



BUREAU  
VERITAS

# VERIFICATION REPORT

## CJSC “NATIONAL CARBON SEQUESTRATION FOUNDATION”

### VERIFICATION OF THE

## “ENERGY EFFICIENCY INCREASE IN STEELMAKING AND SINTER PLANTS JSC “ZAPORIZHSTAL”, UKRAINE”

THIRD PERIODIC  
(01/07/2011 – 29/02/2012)

REPORT No. UKRAINE-VER/0412/2011

REVISION No. 02

BUREAU VERITAS CERTIFICATION



VERIFICATION REPORT

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Client: CJSC "National Carbon Sequestration Foundation"	Client ref.: Yuriy Fedorov

**Summary:**  
 Bureau Veritas Certification has made the third periodic verification of the JI project "Energy efficiency increase in steelmaking and sinter plants JSC "Zaporizhstal", Ukraine", JI Registration Reference Number UA1000272, project of CJSC "National Carbon Sequestration Foundation" located in Zaporizhzhya, Ukraine and applying JI specific approach, 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 verification scope is defined as a periodic independent review and ex post determination by the Accredited Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the monitoring report against 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 verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification Requests and Corrective Actions Requests (CL and CAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as per determined changes. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, and misstatements, and the ERUs issued totalize 96 645 tonnes of CO<sub>2</sub> equivalent for the monitoring period 01/07/2011 – 29/02/2012.

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: UKRAINE-ver/0412/2011	Subject Group: JI
Project title: "Energy efficiency increase in steelmaking and sinter plants JSC "Zaporizhstal", Ukraine"	
Work carried out by: Oleg Skoblyk – Team Leader, Lead Verifier Olena Manziuk – Team member, Verifier Iuliia Pynova - Team member, Technical Specialist	
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Igor Alekseenko - Technical specialist for ITR	
Work approved by: Ivan Sokolov - Operational Manager	
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## 1 INTRODUCTION

CJSC “National Carbon Sequestration Foundation” (NCSF) has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” (hereafter called “the project”) at Zaporizhzhya, Ukraine.

This report summarizes the findings of the verification 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

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period.

The objective of verification can be divided in Initial Verification and Periodic Verification.

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 verification scope is defined as an independent and objective review of submitted monitoring report and the determined project design document including 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 verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications requests, corrective action requests and/or forward actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

### 1.3 Verification Team

The verification team consists of the following personnel:

Oleg Skoblyk  
Team Leader, Bureau Veritas Certification Climate Change Lead Verifier



Olena Manziuk  
Team member, Bureau Veritas Certification Climate Change Verifier

Iuliia Pylnova  
Team member, Bureau Veritas Certification Technical Specialist

This verification report was reviewed by:

Ivan Sokolov  
Bureau Veritas Certification, Internal Technical Reviewer

Igor Alekseenko  
Bureau Veritas Certification Technical specialist for ITR

## **2 METHODOLOGY**

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

In order to ensure transparency, a verification 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 verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

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

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

### **2.1 Review of Documents**

The Monitoring report (MR) submitted by CJSC “National Carbon Sequestration Foundation” (NCSF) and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), developed JI specific approach in compliance with Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on Verification requirements to be checked by an Accredited Independent Entity were reviewed.

The verification findings presented in this report relate to the Monitoring report version 01.1 dated 02/04/2012, the Monitoring report version 02.1 dated 31/05/2012, and project as described in the determined PDD version 02 dated 15/03/2011.

## 2.2 Follow-up Interviews

On 27/04/2012 Bureau Veritas Certification during site visit performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of JSC “Zaporizhstal” and CJSC “NCSF” were interviewed (see References). The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

Interviewed organization	Interview topics
JSC “Zaporizhstal”	<ul style="list-style-type: none"> <li>➤ Organizational structure</li> <li>➤ Responsibilities and authorities</li> <li>➤ Training of personnel</li> <li>➤ Quality management procedures and technology</li> <li>➤ Implementation of equipment (records)</li> <li>➤ Metering equipment control</li> <li>➤ Metering record keeping system, database</li> <li>➤ Monitoring procedure</li> </ul>
CJSC “National Carbon Sequestration Foundation”	<ul style="list-style-type: none"> <li>➤ Baseline methodology</li> <li>➤ Monitoring plan</li> <li>➤ Monitoring report</li> <li>➤ Deviations from PDD</li> <li>➤ Emission reduction calculation</li> </ul>

## 2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification 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 GHG emission reduction calculation.

If the Verification Team, in assessing the monitoring report and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should 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 that is not in accordance with the monitoring plan;

(b) Clarification request (CL), requesting the project participants to provide additional information for the Verification Team to assess compliance with the monitoring plan;

(c) Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

The Verification 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 verification.

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

### **3 VERIFICATION CONCLUSIONS**

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

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

The Clarification Requests and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the project resulted in three Corrective Action Requests and two Clarification Requests.

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

#### **3.1 Remaining issues and FARs from previous verifications**

Remaining issues and FARs from previous verification are absent.  
Not applicable.

#### **3.2 Project approval by Parties involved (90-91)**

Host Party (i.e., Ukraine) provides the Letter of Approval #1604/23/7 dated 22/06/2011 of JI project "Energy efficiency increase in steelmaking



and sinter plants JSC “Zaporizhstal”, Ukraine” issued by State Environmental Investment Agency of Ukraine (refer to section 5 Category 1 documents).

Also, written project approval (LoA #2011JI18 dated 31/05/2011) by the Netherlands, that is Party of this JI project, has been issued by the DFP of that Party (i.e., NL Agency Ministry of Economic Affairs, Agriculture and Innovation).

### **3.3 Project implementation (92-93)**

JI project for energy efficiency increase in steelmaking and sinter plants by introduction of new gas burners with spray and niche technology is fulfilled at JSC “Zaporizhstal”.

The purpose of the considered JI project is installation of gas burners with spray and niche technology designed by CJSC “ZPK “Specgazprom” on aggregates in steelmaking and sinter plants. According to the provided information, there is known that the gas burners with spray and niche technology have the same construction and technological qualities that provide to more effective combustion of natural gas by steel and sinter production in comparison with other types of burners. Described situation leads to the decrease of natural gas consumption in the metallurgical works and as a result to greenhouse gases emissions reductions from fuel combustion. As a fact, natural gas is used in steelmaking plant for metal heating by steel smelting and in sinter plant for firing of sinter charge by sinter production at JSC “Zaporizhstal”.

As described in the documents, the decision to implement the project on the installation of gas burners with spray and niche technology in sinter and steelmaking plants at the JSC “Zaporizhstal” was taken in 2005. The replacement of gas burners is implemented stepwise in 2005-2009. The work documentation is elaborated for each aggregate for new gas burners installation in period of installation works. The final replacement of traditional burners in the burner with spray and niche technology is made in 2009.

According to the PDD, the operation time of gas burners with spray and niche technology (hereafter called “upgraded gas burners”) on aggregates of metallurgical works is about one year in steelmaking plant and about five years in sinter plant. During the monitoring period 01/07/2011 – 29/02/2012 a list of upgraded gas burners of steelmaking plant were replaced. In summary, approximately 34 gas burners with spray and niche technology of open-hearth furnaces (OHFs) involved to the JI project were substituted. Monitoring report (section A.2) includes details of upgraded gas burners at steelmaking plant. The gas burners with spray and niche





technology of sinter plant were not replaced because they are still operation and their operation time has not become exhausted yet. Thus, emission reductions are achieved due to installed burners at steelmaking plant and in sinter plant of JSC “Zaporizhstal”.

After site visit and JI project documents review it is known that the production level of steelmaking and sinter plants at JSC “Zaporizhstal” is increased during monitoring period July 2011 – February 2012. Namely, steel production at JSC “Zaporizhstal” rose by 2.45 million tonnes; and sinter production at the sinter plant rose by 3.64 million tonnes in comparison to forecasted data. The facts mentioned above lead to deviations of actual emission reductions from estimated in the PDD for the regarded monitoring period. Moreover, the difference between GHG emission reductions for this monitoring period stated in the MR and emission reductions estimated in the registered PDD also was caused by some minor additional reasons. For instance, project participants confirmed with documented evidence that among additional reasons are optimizing of heating conditions of steelmaking furnaces with spray and niche technology burners achieved through taken out of operation open-hearth furnace # 11, steel smelting increase on the most energy effective two-bath steel melting aggregate # 1, decrease of downtime of the steelmaking furnaces, etc. As a result of JI project activity implementation, actual emission reduction achieved for the monitoring period July 2011 – February 2012 is 96 645 tonnes CO<sub>2</sub> equivalent, and estimated value for the same period is 60 747 tonnes CO<sub>2</sub> equivalent.

The identified area of concern as to project implementation project participants response and BV Certification’s conclusion are described in Appendix A (refer to CL01 and CL02).

### **3.4 Compliance of the monitoring plan with the monitoring methodology (94-98)**

The monitoring occurred in accordance with the determined changes in the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website

(<http://ji.unfccc.int/JIITLProject/DB/JOQRPTLWUXD0B7CWP2ZLYT47D3YXW1/details>).

For calculating the emission reductions key factors, such as emission factor of the natural gas consumption, production level, amount of the fuel consumption, fuel quality, etc., influencing the baseline emissions and the activity level of the project and the emissions due to the JI project as well as risks associated with the project were taken into account, as appropriate.



Data sources used for calculating emission reductions are clearly identified, reliable and transparent. On site responsible persons register data from the measurement equipments and fixed monitoring data to logbooks, monthly data collected to the technical reports. Moreover, there is electronic database of monitoring data. All roles and responsibilities are described in details in the Monitoring report. Also, In the MR there is provided the chart which described the monitoring scheme of data collection, data delivery and data processing.

Carbon emission factor from natural gas consumption is used for calculation of emissions and emission reductions. This factor is monitored and calculated through the crediting period of the JI project. The formula that used for CO<sub>2</sub> emission factor calculation is selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner. As a result of documents revision, all data connected with estimation of emission reduction are consistent through the Monitoring report and excel spreadsheets with calculation.

All calculations of project emissions, baseline emissions, and emission reduction were performed using equations that stated in the approved monitoring plan.

The monitoring periods per component of the project are clearly specified in the monitoring report and do not overlap with those for which verifications were already deemed final in the past.

The identified area of concern as to compliance of the monitoring plan with the monitoring methodology project participants response and BV Certification's conclusion are described in Appendix A (refer to CAR01).

### **3.5 Revision of monitoring plan (99-100)**

In the course of the monitoring period (01/07/2011 – 29/02/2012) the original monitoring plan described in the registered Project Design Document version 02 dated 15/03/2011 was modified by the project participants. The project participants provided an appropriate justification for the proposed revision, which was caused by a set of reasons that described below. The change is as follows:

1. New version of Company standard on GHG monitoring system was elaborated



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In the frame of monitoring period 01/07/2011 – 29/02/2012 the procedures of GHGs emission reductions monitoring are determined by the Company standard STP 8.2-13-11 “Integrated quality system. Monitoring of GHGs emission reductions”. The Company standard STP 8.2-13-11 was approved by Order #552 dated on 12/12/2011 of JSC “Zaporizhstal”. During site visit the Company standard STP 8.2-13-11 and Order #552 were provided to the verification team (see the item 12 and 11 of section 5 “References” respectively). Documents were revised and found in order. According to the explanation stated in the monitoring report, this standard is introduced instead of Company standard STP 8.2-13-10 functioned in the previous period. Taking into account that several JI projects are implemented at JSC “Zaporizhstal”, the new standard is elaborated for improvement of overall GHG monitoring system. The monitoring procedures of the JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” were not changed. Thus, it can be concluded that such changes do not influence on data accuracy and information applicability.

The revisions to the monitoring plan was made in accordance with the paragraph D of the „Guidance on criteria for baseline setting and monitoring” (version 03) to improve accuracy of the monitoring of emission reductions and applicability of information collected.

The proposed revision improves the monitoring procedure without changing conformity with the relevant rules and regulations for the establishment of monitoring plans.

Based on above mentioned, BVC verification team can conclude that the proposed revision of the monitoring plan of the project is complete, effective and reliable. All relevant emission sources are covered by the monitoring plan and the boundaries of the project are defined correctly and transparently. All pertinent parameters were monitored and determined as prescribed. The collected data are stored electronic and paper formats. The monitoring methodologies and supporting records were sufficient to enable verification of emission reductions. As a result of the verification process, no significant lacks of evidence were detected.

Furthermore, two revisions that were determined during the previous verification (i.e., second periodic verification of the monitoring period 01/01/2011 – 30/06/2011) are valid and followed by project participants for realization of JI project monitoring procedure. Determined revisions are the following:

1. The monitoring report is prepared periodically but not less than 1 time a year instead of yearly monitoring report preparation according to the monitoring plan.



2. Since 01.01.2011 the calculation of natural gas consumption for steel production in steel-smelting furnaces in the project scenario (ID-1 – ID-9) is provided monthly by Open-hearth plant instead of Central laboratory. The results of calculations are recorded in the monitoring forms according to the STP 8.2-13-11 “Monitoring of GHG emission reductions”.

### **3.6 Data management (101)**

The data and their sources, provided in Monitoring report, are clearly identified, reliable and transparent (refer to section 3.4 of this report).

The implementation of data collection procedures is in accordance with the revised monitoring plan, including the quality control and quality assurance procedures. Monitoring procedure was described in details in the Company standard STP 8.2-13-11 “Integrated quality system. Monitoring of GHGs emission reductions”. The monitoring standard at JSC “Zaporizhstal” was developed based on the monitoring plan approved in the frame of project design document version 02 dated 15/03/2011. This standard was provided to the verification team for analysis (see the item 12 of section 5 “References” of this report).

During site visit, all passports of measurement equipments that used in the JI project were provided for revision. After the documents revision, the verification team can conclude that all measurement equipments of regarded JI project are calibrated according to the national requirements and regulations in time. Thus, the function of the monitoring equipment, including its calibration status, is in order.

The evidence and records used for the monitoring are maintained in a traceable manner. Technical reports of steelmaking plant and sinter plant, certificates of natural gas quality, and other monitoring documents were reviewed. As a matter of fact, monitoring data from the monitoring report and excel spreadsheets are in compliance to the data from the initial documented evidences.

The data collection and management system for the project is in accordance with revised monitoring plan. Furthermore, internal audits and checking measures are carried out regularly as was planned. Performance of internal audits is justified with documented evidences. During site visit verification team checked the protocols of internal audits that carried out at the steelmaking plant and at the sinter plant of JSC “Zaporizhstal” within the period 01/07/2011-29/02/2012. The documented evidences of internal audits were found satisfactory.



According to PDD version 02 dated 15/03/2011, emission reductions during the monitoring period 01/07/2011-29/02/2012 were expected to be 60 747 tonnes CO<sub>2</sub> equivalent. According to Monitoring report, emission reductions achieved are 96 645 tonnes CO<sub>2</sub> equivalent. The difference in the emission reductions is explained as follows: steel production at JSC “Zaporizhstal” rose by 2.45 million tonnes; and sinter production at the sinter plant rose by 3.64 million tonnes in comparison to forecasted data. The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner. Also, the difference between emission reductions described above was caused by some minor additional reasons. For instance, project participants confirmed with documented evidence that among additional reasons are optimizing of heating conditions of steelmaking furnaces with spray and niche technology burners achieved through taken out of operation open-hearth furnace # 11, steel smelting increase on the most energy effective two-bath steel melting aggregate # 1, decrease of downtime of the steelmaking furnaces, etc.

The identified areas of concern as to data management project participants response and BV Certification’s conclusion are described in Appendix A (refer to CAR02 and CAR03).

### **3.7 Verification regarding programmes of activities (102-110)**

Not applicable.



## 4 VERIFICATION OPINION

Bureau Veritas Certification has performed the third periodic verification of the JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” in Ukraine, which applies JI specific approach. The verification 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 verification consisted of the following three phases: i) desk review of the monitoring report against 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 verification report and opinion.

The management of CJSC “National Carbon Sequestration Foundation” is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring Plan as per determined changes. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification verified the project Monitoring report version 02.1 dated 31/05/2012 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as per determined changes. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions and misstatements. Our opinion relates to the project’s GHG emissions and resulting GHG emissions reductions reported and related to the approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm, with a reasonable level of assurance, the following statement:

Reporting period: From 01/07/2011 to 29/02/2012

Baseline emissions	: 338 065	t CO <sub>2</sub> equivalents
Project emissions	: 241 420	t CO <sub>2</sub> equivalents
Emission reductions	: 96 645	t CO <sub>2</sub> equivalents



Emission reductions, project emissions and baseline emissions which are stated below are rounded by monitoring report developers to the whole figure (1t) and are based on calculations which are demonstrated in excel spreadsheet attached to the monitoring report for the period 01/07/2011 - 29/02/2012.



## 5 REFERENCES

### Category 1 Documents:

Documents provided by CJSC “National Carbon Sequestration Foundation” that relate directly to the GHG components of the project.

- /1/ Monitoring report for the period 01/07/2011 - 29/02/2012 of JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” version 01.1 dated 02/04/2012
- /2/ Monitoring report for the period 01/07/2011 - 29/02/2012 of JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” version 02.1 dated 31/05/2012
- /3/ PDD of the JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” version 02 dated 15/03/2011
- /4/ Verification report # UKRAINE-ver/0327/2011 dated 02/09/2011 of JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” issued by Bureau Veritas Certification
- /5/ Guidance on criteria for baseline setting and monitoring, version 03
- /6/ Letter of Approval #2011JI18 dated 31/05/2011 issued by NL Agency Ministry of Economic Affairs, Agriculture and Innovation
- /7/ Letter of Approval #1604/23/7 dated 22/06/2011 of JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” issued by State Environmental Investment Agency of Ukraine

### Category 2 Documents:

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

- /1/ Information on training of personnel of sinter and steelmaking plants and CHP for 2011 and 2012
- /2/ Logbook on registration of gas mixture and dust parameters on source output for the second half of 2011 (OHF-1, OHF-2, OHF-5, OHF-6, OHF-7, OHF-8, OHF-10, OHF-12,
- /3/ Information on measuring equipment used for the project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” for 2011
- /4/ Calculation of FER distribution to consumers for December 2011
- /5/ Actual production volumes of JSC “Zaporizhstal” plants for October, November, December 2011, January, February 2012





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- /6/ Report on gaseous department operation for October, November, December 2011, January, February 2012
- /7/ Pie charts on natural gas consumption by sinter plant for 30-31/01/2012, 31-01/02/2012
- /8/ Form # 5. Natural gas chemical composition and net calorific value for July, August, September, October, November, December 2011, January, February 2012
- /9/ Form # 4. Natural gas distribution in sinter plant for July, August, September, October, November, December 2011, January, February 2012
- /10/ Natural gas physical and chemical parameters passports for July 2011, August 2011, September 2011, October 2011, November 2011, December 2011, January 2012, February 2012
- /11/ Order # 552 dated 12/12/2011 on approval and implementation of enterprise standard
- /12/ Enterprise standard STP 8.2-13-11. GHG emissions reduction monitoring
- /13/ Protocol # 11-160 on internal audit at sinter plant dated 03/08/2011, JSC "Zaporizhstal"
- /14/ Protocol # 11-251 on internal audit at sinter plant dated 01/12/2011, JSC "Zaporizhstal"
- /15/ Protocol # 12-15 on internal audit at sinter plant dated 01/02/2012, JSC "Zaporizhstal"
- /16/ Protocol # 11-145 on internal audit at steelmaking plant dated 04/07/2011, JSC "Zaporizhstal"
- /17/ Protocol # 11-186 on internal audit at steelmaking plant dated 01/09/2011, JSC "Zaporizhstal"
- /18/ Protocol # 11-232 on internal audit at steelmaking plant dated 17/11/2011, JSC "Zaporizhstal"
- /19/ Protocol # 12-01 on internal audit at steelmaking plant dated 04/01/2012, JSC "Zaporizhstal"
- /20/ Form # 1. Steel production by steelmaking plant for July, August, September, October, November, December 2011, January, February 2012
- /21/ Form # 2. Sinter production by sinter plant for July, August, September, October, November, December 2011, January, February 2012
- /22/ Protocol on gas-dust flow parameters measurement dated 08/09/2011
- /23/ Protocol on gas-dust flow parameters measurement dated 06/09/2011
- /24/ Protocol on gas-dust flow parameters measurement dated 13/07/2011
- /25/ Protocol on gas-dust flow parameters measurement dated 07/12/2011
- /26/ Protocol on gas-dust flow parameters measurement dated 18/11/2011



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- /27/ Report on air protection for the 3d quarter 2011. Form # 2- ТП (air)
- /28/ Report on air protection for 2011. Form # 2- ТП (air)
- /29/ Permit # 2310136600-39 dated 30/12/2009 on stationary sources air pollution. Valid for 10 years, from 30/12/2009 to 29/12/2019
- /30/ Certificate # 83002/24 on measuring equipment calibration, Delta 65, fabrication # 288781 dated 21/03/2011. Valid till 21/03/2012
- /31/ Certificate # 83002/23 on measuring equipment calibration, Delta 65, fabrication # 287963 dated 21/03/2011. Valid till 21/03/2012
- /32/ Certificate # 83002/26 on measuring equipment calibration, Delta 65, fabrication # 288783 dated 21/03/2011. Valid till 21/03/2012
- /33/ Certificate # 83002/25 on measuring equipment calibration, Delta 65, fabrication # 288782 dated 21/03/2011. Valid till 21/03/2012
- /34/ Certificate # 12-01/2208 on measuring equipment calibration, Термит 5000, fabrication # 07084 dated 19/05/2011. Valid till 20/05/2012
- /35/ Agreement # 200м-2011 dated 21/12/2010 on providing metrological services. Valid from 01/01/2011 to 31/12/2011
- /36/ Agreement # 271м-2012 dated 28/12/2011 on providing metrological services. Valid from 01/01/2012 to 29/02/2012
- /37/ Passport on measuring equipment, fabrication # 67542. Last calibration date – 18/11/2011
- /38/ Passport on measuring equipment, fabrication # 67496. Last calibration date – 18/11/2011
- /39/ Passport on measuring equipment parameters and environment features, Диск-250 meter, serial #120994. JSC “Zaporizhstal”, Sinter Plant Measuring equipment Area. Calibration results dated 14/03/2011
- /40/ Passport on weighing machine, fabrication # 359. Last calibration date – 05/10/2011
- /41/ Passport on measuring equipment, fabrication # 77669. Last calibration date – 18/11/2011
- /42/ Passport on measuring equipment, fabrication # 67501. Last calibration date – 18/11/2011
- /43/ Passport # 15E on weighing machine (electronic and tensometric device of float weighing of ingots), ser. #04/1E, inv. #10634567. Last calibration results dated 22/09/2011
- /44/ Passport on measuring equipment parameters and environment features, Диск-250 meter, serial #82670. JSC “Zaporizhstal” Sinter Plant Measuring equipment Area. Calibration results dated 14/03/2011
- /45/ Measuring equipment calibration certificate #2-0476-10 dated 29/07/2010, Флоутек measuring unit, serial #583. Valid till 29/07/2012



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- /46/ Passport on measuring equipment parameters and features, Сафир5420, serial #10251684. JSC "Zaporizhstal". State calibration results dated 04/05/2011
- /47/ Passport on measuring equipment parameters and features, Сафир М-5410, serial #08147118. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 04/05/2011
- /48/ Passport on measuring equipment parameters and features, Сафир5420, serial #09276441. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 04/05/2011
- /49/ Passport on measuring equipment parameters and features, Сафир, serial #09311428. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 04/05/2011
- /50/ Passport on measuring equipment parameters and features, ДМ3583, serial #9673, КСД-250, serial #73492. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 04/05/2011
- /51/ Passport on measuring equipment parameters and features, ДМ3583, serial #1848, КСД-250, serial #73493. JSC "Zaporizhstal" steelmaking plant. Calibration results dated 04/05/2011
- /52/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #39799, КСД-3, serial #104922. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 12/05/2011
- /53/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #5609, КСД-3, serial #275787. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 12/05/2011
- /54/ Passport on measuring equipment parameters and features, Сафир5420, serial #10245836. JSC "Zaporizhstal". State calibration results dated 12/05/2011
- /55/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #52357, КСД-3, serial #203102. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 12/05/2011
- /56/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #20759, КСД-250, serial #364557. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 10/06/2011
- /57/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #2341, КСД-3, serial #223739. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 12/05/2011
- /58/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #61757, КСД-250, serial #68574. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 12/05/2011
- /59/ Passport on measuring equipment parameters and features, Сафир5420, serial #04691392. JSC "Zaporizhstal" steelmaking



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- plant. State calibration results dated 16/05/2011
- /60/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #45042, КСД-3, serial #191554. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 16/05/2011
  - /61/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #4713, КСД-3, serial #224123. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 20/05/2011
  - /62/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #83336, КСД-3, serial #233716. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 20/05/2011
  - /63/ Passport on measuring equipment parameters and features, ДМ, serial #61899, КСД-250, serial #73494. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 10/06/2011
  - /64/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #4747, КСД-3, serial #163506. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 01/06/2011
  - /65/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #4899, КСД-3, serial #147465. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 01/06/2011
  - /66/ Passport on measuring equipment parameters and features, ДМ3583, serial #2148, КСД-250, serial #73505. JSC "Zaporizhstal" steelmaking plant. Calibration results dated 16/06/2011
  - /67/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #11421, КСД-3, serial #264661. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 03/06/2011
  - /68/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #43637, КСД-3, serial #264663. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 06/06/2011
  - /69/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #4889, КСД-3, serial #262396. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 08/06/2011
  - /70/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #86693, КСД-3, serial #176478. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 08/06/2011
  - /71/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #6218, КСД-3, serial #141191. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 16/06/2011



- /72/ Passport on measuring equipment parameters and environment features, ДМ3583, serial #81725, КСД-3, serial #264697. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 16/06/2011
- /73/ Passport on measuring equipment parameters and features, Сафир, serial #09332509. JSC "Zaporizhstal". State calibration results dated 21/06/2011
- /74/ Passport on measuring equipment parameters and features, Сафир, serial #09328507. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 22/06/2011
- /75/ Passport on measuring equipment parameters and features, Сафир5420, serial #10253454. JSC "Zaporizhstal". State calibration results dated 22/06/2011
- /76/ Passport on measuring equipment parameters and features, МЭД, serial #11233. JSC "Zaporizhstal" steelmaking plant. State calibration results dated 16/06/2011
- /77/ Photos – Equipment of natural gas consumption at OHF-1 (ser. # 82721, ser. # 82828, ser. # 91012, ser. # 90225, ser. # 73492, ser. # 73493)
- /78/ Photos – Equipment of natural gas consumption at OHF-2 (ser. # 104922, ser. # 275787)
- /79/ Photos – Equipment of natural gas consumption at OHF-5 (ser. # 3801, ser. # 203102)
- /80/ Information note # 40-1070733 with analysis of factors that influenced fuel consumption at steelmaking plant for the period July 2011 - February 2012 in comparison with the period 2009 - 2010 dated 31/05/2012
- /81/ Information note # 49-1067249 about replacement of gas burners at sinter plant for the period July 2011 - February 2012 dated 24/05/2012
- /82/ Information note # 40-1069372 about replacement of gas burners at sinter plant for the period July 2011 - February 2012 dated 29/05/2012

**Persons interviewed:**

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

- /1/ I. Kholina - Chief of Laboratory of environmental protection at JSC "Zaporizhstal"
- /2/ V. Yarysh - Deputy chief of chief power engineer department at JSC "Zaporizhstal"
- /3/ S. Chernyshov - Deputy chief of furnaces and heat-and-power engineering of Marten shop at JSC "Zaporizhstal"



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- /4/ A. Hrobko – Chief of the bureau of device maintenance, attestation, and metrology at JSC “Zaporizhstal”
- /5/ P. Sidelnikov - Deputy chief of energy equipment of sinter plant at JSC "Zaporizhstal"
- /6/ M. Nechyporuk - Deputy chief of training department at JSC "Zaporizhstal"
- /7/ R. Kazakov - Principal specialist CJSC "NCSF"
- /8/ S. Yefremov – senior foreman of control measuring equipment of Marten shop at JSC "Zaporizhstal"



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## APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL

**Table 1 Check list for verification, according to the JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)**

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
<b>Project approvals by Parties involved</b>				
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	Host Party (i.e., Ukraine) provided Letter of Approval #1604/23/7 dated 22.06.2011 of JI project "Energy efficiency increase in steelmaking and sinter plants JSC "Zaporizhstal", Ukraine" which was issued by State Environmental Investment Agency of Ukraine. Also, Party B provided Letter of Approval #2011JI18 dated 31.05.2011 that was issued by NL Agency Ministry of Economic Affairs, Agriculture and Innovation.	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	Refer to the section 90 of this protocol above.	-	-
<b>Project implementation</b>				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	Implementation of the project activity was realized according to the project implementation schedule described in the project design document. There is one deviation from the registered Monitoring plan that connected to the improvement of monitoring reporting procedure at JSC "Zaporizhstal".	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
93	What is the status of operation of the project during the monitoring period?	<p>Monitoring report indicated the current status of the project activity implementation. Based on provided materials, there is known that all project equipments were operational in the reporting period.</p> <p>As a fact, the replacement of gas burners is implemented stepwise in 2005-2009. The work documentation is elaborated for each aggregate for new gas burners installation in period of installation works. The final replacement of traditional burners in the burner with spray and niche technology is made in 2009. In addition, the detailed implementation schedule of gas burners installation was provided in the Monitoring report.</p> <p>The value of emission reduction achieved for the monitoring period 01/07/2011-29/02/2011 makes 96 645 tonnes CO<sub>2</sub> equivalent and that one estimated in PDD – 60 747 tonnes CO<sub>2</sub> equivalent for the same period.</p> <p><u>Clarification request 01 (CL01)</u>. The operation time of gas burners with spray and niche technology on aggregates of metallurgical works is about one year in steelmaking plant and about five years in sinter plant. Please, clarify whether any gas burners were replaced during the monitoring period 01/07/2011-29/02/2011.</p>	CL01	OK





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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Clarification request 02 (CL02). Please, explain in more details the reason of difference between the value of emission reductions estimated in the PDD and emission reductions stated in the Monitoring report for the monitoring period 01/07/2011-29/02/2011.	CL02	OK
<b>Compliance with monitoring plan</b>				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	The monitoring process at JSC "Zaporizhstal" is carried out in accordance with the revised monitoring plan. Data used for calculation of emissions reduction based on information that confirmed by JSC "Zaporizhstal" documental evidences. <u>Corrective Action Request 01 (CAR01)</u> . Please, check and correct the value of molar fraction of N <sub>2</sub> of natural gas (ID-11.1) for January 2012.	CAR01	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	According to reviewed information, there are taken into account key factors (such as emission factor of the natural gas consumption, etc.), production level, amount of the fuel consumption, fuel quality and other risks associated with the implementation of the project activity that can influence to the baseline and project emission, and emission reduction due to the JI project.	OK	OK
95 (b)	Are data sources used for	Data sources used for calculating emission	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	reductions are clearly identified, reliable and transparent. On site responsible persons register data from the measurement equipments and fixed monitoring data to logbooks, monthly data collected to the technical reports, and prepared special reporting forms as required by internal company standard "Integrated quality system. Monitoring of GHGs emission reductions". Moreover, there is electronic database of monitoring data. All roles and responsibilities are described in details in the Monitoring report.		
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	CO <sub>2</sub> emission factor from natural gas consumption is used for calculation of emissions and emission reductions. This factor is monitored and calculated through the crediting period.	OK	OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner. As a result of documents revision, all data connected with estimation of emission reductions are consistent through the Monitoring report and excel spreadsheets with	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		calculation.		
<b>Applicable to JI SSC projects only</b>				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	Not applicable	OK	OK
<b>Applicable to bundled JI SSC projects only</b>				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	Not applicable	OK	OK
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	Not applicable	OK	OK
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which	Not applicable	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	verifications were already deemed final in the past?			
<b>Revision of monitoring plan</b>				
<b>Applicable only if monitoring plan is revised by project participant</b>				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	There is one deviation from the monitoring plan. The deviation is based on improvement of company standard STP 8.2-13-11 "Integrated quality system. Monitoring of GHGs emission reductions" developed by JSC "Zaporizhstal" representatives to state strict requirements of the JI project monitoring procedure. As a fact, the change concerns the improvement of the GHG monitoring system at JSC "Zaporizhstal". Project participants provided an appropriate justification and description for the proposed revision. Due to standard investigation, it can be concluded that regarded revision does not influence on the calculation of emission reduction. All detail explanation and justification are described in the Monitoring Report for the period 01/07/2011-29/02/2012.	OK	OK
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for	Proposed revision improves the GHG monitoring system at JSC "Zaporizhstal" without any changes of the monitoring procedure of the JI project "Energy efficiency increase in steelmaking and sinter plants JSC "Zaporizhstal", Ukraine" that was determined	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the establishment of monitoring plans?	final for this project.		
<b>Data management</b>				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	Procedures of data collection are implemented in compliance with the approved monitoring plan. Also, STP 8.2-13-11 "Integrated quality system. Monitoring of GHGs emission reductions" was developed at JSC "Zaporizhstal" to state strict requirements of the JI project monitoring procedure. For monitoring there are used measuring equipments, such as scales, gas meters, etc. Monitoring data of the project is monitored in compliance with scheduled frequency approved in the developed monitoring plan and company monitoring standard (i.e., STP 8.2-13-11). The quality control and quality assurance procedures realised by performing of internal audits and checking measures, participation of third parties, and carrying out of procedures of emergencies finding.	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	All monitoring equipment have calibration. It is calibrated with periodic frequency (passport states the calibration frequency for every device) according to the national regulations. During site visit verifiers received and reviewed passports and certificates on		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		calibration of all measurement equipments and found it satisfactory. <u>Corrective Action Request 02 (CAR02).</u> Please, provide the Contract or any other documented evidence that justify cooperation of the JSC "Zaporizhstal" with the third party that perform calibration of JI project measurement equipment. <u>Corrective Action Request 03 (CAR03).</u> Please, provide documented evidences that confirm calibration status of some measurement devices (i.e., measurement equipment such as ser. # 67542, ser. # 67496, ser. # 359, ser. # 77669, ser. # 67501, ser. # 04/1E).	CAR02  CAR03	OK  OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records used for the monitoring are maintained in responsible departments in a traceable manner.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The data collection and management system for the project is in accordance with the revised monitoring plan. Implementation of monitoring system was checked through site visit, and concluded that monitoring system is completely in accordance with the stated monitoring procedure. This fact is also confirmed by the documented evidences.	OK	OK
<b>Verification regarding programs of activities (additional elements for assessment)</b>				
102	Is any JPA that has not been added	Not applicable	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	to the JI PoA not verified?			
103	Is the verification based on the monitoring reports of all JPAs to be verified?	Not applicable	OK	OK
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	Not applicable	OK	OK
104	Does the monitoring period not overlap with previous monitoring periods?	Not applicable	OK	OK
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	Not applicable	OK	OK
<b>Applicable to sample-based approach only</b>				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable,	Not applicable	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	taking into account differences among the characteristics of JPAs, such as: <ul style="list-style-type: none"> <li>- The types of JPAs;</li> <li>- The complexity of the applicable technologies and/or measures used;</li> <li>- The geographical location of each JPA;</li> <li>- The amounts of expected emission reductions of the JPAs being verified;</li> <li>- The number of JPAs for which emission reductions are being verified;</li> <li>- The length of monitoring periods of the JPAs being verified; and</li> <li>- The samples selected for prior verifications, if any?</li> </ul>			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	Not applicable	OK	OK
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE	Not applicable	OK	OK





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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?			
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	Not applicable	OK	OK
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	Not applicable	OK	OK

**Table 2 Resolution of Corrective Action Requests 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	Verification team conclusion
<u>Corrective Action Request 01</u>	Table 1,	The value of molar fraction of N <sub>2</sub> of	Required data were



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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
<u>(CAR01)</u> . Please, check and correct the value of molar fraction of N <sub>2</sub> of natural gas (ID-11.1) for January 2012.	94	natural gas for January 2012 is corrected. The calculation of GHG emission reductions is reviewed.	corrected. Issue is closed.
<u>Corrective Action Request 02 (CAR02)</u> . Please, provide the Contract or any other documented evidence that justify cooperation of the JSC “Zaporizhstal” with the third party that perform calibration of JI project measurement equipment.	Table 1, 101 (b)	Contract between JSC “Zaporizhstal” and SE “Zhaporizhza” (scientific production centre of standardization, metrology and certification) was provided to the verification team.	Based on the document analysis, issue is closed.
<u>Corrective Action Request 03 (CAR03)</u> . Please, provide documented evidences that confirm calibration status of some measurement devices (i.e., measurement equipment such as ser. # 67542, ser. # 67496, ser. # 359, ser. # 77669, ser. # 67501, ser. # 04/1E).	Table 1, 101 (b)	Passports with justification of the calibration status of required equipment were provided.	According to the documented evidences, calibration status of all equipment that mentioned in CAR03 is in order. Issue is closed.
<u>Clarification request 01 (CL01)</u> . The operation time of gas burners with spray and niche technology on aggregates of metallurgical works is about one year in steelmaking plant and about five years in sinter plant. Please, clarify whether any gas	Table 1, 93	The gas burners were replaced in the current monitoring period on steelmaking furnaces. The dates of the burning replacement are provided in the table A.2-2 stated in the section A.2 of the monitoring report version 02.1.	Explanation was provided in the monitoring report as well as documented evidences. Verification team revised the information and found it satisfactory. Issue is closed.



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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
burners were replaced during the monitoring period 01/07/2011-29/02/2011.			
<u>Clarification request 02 (CL02).</u> Please, explain in more details the reason of difference between the value of emission reductions estimated in the PDD and emission reductions stated in the Monitoring report for the monitoring period 01/07/2011-29/02/2011.	Table 1, 93	The more detailed clarification of achieved GHG emission reductions from estimated value is provided in the section D.5 of the monitoring report version 02.1 and confirmed by Reference of Open-hearth plant JSC "Zaporizhstal" dated on 31.05.2012.	Clarification was provided and justified with documented evidence. Based on the explanation, issue is closed.