DETERMINATION REPORT

ING BANK N.V.

DETERMINATION OF THE

INTRODUCTION OF ENERGY EFFICIENCY MEASURES AT PJSC "ILYICH IRON AND STEEL WORKS OF MARIUPOL"

REPORT NO. UKRAINE-DET/0315/2011

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BUREAU VERITAS CERTIFICATION

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Client: ING Bank N.V.	Client ref.: Mr Peter van Eijndhoven

Summary:

Bureau Veritas Certification has made the determination of the "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol" project of ING Bank N.V. located in the city of Mariupol, 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 Requests 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 Guidance on criteria for baseline setting and monitoring and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

Report No.: UKRAINE-det/0315/2011	Subject Group: JI
Project title: "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol"	
Work carried out by: Svitlana Gariyenchyk – Team Leader, Verifier Sergij Kustovsky – Team Member, Verifier Trainee Oleg Papu – Technical Specialist Denis Pishchalov – Financial Specialist	
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Igor Alekseenko - Technical Specialist	
Work approved by: Ivan Sokolov - Operational Manager	
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Bureau Veritas Certification Holding SAS

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1 INTRODUCTION

ING Bank N.V. has commissioned Bureau Veritas Certification (BVC) to determine its JI project “Introduction of Energy Efficiency Measures at PJSC “Ilyich Iron and Steel Works of Mariupol” (hereafter called “the project”) in the city of Mariupol, 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:

Svitlana Gariyenchyk
Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Sergij Kustovsky
Bureau Veritas Certification Team Member, Climate Change Verifier Trainee

Oleg Papu

Bureau Veritas Certification Team Member, Technical Specialist

Denis Pishchalov

Bureau Veritas Certification Team Member, Financial Specialist

This determination report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

Igor Alekseenko
Bureau Veritas Certification, Technical Specialist

2 METHODOLOGY

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

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

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

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

2.1 Review of Documents

The Project Design Document (PDD) version 1.3 submitted by ING Bank N.V.on 25/07/2011 and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for users of the joint implementation project design document form, Approved CDM methodology and 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, ING Bank N.V. revised the PDD and resubmitted it on 27/10/2011 as version 1.4, on 24/11/2011 as version 1.5, on 03/01/2012 as version 1.6 and on 05/11/2012 as version 1.7, and the PDD version 1.8 dated 04/12/2012 the latter is deemed final.

The determination findings presented in this report relate to the project as described in the PDD version 1.8.

2.2 Follow-up Interviews

On 28-29 of July, 2011 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of PJSC "Ilyich Iron and Steel Works of Mariupol", ING Bank NV and GreenStream Network GmbH were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
PJSC "Ilyich Iron and Steel Works of Mariupol"	➢ Implementation schedule ➢ Project management organization ➢ Evidence and records on reconstruction and new equipment and its operation ➢ Environmental Impact Assessment ➢ Project monitoring responsibilities ➢ Monitoring equipment ➢ Quality control and quality assurance procedures ➢ Environmental impacts affected ➢ Local authorities and public opinion
ING Bank NV GreenStream Network GmbH	➢ Applicability of methodology ➢ Baseline and Project scenarios ➢ Barriers analysis ➢ Additionality justification ➢ Common practice analysis ➢ Monitoring plan ➢ Conformity of PDD to JI requirements

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.

If the determination team, in assessing the PDD and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to JI project requirements, it will raise these issues and inform the project participants of these issues in the form of:

(a) Corrective action request (CAR), requesting the project participants to correct a mistake in the published PDD that is not in accordance with the (technical) process used for the project or relevant JI project requirement or that shows any other logical flaw;

(b) Clarification request (CL), requesting the project participants to provide additional information for the determination team to assess compliance with the JI project requirement in question;

(c) Forward action request (FAR), informing the project participants of an issue, relating to project implementation but not project design, that needs to be reviewed during the first verification of the project.

The determination team will make an objective assessment as to whether the actions taken by the project participants, if any, satisfactorily resolve the issues raised, if any, and should conclude its findings of the determination.

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

3 PROJECT DESCRIPTION

The project is aimed to introduce energy efficiency measures resulting in reduction of greenhouse gas emissions into the atmosphere, decrease of specific energy consumption for steel and iron production, as well as increase of competitiveness in the metal market.

The proposed JI project foresees implementation of the following activities:

- reconstruction of the blast furnaces #2, #3, #4 and #5 to reduce specific consumption of coke and natural gas during iron production. Additionally, reconstruction will include extension of the effective work volume of BF #2 and BF#3;

- upgrade of blast furnaces #1, #2, #3, #4 and #5 with implementation of separate charge feed of the furnaces;

- further use of pulverized coal in blast furnaces #2, #3, #4 and #5;

-construction of the new slag processing complexes AMCOM-1 and AMCOM-2;

- partial replacement of the iron-ore concentrate with sludge during sinter production.

Abovementioned measures not only allow reducing specific energy consumption (coke, natural gas and electricity), but also result in significant reduction of GHG emissions and harmful substances in the atmosphere at PJSC "IISW".

The project implementation will ensure reduction of greenhouse gas emissions through decreased consumption of coke and natural gas, and will reduce greenhouse gas emissions from electricity generation in the national power grid.

The identified areas of concern as to the project description, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR 02, CAR 03, CAR 04, CAR 05, CAR 27, CL 01, CL 02, CL 05).

4 DETERMINATION CONCLUSIONS

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

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

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in 40 Corrective Action Requests and 26 Clarification Requests.

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

4.1 Project approvals by Parties involved (19-20)

The project has the Letter of Endorsment #1603/23/7 issued by the State Environmental Investments Agency of Ukraine (SEIA) on June 22,2011. After finishing JI project determination report, the PDD and Determination Report will be presented to SEIA for receiving the Letter of Approval (LoA).

The identified areas of concern as to project approvals by Parties involved, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR 01).

4.2 Authorization of project participants by Parties involved (21)

The participation of each project participant listed in the PDD will be authorized by Letter of Approval from appropriate party explicitly stating the name of the legal entity.

The identified areas of concern as to the authorization of project participants by Parties involved, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR 01).

The project has no approvals by the Parties involved, therefore CAR 01 remains pending. This issue will be closed after evidencing letter presentation before report finalizing.

4.3 Baseline setting (22-26)

The PDD explicitly indicates that that a baseline for the JI project is set in accordance with Appendix B to decision 9/CMP.1 (JI guidelines), and with further Guidance on Criteria for Baseline Setting and Monitoring (version 03) (hereinafter referred to as Guidance) as well as the application of the "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality", Version 03.0.1 and "Tool to Calculate Project or Leakage CO2 Emissions from Fossil Fuel Combustion", Version 02.
Thus, the Project participants applied the JI specific approach developed specifically for the Project "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol".
According to Guidance on Criteria for Baseline Setting and Monitoring, version 03, the proposed JI specific approach includes elements of approach used for the baseline setting in the UNFCCC registered JI project, determination of which is deemed final: "Introduction of energy efficiency measures at OJSC "Enakievo Metallurgical Works", PDD version 2.21, ITL project ID: UA1000224 as a comparable JI case.
The use of the elements of the JI project "Introduction of energy efficiency measures at OJSC "Enakievo Metallurgical Works" as a comparable JI case is justified through the assessment of comparability of the two projects under consideration. The JI Project "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol" encompasses the similar sources of GHG emissions within its project boundary, it is hosted by the same Party which is Ukraine, and the emission reductions are achieved by the similar measures, such as reconstruction of blast furnaces and implementation of PCI technology.

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

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

1. Upgrade of the blast furnaces #1 – 5, implementation of the pulverized coal injection into blast furnaces, construction of the new slag processing complexes AMCOM-1 and AMCOM-2, and implementation of the technology of partial replacement of the iron-ore concentrate with metallurgical sludge (project activity without JI mechanism implementation).
2. Continuation of operation of the existing blast furnaces without any reconstruction. It means continuation of the current situation at the PJSC “IISW” before the project activity implementation.
3. Construction of new blast furnaces with new auxiliary equipment, construction of the new sinter plant.

(b) Taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, sectoral reforming 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. A comprehensive analysis and an in-depth description of the sectoral reform policies and legislation concerning the development and reforming of the mining and metallurgical sector of Ukraine and stipulating the upgrade of blast furnaces and use of pulverized coal fuel instead of natural gas, as well as increasing of energy consumption efficiency and minimization of energy resources import dependency ;
b. Describing economic situation the project participants state that the national metallurgical policy represented by the Decree of the Cabinet of Ministers of Ukraine #967 “State Program of Development and Reforming of the Mining and Metallurgical Sector for the Period until 2011” as of 28/07/2004 implies upgrade of blast furnaces and use of pulverized coal fuel instead of natural gas, however, the program’s provision is not compulsory for implementation. It is also admitted that the other Ukrainian laws do not stipulate commitments to implementation of any proposed alternatives concerning the increasing of energy consumption efficiency and minimization of energy resources import dependency, such as natural gas;
c. As far as availability of capital there is a summary of key indicators of business practices in Ukraine as well as a comparison country risk premiums for Poland, Hungary, Slovakia and Ukraine provided by the PP’s vividly

demonstrating that Ukraine has been always considered a high-risk country for investments and doing business, which extremely limits the opportunities of the project as for its access to financial resources at the international level. As far as the national funding opportunities, the project participants prove that in view of the high rates for project financing suggested by the Ukrainian commercial banks, they are also limited. It is also mentioned that landslide of world prices for ferrous industry has substantially weakened possibilities of the plant to invest in new technologies and equipment;

d. It is stated in the PDD that the activities implemented under the proposed project are not a common practice in Ukraine. As of today, besides PJSC "IISW", there are only four enterprises performing reconstruction of blast furnaces, in particular, OJSC Alchevsk Iron & Steel Works, OJSC Dniprovskiy Iron and Steel Works named after Dzerzhinsky, OJSC Enakievo Metallurgical Works and PJSC Azovstal, but all of them are using the JI mechanism;
e. The applicable technological barriers and risks to the project scenarios, such as production suspension risk due to the new equipment launch, loss of the market share risk are also defined in the PDD.

For more details, please, refer to Appendix A Section “Baseline setting”, of the present report.

The identified areas of concern as to the baseline setting, project participants’ response and BVC’s conclusion are described in Appendix A, Table 2 (refer to CAR 12, CAR 13, CAR 15, CAR 16, CAR 17, CAR 20, CL 10 – CL 13).

4.4 Additionality (27-31)

To analyze additionality, the JI specific approach is applied. The JI specific approach chosen by the project participants is based on the guidance provided by the “Joint Implementation Determination and Verification Manual”, Version 01, as well as selected steps from the “Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality”, Version 03.0.1.
According to the “Joint Implementation Determination and Verification Manual”, Version 01, the additionality of a JI project can be proven by means of “Provision of traceable and transparent information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances (same GHG mitigation measure, same country, similar technology, similar scale) would result in

a reduction of anthropogenic emissions by sources or an enhancement of net anthropogenic removals by sinks that is additional to any that would otherwise occur and a justification why this determination is relevant for the project at hand".

Three JI projects with positive determination by an AIE are used to justify the additionality of the proposed JI project at PJSC "IISW":

UA1000224: Introduction of Energy Efficiency Measures at OJSC "Enakievo Metallurgical Works";
UA1000266: Reconstruction of the Agglomerate and Blast-Furnace Production at the JSC "Zaporizhstal";
UA1000223: Energy Efficiency Measures at the "Public Joint Stock Company Azovstal Iron & Steel Works".
Comprehensive explanations, descriptions and analyses are made in accordance with the selected method and provided in the respective PDD section B.2.

JI project of PJSC "IISW" is similar to three other JI projects already positively determined by AIEs in terms of same GHG mitigation measure, same country, similar technology and scale, as shown above. Therefore, the JI project of PJSC "IISW" is additional.

To prove additionality and guarantee the transparency of the additionality analysis the following steps of the "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality", Version 03.0.1 were performed:

- Identifying project activity alternatives
- Barrier analysis
- Analysis of prevailing practices
- Common practice analysis

Additionality is demonstrated appropriately as a result of the analysis using the approach chosen.

The identified areas of concern as to additionality, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR 14, CAR 18, CAR 19, CAR 32, CAR 33, CAR 34, CL 26).

4.5 Project boundary (32-33)

The project boundaries cover the blast furnace shop (with all blast furnaces and pulverized coal injection systems of all furnaces), AMCOM-1 and AMCOM-2 complexes, and sinter plant. All the facilities are located within the PJSC "IISW". The detailed description of the project and baseline scenario boundaries, the list of emission sources and

greenhouse gases are presented in Table B.6. and Fig. B.1. of the PDD Section B.3.
The emission estimation approach takes into account carbon dioxide emissions from iron smelting in blast furnaces #1, #2, #3, #4, #5, use of pulverized coal fuel in blast furnace shop, implementation of AMCOM slag processing complex, and introduction of technology of partial replacement of iron-ore concentrate with metallurgical sludge. Fig. B.1. demonstrates the baseline and project scenario boundaries. All listed facilities are located within the PJSC "IISW".

The identified areas of concern as for project boundary, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CL 06 – CL 09, CL 18 – CL 22).

4.6 Crediting period (34)

The PDD states 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, and the starting date is 01/06/2002, which is the beginning of upgrade implementation of the blast furnaces # 1 - 5.

The PDD states the expected operational lifetime of the project in years and months, which is 19 years or 228 months.

The PDD states the length of the crediting period in years and months, which is 16 years or 192 months, and its starting date as 01/01/2005 which is the date after the first emission reductions were generated by the project.
The length of the crediting period before the Kyoto Protocol's period is 3 years or 36 months.
The length of the crediting period during the Kyoto Protocol's period 5 years or 60 months.
Post-Kyoto Protocol crediting period is 8 years or 96 months.

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

The identified areas of concern as to crediting period, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR 06 – CAR 10, CL 04, CAR 11, CL 03).

4.7 Monitoring plan (35-39)

In accordance with Guidance on Criteria for Baseline Setting and Monitoring, version 03 paragraph 9 (a), the proposed JI project applies the JI specific approach used for the monitoring in the UNFCCC

registered JI project, determination of which is deemed final :“Introduction of energy efficiency measures at OJSC “Enakievo Metallurgical Works”, PDD version 2.21, ITL project ID: UA1000224, as a comparable JI case.
As a comparable case, the JI project “Introduction of energy efficiency measures at OJSC “Enakievo Metallurgical Works” encompasses the similar sources of GHG emissions within its project boundary, it is hosted by the same Party which is Ukraine, and the emission reductions are achieved by the similar measures.
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
- data to be monitored: the parameters that are subject to monitoring are presented in Section B.1., as well as in Tables D.1.1.1. and D.1.1.3. of the PDD;
- the period in which they will be monitored: daily/monthly/annually;
- all decisive factors for the control and reporting of project performance: project activity reports provided by the plant; quality control (QC) and quality assurance (QA) procedures; the operational and management structure that will be applied in 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. They are listed in Tables D.1.1.1. and D.1.1.3. of the PDD.

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, such as baseline emissions (BEy) , project emissions (PEy), year (y), grid emission factor (EFgrid), other emission factors (EFxx,yy), net calorific value (NCV_{XX}) and others.

The monitoring plan explicitly and clearly distinguishes:

(i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination, such as the ones presented in tabular form in Section B.1.

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

(iii) Data and parameters that are monitored throughout the crediting period, such as the ones given in Tables D.1.1.1. and D.1.1.3. of the PDD.

The monitoring plan describes the methods employed for data, such as wagon balances, pressure sensors, electricity meters, laboratory analyses, the suppliers' certificates, the data of the enterprise, as well as data collection frequency (daily, monthly or annually) and recording (electronic/paper).
The parameters that are subject to monitoring in project and baseline scenarios are clearly distinguished.

The monitoring plan elaborates 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, such as

Baseline emissions:

$$BE_y = BE_{BF,y} + BE_{Sinter,y} + BE_{IOC,y} + BE_{CP,y},$$

where:
BE_y : baseline emissions, tCO_2e;
$BE_{BF,y}$: baseline emissions from blast furnaces, tCO_2e;
$BE_{Sinter,y}$: baseline emissions from sinter use, replaced with AMCOM products;
$BE_{IOC,y}$: baseline emissions from iron-ore concentrate production, replaced with the metallurgical sludge;
$BE_{CP,y}$: baseline emissions from coke production, consumption of which will be reduced due to the blast furnace upgrade, tCO_2e;
y : year covered by calculations;

Project emissions:

$$PEy = PE_{BF,y} + PE_{AMCOM,y} + PE_{Sludge,y},$$

where:
PE_y : CO_2e emissions from the project activity, tCO_2e;
$PE_{BF,y}$: project emissions from blast furnaces, tCO_2e;
$PE_{AMCOM,y}$: project emissions from AMCOM complex operation, tCO_2e;
$PE_{Sludge,y}$: project emissions from consumption of sludge partially replaced with concentrate, tCO_2e;

Emission reduction:

$$ERy = BEy – PEy – LEy,$$

where:
ER_y : emission reductions in year y, tCO_2e;
BE_y : baseline emissions in the year y, tCO_2e;
PE_y : greenhouse gas emissions from the project activity in year y, tCO_2e;
LE_y : leakage emissions in year y, tCO_2e;

The monitoring plan presents the quality assurance and control procedures for the monitoring process. Monitoring plan does not stipulate any additional measures on installation of new metering equipment or collection of additional parameters in contrast to the ones being implemented at the plant. Monitoring techniques are in line with current operation routines at the enterprise.

The monitoring plan provides, in tabular form, a complete compilation of the data that need to be collected for its application, as well as methods of their collecting, level of accuracy, calibration routines, approved methodologies and technical standards applied for performing metering, laboratory analyses and calibration procedures.

It is indicated in the monitoring plan that data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities; they are presented in sufficient detail in the form of the flowchart. The operational and management structure under the monitoring plan is provided in Fig. D.1. The detailed description of the roles and responsibilities assigned is also provided in PDD Section D.3.

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

The identified areas of concern as to monitoring plan, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR 21 – CAR 26, CAR 28 - CAR 31, CAR 35, CAR 36, CAR 39, CL 02, CL 14 - CL 17,CL 23 - CL 25).

4.8 Leakage (40-41)

To estimate project leakages the approach used in the JI project "Introduction of energy efficiency measures at OJSC "Enakievo Metallurgical Works", PDD version 2.21 used for the baseline setting of the proposed project was applied. Within the proposed approach the emission sources from reconstruction of the PJSC "IISW" facilities (emissions from equipment and material transportation, energy resource consumption during construction and installation works) were neglected.

No other emission sources or emission increase outside the project boundaries from the existing sources outside the project have been identified.

The identified areas of concern as to leakage, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR 37).

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

The PDD indicates assessment of emissions or net removals 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 estimates of:

(a) Emissions for the project scenario which are 34 798 971 tones CO2e for the period 2005-2007; 47 360 277 tones CO2e for the period 2008-2012; 73 277 856 CO2e for the period 2013-2020 (ex ante).

(b) Leakage that are considered to equal zero;

(c) Emissions for the baseline scenario (within the project boundary), which are 38 971 009 tones CO2e for the period 2005-2007; 54 212 557 tones CO2e for the period 2008-2012; 91 955 024 CO2e for the period 2013-2020.
Calculation of the material and energy specific consumption is based on historical data for 4 years preceding the start of project works. The finished product unit under the project is a ton of produced pig iron. For determining the baseline emissions, the actual (ex post) data of pig iron production is used.

(d) Emission reductions adjusted by leakage (based on (a)-(c) above), which are 4 172 038 tones CO2e for the period 2005-2007; 6 852 280 tones CO2e for the period 2008-2012; 18 677168 CO2e for the period 2013-2020.

The estimates referred to above are given:

(a) On an annual basis;

(b) From 01/01/2005 to 31/12/2020, covering the whole crediting period;

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

(d) For CO2 only;

(e) In tonnes of CO2 equivalent.

The formula used for calculating the estimates referred above, which are provided in section 4.7 above are consistent throughout the PDD.

Data sources used for calculating the estimates referred to above are clearly identified, reliable and transparent.

For calculating the estimates referred to above, key factors mentioned in Section 4.3. of the present report as well as in Section B.2. of the PDD influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating the estimates referred to above, such as the Orders of the National Environmental Investment Agency (DFP in Ukraine) on approval of specific carbon dioxide emission factors; Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories; TÜV SÜD Industrie Service GmbH study "Ukraine - Assessment of new calculation of CEF"; "Ukraine's National Inventory Reports of GHG Sources and Sinks, 1990-2010", technical standards and norms are clearly identified, reliable and transparent.

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 identified areas of concern as to estimation of emission reductions or enhancements of net removals, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR 40).

4.10 Environmental impacts (48)

It is stated in the PDD that the measures offered by the current project require conducting Environmental Impact Assessment that has been performed and approved in accordance with procedures as determined by the host Party, such as State Building Standard DBN A.2.2-1-2003 "Structure and content of materials required to assess environmental impact (EIA) when designing and building enterprises, buildings and facilities"; State Building Standard DBN A.2.2-3-2004 "Content, procedure of developing, agreeing approving the project documentation for construction"; Law of Ukraine On Environmental Expertise.
The PDD also lists and attaches the following documentation on the analysis of the environmental impacts of the project:

- Statement on environmental impact of construction of the unit for pulverized coal fuel preparation and injection into blast furnaces #1-#5 in PJSC “Ilyich Iron and Steel Works of Mariupol”, prepared by Azovgipromez Ltd.
- Statement on environmental impact of construction of slag separation unit in PJSC “Ilyich Iron and Steel Works of Mariupol”, prepared by the collective research enterprise “Donbasekologiya”.

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, among them:

- Permit for performance of reconstruction (or construction) of blast furnaces BF#1-5;
- Permit for performance of construction of slag processing complexes AMCOM-1 and AMCOM-2;
- Permit for performance of construction of the pulverized coal fuel preparation and injection system;
- State inspection board’s certificate of commissioning of the reconstructed blast furnaces BF# 1-5;
- State inspection board’s certificate of commissioning of slag processing complexes AMCOM-1 and AMCOM-2;
- Positive expert conclusion on FS of construction of slag processing complexes AMCOM-1 and AMCOM-2.

The project has no transboundary impacts.

The proposed project will have a general positive environmental impact compared to the current situation, since the proposed measures will improve the efficiency of energy resource consumption and restrict concentration of pollutant emissions within allowable limits, as well as ensure reduction of pollutant emissions in the environment.

The identified areas of concern as to environmental impacts, project participants’ response and BVC’s conclusion are described in Appendix A, Table 2 (refer to CAR 38).

4.11 Stakeholder consultation (49)

No negative stakeholders’ comments were received.

4.12 Determination regarding small scale projects (50-57) “Not applicable”

4.13 Determination regarding land use, land-use change and forestry (LULUCF) projects (58-64) "Not applicable"

4.14 Determination regarding programmes of activities (65-73) "Not applicable"

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

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

6 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol" Project. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

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

Project participants used the guidance provided by the "Joint Implementation Determination and Verification Manual", Version 01, as well as selected steps from the "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality", Version 03.0.1. for demonstration of the additionality. In line with Joint Implementation Determination and Verification Manual" the PDD provides analysis of a comparable JI case; in line with the "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality" the PDD provides barrier analysis, analysis of prevailing practices 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 two pending issues related to the current determination stage of the project: the issue of the written approval of the

project and the authorization of the project participant by the host Party. If the written approval and the authorization by the host Party are awarded, it is our opinion that the project as described in the Project Design Document, Version 1.8 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

The review of the project design documentation version 1.8 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 ING Bank N.V. that relate directly to the GHG components of the project.

/1/ Project Design Document "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol" version 1.3 of 25/07/2011
/2/ Emission Reductions Calculation version 1.0 excel file of 25/06/2011
/3/ Project Design Document "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol" version 1.4 of 27/10/2011
/4/ Emission Reductions Calculation version 1.0 excel file of 26/10/2011
/5/ Project Design Document "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol" version 1.5 of 24/11/2011
/6/ Emission Reductions Calculation excel file of 24/11/2011
/7/ Project Design Document "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol" version 1.6 of 03/01/2012
/8/ Emission Reductions Calculation excel file of 03/01/2012
/9/ Project Design Document "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol" version 1.7 of 05/11/2012
/10/ Emission Reductions Calculation excel file of December 2012
/11/ LoE No # 1603/23/7 dated 22/06/2011 issued by the State environmental Investment Agency of Ukraine
/12/ Guidance on Criteria for Baseline Setting and Monitoring, version 03
/13/ "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality", Version 03.0.1
/14/ "Tool to Calculate Project or Leakage CO2 Emissions from Fossil Fuel Combustion", Version 02
/15/ UA1000224: Introduction of Energy Efficiency Measures at OJSC "Enakievo Metallurgical Works"
/16/ UA1000266: Reconstruction of the Agglomerate and Blast-Furnace Production at the JSC "Zaporizhstal"
/17/ UA1000223: Energy Efficiency Measures at the "Public Joint Stock Company Azovstal Iron & Steel Works"
/18/ Project Design Document "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol" version 1.8 of 04/12/2012

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

/1/ Quality policy at PJSC "Ilyich Iron and Steel Works of Mariupol" dated 11/08/2010
/2/ Scheme of sinter plant circuit devices at PJSC "Ilyich Iron and Steel Works of Mariupol"
/3/ Scheme of ore and concentrate warehouse (approved of 12/03/2007)
/4/ Fixation scheme of sinter plant (approved of 16/02/2005)
/5/ Traffic scheme of sinter plant materials
/6/ Technology instruction
ТИ-227-ОА-01-10. Fluxed blast-furnace sinter production
/7/ Photo – Control panel type SK3, serial number #200404
/8/ Photo – Cable 0.3 m. Serial #6492
/9/ Photo – Transformer substation 2 КТПГС-400/10/0.4-К-У1,number №411387
/10/ Certificate on awarding work professions qualification. Registration #75 dated 11/01/2011
/11/ Certificate #1588 and card on right to perform high risk works
/12/ Technical report for 1998 on blast-furnace shop
/13/ Technical report for 1999 on blast-furnace shop
/14/ Technical report for 2000 on blast-furnace shop
/15/ Technical report for 2001 on blast-furnace shop
/16/ Technical report for 2002 on blast-furnace shop
/17/ Technical report for 2003 on blast-furnace shop
/18/ Technical report for 2004 on blast-furnace shop
/19/ Technical report for 2005 on blast-furnace shop
/20/ Technical report for 2006 on blast-furnace shop
/21/ Technical report for 2007 on blast-furnace shop
/22/ Technical report for 2008 on blast-furnace shop
/23/ Technical report for 2009 on blast-furnace shop
/24/ Technical report for 2010 on blast-furnace shop
/25/ List of meters installed at VRU-60 substation №48 (2006)
/26/ List of meters installed at blast-furnace and sinter plants substation №10, 25 (2006)
/27/ Blast-furnace shop (BF#4) Weight section
/28/ Blast-furnace shop (BF#5) Weight section
/29/ Blast-furnace shop (BF#2) Weight section
/30/ Blast-furnace shop (BF#1) Weight section
/31/ Blast-furnace shop (BF#3) Weight section
/32/ Data on oxygen shop, КААр-60 air separation plant (ВРУ-60)
/33/ Protocol #1445 dated 24/09/2010
Qualification commission meeting of experts (Oxygen shop)
/34/ Protocol #2300 dated 09/11/2007
Qualification commission meeting of experts(Oxygen shop)
/35/ Protocol #3193 dated 29/12/2006
Qualification commission meeting of experts (Oxygen shop)

/36/ Order #27/26 dated 09/01/2007 on oxygen shop
/37/ Application dated 29/09/2005 on manufacturing practice in oxygen shop
/38/ Protocol #2079 dated 12/10/2007 on qualification exams conduction
/39/ Protocol #1583 dated 06/07/2006 on qualification exams conduction
/40/ Passport №23/86 dated 21/01/2011 on environment conditions and characteristics of oxygen meter type Rosemount 3051, serial #7937641
/41/ Permission on implementation and fulfillment of high risk work #1002.09.14-27.10.0, valid from 07/09/2009 till 07/09/2014, issued by the Donetsk Region State Mining Inspection Local Administration
/42/ Work committee act dated 10/11/2006 on building construction readiness for presentation to the state committee
/43/ Contract #40169-55/TE/00 between AIR LIQUIDE and SONAG Industriefinanzierungsberatung und Beteiligungs Gessellschaft mbH for PJSC "Ilyich Iron and Steel Works of Mariupol"
/44/ Technological journal of oxygen separation unit VRU-60 dated 05/07/2011
/45/ Daily register dated 29/07/2011 on substation #48
/46/ Photo – Control panel for substations "Ilyich" and "Mirnaya"
/47/ Photo – Electricity meter type Energia-9, serial #21166
/48/ Photo – Electricity meter type Energia-9, serial #21165
/49/ Power consumption by types of production for June 2011
/50/ Passport #4.1.45-2 on conditions and characteristics of gas meter type APR-2000, serial #02082427 (last calibration date – 16/06/2011)
/51/ Protocol for passport #4.1.45-3 on registration meter type Диск-250м, serial #265 (last calibration date – 16/06/2011)
/52/ Protocol for passport #4.1.45-2 on pressure meter type APR-2000, serial #02082427 (last calibration date – 16/06/2011)
/53/ Measuring equipment conditions and characteristics passport #4.1.45-3 on gas meter type Диск-250м, serial number #265 (last calibration date – 16/06/2011)
/54/ Measuring equipment conditions and characteristics passport #4.1.41-2 on gas meter type APR-2000м, serial number #02082423 (last calibration date – 16/06/2011)
/55/ Protocol for passport #4.1.40-3 on registration meter type Диск-250м, serial #4343 (last calibration date – 16/06/2011)
/56/ Protocol for passport #4.1.40-3 on gas meter type APR-2000, serial #02082423 (last calibration date – 16/06/2011)
/57/ Measuring equipment conditions and characteristics passport #4.1.40-3 on converters type Диск-250м, serial number #4343 (last calibration date – 16/06/2011)
/58/ Measuring equipment conditions and characteristics passport #4.1.41-2 on gas meter type APR-2000м, serial number #02082425 (last calibration date – 16/06/2011)
/59/ Protocol for passport #4.1.40-2 on gas meter type APR-2000, serial #02082425 (last calibration date – 16/06/2011)
/60/ Protocol for passport #4.1.41-3 on gas meter type Диск-250, serial #4723 (last calibration date – 16/06/2011)
/61/ Measuring equipment conditions and characteristics passport #4.1.40-3 on converters type Диск-250м, serial number #4723 (last calibration date –

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/62/ Passport #4.1.44-2 on conditions and characteristics of gas meter type APR-2000, serial #02082418 (last calibration date – 16/06/2011)

/63/ Protocol for passport #4.1.44-3 on meter type Диск-250, serial #4542 (last calibration date – 16/06/2011)

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/66/ Measuring equipment conditions and characteristics passport #4.1.43-2 on gas meter type APR-2000м, serial number #02082424 (last calibration date – 16/06/2011)

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/68/ Protocol for passport #4.1.43-3 on meter type ДП-1, serial #4602 (last calibration date – 16/06/2011)

/69/ Measuring equipment conditions and characteristics passport #4.1.43-3 on gas meter type Диск-250м, serial number #4602 (last calibration date – 16/06/2011)

/70/ Measuring equipment conditions and characteristics passport #4.1.42-2 on gas meter type APR-2000м, serial number #02082422 (last calibration date – 16/06/2011)

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/72/ Protocol for passport #4.1.42-3 on meter type Диск-250, serial #4556 (last calibration date – 16/06/2011)

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/76/ Measuring equipment conditions and characteristics passport #4.1.32-13 on gas meter type APR-2000, serial number #03080189 (last calibration date – 16/06/2011)

/77/ Protocol for passport #4.1.32-13 dated 16/06/2011 on meter type APR-2000, serial #03080189

/78/ Measuring equipment conditions and characteristics passport #4.1.32-12 on gas meter type APR-2000, serial number #03080192 (last calibration date – 16/06/2011)

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/80/ Measuring equipment conditions and characteristics passport #4.1.32-11 on gas meter type APR-2000, serial number #03080193 (last calibration date –

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/81/ Protocol for passport #4.1.32-12 on meter type APR-2000, serial #03080193 (last calibration date – 16/06/2011)

/82/ Measuring equipment conditions and characteristics passport #4.1.32-11 on gas meter type APR-2000, serial number #03080045 (last calibration date – 16/06/2011)

/83/ Protocol for passport #4.1.32-40 on meter type APR-2000, serial #03080045 (last calibration date – 16/06/2011)

/84/ Measuring equipment conditions and characteristics passport #4.1.33-9 on gas meter type APR-2000, serial number #03080051 (last calibration date – 16/06/2011)

/85/ Protocol for passport #4.1.32-9 on meter type APR-2000, serial #03080051 (last calibration date – 16/06/2011)

/86/ Measuring equipment conditions and characteristics passport #4.1.33-8 on gas meter type APR-2000, serial number #03080192 (last calibration date – 16/06/2011)

/87/ Protocol for passport #4.1.33-8 on meter type APR-2000, serial #03080192 (last calibration date – 16/06/2011)

/88/ Measuring equipment conditions and characteristics passport #4.1.32-7 on gas meter type APR-2000, serial number #03080047 (last calibration date – 16/06/2011)

/89/ Protocol for passport #4.1.32-7 on meter type APR-2000, serial #03080047 (last calibration date – 16/06/2011)

/90/ Measuring equipment conditions and characteristics passport #4.1.32-6 on gas meter type APR-2000, serial number #03080044 (last calibration date – 16/06/2011)

/91/ Protocol for passport #4.1.32-6 on gas meter type APR-2000, serial #03080044 (last calibration date – 16/06/2011)

/92/ Measuring equipment conditions and characteristics passport #4.1.32-5 on gas meter type APR-2000, serial number #03080048 (last calibration date – 16/06/2011)

/93/ Protocol for passport #4.1.32-5 on pressure meter type APR-2000, serial #03080048 (last calibration date – 16/06/2011)

/94/ Measuring equipment conditions and characteristics passport #4.1.32-4 on gas meter type APR-2000, serial number #03080191 (last calibration date – 16/06/2011)

/95/ Protocol for passport #4.1.32-4 on pressure meter type APR-2000, serial #03080191 (last calibration date – 16/06/2011)

/96/ Measuring equipment conditions and characteristics passport #4.1.32-3 on gas meter type APR-2000, serial number #03080050 (last calibration date – 16/06/2011)

/97/ Protocol for passport #4.1.32-3 on pressure meter type APR-2000, serial #03080050 (last calibration date – 16/06/2011)

/98/ Measuring equipment conditions and characteristics passport #4.1.32-2 on gas meter type APR-2000, serial number #03080194 (last calibration date – 16/06/2011)

/99/ Protocol for passport #4.1.32-2 on pressure meter type APR-2000, serial

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/100/ Measuring equipment conditions and characteristics passport #4.1.32-1 on gas meter type APR-2000, serial number #03080049 (last calibration date – 16/06/2011)

/101/ Protocol for passport #4.1.32-1 on pressure meter type APR-2000, serial #03080049

/102/ Measuring equipment conditions and characteristics passport #4.1.27-3 on gas meter type Диск-250м, serial #4648 (last calibration date – 16/06/2011)

/103/ Measuring equipment conditions and characteristics passport #4.1.28-3 on gas meter type Диск-250м, serial number #4666

/104/ Measuring equipment conditions and characteristics passport #4.1.26-3 on gas meter type Диск-250м, serial number #4669 (last calibration date – 28/04/2011)

/105/ Protocol for passport #4.2.30-2 on pressure meter type Metran-100ДД, serial #80912 (last calibration date – 08/10/2010)

/106/ Conditions and characteristics passport #4.2.30-2 on gas meter type Metran-100ДД, serial number #80912 (last calibration date – 08/10/2010)

/107/ Protocol for passport #4.2.46-1 on pressure meter type Metran-100ДД, serial #204284 (last calibration date – 25/01/2011)

/108/ Conditions and characteristics passport #4.2.46-2 on gas meter type Metran-100ДД, serial number #204284 (last calibration date – 25/01/2011)

/109/ Protocol for passport #4.2.45-1 on pressure meter type Metran-100ДД, serial #205748 (last calibration date – 25/01/2011)

/110/ Conditions and characteristics passport #4.2.45-2 on gas meter type Metran-100ДД, serial number #205748 (last calibration date – 25/01/2011)

/111/ Protocol for passport #4.2.38-2 on pressure meter type Metran-100ДД, serial #204275 (last calibration date – 25/01/2011)

/112/ Conditions and characteristics passport #4.2.38-2 on gas meter type Metran-100ДД, serial number #204275 (last calibration date – 25/01/2011)

/113/ Protocol for passport #4.2.34-2 on pressure meter type Metran-100ДД, serial #204279 (last calibration date – 25/01/2011)

/114/ Conditions and characteristics passport #4.2.34-2 on gas meter type Metran-100ДД, serial number #204279 (last calibration date – 25/01/2011)

/115/ Protocol for passport #4.2.37-2 on pressure meter type Metran-100ДД, serial #205723 (last calibration date – 25/01/2011)

/116/ Conditions and characteristics passport #4.2.37-2 on gas meter type Metran-100ДД, serial number #205753 (last calibration date – 25/01/2011)

/117/ Protocol for passport #4.2.36-2 on pressure meter type Metran-100ДД, serial #205742 (last calibration date – 25/01/2011)

/118/ Conditions and characteristics passport #4.2.36-2 on gas meter type Metran-100ДД, serial number #205742 (last calibration date – 25/01/2011)

/119/ Protocol for passport #4.2.35-2 on pressure meter type Metran-100ДД, serial #205749 (last calibration date – 25/01/2011)

/120/ Conditions and characteristics passport #2.35-2 on gas meter type Metran-100ДД, serial number #205749 (last calibration date – 25/01/2011)

/121/ Protocol for passport #4.2.32-2 on pressure meter type Metran-100ДД, serial #206186 (last calibration date – 24/01/2011)

/122/ Conditions and characteristics passport #2.32-2 on gas meter type Metran-100ДД, serial number #206186 (last calibration date – 24/01/2011)
/123/ Protocol for passport #4.2.20-2 on pressure meter type Metran-100ДД, serial #205752 (last calibration date – 25/01/2011)
/124/ Conditions and characteristics passport #4.2.40-2 on gas meter type Metran-100ДД, serial number #205752 (last calibration date – 25/01/2011)
/125/ Protocol for passport #4.2.39-2 on pressure meter type Metran-100ДД, serial #205751 (last calibration date – 25/01/2011)
/126/ Conditions and characteristics passport #4.2.39-2 on gas meter type Metran-100ДД, serial number #205751 (last calibration date – 25/01/2011)
/127/ Protocol for passport #4.2.44-2 on pressure meter type Metran-100ДД, serial #205746 (last calibration date – 25/01/2011)
/128/ Conditions and characteristics passport #4.2.39-2 on gas meter type Metran-100ДД, serial number #205746 (last calibration date – 25/01/2011)
/129/ Protocol for passport #4.2.31-2 on pressure meter type Metran-100ДД, serial #206185 (last calibration date – 24/01/2011)
/130/ Conditions and characteristics passport #4.2.39-2 on gas meter type Metran-100ДД, serial number #206185 (last calibration date – 24/01/2011)
/131/ Protocol for passport #4.2.43-2 on pressure meter type Metran-100ДД, serial #204276 (last calibration date – 25/01/2011)
/132/ Conditions and characteristics passport #4.2.43-2 on gas meter type Metran-100ДД, serial number #204276 (last calibration date – 25/01/2011)
/133/ Protocol for passport #4.2.43-2 on pressure meter type Metran-100ДД, serial #204283 (last calibration date – 25/01/2011)
/134/ Conditions and characteristics passport # 4.2.42-2 on gas meter type Metran-100ДД, serial number #204283 (last calibration date – 25/01/2011)
/135/ Protocol for passport #4.2.41-2 on pressure meter type Metran-100ДД, serial #205743 (last calibration date – 25/01/2011)
/136/ Conditions and characteristics passport # 4.2.41-2 on gas meter type Metran-100ДД, serial number #205743 (last calibration date – 25/01/2011)
/137/ Protocol for passport #4.2.65-2 dated 24/01/2011 on pressure meter type Metran-100ДД, serial #206190 (last calibration date – 24/01/2011)
/138/ Conditions and characteristics passport #2.65-2 on gas meter type Metran-100ДД, serial number #206190 (last calibration date – 24/01/2011)
/139/ Protocol for passport #4.2.33-on pressure meter type Metran-100ДД, serial #206189 (last calibration date – 24/01/2011)
/140/ Conditions and characteristics passport #2.33-2 on gas meter type Metran-100ДД, serial number #206189 (last calibration date – 24/01/2011)
/141/ Protocol for passport #4.3.34-1 on pressure meter type Сапфир-22, serial #101574 (last calibration date – 17/08/2010)
/142/ Conditions and characteristics passport #2.33-2 on gas meter type Metran-100ДД, serial number #101574 (last calibration date – 17/08/2010)
/143/ Protocol for passport #4.3.33-2 on pressure meter type Сапфир-22, serial #101534 (last calibration date – 17/08/2010)
/144/ Conditions and characteristics passport #4.3.33-2 on gas meter type Metran-100ДД, serial number #101534 (last calibration date – 17/08/2010)
/145/ Protocol for passport #4.3.32-2 on pressure meter type Metran-100ДД, serial

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/146/ Conditions and characteristics passport #3.32-2 on gas meter type Metran-100ДД, serial number #80839 (last calibration date – 17/08/2010)
/147/ Protocol for passport #4.3.95-2 on pressure meter type Сапфир-22, serial #101192 (last calibration date – 17/08/2010)
/148/ Conditions and characteristics passport #4.3.95-2 on gas meter type Сапфир-22, serial number #101192 (last calibration date – 17/08/2010)
/149/ Protocol for passport #4.4.67-2 on pressure meter type Metran-150, serial #955170 (last calibration date – 15/02/2011)
/150/ Conditions and characteristics passport #4.4.67-2 on gas meter type Metran-150СД2, serial number #101192 (last calibration date – 15/02/2011)
/151/ Protocol for passport #4.4.67-2 on pressure meter type Metran-100ДД, serial #206193 (last calibration date – 15/02/2011)
/152/ Conditions and characteristics passport #4.4.64-2 on gas meter type Metran-100ДД, serial number #206193 (last calibration date – 15/02/2011)
/153/ Protocol for passport #4.4.66-2 on pressure meter type Metran-100ДД, serial #334221 (last calibration date – 15/02/2011)
/154/ Conditions and characteristics passport # 4.4.66-2 on gas meter type Metran-100ДД, serial number #334221 (last calibration date – 15/02/2011)
/155/ Protocol for passport #4.4.65-2 on pressure meter type Metran-100ДД, serial #334249 (last calibration date – 15/02/2011)
/156/ Conditions and characteristics passport #4.4.65-2 on gas meter type Metran-100ДД, serial number #334249 (last calibration date – 15/02/2011)
/157/ Protocol for passport #4.4.105-2 on pressure meter type Metran-100ДД, serial #334222 (last calibration date – 15/02/2011)
/158/ Conditions and characteristics passport #4.4.105-2 on gas meter type Metran-100ДД, serial number #334222 (last calibration date – 15/02/2011)
/159/ Calibration protocol for passport #4.5.64-1 on gas meter type Metran-150, serial #873918 (last calibration date – 03/12/2010)
/160/ Conditions and characteristics passport dated 03/12/2010 on gas meter type Metran-150, serial number #873918 (last calibration date – 03/12/2010)
/161/ Calibration protocol for passport #4.5.65-2 dated 10/11/2010 on gas meter type Metran-150, serial #874251 (last calibration date – 03/12/2010)
/162/ Conditions and characteristics passport #4.5.65-2 on gas meter type Metran-150, serial number #874251 (last calibration date – 10/11/2010)
/163/ Calibration protocol for passport #4.5.66-2 on gas meter type Metran-150, serial #876198 (last calibration date – 03/12/2010)
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/171/ Extract from desicion #55 dated 15/02/2006б issued by the Mariupol City Council Executive Committee
/172/ Statement #15 dated 29/07/2008.
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/174/ Statement of 11/2003.
Main aggregates acceptance after major repair (Blast furnace #3)
/175/ Statement #7 dated 11/07/2007.
Main aggregates acceptance after major repair (Blast furnace #4)
/176/ Statement #15
Main aggregates acceptance after major repair.
Blast furnace #5
/177/ Statement of scientific and technological action implementation
Ukrainian patent #51584A
/178/ Reconstruction of blast-furnace department. Volume 1, part 1.
Explainable letter #AT 77804
/179/ Reconstruction of blast-furnace department. Evaluation of influence on environment .
Explanation note #AT 78651
/180/ Permission #08/04/1459 dated 18/02/2011 on fulfillment of construction works
/181/ Complex expert inference #1699/2 dated 26/10/2007
/182/ Conclusion of National ecology examination №537.
“Reconstruction of blast furnace department with installation for preparing and blowing in of pulverized-coal in the blast furnaces #1-5”
PJSC “Ilyich Iron and Steel Works of Mariupol”
/183/ Reconstruction of oxygen shop. Work project. Explanation note #AT 76532, Volume 1
/184/ Presumptive complex expert inference #16/1 dated 11/01/2005
/185/ Repeated complex expert inference #16/2 dated 22/04/2005
/186/ Conclusion of State Ecological Expert Commission #04.07.170 dated 16/07/2004
/187/ Conclusion of State Ecological Expert Commission (additional) #04.09.203 dated 01/09/2003
/188/ Extract from decision #362 dated 20/12/2006, issued by the Mariupol City Council Executive Committee
/189/ State Inspection Board statement dated 07/12/2006 about acceptance of finished by construction building
/190/ Installation for metallic additives retrieving. Work project.
Explanation note #ТИ 20\503 ПЗ. Volume 1
/191/ Installation for metallic additives retrieving. Work project.
Environmental impact assessment #10-05 Д\Э
/192/ Permission #16 dated 01/08/2006 on fulfillment of construction works
/193/ Complex expert inference #04.07.042 dated 20/07/2006
/194/ Conclusion of State Ecology Examination Committee #04.07.042 dated 14.07.2006

/195/ Order #217 dated 14/03/2007 issued by the head of district administration
/196/ State Inspection Board statement dated 14/02/2007 about acceptance of finished by construction building
/197/ Technical passport #2 dated 13/11/2010 on track scales type 2ТП250
/198/ Technical passport #3 dated 13/07/2010 on track scales type РС-150Ц13А
/199/ Technical passport #3 dated 11/04/2011 on mixer scales type 465В250
/200/ Technical passport #4 dated 11/04/2011 on mixer scales type 465В250
/201/ Technical passport #9 dated 06/01/2011 on scales type ЭТВУ(272Т200)
/202/ Certificate #4-1528-10 dated 19/08/2011 on working measuring equipment calibration
/203/ Technical passport #1 dated 13/11/2010 on scales type 2ТП250
/204/ Technical passport #36 dated 11/05/2010 on scales type ЧЖ250
/205/ Technical passport #2 dated 20/04/2011 on scales type 4180П250
/206/ Technical passport #1 dated 20/04/2011 on scales type 4180П250
/207/ Technical passport #37 dated 14/5/2010 on scales type ЧЖ250
/208/ Technical passport #4 dated 23/12/2010 on scales type ЧЖ200
/209/ Conditions and characteristics passport #4.1.32-2 dated 15/06/2010 on gas meter type APR-2000, serial number #03080186
/210/ Conditions and characteristics passport #4.1.31-2 dated 15/06/2010 on gas meter type Metran-100DD, serial number #345741
/211/ Conditions and characteristics passport #2.57-2 dated 24/01/2011 on gas meter type Metran-100DD, serial number #204278
/212/ Conditions and characteristics passport dated 01/04/2011 on gas meter type Metran-150, serial number #1010260
/213/ Conditions and characteristics passport #4.4.97-2 dated 15/02/2011 on gas meter type Metran-100DD, serial number #333493
/214/ Conditions and characteristics passport #4.5.97-2 dated 04/11/2011 on gas meter type Metran-150, serial number #874257
/215/ Conditions and characteristics passport #ТК10-3 dated 11/02/2011 on gas meters type ДМ, serial number #5705 (first meter) and type КСД-3, serial number #364861(second meter)
/216/ Conditions and characteristics passport #ТК9-3 dated 24/11/2010 on gas meters type ДМ, serial number #66882 (first meter) and type КСД-3, serial number #364908 (second meter)
/217/ Conditions and characteristics passport #23В23 dated 21/04/2011 on gas meter type Metran-100-2D, serial number #254437
/218/ Conditions and characteristics passport #23В24 dated 21/04/2011 on gas meter type Metran-100DD, serial number #241962
/219/ Passport #17/749 on oxygen meter type Диск-250, serial #92127 (last calibration date – 12/05/2010)
/220/ Passport #17/748 on oxygen meter Диск-250, serial #92141 (last calibration date – 20/01/2011)
/221/ Passport #17/746 on oxygen meter Диск-250, serial #92138 (last calibration date – 22/04/2011)
/222/ Passport #17/747 on oxygen meter Диск-250, serial #92143 (last calibration date – 29/03/2010)
/223/ Passport #17/741 on oxygen meter Диск-250, serial #92144 (last calibration

date –22/07/2010)
/224/ Passport #17/745 on oxygen meter Диск-250, serial #92142 (last calibration date –18/08/2010)
/225/ Passport #17/740 on oxygen meter Диск-250, serial #92139 (last calibration date – 22/04/2011)
/226/ Calibration protocol #17/36 on oxygen meter type Metran-100ДД, serial #244717 (last calibration date – 20/01/2011)
/227/ Calibration protocol #17/29 dated on oxygen meter type Metran-100ДД, serial #244098 (last calibration date – 29/03/2011)
/228/ Calibration protocol #17/22 on oxygen meter type Metran-100ДД, serial #251199 (last calibration date – 22/04/2011)
/229/ Calibration protocol #17/8 on oxygen meter type Metran-100ДД, serial #251199 (last calibration date – 18/08/2011)
/230/ Calibration protocol #17/15 on oxygen meter type Metran-100ДД, serial #244715 (last calibration date – 22/07/2010)
/231/ Calibration protocol #17/41 dated 22/04/2011 on oxygen meter type Metran-100ДД, serial #244308 (last calibration date – 22/04/2011)
/232/ Calibration protocol #17/41 dated 12/02/2011 on oxygen meter type Metran-100ДД, serial #244713
/233/ Statement #064965 dated 04/02/2009 on technical checking of measuring tools with voltage 1kV
/234/ Conditions and characteristics passport dated 10/09/2011 on gas meter type Metran, serial number #2993330
/235/ Passport #5.9-2 on measuring equipment parameters of gas meter type Диск-250м, serial number #915
/236/ Conditions and characteristics passport dated 05/04/2011 on gas meter type Metran, serial number #874194
/237/ Conditions and characteristics passport #17/232 dated 10/04/2011 on gas meter type Metran-100DD, serial number #244712
/238/ Conditions and characteristics passport #17/235 dated 10/02/2011 on gas meter type Metran-100DD, serial number #372199
/239/ Measuring equipment conditions passport #6.10-2 dated 05/04/2011 on gas meter type Диск-250м, serial number #5759
/240/ Conditions and characteristics passport #17/466 dated 20/12/2010 on oxygen meter type 13ДДН, serial number #206852
/241/ Conditions and characteristics passport dated 19/01/2011 on oxygen meter type Metran-100, serial number #346994
/242/ Conditions and characteristics passport #17/467 dated 20/12/2010 on oxygen meter type 13ДД11, serial number #76885
/243/ Conditions and characteristics passport #4.9/1 dated 09/03/2011 on oxygen meter type 13ДД11, serial number #380589
/244/ Measuring equipment conditions passport #1.12-2 dated 21/01/2010 on gas meter type Диск-250м, serial number #17229
/245/ Conditions and characteristics passport #4.1.27-2 dated 15/06/2010 on gas meter type APR-2000, serial number #02082426
/246/ Conditions and characteristics passport #4.1.27-2 dated 08/10/2010 on gas meter type Metran-100DD, serial number #80912

/247/ Conditions and characteristics passport #2.31-2 dated 24/01/2011 on gas meter type Metran-100DD, serial number #206185
/248/ Conditions and characteristics passport #4.4.64-2 dated 15/02/2011 on gas meter type Metran-100DD, serial number #206193
/249/ Conditions and characteristics passport #4.4.65-2 dated 15/02/2011 on gas meter type Metran-100DD, serial number #334249
/250/ Conditions and characteristics passport dated 03/12/2010 on gas meter Metran-100DD, serial number #873918
/251/ Conditions and characteristics passport #4.3.31-2 dated 17/08/2010 on gas meter type Metran-100DD, serial number #341491
/252/ Conditions and characteristics passport #3.32-2 dated 17/08/2010 on gas meter type Metran-100DD, serial number #80839
/253/ Passport #12 dated 20/05/2010 on coke scale type 7449.01 (Blast-furnace shop)
/254/ Passport #12 dated 20/05/2010 on coke scale type КЦ7449.01 (Blast-furnace shop)
/255/ Passport #17 dated 20/05/2010 on addition scale type 7449.03. (Blast-furnace shop)
/256/ Passport #18 dated 20/05/2010 on addition scale type 7449.03 (Blast-furnace shop)
/257/ Passport #15 dated 20/05/2010 on addition scale type 7449.03 (Blast-furnace shop)
/258/ Passport #16 dated 20/05/2010 on addition scale type 7449.03 (Blast-furnace shop)
/259/ Passport #21 dated 12/09/2010 on coke scale type 7429.01 (Blast-furnace shop)
/260/ Passport #22 dated 12/09/2010 on coke scale type КМ 7429.01 (Blast-furnace shop)
/261/ Passport #201 dated 12/09/2010 on coke scale type КМ 7429.03 (Blast-furnace shop)
/262/ Passport #203 dated 12/09/2010 on coke scale type КМ 7429.03 (Blast-furnace shop)
/263/ Passport #211 dated 12/09/2010 on coke scale type КМ 7429.03 (Blast-furnace shop)
/264/ Passport #211 dated 12/09/2010 on coke scale type КМ 7429.03 (Blast-furnace shop)
/265/ Passport #31 dated 18/03/2010 on coke scale type ВИ7413.1 (Blast-furnace shop)
/266/ Passport #32 dated 18/03/2010 on coke scale type ВИ7413.2 (Blast-furnace shop)
/267/ Passport #301 dated 18/03/2010 on coke scale type ВИ7415.1 (Blast-furnace shop)
/268/ Passport #302 dated 18/03/2010 on coke scale type ВИ7415.2 (Blast-furnace shop)
/269/ Passport #311 dated 18/03/2010 on coke scale type ВИ7415.3 (Blast-furnace shop)
/270/ Passport #312 dated 18/03/2010 on coke scale type ВИ7415.4 (Blast-furnace

shop)
/271/ Passport #41 dated 29/07/2010 on coke scale type КИ7447.01 (Blast-furnace shop)
/272/ Passport #42 dated 29/07/2010 on coke scale type КИ7447.01 (Blast-furnace shop)
/273/ Passport #403 dated 29/07/2010 on coke scale type КИ7447.03 (Blast-furnace shop)
/274/ Passport #404 dated 29/07/2010 on coke scale type КИ7447.03 (Blast-furnace shop)
/275/ Passport #413 dated 22/02/2010 on coke scale type КИ7447.03 (Blast-furnace shop)
/276/ Passport #414 dated 29/07/2010 on coke scale type КИ7447.03 (Blast-furnace shop)
/277/ Passport #51 dated 08/10/2010 on coke scale type КМ7425.01 (Blast-furnace shop)
/278/ Passport #52 dated 08/10/2010 on coke scale type КМ7425.01 (Blast-furnace shop)
/279/ Passport #503 dated 08/10/2010 on coke scale type КИ7425.03 (Blast-furnace shop)
/280/ Passport #502 dated 08/10/2010 on coke scale type КМ7425.03 (Blast-furnace shop)
/281/ Passport #511 dated 08/10/2010 on coke scale type КМ7425.03 (Blast-furnace shop)
/282/ Passport #512 dated 08/10/2010 on coke scale type КМ7425.03 (Blast-furnace shop)
/283/ Certificate #003557 dated 18/02/2011 on car scales type Scalex 2200, serial #99903600
/284/ Statement dated 16/08/2007 on environmental impact of installation for preparing and pulverized-coal blowing in at the blast furnaces #1,5 (PJSC “Ilyich Iron and Steel Works of Mariupol”)
/285/ Statement dated 30/09/2006 on intentions. PJSC “Ilyich Iron and Steel Works of Mariupol”
/286/ License #24 dated 21/06/2010 about state environment certification.
/287/ Passport #AAH3 466559 200ПС dated 14/11/2007 on electricity meter type Energia-9, serial #37752
/288/ Passport #AAH3 466559 200ПС dated 14/11/2007 on electricity meter type Energia-9, serial #37112
/289/ Passport #AAH3 466559 200ПС dated 14/11/2007 on electricity meter type Energia-9, serial #37447
/290/ Passport #AAH3 466559 200ПС dated 14/11/2007 on electricity meter type Energia-9, serial #37744
/291/ Passport #AAH3 466559 200ПС dated 14/11/2007 on electricity meter type Energia-9, serial #37743
/292/ Technological journal of blast-furnace exploitation (ДП-3, July 2011)
/293/ Technological journal of blast-furnace exploitation (ДП-2, July 2011)
/294/ Calibration schedule dated 28/10/2010 of measuring equipment for 2011. Type of measurement: mechanical

/295/ Calibration schedule dated 28/10/2010 of measuring equipment for 2011.Type of measurement: radio engineering
/296/ Calibration schedule dated 21/10/2010 of measuring equipment for 2011.Type of measurement: electrical
/297/ Passport dated 01/11/2005 on power pliers type РК120 and РК120.1, serial #16742685
/298/ Passport dated 18/08/2005 on power clamp type РК120 and type РК120.1, serial #16742516
/299/ Passport dated 20/06/2007 on anemometer type АСЦ-3, serial #3658
/300/ Passport dated 21/01/2007 on anemometer type АСЦ-3, serial #3666
/301/ Production and technical instruction #227-667-63-2011 dated 26/08/2011
/302/ Technical passport dated 18/06/2011 on scale type Caston 3, serial # 040201766
/303/ Technical passport dated 12/08/2010 on scale type Caston 3, serial #040203829
/304/ Technical passport dated 24/03/2011 on scale type рп-150, serial #2529
/305/ Technical passport dated 12/01/2011 on scale type 4121П02, serial # 08718
/306/ Measuring equipment calibration certificate # 1/1570 dated 14/07/2009 on control load, serial #39
/307/ Passport #959 dated 03/03/2005 on control load, serial #39
/308/ Measuring equipment calibration certificate # 1/1569 dated 14/07/2009 on control load, serial #37
/309/ Passport #957 dated 03/03/2005 on control load, serial #37
/310/ Measuring equipment calibration certificate #1/1572 dated 14/07/2009 on control load, serial #38
/311/ Passport #958 dated 03/03/2005 on control load, serial #38
/312/ Measuring equipment calibration certificate # 1/1571 dated 14/07/2009 on control load, serial #36
/313/ Passport #956 dated 03/03/2005 on control load, serial #36
/314/ Measuring equipment calibration certificate #1/816 dated 08/07/2011 on control load, serial #60
/315/ Passport #1099 dated 25/06/2003 on control load, serial #36
/316/ Measuring equipment calibration certificate #1/369 dated 08/07/2011 on control load, serial #352
/317/ Passport #761 dated 21/02/2005 on control load, serial #352
/318/ Measuring equipment calibration certificate #1/375 dated 24/02/2011 on control load, serial #201
/319/ Passport #316 dated 26/01/2005 on control load, serial #201
/320/ Measuring equipment calibration certificate #1/373 dated 24/02/2011 on control load, serial #200
/321/ Passport #315 dated 26/01/2005 on control load, serial #200
/322/ Measuring equipment calibration certificate #1/3110 dated 08/11/2010 on control load, serial #9
/323/ Passport #2133 dated 23/05/2005 on control load, serial #9
/324/ Measuring equipment calibration certificate #1/3111 dated 08/11/2010 on control load, serial #10

/325/ Passport #2134 dated 23/05/2005 on control load, serial #10
/326/ Measuring equipment calibration certificate #1/3112 dated 08/11/2010 on control load, serial #11
/327/ Passport #2215 dated 01/06/2005 on control load, serial #11
/328/ Measuring equipment calibration certificate # 1/3113 dated 08/11/2010 on control load, serial #12
/329/ Passport #2216 dated 01/06/2005 on control load, serial #12
/330/ Information document #29/84 dated 28/07/2011 about operation term of blast-furnace #1-5
/331/ Information document #19/2344 dated 28/07/2011 about recalculation natural fuel in equivalent
/332/ Annex #14.1a dated 17/12/2008 to agreement about energy supply #20043000/3573 dated 18/06/2008
/333/ Conditions and characteristics passport #ТК9-3 on gas meter type ДМ, serial number #66882 (first meter) and type КСД-3, serial #364908 (second meter) (last calibration date – 24/11/2011)
/334/ Conditions and characteristics passport #ТК10-3 on gas meter type ДМ, serial number #5705 (first meter) and type КСД3, serial #364861 (second meter) (last calibration date – 11/02/2011)
/335/ Conditions and characteristics passport #ПВД-8-13 on gas meter type Сафір, serial number #06125006 (last calibration date – 22/04/2011)
/336/ Conditions and characteristics passport #ТВ8-14 on gas meter type Сафір-2415, serial number #0912660 (last calibration date – 22/04/2011)
/337/ Conditions and characteristics passport #ТВ7-5 on gas meter type ДМ, serial number #27448 (first meter) and type КСД-250, serial #364691 (second meter) (last calibration date – 25/01/2011)
/338/ Conditions and characteristics passport #ТВ8-3 on gas meter type Сафір-2415, serial number #08130487 (last calibration date – 22/04/2011)
/339/ Conditions and characteristics passport #ТВД#6-4 on gas meter type ДМ, serial number #31794 (first meter) and type КСД-3, serial #364224 (second meter) (last calibration date – 22/11/2010)
/340/ Conditions and characteristics passport #ТВ5-6 on gas meter type ДМ, serial number #9212 (first meter) and type КСД-3, serial #164059 (second meter) (last calibration date – 12/01/2011)
/341/ Conditions and characteristics passport #ТВ5-6 on gas meter type ДМ, serial number #27449 (first meter) and type КСД-3, serial #364307 (second meter) (last calibration date – 28/03/2011)
/342/ Conditions and characteristics passport #ТВД4-3 on gas meter type ДМ, serial number #7362 (first meter) and type КСД, serial #364197 (second meter) (last calibration date – 25/03/2011)
/343/ Conditions and characteristics passport #ТВ1-5 on gas meter type ДМ, serial number #14808 (first meter) and type КСД, serial #364723 (second meter) (last calibration date – 24/06/2011)
/344/ Conditions and characteristics passport #ТВ8-3 on gas meter type Metran, serial number #2993330 (last calibration date – 10/02/2011)
/345/ Calibration protocol #17/231 dated 10/02/2011 of expenditures difference on oxygen meter type Metran-100ДД, serial #299333

/346/ Switchgear passport #13-A/1 on oxygen meter type ДБС 10-1200
/347/ Measuring act dated 28/02/2008 on inside diameter of switchgear pipeline. Oxygen consumption. Blast-furnace shop
/348/ Expertise act #13A/1 dated 18/02/2008 on flow meter
/349/ Passport #13a dated 23/08/2005 on diaphragm. Oxygen consumption in blast-furnace shop
/350/ Passport #13Д dated 23/08/2005 on diaphragm. Oxygen consumption in blast-furnace shop
/351/ Measuring act dated 28/02/2008 on inside diameter of pipeline. Oxygen consumption. Blast-furnace shop 1
/352/ Expertise act #13 Д/1 dated 18/02/2008 on flow meter
/353/ Switchgear passport #13-Д on oxygen meter type ДБ 0.6-1200
/354/ Conditions and characteristics passport #17/232a dated 10/02/2011 on gas meter type Metran-100DD, serial number #244712
/355/ Calibration protocol #17/232 dated 10/02/2011 of expenditures difference on oxygen meter type Metran-100ДД, serial #244712
/356/ Conditions and characteristics passport #К7:10-8 on gas meter type ДМ, serial number #13143 (first meter) and type КСД-3, serial #170694 (second meter) (last calibration date – 25/05/2011)
/357/ Conditions and characteristics passport #ПВС-1 on gas meter type ДМ, serial number #32304 (first meter) and type КСД-3, serial #358843 (second meter) (last calibration date – 25/05/2011)
/358/ Conditions and characteristics passport #К16-4 on gas meter type ДМ, serial number #10376 (first meter) and type КСД-3, serial #364922 (second meter) (last calibration date – 25/08/2010)
/359/ Conditions and characteristics passport #К16-2 on gas meter type ДМ, serial number #68326 (first meter) and type КСД-3, serial #364917 (second meter) (last calibration date – 25/08/2010)
/360/ Conditions and characteristics passport #К15-2 on gas meter type ДМ, serial number #57585 (first meter) and type КСД-3, serial #80902 (second meter) (last calibration date – 11/12/2010)
/361/ Conditions and characteristics passport #К16-3 on gas meter type ДМ, serial number #47641 (first meter) and type КСД-3, serial #364927 (second meter) (last calibration date – 25/08/2010)
/362/ Conditions and characteristics passport #К14-3 on gas meter type ДМ, serial number #7015 (first meter) and type КСД-3, serial #190145 (second meter) (last calibration date – 19/07/2011)
/363/ Conditions and characteristics passport #К15-3 on gas meter type ДМ, serial number #96334 (first meter) and type КСД-3, serial #306180 (second meter) (last calibration date – 20/12/2010)
/364/ Conditions and characteristics passport #К14-2 on gas meter type ДМ, serial number #3583М (first meter) and type КСД, serial #79568 (second meter) (last calibration date – 20/12/2010)
/365/ Conditions and characteristics passport #К14-3 on gas meter type ДМ, serial number #12704М (first meter) and type КСД-3 serial #322405 (second meter) (last calibration date – 21/07/2010)
/366/ Conditions and characteristics passport #К13-2 on gas meter type ДМ, serial

number #5125M (first meter) and type КСД-3 serial #358946 (second meter) (last calibration date – 24/05/2011)

/367/ Conditions and characteristics passport #К13-3 on gas meter type ДМ, serial number #88094 (first meter) and type КСД-3 serial #361347 (second meter) (last calibration date – 24/05/2011)

/368/ Conditions and characteristics passport #К11-4 on gas meter type ДМ, serial number #66132 (first meter) and type КСД-3 serial #142294 (second meter) (last calibration date – 20/10/2010)

/369/ Conditions and characteristics passport #К11-4 on gas meter type ДМ, serial number #7264 (first meter) and type КСД-3 serial #361369 (second meter) (last calibration date – 24/05/2011)

/370/ Conditions and characteristics passport #К11-5 on gas meter type ДМ, serial number #7903 (first meter) and type КСД-3 serial #359935 (second meter) (last calibration date – 20/10/2010)

/371/ Conditions and characteristics passport #К11-3 on gas meter type ДМ, serial number #1315 (first meter) and type КСД-3 serial #142293 (second meter) (last calibration date – 20/10/2010)

/372/ Conditions and characteristics passport #К12-3 on gas meter type ДМ, serial number #12518 (first meter) and type КСД-3 serial #142365 (second meter) (last calibration date – 22/10/2010)

/373/ Conditions and characteristics passport #К11-6 on gas meter type ДМ, serial number #16582 (first meter) and type КСД-3 serial #79563 (second meter) (last calibration date – 20/10/2010)

/374/ Conditions and characteristics passport #К12- Б on gas meter type ДМ, serial number #12677 (first meter) and type КСД-3 serial #79561 (second meter) (last calibration date – 22/10/2010)

/375/ Conditions and characteristics passport #К12-4 on gas meter type ДМ, serial number #7268 (first meter) and type КСД-3 serial #237949 (second meter) (last calibration date – 22/10/2010)

/376/ Conditions and characteristics passport #К10-5 on gas meter type ДМ, serial number #35352 (first meter) and type КСД-3 serial #364306 (second meter) (last calibration date – 23/11/2010)

/377/ Conditions and characteristics passport #К12-6 on gas meter type ДМ, serial number #3194 (first meter) and type КСД-3 serial #202108 (second meter) (last calibration date – 22/10/2010)

/378/ Conditions and characteristics passport #К9-4 on gas meter type ДМ, serial number #3194 (first meter)
and type КСД-3 serial #202108 (second meter) (last calibration date – 25/01/2011)

/379/ Conditions and characteristics passport #К10-4 on gas meter type ДМ, serial number #34890 (first meter) and type КСД-3 serial #145588 (second meter) (last calibration date –23/11/2011)

/380/ Conditions and characteristics passport #К8-4 on gas meter type ДМ, serial number #89205 (first meter)
and type КСД-3 serial #358838 (second meter) (last calibration date – 08/02/2011)

/381/ Conditions and characteristics passport #К9-5 on gas meter type ДМ, serial

number #86475 (first meter)
and type КСД-3 serial #202112 (second meter) (last calibration date – 25/01/2011)

/382/ Conditions and characteristics passport #К7-5 on gas meter type ДМ, serial number #3589М (first meter)
and type КСД-3 serial #364314 (second meter) (last calibration date – 09/02/2011)

/383/ Conditions and characteristics passport #К8-5 on gas meter type ДМ, serial number #4914 (first meter)
and type КСД-3 serial #364099 (second meter) (last calibration date – 08/02/2011)

/384/ Conditions and characteristics passport #К7-4 on gas meter type ДМ, serial number #38293 (first meter)
and type КСД-3 serial #201918 (second meter) (last calibration date – 09/02/2011)

/385/ Data dated 06/04/2011 on production of oxygen blowing

/386/ Passport # Т1062401/0624 on diaphragm (last calibration date – 04/09/2009). Natural gas consumption by boiler houses #7-12 TPP#1

/387/ Conditions and characteristics passport #ПВС-1 on gas meter type ДМ, serial number #32304 (first meter) and type КСД-3 serial #358843 (second meter) (last calibration date – 17/05/2010)

/388/ Passport #1564 on diaphragm (last calibration date – 07/10/2008). Oxygen consumption in boiler houses #7-10 TPP#1

/389/ Conditions and characteristics passport #К7-4 on gas meter type ДМ, serial number #38293 (first meter)
and type КСД-3 serial #201918 (second meter) (last calibration date – 09/02/2011)

/390/ Passport #1142/1255 on diaphragm (last calibration date – 16/09/2009). Steel consumption at КПЦ

/391/ Conditions and characteristics passport #КПЦ-1 on gas meter type ДМ, serial number #92466 (first meter) and type КСД-3 serial #328403 (second meter) (last calibration date – 09/02/2011)

/392/ Passport #Т1762211/0679 on diaphragm (last calibration date – 05/09/2009). Steal consumption

/393/ Conditions and characteristics passport #КЩ-1 on gas meter type ДМ, serial number #16391 (first meter) and type КСД-3 serial #359685 (second meter) (last calibration date – 27/05/2010)

/394/ Conditions and characteristics passport #К16-6 on gas meter type ДМ, serial number #96091 (first meter) and type КСД-3 serial #364096 (second meter) (last calibration date –25/08/2010)

/395/ Conditions and characteristics passport #К16-5 on gas meter type ДМ, serial number #50094 (first meter) and type КСД-3 serial #364040 (second meter) (last calibration date –25/08/2010)

/396/ Conditions and characteristics passport #К16-7 on gas meter type ДМ, serial number #32799 (first meter) and type КСД-3 serial #364037 (second meter) (last calibration date –25/08/2010)

/397/ Conditions and characteristics passport #К16-8 dated 25/08/2010 on gas

meter type ДМ, serial number #50995 (first meter) and type КСД-3 serial #364038 (second meter) (last calibration date –25/08/2010)

/398/ Conditions and characteristics passport #К16-14 on gas meter type ДМ, serial number #24424 (first meter) and type КСД-3 serial #364033 (second meter) (last calibration date –25/08/2010)

/399/ Passport on nozzle, serial #502 (nozzle diaphragm) (last calibration date – 19/07/2010). Consumption of superheated steam

/400/ Conditions and characteristics passport #К16-2 on gas meter type ДМ, serial number #68326 (first meter) and type КСД-3 serial #364917 (second meter) (last calibration date – 25/08/2010)

/401/ Conditions and characteristics passport #К16-4 on gas meter type ДМ, serial number #10376 (first meter) and type КСД-3 serial #364922 (second meter) (last calibration date – 25/08/2010)

/402/ Passport #Т1762211/0679 on diaphragm (last calibration date – 05/09/2009). Gas consumption boiler #16

/403/ Conditions and characteristics passport #К16-3 on gas meter type ДМ, serial number #47641 (first meter) and type КСД-3 serial #364927 (second meter) (last calibration date – 25/08/2010)

/404/ Passport #1234а on diaphragm (last calibration date – 08/07/2010). Gas consumption of boiler #16

/405/ Conditions and characteristics passport #К15-2 on gas meter type ДМ, serial number #57585 (first meter) and type КСД-3 serial #80902 (second meter) (last calibration date – 20/12/2010)

/406/ Conditions and characteristics passport #К15-3 on gas meter type ДМ, serial number #96334 (first meter) and type КСД-3 serial #306180 (second meter) (last calibration date – 20/12/2010)

/407/ Conditions and characteristics passport #К15-5 on oxygen meter type ДМ, serial number #21110 (first meter) and type КПД serial #107931 (second meter) (last calibration date – 20/12/2010)

/408/ Conditions and characteristics passport #К15-9 on oxygen meter type ДМ, serial number #21110 (first meter) and type КПД serial #107931 (second meter) (last calibration date – 20/12/2010)

/409/ Passport #201911 on diaphragm (last calibration date – 21/04/2011). Gas consumption boiler #15

/410/ Passport #1044 on diaphragm (last calibration date – 21/04/2011). Gas consumption boiler #15

/411/ Conditions and characteristics passport #К15-9 on oxygen meter type ДМ, serial number #95512 (first meter) and type КПД serial #107931 (second meter) (last calibration date – 20/12/2010)

/412/ Passport on nozzle (last calibration date – 21/04/2011). Steam production of boiler #15

/413/ Conditions and characteristics passport #К14-3 on oxygen meter type ДМ, serial number #12704 (first meter) and type КСД-3 serial #322405 (second meter) (last calibration date – 21/07/2010)

/414/ Conditions and characteristics passport #К14-2 on oxygen meter type ДМ3583М, serial number #795 (first meter) and type КСД serial #79568 (second meter) (last calibration date – 21/07/2010)

/415/ Passport #Ц1131-4 on nozzle (last calibration date – 18/05/2009). Steam production of boiler #14
/416/ Conditions and characteristics passport #К14-2 on oxygen meter type ДМ, serial number #10987 (first meter) and type КСД serial #145719 (second meter) (last calibration date – 21/07/2010)
/417/ Passport #1044 on diaphragm (last calibration date – 22/05/2009). Gas consumption boiler #14
/418/ Passport #1044 on diaphragm (last calibration date – 22/08/2011). Gas consumption boiler #14
/419/ Conditions and characteristics passport #К14-4 on oxygen meter type ДМ, serial number #7015 (first meter) and type КСД-3 serial #145719 (second meter) (last calibration date – 21/07/2010)
/420/ Passport #1171 on diaphragm (last calibration date – 18/05/2009). Gas consumption boiler #14
/421/ Conditions and characteristics passport #К14-6 on oxygen meter type ДМ, serial number #4442 (first meter) and type КСД-3 serial #202002 (second meter) (last calibration date – 21/07/2010)
/422/ Conditions and characteristics passport #К14-5 on oxygen meter type ДМ, serial number #84865 (first meter) and type КСД-3 serial #202093 (second meter) (last calibration date – 21/07/2010)
/423/ Passport #1044 on diaphragm (last calibration date – 12/06/2008). Gas consumption boiler #13
/424/ Passport #1044 on diaphragm (last calibration date – 10/11/2009). Gas consumption boiler #13
/425/ Conditions and characteristics passport #К13-4 on oxygen meter type ДМ, serial number #7264 (first meter) and type КСД-3 serial #361396 (second meter) (last calibration date – dated 26/05/2010)
/426/ Conditions and characteristics passport #К13-3 on oxygen meter type ДМ, serial number #88094 (first meter) and type КСД-3 serial #361347 (second meter) (last calibration date – 26/05/2010)
/427/ Conditions and characteristics passport #К13-6 on oxygen meter type ДМ, serial number #32142 (first meter) and type КСД-3 serial #71192 (second meter) (last calibration date – 26/05/2010)
/428/ Conditions and characteristics passport #К13-5 on oxygen meter type ДМ, serial number #32140 (first meter) and type КСД-3 serial #71196 (second meter) (last calibration date – 26/05/2010)
/429/ Passport #1487 on nozzle (last calibration date – 30/01/2009). Steam production of boiler #13
/430/ Conditions and characteristics passport #К13-9 on steam meter type ДМ, serial number #53156 (first meter) and type КСД-3 serial #358840 (second meter) (last calibration date – 26/05/2010)
/431/ Conditions and characteristics passport #К13-2 on gas meter type ДМ, serial number #5125 (first meter) and type КСД-3 serial #358946 (second meter) (last calibration date – 26/05/2010)
/432/ Conditions and characteristics passport #К13-2 on steam meter type ДМ, serial number #12091 (first meter) and type КСД-3 serial #359885 (second meter) (last calibration date – 26/05/2010)

/433/ Passport #1528 on diaphragm (last calibration date – 07/02/2011). Gas consumption of boiler #12

/434/ Conditions and characteristics passport #К12-5 on gas meter type ДМ, serial number #12667 (first meter) and type КСД-3 serial #79561 (second meter) (last calibration date – 22/10/2010)

/435/ Passport #1527 on diaphragm (last calibration date – 07/02/2011). Gas consumption of boiler #12 (right side)

/436/ Conditions and characteristics passport #К12-5 on gas meter type ДМ, serial number #3194 (first meter) and type КСД-3 serial #202108 (second meter) (last calibration date – 22/10/2010)

/437/ Passport #1527 dated 07/02/2011 on diaphragm (last calibration date – 21/07/2010). Gas consumption of boiler #12 (left side)

/438/ Passport #694A dated 07/02/2011 on diaphragm (last calibration date – 21/07/2010). Blast-furnace gas consumption of boiler #12 (left side)

/439/ Conditions and characteristics passport #К12-5 on gas meter type ДМ, serial number #12518 (first meter) and type КСД-3 serial #142365 (second meter) (last calibration date – 22/10/2010)

/440/ Passport #694A on diaphragm. Blast-furnace gas consumption of boiler #12 (right side) (last calibration date – 07/02/2011)

/441/ Conditions and characteristics passport #К12-5 on gas meter type ДМ, serial number #1315 (first meter) and type КСД-3 serial #142293 (second meter) (last calibration date – 22/10/2010)

/442/ Passport #694A on diaphragm (last calibration date – 01/04/2010). Blast-furnace gas consumption of boiler #12 (right side)

/443/ Conditions and characteristics passport #К12-5 on gas meter type ДМ, serial number #66132 (first meter) and type КСД-3 serial #142294 (second meter) (last calibration date – 22/10/2010).

/444/ Passport #694A on diaphragm (last calibration date – 01/04/2010). Blast-furnace gas consumption of boiler #11 (left side)

/445/ Conditions and characteristics passport #К11-5 on gas meter type ДМ, serial number #7903 (first meter) and type КСД-3 serial #359935 (second meter) (last calibration date – 20/10/2010)

/446/ Passport #191/0223 on diaphragm (last calibration date – 01/07/2010). Gas consumption of boiler #11 (right side)

/447/ Conditions and characteristics passport #К11-6 on gas meter type ДМ, serial number #16582 (first meter) and type КСД-3 serial #79563 (second meter) (last calibration date – 20/10/2010)

/448/ Passport #191/0223 on diaphragm (last calibration date – 11/07/2010). Gas consumption of boiler #11 (left side)

/449/ Conditions and characteristics passport #К11-8 on gas meter type ДМ, serial number #42962 (first meter) and type КСД-3 serial #364035 (second meter) (last calibration date – 20/10/2010)

/450/ Passport #1528 on diaphragm (last calibration date – 11/07/2010). Steam production of boiler #11

/451/ Conditions and characteristics passport #К10-6 on gas meter type ДМ, serial number #2506 (first meter) and type КСД-3 serial #358949 (second meter) (last calibration date – 13/11/2010)

/452/ Passport #1112 on diaphragm (last calibration date – 11/07/2010). Steam production of boiler #10

/453/ Conditions and characteristics passport #К10-4 on gas meter type ДМ, serial number #34890 (first meter) and type КСД-3 serial #145588 (second meter) (last calibration date – 23/11/2010)

/454/ Passport #1508 on diaphragm (last calibration date – 02/07/2010). Blast-furnace gas consumption of boiler #10

/455/ Conditions and characteristics passport #К10-4 on gas meter type ДМ, serial number #35352 (first meter) and type КСД-3 serial #364306 (second meter) (last calibration date – 23/11/2010)

/456/ Passport #1372 on diaphragm (last calibration date –02/07/2010). Gas consumption of boiler #10

/457/ Conditions and characteristics passport #К9-5 on gas meter type ДМ, serial number #35352 (first meter)
and type КСД-3 serial #364306 (second meter) (last calibration date – 20/01/2011)

/458/ Passport #1372 on diaphragm (last calibration date – 02/09/2009). Gas consumption of boiler #9

/459/ Passport #1597 on diaphragm (last calibration date – 17/09/2009). Gas consumption of boiler #9

/460/ Conditions and characteristics passport #К9-6 on gas meter type ДМ, serial number #62759 (first meter)
and type КСД-3 serial #86072 (second meter) (last calibration date – 20/01/2011)

/461/ Passport #1112 on diaphragm (last calibration date – 17/09/2009). Gas consumption of boiler #9

/462/ Conditions and characteristics passport #К9-6 on gas meter type ДМ, serial number #11737 (first meter)
and type КСД-3 serial #86619 (second meter) (last calibration date – 25/01/2011)

/463/ Conditions and characteristics passport #К8-4 on gas meter type ДМ, serial number #89205 (first meter)
and type КСД-3 serial #358838 (second meter) (last calibration date – 08/02/2011)

/464/ Passport #1567 on diaphragm (last calibration date – 04/11/2008). Blast-furnace gas consumption of boiler #8

/465/ Conditions and characteristics passport #К8-5 on gas meter type ДМ, serial number #49147 (first meter)
and type КСД-3 serial #364099 (second meter) (last calibration date – 08/02/2011)

/466/ Passport #1372 on diaphragm (last calibration date – 08/02/2011). Blast-furnace gas consumption of boiler #8

/467/ Conditions and characteristics passport #К8-6 on gas meter type ДМ, serial number #8732 (first meter) and type КСД-3 serial #146578 (second meter) (last calibration date – 08/02/2011)

/468/ Passport #1112 on diaphragm (last calibration date – 04/11/2008). Steam consumption of boiler #8

/469/ Conditions and characteristics passport #К7-6 on gas meter type ДМ, serial number #12351 (first meter) and type КСД-3 serial #322404 (second meter) (last calibration date – 08/02/2011)
/470/ Passport #1112 on diaphragm (last calibration date – 12/01/2011). Steam production of boiler #7
/471/ Conditions and characteristics passport #К7-6 on gas meter type ДМ, serial number #3589 (first meter) and type КСД-3 serial #364314 (second meter) (last calibration date – 09/02/2011)
/472/ Passport #1373 on diaphragm (last calibration date – 13/01/2011). Gas consumption of boiler #7
/473/ Conditions and characteristics passport #К7-4 on gas meter type ДМ, serial number #38293М (first meter) and type КСД-3 serial #201918 (second meter) (last calibration date – 09/02/2011)
/474/ Passport #1175 on diaphragm (last calibration date – 13/01/2011). Gas consumption of boiler #7
/475/ Conditions and characteristics passport #БРОУ1-1 #8565М (first meter) and type КСД-3 serial #79562 (second meter) (last calibration date – 09/02/2011)
/476/ Passport #1347/155 on diaphragm (last calibration date – 02/09/2009). Steam consumption of БРОУ-1
/477/ Conditions and characteristics passport #РОУ-21 on steam meter type ДМ, serial number #38073 (first meter) and type КСД-3 serial #364960 (second meter) (last calibration date – 25/10/2010)
/478/ Passport #1436а on diaphragm (last calibration date – 08/12/2008). Steam consumption of РОУ 40/23
/479/ Conditions and characteristics passport #РОУ1-1 on steam meter type ДМ, serial number #3023 (first meter) and type КСД-3 serial #358895 (second meter) (last calibration date – 25/10/2010)
/480/ Passport #1422а on diaphragm. Steam consumption of РОУ 100/33-1 (last calibration date – 08/12/2008)
/481/ Conditions and characteristics passport #РОУ100/13-1 on steam meter type ДМ, serial number #3023 (first meter) and type КСД-3 serial #358895 (second meter) (last calibration date – 25/10/2010)
/482/ Passport #1343а on diaphragm (last calibration date – 16/11/2008). Steam consumption of РОУ 100/13
/483/ Conditions and characteristics passport #РОУ2-2 on steam meter type ДМ, serial number #30333 (first meter) and type КСД-3 serial #331392 (second meter) (last calibration date – 23/03/2011)
/484/ Passport #1423а on diaphragm (last calibration date – 24/09/2009). Steam consumption of РОУ 100/33-2
/485/ Conditions and characteristics passport #ИУ2-12 on steam meter type ДМ, serial number #49694 (first meter) and type КСД-3 serial #267582 (second meter) (last calibration date – 22/06/2010)
/486/ Conditions and characteristics passport #ИУ2-7 on steam meter type ДМ, serial number #15672 (first meter) and type КСД-3 serial #365022 (second meter) (last calibration date – 22/06/2010)
/487/ Passport #1374 on diaphragm (last calibration date – 17/08/2010). Steam consumption of ИУ-2

/488/ Passport #080212 on nozzle (last calibration date – 05/08/2009). Steam production of boiler #13

/489/ Conditions and characteristics passport #ТГ2-1 on steam meter type ДМ, serial number #12219(first meter) and type КСД-3 serial #364699 (second meter) (last calibration date – 26/07/2011)

/490/ Conditions and characteristics passport #ТГ1-4 on steam meter type ДМ, serial number #1014 (first meter) and type КСД-3 serial #324064 (second meter) (last calibration date – 22/09/2010)

/491/ Passport #1652 on diaphragm (last calibration date – 22/09/2008). Steam consumption of ТГ-1

/492/ Conditions and characteristics passport #ТГ1-5 on steam meter type ДМ, serial number #71515(first meter) and type КСД-3 serial #331383 (second meter) (last calibration date – 22/09/2010)

/493/ Passport #1418 on diaphragm (last calibration date – 22/09/2008). Steam consumption of ТГ-1 (Д1,2)

/494/ Conditions and characteristics passport #ТГ1-6 on steam meter type ДМ, serial number #13170 (first meter) and type КСД-3 serial #360225 (second meter) (last calibration date – 22/09/2010)

/495/ Conditions and characteristics passport #ТГ1-2 dated 22/09/2011 on steam meter type ДМ, serial number #0054(first meter)
and type КСД-3 serial #331232 (second meter) (last calibration date – 22/09/2011)

/496/ Passport #1418 dated 22/09/2008 on diaphragm (last calibration date – 22/09/2008). Steam consumption of ТГ-1
(Д3,4,5)

/497/ Passport #1588 on diaphragm (last calibration date – 22/09/2008). Steam consumption of ТГ-1 Steam line #2

/498/ Conditions and characteristics passport #ТГ1-1 on steam meter type ДМ, serial number #63746(first meter) and type КСД-3 serial #262421 (second meter) (last calibration date – 22/09/2010)

/499/ Passport #1588 on diaphragm (last calibration date – 22/09/2008). Steam consumption of ТГ-1 Steam line #1

/500/ Passport #623a on diaphragm (last calibration date – 15/05/2009). Steam consumption of ТГ-1

/501/ Conditions and characteristics passport #ППУ-2-5 on steam meter type ДМ, serial number #9436 (first meter) and type КСД-3 serial #361162 (second meter) (last calibration date – 25/03/2011)

/502/ Conditions and characteristics passport #ППУ-1-1 on steam meter type ДМ, serial number #5882 (first meter) and type КСД serial #89983 (second meter) (last calibration date – 27/04/2011)

/503/ Passport #571в/1268 on diaphragm (last calibration date – 06/06/2008). Steam consumption of ППУ-1

/504/ Conditions and characteristics passport #ППУ-1-1 on steam meter type ДМ, serial number #67615 (first meter) and type КСД serial #89997 (second meter) (last calibration date – 27/04/2011)

/505/ Passport #204а/1256 on diaphragm (last calibration date – 06/06/2008). Steam consumption of ППХ-1

/506/ Conditions and characteristics passport #ППУ-1-3 on steam meter type ДМ, serial number #85863 (first meter) and type КСД-3 serial #202282 (second meter) (last calibration date – 27/04/2011).
/507/ Passport #1143a on diaphragm (last calibration date – 04/06/2008). Steam consumption of ППУ-1
/508/ Conditions and characteristics passport #ППУ-1-4 on steam meter type ДМ, serial number #10963 (first meter) and type КСД-3 serial #201962 (second meter) (last calibration date – 27/04/2011)
/509/ Passport #1141/1257 on diaphragm. Steam consumption of ППУ-1 (last calibration date – 06/06/2008)
/510/ Conditions and characteristics passport #ТК10-3 on steam meter type ДМ, serial number #5705 (first meter) and type КСД-3 serial #364861 (second meter) (last calibration date – 11/02/2011)
/511/ Passport #1315 on diaphragm. Steam consumption of ТК-10 (last calibration date – 21/09/2009)
/512/ Conditions and characteristics passport #ТК10-1 on steam meter type ДМ, serial number #9898(first meter) and type КСД-3 serial #364861 (second meter) (last calibration date – 11/02/2011)
/513/ Passport #1531 on nozzle. Steam consumption of ППУ-10 (last calibration date – 01/09/2009)
/514/ Conditions and characteristics passport #ПВ9-1 on steam meter type ДМ, serial number #66397(first meter) and type КСД-3 serial #365053 (second meter) (last calibration date – 24/11/2009)
/515/ Passport #1531 on nozzle (last calibration date – 01/07/2010). Steam consumption of ТК-9
/516/ Conditions and characteristics passport #ТК9-3 on steam meter type ДМ, serial number #364908 (first meter) and type КСД-3 serial #364908 (second meter) (last calibration date – 24/11/2010)
/517/ Passport #1324/134 on diaphragm (last calibration date – 01/07/2010). Steam consumption of ТК-9
/518/ Measuring equipment conditions and characteristics passport #8-2 on oxygen meter type Диск-260, serial number #73243 (last calibration date – 22/04/2011)
/519/ Conditions and characteristics passport #ПВД8-13 on oxygen meter type Saphir, serial number #06125006 (last calibration date – 22/04/2011)
/520/ Conditions and characteristics passport #ТВ8-14 on oxygen meter type Saphir, serial number #0912660 (last calibration date – 22/04/2011)
/521/ Conditions and characteristics passport #ТВ8-3 on oxygen meter type Saphir2415, serial number #08130487 (last calibration date – 22/04/2011)
/522/ Passport #1472A on nozzle (last calibration date – 10/03/2009). Steam consumption of ТК-9
/523/ Passport #1568 on nozzle (last calibration date – 10/03/2009). Steam consumption of ТВД-8
/524/ Conditions and characteristics passport #ТВ8-1 on oxygen meter type Saphir2440, serial number #09133605 (last calibration date – 22/04/2011)
/525/ Conditions and characteristics passport #ТВ8-1 on oxygen meter type Saphir2440, serial number #09135614 (last calibration date – 22/04/2011)

/526/ Conditions and characteristics passport #ТВ8-12 on oxygen meter type Saphir2410, serial number #09114646 (last calibration date – 22/04/2011)
/527/ Passport #1563A on diaphragm (last calibration date – 19/03/2009). Oxygen consumption of ТВД-8
/528/ Conditions and characteristics passport #ТВ7-5 on oxygen meter type ДМ, serial number #27448(first meter) and type КСД-250 serial #364691 (second meter) (last calibration date – 25/01/2011)
/529/ Conditions and characteristics passport #ТВД7-1 on oxygen meter type ДМ, serial number #8211(first meter) and type КСД-250 serial #364716 (second meter) (last calibration date – 25/01/2011)
/530/ Passport #1466 on nozzle (last calibration date – 25/05/2010). Oxygen production of ТВД-7
/531/ Conditions and characteristics passport #ТВ7-3 on oxygen meter type Metran, serial number #T221M (last calibration date – 21/09/2010)
/532/ Passport #1296-7 on diaphragm (last calibration date – 25/05/2010). Oxygen consumption of ТВД-7
/533/ Passport #1320/130 on diaphragm (last calibration date – 25/05/2010). Oxygen consumption of ТВД-7
/534/ List of measuring equipment which is in service and have to be verified in 2011 (measuring of geometric quantities) Code 01
/535/ List of measuring equipment which is in service and have to be verified in 2011 (pressure measuring, vacuum measuring) Code 04
/536/ List of measuring equipment which is in service and have to be verified in 2011 (temperature measuring and thermophysical measuring) Code 06
/537/ List dated 04/02/2011 of measuring equipment which is in service and have to be verified in 2011(flow parameters measuring, consuming, and liquid level measuring) Code 03
/538/ List dated 30/11/2010 of measuring equipment which is in service and have to be verified in 2011 (pressure measuring, vacuum measuring) Code 04
/539/ List dated 22/11/2010 of measuring equipment which is in service and have to be verified in 2011 (temperature measuring and thermophysical measuring) Code 06
/540/ List of measuring equipment which is in service and have to be verified in 2011 (pressure measuring, vacuum measuring) Code 04
/541/ List dated 08/12/2010 of measuring equipment which is in service and have to be verified in 2011 (temperature measuring and thermophysical measuring) Code 06
/542/ List dated 04/02/2011 of measuring equipment which is in service and have to be verified in 2011 (electrical measuring and magnetic measuring) Code 08
/543/ List dated 07/02/2011 of measuring equipment which is in service and have to be verified in 2011 (electrical measuring and magnetic measuring) Code 08
/544/ List dated 30/11/2011 of measuring equipment which is in service and have to be verified in 2011 (electrical measuring and magnetic measuring) Code 08
/545/ List dated 21/01/2011 of measuring equipment which is in service and have to be verified in 2011 (electrical measuring and magnetic measuring) Code 08
/546/ List dated 24/11/2010 of measuring equipment which is in service and have to be verified in 2011 (electrical measuring and magnetic measuring) Code 08

/547/ List dated 01/12/2010 of measuring equipment which is in service and have to be verified in 2011 (electrical measuring and magnetic measuring) Code 08
/548/ List of measuring equipment which is in service and have to be verified in 2011 (measuring of geometric size) Code 01
/549/ List of measuring equipment which is in service and have to be verified in 2011 (measuring of time and frequencies) Code 07
/550/ List dated 01/12/2010 of measuring equipment which is in service and have to be verified in 2011(electrical measuring and magnetic measuring) Code 08
/551/ List of measuring equipment which is in service and have to be verified in 2011 (measuring of radio and radio-electronic) Code 09
/552/ List of measuring equipment which is in service and have to be verified in 2011 (measuring of characteristics of ionizing radiation and nuclear constants) Code 12
/553/ List dated 03/12/2010 of measuring equipment which is in service and have to be verified in 2011 (measuring of time and frequencies) Code 07
/554/ List dated 08/12/2010 of measuring equipment which is in service and have to be verified in 2011 (measuring of radio and radio-electronic) Code 09
/555/ List dated 08/12/2010 of measuring equipment which is in service and have to be verified in 2011 (measuring of acoustic values) Code 10
/556/ List dated 08/12/2010 of measuring equipment which is in service and have to be verified in 2011 (measuring of characteristics of ionizing radiation and nuclear constants) Code 12
/557/ List dated 26/11/2010 of measuring equipment which is in service and have to be verified in 2011 (measuring of acoustic values) Code 10
/558/ List dated 26/11/2010 of measuring equipment which is in service and have to be verified in 2011 (measuring of characteristics of ionizing radiation and nuclear constants) Code 12
/559/ List dated 30/11/2010 of measuring equipment which is in service and have to be verified in 2011 (measuring of radio and radio-electronic) Code 09
/560/ List of measuring equipment which is in service and have to be verified in 2011 (measuring of mechanical values) Code 02
/561/ List of measuring equipment which is in service and have to be verified in 2011 (measuring of physical and chemical composition of substance) Code 05
/562/ List dated 08.12.2010 of measuring equipment which is in service and have to be verified in 2011 (optical and physical measuring) Code 11
/563/ List dated 30/11/2010 of measuring equipment which is in service and have to be verified in 2011 (temperature measuring and thermophysical measuring) Code 06
/564/ List of measuring equipment which is in service and have to be verified in 2011 (optical and physical measuring) Code 11
/565/ List dated 03/11/2010 of measuring equipment which is in service and have to be verified in 2011 (measuring of physical and chemical composition of substance) Code 05
/566/ List dated 13/12/2010 of measuring equipment which is in service and have to be verified in 2011 (measuring of physical and chemical composition of substance) Code 05
/567/ List dated 26/11/2010 of measuring equipment which is in service and have to

be verified in 2011 (optical and physical measuring) Code 11

/568/ Passport #1320/130 on diaphragm (last calibration date – 25/05/2010). Steam consumption of ТВД-7

/569/ Conditions and characteristics passport #ТВД6-4 on oxygen meter type ДМ, serial number #31794 (first meter) and type КСД-3 serial #364224 (second meter) (last calibration date – 22/11/2010)

/570/ Conditions and characteristics passport #ТВД6-1 on oxygen meter type ДМ, serial number #23115 (first meter) and type КСД-3 serial #364226 (second meter) (last calibration date – 22/11/2010)

/571/ Conditions and characteristics passport #ТВД6-3 on oxygen meter type ДМ, serial number #44066 (first meter) and type КСД-3 serial #361363 (second meter) (last calibration date – 22/11/2010)

/572/ Passport #1297-6A on diaphragm (last calibration date – 23/09/2009). Steam consumption of ТВ-6

/573/ Conditions and characteristics passport #ТВД5-6 on oxygen meter type ДМ, serial number #9212 (first meter) and type КСД-3 serial #164059 (second meter) (last calibration date – 24/01/2011)

/574/ Conditions and characteristics passport #ТВД5-1 on oxygen meter type ДМ, serial number #29931 (first meter) and type КСД-3 serial #262704 (second meter) (last calibration date – 24/01/2011)

/575/ Passport #1466 on nozzle (last calibration date – 02/09/2009). Steam production of ТВД-5

/576/ Conditions and characteristics passport #ТВД5-3 on oxygen meter type Metran, serial number #T202M (last calibration date – 24/01/2011)

/577/ Passport #1297-6 on diaphragm (last calibration date – 17/09/2009). Oxygen consumption of ТВД-5

/578/ Passport #1317 on diaphragm (last calibration date – 04/02/2010). Oxygen consumption of ТВД-4

/579/ Conditions and characteristics passport #ТВД5-1 on oxygen meter type ДМ, serial number #7362 (first meter) and type КСД-3 serial #364197 (second meter) (last calibration date – 25/03/2011)

/580/ Conditions and characteristics passport #ТВД-4 on oxygen meter type Metran, serial number #T202M (last calibration date – 25/03/2011)

/581/ Conditions and characteristics passport #ТВД5-1 on steam meter type ДМ, serial number #7869 (first meter) and type КСД serial #266110 (second meter) (last calibration date – 25/03/2011)

/582/ Passport #1502 on diaphragm (last calibration date – 04/02/2010). Steam consumption of ТВД-4

/583/ Passport #1314 on diaphragm (last calibration date – 10/11/2008). Oxygen consumption of ТВД-4

/584/ Conditions and characteristics passport #ТВД2-5 on steam meter type ДМ, serial number #27449 (first meter) and type КСД serial #364307 (second meter) (last calibration date – 28/03/2011)

/585/ Conditions and characteristics passport #ТВД2-3 on oxygen meter type Metran, serial number #T207M (last calibration date – 18/03/2011)

/586/ Conditions and characteristics passport #ТВД2-5 on steam meter type ДМ, serial number #34346 (first meter) and type КСД-3 serial #189877 (second

meter) (last calibration date – 28/03/2011)

/587/ Passport #1521 on diaphragm (last calibration date – 10/11/2008). Steam consumption of ТВД-2

/588/ Conditions and characteristics passport #ТВД2-2 on steam meter type ДМ, serial number #28738 (first meter) and type КСД-3 serial #202064 (second meter) (last calibration date – 28/03/2011)

/589/ Passport #1521 on diaphragm (last calibration date – 10/08/2008). Steam consumption of ТВД-2

/590/ Passport #1398-2 on diaphragm (last calibration date – 10/11/2008). Oxygen consumption of ТВД-2

/591/ Conditions and characteristics passport #ТВД1-5 on oxygen meter type ДМ, serial number #14808 (first meter) and type КСД-3 serial #364723 (second meter) (last calibration date – 23/06/2010)

/592/ Passport #1336/145 on diaphragm (last calibration date – 08/07/2010). Oxygen consumption of ТВД-2

/593/ Conditions and characteristics passport #ТВД1-1 on oxygen meter type ДМ, serial number #46146 (first meter) and type КСД-3 serial #364737 (second meter) (last calibration date – 23/06/2010)

/594/ Passport #1521 on diaphragm (last calibration date – 05/07/2010). Oxygen consumption of ТВД-1, First steam line

/595/ Conditions and characteristics passport #ТВ1-1on oxygen meter type ДМ, serial number #4722 (first meter) and type КСД-3 serial #364720 (second meter) (last calibration date – 23/06/2010)

/596/ Passport #1521 on diaphragm (last calibration date – 05/07/2010). Oxygen consumption of ТВД-1. Second steam line

/597/ Conditions and characteristics passport #ТВ1-3 on oxygen meter typeMetran, serial number #Т223М (last calibration date – 29/10/2010)

/598/ Passport #1398-1 on diaphragm (last calibration date – 06/07/2010). Oxygen consumption of ТВД-1

/599/ Document dated 15/06/2011 about direction of copy of passport on electricity meter type Energia-9, serial #20056

/600/ List dated 23/11/2010 of agreements on provided metallurgical services.

/601/ Calculation of factor of iron-ore concentrate replacement with sludge

Persons interviewed:

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

/1/ Groza Yevgen – director “GreenSream Network”

/2/ Sarioglo Anatoliy – project manager “GreenSream Network”

/3/ Peter van Eijndhoven – ING Bank, director “Natural Resources”

/4/ Smotrov Aleksandr – deputy chief engineer of protection of the environment PJSC “Ilyich Iron and Steel Works of Mariupol”

/5/ Shpak Oleksey – deputy chief of slag proccesing shop

/6/ Miroshnichenko Dmitriy – deputy chief of blast furnace shop on technology

/7/ Shamraenko Igor – deputy chief of sinter plant on technology

/8/ Gugar Valeriy – chief of sinter-blast bureau of technical department

/9/ Vovchickiy Pavel – chief of technical department
/10/ Bratishko Dmitriy – deputy chief of networks and substations shop
/11/ Serebrakov Victor – deputy chief power engineer on energy saving
/12/ Zaharchenko Victoriya – power engineer of instrumentation shop
/13/ Bendich Elena – deputy chief of educational industrial complex
/14/ Bakargiev Sergey – chief of laboratory of protection of the environment
/15/ Shevchenko Oleksandr – chief metrologist, chief of instrumentation shop
/16/ Yacelenko Sergey – senior foreman of blast furnace cleaning
/17/ Chalabov Evgeniy – chief of central metrology laboratory
/18/ Kornev Georgiy – chief of ecology department of executive committee of the Mariupol Soviet of People's Deputies
/19/ Leshenko Victor – chief of TPP №1
/20/ Kovineva Antonuna – process-engineer of TPP №1
/21/ Chumachenko Victor – chief of oxygen shop
/22/ Romanenko Robert – executive chief of oxygen shop
/23/ Antonov Oleg – instrument controller
/24/ Chernavskaya Elina – economist of oxygen shop
/25/ Gorbuk Alena – wireman on substation #48 service at networks and substations shop
/26/ Kosolap Nikolay – chief of blast furnace shop
/27/ Dolya Sergey – executive chief on sinter-blast production
/28/ Demyanenko Anatoliy – master of pyrometric #4 at blast furnace shop
/29/ Lopa Vladislav – master of pyrometric #3 at blast furnace shop
/30/ Gorelov Vladimir – master of pyrometric #2 at blast furnace shop
/31/ Kazankov Victor – mechanic of blast furnace shop

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APPENDIX A: COMPANY PROJECT DETERMINATION PROTOCOL

Table 1

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
General description of the project				
Title of the project				
-	Is the title of the project presented?	The title of the project is: Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol".		OK
-	Is the sectoral scope to which the project pertains presented?	The sectoral scope is: (9) Metal production		OK
-	Is the current version number of the document presented?	PDD Version 1.8.		OK
-	Is the date when the document was completed presented?	PDD dated 04/12/2012		OK
Description of the project				
-	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 date of the project; b) Baseline scenario; and c) Project scenario (expected outcome, including a technical description)?	PDD Section A.2 reads: The project aims to introduce energy efficiency measures resulting in reduction of greenhouse gas emissions into the atmosphere, decrease of specific energy consumption for steel and iron production, as well as increase of competitiveness in the metal market. Situation existing prior to the starting date of the project, baseline and project scenarios are describe in full in section A.2. of the PDD.		OK
-	Is the history of the project (incl. its JI	The history of the project (incl. its JI component) is	CAR02	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	component) briefly summarized?	briefly summarized in Section A.2. of the PDD. **CAR 02**. Please, include in section A.2. of the PDD a brief explanation of the situation existing prior to the starting date of the project, as well as the history of the project including its JI component		
Project participants				
-	Are project participants and Party(ies) involved in the project listed?	Party(ies) and project participants involved in the project are listed as follows: Party A: Ukraine and its legal entity PJSC "Ilyich Iron and Steel Works of Mariupol"; - Party B: the Netherlands and its legal entity ING Bank NV: - Party C: Switzerland and its legal entity Metinvest International SA		OK
-	Is the data of the project participants presented in tabular format?	The data of the project participants are presented in due tabular format.		OK
-	Is contact information provided in Annex 1 of the PDD?	Contact information is provided in Annex 1 of the PDD.		OK
-	Is it indicated, if it is the case, if the Party involved is a host Party?	Ukraine is indicated as Host Party.		OK
Technical description of the project				
Location of the project				
-	Host Party(ies)	Ukraine		OK
-	Region/State/Province etc.	Donetsk Region		OK
-	City/Town/Community etc.	The city of Mariupol		OK
-	Detail of the physical location, including information allowing the unique identification of the project. (This section	Geographical coordinates of the project site are: latitude: 47° 9'32.22", longitude: 37°33'20.07 **CAR 03**. Section A.4.1.4 exceeds one page. To comply	CAR03	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	should not exceed one page)	with the requirement, please, remove Fig. A.1 from this section.		
Technologies to be employed, or measures, operations or actions to be implemented by the project				
-	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 some relevant technical data of main equipment installed and actions to be implemented by the project. The detailed description of measures covered by the project, as well as the implementation schedule is provided for each project component in the same section of the PDD. **CAR 04.** There are inconsistencies in figures stating the extension of the effective volume of BF#2 and #4 on p.9 of the PDD. Please, check this and make appropriate corrections **CL 01**. Please, explain what the Rome figures stand for in Table A.2. (Schedule of measures covered by the JI project) **CAR 05.** It is unclear from the implementation schedule when the installation of the new oxygen unit VRU-60 took place. Please, indicate in the PDD when oxygen unit VRU-60 was installed **CL 02.** It is also unclear from the implementation schedule when the implementation of measure 6 is planned for. Please, indicate in the PDD when the sludge use for sinter production in the sinter plant was implemented. Please, provide documentary evidence proving that this measure has been implemented.	CAR04 CL01 CAR05 CL02	OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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				
-	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	The project implementation will ensure reduction of greenhouse gas emissions through decreased consumption of coke and natural gas, and will reduce greenhouse gas emissions from electricity generation in the national power grid. In addition, Section A.2 provides a detailed description of how anthropogenic GHG emission reductions will be achieved in the result of the project activities implementation.		OK
-	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period is provided separately for the period prior to the first commitment period, for the first commitment period and post-Kyoto period.		OK
-	Is it provided the estimated annual reduction for the chosen credit period in tCO2e?	The estimated annual reduction for the chosen credit period is provided in tCO2e separately for the period prior to the first commitment period, for the first commitment period and post-Kyoto period.		OK
-	Are the data from questions above presented in tabular format?	The data from questions above are presented in tabular format. Refer to Tables A.4, A.5. and A.6. of the PDD.		OK
Estimated amount of emission reductions over the crediting period				
-	Is the length of the crediting period Indicated?	Length of the crediting period: 16 years or 192 months. Length of the part of crediting period before the Kyoto Protocol's period is 3 years. Length of the part of crediting period within the first		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		commitment period of the Kyoto Protocol: is 5 years or 60 months. Length of the part of crediting period after the first commitment period of the Kyoto Protocol: 8 years (96 months.		
-	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO2 equivalent provided?	Total as well as annual and average annual emission reductions in tonnes of CO2 equivalent are provided in accordance with the calculated values in the spreadsheet provided to the verifier. **CL 05.** Please, provide explanation for decreasing of ER in 2009 (Table A.5. of the PDD)	CL05	OK
Project approvals by Parties				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	**CAR 01.** The project has no written approvals by the Parties involved. The project approval by the Host Party will be provided after the determination statement is issued by the AIE.	CAR01	Pending
19	Does the PDD identify at least the host Party as a "Party involved"?	Neither of two Parties is identified as a "Party involved".		OK
19	Has the DFP of the host Party issued a written project approval?	Refer to CAR 01 **CAR 27.** Please, provide the LoE for the project.	CAR27	OK
20	Are all the written project approvals by Parties involved unconditional?	Yes, the written project approvals by Parties involved are unconditional.		OK
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: − A written project approval by a Party	The project participants are not authorized by the Parties involved in the project. The project participants will likely be authorized with the issue of the relevant project approvals. Please, refer to CAR01.	CAR01	Pending

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?			
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	It is stated that a baseline for the JI project is set in accordance with Appendix B to decision 9/CMP.1 (JI guidelines), applying the JI specific approach developed specifically for the Project "Introduction of Energy Efficiency Measures at PJSC "Ilyich Iron and Steel Works of Mariupol", and with further Guidance on Criteria for Baseline Setting and Monitoring (version 03) (hereinafter referred to as Guidance) using selected elements of approaches for baseline setting and monitoring already taken in comparable JI cases, namely, elements of approach used for the baseline setting in the UNFCCC registered JI project, determination of which is deemed final: "Introduction of energy efficiency measures at OJSC "Enakievo Metallurgical Works", PDD version 2.21, ITL project ID: UA1000224, as a comparable JI case. http://ji.unfccc.int/UserManagement/FileStorage/WPHQEOTL2JFDU65MR487XYC1ZB0VN9 Also, the proposed JI specific approach includes application of the following methodological tools: • "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality",	CAR12 CAR13	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Version 03.0.1. • "Tool to Calculate Project or Leakage CO2 Emissions from Fossil Fuel Combustion", Version 02. **CAR 12.** Please, correct the version of the Methodological tool used for identifying baseline scenario and demonstrating additionality **CAR 13.** The approach the PPs chose for baseline setting is not clearly specified (Please, refer to appendix B of the JI guidelines)		
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	A detailed theoretical description in a complete and transparent manner is provided for the applied JI specific approach. It includes: - an in-depth justification of the baseline chosen in accordance with the Guidance on Criteria for Baseline Setting and Monitoring (version 03); - an assessment of applicability of the approach chosen for the baseline setting		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?	Baseline is established: (a) By listing and describing three realistic and credible alternative scenarios to the project activity: 1.Upgrade of the blast furnaces #1 – 5, implementation of the pulverized coal injection into blast furnaces, construction of the new slag processing complexes AMCOM-1 and AMCOM-2, and implementation of the technology of partial replacement of the iron-ore	CAR15 CAR16 CAR17 CL10 CL11 CL12 CL13	OK OK OK OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	−Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (d) Taking into account of uncertainties and using conservative assumptions? (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure? (f) By drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring", as appropriate?	concentrate with metallurgical sludge (project activity without JI mechanism implementation); 2. Continuation of operation of the existing blast furnaces without any reconstruction. It means continuation of the current situation at the PJSC "IISW" before the project activity implementation. 3. Construction of new blast furnaces with new auxiliary equipment, construction of the new sinter plant. (b) Taking into account relevant national and/or sectoral policies (refer to Section B.1., Step 1b) as well as key appropriate factors that affect a baseline, such as availability of skilled and/or properly trained labor to operate and maintain the technology; infrastructure for implementation and logistics for maintenance of the technology; risk of technological failure and loss of the market share risk; the world prices for iron industry and energy resources; an investment climate of Ukraine; international funding opportunities. (c) The baseline is established in a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data sources and key factors. For the sake of transparency the relevant steps of the "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality", Version 03.0.1 were performed: All assumptions, parameters, data sources and key factors are referenced by the reputable sources. (d) taking into account uncertainties and using conservative assumptions. All data necessary to		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		establish the baseline where taken from open and publicly available sources, such as national regulations and laws, the study "Ukraine - Assessment of new calculation of CEF" carried out by TÜV SÜD Industrie ServiceGmbH, Orders of National Environmental Investment Agency of Ukraine, IPCC data, "Ukraine's National Inventory Reports of GHG Sources and Sinks", the comparable JI project which determination is deemed final. (e) in such a way that ERUs cannot be earned for decreases in activity levels outside the project activity or due to force majeure. The project activity suggests that emission reductions will be earned only due to introduction of the energy efficiency measures resulting in reduction of greenhouse gas emissions into the atmosphere. **CAR 15.** According to paragraph 25 of the Guidance on criteria for baseline setting and monitoring the PPs shall establish a baseline taking into account relevant national and/ or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector. Please, state those factors that affect a baseline. **CAR 16.** Please, note that according to the Guidelines for users of the JI PDD Form version 04 section B. shall contain all key elements of the baseline. Annex 2 should be prepared in parallel to completing the remainder of section B. and shall contain a summary of		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		key elements in tabular form as well as additional supporting documentation/information **CAR 17.** According to the Guidelines for users of the JI PDD Form version 04 section B. doesn't require from the PPs indication of emissions from the project activity as well as Emission reductions. Please, remove this information from section B. **CL 10.** It is stated in the PDD that in order to establish a baseline the PPs used ex-pose data for the periods before a specific project activity was implemented; those periods are provided in Table B.2. of the PDD. It is also stated in Section A.4.2. that the dates on which the reconstruction of blast furnaces took place differ for each of them. How can this be explained. According to the approach the PPs chose for baseline setting, the historical period should have been chosen for different furnaces separately **CL 11.** Since it is unclear from the PDD when the use of sludge for sinter production was implemented, please explain why sinter plant as well as sludge use were excluded as the project activity components from Table B.2. of the PDD? **CL 12.** It is unclear what the following statement contained in Section D.1. means: "Other parameters out of monitoring are derivatives that should be calculated using initial parameters indicating in the monitoring plan or Section B.1."? **CL 13.** Please, explain whether parameters of the baseline other than indicated in Section B.1. are to be		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		monitored?		
24	If selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?	The selected elements or combinations together with the elements supplementary developed by the project participants are in line with 23 above.		OK
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	For this project a grid factor developed in the study "Ukraine - Assessment of new calculation of CEF" carried out by TÜV SÜD Industrie ServiceGmbH; specific carbon dioxide non direct emissions factors for consumption of electricity generated by power stations of united energy system of Ukraine approved by Ukrainian DFP (National Environmental Investment Agency of Ukraine); NIR data on CO2 emission factor for natural gas; CO2 emission factor for coal; CO2 emission factor for diesel fuel; oxidation factor of natural gas; oxidation factor of coal; oxidation factor of diesel fuel; IPCC data on CO_2 emission factor for coke production; CO_2 emission factor for sinter production were used. **CAR 20.** Please, explain which CO2 emission factor/s was/ were used for ER calculations for different periods of project implementation; please, provide references for the sources of information used	CAR20	OK
Approved CDM methodology approach only_ Paragraphs 26(a) – 26(d)_Not applicable				
Additionality				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals; (b) Provision of traceable and transparent information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances has additionality; (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".	To analyze additionality, the JI specific approach is applied. The JI specific approach is based on the guidance provided by the "Joint Implementation Determination and Verification Manual", Version 01. For the sake of transparency, selected steps from the "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality", Version 03.0.1 were applied. According to the "Joint Implementation Determination and Verification Manual", Version 01, the additionality of a JI project can be proven by means of "Provision of traceable and transparent information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances (same GHG mitigation measure, same country, similar technology, similar scale) would result in a reduction of anthropogenic emissions by sources or an enhancement of net anthropogenic removals by sinks that is additional to any that would otherwise occur and a justification why this determination is relevant for the project at hand". Thus, approaches (b) and (c) were chosen by the PPs to prove the additionality of the project. **CAR 14.** In accordance with Annex 1 of Guidance on criteria for baseline setting and monitoring version 03 the PPs must choose the approach for demonstration of additionality, including justification of the	CAR14 CAR18 CAR19	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		appropriateness of their choice. **CAR 18.** According to "Combined tool to identify the baseline scenario and demonstrate additionality". (Version 03.0.1) the PPs use for demonstration additionality, requires that alternative scenarios should be identified separately in case the proposed project activity includes several different facilities, technologies, outputs or services **CAR 19.** PPs are encouraged to strictly follow steps and sub-steps of the tool chosen for demonstration additionality. Please, explain why some steps, sub-steps and overcomes were omitted.		
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	The applicability of the approaches chosen is assessed and justified in full details in Section B.2 of the PDD.		OK
29 (b)	Are additionality proofs provided?	Additionality proofs are provided by using the "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality", Version 03.0.1 **CAR 33.** The developer is correct while mentioning to the rather poor investment profile of Ukraine as the frontier market. At the same time some factual mistakes are present. The interest rates at the moment of the project start have been much lower than 30% indicated by the developer. The average interest rate for the loans denominated in UAH as of the end of 2002 has been 19,5%. The source: http://bank.gov.ua/Fin_ryn/Pot_tend/2002.zip	CAR33 CL26	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CL 26. Please note that the reference to the inferior Ukrainian economical conditions is not sufficient to prove inability to complete the project without JI mechanism. A number of Ukrainian companies made successful IPOs during the period of 2002-2008 and attracted substantial syndicated loans from the western banks at law interest rates. Please, describe in more detailed manner the investment barriers specific to IISW.		
29 (c)	Is the additionality demonstrated appropriately as a result?	The additionality is demonstrated appropriately by performing the following steps as defined by the "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality", Version 03.0.1: • Identifying project activity alternatives • Barrier analysis • Analysis of prevailing practices • Common practice analysis	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 selected approach. **CAR 32.** Please, note that Guidelines for objective demonstration and assessment of barriers (Guideline 1) requires that for demonstration of the investment barrier "information should include nature of company, organization and its ownership and financial information". Unfortunately PDD is currently missing the relevant details. **CAR 34.** Please note that as the result of operations in	CAR32 CAR34	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		2002 the company has been able to gain the net profit of UAH 257 807 thousands. The next year the net profit reached UAH 827 711 thousands, in 2004 – UAH 2 010 070 thousands. Source: http://acc.smida.gov.ua/emitents/zvit_menu.php?kod=00191129&year=2004&forma=FP&zvit_type=vat194 This fact clearly confirms very good financial standing of the company at the moment of the project start. The profits accumulated during only three years of 2002-2004 were sufficient to implement the project without external borrowings, so financial barrier clearly needs more justification in order to show the unavailability of the funds for this particular project. Please, apply investment analysis in order to prove unattractiveness of the project for the company.		
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable				
Project boundary (applicable except for JI LULUCF projects)				
JI specific approach only				
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	Project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants as all facilities are located in the plant's territory; (ii) Reasonably attributable to the project and include the carbon dioxide emissions from iron smelting in blast furnaces #1, #2, #3, #4, #5, use of pulverized coal fuel in blast furnace shop, implementation of AMCOM slag processing complex, and introduction of technology of partial replacement of iron-ore concentrate with	CL06	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		metallurgical sludge; (iii) Significant. Only the carbon dioxide emissions sources are taken into account as the key source of GHG emissions. CH4 and N2O emission sources are neglected as insignificant for conservative simplification. For more detail, please, refer to Figure B.1.. and Table B.6. of the PDD Section B.3. **CL 06.** Please clarify what is meant by the notion "extended project boundaries" mentioned in fig.B.3.1. of the PDD		
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. They include the carbon dioxide emissions from iron smelting in blast furnaces #1, #2, #3, #4, #5, use of pulverized coal fuel in blast furnace shop, implementation of AMCOM slag processing complex, and introduction of technology of partial replacement of iron-ore concentrate with metallurgical sludge.		OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	Delineation of the project boundary and the gases and sources included are appropriately described and justified in Figure B.1. and Table B.6. of the PDD Section B.3.		OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	All gases and sources included are explicitly stated. All exclusions made are appropriate as conservative ones. **CL 07.** Please, explain why emissions from coal consumption in the blast furnace shop are excluded	CL07 CL08 CL09 CL18 CL19	OK OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		from the baseline scenario **CL 08.** Please explain why emissions from coke production are excluded from the project scenario **CL 09.** It is stated in the PDD that the iron-ore concentrate is to be partially replaced by sludge in the project scenario. Please, explain why emissions from production of concentrate is completely excluded in the project scenario **CL 18.** Please, explain why emissions from coke production are excluded from the project scenario. (Refer to Section B.3., Table B.3.) **CL 19.** Please, explain why emissions from iron-ore concentrate production are fully excluded from the project scenario. (Refer to Section B.3., Table B.3.) **CL 20.** Please, explain why emissions from sinter production are excluded from the baseline scenario (Refer to Section B.3., Table B.3.) **CL 21.** Please, explain why emissions from coal consumption included in the project scenario are excluded from the baseline scenario. (Refer to Section B.3., Table B.3.) **CL 22.** Please explain why emissions from limestone consumption are not taken into account. (Refer to Section B.3., Table B.3.)	CL20 CL21 CL22	OK OK OK
Approved CDM methodology approach only_Paragraph 33_ Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the	Starting date of the project is 01/06/2002. This is the date of upgrade implementation of the blast furnaces #	CAR07 CL04	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	implementation or construction or real action of the project will begin or began?	1 - 5. **CAR 07.** Please, indicate the exact date on with the project started should be provided along with the corresponding documentary evidence. **CL 04.** Please, provide documentary evidence proving the start of the crediting period.		
34 (a)	Is the starting date after the beginning of 2000?	Refer to 34 (a).		OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	The operational lifetime of the project is 19 years or 228 months. **CAR 06.** It is stated in section A.4.3. that existing blast furnaces BF # 1, BF # 2, BF # 3, BF # 4 and BF #5, existing oxygen units and the sinter plant of the PJSC "IISW" may keep operating at least through 2020 whereas the crediting period covers the period till 2022 inclusive. Guidelines for users of the JI PDD Form require that the crediting period shall not extend beyond the operational lifetime of the project. **CAR 08.** There is an unconformity in defining operational time of the project in sections C.2. and A.4.3. (p.15). Please, check this and make corrections appropriately. Please, also explain how the project equipment operational lifetime was assessed? **CAR 11.** It is stated in the Table B.1.(p.19) that the residual life of the project equipment included in the project boundaries is 2020 which is less than the length of the crediting period. Please, provide explanation and documentary evidence	CAR06 CAR08 CAR11	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		on how the residual life of the project equipment was determined. Make due corrections to the PDD.		
34 (c)	Does the PDD state the length of the crediting period in years and months?	Length of the crediting period stated is 16 years or 192 months. Length of the crediting period before the first commitment period of the Kyoto Protocol is 3 years. Length of the crediting period within the first commitment period of the Kyoto Protocol is 5 years or 60 months. Length of the crediting period after the first commitment period of the Kyoto Protocol is 8 years or 96 months. **CAR 09.** The length of the crediting period before the first commitment period must be stated in years and months, otherwise it is unclear whether 5,5 years stand for five a half years or 5 years and 5 months. Either the case, this period is stated incorrectly. Please check this and make appropriate corrections. **CAR 10.** It is stated in the subsection "Estimation of the equipment residual life" of the PDD (p.19) that project crediting period is set as 11 years. Please, bring this statement in line with another ones made for the length of the crediting period mentioned throughout the PDD text.	CAR09 CAR10	OK OK
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	Start of the crediting period: 01/01/2005 which is the date after the first emission reductions were generated by the project **CL 03.** Please, explain whether the crediting period	CL03	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		and starting date of the project began on the same date.		
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?	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.		OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	The status of emission reductions or enhancements of net removals generated by JI projects after the end of the first commitment period of the Kyoto Protocol may be determined by any relevant agreement under the UNFCCC.		OK
Monitoring plan				
35	Does the PDD explicitly indicate which of the following approaches is used? − JI specific approach − Approved CDM methodology approach	In accordance with Guidance on Criteria for Baseline Setting and Monitoring, version 03 paragraph 9 (a), the proposed JI project applies the JI specific approach used for the monitoring in the UNFCCC registered JI project, determination of which is deemed final: "Introduction of energy efficiency measures at OJSC "Enakievo Metallurgical Works", PDD version 2.21, ITL project ID: UA1000224, as a comparable JI case. **CAR 35.**Please, explicitly indicate and describe which of the approaches regarding monitoring is chosen	CAR35	OK
JI specific approach only				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (a)	Does the monitoring plan describe: − All relevant factors and key characteristics that will be monitored? − The period in which they will be monitored? − All decisive factors for the control and reporting of project performance?	The monitoring plan describes: - data to be monitored in the project and baseline scenarios that are provided in Section D.1. - the period in which they will be monitored: daily/monthly/annually; - all decisive factors for the control and reporting of project performance: quality control (QC) and quality assurance (QA) procedures; the operational and management structure that will be applied in implementing the monitoring plan. **CAR 21.** The parameters subject to monitoring denoted in Section D.1. do not comply with those ones provided in section D.1.1.1. Please, bring them to conformity. **CAR 22.** Please correct the mistake made for a parameter P.6 in Table D.1.1.1. **CAR 23.** Please make clear in Table D.1.1.1. what abbreviation in the comment column for a parameter P.8 stands for. **CAR 24.** Please note there is a mistake in the formula for calculation of emissions from the blast furnace in Section D.1.1.2. Please, make due corrections to this formula. **CL 14.** Please, provide documentary evidence for NCV for fuels consumed. **CL 15.** Please, provide initial data of Inguletskiy Mining and Processing Works on natural gas and electricity consumption for iron-ore concentrate supplier. **CAR 25.** The exact reference for data taken from 2006 IPCC such as volume, paragraph, table should be	CAR21 CAR22 CAR23 CAR24 CL14 CL15 CAR25 CAR26 CL17	OK OK OK OK OK OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		provided. (Please, refer to Table D.1.1.3.) **CAR 26.** Please, make clear in Fig. D.1. what an abbreviation EC&I stands for. **CL 17.** Please explain why historical period data are provided for BF reconstruction and Oxygen shop upgrade and are not provided for other project components.		
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	The indicators, constants and variables used are taken from recognized and reliable sources, such as the study "Ukraine - Assessment of new calculation of CEF" carried out by TÜV SÜD Industrie ServiceGmbH; Orders of National Environmental Investment Agency of Ukraine, UNFCCC and IPCC documents, "Ukraine's National Inventory Reports of GHG Sources and Sinks", technical standards and norms, such as approved technical standards TU U 322-00190443-114-96 "Blast furnace coke" and TU U 14.1-00191827-001-2003 "Limestone fluxes"; the comparable JI projects which determinations are deemed final. **CL 16**. Please explain what MOS-1 and MOS-2 stand for. **CAR 28.** As it is seen from the supporting documents submitted for verifiers, the EF for iron-ore concentrate production is calculated based on the data provided by Inguletskiy Mining and Processing Integrated Works (MPIW), whereas iron-ore concentrate is also supplied by Pivnichniy MPIW and Central MPIW. Please explain	CL16 CAR28 CL24	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		how the conservative approach in calculating the EF can be demonstrated and justified in this case. **CL 24.** It is stated in the PDD that: "To calculate $EF_{BL,IOC}$, the data on natural gas and electricity consumption during iron-ore concentrate production by the key concentrate supplier, Inguletskiy Mining and Processing Integrated Works (MPIW), were applied". Please, provide documented evidence of initial data from Inguletskiy MPIW used for making calculations.		
36 (b)	If default values are used: − Are accuracy and reasonableness carefully balanced in their selection? − Do the default values originate from recognized sources? − Are the default values supported by statistical analyses providing reasonable confidence levels? − Are the default values presented in a transparent manner?	Refer to the above paragraph 36 (b) **CL 25.** Please, provide explanation and justification of the LCV_{NG} used to calculate carbon emission factor for iron-ore concentrate production	CL25	OK
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	N/A		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	The monitoring plan clearly indicates the precise references from which these default values are taken (e.g. factor of iron-ore concentrate replacement with metallurgical sludge (RF_{IOC}) was determined by the Technological Department of the PJSC "IISW"; net	CL23 CAR31	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	provided justified?	calorific values of natural gas consumed during concentrate production by Inguletskiy Mining and Processing Integrated Works for the historical period was taken from the respective Ukraine's National Inventory Reports of GHG Sources and Sinks. The conservativeness of the values provided is justified **CL 23.** The PDD says the following: "The value of RF_{IOC} is taken as the lowest one in the range of possible factors of concentrate replacement with sludge, which complies with the most conservative approach to calculation of emissions. The range of possible replacement factors was determined by the Technological Department of the PJSC "IISW" sinter plant and makes 0.55 – 0.597 t of iron-ore concentrate / t of sludge". Please, provide explanations along with the documented proof as for in what way those replacement factors were determined. **CAR 31.** EF_{CO2} = 0,896tCO2/MWh taken for calculation for the historic period (excel file) is not the IPCC2006 value. Please, correct this		
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	N/A		OK
36 (b) (iv)	Are International System Unit (SI units) used?	International System Units (SI units) are used.		OK
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc.	N/A as the parameters, coefficients, variables, etc. that are used to calculate baseline emissions are obtained		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	that are used to calculate baseline emissions or net removals but are obtained through monitoring?	from the historic data.		
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	There is consistency between parameters and used in baseline and monitoring plan. **CAR 29.** Average NCV of natural gas consumed for the historical period (see Section B.1., p. 28) is presented in kcal/1000m^3 while the same parameter in the excel spreadsheet is in TJ. Please, the units to conformity.	CAR29	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 draws on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring".		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 already available at the stage of determination? (iii) Data and parameters that are	Description of the monitoring plan in Section D.1 explicitly and clearly distinguishes: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination, such as the ones presented in tabular form in Section B.1. (ii) N/A (iii) Data and parameters that are monitored throughout the crediting period, such as the ones given in Tables D.1.1.1. and D.1.1.3. of the PDD. **CAR 36.** Please, explicitly and clearly distinguish:	CAR36	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitored throughout the crediting period?	a) 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 regarding the PDD; b) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination regarding the PDD; and c) Data and parameters that are monitored throughout the crediting period.		
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	The methods used (tensometric wagon balances, pressure sensors, meters, analyses of the certified laboratories, certificates of the resources and materials suppliers) and data collection frequency (daily/ monthly/annually) and recording (electronic/paper) are clearly defined in the monitoring plan	CL02	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?	These are Formulae: (D.1-1) – (D.1-3) for project emissions, (D.1-4) – (D.1-6) for baseline emissions, (D. 1-7) – (D.1-8) for leakage, (D.1-9) for emission reduction.		OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Yes		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts etc. are used.		OK
36 (f) (iii)	Are all equations numbered?	All equations are numbered		OK
36 (f) (iv)	Are all variables, with units indicated defined?	Yes		OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	N/A		OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	N/A		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 calculating the baseline emission in the monitoring plan and on spreadsheet.		OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	All formulae are clearly explained **CAR 30.** There are mistakes in calculations of specific electricity consumption for oxygen generation for 2007-2012 (Refer to excel file, Oxygen project). Formula for calculation of that parameter presented in the PDD differs from the one according to which the calculation was made in the excel file). Please, check this and make appropriate corrections	CAR30	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Yes, the monitoring is in line with current operational routines.		OK
36 (f) (vii)	Are references provided as necessary?	N/A		OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	All key assumptions are explained in a transparent manner if needed.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	The low level uncertainty for measuring key parameters and further calculation of emission reductions is stipulated by; - applying respective industrial standards and methodologies, - manufactures' passports and certificates for the project equipment, - parameters defined for the materials and resources by their suppliers, - accreditation certificates of the chemical laboratories and metrological organizations involved in the project.		OK
36 (g)	Does the monitoring plan identify a national or international monitoring standard if such standard has to be and/or is applied to certain aspects of the project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?	N/A		OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	N/A		OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures	QC/QA procedures are outlined in PDD Section D.2. These are routine enterprise procedures.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?			
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	The operational and management structure that the project participants will implement in order to monitor emission reduction generated by the project is described in sufficient detail in PDD Section D.3. **CAR 39.** Please, provide information in Section D.3. in accordance with the requirements of Guidelines for users of the JI PDD form	CAR39	OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	On the whole, monitoring techniques are in line with current operation routines at the enterprise and reflect good monitoring practices appropriate to the project type.		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
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification	The monitoring plan indicates that all data collected as part of monitoring should be archived electronically and		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	are to be kept for two years after the last transfer of ERUs for the project?	be kept at least for 2 years after the end of the last crediting period.		
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	The selected elements or combination, together with elements supplementary developed by the project participants are in line with 36 above.		OK
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable				
Applicable to both JI specific approach and approved CDM methodology approach_Paragraph 39_Not applicable				
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?	An assessment of the potential leakage of the project is made based on the comparable JI case. To estimate leakages the JI project "Introduction of energy efficiency measures at OJSC "Enakievo Metallurgical Works", PDD version 2.21 used for the baseline setting of the proposed project was applied. Within the proposed approach the emission sources from reconstruction of the PJSC "IISW" facilities (emissions from equipment and material transportation, energy resource consumption during construction and installation works) were neglected. **CAR 37**. In accordance with the GUIDANCE ON CRITERIA FOR BASELINE SETTING AND MONITORING version 03 project participants must	CAR37	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		undertake an assessment of the potential leakage of the proposed JI project and explain which sources of leakage are to be calculated, and which can be neglected. All sources of leakage that are included shall be quantified and a procedure for an ex ante estimate shall be provided. Only those emission sources that account for, on average per year over the crediting period, more than 1 per cent of the difference between project and baseline emissions, or which exceed an amount of 2,000 tonnes of CO2 equivalent, whichever is lower, shall be included.		
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	N/A		OK
Approved CDM methodology approach only_Paragraph 41_Not applicable				
Estimation of emission reductions or enhancements of net removals				
42	Does the PDD indicate which of the following approaches it chooses? (a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions	The project activity will use Option (a): assessment of emissions or net removals in the baseline scenario and in the project scenario		OK
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable?	(a) ex ante estimates of emissions for the project scenario (within the project boundary) are provided; (b) N/A; (c) Emissions for the baseline scenario are provided based on historic data; (d) Emission reductions are provided.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(c) Emissions or net removals for the baseline scenario (within the project boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?			
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	N/A		OK
45	For both approaches in 42 (a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tones 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? (b) Are the formula used for calculating the estimates in 43 or 44 consistent throughout	(a) Estimates in 43 are given on the periodic basis, from the beginning until the end of the crediting period, in tones of CO2 equivalent, on a source-by-source basis, for CO2 only; (b) The formulae used in PDD are consistent; (c) Key factors influencing the baseline emissions and the activity level of the project and the project emissions are taken into account, as appropriate; (d) Data sources used for calculating the estimates are clearly identified, reliable and transparent; (e) Default values are taken from identified sources; (f) Estimation in 43 is based on conservative assumptions and the most plausible scenario in a transparent manner; (g) Estimates in 43 are consistent throughout the PDD;		OK

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
46	If the calculation of the baseline emissions or net removals is to be performed ex post, does the PDD include an illustrative ex ante emissions or net removals calculation?	Illustrative ex-ante estimation of emission reduction is made on the excel spreadsheet made available to AIE. No calculation errors were observed with a reservation concerning CAR 40. **CAR 40.** As the estimation of the ERs from the oxygen shop were excluded from the calculations, please, delete them from the calculation spreadsheet (Total ERs)	CAR40	OK
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				
Environmental impacts				
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	PDD Section F.1 lists and attaches documentation on the analysis of the environmental impacts of the project in accordance with procedures as determined by the host Party. For more details, please, refer to Section 4.10. of the Present determination report. **CAR 38.** Nothing is said in section D.1.5. Please check this and make appropriate corrections.	CAR38	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?	Section F.1. describes the most important impact of the project on the environment. The environmental impacts are not considered significant by the host Party, which is evidenced by the documentation listed in the PDD and provided to the determination team during the on-site visit.		OK
Stakeholder consultation				
49	If stakeholder consultation was undertaken	No negative comments were received from the		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? I A description on whether and how the comments have been addressed?	stakeholders.		
Determination regarding small-scale projects (additional elements for assessment)_Paragraphs 50 - 57_Not applicable				
Determination regarding land use, land-use change and forestry projects _Paragraphs 58 – 64(d)_Not applicable				
Determination regarding programmes of activities_Paragraphs 66 – 73_Not applicable				

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Determination team conclusion
CAR 01. There is no written approval of the Host country issued for the present JI project.	21	The Letter of Endorsement for the present JI project was issued on 22.06.2011 under # 1603/23/7, please refer to the section A.5. of the PDD. Also please refer to the response to CAR 27. Upon completion of the Determination Report by the Accredited Independent Entity (AIE), the PDD and Determination Report will be submitted to the NEIAU for review in order to obtain the Letter of Approval from the host Party.	Pending
CAR 02. Please, include in section A.2. of the PDD a brief explanation of the situation existing prior to the starting date of the project, as well as the history of the project including its JI component	-	Brief explanation of the situation existing prior to the starting date of the project and brief description of the project history has been added to the section A.2. of the PDD.	Issue is closed as the required explanation has been added to the PDD
CAR 03. Section A.4.1.4 exceeds one page. To comply with the requirement, please, remove Fig. A.1 from this section.	-	Appropriate corrections have been made. The Fig. A.1 has been removed from the section A.4.1.4. The Fig. A.2 has been re-named to Fig. A.1 in the corrected Section A.4.1.4.	Issue is closed as the required corrections have been made.
CAR 04. There are inconsistencies in figures stating the extension of the effective volume of BF#2 and #4 on p.9 of the PDD. Please, check this and make appropriate corrections	-	The working volume of the BF#2 is 1400m^3 in accordance with the Act of commissioning the BF#2. Appropriate figures have been corrected in the PDD.	Issue is closed as the required corrections have been made.

CL 01. Please, explain what the Rome figures stand for in Table A.2. (Schedule of measures covered by the JI project)	-	The Rome figures in Table A.2. correspond to relevant month of the year mentioned above corresponding column. For example, "I" stands for January, "IV" stands for April, etc. Appropriate footnote with the explanation has been added to the PDD Table A.2.	The explanation has been provided. CL 01 is closed.
CAR 05. It is unclear from the implementation schedule when the installation of the new oxygen unit VRU-60 took place. Please, indicate in the PDD when oxygen unit VRU-60 was installed	-	In the updated PDD v.1.4 and the calculation model, Oxygen shop was excluded from emission reductions estimation.	Issue is closed as the source of emission has been excluded from the estimation.
CL 02. It is also unclear from the implementation schedule when the implementation of measure 6 is planned for. Please, indicate in the PDD when the sludge use for sinter production in the sinter plant was implemented. Please, provide documentary evidence proving that this measure has been implemented.	-	It is indicated in the implementation schedule (Table A.2.) that the measure #6 implementation date (Sludge use for sinter production) is January 2005 (I, 2005). Please also refer to response to CL 01 for clarification. Please find the documentary evidence of slag usage implementation (volumes of a slag usage fraction for 2005-2010) in the supporting file "Slag usage 2005-2010.jpeg"	CL02 is closed based on the required documents provided to the verifiers.
CAR 06. It is stated in section A.4.3. that existing blast furnaces BF # 1, BF # 2, BF # 3, BF # 4 and BF #5, existing oxygen units and the sinter plant of the PJSC "IISW" may keep operating at least through 2020 whereas the crediting period covers the period till 2022 inclusive. Guidelines for users of the JI PDD Form require that the crediting period shall not extend beyond the operational lifetime of the project.	34 (b)	The length of the crediting period has been reduced to 2020 inclusive. Appropriate corrections have been made in the PDD and the calculation file. See also response to CAR 11. Regarding to Oxygen shop equipment please refer to response to CAR 05	CAR 06 is closed based on the appropriate corrections made in the PDD and the calculation file.

CAR 07. Please, indicate the exact date on with the project started should be provided along with the corresponding documentary evidence.	34 (a)	The project starting date is 01.06.2002. The Section C.1. of the PDD has been corrected to provide the exact project starting date. Please find the documentary evidence of the project starting date in the supporting document "SD1.pdf".	The required documentation on the project starting date has been provided. CAR 07 is closed.
CAR 08. There is an unconformity in defining operational time of the project in sections C.2. and A.4.3. (p.15). Please, check this and make corrections appropriately. Please, also explain how the project equipment operational lifetime was assessed?	34 (b)	Section A.4.3. has been updated to provide correct term of the project equipment lifetime which is at least till 2020 inclusive (please also refer to the response to CAR 06). Please refer to the response to CAR 11 as to the equipment operational time assessment.	The provided documentation was reviewed and found to be appropriate. Issue is closed.
CL 03. Please, explain whether the crediting period and starting date of the project began on the same date.	34 (c)	Yes, the crediting period starting date is the same as the proposed JI project starting date and is 01 June 2002.	The explanation has been provided. CL 03 is closed.
CL 04. Please, provide documentary evidence proving the start of the crediting period.	34 (a)	The documentary evidence of the starting crediting period is the separate charge loading system commissioning act for the BF#1 and BF#4. Please find the documentary evidence of implementation of the separate charge loading system in the file "Act for starting date of JI Project. jpg".	CL04 is closed based on the required documented evidence provided to the verifiers.
CAR 09. The length of the crediting period before the first commitment period must be stated in years and months, otherwise it is unclear whether 5,5 years stand for five a half years or 5 years and 5 months. Either the case, this period is stated incorrectly. Please check this and make appropriate corrections.	34 (c)	The length of the crediting period before the first commitment period has been appropriately corrected throughout the PDD to reflect the correct value of 5 years and 7 months.	Issue is closed based on the corrections made to the PDD.

CL 05. Please, provide explanation for decreasing of ER in 2009 (Table A.5. of the PDD)	-	Decreasing of ER in 2009 was caused by decreasing in pig iron production in 2009 as consequence of the world economic crisis.	Issue is closed based on the clarification provided
CAR 10. It is stated in the subsection "Estimation of the equipment residual life" of the PDD (p.19) that project crediting period is set as 11 years. Please, bring this statement in line with another ones made for the length of the crediting period mentioned throughout the PDD text.	34 (c)	The PDD has been appropriately corrected. The project crediting period is 18 years and 7 months including period before the first commitment period, the commitment period, and after commitment period.	Issue is closed based on the corrections made to the PDD.
CAR 11. It is stated in the Table B.1.(p.19) that the residual life of the project equipment included in the project boundaries is 2020 which is less than the length of the crediting period. Please, provide explanation and documentary evidence on how the residual life of the project equipment was determined. Make due corrections to the PDD.	34 (b)	The length of the crediting period has been reduced to 2020 inclusive. Appropriate corrections have been made in the PDD and the calculation file. The residual life of the blast furnaces was assessed by the plant specialists. According to the assessment conclusion, the equipment is capable to keep on operation till 2020 inclusive. Please find the documentary conclusion as to residual life of the blast furnaces in the supporting file "BF1-5 lifetime. Jpg". Regarding to Oxygen shop equipment please refer to response to CAR 05	Issue is closed based on the clarification provided and corrections made to the PDD.
CL 06. Please clarify what is meant by the notion "extended project boundaries" mentioned in fig.B.3.1. of the PDD	32 (a)	"Extended project boundaries (EPB)" – are boundaries which embrace all the sources of GHG (not only at the project equipment site) connected with the production process at MMKI. Thus EPB show the outside GHG sources – indirect emissions.	CL 06 is closed based on the explanation provided.
CL 07. Please, explain why emissions from coal consumption in the blast furnace shop are excluded from the baseline scenario	32 (d)	Coal is not used in the baseline scenario. In the project scenario, it will be in use only from 2012 when PCI system should be introduced.	The clarification has been provided. CL 07 is closed.

CL 08. Please explain why emissions from coke production are excluded from the project scenario	32 (d)	Emissions from coke production were completely taken into account while calculation of the emissions for both baseline and project scenarios. Please refer to calculation file, tab "*BF project1*".	The clarification has been provided. CL08 is closed.
CL 09. It is stated in the PDD that concentrate is to be partially replaced by sludge in the project scenario. Please, explain why emissions from production of concentrate is completely excluded in the project scenario	32 (d)	Emissions from production of concentrate were taken into account when calculating project emissions, please refer to the calculation excel file, tabs "Concentrate EF Estimation" and "Ers Sludge utilization". Also, please refer to the PDD, Section D.1, sub-section "Project emissions" where emissions from production of concentrate are taken into account.	Issue is closed based on the clarification provided
CAR 12. Please, correct the version of the Methodological tool used for identifying baseline scenario and demonstrating additionality	22	The version of the Methodological tool used for identifying baseline scenario and demonstrating additionality has been corrected for the last update version (version 03.0.1)	Due corrections have been made to the PDD. Issue is closed.
CAR 13. The approach the PPs chosen for baseline setting is not clearly specified (Please, refer to appendix B of the JI guidelines)	22	The PDD Section B has been updated to clearly specify the chosen approach for baseline setting to be JI specific approach which includes elements of the registered JI project: "Introduction of energy efficiency measures at OJSC "Enakievo Metallurgical Works", PDD version 2.21 ITL project ID: UA1000224. http://ji.unfccc.int/UserManagement/FileStorage/WPHQEOTL2JFDU65MR487XYC1ZB0VN9	The PDD Section B has been updated and now provide the detailed explanation of the approach chosen. CAR 13 is closed

CAR 14. In accordance with Annex 1 of Guidance on criteria for baseline setting and monitoring version 03 the PPs must choose the approach for demonstration of additionality, including justification of the appropriateness of their choice.	28	Description of appropriateness justification of the chosen approach for demonstration of addtionality has been added to the PDD Section B.2. (please refer to the Step 1. "Identification and description of the approach in use").	CAR 14 is closed based on the description of the chosen approach added to the PDD.
CAR 15. According to paragraph 25 of the Guidance on criteria for baseline setting and monitoring the PPs shall establish a baseline taking into account relevant national and/ or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector. Please, state those factors that affect a baseline.	23	The PDD Section B1 has been updated to state that the factors have been regarded. More detailed description of those factors is given in the Section B.2. (please refer to the Step 1b "Compliance with current laws and regulations" and the Step 2a "Investment barrier").	Due corrections and justifications have been added and found appropriate. CAR 15 is closed
CAR 16. Please, note that according to the Guidelines for users of the JI PDD Form version 04 section B. shall contain all key elements of the baseline. Annex 2 should be prepared in parallel to completing the remainder of section B. and shall contain a summary of key elements in tabular form as well as additional supporting documentation/information	23	The PDD Section B.1 has been appropriately updated to use correct tabular form for all key elements of the baseline to meet requirements of the Guidelines for users of the JI PDD Form version 04 section B.	The PDD Section B.1 has been appropriately updated. CAR 16 is closed
CAR 17. According to the Guidelines for users of the JI PDD Form version 04 section B. doesn't require from the PPs indication of emissions from the project activity as well as Emission reductions. Please, remove this information from section B.	23	The information regarding to emissions from the project activity as well as emission reductions has been removed from the Section B.	Due corrections have been made to the PDD. Issue is closed

CAR 18. According to "Combined tool to identify the baseline scenario and demonstrate additionality". (Version 03.0.1) the PPs use for demonstration additionality, requires that alternative scenarios should be identified separately in case the proposed project activity includes several different facilities, technologies, outputs or services.	28	The alternative scenario (A.3.) considers the construction of new blast furnaces with new auxiliary equipment, construction of the new oxygen shop, construction of the new sinter plant. Thus, each alternative case of the involved technologies is considered. Also, please note, that the same approach is used in the registered JI project "Introduction of energy efficiency measures at OJSC "Enakievo Metallurgical Works", ITL project ID: UA1000224, elements of which are used in the proposed JI project.	The explanation has been provided. CAR18 is closed.
CAR 19. PPs are encouraged to strictly follow steps and sub-steps of the tool chosen for demonstration additionality. Please, explain why some steps, sub-steps and overcomes were omitted.	28	In the Step 1a, the sub-steps (scenarios) S2, S4, and S6 were omitted as the "Combined tool to identify the baseline scenario and demonstrate additionality", version 03.0.1 states their applicability as "where applicable". These sub-steps are not applicable to the proposed JI project. The PDD has been updated to specify these sub-steps and their applicability. The following omitted sub-steps and outcomes have been added to the PDD Section B.2. to follow the format of the tool: Outcome of Step 1a, Outcome of Step 1b, Outcome of Step 2a, Outcome of Step 2b, Outcome of Step 3, and Outcome of Step 4, sub-step "Lack of prevailing practice".	The PDD has been updated s required. CAR 19 is closed.

CL 10. It is stated in the PDD that in order to establish a baseline the PPs used ex-pose data for the periods before a specific project activity was implemented; those periods are provided in Table B.2. of the PDD. It is also stated in Section A.4.2. that the dates on which the reconstruction of blast furnaces took place differ for each of them. How can this be explained? According to the approach the PPs chose for baseline setting, the historical period should have been chosen for different furnaces separately	23	From the point of view of the steel-making technology, the blast furnace shop is a single whole unit integrated at one object site and using exactly the same technology. Therefore, the reconstruction of the blast furnace shop is regarded as a single whole measure and the historical period is considered regarding the reconstruction of the blast furnace shop as a whole. Also, please note, that the same approach is applied in the registered JI project "Introduction of energy efficiency measures at OJSC "Enakievo Metallurgical Works", ITL project ID: UA1000224, elements of which are used in the proposed JI project.	CL 10 is closed based on explanation provided.
CL 11. Since it is unclear from the PDD when the use of sludge for sinter production was implemented, please explain why sinter plant as well as sludge use were excluded as the project activity components from Table B.2. of the PDD?	23	Table A.2. specifies sludge use for sinter production is planned for January 2005 (I, 2005). Please also refer to response to CL 01 and CL 02 for clarification. The project activity components regarding the sludge use and the sinter plant are given in the Table D.1.1.1 of the PDD.	Clarification has been provided. CL 11 is closed.

CAR 20. Please, explain which CO2 emission factor/s was/ were used for ER calculations for different periods of project implementation; please, provide references for the sources of information used.	25	The following CO2 emission factors were used for different periods of project implementation: CO_2 emission factor in the UPG of Ukraine for power consumption reduction projects: c) for the period before 2008 and after 2011: 0.896 tCO2/MWh Source: "Ukraine – Assessment of new calculation of CEF" http://ji.unfccc.int/UserManagement/FileStorage/46JW2KL36KM0GEMI0PHDTQF6DVI514 d) for 2008: 1.082 kgCO2/kWh Source: NEIA Order #62 as of 15.04.2011 "Approval of carbon dioxide specific coefficients for 2008" http://www.neia.gov.ua/nature/doccatalog/document?id=127171 e) for 2009: 1.096 kgCO2/kWh Source: NEIA Order #63 as of 15.04.2011 "Approval of carbon dioxide specific coefficients for 2009" http://www.neia.gov.ua/nature/doccatalog/document?id=127172 f) for 2010: 1.093 kgCO2/kWh Source: NEIA Order #43 as of 28.03.2011 "Approval of carbon dioxide specific coefficients for 2010" http://www.neia.gov.ua/nature/doccatalog/document?id=126006 g) for 2011: 1.090 kgCO2/kWh	The required justifications and due corrections have been made. Issue is closed.
		Source: SEIA Order #75 as of 12.05.2011 "Approval of carbon dioxide specific coefficients for 2011" Appropriate references for the sources have been	

CL 12. It is unclear what the following statement contained in Section D.1. means: "Other parameters out of monitoring are derivatives that should be calculated using initial parameters indicating in the monitoring plan or Section B.1."?	23	This statement means that other parameters used to calculate baseline and project emissions are derivatives from the initial parameters indicated in the monitoring plan or Section B.1. For example, the parameters of specific consumption of fuel *($BSEC_i$)* or specific consumption of raw material *($BSMC_j$)* are derivatives from the initial parameters P_{hist} , FF_{hist}, NCV_{hist} , $M_{raw,his}$.	The explanation has been provided. CL 12 is closed
CL 13. Please, explain whether parameters of the baseline other than indicated in Section B.1. are to be monitored?	23	The baseline parameters subject to monitoring are given in the Section D.1 (see the subsection "Baseline emissions") and the Table D.1.1.3 of the PDD.	The explanation has been provided. CL 13 is closed
CAR 21. The parameters subject to monitoring denoted in Section D.1. do not comply with those ones provided in section D.1.1.1. Please, bring them to conformity.	36 (a)	Section D.1. and Table D.1.1.1 of the PDD have been appropriately corrected to bring the parameters subject to monitoring in conformity.	CAR 21 is closed based on the due corrections made to the PDD
CAR 22. Please correct the mistake made for a parameter P.6 in Table D.1.1.1.	36 (a)	The mistake has been corrected for a parameter P.6 in the Table D.1.1. to reflect NCV of coal.	CAR 22 is closed.
CAR 23. Please make clear in Table D.1.1.1. what abbreviation in the comment column for a parameter P.8 stands for.	36 (a)	"TU U 322-00190443-114-96" is a designator for approved technical standard TU U 322-00190443-114-96 "Blast furnace coke". Appropriate information on the designator has been added in the Table D.1.1.1 for the parameter P.8.	The required explanation has been added to the PDD. CAR 23 is closed
CAR 24. Please note there is a mistake in the formula for calculation of emissions from the blast furnace in Section D.1.1.2. Please, make due corrections to this formula.	36 (a)	The formula for calculation of emissions from the blast furnace (# 32) in Section D.1.1.2. has been appropriately corrected ("$PE_{,y}$" replaced with "$PE_{BF,y}$").	Due correction has been made to the formula. CAR 24 is closed

CL 14. Please, provide documentary evidence for NCV for fuels consumed.	36 (a)	Please find the documentary evidence in the provided file "NG NCV from 2002.jpg".	The required were provided to the verifiers. Issue is closed.
CL 15. Please, provide initial data of Inguletsky Mining and Processing Works on natural gas and electricity consumption for iron-ore concentrate supplier.	36 (a)	Please find the initial data of Inguletskiy Mining and Processing Works on natural gas and electricity consumption for iron-ore concentrate supplier in the provided file "ОАО Ингулецкий ГОК.pdf".	The data required has been submitted CL 15 is closed
CAR 25. The exact reference for data taken from 2006 IPCC such as volume, paragraph, table should be provided. (Please, refer to Table D.1.1.3.)	36 (a)	Table D.1.1.3 has been appropriately corrected to reflect exact reference for data taken from 2006 IPCC.	The exact references for IPCC data have been provided. CAR 25 is closed
CAR 26. Please, make clear in Fig. D.1. what an abbreviation EC&I stands for.	36 (a)	"EC&I stands for "Electrical Control & Instrumentation" which is standard abbreviation for industrial control and measuring systems. Fig. D.1. has been updated to reflect the full name of the system.	The explanation has been provided. The PDD has been updated correspondently.
CAR 27. Please, provide the LoE for the project.	19	Please find the copy of LoE #1603/23/7 from 22.06.2011 in the provided file "2011.06.22 LoE Illycha.pdf".	LoE is available for verificatiom. Issue is closed.
CL 16. Please explain what MOS-1 and MOS-2 stand for.	36 (b)	"MOS-1" and "MOS-2" are standard abbreviations for slug fraction types. Abbreviation "MOS" stands for "Metallurgicheskie Otkhody Stali" which means metallurgic by-products resulting from steel production process.	Explanation for abbreviations has been provided. CL 16 is closed

CAR 28. As it is seen from the supporting documents submitted for verifiers, the EF for iron-ore concentrate production is calculated based on the data provided by Inguletskiy Mining and Processing Integrated Works (MPIW), whereas iron-ore concentrate is also supplied by Pivnichniy MPIW and Central MPIW. Please explain how the conservative approach in calculating the EF can be demonstrated and justified in this case.	36 (b)	The data from Inguletskiy MPIW are used for EF for concentrate production calculation as the iron-ore concentrate supplied by Inguletskiy MPIW is overwhelming significant share of total concentrate consumption at MMK Illicha compared to other suppliers. Data as to the percentage of the concentrate consumption at MMK Illicha from concentrate suppliers have been provided to auditor.	Due justification complemented by the documented evidences has been provided to the verifiers and is considered appropriate. CAR 28 is closed
CL 17. Please explain why historical period data are provided for BF reconstruction and Oxygen shop upgrade and are not provided for other project components.	36 (a)	It is specified in the PDD (please refer to the Section B.1, subsection "Historical period") that: *"Within the historical period, the approach takes several years before implementation of specific projects on improvement of energy efficiency of existing equipment, plants or technologies, i.e. several years of the plant operation before the project activity. It does not cover new equipment and technologies that have been implemented by the PJSC "IISW" within the project boundaries."* Thus, since the BF shop is the existing object operated before the implementation of reconstruction and upgrade measures, the historical period data are used to establish the baseline for this object. Regarding to Oxygen shop equipment please refer to response to CAR 05 Other objects and measures within the scope of the JI project such as AMCOM implementation and sludge use for partial sinter replacement are newly implemented components for which historical data are not applied.	CL 17 is closed based on the clarifications provided

CAR 29. Average NCV of natural gas consumed for the historical period (see Section B.1., p. 28) is presented in kcal/1000m^3 while the same parameter in the excel spreadsheet is in TJ. Please, the units to conformity.	36 (b) (v)	In the Section B.1., the NCV of NG unit of kcal/1000m^3 is erroneous. The unit should be kcal/m^3. The unit has been corrected to be kcal/m^3. As the natural gas emission factor is given in tCO2/TJ, in the calculation file, natural gas NCV value in TJ/1000 m3 is used. Appropriate explanation of conversion from kcal/m3 to TJ/1000 m3 has been added in the excel calculation file.	Appropriate explanations have been provided; respective corrections have been added to the PDD. Issue is closed
CL 18. Please, explain why emissions from coke production are excluded from the project scenario. (Refer to Section B.3., Table B.3.)	32 (d)	Emissions from coke production are included in the project emissions calculation. Table B.3 of the PDD has been appropriately corrected to reflect emissions from coke production in the project scenario.	
CL 19. Please, explain why emissions from iron-ore concentrate production are fully excluded from the project scenario. (Refer to Section B.3., Table B.3.)	32 (d)	Emissions from iron-ore concentrate production are included in the project emissions calculation. Table B.3 of the PDD has been appropriately corrected to reflect emissions from iron-ore concentrate production in the project scenario.	Table B.3 of the PDD has been appropriately corrected CL 19 is closed
CL 20. Please, explain why emissions from sinter production are excluded from the baseline scenario (Refer to Section B.3., Table B.3.)	32 (d)	Emissions from sinter production are included in the baseline scenario. Please refer to Section B.3., Table B.3., see the entry “Emissions from production of sinter replaced by MOS-1 and MOS-2 fractions in the project”	CL 20 is closed based on the provided explanations.
CL 21. Please, explain why emissions from coal consumption included in the project scenario are excluded from the baseline scenario. (Refer to Section B.3., Table B.3.)	32 (d)	Coal is not used in baseline scenario. In the project scenario, it will be in use only from 2012 when PCI system should be introduced. Please also refer to response to CL 07	CL 21 is closed based on the provided explanations.

CL 22. Please explain why emissions from limestone consumption are not taken into account. (Refer to Section B.3., Table B.3.)	32 (d)	Emissions from limestone consumption are taken into account. Please refer to Section B.3., Table B.3., see the entry "Emissions from limestone use in blast furnaces".	CL 22 is closed based on the provided explanations.
CAR 30. There are mistakes in calculations of specific electricity consumption for oxygen generation for 2007-2012 (Refer to excel file, Oxygen project). Formula for calculation of that parameter presented in the PDD differs from the one according to which the calculation was made in the excel file). Please, check this and make appropriate corrections.	36 (f) (vii)	In the updated PDD v.1.4 and the calculation model, Oxygen shop was excluded from emission reductions estimation.	The PDD has been updated to reflect the real situation CAR 30 is closed.
CL 23. The PDD says the following: "The value of RF_{IOC} is taken as the lowest one in the range of possible factors of concentrate replacement with sludge, which complies with the most conservative approach to calculation of emissions. The range of possible replacement factors was determined by the Technological Department of the PJSC "IISW" sinter plant and makes 0.55 – 0.597 t of iron-ore concentrate / t of sludge". Please, provide explanations along with the documented proof as for in what way those replacement factors were determined.	36 (b) (ii)	Factors of concentrate replacement with sludge are determined as a result of calculations of sinter chemical composition. Please refer to the provided supporting document for the documented proof and calculation details.	Factor RF_{IOC} is not a subject for constant monitoring as its lowest value will be taken for calculation CL 23 is closed

CL 24. It is stated in the PDD that: "To calculate $EF_{BL,IOC}$, the data on natural gas and electricity consumption during iron-ore concentrate production by the key concentrate supplier, Inguletskiy Mining and Processing Integrated Works (MPIW), were applied". Please, provide documented evidence of initial data from Inguletskiy MPIW used for making calculations.	36 (b)	Please refer to response to CL15 for initial data on natural gas and electricity consumption from Inguletskiy MPIW.	CL 24 is closed based on the explanation provided.

CL 25. Please, provide explanation and justification of the LCV_{NG} used to calculate carbon emission factor for iron-ore concentrate production	36 (b)	NCV_{NG} data of natural gas used for iron-ore concentrate production are not available from the concentrate supplier. In order to ensure conservative approach during estimation of iron-ore concentrate production emission factor, the NCV_{NG} data provided in the Ukraine's National Inventory Report of GHG Sources and Sinks 1990 to 2005 (page 185, Table A2.4.) http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/x-zip-compressed/ukr_2007_nir_eng_23jul.zip Ukraine's National Inventory Report of GHG Sources and Sinks 1990 to 2006* (page 212, Table P2.3) http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/ukr_2008_nir_21may.zip Ukraine's National Inventory Report of GHG Sources and Sinks 1990 to 2007† (page 266, Table P2.3) http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/ukr_2009_nir_25may.zip These data were applied for the period of 2005 – 2007 as reflecting common situation regarding properties of natural gas consumed by Ukrainian industry.	The required justification has been provided to the verifiers and is found appropriate. Issue is closed

CAR 31. EF_{CO2} = 0,896tCO2/MWh taken for calculation for the historic period (excel file) is not the IPCC2006 value. Please, correct this	36 (b) (ii)	Data of IPCC 1996 is applied for natural gas EF CO2 in the current version of excel calculation model. The value of 0.896 tCO2/MWh was taken from the source "Ukraine – Assessment of new calculation of CEF" for the period before 2008 and after 2011.	The EF used was found to be applied correctly. Issue is closed
CAR 32. Please note that Guidelines for objective demonstration and assessment of barriers (Guidline 1) requires that for demonstration of the investment barrier "information should include nature of company, organization and its ownership and financial information". Unfortunately PDD is currently missing the relevant details.	30	Respective information was added to the investment barrier description.	Issue is closed based on the respective information added to the investment barrier description.
CAR 33. The developer is correct while mentioning to the rather poor investment profile of Ukraine as the frontier market. At the same time some factual mistakes are present. The interest rates at the moment of the project start have been much lower than 30% indicated by the developer. The average interest rate for the loans denominated in UAH as of the end of 2002 has been 19,5%. The source: http://bank.gov.ua/Fin_ryn/Pot_tend/2002.zip	29 (b)	Respective change was made into the investment barrier description	CAR 33 is closed based on the respective change made to the investment barrier description.

[*] http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/ukr_2008_nir_21may.zip
[†] http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/ukr_2009_nir_25may.zip

CL 26. Please note that the reference to the inferior Ukrainian economical conditions is not sufficient to prove inability to complete the project without JI mechanism. A number of Ukrainian companies made successful IPOs during the period of 2002-2008 and attracted substantial syndicated loans from the western banks at law interest rates. Please, describe in more detailed manner the investment barriers specific to IISW.	30	The approach of the "Joint Implementation Determination and Verification Manual", Version 01 is used for substantiation of the project's additionality. Since at least four similar JI projects receiving positive determination from an AIE are referring to the existence of the same type of investment barriers, it should be a solid independent proof for the existence of investment barriers for large-scale reconstruction projects in Ukraine. In addition to that, the following JI projects with positive AIE determination refer to substantial investment barriers in implementing similar type of activities: 1) UA1000224: Introduction of Energy Efficiency Measures at OJSC "Enakievo Metallurgical Works" (estimated project costs USD 173 million) 2) UA1000022: Revamping and Modernization of the Alchevsk Steel Mill (estimated project costs USD 944 million) Both of the projects above were implemented at steel factories operating in Ukraine under the same market conditions as PJSC "IISW". The estimated project costs of the abovementioned projects are within the same range as the costs of the proposed project at PJSC "IISW" (USD 580 million). Therefore, the present project is facing similar investment barrier as the projects of Enakievo Metallurgical Works and Alchevsk Steel Mill.	The comparable analysis has been provided and found adequate. Issue is closed

CAR 34. Please note that as the result of operations in 2002 the company has been able to gain the net profit of UAH 257 807 thousands. The next year the net profit reached UAH 827 711 thousands, in 2004 – UAH 2 010 070 thousands. Source: http://acc.smida.gov.ua/emitents/zvit_menu.php?kod=00191129&year=2004&forma=FP&zvit_type=vat194 This fact clearly confirms very good financial standing of the company at the moment of the project start. The profits accumulated during only three years of 2002-2004 were sufficient to implement the project without external borrowings, so financial barrier clearly needs more justification in order to show the unavailability of the funds for this particular project. Please, apply investment analysis in order to prove unattractiveness of the project for the company.	30	The good financial standing of PJSC "IISW" proves the fact of the solid market position of the company without the implementation of the energy efficiency measures foreseen by the JI project. Substantial investments into energy efficiency could potentially undermine the company's position on the market and even lead to change of ownership, as in the case of Alchevsk Steel Works (http://www.bbc.co.uk/ukrainian/business/2010/01/100111_isd_analysis_it.shtml). This is further proven by substantial losses made by PJSC "IISW" in the subsequest years, and the process of merger undergone in 2010, see for example: 1) On company's losses during 2009-2010 http://novynar.com.ua/business/158693 2) On company's losses during 2011 http://www.rbc.ua/ukr/top/show/chistyy-ubytok-mmk-im-ilicha-za-9-mesyatsev-uvelichilsya-do-1-147-26102011115800 Investment analysis is not required by the "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality", Version 03.0.1. Furthermore, since the project is using "Joint Implementation Determination and Verification Manual", Version 01, to prove additionality, the investment analysis is not applicable.	The comparable analysis has been provided and found adequate. Issue is closed

		Besides that, the project envisages to reach effective fuel consumption levels that are far lower compared to those currently existing in Ukraine. After all the modernization measures are introduced, the average specific coke consumption per ton of pig iron at IISW in 2012 is expected to be 402 kg/t, while the average specific coke consumption in Ukraine is equal to 534.5 kg/t in 2004 (www.me.gov.ua/file/link/78897/file/Burkinski_4_06_U.pdf) .	
CAR 35. Please, explicitly indicate and describe which of the approaches regarding monitoring is chosen	35	PDD Section D.1 has been updated to include indication and description of the approach regarding monitoring.	PDD Section D.1 has been updated to include the description of the approach chosen. Issue is closed

CAR 36. Please, explicitly and clearly distinguish: a) 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 regarding the PDD; b) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination regarding the PDD; and c) Data and parameters that are monitored throughout the crediting period.	36 (d)	PDD Section D.1.1 has been updated to distinguish appropriate data and parameters according to Guidance for Users of the JI PDD form.	Issue is closed

CAR 37. In accordance with the GUIDANCE ON CRITERIA FOR BASELINE SETTING AND MONITORING version 03 project participants must undertake an assessment of the potential leakage of the proposed JI project and explain which sources of leakage are to be calculated, and which can be neglected. All sources of leakage that are included shall be quantified and a procedure for an ex ante estimate shall be provided. Only those emission sources that account for, on average per year over the crediting period, more than 1 per cent of the difference between project and baseline emissions, or which exceed an amount of 2,000 tonnes of CO2 equivalent, whichever is lower, shall be included.	40 (a)	The baseline setting applies the JI specific approach based on the registered JI project "Introduction of energy efficiency measures at OJSC "Enakievo Metallurgical Works", PDD version 2.21 having positive determination, as a comparable case using, inter alia, the same technology of measures implemented, in which the leakage is neglected.	Justification for the leakage estimation has been added to the PDD. CAR is closed
CAR 38. Nothing is said in section D.1.5. Please check this and make appropriate corrections.	48 (a)	PDD Section D.1.5 has been updated to specify appropriate information.	PDD Section D.1.5 has been updated to specify appropriate information. Issue is closed
CAR 39. Please, provide information in Section D.3. in accordance with the requirements of Guidelines for users of the JI PDD form	36 (j)	PDD Section D.3 (see Figure D.1) has been appropriately corrected to specify information in accordance with the requirements of Guidelines for users of the JI PDD form	PDD Section D.3 (see Figure D.1) has been appropriately corrected CAR 39 is closed
CAR 40. As the estimation of the ERs from the oxygen shop were excluded from the calculations, please, delete them from the calculation spreadsheet (Total ERs)	46	The calculation spreadsheet has been updated respectively.	The calculation spreadsheet has been updated as required CAR 40 is closed