DETERMINATION REPORT
VEMA S.A.

DETERMINATION OF THE JI PROJECT

"Implementation of the energy efficiency measures at SE "Malyshev Plant"

REPORT NO. UKRAINE-DET/0533/2012

REVISION NO. 03

BUREAU VERITAS CERTIFICATION

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Client: VEMA S.A.	Client ref.: Fabian Knodel

Summary:
Bureau Veritas Certification has made the determination of the "Implementation of the energy efficiency measures at SE "Malyshev Plant" project of VEMA S.A. located in Kharkiv 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 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.: URKAINE-det/0533/2012	Subject Group: JI
Project title: "Implementation of the energy efficiency measures at SE "Malyshev Plant"	
Work carried out by: Vyacheslav Yeriomin – Team Leader, Climate Change Lead Verifier Vladimir Kulish – Team Member, Climate Change Lead Verifier	
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Oleg Papu - Technical expert	
Work approved by: Ivan Sokolov - Operational Manager	
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1 INTRODUCTION

VEMA S.A. has commissioned Bureau Veritas Certification to determine its JI project "Implementation of the energy efficiency measures at SE "Malyshev Plant" (hereafter called “the project”) located in Kharkiv 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:

Vyacheslav Yeriomin

Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Vladimir Kulish

Bureau Veritas Certification Team Member, Climate Change Lead Verifier

This determination report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

Oleg Papu
Bureau Veritas Certification,Technical expert

2 METHODOLOGY

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

In order to ensure transparency, a determination protocol was customized for the project, according to the version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of determination and the results from determining the identified criteria. The determination protocol serves the following purposes:

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

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

2.1 Review of Documents

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

baseline setting and monitoring, Kyoto Protocol, Clarifications on Determination Requirements to be Checked by an Accredited Independent Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, VEMA S.A. revised the PDD version 01 dated February 16, 2012 and resubmitted it on March 30, 2012, June 21, 2012 and August 16, 2012 as versions 02, 03 and 04 respectively.
The determination findings presented in this report relate to the project as described in the PDD versions 01, 02, 03 and 04.

2.2 Follow-up Interviews

On 22/06/2012 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 SE "Malyshev Plant" 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
SE "Malyshev Plant"	➢ Project History ➢ Project approach ➢ Project boundary ➢ Schedule of implementation ➢ Organizational Structure ➢ Responsibilities and obligations ➢ Training ➢ Quality control procedures and technologies ➢ Modernization / installation of equipment (records) ➢ Control over metering equipment ➢ The system of keeping records of measurements, the database ➢ Technical Documentation ➢ Monitoring Plan and procedures ➢ Permits and licenses ➢ Environmental Impact Assessment ➢ Answers of stakeholders
VEMA S.A.	➢ Baseline methodology ➢ Monitoring Plan ➢ Additionality proofs ➢ The calculations of emission reductions ➢ Project design ➢ Legal issues relating to the project ➢ Environmental Impacts ➢ Approval of the host party

2.3 Resolution of Clarification and Corrective Action Requests

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

Corrective Action Request (CAR) is issued, where:

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

(b) The JI requirements have not been met;

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

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

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

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

3 PROJECT DESCRIPTION

The main purpose of the Joint Implementation Project (hereinafter – JI project) “Implementation of the energy efficiency measures at SE “Malyshev Plant” is to increase energy efficiency of operations and improve environmental situation in the region due to full scale modernization of equipment.

State Enterprise “Malyshev Plant” is one of the oldest heavy engineering plants in Ukraine and the CIS. The company has a history of 115 years and is one of Ukraine’s largest enterprises. SE “Malyshev Plant” continues to produce large-size military and civil vehicles, parts and components, ship engines, equipment for coal mining, embracing leading positions in the metallurgical sector of the Ukrainian market (pig iron, steel, non-ferrous metals). The production process at SE “Malyshev Plant”

is a complex system with many machines and devices cooperating under the supervision of the servicing staff. Therefore, modernization of the operations requires an integral approach, since partial implementation is ineffective, time-consuming and sometimes impossible.
SE "Malyshev Plant" hadn't carried out any full-sccale modernization of equipment before the JI project because of a lack of financing and the absence of a perspective industry development plan. Therefore, the condition of technological equipment is worsening and its performance rates are on a permanent decline.

Most of operating equipment is obsolete and worn-out, which leads to increase in natural gas and electricity consumption to provide the stable level of electricity and heat supply of the company.

Despite the poor condition of equipment, which is ineffective but still capable of further operation, taking account of the operational experience and economic indicators, it can be concluded that the equipment, which operated before the JI project, can operate for another 15-20 years.

The project provides for the full-scale modernization of manufacturing processes at SE "Malyshev Plant" in the following key areas:
(i) installation of effective energy-saving technological equipment to produce:
- ferrous and non-ferrous metals;
- other products measured in tonnes.

(ii) implementation of energy-efficient heat generating equipment;
(iii) replacement of metering devices.

The increase in production efficiency will lead to the reduction of electricity and natural gas consumption in the course of manufacture, which, in turn, will cause lower greenhouse gas (GHG) emissions in the atmosphere.

Measures that will be implemented as part of the project, as well as implementation and performance of constant monitoring will help to reduce electricity and natural gas consumption significantly in the course of manufacturing processes at SE "Malyshev Plant", which, in turn, will decrease GHG emissions.

03/01/2006 – SE "Malyshev Plant" Management Board made a decision to implement the JI project "Implementation of the energy efficiency measures at SE "Malyshev Plant".

18/04/2006 – the date when implementation of new energy-effective equipment started as part of the project activity (certificate No.1-2006).
13/03/2012 – the date of preparation and submission of the project idea note to support anthropogenic GHG emission reductions, to the State Environmental Investment Agency of Ukraine.
07/06/2012– the date of obtaining of a Letter of Endorsement from the State Environmental Investment Agency of Ukraine.
Determination report includes CAR and CL for the PDD versions 01, 02, 03 and 04.

4 DETERMINATION CONCLUSIONS

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

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

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in 38 Corrective Action Requests and 9 Clarification Requests.

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 "Implementation of the energy efficiency measures at SE "Malyshev Plant" has already obtained endorsement from the government of Ukraine, namely a Letter of Endorsement No.1463/23/7 issued by the State Environmental Investment Agency of Ukraine dated 07/06/2012.
Bureau Veritas Certification received this letter from the project participants and does not doubt its authenticity.
Upon completion of the Determination Report the project design document will be submitted to the State Environmental Investment Agency of Ukraine for receiving a Letter of Approval.
As the project has no approval by the Parties involved, CAR 14 remains pending and will be closed after report finalizing (see Appendix A).
The identified areas of concern as to the project approvals by the Parties involved, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 14, CAR 15).

4.2 Authorization of project participants by Parties involved (21)

The participation for each of the legal entities listed as project participants in the PDD will be authorized by the Parties involved, through the written Letters of Approval (from the government of Switzerland as the country-investor and from Ukraine as the host party). Refer to CAR 14.

4.3 Baseline setting (22-26)

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

None of the existing methodologies can be applied for the proposed project aimed at the reduction of energy consumption at SE "Malyshev Plant". The project participant has chosen a JI-specific approach in accordance with paragraph 9 (a) of the "Guidance on criteria for baseline setting and monitoring", Version 03.

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 plausible scenarios on the basis of conservative assumptions and selecting the most plausible one:

   a. Continuation of the current situation, without the JI project implementation.
   b. Proposed project activity without the use of the JI mechanism.
   c. Partial project activities (some of the project activities are implemented) without the use of the Joint Implementation Mechanism.

(b) Taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, manufacturing industries 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. Manufacturing industry in Ukraine plays an important role in the economy. Branch structure of industry in Ukraine is characterized by the dominance of manufacturing industries, where machine building industry accounts for 14% of the total volume of industrial products and services in Ukraine. The greatest share in the structure of manufacturing industry is metal production and manufacturing of fabricated metal products. In the future heavy engeneering should take a more important place both in the structure of the industry and in the formation of Ukraine's exports. But in order to do this it is necessary to improve the industrial structure of heavy engeneering, expand its product range by increasing the share of industries that produce consumer goods. It is necessary to modernize machine building plants, to re-equip them by using modern technology and increase their quality and competitiveness. It is necessary to organize production of highly efficient machines and systems for all sectors of the economy, appliances and devices, high-speed electronic computers of new generations of communications systems, management and automation facilities etc. The state's role in the development of the sector is very small. To date there is no formal strategy in heavy engeneering and metal production industy.

b. In the framework of the existing market model of heavy engeneering and metal production, the effective competition among the producers can't be achieved; this market model can't also provide for the competitive pricing, which would stimulate the producers to improve efficiency and increase investment in the sector. Existing market mechanisms and targeted administrative measures don't provide for the necessary modernization and upgrading of the existing systems of manufacturing industries operation. The situation becomes particularly critical given the growing needs of enterprises to upgrade production equipment, physical worn-out and moral obsolescence which are a threat to safe operation of the production and sale of products of manufacturing enterprises.

c. Existing prices for manufacturing industries products are regulated by the state and mechanisms of market economy; the prices do not fully take into account depreciation and investment needs of producers. 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 prices for manufacturing industries products does not include an investment component for the development of the processing industry. According to the Law "On priorities of innovation activity in Ukraine" SE "Malyshev Plant" is not obliged and it is unmotivated to implement new equipment at its own expense. On top of that, state investment programs in most cases are targeted at administrative and organizational implementations.

e. State support in the manufacturing industry sector 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 already implements JI projects in the sphere of heavy engeneering and metal production, which is not possible without the funds earned from the sale of emission reduction units.

The PDD provides a detailed description in a complete and transparent manner, as well as justification, that the baseline was duly set.
The methods of calculation used to determine the expected and actual baseline emissions, are sufficiently described in sections E and D of the PDD, respectively.

The identified areas of concern as to the baseline setting, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 16 – CAR 20).

4.4 Additionality (27-31)

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

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

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

- Alternative 1.1: Continuation of the current situation, without the JI project implementation.
- Alternative 1.2: Proposed project activity without the use of the JI mechanism.
- Alternative 1.3: Partial project activities (some of the project activities are implemented) without the use of the Joint Implementation Mechanism.

and the mandatory compliance of the scenarios with the legislation and legal acts was demonstrated.
According to the "Tool for the demonstration and assessment of additionality" (Version 06.0.0) investment analysis and common practice analysis were used in the PDD to justify additionality of the project.
Thus, the overall conclusion is that the project activity meets the criteria of additionality, is not a baseline scenario and is additional.
Additionality is demonstrated appropriately as a result of the analysis using the approach chosen.
The identified areas of concern as to the additionality, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 21 – CAR 25, CL 06).

4.5 Project boundary (32-33)

The project boundary encompasses the entire technological complex of equipment to produce metallurgical products (pig iron, steel, non-ferrous metals), as well as equipment producing heavy engineering products measured in tonnes, heat generating equipment and flow meters at SE "Malyshev Plant" involved in production.
Project boundary encompasses all anthropogenic emissions by sources of greenhouse gas (GHGs), which are:

(i) Under the control of the project participants such as:
- CO_2 emissions from electricity consumption for production needs.

(ii) Reasonably attributable to the project such as:
- CO_2 emissions from natural gas for production needs;

(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.

The identified areas of concern as to the project boundary, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer CAR 26).

4.6 Crediting period (34)

The PDD states the starting date of the project as the date on which was the meeting of the company management SE "Malyshev Plant" and was decided to develope a JI project, and the starting date of the project is 03/01/2006, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 16 years or 192 months – from January 1, 2007 to December 31, 2022.

The PDD states the length of the crediting period in years and months, which is 16 years or 192 months, and its starting date of the crediting period is 01/01/2007, which is the date the first emission reductions are expected to be generated by the project.

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

The PDD states that the extension of the crediting period after 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 relating to the crediting period, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 27, CAR 28).

4.7 Monitoring plan (35-39)

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

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

The monitoring plan specifies the indicators, constants and variables that are reliable (i.e. provide consistent and accurate values), valid (i.e. be clearly connected with the effect to be measured), and that provide a transparent picture of the emission reductions to be monitored such as: total production, energy consumption, ner calorific value of natural gas, carbon dioxide emission factors for electric energy consumption by consumers of electric energy, carbon emission factor in the process of natural gas combustion, carbon oxidation factor for the process of natural gas combustion.

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, including baseline emissions (BE_y), project emissions (PE_y), CO_2 emission factor ($EF_{CO_2,}$), Net calorific value (NCV_{XX}).

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

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

N_b^j	Total production in historical period j in the baseline scenario, t
EC_b^j	Electricity consumption in historical period j in the baseline scenario, MWh
$EF_{b,CO2,ELEC}^j$	Carbon dioxide emission factor for electricity consumption by consumers, in historical period j in the baseline scenario, tCO2/MWh
$FC_{b,NG}^j$	Total natural gas consumption in historical period j in the baseline scenario, ths m3
$NCV_{b,NG}^j$	Net calorific value of natural gas in historical period j in the baseline scenario, TJ/ths m3
$EF_{b,C,NG}^j$	Carbon emission factor for natural gas combustion in historical period j in the baseline scenario, t C /TJ
$OXID_{b,NG}^j$	Carbon oxidation factor for natural gas combustion in historical period j in the baseline scenario, relative units

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

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

N_p^y	Total production in monitoring period y in the project scenario, t
EC_p^y	Electricity consumption in monitoring period y in the project scenario, MWh
$EF_{p,CO2,ELEC}^y$	Carbon dioxide emission factor for electricity consumption by consumers, in historical period j in the baseline scenario, tCO2/MWh
$FC_{p,NG}^y$	Total natural gas consumption in monitoring period y in the project scenario, ths m3
$NCV_{p,NG}^y$	Net calorific value of natural gas in monitoring period y in the project scenario scenario, TJ/ths m3
$EF_{p,C,NG}^y$	Carbon emission factor for natural gas combustion in monitoring period y in the project scenario, t C /TJ
$OXID_{p,NG}^y$	Carbon oxidation factor for natural gas combustion in monitoring period y in the project scenario, relative units

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording, such as data archiving using accounting and statistical computer programs.

The most objective and cumulative factor that provides a clear picture of whether the emission reductions took place is the fact of energy resource consumption decrease through full scale production modernization. It can be defined as the difference between baseline GHG emissions and the emissions after the project implementation.

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

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

$$PE_p^y = PE_{p,ELEC}^y + PE_{p,NG}^y, \quad (1)$$

where

PE_p^y - total GHG emissions from natural gas combustion and electricity consumption in the course of production in monitoring period *y* in the project scenario, t CO_2eq;

$PE_{p,ELEC}^y$ - GHG emissions from fossil fuel combustion in the course of generation of electricity consumed in the course of production in monitoring period *y* in the project scenario, t CO_2eq;

$PE_{p,NG}^y$ - GHG emissions from combustion of natural gas used in the course of production in monitoring period *y* in the project scenario, t CO_2eq;

$[y]$ - monitoring period;

$[p]$ - project scenario;

$[ELEC]$ - electric energy;

$[NG]$ - natural gas.

$$PE_{p,ELEC}^y = EC^y * EF_{p,CO2,ELEC}^y \quad (2)$$

$PE_{p,ELEC}^y$ - GHG emissions from fossil fuel combustion in the course of generation of electricity consumed in the course of production in monitoring period *y* in the project scenario, t CO_2eq;

EC_p^y - electricity consumption in monitoring period *y* in the project scenario, MWh;

$EF_{p,CO2,ELEC}^y$ - Carbon dioxide emission factor for electricity consumption by consumers, in monitoring period *y* in the project scenario, tCO2/MWh;

$[y]$ - monitoring period;

$[p]$ - project scenario;

$[ELEC]$ - electric energy.

$$PE_{p,NG}^y = FC_{p,NG}^y * NCV_{p,NG}^y * EF_{p,CO2,NG}^y, \quad (3)$$

$PE_{p,NG}^y$ - GHG emissions from combustion of natural gas used in the course of production in monitoring period *y* in the project scenario, t CO_2eq;

$FC_{p,NG}^y$ - total natural gas consumption in monitoring period *y* in the project scenario, ths m^3;

$NCV_{p,NG}^y$ - net calorific value of natural gas in monitoring period *y* in the project scenario scenario, TJ/ths m^3;

$EF^{y}_{p,CO2,NG}$ - default carbon dioxide emission factor for stationary natural gas combustion in monitoring period *y* in the project scenario, t CO_2/TJ.

$$EF^{y}_{p,CO2,NG} = EF^{y}_{p,C,NG} * OXID^{y}_{p,NG} * 44/12, \quad (4)$$

$EF^{y}_{p,CO2,NG}$ - default carbon dioxide emission factor for stationary natural gas combustion in monitoring period *y* in the project scenario, t CO_2/TJ;

$EF^{y}_{p,C,NG}$ - carbon emission factor for natural gas combustion in monitoring period *y* in the project scenario, t C /TJ;

$OXID^{y}_{p,NG}$ - carbon oxidation factor for natural gas combustion in monitoring period *y* in the project scenario, relative units;

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

$[y]$ - monitoring period;

$[p]$ - project scenario;

$[NG]$ - natural gas.

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

$$BE^{y}_{b} = N^{y}_{p} * BPER, \quad (5)$$

where

BE^{y}_{b} - total GHG emissions in the course of production in monitoring period *y* in the baseline scenario, t CO_2eq;

N^{y}_{p} - total production in monitoring period «y» in the project scenario (t);

$BPER$ - pre-project production efficiency rate, t CO_2eq/t;

$[y]$ - monitoring period;

$[b]$ - baseline scenario;

$[p]$ - project scenario;

$$BPER = \sum_{n=1}^{3} \frac{BE_b^j / N_b^j}{3}; \quad (6)$$

$BPER$ - pre-project production efficiency rate, t CO2eq/t;

BE_b^j - total GHG emissions in the course of production in historical period j in the baseline scenario, t CO2eq;

N_b^j - total production in historical period *j* in the project scenario, t;

$[y]$ - monitoring period;

$[p]$ - project scenario;

$[j]$ - historical period;

$[b]$ - baseline scenario;

$[3]$- three years in the baseline scenario.

$$BE_b^j = BE_{b,ELEC}^j + BE_{b,NG}^j, \quad (7)$$

BE_b^j - total GHG emissions in the course of production in historical period *j* in the baseline scenario, t CO_2eq);

$BE_{b,ELEC}^j$ - GHG emissions from fossil fuel combustion during the generation of electricity consumed in technological production process, in historical period *j* in the baseline scenario, t CO_2eq);

$BE_{b,NG}^j$ - GHG emissions from combustion of natural gas used in the course of production in historical period *j* in the baseline scenario, t CO_2eq;

$[j]$ - historical period;

$[b]$ - baseline scenario;

$[ELEC]$ - electricity;

$[NG]$ - natural gas;

$$BE_{b,ELEC}^j = EC_b^j * EF_{b,CO2,ELEC}^j \quad (8)$$

$BE_{b,ELEC}^j$ - GHG emissions from combustion of fossil fuel used in the course of generation of electricity consumed in production in historical period *j* in the baseline scenario, t CO_2eq;

EC_b^j - total electricity consumption in historical period *j* in the baseline scenario, MWh;

$EF^{j}_{b,CO2,ELEC}$ - carbon dioxide emission factor for electricity consumption by consumers in historical period *j* in the baseline scenario, t CO_2/MWh;

$[j]$ - historical period;

$[b]$ - baseline scenario;

$[ELEC]$ - electricity;

$$BE^{j}_{b,NG} = FC^{j}_{b,NG} * NCV^{j}_{b,NG} * EF^{j}_{b,CO2,NG}, \quad (9)$$

$BE^{j}_{b,NG}$ - GHG emissions from combustion of natural gas used in the course of production in historical period j in the baseline scenario, t CO2eq;

$FC^{j}_{b,NG}$ - total natural gas consumption in historical period *j* in the baseline scenario, ths m^3;

$NCV^{j}_{b,NG}$ - net calorific value of natural gas in historical period *j* in the baseline scenario, TJ/ths m^3;

$EF^{j}_{b,CO2,NG}$ - default carbon dioxide emission factor for stationary natural gas combustion in historical period j in the baseline scenario, t CO2 /TJ;

$[j]$ - historical period;

$[b]$ - baseline scenario;

$[NG]$ - natural gas;

$$EF^{j}_{b,CO2,NG} = EF^{j}_{b,C,NG} * OXID^{j}_{b,NG} * 44/12, \quad (10)$$

$EF^{j}_{b,CO2,NG}$ - default carbon dioxide emission factor for stationary natural gas combustion in historical period *j* in the baseline scenario, t CO_2 /TJ;

$EF^{j}_{b,C,NG}$ - carbon emission factor for natural gas combustion in historical period *j* in the baseline scenario, t C /TJ;

$OXID^{j}_{b,NG}$ - carbon oxidation factor for natural gas combustion in historical period *j* in the baseline scenario, relative units;

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

$[j]$ - historical period;

$[b]$ - baseline scenario;

$[NG]$ - natural gas;

Formulae used to estimate leakage (for each gas, source etc.; emissions in terms of equivalent tons of CO2):

Leakage is not expected under the project.

Formulae used to estimate project emission reduction (for each gas, source etc.; emissions in units of CO2 equivalent):

$$ER^{y} = BE_{b}^{y} - PE_{p}^{y} \quad (11)$$

ER^{y} - emission reductions due to the project activity in monitoring period y in the project scenario, t CO2eq;

BE_{b}^{y} - total GHG emissions from natural gas combustion and electricity consumption in the course of production in monitoring period y in the baseline scenario, t CO2eq;

PE_{p}^{y} - total GHG emissions from natural gas combustion and electricity consumption in the course of production in monitoring period y in the project scenario, t CO2eq;

$[y]$ - monitoring period;

$[p]$ - project scenario;

$[b]$ - baseline scenario.

The monitoring plan presents the quality assurance and control procedures for the monitoring process, which are sufficiently described in tabular form in sections of the PDD D.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.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. Collection all the key parameters required for monitoring and calculation of GHG emission reductions continuously carried out according to the practice, established at SE "Malyshev Plant". Monitoring under the project does not require any changes in existing data accounting and data collection system.

In general, the monitoring plan reflects good practices in monitoring, reasonable for this type of project.

The monitoring plan provides a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources (e.g. official statistics, expert judgment, proprietary data, 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 BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 29 - CAR 35; CL 07, CL 08).

4.8 Leakage (40-41)

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

According to the selected specific approach the PDD states that the increase of GHG emissions from leakage within and outside the project boundary, which may be caused by the project activities is not expected.

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

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

The PDD provides the ex ante estimates of:

(a) Emissions for the project scenario (within the project boundary), which are 62 348 tons of CO2eq in 2007, 368 619 tons of CO2eq in 2008-2012, 697 360 tons of CO2eq in 2013-2022;

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

(c) Emissions for the baseline scenario (within the project boundary), which are 138 125 tons of CO2eq in 2007, 598 929 tons of CO2eq in 2008-2012, 1 105 030 tons of CO2eq in 2013-2022;

(d) Emission reductions adjusted by leakage (based on (a)-(c) above), which are 75 777 tons of CO2eq in 2007, 230 310 tons of CO2eq in 2008-2012, 407 670 tons of CO2eq in 2013-2022.

The estimates referred to above are given:

(a) On an annual basis;

(b) From 01/01/2007 to 31/12/2022, covering the whole crediting period;

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

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

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

The formula used for calculating the estimates referred above, are given in section 4.7. All formulae are consistent throughout the PDD.
For calculating the estimates referred to above, such key factors as the Ukrainian environmental legislation and other national legislation, as well as key relevant factors such as availability of funds for implementation of measures envisaged by the project, tariffs that are set by the state, modern technology and the ability to implement know-how in the manufacturing industry, including metal production and heavy engeneering 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.

Sources of data used for calculating the above estimates, such as documents and archival data of the enterprise, standards and statistical form, the results of periodic verifications of meters, are clearly defined, credible and transparent.

Emission factors such as carbon dioxide emissions for electric energy consumption by electric energy consumers ($EF^{j}_{b,CO2,ELEC}$), carbon emission factor in the process of natural gas combustion ($EF^{j}_{b,C,NG}$), were selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

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

The estimates referred to above are consistent throughout the PDD.

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

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

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

4.10 Environmental impacts (48)

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

In the PDD states that according to Ukrainian law the projects of new plant, building and structure construction shall include Environmental Impact Assessment (EIA), the basic requirements of which are provided in State building regulations of Ukraine A.2.2-1-2003 «Composition and content of the materials of environment impact assessment (EIA) for design and construction of plants, buildings and structures».

SE "Malyshev Plant" is not obliged to conduct the development of the Environmental Impact Assessment for this type of project because the project does not create a negative environmental impact.

According to the PDD, the facilities included in the project boundary, meet all standards and requirements of the Laws of Ukraine "On Protection of Atmospheric Air", "On Environmental Protection" and the effective rules limiting emissions "Standards of maximum allowable emissions of pollutants from stationary sources", are environmentally safe and do not cause any negative environmental impact.

In general, the impact of "Implementation of the energy efficiency measures at SE "Malyshev Plant" project on the environment during construction activities can be assessed as allowable, because the impact is insignificant. Project facilities are not included in the list of activities and facilities that may be hazardous for the environmental.

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

The identified areas of concern as to the environmental impacts, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 38, CL 09).

4.11 Stakeholder consultation (49)

Since the project activity does not provide for any negative environmental or social impact, there was no necessity to hold special public discussions. Stakeholders were consulted with by local authorities at their meetings.

The programme for better efficiency of fuel and energy resources is spotlighted regularly in mass media.

Numerous publications of company's employees in specialized national periodicals took place.

4.12 Determination regarding small scale projects (50-57)

Not applicable.

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

Not applicable.

4.14 Determination regarding programmes of activities (65-73)

Not applicable.

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

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

6 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the "Implementation of the energy efficiency measures at SE "Malyshev Plant" Project in Ukraine. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

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

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

Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the

project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The determination revealed one pending issue related to the current determination stage of the project: the issue of the written approval of the project by the host Party (Ukraine). If the written approval by the host Party is awarded, it is our opinion that the project as described in the Project Design Document, Version 04 dated 16/08/2012 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria as well as project stakeholders expectations.

The review of the project design documentation (version 04 dated 16/08/2012) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

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

7 REFERENCES

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

/1/	The PDD "Implementation of the energy efficiency measures at SE "Malyshev Plant", version 01 dated 16/02/2012
/2/	The PDD "Implementation of the energy efficiency measures at SE "Malyshev Plant", version 02 dated 30/03/2012
/3/	The PDD "Implementation of the energy efficiency measures at SE "Malyshev Plant", version 03 dated 21/06/2012
/4/	The PDD "Implementation of the energy efficiency measures at SE "Malyshev Plant", version 04 dated 16/08/2012
/5/	Supporting document 1. "Calculation of GHG emission reduction under project "Implementation of the energy efficiency measures at SE "Malyshev Plant"
/6/	Supporting document 2. "Investment Analysis"
/7/	Letter of Endorsement No.1463/23/7 issued by the State Environmental Investment Agency of Ukraine dated 07/06/2012
/8/	Guidelines for users of JI PDD form. Version 04, JISC
/9/	Tool for the demonstration and assessment of additionality, version 06.0.0.
/10	The Kyoto Protocol
/11	Marrakesh Agreement, JI Methods
/12	National inventory of greenhouse gas anthropogenic emissions by sources and removals by sinks in Ukraine for the period of 1990-2010
/13	Third National Communication of Ukraine on climate change under the Kyoto Protocol
/14	Fourth National Communication of Ukraine on climate change under the Kyoto Protocol
/15	Fifth National Communication of Ukraine on climate change under the Kyoto Protocol
/16	Decree of the National Environmental Investment Agency of Ukraine (NEIA) № 62 of 15/04/2011 "On approval of carbon dioxide emission factors in 2008"
/17	Decree of the National Environmental Investment Agency of Ukraine (NEIA) № 62 of 15/04/2011 "On approval of carbon dioxide emission factors in 2009"
/18	Decree of the National Environmental Investment Agency of Ukraine (NEIA) № 62 of 15/04/2011 "On approval of carbon dioxide emission factors in 2010"
/19	Decree of the National Environmental Investment Agency of Ukraine (NEIA) № 62 of 15/04/2011 "On approval of carbon dioxide

	emission factors in 2011"
/20	Law of Ukraine "On metrology and metrological activity"
/21	Law of Ukraine "On Air Protection"
/22	Law of Ukraine "On Environmental Protection"
/23	JI guidelines. Appendix to decision 9/CDM.1.
/24	JI Determination and Verification Manual, Version 01
/25	Guidance on criteria for baseline setting and monitoring, JISC. Version 03.

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

/1/	Minutes # 26m of the Meeting held at Orekhov's M.I place dated 03/01/2006. Orekhov M.I. - Deputy General Director of State Enterprise "Malyshev Plant"
/2/	Power balance, the composition of power equipment and report on the operation of power plant (power generating units) in 2007 dated 17/01/2008
/3/	Report on fuel, heat and electric energy consumption in January-December 2007 dated 15/01/2008
/4/	Power balance, the composition of power equipment and report on the operation of power plant (power generating units) in 2008 dated 22/01/2009
/5/	Report on fuel, heat and electric energy consumption in January-December 2008 dated 29/01/2009
/6/	Power balance, the composition of power equipment and report on the operation of power plant (power generating units) in 2009 dated 20/01/2010
/7/	Report on fuel heat and electric energy consumption in January-December 2009 dated 20/01/2010
/8/	Power balance, the composition of power equipment and report on the operation of power plant (power generating units) in 2010
/9/	Report on fuel, heat and electric energy consumption in January-December in 2010 dated 20/01/2011
/10/	Power balance, the composition of power equipment and report on the operation of power plant (power generating units) in 2011 dated 20/01/2012
/11/	Report on fuel, heat and electric energy consumption in January-December in 2011 dated 20/01/2012
/12/	Report on industrial output in 2007 dated 29/01/2008
/13/	Report on industrial output in 2008 dated 06/02/2009
/14/	Report on industrial output in 2009 dated 17/02/2010
/15/	Report on industrial output in 2010 dated 08/02/2011
/16/	Report on industrial output in 2011 dated 15/02/2012
/17/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (Cylindrical grinding machine with a system S 21 Studer) dated 08/12/2010

/18/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (Grinding machine UVA; 13 model) dated 08/12/2010
/19/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (balancing machine VN 050) from August 2010
/20/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (electropolishing pot ADR 9986-8396) dated 29/03/2011
/21/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (constant flow mixer S1Sh-3A) dated 09/12/2010
/22/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (submachine for arc surfacing PDGO-602 with VDU-601) dated 16/01/2010
/23/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (machine for welding flux A-1416 with rectifier KIU 1) dated 16/01/2010
/24/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (unit for arc welding UDGU-501AS) dated 16/01/2010
/25/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (work bench sawing machine SPD-853 model) dated 16/01/2010
/26/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (contact welding machine KSh 001 UKh4) from February 2010
/27/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (contact welding machine KSh 002 UKh4) from February 2010
/28/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (argon-arc welding unit UDG-501) dated 11/01/2010
/29/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (argon-arc welding unit UDG-501AS/DS) from February 2010
/30/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (argon-arc welding unit) from March 2010
/31/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (conservation pot ADR 9986-7239) dated 21/11/2011
/32/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (installation for plasma cutting A-1612 “Kyiv-4m”) from September 2010
/33/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (bath for electro polishing ADR 9986-818SB) dated 27/09/2012
/34/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (space for the benches for testing abrasive wheels f150+130 in TsASe build. 750s) dated 07/04/2008
/35/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (construction, reconstruction of benches for abrasive wheels testing f150+130 in TsACe build 750s) dated 08/06/2007
/36/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (construction, reconstruction of installation and aggregate testing platform A-125h) in 2006
/37/	Certificate of Completion approved by the Acceptance Commitee for the installation and aggregate testing platform A-125h № 1-2006 dated 18/04/2006
/38/	Certificate of Completion approved by the Acceptance Commitee for the stand for testing abrasive wheels # 1 dated 23/06/2007

/39/	Certificate of Completion approved by the Acceptance Commitee for the building and installation of the stand for testing abrasive wheels F150f300 in TsAS build. 750S # 2 dated 23/05/2007
/40/	Delivery and Acceptance Certificate (internal displacement) of fixed assets (pot for electro polishing ADR 9986-8181 sb) dated September 2006
/41/	Delivery and Acceptance Certificate of fixed assets #048 (salt pot with kaf SVS) dated 09/07/2007
/42/	Delivery and Acceptance Certificate of fixed assets #203 (diesel-generator DH-A-24M1) dated 04/09/2007
/43/	Delivery and Acceptance Certificate of fixed assets # 122 (El. furnace YAT. 2.5/1.6. NZ) dated 27/10/2007
/44/	Delivery and Acceptance Certificate of fixed assets # 924 (scraper conveyor 9986-097) dated 05/11/2007
/45/	Delivery and Acceptance Certificate of fixed assets # 924 (line measurement of hardness) dated 22/08/2007
/46/	Delivery and Acceptance Certificate of fixed assets # 930 (Mechanized line of elements polishing) dated 14/03/2007
/47/	Delivery and Acceptance Certificate of fixed assets # 922 (El. furnace SEV-3,3/11,5) dated 21/05/2007
/48/	Delivery and Acceptance Certificate of fixed assets # 908 (electric furnace) dated 07/02/2007
/49/	Delivery and Acceptance Certificate of fixed assets # 803 (salt bath with the transformer) dated 29/05/2007
/50/	Delivery and Acceptance Certificate of fixed assets # 874 (hardening furnace SIV-1010/7m^3-1) dated 18/06/2007
/51/	Delivery and Acceptance Certificate of fixed assets # 1222 (El. furnace YAT-2,5/1,643) dated 01/06/2008
/52/	Delivery and Acceptance Certificate of fixed assets # 215 (Machine for molding) dated 27/06/2008
/53/	Delivery and Acceptance Certificate of fixed assets # 037 (electric pit-type heating furnace) dated 24/07/2008
/54/	Delivery and Acceptance Certificate of fixed assets # 054 (analytical system of endogas AS-HY-A) dated 07/07/2008
/55/	Delivery and Acceptance Certificate of fixed assets # 467 (special machine) dated 01/04/2008
/56/	Delivery and Acceptance Certificate of fixed assets # 081 (hydraulic machine) dated 26/06/2008
/57/	Delivery and Acceptance Certificate of fixed assets (installation for loading inductance heating device) dated 10/04/2008
/58/	Delivery and Acceptance Certificate of fixed assets # 055 (analytical system of endogas AS-HY-A) dated 29/03/2008
/59/	Delivery and Acceptance Certificate of fixed assets # 655 (installation for assembly/disassembly of opok.) dated 12/06/2008
/60/	Delivery and Acceptance Certificate of fixed assets # 126 (machine for injection molding) dated 13/05/2008
/61/	Delivery and Acceptance Certificate of fixed assets # 688 (casting machine)

	dated 10/03/2009
/62/	Delivery and Acceptance Certificate of fixed assets # 682 (unit 9969-5114) dated 30/04/2009
/63/	Delivery and Acceptance Certificate of fixed assets # 167 (water charger) dated 14/05/2009
/64/	Delivery and Acceptance Certificate of fixed assets # 255 (rotating device 72122) dated 29/05/2009
/65/	Delivery and Acceptance Certificate of fixed assets # 257 (vibro st. 001) dated 09/06/2009
/66/	Delivery and Acceptance Certificate of fixed assets # 284 (machine for molding 9-5903) dated 26/03/2009
/67/	Delivery and Acceptance Certificate of fixed assets # 880 (electric furnace ShYM-6,6/9f3) dated 10/09/2009
/68/	Delivery and Acceptance Certificate of fixed assets (electric furnace SN3-8 16,5/1042) dated 25/06/2009
/69/	Delivery and Acceptance Certificate of fixed assets (hardening furnace SIV-10.10/7m^3) dated 29/07/2009
/70/	Delivery and Acceptance Certificate of fixed assets # 876 (electric furnace SMO-6.30/104) dated 15/07/2009
/71/	Delivery and Acceptance Certificate of fixed assets # 946 (cylindrical grinding machine) dated 2011
/72/	Delivery and Acceptance Certificate of fixed assets # 214 (machine for making molds) dated 15/05/2011
/73/	Delivery and Acceptance Certificate of fixed assets # 690 (automatic unit 52-655) dated 2011
/74/	Delivery and Acceptance Certificate of fixed assets # 285 (machine for making paste 61701) dated 2011
/75/	Delivery and Acceptance Certificate of fixed assets # 385 (box furnace) dated 29/11/2011
/76/	Delivery and Acceptance Certificate of fixed assets # 167 (leaching unit ADR -9968-5029) dated 2011
/77/	Delivery and Acceptance Certificate of fixed assets # 951 (endogas unit) dated 06/08/2011
/78/	Delivery and Acceptance Certificate of fixed assets # 191 (rotoblast barrel 42203 model) dated 2001
/79/	Delivery and Acceptance Certificate of fixed assets # 377 (automatic molding line) dated 2011

Persons interviewed:

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

	Name	Organization	Position
/1/	Bielov M.L.	SE “Malyshev Plant”	Director General,

			Working Team member
/2/	Myrhorodskyi Yu.Ya	SE “Malyshev Plant”	Chief engineer, Working Team leader
/3/	Sheiko A.I.	SE “Malyshev Plant”	First Deputy Chief Engineer, Working Team member
/4/	Ivakhno V.M.	SE “Malyshev Plant”	Deputy chief power engineer
/5/	Roshka K.H	SE “Malyshev Plant”	Manufacturing process engineer
/6/	Repinetskyi S.O.	“CEP” LLC	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 "Implementation of the energy efficiency measures at SE "Malyshev Plant".	OK	OK
A.1	Is the sectoral scope to which the project pertains presented?	**CAR 01.** In Section A.1.of the PDD not all sectoral scopes were stated. Please, provide necessary information.	**CAR 01**	OK
A.1	Is the current version number of the document presented?	The current version of the document: PDD, Version 04 dated 16/08/2012. See Section A.1.	OK	OK
A.1	Is the date when the document was created presented?	The date when the document was created: 16/08/2012.	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 Joint Implementation Project (hereinafter – JI project) “Implementation of the energy efficiency measures at SE “Malyshev Plant” is to increase energy efficiency of operations and improve	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)?	environmental situation in the region due to full-scale modernization of equipment. The project provides for the full-scale modernization of manufacturing processes at SE "Malyshev Plant" in the following key areas: installation of effective energy-saving technological equipment to produce: ferrous and non-ferrous metals; other products measured in tonnes. Implementation of energy-efficient heat generating equipment; replacement of metering devices. The increase in production efficiency will lead to the reduction of electricity and natural gas consumption in the course of manufacturing process, which, in turn, will cause lower greenhouse gas (GHG) emissions in the atmosphere. Measures that will be implemented as part of the project, as well as implementation and performance of constant monitoring will help to reduce electricity and natural gas consumption significantly in the course of manufacturing processes at SE "Malyshev Plant", which, in turn, will decrease GHG emissions. 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	**CAR 02.** In Section A.2. of the PDD the starting date	**CAR 02**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	component) briefly summarized?	of the project is not stated. Please, provide relevant information in the description of the historical details of the project. **CAR 03.** Please, specify the date when the Letter of Endorsement was obtained from the SEIAU.	**CAR 03**	OK
A.3. Project participants				
A.3	Are project participants and Party (ies) involved in the project listed?	Parties involved in the project: SE "Malyshev Plant" (Ukraine - the host party) and VEMA S.A. (Switzerland).	OK	OK
A.3	Is the data of the project participants presented in tabular format?	The data of the project participants is presented in tabular format. **CAR 04.** Please, in Section A.3. provide a table according to the Guidelines for users of the JI PDD form. Version 04, JISC.	**CAR 04**	OK
A.3	Is contact information provided in Annex 1 of the PDD?	Contact information of SE "Malyshev Plant" and VEMA S.A. is provided in Annex 1 to the PDD. **CAR 05.** The incorrect surname of General Director is stated in Table of Annex 1 to the PDD that contains contact information on SE "Malyshev Plant". Please, make all necessary corrections.	**CAR 05**	OK
A.3	Is it indicated, if it is the case, that the Party involved is a host Party?	Ukraine is the Host Party.	OK	OK
A.4 Technical description of the project				
Location of the project				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
A.4.1.1	Host Party(ies)	Ukraine is the Host Party.	OK	OK
A.4.1.2	Region/State/Province etc.	Kharkiv region, Ukraine	OK	OK
A.4.1.3	City/Town/Community etc.	Kharkiv city, 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.	OK	OK
A.4.2. Technologies to be employed, or measures, operations or actions to be implemented by the project				
A.4.2	Are the technology (ies) to be employed, or measures, operations or actions to be implemented by the project, including all relevant technical data and the implementation schedule described?	PDD Section A.4.2 provides the description of the main stages of the project implementation, the annual project activities schedule, some relevant technical data relating to the main equipment to be installed, and actions to be implemented under the project. Project design represents the current cutting-edge practice. **CAR 06.** Please, provide information on how the introduction of reactive power compensation devices will lead to GHG emission reductions under the project. **CAR 07.** Please, state the manufacturers of equipment to be implemented under the project. **CAR 08.** Please, provide information on the technical characteristics of manufacturing technique for chemical	**CAR 06** **CAR 07** **CAR 08** **CAR 09** **CAR 10** **CL 01** **CL 02** **CL 03** **CL 04** **CL 05**	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
		set cores of non-ferrous metal. **CAR 09.** In Table 8 of the PDD (Schedule of implementation) state the names of the project activities. **CAR 10.** The project provides for replacement of meters. Please, provide relevant information in Section A.4.2. **CL 01.** The project provides for replacement of alternate-current furnaces with direct-current furnaces. Please, state the main advantages of new furnaces. **CL 02.** Please, provide clarification whether the concept of the project complies with the existing modern practice. **CL 03.** Please, clarify whether the project provides for replacement of project equipment during the project lifetime. **CL 04.** Please, explain whether the project requires any initial training and efforts to service the new equipment units. **CL 05.** Please, provide information on requirements to personnel training and maintenance of the project		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		equipment.		
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				
A.4.3	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	The project activity is aimed at the reduction of electricity and natural gas consumption by modernization of technological equipment used for production of heat, pig iron, steel, non-ferrous metals and other products measured in tonnes, by means of implementation of innovative energy efficient and energy saving equipment. Thanks to the full-scale modernization of operations under the project "Implementation of the energy efficiency measures at SE "MalyshevPlant", energy resource consumption will drop to the minimum, causing a reduction of GHG emissions to the atmosphere. **CAR 11.** Please, in Section A.4.3. provide information as to why the GHG emission reductions will not occur in case of absence of the project activity.	**CAR 11**	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 12**. It is stated in the PDD that the length of the	**CAR 12** **CAR 13**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		crediting period is 16 years (2007-2022) and the calculations are provided only for 14 years (2007-2020). Please, make the appropriate corrections. **CAR 13.** In Section A.4.3.1. in Table 11. the length of the period after the crediting period is defined incorrectly. Please, make the necessary changes.		
A.4.3	Is it provided the estimated annual reduction for the chosen credit period in tCO_2e?	The estimated annual reduction is provided in tCO_2e for the first commitment period as well as the estimated annual reduction for the periods before and after the first commitment period within the project.	OK	OK
A.4.3	Are the data from questions above presented in tabular format?	Information on the crediting period, the period before and after the crediting period is presented in tabular format. See PDD (Version 04) Tables 9, 10 and 11, 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 stated 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 tCO2 equivalent are given in accordance with the values calculated in the tables of Section A of the PDD and Supporting documents.	OK	OK
Project approvals by Parties				
19	Have the DFPs of all Parties listed as	**CAR 14**. The project has no approval of the Host Party	**CAR 14**	Pending

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	"Parties involved" in the PDD provided written project approvals?	and the country-investor. 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 country-investor is also not obtained at the current stage of the Project. **CAR 14** will be closed after the Letters of Approval are issued by the Party involved and the country-investor. **CAR 15.** In Section A.5. of the PDD it is stated that the project obtained a Letter of Approval from the Ministry of Environment of Estonia but Estonia is not a party involved. Please, delete this information.	**CAR 15**	Pending
19	Does the PDD identify at least the host Party as a "Party involved"?	The Host Party involved in the project is Ukraine.	OK	OK
19	Has the DFP of the host Party issued a written project approval?	Reference to **CAR 14.**	**CAR 14**	Pending
20	Are all the written project approvals by Parties involved unconditional?	Reference to **CAR 15.**	**CAR 15**	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	The Party Involved 1: Ukraine (Host Party), a legal	**CAR 14**	Pending

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	Party involved, which is also listed in the PDD, through: − A written project approval by a Party involved, explicitly indicating the name of the legal entity? or − Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?	entity is SE "Malyshev Plant". The Party Involved 2: Switzerland, a legal entity is VEMA S.A. The project participants will be authorized in accordance with the relevant project approvals. Pending **CAR 14**		
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 16.** Please, state whether the elements of approved CDM methodologies were used for baseline setting.	**CAR 16**	OK
JI specific approach only				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
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 04. **CAR 17**. Please, in Section B.1 provide the correct name of the Guidelines according to which the baseline was chosen. **CAR 18.** Please, in Section B.1. provide a detailed, comprehensive and trasparent theoretical description of the baseline (formulae). This is a requirement of the Guidelines for users of the JI PDD form. **CAR 19.** Please, provide the reference to the source of data for parameter $FC_{b,NG}^{j}$ in section B.1.	**CAR 17** **CAR 18** **CAR 19**	OK OK OK
23	Does the PDD provide justification that the baseline is established: (a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? − Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources	The PDD provides detailed, full and transparent description and justification that the baseline is established: (a) By 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 the current situation, without the JI project implementation. - Alternative 1.2: Proposed project activity without the use of the JI mechanism.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	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 1.3: Partial project activities (some of the project activities are implemented) without the use of the Joint Implementation Mechanism. (b) Taking into account key factors such as Ukrainian environmental legislation and other national legislation, as well as key relevant factors, such as the ability to finance the measures in the manufacturing industry, prices which are set by the state and the mechanisms of market economy, modern technology and the possibility of introducing know-how in the manufacturing industry, including metallurgy and machine building, affecting the baseline emission level and level of project activity and emissions and also risks associated with the project; (c) In a transparent manner with regard to the choice of JI approach and assumptions, parameters, data sources and key factors for identifying initial conditions listed in tabular format in Section B.1; (d) By taking into account 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.		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		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 are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?	None of the existing methodologies can be applied to the proposed project aimed at reduction of energy consumption at SE "Malyshev Plant" in the production process.	OK	OK
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	When setting the baseline the following factors were used: Carbon dioxide emission factor in the process of electric energy consumption by electric energy consumers and carbon emission factor in the process of natural gas combustion. Data sources that were (to be) used are well-defined in the PDD version 04. **CAR 20.** Please, provide the name of carbon dioxide emission factor in the process of electric energy consumption according to SIEAU orders.	**CAR 20**	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?	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.	**CAR 21** **CAR 22**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals (b) Provision of traceable and transparent information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances has additionality (c) Application of the most recent version of the "Tool for the demonstration and assessment of additionality. (allowing for a two-month grace period) or any other method for proving additionality approved by the CDM Executive Board".	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 21.** Reference to paragraph 6a of the Guidelines on the assessment of investment analysis concerning the use of a discount rate that is determined with accout of the weighted average cost of capital (WACC) is incorrect. **CAR 22.** Please, provide the reference to the method of calculation of company's own equity.		
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 in the baseline scenario are likely to exceed emissions in the project scenario due to the implementation of project activities.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
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. **CAR 23.** Since the lifetime of the project lasts till 2022, the calculation period in the investment analysis should also last till 2022. **CAR 24.** Since the lifetime of the project is 16 years, the same duration of period should be used for calculation of the residual value of equipment. **CAR 25.** Reference to paragraph 17 of the the Additionality Guidelines relating to the sensitivity analysis is not correct. Please, provide the correct reference. **CL 06.** Please, state, whether there are mandatory government programs or policies that provide for mandatory modernization at manufacturing enterprises or not.	**CAR 23** **CAR 24** **CAR 25** **CL 06**	OK OK OK OK
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	All explanations, descriptions and analyses are made in accordance with the newest version of the "Tools for the demonstration and assessment of additionality". (Version 06.0.0)	OK	OK
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable				
Project boundary (applicable except for JI LULUCF projects)				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
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 due to electric energy consumprion for production purposes. (ii) Reasonably attributable to the project, such as: - CO_2 emissions due to natural gas consumption for production purposes. (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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
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?	Thus, the definition of the project boundary and the gases and sources included are described and justified in the PDD by the graphic (picture) and the table.	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?	**CAR 26.** Section B.3. of the PDD states that the project boundary includes GHG emissions from electricity consumption and natural gas consumption for production needs of the company. Please, separate these emission sources.	**CAR 26**	OK
Approved CDM methodology approach only_Paragraph 33_ Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	According to the Guidelines for users of the JI PDD form (version 04), the starting date of the JI project is the date when the introduction, construction or real action under the project begins. The starting date of the project is identified and specified in Section C. 1 of the PDD. The starting date of the project is 03/01/2006 when a decision to launch a JI project was made at the meeting of SE "Malyshev Plant "managment.	**OK**	OK
34 (a)	Is the starting date after 2000?	The starting date is after 2000.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	The expected operational lifetime of the project in years and months is 16 years, or 192 months, from 01/01/2007 to 31/12/2022. **CAR 27.** In Section C.2. of the PDD the number of months of the project lifetime is calculated incorrectly.	**CAR 27**	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 28.** Please, justify the starting date of the crediting period.	**CAR 28**	OK
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 28**.	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	The PDD states that the prolongation of the crediting period beyond 2012 is subject to approval of the host party and estimation of emission reductions is presented separately for those until 2012 and those after 2012 in the relevant sections of the PDD. If after the first commitment period under the Kyoto	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	separately for those until 2012 and those after 2012?	protocol, the Kyoto protocol is prolonged, the crediting period under the project will be prolonged by 10 years/120 months until December 31, 2022.		
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 key factors for the control and reporting on project performance: quality control (QC) and quality assurance (QA) procedures; operational and management structures that will be applied when implementing the monitoring plan. **CAR 29.** In Section D.1. of the PDD the table with data and parameters that are not controlled during the entire monitoring period and determined only once, which are already available on the stage of PDD development, contains parameter $BPER$, but it is a calculated parameter.	**CAR 29**	OK
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide	The monitoring plan specifies indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or	**CAR 30** **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
	transparent picture of the emission reductions or enhancements of net removals to be monitored?	enhancement of net removals to be monitored. Data to be monitored are presented in section D of the PDD. **CAR 30.** In Section D.1.1.1. of the PDD the name of the authority that issued Orders № 43, 62, 63, 75 "On approval of carbon dioxide emission factors" is incorrect. **CAR 31.** In Section D.1.1.3. the data units for parameter N_p^y are incorrect. Please, make the appropriate corrections in accordance with specified formulae. **CAR 32.** Please, provide an explanation of the indexes used in the 3rd and 9th formulae in Section D.1.1.2. **CAR 33.** Please, bring Tables in Section D.1.1.1. into accordance with the Guidelines for users of the JI PDD form Version 04. **CL 07.** Please, number all formulae.	**CAR 32** **CAR 33** **CL 07**	OK OK OK
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	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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	confidence levels? − Are the default values presented in a transparent manner?			
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	The monitoring plan clearly indicates how the values are to be selected and justified.	OK	OK
36 (b) (ii)	For other values, − Does the monitoring plan clearly indicate the precise references from which these values are taken? − Is the conservativeness of the values provided justified?	The monitoring plan clearly defines the exact reference from which these values are taken. Conservativeness of these values are properly justified.	OK	OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	Refer to section D of the PDD. **CAR 34.** Please, add information regarding data collecting and archiving 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 scenario for anthropogenic emissions of greenhouse gases within the project boundary are presented in table D.1.1.3. of the PDD.	OK	OK

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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	In tables of parameters provided in section D.1.1.1. of the PDD the time of monitoring (frequency) and the source of data to be used, as well as recording method are indicated for all the monitored parameters and data.	OK	OK
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	All algorithms and formulae used for the estimation of baseline and project emissions are indicated and explained in the PDD. The description of formulae is provided in Section D of the PDD	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Refer to section 36 (f) of this table.	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts etc. are used.	OK	OK
36 (f) (iii)	Are all equations numbered?	See **CL 07.**	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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
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 any changes in existing data accounting and collection system at SE “Malyshev Plant”.	OK	OK
36 (f) (vii)	Are references provided as necessary?	**CAR 35.** Please, provide references to relevant regulations 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 procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	N/A	OK	OK
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of	All meters used under the project activity are subject to calibration and verification in accordance with the procedures of quality management, the Law of Ukraine "On metrology and metrological activity".	OK	OK

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	emission reductions or enhancements of net removals provided?	Thus, the question of the range of uncertainty and confidence interval is not important for such measurements.		
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 is set in accordance with national norms and standards.	OK	OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	Yes	OK	OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available upon request?	The monitoring plan provides adequate quality assurance and control procedures for monitoring process, including information on the calibration of meters, officially approved national data and methods of collecting and storing data necessary for monitoring.	OK	OK
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 08.** Please, provide information about the entities	OK **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
		that determined the monitoring plan in Section D.4..		
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	Monitoring under the project does not require any changes in existing accounting system and data collection procedure.	OK	OK
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	Tables D.1.1.1 and D.1.1.3 provide compilation of all data needed to monitor project and baseline emissions.	OK	OK
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	Data to be monitored and required for determination are to be kept for two years after the last transfer of ERUs under the project.	OK	OK
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for	None of the existing methodologies can be applied to the proposed project aimed at reduction of energy sources consumption in the process of production at	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	SE "Malyshev Plant".		
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable				
Applicable to both JI specific approach and approved CDM methodology approach				
39	If the monitoring plan indicates overlapping monitoring periods during the crediting period: (a) Is the underlying project composed of clearly identifiable components for which emission reductions or enhancements of removals can be calculated independently? (b) Can monitoring be performed independently for each of these components (i.e. the data/parameters monitored for one component are not dependent on/effect data/parameters to be monitored for another component)? (c) Does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the	No periods are expected to overlap during the crediting period.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met? (d) Does the monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the conditions mentioned in (a)-(c) are met?			
Leakage				
JI specific approach only				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	According to the JI specific approach, there isn't any leakage.	OK	OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	Ref. to 40 (a).	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	In the PDD the approach of estimation of emissions in the baseline scenario and in the project scenario is indicated. **CAR 36.** Please, check the numbering of tables in	**CAR 36** **CAR 37**	OK OK

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	(b) Direct assessment of emission reductions	Section E of the PDD and make corresponding corrections. **CAR 37.** Please, correct the incorrect reference to the Supporting Documents in Section E.		
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the project boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?	The PDD provides estimates of: (a) Emissions in the project scenario (Section E.1) (b) Leakage (Section E.2) (c) Emissions in the baseline scenario (Section E.4) (d) Emission reductions adjusted by leakage (Section E.6).	OK	OK
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	N/A	N/A	N/A
45	For both approaches in 42	(a) Estimates in 43 are given on the periodic basis, in	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tonnes of CO_2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formulae used for calculating the estimates in 43 or 44 consistent throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the emissions or net removals as well as risks associated with the project taken into account, as appropriate?	tonnes of CO_2 equivalent, on a source-by-source basis, before, during and after the crediting period. (b) The formulae used in PDD are consistent. (c) Key factors influencing baseline emissions and activity level of the project and risks associated with the project are taken into account, as appropriate. (d) Data sources used to calculate the estimates are clearly identified, reliable and transparent. (e) Emission factors are taken from identified sources. (f) Estimation in 43 is based on conservative assumptions and the most plausible scenario in a transparent manner. (g) Estimates in 43 are consistent throughout the PDD. (h) The annual average of estimated emission reductions are calculated correctly (by dividing the total estimated emission reductions over the crediting 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
	(d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent? (e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?			
46	If the calculation of the baseline emissions or net removals is to be performed de facto, does the PDD include an illustrative forecasted emissions or net removals	Baseline emission level is calculated using the specific approach. Calculation of estimated emissions is clearly provided in the PDD.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	calculation?			
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?	Project environmental impact was described sufficiently.	OK	OK
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to Supporting Documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	**CAR 38.** Please, provide information on the transboundary impacts of the project activities. **CL 09.** Please, explain if it is nessessary to carry out environmental impact assessment for this project activity according to the legislation of Ukraine.	**CAR 38** **CL 09**	OK OK
Stakeholder consultations				
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been	Since the project activity does not provide for any negative environmental or social impact, there was no necessity to hold special public discussions. Stakeholders were consulted with by local authorities at their meetings.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	The programme for better efficiency of fuel and energy resources is spotlighted regularly in mass media. Numerous publications of company's employees in specialized national periodicals took place.		
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 RESOLUTIONS OF CORRECTIVE ACTION AND CLARIFICTION REQUESTS

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 01. In Section A.1.of the PDD not all sectoral scopes were stated. Please, provide necessary information.	A.1	Sectoral scopes: Secttoral scope 4 – Manufacturing industries; Sectoral scope 9 – Metal production.	The information is provided, the issue is closed.
CAR 02. In Section A.2. of the PDD the starting date of the project is not stated. Please, provide relevant information in the description of the historical details of the project.	A.2	01/03/2006 - date of meeting of SE "Malyshev Plant" management where a decision to establish a JI project "Implementation of the energy efficiency measures at SE "Malyshev Plant" was made	The corresponding information is provided, the issue is closed.
CAR 03. Please, specify the date when the Letter of Endorsement was obtained from the SEIAU.	A.2	07/06/2012 - the date when the Letter of Endorsement was obtained from the State Environmental Investment Agency of Ukraine.	The information is provided, the issue is closed.
CAR 04. Please, in Section A.3. provide a table according to the Guidelines for users of the JI PDD form. Version 01, JISC.	A.3	Table in Section A.3. of the PDD was brought in accordance with the Guidelines for users of the PDD form. Version 04, JISC.	The necessary corrections are made, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 05. The incorrect surname of General Director is stated in Table of Annex 1 to the PDD that contains contact information on SE "Malyshev Plant". Please, make all necessary corrections.	A.3	General Director - Bielov Mykola Lvovych. The corresponding corrections were made in the PDD version 04.	The necessary corrections are made, the issue is closed.
CAR 06. Please, provide information on how the introduction of reactive power compensation devices will lead to GHG emission reductions under the project.	A.4.2	Installation of reactive power compensation devices significantly reduces electricity consumption in the technological process of production by raising the potential of distribution units and transmission capacity of cable lines, which in turn will reduce GHG emissions into the atmosphere. The relevant information was provided in the PDD version 04.	The information is provided in Section A.4.2. The issue is closed.
CAR 07. Please, state the manufacturers of equipment to be implemented under the project.	A.4.2	It is planned to purchase equipment that is necessary for the project from leading Ukrainian and European companies on tender basis. Ref. PDD version 04.	The references to the web-sites of manufactures were provided. The issue is closed.
CAR 08. Please, provide information on the technical characteristics of manufacturing technique for chemical set cores of non-ferrous metal.	A.4.2	Information about the technical characteristics of manufacturing technique for chemical set cores of non-ferrous metal is provided in Table 2. PDD version 04.	The information is provided in corresponding section, 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 09. In Table 8 of the PDD (Schedule of implementation) state the names of the project activities.	A.4.2	The names of the project activities, phases and periods of implementation are presented in Table 8 of the PDD version 04.	The information is checked, the issue is closed.
CAR 10. The project provides for replacement of meters. Please, provide relevant information in Section A.4.2.	A.4.2	Application of new meters with higher accuracy class will reduce electricity consumption by meters and improve the monitoring of electricity consumption; this will reduce GHG emissions into the atmosphere. Information on the characteristics of new meters is provided in Section A.4.2. of the PDD version 04	The necessary information is provided, the issue is closed.
CAR 11. Please, in Section A.4.3. provide information as to why the GHG emission reductions will not occur in case of absence of the project activity.	A.4.3	Because of limited financing, the absence of perspective industry development plan, the modernization of technological processes was risky and not economically feasible. Therefore, can make a conclusion that without the JI project, the modernization of technological equipment would be unlikely. This fact would entail high energy losses and GHG emissions to the atmosphere. For more details ref. Section A.4.3 of the PDD version 04.	The necessary information is provided, the issue is closed.
CAR 12. It is stated in the PDD that the	A.4.3	Tables 9, 10, 11 contain estimated	The corrections were made, the

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
length of the crediting period is 16 years (2007-2022) and the calculations are provided only for 14 years (2007-2020). Please, make the appropriate corrections.		amount of emission reduction before the first commitment period (2007) during the first commitment period (2008-2012), after the first commitment period (2013-2022). The relevant corrections were made in the PDD version 04.	issue is closed.
CAR 13. In Section A.4.3.1. in Table 11. the length of the period after the crediting period is defined incorrectly. Please, make the necessary changes.	A.4.3	Period after the crediting period lasts for 10 years. The necessary corrections were made in the PDD version 04.	The corresponding corrections are provided, the issue is closed.
CAR 14. The project has no approval of the Host Party and the country-investor.	19	The project is implemented as a bilateral JI project. The Host Country of the project is Ukraine and the Country-Buyer is Switzerland. For obtaining a Letter of Approval it is necessary to submit the final Determination report to the State Environmental Investment Agency of Ukraine, including the Determination Protocol and a list of sources of Reference information. So far, the Letter of Approval from the government of Switzerland, as country-investor has not been obtained.	The issue will be closed after issuance of the Letters of Approval by the Host Party and the country-investor.

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 15. In Section A.5. of the PDD it is stated that the project obtained a Letter of Approval from the Ministry of Environment of Estonia but Estonia is not a party involved. Please, delete this information.	19	Relevant information was deleted from the text of the PDD. The corresponding corrections were made in the PDD version 04.	Necessary corrections are made, the issue is closed.
CAR 16. Please, state whether the elements of approved CDM methodologies were used for baseline setting.	22	None of the existing methodologies can be applied to the proposed project aimed at reduction of energy consumption at SE "Malyshev Plant" in the production process. Relevant information is provided in Section B.1. of the PDD version 04.	Information is provided. The issue is closed.
CAR 17. Please, in Section B.1 provide the correct name of the Guidelines according to which the baseline was chosen.	23	The Project Participant chose a specific approach based on the requirements to JI projects in accordance with paragraph 9 (a) JI Guidance on criteria for baseline setting and monitoring, Version 03.	Corresponding corrections are made. The issue is closed.
CAR 18. Please, in Section B.1. provide a detailed, comprehensive and trasparent theoretical description of the baseline (formulae). This is a requirement of the Guidelines for users of the JI PDD form.	23	a detailed, comprehensive and trasparent theoretical description of the baseline (formulae) was provided in Section B.1. of the PDD version 04.	Necessary information was provided. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 19. Please, provide the reference to the source of data for parameter $FC_{b,NG}^{j}$ in section B.1.	23	References to the data source for this parameter are provided in Section B.1. of the PDD version 04.	References are provided, the issue is closed.
CAR 20. Please, provide the name of carbon dioxide emission factor in the process of electric energy consumption according to SIEAU orders.	25	$EF_{b,CO2,ELEC}^{j}$ - carbon dioxide emission factor in the process of electric energy consumption by consumers of electric energy.	Corrections are made, the issue is closed.
CAR 21. Reference to paragraph 6a of the Guidelines on the assessment of investment analysis concerning the use of a discount rate that is determined with accout of the weighted average cost of capital (WACC) is incorrect.	28	The approach proposed in paragraph 12 of the "Guidelines on the assessment of investment analysis ver.05" involves the use of the discount rate that is determined with accout of the weighted average cost of capital (WACC). Appropriate corrections were made in the PDD version 04.	The issue is closed as corresponding changes are made.
CAR 22. Please, provide the reference to the method of calculation of company's own equity.	28	The cost of equity is calculated as the sum of risk-free rate (3%) risk premium on investment in compnay's own capital (6.5%) and country risk (5.25%) according to the "Default value of the expected return on equity." Relevant references are provided in the PDD version 04.	The issue is closed as corresponding references are provided.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 23. Since the lifetime of the project lasts till 2022, the calculation period in the investment analysis should also last till 2022.	29 (c)	Investment analysis was corrected. Calculation period is 2006-2022.	Checked. The issue is closed.
CAR 24. Since the lifetime of the project is 16 years, the same duration of period should be used for calculation of the residual value of equipment.	29 (c)	The corresponding corrections are made in the investment analysis in the PDD version 04.	Necessary corrections are made, the issue is closed.
CAR 25. Reference to paragraph 17 of the the Additionality Guidelines relating to the sensitivity analysis is not correct. Please, provide the correct reference.	29 (c)	According to the "Guidelines on the assessment of investment analysis ver.05" (p. 21) sensitivity analysis should be conducted for key parameters in the range of deviation ± 10%.	Necessary corrections are made, the issue is closed.
CAR 26. Section B.3. of the PDD states that the project boundary includes GHG emissions from electricity consumption and natural gas consumption for production needs of the company. Please, separate these emission sources.	32 (d)	Sources of emissions are separated. The corresponding correction made in the PDD version 04.	Necessary corrections are made, the issue is closed.
CAR 27. In Section C.2. of the PDD the number of months of the project lifetime is calculated incorrectly.	34 (b)	The lifetime of the project is 16 or 192 months: from 01/01/2007 to 31/12/2022.	Necessary corrections are made, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 28. Please, justify the starting date of the crediting period.	34 (c)	The starting date of the crediting period is the date when the first assigned amount units are expected to be generated, namely 1 January 2007.	The justification is provided, the issue is closed.
CAR 29. In Section D.1. of the PDD the table with data and parameters that are not controlled during the entire monitoring period and determined only once, which are already available on the stage of PDD development, contains parameter $BPER$, but it is a calculated parameter.	36(a)	The information relating to the parameter was removed from the Table. Corrections were made in the PDD version 04.	Necessary corrections are made, the issue is closed.
CAR 30. In Section D.1.1.1. of the PDD the name of the authority that issued Orders № 43, 62, 63, 75 "On approval of carbon dioxide emission factors" is incorrect.	36(b)	Carbon dioxide emission factors are determined according to the Orders No. 43, 62, 63, 75 of the National Environmental Investment Agency of Ukraine "On approval of carbon dioxide emission factors". Corrections were made in Section D.1.1.1 of the PDD version 04.	Corrections are accepted, the issue is closed.
CAR 31. In Section D.1.1.3. the data units for parameter N_p^y are incorrect. Please, make the appropriate corrections in accordance with specified formulae.	36 (b)	N_p^y - total production in monitoring period «y» in the project scenario, Appropriate corrections were made in the PDD version 04.	The corrections are made, the issue is closed.
CAR 32. Please, provide an explanation of	36 (b)	Explanation of indexes used in the	The necessary information 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
the indexes used in the 3rd and 9th formulae in Section D.1.1.2.		3rd and 9th formulae was provided. Ref. PDD version 04.	provided, the issue is closed.
CAR 33. Please, bring Tables in Section D.1.1.1. into accordance with the Guidelines for users of the JI PDD form Version 01.	36 (b)	Tables are brought into accordance with the Guidelines for users of the JI PDD form. Version 04. Ref. PDD version 04.	The changes are made, the issue is closed.
CAR 34. Please, add information regarding data collecting and archiving in Section D.1.1.	36(f) (iii)	Information regarding collection and archiving of data is provided in the PDD version 04.	Information is checked, the issue is closed.
CAR 35. Please, provide references to relevant regulations and regulatory documents of the host Party.	36 (f) (vii)	References to the following documents are provided: - 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: "Standards of maximum permissible emissions of pollutants from stationary sources" approved by the Ministry of Environmental Protection of Ukraine dated 27/06/2006, No.309 and registered in the Ministry of Justice of Ukraine dated 01/09/2006, No.912/12786 .	The references are provided, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 36. Please, check the numbering of tables in Section E of the PDD and make corresponding corrections.	42	Errors in numbering of tables were corrected in the PDD version 04.	Necessary corrections are made, the issue is closed
CAR 37. Please, correct the incorrect reference to the Supporting Documents in Section E.	42	Incorrect references to the Supporting Documents in Section E were corrected.	Necessary corrections are made, the issue is closed
CAR 38. Please, provide information on the transboundary impacts of the project activities.	48 (b)	Transboundary impacts of the project activity according to their definition in the text of "Convention on long-range transboundary pollution" ratified by Ukraine do not take place.	Information is provided, the issue is closed.
CL 01. The project provides for replacement of alternate-current furnaces with direct-current furnaces. Please, state the main advantages of new furnaces.	A.4.2	Electric arc furnaces have the following advantages over alternate-current furnaces: - lower consumption of graphite electrodes; - improved wall lining life; - lower waste of metal and dopants; - improved environment in the furnace operational site.	Clarification is provided. The issue is closed.
CL 02. Please, provide clarification whether the concept of the project complies with the existing modern practice.	A.4.2	Yes, the concept of the project is in line with the current practice. Ref. to the PDD version 04.	The explanation is accepted. The issue is closed.
CL 03. Please, clarify whether the project	A.4.2	With proper maintenance,	The 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
provides for replacement of project equipment during the project lifetime.		replacement of equipment implemented in the framework of is not planned in the determed period of time, since the technology implemented is in line with modern practice. Ref. to the PDD version 04.	
CL 04. Please, explain whether the project requires any initial training and efforts to service the new equipment units.	A.4.2	Training of employees and specialists of SE "Malyshev Plant" will take place in accordance with practice that existed before the start of the project. Ref. to the PDD version 04.	The explanation is accepted. The issue is closed.
CL 05. Please, provide information on requirements to personnel training and maintenance of the project equipment.	A.4.2	If necessary, i.e. if employees' qualification turns to be insufficient for proper operation of project equipment, the manufactures of equipment will hold trainings and instructions under the equipment purchase contracts.	The explanation is accepted. The issue is closed.
CL 06. Please, state, whether there are mandatory government programs or policies that provide for mandatory modernization at manufacturing enterprises or not.	29 (c)	There are no state programmes or policies to provide for mandatory modernization of equipment at processing operations. Due to the current practice all the modernization activities through implementation of more efficient production technologies	The 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
		shall be borne by the enterprise, and SE "Malyshev Plant" does not have any incentive to implement new equipment and technologies.	
CL 07. Please, number all formulae.	36 (b)	Numbering of formulae was checked, the appropriate corrections were made.	The issue is closed. Necessary corrections were made.
CL 08. Please, provide information about the entities that determined the monitoring plan in Section D.4..	36(j)	Monitoring plan is determined by VEMA S.A., developer of the project, and SE «Malyshev Plant" the owner of the project.	The issue is closed as sufficient information is provided.
CL 09. Please, explain if it is nessessary to carry out environmental impact assessment for this project activity according to the legislation of Ukraine.	48(b)	According to the law of Ukraine "On Environmental Protection" and DBN A.2.2-1-2003 "Composition and content of the materials of environment impact assessment (EIA) for design and construction of plants, buildings and structures", SE "Malyshev Plant" is not obliged to carry out the EIA development for this type of project, because it has no negative impact on the environment.	The issue is closed as sufficient explanation is provided.