



VERIFICATION REPORT

CJSC “NATIONAL CARBON SEQUESTRATION FOUNDATION”

VERIFICATION OF THE

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

SECOND PERIODIC
(01/01/2011 – 30/06/2011)

REPORT No. UKRAINE-VER/0327/2011
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 second 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 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, Corrective Actions Requests, Forward Actions Requests (CR, CAR and FAR), 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, or misstatements, and the ERUs issued totalize 56,719 tons of CO₂ equivalents for the monitoring period 01/01/2011 – 30/06/2011.

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/0327/2011	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 Vera Skitina – Team Member, Verifier Olena Manziuk – Team member, Verifier		
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Igor Alekseenko - Technical specialist for PTR		
Work approved by: Flavio Gomes - 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, corrective 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:

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Bureau Veritas Certification Team Leader, Climate Change Verifier



Vera Skitina
Bureau Veritas Certification Climate Change Verifier

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This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

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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 and/or 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 08/08/2011, the Monitoring report version 02.1 dated 01/09/2011, and project as described in the determined PDD.

2.2 Follow-up Interviews

On 22/08/2011 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"> ➤ Organizational structure ➤ Responsibilities and authorities ➤ Training of personnel ➤ Quality management procedures and technology ➤ Implementation of equipment (records) ➤ Metering equipment control ➤ Metering record keeping system, database ➤ Monitoring procedure
CJSC “National Carbon Sequestration Foundation”	<ul style="list-style-type: none"> ➤ Baseline methodology ➤ Monitoring plan ➤ Monitoring report ➤ Deviations from PDD ➤ Emission reduction calculation

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, Corrective Action Requests and Forward 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 two 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 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 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.

At the present monitoring period all devices were installed. As planned, 58 burners with spray and niche technology in sinter and steelmaking plants are in operation. Thus, emission reductions are achieved due to installed burners at steel smelting plant and in sinter plant of JSC “Zaporizhstal”.

According to the documents review, the production level of steelmaking and sinter plants at JSC “Zaporizhstal” is increased during monitoring period (January – June 2011). As a fact, steel production at JSC



“Zaporizhstal” rose by 7.5% (i.e., 1.9 million ton); and sinter production at the sinter plant rose by 6.9% (i.e., 2.6 million ton).

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).

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 CO₂ 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 (01/01/2011 – 30/06/2011) 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 changes are as follows:

1. Frequency of Monitoring report preparation.

According to the revised monitoring plan, 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. Based on the Monitoring Report version 02.2, the monitoring report is to be approved by Technical Director of the JSC "Zaporizhstal" after the report preparation. The function and frequency of other responsible person in the monitoring is not changed. It can be concluded that such changes do not influence on data accuracy and information applicability. This revision improves the Monitoring plan of the JI project.

2. Changes of the responsible department of one type parameters submission.

As per determined changes in the Monitoring plan, 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 8.2-13-10 "Monitoring of GHG emission reductions". As a matter of fact, since January 2011 the data of natural gas consumption for steel production in steel-smelting furnaces in standard fuels units are excluded from the report because of changes in preparation of open-hearth plant's technical report. Therefore, the Central laboratory JSC "Zaporizhstal" has not more the reasons for monitoring parameter recording. The initial data for calculation and formula used for calculation of natural gas consumption



for steel production in steel-smelting furnaces were not changed (i.e., formula (1.1.1) stated in the section B.1.4 of the monitoring report). The procedures of quality control and quality assurance stated in the approved monitoring plan do not require revision. The information about meters used for the monitoring parameters recording and QC/QA procedures is provided in the section B and C of the monitoring report. Thus, this revision has no serious influence on data reliability, and it is appeared because of organization changes at steelmaking plant of JSC “Zaporizhstal”.

All revisions to the monitoring plan were made in accordance with the paragraph D of the „Guidance on criteria for baseline setting and monitoring” (version 02) to improve accuracy of the monitoring of emission reductions and applicability of information collected.

The proposed revision improves the accuracy and/or applicability of information collected compared to the original monitoring plan 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.

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 plant standard STP 8.2-13-10 Integral management system of monitoring of greenhouse gas 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 is mentioned in the section “References” of this report (see the item 76 of section 5 “References”).



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 steel melting 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 monitoring documents.

The data collection and management system for the project is in accordance with the revised monitoring plan. Furthermore, internal audits and checking measures are carried out regularly as was planned.

According to PDD version 02 dated 15/03/2011, emission reductions during the monitoring period 01/01/2011-30/06/2011 were expected to be 44,725 t CO₂ equivalents. According to Monitoring report, emission reductions achieved are 56,719 t CO₂ equivalents. The difference in the emission reductions is explained as follows: deviation of actual emission reductions from estimated in the PDD in January – June 2011 is explained by increase on 7.5% of steel production in JSC “Zaporizhstal” (i.e., 1.9 million t) in comparison to forecasted data and by increase on 6.9% of sinter production (i.e., 2.6 million t). The estimated GHG emission reductions are about 0.024 tCO₂/t steel (table A.4.3-1 of the registered PDD); therefore, the production increase provides also to the GHG emission reductions increase.

The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.

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, CL02).

3.7 Verification regarding programmes of activities (102-110)

Not applicable.



4 VERIFICATION OPINION

Bureau Veritas Certification has performed the second 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 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 and Verification Plan indicated in the final PDD version 02 dated 15/03/2011. 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 02.2 dated 01/09/2011 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. 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, or 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 01/01/2011 to 30/06/2011

Baseline emissions	: 271,148	t CO ₂ equivalents
Project emissions	: 214,429	t CO ₂ equivalents
Emission reductions	: 56,719	t CO ₂ 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 file attached to the monitoring report.



5 REFERENCES

Category 1 Documents:

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

- /1/ PDD of the JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” version 02 dated 15/03/2011
- /2/ Monitoring report for the period 01/01/2011 – 30/06/2011 of JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” version 01.1 dated 08/08/2011
- /3/ Monitoring report for the period 01/01/2011 – 30/06/2011 of JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” version 02.1 dated 01/09/2011
- /4/ Monitoring report for the period 01/01/2011 – 30/06/2011 of JI project “Energy efficiency increase in steelmaking and sinter plants JSC “Zaporizhstal”, Ukraine” version 02.2 dated 01/09/2011
- /5/ Letter of Approval #2011JI18 dated 31/05/2011 issued by NL Agency Ministry of Economic Affairs, Agriculture and Innovation
- /6/ 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/ Report of the air protection for the first quarter of 2011. Form 2TP (air) of OJSC “Zaporizhstal”.
- /2/ Report of the air protection for the second quarter of 2011. Form 2TP (air) of OJSC “Zaporizhstal”.
- /3/ Technical report of sinter plant operation for January 2011, February 2011, March 2011, April 2011, May 2011, and June 2011.
- /4/ Protocol #23-11 of measurement of pollutants composition of emissions by stationary sources dated 21/07/2011 (measurement devices, such as gas analyzer ТЕРМИТ 5000 ser. #05041, laboratory scale ВЛР-200 ser. #852 and other additional devices).
- /5/ Report of gas plant operation for January 2011, February 2011, March 2011, April 2011, May 2011, and June 2011.
- /6/ Logbook of data records of emissions by stationary sources at sinter plant (SMs 1-6)
- /7/ Logbook of data records of emissions by stationary sources at steelmaking plant (OHFs 1, 2, 5, 6, 7, 8, 10, 12)



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- /8/ Technical report of steelmaking plant operation for January 2011, February 2011, March 2011, April 2011, May 2011, and June 2011.
- /9/ Passport #359 of weighbridge type BB-200, ser #359. State calibration dated 06/10/2010
- /10/ Passport #15E on weighing machine (electronic and tensometric device of float weighing of ingots), ser. #04/1E, inv. #10634567. Verification results dated 22.09.2010
- /11/ Passport on measurement equipment parameters and environment features, Диск-250 meter, serial #120994. JSC "Zaporizhstal", Sinter Plant Measurement Equipment Area. Calibration results dated 14/03/2011
- /12/ Passport on measurement equipment parameters and environment features, Диск-250 meter, serial #82670. JSC "Zaporizhstal" Sinter Plant Measurement Equipment Area. Calibration results dated 14/03/2011
- /13/ Passport on measurement equipment parameters and features, ДМ3583, serial #1848, КСД-250, serial #73493. JSC "Zaporizhstal" Open-hearth Plant. Calibration results dated 04/05/2011
- /14/ Passport on measurement equipment parameters and features, ДМ3583, serial #2148, КСД-250, serial #73505. JSC "Zaporizhstal" Open-hearth Plant. Calibration results dated 16/06/2011
- /15/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #2341, КСД-3, serial #223739. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 12/05/2011
- /16/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #4713, КСД-3, serial #224123. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 20/05/2011
- /17/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #4747, КСД-3, serial #163506. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 01/06/2011
- /18/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #4889, КСД-3, serial #262396. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 08/06/2011
- /19/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #11421, КСД-3, serial #264661. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 03/06/2011
- /20/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #20759, КСД-250, serial #364557. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 10/06/2011
- /21/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #39799, КСД-3, serial #104922. JSC



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- "Zaporizhstal" Open-hearth Plant. State calibration results dated 12/05/2011
- /22/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #43637, КСД-3, serial #264663. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 06/06/2011
- /23/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #45042, КСД-3, serial #191554. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 16/05/2011
- /24/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #4899, КСД-3, serial #147465. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 01/06/2011
- /25/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #52357, КСД-3, serial #203102. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 12/05/2011
- /26/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #5609, КСД-3, serial #275787. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 12/05/2011
- /27/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #61757, КСД-250, serial #68574. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 12/05/2011
- /28/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #6218, КСД-3, serial #141191. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 16/06/2011
- /29/ Passport on measurement equipment parameters and features, ДМ3583, serial #9673, КСД-250, serial #73492. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 04/05/2011
- /30/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #81725, КСД-3, serial #264697. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 16/06/2011
- /31/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #83336, КСД-3, serial #233716. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 20/05/2011
- /32/ Passport on measurement equipment parameters and environment features, ДМ3583, serial #86693, КСД-3, serial #176478. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 08/06/2011
- /33/ Passport on measurement equipment parameters and features, ДМ, serial #61899, КСД-250, serial #73494. JSC "Zaporizhstal"



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- Open-hearth Plant. State calibration results dated 10/06/2011
- /34/ Passport on measurement equipment parameters and features, Метран-100ДД, serial #67542. JSC "Zaporizhstal" Gaseous department. State calibration results dated 18/11/2010
 - /35/ Passport on measurement equipment parameters and features, МЭД, serial #11233. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 16/06/2011
 - /36/ Passport on measurement equipment parameters and features, Сафир5420, serial #04691392. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 16/05/2011
 - /37/ Passport on measurement equipment parameters and features, Сафир М-5410, serial #08147118. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 04/05/2011
 - /38/ Passport on measurement equipment parameters and features, Сафир5420, serial #09276441. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 04/05/2011
 - /39/ Passport on measurement equipment parameters and features, Сафир, serial #09311428. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 04/05/2011
 - /40/ Passport on measurement equipment parameters and features, Сафир, serial #09328507. JSC "Zaporizhstal" Open-hearth Plant. State calibration results dated 22/06/2011
 - /41/ Passport on measurement equipment parameters and features, Сафир, serial #09332509. JSC "Zaporizhstal". State calibration results dated 21/06/2011
 - /42/ Passport on measurement equipment parameters and features, Сафир5420, serial #10245836. JSC "Zaporizhstal". State calibration results dated 12/05/2011
 - /43/ Passport on measurement equipment parameters and features, Сафир5420, serial #10251684. JSC "Zaporizhstal". State calibration results dated 04/05/2011
 - /44/ Passport on measurement equipment parameters and features, Сафир5420, serial #10253454. JSC "Zaporizhstal". State calibration results dated 22/06/2011
 - /45/ Measurement equipment calibration certificate #2-0476-10 dated 29/07/2010, Флоутек measuring unit, serial #583. Valid till 29/07/2012
 - /46/ Protocols of measuring of gas and dust flow parameters dated 22/02/2011 (sinter machine 1-4)
 - /47/ Protocols of measuring of gas and dust flow parameters dated 05/08/2011 (OHF#5). Form LOOS-53
 - /48/ Protocols of measuring of gas and dust flow parameters dated 15/04/2011 (OHF#6). Form LOOS-53
 - /49/ Protocols of measuring of gas and dust flow parameters dated 11/03/2011 (OHF#2). Form LOOS-53
 - /50/ Certificates on physic and chemical parameters of natural gas for January 2011, February 2011, March 2011, April 2011, May 2011,



- and June 2011
- /51/ Reporting form #4. Natural gas consumption in sinter plant for January 2011, February 2011, March 2011, April 2011, May 2011, and June 2011
 - /52/ Reporting form #5. Chemical composition and calorie content of natural gas for January 2011, February 2011, March 2011, April 2011, May 2011, and June dated 19/07/2011
 - /53/ Reporting forms #1. Steel production in steelmaking plant for January 2011, February 2011, March 2011, April 2011, May 2011, and June 2011
 - /54/ Reporting forms #2. Sinter production in sinter plant for January 2011, February 2011, March 2011, April 2011, May 2011, and June 2011
 - /55/ Reporting forms #3. Natural gas consumption in steelmaking plant for January 2011, February 2011, March 2011, April 2011, May 2011, and June 2011
 - /56/ Passport of measurement device type Delta 65
 - /57/ Passport of measurement device type ТЕРМИТ 5000
 - /58/ Certificate on calibration #82001/20 of measurement equipment type Delta 65, ser. #288783 dated 18/03/2010. It is valid to 18/03/2011
 - /59/ Certificate on calibration #83002/26 of measurement equipment type Delta 65, ser. #288783 dated 21/03/2011. It is valid to 21/03/2012
 - /60/ Certificate on calibration #82001/19 of measurement equipment type Delta 65, ser. #288782 dated 18/03/2010. It is valid to 18/03/2011
 - /61/ Certificate on calibration #83002/25 of measurement equipment type Delta 65, ser. #288782 dated 21/03/2011. It is valid to 21/03/2012
 - /62/ Certificate on calibration #83002/24 of measurement equipment type Delta 65, ser. #288781 dated 21/03/2011. It is valid to 21/03/2012
 - /63/ Certificate on calibration #82001/17 of measurement equipment type Delta 65, ser. #287963 dated 18/03/2010. It is valid to 18/03/2011
 - /64/ Certificate on calibration #83002/23 of measurement equipment type Delta 65, ser. #287963 dated 21/03/2011. It is valid to 21/03/2012
 - /65/ Certificate on calibration #12-01/ of measurement equipment type ТЕРМИТ 5000, ser. #07084. It is valid to 26/11/2010
 - /66/ Certificate on calibration #12-01/2208 of measurement equipment type ТЕРМИТ 5000, ser. #07084, dated 19/05/2011. It is valid to 20/05/2012
 - /67/ Protocols on staff training.
 - /68/ Passport on measurement equipment parameters and features, Метран-100ДД, serial #67496. JSC "Zaporizhstal" Gaseous



- department. State calibration results dated 18/11/2010
- /69/ Passport on measurement equipment parameters and features, Метран, serial #77669, Диск-250, serial #28146. JSC "Zaporizhstal" Gaseous department. State calibration results dated 18/11/2010
 - /70/ Passport on measurement equipment parameters and features, Метран, serial #67501, Диск-250, serial #64229. JSC "Zaporizhstal" Gaseous department. State calibration results dated 18/11/2010
 - /71/ Attestation certificate #06544-5-1-26/3-ГОМЦ issued by the Laboratory of Environmental Protection to JSC "Zaporizhstal", dated 21/05/2010. It is valid till 21/05/2013

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/ S. Chernyshov - Deputy chief of furnaces and heat-and-power engineering of Marten shop at JSC "Zaporizhstal";
- /2/ P. Sidelnikov - Deputy chief of energy equipment of sinter plant at JSC "Zaporizhstal";
- /3/ R. Zemenkov - Chief of methodology and economic calculation bureau of economic planning department at JSC "Zaporizhstal";
- /4/ V. Yarysh - Deputy chief of chief power engineer department at JSC "Zaporizhstal";
- /5/ I. Holina - Chief of Laboratory of environmental protection at JSC "Zaporizhstal";
- /6/ M. Nechyporuk - Deputy chief of training department at JSC "Zaporizhstal";
- /7/ T. Starodub - Acceptor of sinter plant at JSC "Zaporizhstal";
- /8/ O. Lotenkov - Deputy chief of roughing shop at JSC "Zaporizhstal";
- /9/ S. Pshygodskij - Director of external trade department at JSC "Zaporizhstal";
- /10/ R. Kazakov - Principal specialist CJSC "NCSF".



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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
Project approvals by Parties involved				
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 (i.e., the Netherland) 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.	-	-
Project implementation				
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 are two deviations from the registered Monitoring plan that connected to the structural changes of the 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 01/01/2011-30/06/2011 makes 56,719 t CO₂ equivalent and that one estimated in PDD – 44,725 t CO₂ equivalent.</p> <p><u>Clarification request 01 (CL01)</u>. Please, explain the reason of difference between the value of emission reduction estimated in the PDD and emission reduction stated in the Monitoring report.</p>	CL01	OK
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring	The monitoring process at JSC “Zaporizhstal” is carried out in accordance with the		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	monitoring plan included in the registered PDD version 02 dated 15/03/2011. Data used for calculation of emissions reduction based on information that confirmed by JSC "Zaporizhstal" documents. <u>Corrective Action Request 01 (CAR01)</u> . Formulae 1.2.1 from the Monitoring Report is absent in the Monitoring Plan that was approved in the PDD. Please, make corrections.	CAR01	
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 calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	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	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		roles and responsibilities are described in details in the Monitoring report for the regarded monitoring period.		
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 ₂ 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 reduction are consistent through the Monitoring report and excel spreadsheets with calculation.	OK	OK
Applicable to JI SSC projects only				
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	Not applicable	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitoring period determined?			
Applicable to bundled JI SSC projects only				
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 verifications were already deemed final in the past?	Not applicable	OK	OK
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	There are two deviations from the registered Monitoring Plan. One deviation is connected to the frequency of Monitoring report preparation and signature. Other deviation is based on changes in one type parameter data sources. As a fact, the change concerns the	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>parameter of natural gas consumption for steel production in each steel-smelting furnace.</p> <p>Project participants provided an appropriate justification and description for the proposed revisions. Due to documents investigation, it can be concluded that regarded deviations do not influence on the calculation of emission reduction.</p> <p>All detail explanation and justification are described in the Monitoring Report for the period 01/01/2011-30/06/2011.</p>		
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 the establishment of monitoring plans?	Proposed revisions improve the accuracy and applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans.	OK	OK
Data management				
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 8.2-13-10 "Monitoring of GHG emission reductions" was developed at JSC "Zaporizhstal". For monitoring there are used measuring equipments, such as scales, gas meters, etc.	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>Monitoring data of the project is monitored in compliance with scheduled frequency approved in the developed monitoring plan and monitoring procedure.</p> <p>The quality control and quality assurance procedures realised due to performing of internal audits and checking measures, participation of third parties, and carrying out of procedures of emergencies finding.</p>		
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	<p>All monitoring equipments 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/or certificates on calibration of all measurement equipments. <u>Corrective Action Request 02 (CAR02)</u>. Please, provide previous certificates on calibration of environmental measurement devices, such as Delta 65 and TEPMIT 5000. <u>Clarification request 02 (CL02)</u>. Please, provide in the Monitoring report detailed information of the project measurement devices.</p>	<p>CAR02</p> <p>CL02</p>	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 on site of some devices and in responsible departments in a traceable manner.	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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 approved monitoring plan. Implementation of monitoring system was checked through site visit, and concluded that monitoring system is completely in accordance with the revised monitoring plan. This fact is also confirmed by the documents.	OK	OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	Not applicable	OK	OK
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
Applicable to sample-based approach only				
106	Does the sampling plan prepared by the AIE:	Not applicable	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	<p>(a) Describe its sample selection, taking into account that:</p> <p>(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, taking into account differences among the characteristics of JPAs, such as:</p> <ul style="list-style-type: none"> - The types of JPAs; - The complexity of the applicable technologies and/or measures used; - The geographical location of each JPA; - The amounts of expected emission reductions of the JPAs being verified; - The number of JPAs for which emission reductions are being verified; - The length of monitoring periods of the JPAs being verified; and - The samples selected for prior 			



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	verifications, if any?			
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 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?	Not applicable	OK	OK
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



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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 (CAR01)</u> . Formulae 1.2.1 from the Monitoring Report is absent in the Monitoring Plan that was approved in the PDD. Please, make corrections.	Table 1, 94	The section B.1.4.1. "Formulas used to calculate project emissions" of the monitoring report is corrected according to the approved monitoring plan.	The amendment was made in the Monitoring report. Issue is closed.
<u>Corrective Action Request 02 (CAR02)</u> . Please, provide previous certificates on calibration of environmental measurement devices, such as Delta 65 and TEPMIT 5000.	Table 1, 101 (b)	The calibration certificates of environmental measurement devices (Delta 65, TEPMIT 5000) are attached to the monitoring report.	Necessary documents were provided. Thus, Issue is closed.
<u>Clarification request 01 (CL01)</u> . Please, explain the reason of difference between the value of emission reduction estimated in the PDD and emission reduction stated in the Monitoring report.	Table 1, 93	The difference between the value of emission reduction estimated in the PDD and emission reduction stated in the Monitoring report can be explained through steel and sinter production increase in the current monitoring period. The corresponding information is stated in the section D.5 of the monitoring report.	According to the explanation and documented justification, 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
<u>Clarification request 02 (CL02)</u> . Please, provide in the Monitoring report detailed information of the project measurement devices.	Table 1, 101 (b)	The detailed information of the project measurement devices are provided in the table B.3-1 of the Monitoring report version 02.	Additional information about measurement equipments was provided in the Monitoring report for the period January-June 2011. Issue is closed.