 1 per cent of the annual average anthropogenic emissions by sources of GHGs, or exceed an amount of 2000 tonnes of CO_2 equivalent, whichever is lower.		
32 (b)	Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above?	Project boundary is defined on the basis of case-by-case assessment of different emission sources.	OK	OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart if it is possible?	The project boundary is presented in a tabular form and are understandable enough so that there is no need of graphic presentation.	OK	OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	All gases and sources included are explicitly stated. See Section B of PDD version 02.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
Approved CDM methodology approach only_Paragraph 33_ Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	According to the Guidelines for users of JI PDD form (version 04) the starting date of the project is the date on which the implementation or construction or real action of the project begins. The project's starting date is identified and specified in Section C. 1 of the PDD. The starting date of the project is 01/12/2003, which is the date when PJSC "Mariupolgaz" started to implement measures on gas distribution system expansion in Mariupol city and territories adherent to the city within the framework of the Joint Implementation Project. **CAR 28.** The starting date of the project specified in Section C.1 does not comply with the date specified in Section A.2. Please make necessary corrections.	**CAR 28**	OK
34 (a)	Is the starting date after 2000?	The starting date is after 2000.	OK	OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	The expected operational lifetime of the project in years and months is 17 years, or 204 months, from 01/01/2004 to 31/12/2020.	OK	OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	The length of the crediting period is stated in years and months in Section C.3.	**CAR 29**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		CAR 29. The date of the crediting period beginning - is the date when the first emission reductions are expected to be generated. Please clearly set the crediting period boundaries and justify them.		
34 (c)	Is the starting date of the crediting period before or after the date of the first emission reductions or enhancements of net removals generated by the project?	Refer to **CAR 29**.	OK	OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	Generation of ERUs relates to the first commitment period of 5 years (January 1, 2008 – December 31, 2012).	OK	OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	The PDD states that the prolongation of the crediting period beyond 2012 is subject to approval of the host party and estimation of emission reductions of enhancements of net removals is presented separately for those until 2012 and those after 2012 in the relevant sections of PDD. If after the first commitment period under the Kyoto protocol it is prolonged, the crediting period under the project will be prolonged by 8 years/96 months until December 31, 2020.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
Monitoring Plan				
35	Does the PDD explicitly indicate which of the following approaches is used? − JI specific approach − Approved CDM methodology approach	The proposed project uses a JI specific approach based on the JI requirements in accordance with paragraph 9 (a) of the JI Guidance on criteria for baseline setting and monitoring, version 03.	OK	OK
JI specific approach only				
36 (a)	Does the monitoring plan describe: − All relevant factors and key characteristics subject to monitoring? − The period in which they will be monitored? − All critical factors for the control and reporting of project performance?	The monitoring plan specifies all decisive factors for the control and reporting on project performance: quality control (QC) and quality assurance (QA) procedures; operational and management structures that will be applied when implementing the monitoring plan. **CAR 30.** Please clarify the sources of data for the parameters indicated in Annex 3.	**CAR 30**	OK
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	The monitoring plan specifies indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancement of net removals to be monitored. Data to be monitored are presented in section D of the PDD version 02. **CL 06.** Please clarify whether the data necessary for determination will be stored after the last transfer of ERUs under the project.	**CL 06** **CAR 31**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		CAR 31. Please correct data units of monitoring data and parameters in Sections D.1.1.1 and D.1.1.3 of the PDD in accordance with the formulae.		
36 (b)	If default values are used: − Are accuracy and reasonableness carefully balanced in their selection? − Do the default values originate from recognized sources? − Are the default values supported by statistical analyses providing reasonable confidence levels? − Are the default values presented in a transparent manner?	Default values are provided in the table of Annex 3 to the PDD. They originate from recognized sources and are presented in a transparent manner.	OK	OK
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	The monitoring plan clearly indicates how the values are to be selected and justified.	OK	OK
36 (b) (ii)	For other values, − Does the monitoring plan clearly indicate the precise references from which these values are taken? − Is the conservativeness of the values provided justified?	**CAR 32**. Please, number all formulae in Section D of the PDD. **CAR 33**. Please provide all the values of emission reductions in tonnes of CO_2 equivalent in the PDD.	**CAR 32** **CAR 33**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	Refer to section D of the PDD. **CAR 34.** Please add information regarding collecting and archiving of data in Section D.1.1.	**CAR 34**	OK
36 (b) (iv)	Are International System Units (IS units) used?	IS units are used for certain parameters.	OK	OK
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases within the project boundary is presented in table D.1.1.3. of the PDD.	OK	OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	The use of parameters, coefficients and variables are consistent between the baseline and monitoring plan.	OK	OK
36 (c)	Does the monitoring plan draw on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring"?	The monitoring plan is established taking into account the "Guidance on criteria for baseline setting and monitoring".	OK	OK
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at	The monitoring plan clearly distinguishes three types of data and parameters. Refer to Section D.1. of the PDD. (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	the stage of determination? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not yet available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	(ii) Data and parameters that are monitored throughout the crediting period. (iii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not yet available at the stage of determination are absent.		
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	In tables of parameters provided in section D.1.1.1. of the PDD the time of monitoring (frequency) and the source of data to be used, as well as recording method are indicated for all the monitored parameters and data.	OK	OK
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	All algorithms and formulae used for the estimation of baseline and project emissions are indicated and explained in the PDD. The description of formulae is provided in Section D.1.4. of the PDD	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Refer to section 36 (f) of this table.	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts etc. are used.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
36 (f) (iii)	Are all equations numbered?	See **CAR 32.**	OK	OK
36 (f) (iv)	Are all variables with units indicated defined?	Yes. Refer to section D of the PDD.	OK	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	Yes, algorithms/procedures comply with state norms and are conservative.	OK	OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	Uncertainty in parameters used is low taking into account the algorithms of data monitoring.	OK	OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net removals of the baseline ensured?	There is consistency between the elaboration on the baseline scenario and procedure for calculating the baseline emissions in the monitoring plan and in tables.	OK	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	The formulae used in the PDD are sufficiently described.	OK	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Monitoring under the project does not require changes in existing accounting and data collection system existing at PJSC "Mariupolgaz".	OK	OK
36 (f) (vii)	Are references provided as necessary?	**CAR 35**. Please add references to corresponding rules and regulatory documents of the Host Party.	**CAR 35**	OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	All key assumptions are explained in a transparent manner.	OK	OK
36 (f) (vii)	Is it clearly stated which assumptions and	N/A	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?			
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	Meters are subject to a regular calibration according to the quality control procedures and the law of Ukraine "On metrology and metrological activity". Thus, the issue of uncertainty range and confidence interval is irrelevant for such measurements.	OK	OK
36 (g)	Does the monitoring plan identify a national or international monitoring standard if such standard has to be and/or is applied to certain aspects of the project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?	The monitoring plan was set according to national norms and standards.	OK	OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	Yes	OK	OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records on data and/or method	Inspection (calibration) of meters is carried out in accordance with manuals of the manufacturer, approved methodologies on inspection/calibration of meters as well as according to the national standards of Ukraine.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	validity and accuracy are kept and made available upon request?			
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	Detailed operational and management structures are given in Section D.3 to the PDD. **CL 07.** Please provide in Section D.4 information concerning who determined the monitoring plan.	**CL 07**	OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	Monitoring under the project does not require changes in existing accounting system and data collection procedure.	OK	OK
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	Tables D.1.1.1 and D.1.1.3 provide compilation of all data needed to monitor project and baseline emissions.	OK	OK
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last	Data to be monitored and required for determination will be kept for two years after the last transfer of ERUs under the project.	OK	OK

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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(c) Does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met? (d) Does the monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the conditions mentioned in (a)-(c) are met?			
Leakage				
JI specific approach only				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	According to the approved methodology ACM0009 used in the project along with JI specific approach, there are potential sources of leakage due to the project activities. 1. GHG leaks due to combustion of gas fuel by gas turbine units in the course of transportation of natural gas to end consumers 2. GHG leaks in the course of gas transportation by gas transportation networks Leaks associated with fossil fuel supply to the	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		consumer under the baseline scenario are excluded from calculations because they are beyond the project developer's control.		
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	The PDD points to existence of leakage calculated in Section D 1.3.2.	OK	OK
Approved CDM methodology approach only_Paragraph 41_Not applicable				
Estimation of emission reductions or enhancements of net removals				
42	Does the PDD indicate which of the following approaches it chooses? (a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions	In the PDD the approach of assessment of emissions in the baseline scenario and in the project scenario is indicated. **CAR 36.** Please check the numbering of tables in Section E of the PDD and make corresponding corrections. **CAR 37.** Please correct invalid references to Supporting Documents in Section E.	**CAR 36** **CAR 37**	OK OK
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the project boundary)?	PDD provides estimates of: (a) Emissions in the project scenario (Section E.1) (b) Leakage (Section E.2) (c) Emissions in the baseline scenario (Section E.4) (d) Emission reductions adjusted by leakage (Section E.6).	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(d) Emission reductions or enhancements of net removals adjusted by leakage?			
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	N/A	N/A	N/A
45	For both approaches in 42 (a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tonnes of CO_2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol?	(a) Estimates in 43 are given on the periodic basis, in tonnes of CO_2 equivalent, on a source-by-source basis, before, during and after the crediting period. (b) The formulae used in PDD are consistent. (c) Key factors influencing baseline emissions and activity level of the project and risks associated with the project are taken into account, as appropriate. (d) Data sources used to calculate the estimates are clearly identified, reliable and transparent. (e) Default values are taken from identified sources. (f) Estimation in 43 is based on conservative assumptions and the most plausible scenario in a transparent manner. (g) Estimates in 43 are consistent throughout the PDD. (h) The annual average of estimated emission reductions are calculated correctly (by dividing the	OK	OK

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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?			
46	If the calculation of the baseline emissions or net removals is to be performed de facto, does the PDD include an illustrative forecasted emissions or net removals calculation?	Baseline emission level is calculated using the specific approach employing elements of approved ACM0009 methodology. Forecasted emissions calculation is clearly provided in the PDD.	OK	OK
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				
Environmental impacts				
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	The environmental impacts of the project have been sufficiently described	OK	OK
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to Supporting Documentation of an environmental impact assessment undertaken in accordance with	**CAR 38.** Please provide references to regulatory and legislative documents of Ukraine on assessment of the environmental impacts listed in Section F.1 and F.2 of the PDD. **CL 08.** Please provide clarifications on whether the environmental impact assessment necessary for this type of project activities according to the legislation of	**CAR 38** **CL 08**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	the procedures as required by the host Party?	Ukraine.		
Stakeholder consultations				
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	In pursuance of requirements of Article 18 of Law of Ukaine "On territory planning and development" and Article 11 of Law of Ukraine "On environmental impact assessment", PJSC "Mariupolgaz" publishes information in mass media on implementation of planned activities. All the comments received concerning project implementation were positive. No negative comments were received.	OK	OK
Determination regarding small-scale projects (additional elements for assessment)				
Determination regarding land use, land-use change and forestry projects (additional/alternative elements for assessment)				
Determination regarding programmes of activities (additional/alternative elements for assessment)				

TABLE 2 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICTION REQUESTS

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
FAR 01. The project has no approval of the Host Party and the investing country.	19	The project is implemented as a bilateral JI project. The host country is Ukraine, and the buying country is Switzerland. To obtain the Letter of Approval the final Determination report must be submitted to the State Environmental Investment Agency of Ukraine that includes this Determination Protocol and the list of sources of Reference Information. A Letter of Approval of Switzerland as the investing country is not obtained at the current stage of the Project either.	CAR 01 will be closed after the Letter of Approval is issued by the Party involved.
CAR 01. Please provide more detailed information about the history of the project (including its JI component) as well as the documents confirming this information as Accompanying ones.	A.2	01/12/2003– PJSC "Mariupolgaz" started to implement measures on gas distribution system expansion in Mariupol city and territories of Donetsk region adherent to the city as part of the Joint Implementation Project. 04/11/2011 - VEMA S.A. and PJSC "Mariupolgaz" signed an agreement on development of project design documents for the JI project "Reduction of greenhouse gases emissions by gasification of Mariupol city". 12/12/2011– preparation and submission	

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		of the project proposal relating to justification of anthropogenic GHG emission reductions to the State Environmental Investment Agency of Ukraine. The minutes of the meeting of PJSC "Mariupolgaz" on JI project implementation is provided as a supporting document to the PDD. The chronology of events in the early period of JI project implementation is presented in Section A.2 of the PDD.	
CAR 02. Please provide the date when development of project design documents for the JI project "Reduction of greenhouse gases emissions by gasification of Mariupol city" started.	A.2	17/10/2003– the date of commencement of project documentation elaboration for Joint Implementation project "Reduction of greenhouse gases emissions by gasification of Mariupol city".	The information is provided, the issue is closed.
CAR 03. Please provide contact information of the Swiss party (VEMA S.A.).		Contact information of VEMA S.A. is provided in Annex 1 of the PDD.	The information is verified, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 04. Please provide detailed information about facilities included in the project and the details of their physical location.	A.4.1.4	Project facilities, namely gas distribution systems and their components, are located throughout the Donetsk region, which is indicated in Section A.2 and A.4.2. of the PDD. The detailed information is provided in Supporting Documents of the PDD.	The necessary information is provided, the issue is closed.
CAR 05. Please provide information on specifications of pipes used for natural gas transportation via gas distribution systems of PJSC "Mariupolgaz".	A.4.2	The necessary information on specifications of pipes used for natural gas transportation via gas distribution systems of PJSC "Mariupolgaz" is provided in Section A.2.	The information was provided in Section A.4.2. The issue is closed.
CAR 06. Please specify manufacturers of gas valves used in the project.	A.4.2	The project provides for the use of gas valves from the following European manufacturers: “EFAWA”, “Georg Fischer Wavin Ltd”. The detailed information and references to manufacturers are provided in Section A.4.2.	References to web-sites of manufacturers are provided. The issue is closed.
CAR 07. Please provide specifications and information on new metering devices.	A.4.2	For the remote metering of gas it is planned to install an automated gas metering system (AGMS) produced by SSPE "Electronmash". The detailed information on AGMS is provided in Section 4.2 of the PDD and on the manufacturer's web-site.	The information is provided in the corresponding section. The issue is closed.
CAR 08. Please provide the project schedule in tabular form with indication of start dates and end dates for each activity and stage.	A.4.2	The project schedule with indication of project stages and timeframes is provided in Table 1 of the PDD of the newest version.	The issue is closed, the information is verified.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 09. Please provide links to web-sites of manufacturers whose equipment will be used in the project.	A.4.2	Links to web-sites of manufacturers of the new project equipment are provided in the PDD of the newest version.	References are provided, the issue is closed.
CAR 10. Please provide translation of schematic components of Figure 8 presented in PDD Section A.4.2 into the Ukrainian language.	A.4.2	Translation of schematic components of Figure 8 into the Ukrainian language is provided.	The issue is closed as corresponding changes are made.
CAR 11. Please provide information on the length of the project pipeline.	A.4.2	The information is provided in Supporting Documents of the PDD.	The information is provided, the issue is closed.
CAR 12. The project provides for the installation of cathodic protection plants, which is indicated in Section A.4.2. of the PDD. Please provide more details on the application of this equipment.	A.4.2	The project provides for the installation of cathodic protection plants produced by "Elkon" and OJSC "Elektropreobrazovatel". More details on their application are provided in Section A.4.2. of the PDD as well as on manufacturers' web-sites.	The information is provided, the issue is closed.
CAR 13. Please provide information about the reasons why the proposed measures will not be implemented without the project activity, taking into account national and/or sectoral policies and circumstances.	A.4.2	The common practice in the Ukrainian gas supply sphere is use of obsolete technological schemes, constant wear and tear of equipment, no modernization of gas distribution network facilities and no new technologies implemented, which results in ineffective and excessive natural gas consumption. Without the JI project, Donetsk region would continue using solid fossil fuels (i.e. fuel oil, coal), which would inevitably entail more negative consequences in regards to	Explanation is accepted. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		amount of GHG created in the course of combustion of fuel of a certain kind. The detailed explanation is provided in Sections A and B of the PDD.	
CAR 14. The length of the crediting period indicated in PDD is 17 years while the calculation is provided for only 9 years. Please make corresponding amendments.	A.4.3	Tables 2, 3 and 4 demonstrate estimated amount of emission reductions for the period preceding the first commitment period (2004-2007), over the first commitment period (2008-2012) and for the period following the first commitment period (2013-2020).	Corrections are made, the issue is closed.
CAR 15. In Section A.4.3.1. there are incorrect references to Section E and Supporting Documents. Please provide the correct references.	A.4.3	Incorrect references were corrected in Section A.4.3.1.	Correct references are provided, the issue is closed.
CAR 16. Length of the crediting period specified in Table 2, Section A.4.3.1, is incorrect. Please make the correction.	A.4.3	The period preceding to the first commitment period is 2004-2007. The length of this period is 4 years. Corrections are made.	The issue is closed.
CAR 17. Please indicate in PDD whether elements of the approved CDM methodologies for setting the baseline were used.	22	The proposed project uses a specific approach based on approved methodology ACM0009 «Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas - Version 3.2». The key information is provided in Section B of the PDD.	The information is provided, the issue is closed.
CAR 18. Please include more detailed description of the approach used to set the baseline.	23	The proposed project uses specific JI approach for baseline setting. See Section B.1.	The description of the approach is presented, the issue is closed.
CAR 19. Please add correct description of	24	$NCV_{FF,y}$ - net calorific value of fossil	Corrections are made, the issue is

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
parameters $NCV_{NG,y}$ and $NCV_{FF,y}$ through the PDD.		fuel type "F" (fuel type "FF" is coal, fuel oil), GJ/ths t $NCV_{NG,y}$ - net calorific value of natural gas, GJ/ths m^3.	closed.
CAR 20. The value of $\eta_{BL,i}$ parameter is incorrect. Please provide correct value for the parameter according to the data source and make corrections of calculations in Supporting Documents.	24	$\eta_{BL,i}$ - efficiency of stationary combustion of coal or fuel oil at the place of consumer "*i*", relative units; Calculations in Supporting Documents were corrected in accordance with the corrected value $\eta_{BL,i}$.	Corrections are made, the issue is closed.
CAR 21. Please provide the correct description of $EF_{CH_4,los1,y}$ and $EF_{CH_4,los2,y}$ parameters in Section D.1 of the PDD.	24	$EF_{CH_4,los1,y}$ - default emission factor for methane in the course of transportation and distribution of natural gas, t CH_4/ths km; $EF_{CH_4,los2,y}$ - default emission factor for methane at technological gas equipment at end consumer's place, t CH_4/PJ.	The issue is closed as corresponding changes are made.
CAR 22. Annex 2 must include a summary of key elements. Please add relevant information in Annex 2.	24	Annex 2 to the PDD provides key elements for baseline setting (including their description, data source and measurement units).	The information is verified, the issue is closed.
CAR 23. Please add information on CO_2 emission factors for FF type fossil fuel combustion to Annex 2.	24	Information on carbon oxidation factors was added to Annex 2 of the PDD.	Verified. The issue is closed.
CAR 24. Some designations of parameters and data do not correspond to the list of standard variables presented in Annex B of the "Guidance on criteria for baseline setting and monitoring".	24	The relevant corrections were made in accordance with the list of standard variables presented in Annex B of the	The issue is closed as corresponding changes are made.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
Please make corresponding corrections of Section B of PDD.		"Guidance on criteria for baseline setting and monitoring".	
CAR 25. Index "*i"* has two different descriptions in the PDD: - index of elementary fuel combustion process at consumer's place; - index of consumer. Please choose one description.	24	"*i*" is the index that corresponds to the consumer. Corresponding changes were made in the PDD version 03.	The issue is closed as corresponding changes are made.
CAR 26. Parameter identifier of the discount rate does not comply with the list of standard variables, which are presented in Appendix B to the "Guidelines on criteria for baseline setting and monitoring." Please make the corrections.	28	Parameter identifier of the discount rate was changed to dr.	Corrections are made, the issue is closed.
CAR 27. In the section describing the additionality of the project, the developer states that the methodological guidance for the demonstration and assessment of additionality (hereinafter referred to as Additionality guidelines) was used. Additionality assessment does not follow the example which was set by Additionality guidelines. Therefore, the section relating to additionality assessment should be duly changed.	28	Section B.2. of the PDD, which describes the additionality of the JI project, was corrected according to the methodological guidance for the demonstration and assessment of additionality Version 06.0.0).	The section was changed, the issue is closed.
CAR 28. The starting date of the project specified in Section C.1 does not comply with the date specified in Section A.2. Please make necessary corrections.	34(a)	The starting date of the project is deemed to be 01/12/2003 when PJSC "Mariupolgaz" started to implement measures on gas distribution system expansion in Mariupol city and territories adherent to the city within the framework of the Joint Implementation Project. The	The issue is closed, corrections are made.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		date is specified in Sections A.2 and C.1. Corresponding corrections were made in the PDD Version 03.	
CAR 29. The date of the crediting period beginning is a date when the first emission reductions are expected to be generated. Please clearly set the crediting period boundaries and justify them.	34(c)	The starting date of the crediting period is on the date when the first emission reductions, namely January 1, 2004. Generation of ERUs relates to the first commitment period of 5 years (January 1, 2008 – December 31, 2012). The PDD states that the prolongation of the crediting period beyond 2012 is subject to approval of the host party and estimation of emission reductions of enhancements of net removals is presented separately for those until 2012 and those after 2012 in the relevant sections of PDD. If after the first commitment period under the Kyoto protocol it is prolonged, the crediting period under the project will be prolonged by 8 years/96 months until December 31, 2020.	The boundaries of the crediting period are set in Section C of the PDD. The issue is closed.
CAR 30. Please clarify the sources of data for the parameters indicated in Annex 3.	36(a)	Annex 3 provides data sources for parameters and data of monitoring.	Information is provided, the issue is closed.
CAR 31. Please correct data units of monitoring data and parameters in Sections D.1.1.1 and D.1.1.3 of the PDD in accordance with the formulae.	36(b)	Corrections are made to Sections D.1.1.1 and D.1.1.3. of the PDD.	Corrections are accepted, the issue is closed.
CAR 32. Please, number all formulae in Section D of the PDD.	36 (b) (ii)	All the formulae given in Section D of the PDD version 03 were numbered.	The issue is closed as corresponding changes are made.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 33. Please provide all the values of emission reductions in tonnes of CO_2 equivalent in the PDD.	36 (b) (ii)	The values for emission reductions were given in tonnes of CO_2 equivalent throughout the PDD.	The issue is closed as corresponding changes are made.
CAR 34. Please add information regarding collecting and archiving of data in Section D.1.1.	36 (b) (iii)	In Sections D.1.1.1. and D.1.1.3., ways of data collection and the form of archivation are specified.	The information is provided, the issue is closed.
CAR 35. Please add references to corresponding rules and regulatory documents of the Host Party.	36 (f) (vii)	References are provided to the following documents: • Law of Ukraine No.1264-XII "On environmental protection" dated 25/06/1991 • Law of Ukraine No.2707-XII "On atmospheric air protection" dated 16/10/1992 • Current rules for emission restriction: «Norms of maximum permissible emissions of pollutants from permanent sources» – approved by the Ministry of Environmental Protection of Ukraine dated 27/06/2006, №309 and registered in the Ministry of Justice of Ukraine dated 01/09/2006, №912/12786.	The references are verified. The issue is closed.
CAR 36. Please check the numbering of tables in Section E of the PDD and make corresponding corrections.	42	Numbering of tables was corrected in the PDD version 03.	Corrections are made, the issue is closed.
CAR 37. Please correct invalid references to Supporting Documents in Section E.	42	Incorrect references to Supporting Documents in Section E were corrected.	The issue is closed as corresponding changes are made.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 38. Please provide references to regulatory and legislative documents of Ukraine on assessment of the environmental impacts listed in Section F.1. and F.2. of the PDD.	48(b)	In Sections F.1. and F.2. references to the following documents are provided: (i) Law of Ukraine "On atmospheric air protection" (ii) Law of Ukraine "On environmental protection" (iii) SSR -96 "Planning and development of human settlements".	References are verified. The issue is closed.
CL 01. Please provide evidence and explanation of guarantees that the measures implemented under the project activity are not a part of the maintenance program will be guaranteed.	A.4.2	There are several main reasons why the project implementation is hardly plausible without the JI mechanism. There is no legislation to bind PJSC "Mariupolgaz" to carry out gasification of Mariupol city and cities adherent to it. The need of additional investments associated with financial risks and risks to the operation of new gas equipment makes the project economically unattractive without JI mechanisms. The detailed explanation is provided in Sections A and B of the latest PDD version.	The issue is closed as necessary explanations are provided.
CL 02. Please provide explanation to Figure 6 in PDD text in the corresponding section.	A.4.2	Figure 6 depicts cathodic protection electric transducer (CPET) produced by “Elkon” and its principal scheme.	The explanation is provided. The issue is closed.
CL 03. Please define the factors of emission reduction due to gasification of Donetsk region.	A.4.2	The reduction of GHG emissions will be achieved by replacement solid fossil fuel with natural gas, which will trim GHG emissions considerably.	The information is verified, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		The detailed description was provided in Section A.4.2. of the PDD.	
CL 04. Please provide explanations to geographic information system (GIS) technology as well as information on its application by PJSC "Mariupolgaz".	A.4.2	The project provides for a geographic information system (GIS). GIS is designed to solve complex problems of exploitation and development of the gas supply system of the city. This system is based on a digital spatial model of gas networks of the capital and specialized algorithms for the hydraulic calculation of gas pipelines. The detailed information on application of the system is provided in Section A.4.2. of the PDD.	Explanation is sufficient. The issue is closed.
CL 05. Please specify whether there are any mandatory government programs or policy which provide for reconstruction and modernization of the rail transportation system.	29 (c)	There are no programmes or policies to bind PJSC "Mariupolgaz" to carry out gasification of cities in the region; there are no legislative restrictions of the baseline scenario either. The detailed information was provided in Section B.	Explanation is sufficient. The issue is closed.
CL 06. Please clarify whether the data necessary for determination will be stored after the last transfer of ERUs under the project.	36 (b)	Data to be monitored and required for determination and subsequent verification will be archived and stored at PJSC "Mariupolgaz" for two years after the transfer of emission reduction units generated by the project.	Explanation is accepted. The issue is closed.
CL 07. Please provide in Section D.4 information concerning who determined the monitoring plan.	36 (j)	Section D.4. of the PDD version 03 indicates VEMA S.A. and PJSC "Mariupolgaz" established the monitoring plan. Contact information of the project	The issue is closed as corresponding changes are made.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		participants is provided in Annex 1.	
CL 08. Please provide clarifications on whether the environmental impact assessment necessary for this type of project activities according to the legislation of Ukraine.	48(b)	According to the Ukrainian legislation, the projects of new gas distribution networks must include the Environmental Impact Assessment (EIA) that meets basic requirements stated in the State Building Norms of Ukraine A.2.2-1-2003, "Structure and content of environmental impact assessment (EIA) in the process of design and construction of plants, buildings and structures". PJSC "Mariupolgaz" has the necessary EIA for all the gas distribution network projects in accordance with the legislation of Ukraine. EIA of the projects is developed by subcontracting project-assembling organizations and is provided in the sections of reconstruction project document of PJSC «Mariupolgaz».	The issue is closed as sufficient explanation is provided.