VERIFICATION REPORT
CJSC "NATIONAL CARBON SEQUESTRATION FOUNDATION"

VERIFICATION OF THE
EFFECTIVE UTILIZATION OF THE BLAST-FURNACE GAS AND WASTE HEAT AT THE JSC "ZAPORIZHSTAL", UKRAINE

3rd periodic

for the period 01/01/2011 – 30/06/2011

REPORT NO. UKRAINE-VER/0325/2011

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Date of first issue: 05/09/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CJSC "National Carbon Sequestration Foundation"	Client ref.: Yuriy Fedorov

Summary:
Bureau Veritas Certification has made the 3rd periodic verification for the period from 01 January 2011 to 30 June 2011 of the "Effective Utilization of the Blast-Furnace Gas and Waste Heat at the JSC "Zaporizhstal" Ukraine", ITL project ID UA1000222, the project of CJSC "National Carbon Sequestration Foundation" located in city of Zaporizhzhya, Zaporizhzhya region, Ukraine, and applying the 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, 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 25395 tons of CO2eq for the monitoring period from 01/01/2011 to 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/0325/2011	Subject Group: JI	
Project title: Effective utilization of the blast-furnace gas and waste heat at the JSC "Zaporizhstal", Ukraine		
Work carried out by: Team Leader, Lead Verifier: Oleg Skoblyk Team Member, Verifier: Victoria Legka		
Work reviewed by: Ivan Sokolov – Internal Technical Reviewer		☒ No distribution without permission from the Client or responsible organizational unit
Work approved by: Flavio Gomes – Operational Manager		☐ Limited distribution
Date of this revision: 06/09/2011	Rev. No.: 02	Number of pages: 52 ☐ Unrestricted distribution

Bureau Veritas Certification Holding SAS

Table of Contents *Page*

Abbreviations

AIE	Accredited Independent Entity
BVC	Bureau Veritas Certification Holding SAS
BFG	Blast Furnace Gas
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CHPP	Combined Heat and Power Plant
CL	Clarification Request
CO_2	Carbon Dioxide
DFP	Designated Focal Point
DVM	Determination and Verification Manual
ECS	Evaporation Cooling System
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
FAR	Forward Action Request
GHG	Green House Gas(es)
HU	Heating Unit
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
MP	Monitoring Plan
MR	Monitoring Report
NCSF	CJSC “National Carbon Sequestration Foundation”
NCV	Net Calorific Value
PDD	Project Design Document
UNFCCC	United Nations Framework Convention for Climate Change
WHB	Waste-heat boiler

1 INTRODUCTION

CJSC "National Carbon Sequestration Foundation" has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project "Effective Utilization of the Blast-Furnace Gas and Waste Heat at the JSC "Zaporizhstal" Ukraine" (hereafter called "the project") at the city of Zaporizhzhya, Zaporizhzhya region, 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.

The verification covers the period from the 1st January 2011 to 30th June 2011.

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

Verification scope is defined as an independent and objective review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions. The verification is based on the 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:

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

Victoria Legka
Bureau Veritas Certification Team Member, Climate Change Verifier

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

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” and additional background documents related to the project design, baseline, and monitoring plan, i.e. country Law, Project Design Document (PDD), 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 of 08/08/2011 and version 02.2 of 01/09/2011 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 23/08/2011 Bureau Veritas Certification verification team conducted a visit to the project site (JSC "Zaporizhstal") and performed (on-site) interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of JSC "Zaporizhstal" and CJSC "National Carbon Sequestration Foundation" 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"	Organizational structure Responsibilities and authorities Roles and responsibilities for data collection and processing Installation of equipment Data logging, archiving and reporting Metering equipment control Metering record keeping system, database IT management Training of personnel Quality management procedures and technology Internal audits and check-ups
Consultant: CJSC "National Carbon Sequestration Foundation"	Baseline methodology Monitoring plan Revision to the monitoring plan Monitoring report Deviations from PDD.

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, Corrective 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 9 Corrective Action Requests and 5 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

During previous 2nd periodic verification conducted for the period of 01/01/2010-31/12/2010 by BVC one Forward Action Request was issued:

FAR 01. The value of emission factor for blast furnace gas combustion should be calculated for each monitoring period (monthly/annually) based on actual monitored Net Calorific Value of the blast furnace gas utilized. This should be the parameter that is monitored throughout the crediting period instead of fixed value.

To address this request, project participants introduced the revision to the monitoring plan in respect of the method for determination of the emission factor for blast furnace gas (BFG) combustion. This emission factor is now calculated by the formula (1.2) already available in the original monitoring plan (this formula provides for calculation on CO_2 emission factor from gaseous fuel i combustion) on the basis of the chemical composition of BFG, in particular volume fraction of j-components of BFG. The monitoring of chemical composition of BFG is performed since 01/01/2011 by Bureau of industrial heat energy and fuel and energy recording JSC "Zaporizhstal"; the primary sources of monitoring data are daily protocols of chemical analysis of BFG by each blast furnace provided by Central chemical laboratory of JSC "Zaporizhstal". New monitoring point, ID-3.2 – Volume fraction of j-component of gaseous fuel (BFG), is added to the principle scheme of monitoring points' location.

The present revision to the monitoring plan was positively determined in course of the current verification (refer to the Section 3.5.Revision of monitoring plan of this verification report).

Hence, FAR 01 has been satisfactorily resolved.

3.2 Project approval by Parties involved (90-91)

Written project approval by Ukraine, Host party, (Letter of Approval of National Environmental Investment Agency of Ukraine No 2253/23/7, issued on 27/12/2010) and Switzerland, the other Party involved, (Letter of approval for a project under article 6 of the Kyoto Protocol (JI) of the Federal Office for the Environment (FOEN) of Switzerland No J294-0485, issued on 25/11/2010) have been issued by the DFP of those Parties.

The abovementioned written approvals are unconditional.

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

3.3 Project implementation (92-93)

The project which is being implemented at the JSC “Zaporizhstal” is aimed at effective utilization of the blast furnace gas by means of construction of the steam boiler and the turbogenerator with the capacity of 35 MW and effective use of the waste heat due to the reconstruction of the heat networks supplying heat to the customers of Zaporizhzhya city.

To utilize the redundant blast furnace gas at the CHPP of JSC “Zaporizhstal” the following equipment was installed: the steam boiler E-120/150-3,2-390 DKGM with the capacity up to 150 t of steam per hour, cogeneration steam turbine ST-35-2,9/0,8/0,12 with two adjustable steam extractions, with the nominal capacity of 35 MW with the rotating frequency of 50 s-1 (3,000 rot/min) which is designed to directly drive the alternating-current generator of the type TA-35-2MU3.

To utilize the waste heat the reconstruction of the heat networks to supply the heat power to the consumers was performed.
The reconstruction of the heat networks included:
− dismantling of the existing pipeline 2Du700;
− setting up the unit to cut in the heat networks of the works;
− construction of two new in-plant piped routes of the heating pipeline (2Du600) 1,4 km long from the unit of cutting in the heat networks of the works to the thermal camera TC P9;
− heat insulation of the pipeline with the polyurethane polycylinders covered with the galvanized steel;
− setting up the unit to cut in the heat networks of the camera TC P9;
− setting up the unit of the commercial record of the supplied heat power.

The project was implemented in accordance with the implementation schedule presented in determined PDD ver.04 of 01/03/2010.

The main stages of project implementation are given below.

Subproject “Blast furnace gas utilization”

The decision to implement the project on installation of the steam boiler with the capacity of up to 150 t of steam per hour and the installation of the turbogenerator with the capacity of 35 MW to utilize the blast-furnace gas was taken in 2004. The project documentation was elaborated in 2004-2005 (Technical and economic assessment, state agency “Ukrgipromez” (DT 336456)). The business plan of the project on the installation of the turbogenerator in the CHPP of the JSC “Zaporizhstal” was elaborated by the state agency “Ukrgipromez” in 2007 (DT 348508). The construction took place during the period from 2005 to 2007. The commissioning took place in February 2008.

Subproject "Waste heat utilization"

The decision on starting the implementation of the project was taken in 2003. The elaboration of the project documentation was done in 2003. (The working project "Reconstruction of the heat networks from the heat and steam-air station to the thermal camera ТК П9", state agency "Giproprom", 2003. (DT 340020)). The construction took place during 2004-2005. The city of Zaporizhzhya began to receive the heat power from JSC "Zaporizhstal" starting from June 2005.

During the monitoring period of 01/01/2011-30/06/2011 the project was fully operational. The blast-furnace gas was utilized during the whole period from 01/01/2011 to 30/06/2011; the waste heat was utilized for heat supply to the consumers of the city of Zaporizhzhya starting from 20/04/2011 till 30/06/2011 (heat power supply to the consumers of Zaporizhzhya city is seasonal and usually lasts from April to October).

The identified areas of concern as to the project implementation, project participants response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR 02).

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

The monitoring occurred in accordance with the PDD regarding which the determination has been deemed final and revisions of the monitoring plan presented in the Monitoring Report for the current monitoring period.

For calculating the emission reductions, key factors, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions, such as appropriately calibrated measuring equipment, certificates of physical and chemical characteristics of natural gas received from gas supplier, national officially approved data on the emission factor for Ukrainian power grid, reference materials, enterprise's technical reports, IPCC guidelines are clearly identified, reliable and transparent.

Emission factors, including default emission factors, are 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.

The identified areas of concern as to the compliance of the monitoring plan with the monitoring methodology, project participants response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR 03, CL 01).

3.5 Revision of monitoring plan (99-100)

In course of the first monitoring period of 2008-2009 the original monitoring plan in the determined PDD ver.02 of 01/03/2010 was revised by the project participants; the revision related to the inclusion of amount of blast furnace gas utilized in the calculation of GHG emission under the project and baseline. The appropriate justification of the revision was provided: in accordance with the approach to GHG emissions monitoring provided in the section D.1. of the determined PDD, combustion of blast furnace gas was excluded from the consideration, as the total volume of the produced blast furnace gas does not depend on the CHPP operation (i.e., does not depend on the project and baseline scenarios) and all the blast furnace gas is combusted by the consumers or flared. The volume of combusted gas does not depend upon electricity generation in CHPP. This approach has no impact on the volume of emission reductions achieved by the project implementation, but it does not reflect the actual emissions from the use of blast furnace gas for the project and baseline scenarios. In this regard, to ensure transparency, completeness and accuracy of data on GHG emissions under the project and baseline scenario, blast furnace gas was included in the calculation of emissions. The revision was described and justified in the 2008-2009 Monitoring Report ver.04 of 28/12/2010 and obtained positive determination conclusion in course of the 1st periodic verification under the project (the determination of revision and respective conclusion is presented in the Verification report No. UKRAINE/0134/2010, rev.02 of 28/12/2010). The description of the revision is also presented in Monitoring Report for the considered monitoring period of 01/01/2011-30/06/2011.

During the current (3rd periodic) verification project participants submitted for determination another revision of the approved monitoring plan, description and justification of which were provided in the current Monitoring Report for the period 01/01/2011-30/06/2011. Introduced changes are as follows:

- The emission factor for blast furnace gas combustion, which was previously the fixed value, now is calculated for each monitoring period. This modification was introduced addressing the FAR 01 issued during 2nd periodic verification for 2010 monitoring period (FAR 01: "The value of emission factor for blast furnace gas combustion should be calculated for each monitoring period (monthly/annually) based on actual monitored Net Calorific Value of

blast furnace gas utilized. This should be the parameter that is monitored throughout the crediting period instead of fixed value". For further details refer to the Verification report No. UKRAINE/0204/2010, rev.01 of 23/02/2011). This emission factor is calculated by the formula (1.2) already available in the original monitoring plan (this formula provides for calculation on CO_2 emission factor from gaseous fuel i combustion) on the basis of the chemical composition of blast furnace gas, in particular volume fraction of j-components of blast furnace gas. The monitoring of chemical composition of blast furnace gas is performed since 01/01/2011 by Bureau of industrial heat energy and fuel and energy recording JSC "Zaporizhstal"; the primary sources of monitoring data are daily protocols of chemical analysis of blast furnace gas by each blast furnace provided by Central chemical laboratory of JSC "Zaporizhstal". New monitoring point, ID-3.2 – Volume fraction of j-component of gaseous fuel (blast furnace gas), is added to the principle scheme of monitoring points' location.

The mentioned modification improves accuracy of the emission factor for blast furnace gas combustion and provides for using of up-to-date data in the calculation of emission reduction.

- The value of CO_2 emission factor during the electric power generation supplied by the power grid of Ukraine for the projects consuming electric power ($EF_{CO2,ELEC,grid,y}$) was revised according to data recently published by National Environmental Investment Agency of Ukraine (Ukrainian DFP) in the Order #75 of National Environmental Investment Agency of Ukraine dated on 12/05/2011. The electricity produced in the CHPP JSC "Zaporizhstal" (6.3 kV) replaces the electricity consumption from the power grid with the corresponding voltage (6.3 kV). Therefore the electricity consumers at JSC "Zaporizhstal" in the project boundaries correspond to the second class of electricity consumers (voltage less than 27.5 kV in the point of electricity sale) according to the Order #1052 of National committee of electric energy regulation in Ukraine dated on 13/08/1998. Therefore the value of parameter ($EF_{CO2,ELEC,grid,y}$) determined for monitoring in 2011 is 1.227 tCO2/MWh. The value of the parameter ($EF_{CO2,ELEC,grid,y}$) will be revised in 2012 based on corresponding recommendation of National Environmental Investment Agency of Ukraine.

This change is seemed to be reasonable as these data are national officially approved data for Ukrainian power grid published in May 2011, and, thus, are more accurate and up-to-date than the previous data applied in the PDD.

- The frequency of the monitoring report's approval by the Technical director of JSC "Zaporizhstal" was changed from annual to the frequency of monitoring report preparation. This modification was

introduced due to the fact that the current monitoring period is shorter that 1 year, so in order to provide possibility for the verification of achieved emission reduction for the various periods this minor change was done.

- The naming of gas conditions of 293 K, 101.3 kPa was changed from “normal” used in the PDD and previous monitoring reports to “standard” according to the Ukrainian regulations. This is a minor correction introduced to ensure compliance with the host Party regulation.

Two last changes have mostly a specifying nature and provide for consistency of the monitoring plan.

The detailed description and appropriate justification of all changes are provided in the Monitoring Report version 02.2 of 01/09/2011.

The Management and Operational Systems are eligible for reliable project monitoring according to the revised monitoring plan.

The proposed revision improves 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.

The identified areas of concern as to the revision of monitoring plan, project participants response and BVC’s conclusion are described in Appendix A, Table 2 (refer to CAR 05, CAR 06).

3.6 Data management (101)

The data and their sources, provided in monitoring report, are clearly identified, reliable and transparent.

The implementation of data collection procedures is in accordance with the PDD and revisions to monitoring plan, including the quality control and quality assurance procedures.
In monitoring of GHGs emission reductions under the project the following departments of JSC “Zaporizhstal” are involved:

– Laboratory of environment protection;
– Production and technology department of CHPP (PTD of CHPP);
– Bureau of industrial heat energy and fuel and energy recording (Bureau of IHE and FER);
– Control equipment and automatization of CHPP (CEA of CHPP);
– Control equipment and automatization of gaseous department (CEA of gaseous department);
– Electricity distribution plant of CHPP (EDP of CHPP);
– Fuel oil plant;

– Central chemical laboratory of Central laboratory JSC “Zaporizhstal”.

The Scheme of monitoring data collection, delivery and processing is presented in the section B.2 of the Monitoring Report. The description of functions, roles and responsible personnel per structural units involved in the GHG emissions monitoring is provided in sufficient details in the table B.2-1 of the Monitoring Report.

The monitoring as well as quality assurance and quality control procedures are determined by the Standard of JSC “Zaporizhstal” STP 8.2-13-10 “Monitoring of GHG emission reductions” introduced on 05/03/2010 and other respective internal documents.

The function of the monitoring equipment, including its calibration status, is in order. The measurement equipment used for project monitoring is serviced, calibrated and maintained in accordance with the original manufacturer’s instructions, industry standards and internal procedures; relevant records are kept as required. As to the internal procedures, the calibration and verification are regulated by internal standards of JSC “Zaporizhstal”, such as STP 7.6-01-03 “Measurement assurance. General provisions”, STP 7.6-07-03 “Organization and order of meters calibration and verification”.

The evidence and records used for the monitoring are maintained in a traceable manner. All necessary information for monitoring of GHGs emission reductions are stored in paper and electronic formats and will be saved till the end of the crediting period and for two years after the last operation with ERUs from the project. The procedures of monitoring data archiving and responsible person are determined by STP 8.2-13-10 “Monitoring of GHG emission reductions” and other internal documents of JSC “Zaporizhstal”. The description of data processing and storage is described in the section B.2 of the Monitoring Report.

The data collection and management system for the project is in accordance with the PDD and revisions of the monitoring plan. The management and operational system supporting GHG emission monitoring is a part of the company’s Integrated Quality, Health Safety and Environmental Management System certified against the requirements of ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 international standards.

The Monitoring Report provides sufficient information on the assigning roles, responsibilities and authorities for implementation and maintenance of monitoring procedures including control of data. The verification team confirms effectiveness of the existing management and operational systems and found them eligible for reliable project monitoring.

The identified areas of concern as to the data management, project participants response and BVC’s conclusion are described in Appendix A, Table 2 (refer to CAR 07, CAR 08, CAR 09, CL 03, CL 04, CL 05).

3.7 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 3rd periodic verification for the period from 01/01/2011 to 30/06/2011 of the "Effective Utilization of the Blast-Furnace Gas and Waste Heat at the JSC "Zaporizhstal" Ukraine" Project 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 the CJSC "National Carbon Sequestration Foundation" (NCSF) 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 04 and revision of the monitoring plan. 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, for the reporting period from 01/01/2011 to 30/06/2011 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, 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	: 215794	t CO_2 equivalents.
Project emissions	: 190399	t CO_2 equivalents.
Emission Reductions	: 25395	t CO_2 equivalents.

5 REFERENCES

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

/1/ Project Design Document of the project "Effective Utilization of the Blast-Furnace Gas and Waste Heat at the JSC "Zaporizhstal" Ukraine", version 04 dated 01/03/2010
/2/ Monitoring Report for the period from 01/01/2011 till 30/06/2011 version 01.1 dated 08/08/2011
/3/ Monitoring Report for the period from 01/01/2011 till 30/06/2011 version 02.2 dated 01/09/2011
/4/ Calculation of Emission Reductions – excel file "2011-07-18-MONITORING-WASTE_ENERGY-2011-1-ver_01.xls", ver. 01
/5/ Calculation of Emission Reductions – excel file "2011-09-01-MONITORING-WASTE_ENERGY-2011-1-ver_02.2.xls",ver. 02.2
/6/ Verification Report by Bureau Veritas Certification Holding SAS No. UKRAINE/0134/2010 "Effective Utilization of the Blast-Furnace Gas and Waste Heat at the JSC "Zaporizhstal", Ukraine", rev.02 dated 28/12/2010
/7/ Verification Report by Bureau Veritas Certification Holding SAS No. UKRAINE/0204/2010 "Effective Utilization of the Blast-Furnace Gas and Waste Heat at the JSC "Zaporizhstal", Ukraine", rev.01 dated 23/02/2011
/8/ Letter of Approval from National Environmental Investment Agency of Ukraine ref.No 2253/23/7, issued on 27/12/2010
/9/ Letter of approval for a project under article 6 of the Kyoto Protocol (JI) of the Federal Office for the Environment (FOEN) of Switzerland ref.No J294-0485, issued on 25/11/2010

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

/1/ Guidance on Criteria for Baseline Setting and Monitoring, version 02, JISC.
/2/ Order of the National Environmental Investment Agency of Ukraine (NEIA) № 75 of 12/05/2011 on approval of specific carbon dioxide emission indicators for 2011
/3/ Order #1052 of National committee of electric energy regulation in Ukraine dated on 13/08/1998
/4/ Passport #137 dated 06/08/2010 on Elster power meter type EA05RALX-B-4, serial #01103395
/5/ Acceptance certificate dated 21/02/2007 on Elster power meter

type EA05RALX-B-4, serial #01152406

/6/ Passport dated 05/03/2008 on temperature transducer СПТ 961, serial #8372 (second meter)
/7/ Passport dated 28/04/2005 on temperature transducer type TSP 0879, serial #144
/8/ Passport dated 28/04/2005 on temperature transducer TSP 0879, serial #145
/9/ Calibration certificate dated 16/11/2004 on flow-meter УРСВ 022М-002ТП, serial #404033
/10/ Calibration certificate dated 16/11/2004 on flow-meter УРСВ 022М-002ТП, serial #404034
/11/ Report on air protection for the 1st quarter 2011 (2ТП form (air))
/12/ Report on air protection for the 2nd quarter 2011 (2ТП form (air))
/13/ Passport dated 25/11/2008 on flow sensor type ANNUBAR 485, serial #0049868
/14/ Passport dated 25/11/2008 on flow meter type Метран 350 Р, serial #8399794 (second meter)
/15/ Passport dated 27/07/2007 on flow pressure type Метран-100 ДИ 1151, serial #68348
/16/ Passport dated 27/07/2007 on flow pressure type Метран-100 ДИ 1151, serial #68352
/17/ Passport dated 27/07/2007 on pressure sensor type Метран-100 ДИ 1151, serial #68353
/18/ Passport dated 27/07/2007 on pressure sensor type Метран-100 ДИ 1151, serial #333050
/19/ Passport dated 27/07/2007 on pressure sensor type Метран-100 ДИ 1171, serial #195834
/20/ Passport dated 27/07/2007 on pressure sensor type Метран-100 ДИ 1171, serial #195836
/21/ Passport dated 27/09/2007 on pressure sensor type Сафир-М 5040, serial #04907731
/22/ Passport dated 27/09/2007 on pressure sensor type Сафир-М 5050, serial #04833871
/23/ Passport dated 27/09/2007 on pressure sensor type Сафир-М 5050, serial #04839873
/24/ Passport dated 27/09/2007 on pressure sensor type Сафир-М 5050, serial #04845872
/25/ Passport dated 27/07/2007 on pressure sensor type Сафир-М 5420, serial #04046733
/26/ Passport dated 27/07/2007 on pressure sensor type Сафир-М 5440, serial #04019732
/27/ Passport dated 27/07/2007 on flow sensor type Сафир-М 5450, serial #04015735
/28/ Passport dated 27/07/2007 on flow sensor type Сафир-М 5450, serial #04025734
/29/ Passport dated 27/07/2007 on flow sensor type Сафир-М 5450,

serial #04811730
/30/ Passport dated 27/07/2007 on flow sensor type Сафир-М 5450, serial #04975729
/31/ Passport dated 27/07/2007 on flow sensor type Сафир-М 5420, serial #05745909
/32/ Passport dated 27/07/2007 on temperature transducer type ТСП-1088, serial #585
/33/ Passport dated 27/07/2007 on temperature transducer type ТСП-1088, serial #587
/34/ Passport dated 27/07/2007 on temperature transducer type ТСП-1088, serial #589
/35/ Passport dated 27/07/2007 on temperature transducer type ТСП-1088, serial #590
/36/ Passport dated 27/07/2007 on temperature transducer type ТСП-1088, serial #594
/37/ Passport dated 27/07/2007 on temperature transducer type ТСП-1088, serial #634
/38/ Passport dated 27/07/2007 on temperature transducer type ТСП-1088, serial #1730
/39/ Passport dated 01/10/2010 on temperature transducer type ТСП, serial #15/612
/40/ Passport #15/418 dated 13/02/2007 on flow sensor type ДМ 3583, serial #2537
/41/ Passport #15/418 dated 13/02/2007 on flow sensor type КСД 3, serial #176547 (second meter)
/42/ Passport #15/414 dated 13/02/2007 on flow sensor type ДМ 3583, serial #4733
/43/ Passport #15/414 dated 13/02/2007 on flow sensor type КСД 3, serial #195023 (second meter)
/44/ Passport dated 15/02/2008 on flow sensor type ДМ 3583, serial #27546
/45/ Passport dated 15/02/2008 on flow sensor type КСД 3, serial #176453 (second meter)
/46/ Passport #15/415 dated 15/02/2008 on flow sensor type ДМ 36442, serial #36442
/47/ Passport #15/415 dated 15/02/2008 on flow sensor type КСД 3, serial #235456 (second meter)
/48/ Passport #15/426 dated 13/02/2007 on flow sensor type ДМ 81135, serial #81135
/49/ Passport #15/426 dated 13/02/2007 on flow sensor type КСД 3, serial #157922 (second meter)
/50/ Passport dated 30/05/2005 on pressure sensor type Метран 100 ДИ-1151, serial #68357
/51/ Passport dated 30/05/2005 on pressure sensor type Диск 250, serial #80875 (second meter)
/52/ Passport dated 15/02/2007 on manometer type Метран 100 ДИ-1151, serial #21612

/53/ Passport dated 15/02/2007 on manometer type КСУ-3, serial #978764 (second meter)
/54/ Passport #15/411 dated 04/03/2005 on temperature transducer type ТХА, serial #15/610
/55/ Passport #15/411 dated 04/03/2005 on temperature transducer type КСП-3, serial #1001793 (second meter)
/56/ Passport #15/333 dated 13/02/2005 on temperature transducer type ТХК, serial #15/609
/57/ Passport #15/333 dated 13/02/2005 on temperature transducer type Диск-250, serial #19910 (second meter)
/58/ Passport dated 04/03/2005 on transducer type ТХК, serial #15/611
/59/ Passport dated 04/03/2005 on transducer type ПЦ-12р, serial #713 (second meter)
/60/ Passport #15/71 dated 04/01/2007 on flow sensor type ДМ, serial #84898 (CHPP #1, boiler #1)
/61/ Passport #15/71 dated 04/01/2007 on flow sensor type КСД-3, serial #84898 (second meter) (CHPP #1, boiler #1)
/62/ Passport #15/72 dated 05/01/2007 on pressure sensor type Метран55-ДИ, serial #248850 (CHPP #1, boiler #1)
/63/ Passport #15/72 dated 05/01/2007 on pressure sensor type КСУ-3, serial #64945 (second meter) (CHPP #1, boiler #1)
/64/ Passport #15/542 dated 01/03/2005 on temperature transducer type ТХА, serial #15/607 (CHPP #1, boiler #1)
/65/ Passport #15/542 dated 01/03/2005 on temperature transducer type КСП -3, serial #926028 (second meter) (CHPP #1, boiler #1)
/66/ Passport dated 05/01/2008 on flow sensor type ДМ3583М, serial #19883 (CHPP #1, boiler #2)
/67/ Passport dated 05/01/2008 on flow sensor type КСД-3, serial #176438 (second meter) (CHPP #1, boiler #2)
/68/ Passport #15/101 dated 11/01/2004 on pressure sensor type Метран55-ДИ-516, serial #248851 (CHPP #1, boiler #2)
/69/ Passport #15/101 dated 11/01/2004 on pressure sensor type КСУ-3, serial #345873 (second meter) (CHPP #1, boiler #2)
/70/ Passport #15/89 dated 19/01/2005 on temperature transducer type ТХА, serial #15/606 (CHPP #1, boiler #2)
/71/ Passport #15/89 dated 19/01/2005 on temperature transducer type КСП -3, serial #936296 (second meter) (CHPP #1, boiler #2)
/72/ Passport #15/101 dated 11/01/2004 on pressure sensor type МЭД, serial #31842 (CHPP #1, boiler #2)
/73/ Passport #15/101 dated 11/01/2004 on pressure sensor type КСД-3, serial #296720 (second meter) (CHPP #1, boiler #2)
/74/ Passport dated 19/06/2007 on pressure sensor type Метран 100ДД-1440, serial #235857 (CHPP #2, boiler #3)
/75/ Passport dated 18/06/2007 on pressure sensor type Метран 100ДИ-1161, serial #234452 (CHPP #2, boiler #3)
/76/ Passport dated 15/06/2007 on pressure sensor type Метран 100ДИ-1161, serial #234453 (CHPP #2, boiler #3)

/77/ Passport dated 13/06/2007 on flow sensor type Метран 1440, serial #235860 (CHPP #2, boiler #3)
/78/ Passport dated 16/06/2007 on temperature calculator type СПТ 961, serial #10912 (second meter) (CHPP #2, boiler #3)
/79/ Passport dated 16/06/2007 on temperature calculator type СПТ 961, serial #10919 (second meter) (CHPP #2, boiler #3)
/80/ Passport dated 04/03/2008 on temperature transducer type ТХК-2088, serial #15/563 (CHPP #2, boiler #3)
/81/ Passport dated 04/03/2008 on temperature transducer type ТХК-2088, serial #15/564 (CHPP #2, boiler #3)
/82/ Passport #15/104 dated 12/01/2005 on flow sensor type ДМ, serial #2520 (CHPP #2, boiler #4)
/83/ Passport #15/104 dated 12/01/2005 on flow sensor type КСД-3, serial #77446 (second meter) (CHPP #2, boiler #4)
/84/ Passport #15/105 dated 11/01/2007 on flow sensor type ДМ, serial #7216 (CHPP #2, boiler #4)
/85/ Passport #15/105 dated 11/01/2007 on flow sensor type КСД-3, serial #195031 (second meter) (CHPP #2, boiler #4)
/86/ Passport #15-495 dated 18/01/2003 on manometer type МТП-160, serial #2299175 (CHPP #2, boiler #4)
/87/ Passport dated 20/01/2011 on manometer type МТП-160, serial #2299175 (CHPP #2, boiler #4)
/88/ Passport dated 03/05/2006 on temperature transducer type ТХК, serial #15/605 (CHPP #2, boiler #4)
/89/ Passport dated 03/05/2006 on temperature transducer type Диск-250, serial #91021 (second meter) (CHPP #2, boiler #4)
/90/ Passport #15/138 dated 24/01/2005 on flow sensor type ДМ, serial #28207 (CHPP #3, boiler #5)
/91/ Passport #15/138 dated 24/01/2005 on flow sensor type КСД-3, serial #191706 (second meter) (CHPP #3, boiler #5)
/92/ Passport #15/139 dated 24/01/2005 on flow sensor type ДМ, serial #81152 (CHPP #3, boiler #5)
/93/ Passport #15/139 dated 24/01/2005 on flow sensor type КСД-3, serial #202647 (second meter) (CHPP #3, boiler #5)
/94/ Passport #15/153 dated 19/01/2005 on pressure sensor type Метран55-ДИ-516, serial #77486 (CHPP #3, boiler #5)
/95/ Passport #15/153 dated 19/01/2005 on pressure sensor type Диск-250, serial #23632 (second meter) (CHPP #3, boiler #5)
/96/ Passport dated 02/03/2005 on temperature transducer type ТХА, serial #15/604 (CHPP #3, boiler #5)
/97/ Passport dated 02/03/2005 on temperature transducer type КСП - 3, serial #936152 (second meter) (CHPP #3, boiler #5)
/98/ Passport dated 28/02/2005 on flow sensor type ДМ3583, serial #9380 (CHPP #3, boiler #7)
/99/ Passport dated 28/02/2005 on flow sensor type КСД-3, serial #235438 (second meter) (CHPP #3, boiler #7)
/100/ Passport dated 28/02/2005 on flow sensor type ДМ3583, serial

#68585 (CHPP #3, boiler #7)

/101/ Passport dated 28/02/2005 on flow sensor type ДМ3583, serial #68585 (CHPP #3, boiler #7)

/102/ Passport dated 28/02/2005 on flow sensor type КСД-3, serial #235438 (second meter) (CHPP #3, boiler #7)

/103/ Passport #15/209 dated 25/01/2007 on pressure sensor type Метран55-ДИ-516, serial #248849 (CHPP #3, boiler #7)

/104/ Passport #15/209 dated 25/01/2007 on pressure sensor type КСУ -3, serial #129988 (second meter) (CHPP #3, boiler #7)

/105/ Passport #15/209 dated 25/01/2007 on pressure sensor type МП-IV, serial #1365 (CHPP #3, boiler #7)

/106/ Passport #15/209 dated 25/01/2007 on pressure sensor type КСУ-3, serial #129988 (second meter) (CHPP #3, boiler #7)

/107/ Passport #15/541 dated 02/03/2005 on temperature transducer type ТХК, serial #15/600 (CHPP #3, boiler #7)

/108/ Passport #15/541 dated 03/2005 on temperature transducer type КСП -3, serial #971148 (second meter) (CHPP #3, boiler #7)

/109/ Passport #15/188 dated 12/10/2004 on flow sensor type ДМ, serial #15/602 (CHPP #4, boiler #6)

/110/ Passport #15/188 dated 12/10/2004 on flow sensor type КСД-3, serial #203327 (second meter) (CHPP #4, boiler #6)

/111/ Passport #15/204 dated 12/01/2005 on flow sensor type ДМ, serial #15/603 (CHPP #4, boiler #6)

/112/ Passport #15/204 dated 12/01/2005 on flow sensor type КСД-3, serial #203081 (second meter) (CHPP #4, boiler #6)

/113/ Passport #15/205 dated 27/01/2007 on pressure sensor type Метран 43Ф-ДД3196-01, serial #80082 (CHPP #4, boiler #6)

/114/ Passport #15/205 dated 27/01/2007 on pressure sensor type Диск-250, serial #82711 (second meter) (CHPP #4, boiler #6)

/115/ Passport #15/181 dated 21/10/2004 on pressure sensor type Терм XX, serial #15/601 (CHPP #4, boiler #6)

/116/ Passport #15/181 dated 21/10/2004 on pressure sensor type ЖИЗ, serial #957092 (second meter) (CHPP #4, boiler #6)

/117/ Passport dated 07/2007 on pressure sensor type Метран 100 EX ДД, serial #338371

/118/ Passport dated 07/2007 on pressure sensor type Метран 100 EX ДД, serial #367074

/119/ Passport dated 07/2007 on corrector type СПГ-762, serial #1337

/120/ Passport dated 07/2007 on temperature transducer type ТСМ 1088, serial #16/58

/121/ Passport #15/150 dated 12/05/2004 on flow sensor type SDC 900 DP, serial #8739928

/122/ Passport dated 16/02/2011 on pressure sensor type Метран 100-ДА, serial #289626

/123/ Passport #15/151 dated 30/07/2004 on pressure sensor type МИДА-ДА, serial #02409006

/124/ Passport #15/148 dated 26/02/2007 on corrector type СПГ-762,

serial #0392 (second meter)

/125/ Passport #15/153 dated 07/03/2006 on temperature transducer type ТСМ ГР100М, serial #15-100

/126/ Passport #15/137 dated 18/01/2007 on pressure sensor type Метран-100ДИ, serial #68873

/127/ Passport #15/137 dated 18/01/2007 on pressure sensor type Диск 250, serial #23740 (second meter)

/128/ Passport dated 20/02/2008 on pressure sensor type Сафир, serial #06368611

/129/ Passport dated 20/02/2008 on pressure sensor type Диск 250, serial #35667 (second meter)

/130/ Passport #15/88 dated 19/01/2005 on temperature transducer type ТХК, serial #15/608

/131/ Passport #15/88 dated 19/01/2005 on temperature transducer type КСП-3, serial #410917 (second meter)

/132/ Passport on measuring staff type Метрошток-3,3, serial #18987

/133/ Passport #145 dated 06/08/2010 on power meter type EA05RL-B-4, serial #01103134

/134/ Passport #144 dated 06/08/2010 on power meter type EA05RL-B-4, serial #01103140

/135/ Passport #139 dated 06/08/2010 on power meter type EA05RL-B-4, serial #01103145

/136/ Passport #140 dated 06/08/2010 on power meter type EA05RL-B-4, serial #01103216

/137/ Passport #138 dated 06/08/2010 on power meter type EA05RL-B-4, serial #01103254

/138/ Passport #142 dated 06/08/2010 on power meter type EA05RL-B-4, serial #01103262

/139/ Passport #143 dated 06/08/2010 on power meter type EA05RL-B-4, serial #01103264

/140/ Passport #141 dated 06/08/2010 on power meter type EA05RL-B-4, serial #01103327

/141/ Passport #4668 on amperemeter type Э365-1, serial #85361086

/142/ Passport #4665 on amperemeter type Э365-1

/143/ Passport #4664 on amperemeter type Э365-1 (new)

/144/ Passport #819 on amperemeter type Э365-1, serial #06746712

/145/ Passport #4664 on amperemeter type Э365-1 (old)

/146/ Passport #1863 on amperemeter type Э365-1, serial #034565 (old)

/147/ Passport #4670 on amperemeter type Э365.1-1, serial #044961 (new)

/148/ Passport #4670 on amperemeter type Э365.1-1, serial #044961 (old)

/149/ Passport #1863 on amperemeter type Э365.1-1, serial #034565 (new)

/150/ Passport #7035 on amperemeter type Э365-1

/151/ Passport #7412 on amperemeter type Э365-1

/152/ Passport #7027 on amperemeter type Э365-1

/153/ Passport #4121 on amperemeter type Э365-1, serial #89812388
/154/ Passport #4120 on amperemeter type Э365-1, serial #15/03/8
/155/ Passport #173 on amperemeter type Э377, serial #015931
/156/ Passport #174 on amperemeter type Э377, serial #015799
/157/ Passport #157 on amperemeter type Э377, serial #227120
/158/ Passport #584 on amperemeter type Э377, serial #266346
/159/ Passport #5651 on amperemeter type Э378, serial #493603
/160/ Passport #5059 on amperemeter type Э378, serial #761384
/161/ Passport #3854 on amperemeter type Э378, serial #000744
/162/ Passport #1819 on amperemeter type Э378, serial #289282
/163/ Passport #8854 on amperemeter type Э378, serial #136022
/164/ Passport #8855 on amperemeter type Э378, serial #355080
/165/ Passport #6484 on amperemeter type Э378, serial #246305
/166/ Passport #7412 on amperemeter type Э378, serial #034476 (new)
/167/ Passport #4425 on amperemeter type Э378, serial #034476 (old)
/168/ Passport #8857 on amperemeter type Э378, serial #632551
/169/ Passport #8856 on amperemeter type Э378, serial #632352
/170/ Passport #6760 on amperemeter type Э378, serial #539695
/171/ Passport #1865 on amperemeter type Э378, serial #385547
/172/ Passport #4422 on amperemeter type Э378, serial #234433
/173/ Passport #11047 on amperemeter type Э365-1, serial #90703238
/174/ Passport #1378 on amperemeter type Э378, serial #853753
/175/ Passport #8698 on amperemeter type Э378, serial #539592
/176/ Passport #1580 on amperemeter type Э378, serial #217322
/177/ Passport #2795 on amperemeter type Э378, serial #326913
/178/ Passport #6125 on amperemeter type Э378, serial #582045
/179/ Passport #586 on guard relay type Micom P220, serial #2407614
/180/ Passport #1381 on guard relay type Micom P220, serial #0507097
/181/ Passport #9978 on amperemeter type Э378, serial #163375
/182/ Passport #5653 on amperemeter type Э378, serial #034245
/183/ Passport #2437 on amperemeter type Э378, serial #539721
/184/ Passport #5656 on amperemeter type Э378, serial #928077
/185/ Passport #8404 on amperemeter type Э378, serial #493672
/186/ Passport #5656 on amperemeter type Э378, serial #539721
/187/ Passport #6868 on amperemeter type Э365-1, serial #036120
/188/ Passport #6869 on amperemeter type Э365-1, serial #036130
/189/ Passport #6867 on amperemeter type Э365-1, serial #036877
/190/ Passport #9918 on amperemeter type Э365-1, serial #044795
/191/ Passport #9919 on amperemeter type Э365-1, serial #85361585
/192/ Passport #9917 on amperemeter type Э365-1, serial #85361565
/193/ Passport #9920 on amperemeter type Э365-1, serial #85361072
/194/ Protocol #23-11 dated 21/07/2011 on stationary sources pollutant composition detection, issued by the State Ecological Inspection in Zaporizhzhia region
/195/ Protocol #19 dated 01/04/2011 on blast furnace gas chemical analysis (BF #2)
/196/ Protocol #20 dated 01/04/2011 on blast furnace gas chemical

analysis (BF #2)

/197/ Protocol #21 dated 01/04/2011 on blast furnace gas chemical analysis (BF #3)

/198/ Protocol #22 dated 01/04/2011 on blast furnace gas chemical analysis (BF #3)

/199/ Protocol #23 dated 01/04/2011 on blast furnace gas chemical analysis (BF #5)

/200/ Protocol #24 dated 01/04/2011 on blast furnace gas chemical analysis (BF #5)

/201/ Protocol #10 dated 01/03/2011 on blast furnace gas chemical analysis (BF #2)

/202/ Protocol #11 dated 01/03/2011 on blast furnace gas chemical analysis (BF #2)

/203/ Protocol #12 dated 01/03/2011 on blast furnace gas chemical analysis (BF #3)

/204/ Protocol #13 dated 01/03/2011 on blast furnace gas chemical analysis (BF #3)

/205/ Protocol #14 dated 01/03/2011 on blast furnace gas chemical analysis (BF #5)

/206/ Protocol #15 dated 01/03/2011 on blast furnace gas chemical analysis (BF #5)

/207/ Protocol #1 dated 01/02/2011 on blast furnace gas chemical analysis (BF #2)

/208/ Protocol #2 dated 01/02/2011 on blast furnace gas chemical analysis (BF #2)

/209/ Protocol #3 dated 01/02/2011 on blast furnace gas chemical analysis (BF #3)

/210/ Protocol #4 dated 01/02/2011 on blast furnace gas chemical analysis (BF #3)

/211/ Protocol #5 dated 01/02/2011 on blast furnace gas chemical analysis (BF #5)

/212/ Protocol #6 dated 01/02/2011 on blast furnace gas chemical analysis (BF #5)

/213/ Protocol #28 dated 29/04/2011 on blast furnace gas chemical analysis (BF #2)

/214/ Protocol #29 dated 29/04/2011 on blast furnace gas chemical analysis (BF #2)

/215/ Protocol #30 dated 29/04/2011 on blast furnace gas chemical analysis (BF #3)

/216/ Protocol #31 dated 29/04/2011 on blast furnace gas chemical analysis (BF #3)

/217/ Protocol #32 dated 29/04/2011 on blast furnace gas chemical analysis (BF #5)

/218/ Protocol #33 dated 29/04/2011 on blast furnace gas chemical analysis (BF #5)

/219/ Protocol #37 dated 01/06/2011 on blast furnace gas chemical analysis (BF #2)

/220/ Protocol #38 dated 01/06/2011 on blast furnace gas chemical analysis (BF #2)
/221/ Protocol #39 dated 01/06/2011 on blast furnace gas chemical analysis (BF #3)
/222/ Protocol #40 dated 01/06/2011 on blast furnace gas chemical analysis (BF #3)
/223/ Protocol #41 dated 01/06/2011 on blast furnace gas chemical analysis (BF #5)
/224/ Protocol #42 dated 01/06/2011 on blast furnace gas chemical analysis (BF #5)
/225/ Protocol #46 dated 01/07/2011 on blast furnace gas chemical analysis (BF #2)
/226/ Protocol #47 dated 01/07/2011 on blast furnace gas chemical analysis (BF #2)
/227/ Protocol #48 dated 01/07/2011 on blast furnace gas chemical analysis (BF #3)
/228/ Protocol #49 dated 01/07/2011 on blast furnace gas chemical analysis (BF #3)
/229/ Protocol #50 dated 01/07/2011 on blast furnace gas chemical analysis (BF #5)
/230/ Protocol #51 dated 01/07/2011 on blast furnace gas chemical analysis (BF #5)
/231/ Protocol dated 08/08/2011 on gas and dust flow parameters measurement (Form ЛООС-53), source #405
/232/ Protocol dated 08/08/2011 on gas and dust flow parameters measurement (Form ЛООС-53), source #406
/233/ Protocol dated 08/08/2011 on gas and dust flow parameters measurement (Form ЛООС-53), source #407
/234/ Passport on natural gas physical and chemical parameters for the period from 01/01/2011 till 31/01/2011
/235/ Passport on natural gas physical and chemical parameters for the period from 01/02/2011 till 28/02/2011
/236/ Passport on natural gas physical and chemical parameters for the period from 01/03/2011 till 31/03/2011
/237/ Passport on natural gas physical and chemical parameters for the period from 01/04/2011 till 30/04/2011
/238/ Passport on natural gas physical and chemical parameters for the period from 01/05/2011 till 31/05/2011
/239/ Passport on natural gas physical and chemical parameters for the period from 01/06/2011 till 30/06/2011
/240/ Technical report dated 04/02/2011 on CHPP operation for January 2011
/241/ Technical report dated 03/03/2011 on CHPP operation for February 2011
/242/ Technical report dated 04/02/2011 on CHPP operation for March 2011
/243/ Technical report on CHPP operation for April 2011

/244/ Technical report dated 03/06/2011 on CHPP operation for May 2011
/245/ Technical report on CHPP operation for June 2011
/246/ Form #1 dated 03/02/2011. Electric power production at JSC "Zaporizhstal" CHPP for January 2011
/247/ Form #2 dated 01/02/2011. Fuel consumption on power production at JSC "Zaporizhstal" CHPP and heat power supply to Zaporizhzhia city for January 2011
/248/ Form #3 dated 07/02/2011. Chemical composition of natural gas used at JSC "Zaporizhstal" CHPP for January 2011
/249/ Form #4 dated 18/07/2011. Chemical composition and calorific value of blast-furnace gas used at JSC "Zaporizhstal" CHPP for January 2011
/250/ Form #1 dated 03/03/2011. Electric power production at JSC "Zaporizhstal" CHPP for February 2011
/251/ Form #2 dated 03/03/2011. Fuel consumption on power production at JSC "Zaporizhstal" CHPP and heat power supply to Zaporizhzhia city for February 2011
/252/ Form #3 dated 05/03/2011. Chemical composition of natural gas used at JSC "Zaporizhstal" CHPP for February 2011
/253/ Form #4 dated 18/07/2011. Chemical composition and calorific value of blast-furnace gas used at JSC "Zaporizhstal" CHPP for February 2011
/254/ Form #1 dated 03/04/2011. Electric power production at JSC "Zaporizhstal" CHPP for March 2011
/255/ Form #2 dated 04/04/2011. Fuel consumption on power production at JSC "Zaporizhstal" CHPP and heat power supply to Zaporizhzhia city for March 2011
/256/ Form #3 dated 06/04/2011. Chemical composition of natural gas used at JSC "Zaporizhstal" CHPP for March 2011
/257/ Form #4 dated 18/07/2011. Chemical composition and calorific value of blast-furnace gas used at JSC "Zaporizhstal" CHPP for March 2011
/258/ Form #1 dated 04/05/2011. Electric power production at JSC "Zaporizhstal" CHPP for April 2011
/259/ Form #2 dated 04/05/2011. Fuel consumption on power production at JSC "Zaporizhstal" CHPP and heat power supply to Zaporizhzhia city for April 2011
/260/ Form #3 dated 05/05/2011. Chemical composition of natural gas used at JSC "Zaporizhstal" CHPP for April 2011
/261/ Form #4 dated 18/07/2011. Chemical composition and calorific value of blast-furnace gas used at JSC "Zaporizhstal" CHPP for April 2011
/262/ Form #1 dated 03/06/2011. Electric power production at JSC "Zaporizhstal" CHPP for May 2011
/263/ Form #2 dated 03/06/2011. Fuel consumption on power production at JSC "Zaporizhstal" CHPP and heat power supply to Zaporizhzhia

city for May 2011
/264/ Form #3 dated 03/06/2011. Chemical composition of natural gas used at JSC “Zaporizhstal” CHPP for May 2011
/265/ Form #4 dated 18/07/2011. Chemical composition and calorific value of blast-furnace gas used at JSC “Zaporizhstal” CHPP for May 2011
/266/ Form #1 dated 03/06/2011. Electric power production at JSC “Zaporizhstal” CHPP for June 2011
/267/ Form #2 dated 03/06/2011. Fuel consumption on power production at JSC “Zaporizhstal” CHPP and heat power supply to Zaporizhzhia city for June 2011
/268/ Form #3 dated 03/06/2011. Chemical composition of natural gas used at JSC “Zaporizhstal” CHPP for June 2011
/269/ Form #4 dated 18/07/2011. Chemical composition and calorific value of blast-furnace gas used at JSC “Zaporizhstal” CHPP for June 2011
/270/ Statement #150170 dated 29/04/2011 on acceptance-transmitting of heat power in the form of hot water
/271/ Statement #150186 dated 31/05/2011 on acceptance-transmitting of heat power in the form of hot water
/272/ Statement #150200 dated 30/06/2011 on acceptance-transmitting of heat power in the form of hot water
/273/ Certificate on heat supply to City Heat Network concern for April 2011
/274/ Certificate on heat supply to City Heat Network concern for May 2011
/275/ Certificate on heat supply to City Heat Network concern for June 2011
/276/ Information dated 31/01/2011 on fuel distribution at CHPP for January 2011
/277/ Information dated 28/02/2011 on fuel distribution at CHPP for February 2011
/278/ Information dated 31/03/2011 on fuel distribution at CHPP for March 2011
/279/ Information dated 29/04/2011 on fuel distribution at CHPP for April 2011
/280/ Information dated 31/05/2011 on fuel distribution at CHPP for May 2011
/281/ Information on fuel distribution at CHPP for June 2011
/282/ Card #7301 of materials warehousing stock-taking for January-July 2011 (fuel oil)
/283/ GHG emissions reduction monitoring СТП 8.2-13-10
/284/ Daily register of thermalclamping unit and pressure reducing desuperheating station operation at the heat and steam-air station for 01/04/2011 (CHPP-70)
/285/ Daily register on main operation centre for 01/04/2011 (CHPP-43)
/286/ Information on CHPP workers training in connection with

implementation of the new equipment
/287/ Annex #1 to the attestation certificate dated 18/12.09 #06544-5-1-191-ВЛ
/288/ Protocol #9 dated 12/04/2011 on commission session on labour safety knowledge testing
/289/ Protocol #10 dated 12/04/2011 on commission session on labour safety knowledge testing
/290/ Protocol #11 dated 13/04/2011 on commission session on labour safety knowledge testing
/291/ Protocol #12 dated 13/04/2011 on commission session on labour safety knowledge testing
/292/ Protocol #13 dated 14/04/2011 on commission session on labour safety knowledge testing
/293/ Protocol #14 dated 14/04/2011 on commission session on labour safety knowledge testing
/294/ Protocol #15 dated 15/04/2011 on commission session on labour safety knowledge testing
/295/ Protocol #16 dated 15/04/2011 on commission session on labour safety knowledge testing
/296/ Protocol #17 dated 18/04/2011 on commission session on labour safety knowledge testing
/297/ Protocol #18 dated 28/04/2011 on commission session on labour safety knowledge testing
/298/ Protocol #19 dated 04/05/2011 on commission session on labour safety knowledge testing
/299/ Power consumption calculation on thermalclamping unit network pumps at JSC “Zaporizhstal” CHPP
/300/ Attestation certificate of JSC “Zaporizhstal” Central Chemical Laboratory dated 18/12/2009 #06544-5-1-191-ВЛ, valid till 18/12/2012
/301/ Statement #33/1103985 dated 29/08/2011 on absence of coke gas supply from PJSC “Zaporizhkoks” from January till July 2011 to JSC “Zaporizhstal”
/302/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 03/03/2011
/303/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 10/03/2011
/304/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 14/06/2011
/305/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 14/05/2011
/306/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 14/02/2011
/307/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 14/01/2011
/308/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 20/04/2011

/309/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 24/04/2011
/310/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 24/06/2011
/311/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 24/05/2011
/312/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 24/02/2011
/313/ Daily register of power meters showings on JSC “Zaporizhstal” CHPP-40 CEA operation for 24/01/2011
/314/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 03/03/2011
/315/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 10/03/2011
/316/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 14/06/2011
/317/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 14/05/2011
/318/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 14/02/2011
/319/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 14/01/2011
/320/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 20/04/2011
/321/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 24/04/2011
/322/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 24/06/2011
/323/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 24/05/2011
/324/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 24/02/2011
/325/ Daily register of JSC “Zaporizhstal” CHPP-46 condensate unit operation for 24/01/2011
/326/ Daily register of JSC “Zaporizhstal” CHPP-70 thermalclamping unit and pressure reducing desuperheating station operation for 07/05/2011
/327/ Daily register of JSC “Zaporizhstal” CHPP-70 thermalclamping unit and pressure reducing desuperheating station operation for 14/06/2011
/328/ Daily register of JSC “Zaporizhstal” CHPP-70 thermalclamping unit and pressure reducing desuperheating station operation for 20/04/2011
/329/ Daily register of JSC “Zaporizhstal” CHPP-70 thermalclamping unit and pressure reducing desuperheating station operation for 24/04/2011
/330/ Daily register of JSC “Zaporizhstal” CHPP-70 thermalclamping unit

and pressure reducing desuperheating station operation for 24/06/2011

/331/ Daily register of JSC "Zaporizhstal" CHPP-70 thermalclamping unit and pressure reducing desuperheating station operation for 29/05/2011

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 – Head of the environmental laboratory of JSC "Zaporizhstal"

/2/ V. Jarysh – Deputy head of chief power engineer department of JSC "Zaporizhstal"

/3/ A. Grabko – Head of automation and metrology department of JSC "Zaporizhstal"

/4/ V. Pshigotskij – Director of foreign trade company of JSC "Zaporizhstal"

/5/ P. Kushnarenko – Head of CHPP of JSC "Zaporizhstal"

/6/ S. Ryabokon – Head of production and technical department of CHPP of JSC "Zaporizhstal"

/7/ V. Vlasov - Engineer of production and technical department of CHPP of JSC "Zaporizhstal"

/8/ L. Zubkova – Engineer of Bureau of industrial heat energy and fuel and energy recording of JSC "Zaporizhstal"

/9/ S.Tur – Mechanic of Control equipment and automatization department of CHPP of JSC "Zaporizhstal"

/10/ V.Kolesnik – Head of the Chemical laboratory of Central laboratory of JSC "Zaporizhstal"

/11/ R. Kazakov – Principal specialist of CJSC "National Carbon Sequestration Foundation"

APPENDIX A: PROJECT VERIFICATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

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?	The project has been approved by both Host Party (Ukraine) and sponsor party (Switzerland). The written project approvals were issued by DFPs of Parties involved: - Ukraine: Letter of Approval of National Environmental Investment Agency of Ukraine No 2253/23/7, issued on 27/12/2010, and - Switzerland: Letter of approval for a project under article 6 of the Kyoto Protocol (JI) of the Federal Office for the Environment (FOEN) of Switzerland No J294-0485, issued on 25/11/2010. These letters were provided to BVC. However, the information regarding project approval is absent the 1st version of the Monitoring Report (hereafter referred MR). **CAR 01**. Please, provide information on project	CAR 01	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		approval by Parties involved in the MR.		
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	OK	OK
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?	The project has been implemented in accordance with the PDD which was positively determined by BVC, in full adherence with the implementation schedule provided in the PDD. The undertaken activities and equipment installed under the project comply with the determined PDD ver.04 of 01/03/2010. Under the subproject "Blast furnace gas utilization" the steam boiler E-120/150-3,2-390 DKGM with the capacity up to 150 t of steam per hour, cogeneration steam turbine ST-35-2,9/0,8/0,12 with two adjustable steam extractions, with the nominal capacity of 35 MW with the rotating frequency of 50 s-1 (3,000 rot/min) which is designed to directly drive the alternating-current generator of the type TA-35-2MU3 were installed. Under the subproject "Waste heat utilization" the heat networks were reconstructed to supply heat to customers of Zaporizhzhya city as envisaged in the PDD.	OK	OK
93	What is the status of operation of the project during the monitoring period?	Under the subproject "Waste heat utilization" the construction took place during 2004-2005. The city of Zaporizhzhya began to receive the heat power from JSC "Zaporizhstal" starting from the 2nd of June 2005. As to the subproject "Blast furnace gas utilization" the	CAR 02	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		construction works lasted from 2005 to 2007, and the commissioning took place in February 2008. The project operation status during the monitoring period at hand was not presented in the 1st version of MR. **CAR 02**. Please, provide the information in the Monitoring Report regarding the status of operation of the project during the current monitoring period.		
Compliance with monitoring plan				
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 occurred in accordance with the PDD regarding which the determination has been deemed final and revisions to the monitoring plan. The revisions which were introduced during 2008-2009 monitoring period where positively determined in course of the 1st verification under the project. Another set of modifications have been introduced during the present monitoring period and were submitted for determination in course of the current verification (refer to paragraphs 99 (a) – 99 (b) of this check-list). The approved and new changes to the monitoring plan were described and justified in the section A.8 of the MR.	OK	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	Key factors, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account for calculating the emission reductions, as appropriate. Relevant national policies and sectoral	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	circumstances were considered when setting the baseline. Types of fuel available for project participants, electric power demand, demand of heat power supplied to the city etc. were taking into account for calculating the emission reductions.		
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	The data sources used for calculating emission reductions are clearly identified, reliable and transparent. They are listed and classified in the MR Sections B.1.1 – B.1.3 and B.3.1. Data sources include calibrated measuring equipment, certificates of physic and chemical characteristics of natural gas provided by gas suppliers, national officially approved data on the emission factor for Ukrainian power grid, IPCC data, equipment technical passports, enterprise's technical reports, relevant sectoral studies etc. The scheme of monitoring point location is presented on the figure B.1.3-1. In the table B.2-1 of the MR it is stated that physical and chemical characteristics of the blast furnace gas (BFG), and thus the corresponding parameter $W_{j,y}$, are determined daily, however, the monitoring frequency of the parameter $EF_{CO2,i,y}$ (CO_2 emission factor from fuel i combustion) is monthly. Furthermore, protocols of BFG chemical analysis (the parameter $W_{j,y}$ data source) are prepared for each blast furnace (#2, #3, #5) separately. In this respect the CAR was issued:	CAR 03 CL 01	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CAR 03. Please, clarify how $EF_{CO2,i,y}$ monthly values for the blast furnace gas, which are used in the emission reduction calculation, are determined. This must be clearly defined in the MR as well. **CL 01**. Please, provide a document confirming the value of electric power consumption for heat power supply to consumers of the Zaporizhzhya city for April 2011, as this value in the Excel spreadsheets does not correspond to the respective data in the CHPP Technical Report for April 2011.		
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?	Emission factors used for calculating the emission reduction by the project such as CO_2 emission factor for fuel oil combustion, CO_2 emission factor for coke oven gas combustion, CO_2 emission factor during the electric power generation supplied by the power grid of Ukraine for the projects consuming electric power and CO_2 emission factor during the heat power production which would have been produced in the absence of project activity, which is actually an emission factor for natural gas combustion, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice. As the ongoing appropriateness of the default values must be ensured, the CL regarding applied default values was raised: **CL 02**. Considering the fact that default values of	CL 02	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		emission factors must be periodicity verified to ensure their ongoing appropriateness, please provide data on Net Calorific Values (NCV) of coke oven gas and fuel oil consumed during the monitoring period.		
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 performed calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner. Some minor discrepancies were found in the emission reduction calculation spreadsheets, therefore the CAR was raised: **CAR 04.** The values of volume fraction of blast furnace gas components (parameter $W_{j,y}$) for May 2011 indicated in the Excel spreadsheet do not correspond to the data stated in the protocols of blast furnace gas chemical analysis for this month. Please, recheck the value and make appropriate corrections.	CAR 04	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 monitoring period determined?	N/a	N/a	N/a
Applicable to bundled JI SSC projects only				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	N/a	N/a	N/a
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/a	N/a	N/a
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?	N/a	N/a	N/a
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?	In course of the 1st verification under the project the project participants submitted for determination the revision to the approved monitoring plan in the PDD within the 2008-2009 MR, which related to the inclusion of amount of BFG utilized in the calculation of GHG emission under the project and baseline. This revision was positively determined by BVC (determination of the revision was presented in the Verification report No. UKRAINE/0134/2010, rev.02 of 28/12/2010). During the current monitoring period of 01/01/2011-30/06/2011 project participants introduced another	CAR 05 CAR 06	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		revision to the approved monitoring plan in the PDD as a response to the FAR 01 issued during 2nd periodic verification for 2010 monitoring period (FAR 01: The value of emission factor for BFG combustion should be calculated for each monitoring period (monthly/annually) based on actual monitored Net Calorific Value of BFG utilized. This should be the parameter that is monitored throughout the crediting period instead of fixed value. For further details refer to the Verification report No. UKRAINE/0204/2010, rev.01 of 23/02/2011). The modification concerns the method for determination of the emission factor for BFG combustion. This emission factor is now calculated by the formula (1.2) already available in the original monitoring plan (this formula provides for calculation on CO_2 emission factor from gaseous fuel i combustion) on the basis of the chemical composition of BFG, in particular volume fraction of j-components of BFG. The monitoring of chemical composition of BFG is performed since 01/01/2011 by Bureau of industrial heat energy and fuel and energy recording JSC "Zaporizhstal"; the primary sources of monitoring data are daily protocols of chemical analysis of BFG by each blast furnace provided by Central chemical laboratory of JSC "Zaporizhstal". New monitoring point, ID-3.2 – Volume fraction of j-component of gaseous fuel (BFG), is added to the principle scheme of monitoring points' location.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		The detailed description and appropriate justification of the revision was provided in the MR ver.01.1 dated 08/08/2011. However, the CAR was raised in respect of the newly introduced revision to the MR: **CAR 05.** Because of the fact that the parameter $W_{j,y}$ was revised (blast furnace gas was added as an additional gaseous fuel type) the updated information regarding data source, recording frequency, proportion of data to be monitored, data archiving method (electronic or paper) for this parameter should be presented in the section A.8 (description of the MP revision) of the MR. Also, the MR in its section A.8 states that QA/QC procedures described in the approved MP do not require revision which is not correct, as QA/QC procedures for the parameter $W_{j,y}$ in the PDD (section D.2) are provided for the natural gas only. Please, provide QA/QC procedures for the parameter $W_{j,y}$ in respect of blast furnace gas (ID-3.2). In the table B.2-1 of the MR it is stated that the enterprise's Technical Director approves the monitoring report annually, however, this is not the case for the present monitoring period which is not a full year but 6 months only. This is deemed to be a deviation from the approved MP.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CAR 06. The Monitoring plan should be revised in respect of frequency of the monitoring report's approval and the updated information must be present in the MR.		
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?	Continuous monitoring of the emission factor for BFG combustion based on the actual enterprise's data on BFG composition provides for more accurate and up-to-date data on BFG utilized at the enterprise. Thus, the introduced revision improves transparency, completeness, and accuracy of the reported project and baseline emissions (see paragraph 99 (a) for further details) 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?	The implementation of data collection procedures is in accordance with the PDD and revisions to the monitoring plan. Most of the monitoring activities are integral part of the operational routine of the JSC "Zaporizhstal" including quality control and quality assurance procedures. A special corporate standard on GHG emission reduction monitoring STP 8.2-13-10 "Monitoring of GHG emission reductions" was elaborated incorporating existing data collection procedures for GHG emission monitoring and introducing some new requirements on reporting documentation (special reporting forms) and quality control.	CL 03 CL 04 CL 05	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Nevertheless, some requests for clarification were raised by the verification team: **CL 03.** Please, clarify if any revisions to the Monitoring Procedure STP 8.2-13-10 have taken place during the monitoring period. Please, also clarify whether this procedure has been updated in respect of the recent revision of the MP (monitoring of BFG composition). **CL 04.** Please, provide the accreditation certificate of the Central chemical laboratory of Central laboratory of JSC "Zaporizhstal". **CL 05.** Please, present response and the corresponding documentation to FAR 01 issued during the previous verification.		
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	The monitoring equipment used for project monitoring is in order; its calibration status complies with the requirements. However, some requests for corrections in the MR regarding information on measuring equipment were issued: **CAR 07**. Please, include in the MR the detailed information on the measuring devices used in the monitoring of each project parameter used during the given monitoring period.	CAR 07 CAR 08	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CAR 08. The types of meters for steam temperature measurement of the boiler #6 indicated in the list of the project monitoring equipment do not correspond to the types states in the respective passport #15/181. Please, provide the correct information.		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidences and records as to the project monitoring are maintained in a traceable manner. All necessary information for monitoring of GHGs emission reductions are stored in paper and electronic formats and will be saved till the end of the crediting period and for two years after the last operation with ERUs from the project. The procedures for monitoring data keeping, archiving and responsible personnel are defined by STP 8.2-13-10 “Monitoring of GHG emission reductions” and other internal documents of JSC “Zaporizhstal”.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The operational and management structure that the project participants apply in implementing the monitoring plan is in accordance with the determined PDD and revisions to the monitoring plan. Responsibilities and roles of the personnel are explicitly indicated in the MR. The verification team confirms effectiveness of the existing management and operational systems and found them eligible for reliable project monitoring. Due to the fact that the monitoring plan was revised during the considered monitoring period (see	CAR 09	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		paragraph 99 (a) of this check-list), the scheme of monitoring data collection must be revised as well: **CAR 09.** Please, revise the scheme of monitoring data collection, delivery and processing in respect of the last revision to the MP.		
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	N/a	N/a	N/a
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/a	N/a	N/a
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N/a	N/a	N/a
104	Does the monitoring period not overlap with previous monitoring periods?	N/a	N/a	N/a
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	N/a	N/a	N/a
Applicable to sample-based approach only				
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	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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: − 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 verifications, if any?			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/a	N/a	N/a
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	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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)	N/a	N/a	N/a
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?	N/a	N/a	N/a

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Determination team conclusion
CAR 01. Please, provide information on project approval by Parties involved in the MR.	90	The information of the project approval by the Parties involved is provided in the section A.3 of the MR. The Letters of Approval are attached.	The required information has been provided in the MR ver.02.2. The issue is closed.

CAR 02. Please, provide the information in the Monitoring Report regarding the status of operation of the project during the current monitoring period.	93	The operational status of the project during the current monitoring period is identified in the section A.2 of the MR.	The information regarding the operational status of the project during the monitoring period at hand has been included to the MR. The provided information has been reviewed by the verifiers and found appropriate. The issue is closed.
CAR 03. Please, clarify how $EF_{CO2,i,y}$ monthly values for the blast furnace gas, which are used in the emission reduction calculation, are determined. This must be clearly defined in the MR as well.	95 (b)	The monthly value of j-component of blast-furnace gas is determined by Bureau of industrial heat energy and fuel and energy recording as average value of daily data for each blast furnace. The additional clarification is provided in the sections A.8 and B.2 of the MR.	The detailed information as to the method for determination of the emission factor for BFG combustion has been provided in the updated MR. This is now clearly described in the sections A.8 and B.2 of the MR ver.02.2. The issue is closed.
CAR 04. The values of volume fraction of blast furnace gas components (parameter $W_{j,y}$) for May 2011 indicated in the Excel spreadsheet do not correspond to the data stated in the protocols of blast furnace gas chemical analysis for this month. Please, recheck the value and make appropriate corrections.	95 (d)	The values of volume fraction of blast furnace gas components (parameter Wj,y) for May 2011 is corrected in the Excel spreadsheet.	The updated Excel spreadsheet was checked by the verification team: the relevant values had been corrected according to the available protocols of blast furnace gas chemical analysis. The ERUs had been recalculated appropriately. The MR has been updated accordingly. The issue is closed.

CAR 05. Because of the fact that the parameter $W_{j,y}$ was revised (blast furnace gas was added as an additional gaseous fuel type) the updated information regarding data source, recording frequency, proportion of data to be monitored, data archiving method (electronic or paper) for this parameter should be presented in the section A.8 (description of the MP revision) of the MR. Also, the MR in its section A.8 states that QA/QC procedures described in the approved MP do not require revision which is not correct, as QA/QC procedures for the parameter $W_{j,y}$ in the PDD (section D.2) are provided for the natural gas only. Please, provide QA/QC procedures for the parameter $W_{j,y}$ in respect of blast furnace gas (ID-3.2).	99 (a)	The section A.8 of the monitoring report is revised in respect of new monitoring parameter introduction (chemical composition of the blast-furnace gas).	All required information as to the parameter $W_{j,y}$, that was revised in respect of BFG, has been provided in the updated MR. The QA/QC procedures for this parameter have also been presented. The provided information was reviewed by the verification team and found to be in accordance with applicable rules and regulations for the establishment of monitoring plans. The issue is closed based on due amendments made to the MR.
CAR 06. The Monitoring plan should be revised in respect of frequency of the monitoring report's approval and the updated information must be present in the MR.	99 (a)	The monitoring plan is revised in respect of periodicity of monitoring report preparation and approval by Technical Director.	The revision in respect of frequency of the monitoring report's approval has been sufficiently described in the updated MR ver.02.2. The justification of this revision has been provided as well in the section A.8 of the MR. The provided information was checked by the verification team and found to be appropriate, thus, the issue is closed.

CAR 07. Please, include in the MR the detailed information on the measuring devices used in the monitoring of each project parameter used during the given monitoring period.	101 (b)	The detailed information on the measuring devices is provided in the table B.3.1-1 of the MR.	The information presented in the MR in respect of the measuring equipment used together with relevant meters' passports and calibration certificates were analyzed by the verification team and found to be adequate The issue is closed.
CAR 08. The types of meters for steam temperature measurement of the boiler #6 indicated in the list of the project monitoring equipment do not correspond to the types states in the respective passport #15/181. Please, provide the correct information	101 (b)	The types of meters for steam temperature measurement of the boiler #6 in the list of the project monitoring equipment (table B.3.1-1) are corrected.	The issue is closed based on due corrections made to the MR.
CAR 09. Please, revise the scheme of monitoring data collection, delivery and processing in respect of the last revision to the MP.	101 (d)	The scheme of monitoring data collection, delivery and processing is revised.	The scheme of monitoring data collection, delivery and processing has been revised in accordance with the latest revision to the MR and presented in the updated MR ver.02.2. The issue is closed.

CL 01. Please, provide a document confirming the value of electric power consumption for heat power supply to consumers of the Zaporizhzhya city for April 2011, as this value in the Excel spreadsheets does not correspond to the respective data in the CHPP Technical Report for April 2011.	95 (b)	The value of heat power supply to consumers of the Zaporizhzhya city for April 2011 is confirmed by attached certificate and act of heat supply. The CHPP Technical Report includes the total monthly value of heat supply from the CHHP but the heat power supply to consumers of the Zaporizhzhya began in the second part of the month. The monitoring data of electricity consumption for heat power supply to the consumers of the Zaporizhzhya city in April 2011 includes data for the period 20.04.2011 – 31.04.2011 (since begin of heat supply to Zaporizhzhya) and the technical report of CHPP for April 2011 contents data for the whole month. The confirmed initial data and calculations are attached.	The updated Excel spreadsheet together with provided enterprise's documentation, consisting of CHPP technical report for April 2011, Certificate and Statement on heat supply to the consumers of Zaporizhzhya city for April 2011, the procedure for calculation of electricity consumption for network pumps of heating unit at CHPP of Zaporizhstal and other primary input data were analyzed by the verification team. The corrected value of electric power consumption for heat power supply to consumers of 54,080 MWh was found to be in accordance with the relevant submitted documents. The ERUs has been recalculated according to the correction introduced and MR has been updated accordingly. Therefore, the issue is closed.

CL 02. Considering the fact that default values of emission factors must be periodicity verified to ensure their ongoing appropriateness, please provide data on Net Calorific Values (NCV) of coke oven gas and fuel oil consumed during the monitoring period.	95 (c)	The coke oven gas was not used during the current monitoring period. That is confirmed by technical reports of CHPP and Gaseous plant. The actual data of Net Calorific Values (NCV) of coke oven gas were not available during the current monitoring period. The fuel oil used in CHPP JSC Zaporizhstal is not changed in the current monitoring period (the same consignment of fuel oil is used as in the previous monitoring period). The used net calorific value of fuel oil is confirmed by technical reports of CHPP for January – June 2011.	The provided clarification was found appropriate. The issue is closed based on the sufficient information provided.
CL 03. Please, clarify if any revisions to the Monitoring Procedure STP 8.2-13-10 have taken place during the monitoring period. Please, also clarify whether this procedure has been updated in respect of the recent revision of the MP (monitoring of BFG composition).	101 (a)	The STP 8.2-13-10 was revised for purpose of additional parameter monitoring. The revised version of STP 8.2-13-10 is underway for approval.	The revised STP 8.2-13-10 was reviewed by the verification team. The issue is closed based on satisfactory clarification and documentation provided.
CL 04. Please, provide the accreditation certificate of the Central chemical laboratory of Central laboratory of JSC “Zaporizhstal”.	101 (a)	The accreditation certificate of the Central chemical laboratory of JSC “Zaporizhstal” is attached.	Accreditation certificate of JSC “Zaporizhstal” Central Chemical Laboratory dated 18/12/2009 #06544-5-1-191-ВЛ, valid till 18/12/2012 was provided to the verification team together with its Annex. The issue is closed.

CL 05. Please, present response and the corresponding documentation to FAR 01 issued during the previous verification.	101 (a)	The response on the FAR 01 is presented in the section A.8 of the MR.	The information in the section A.8 of the MR was reviewed. In response to the FAR 01 project participants introduced the revision to the monitoring plan in respect of the method for determination of the emission factor for BFG combustion. This emission factor is now calculated by the formula (1.2) already available in the original monitoring plan on the basis of the chemical composition of BFG, in particular volume fraction of j-components of BFG. The monitoring of chemical composition of BFG is performed since 01/01/2011 by Bureau of industrial heat energy and fuel and energy recording JSC "Zaporizhstal"; the primary sources of monitoring data are daily protocols of chemical analysis of BFG by each blast furnace provided by Central chemical laboratory of JSC "Zaporizhstal". New monitoring point, ID-3.2 – Volume fraction of j-component of gaseous fuel (BFG), is added to the principle scheme of monitoring points' location. Hence, FAR 01 has been satisfactorily resolved and considered to be closed.