



BUREAU
VERITAS

VERIFICATION REPORT

INSTITUTE FOR ENVIRONMENT AND ENERGY CONSERVATION LTD

VERIFICATION OF THE REVAMPING AND MODERNIZATION OF THE ALCHEVSK STEEL MILL, UKRAINE

3RD QUARTER 2011

REPORT NO. UKRAINE-VER/0402/2011

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BUREAU VERITAS CERTIFICATION



VERIFICATION REPORT

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Client: Institute for Environment and Energy Conservation Ltd	Client ref.: Vasyl Vovchak

Summary:
Bureau Veritas Certification has made the periodic verification of the third quarter of 2011 of the “Revamping and modernization of the Alchevsk Steel Mill, Ukraine”, JI Registration Reference Number UA 1000022, project of Institute for Environment and Energy Conservation located in Alchevsk, Lugansk region, Ukraine and applying JI specific approach, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the monitoring report against the project design and 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 (CL, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents and revised monitoring plan. 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 309 132 tonnes of CO₂ equivalent for the monitoring period 01/07/2011 – 30/09/2011.

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/0402/2011	Subject Group: JI
Project title: “Revamping and modernization of the Alchevsk Steel Mill, Ukraine”	
Work carried out by: Oleg Skoblyk – Team Leader, Lead verifier Olena Manziuk – Team Member, Verifier	
Work reviewed by: Ivan Sokolov – Internal Technical Reviewer	
Work approved by: Flavio Gomes - Operational Manager	
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Indexing terms

Climate Change, Kyoto Protocol, JI, Emission Reductions, Verification

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Table of Contents		Page
1	INTRODUCTION	3
1.1	Objective	3
1.2	Scope	3
1.3	Verification Team	3
2	METHODOLOGY	4
2.1	Review of Documents	4
2.2	Follow-up Interviews	5
2.3	Resolution of Clarification, Corrective and Forward Action Requests	5
3	VERIFICATION CONCLUSIONS	6
3.1	Remaining issues and FARs from previous verifications	6
3.2	Project approval by Parties involved (90-91)	7
3.3	Project implementation (92-93)	7
3.4	Compliance of the monitoring plan with the monitoring methodology (94-98)	9
3.5	Revision of monitoring plan (99-100)	10
3.6	Data management (101)	10
3.7	Verification regarding programmes of activities (102-110)	11
4	VERIFICATION OPINION	12
5	REFERENCES	14

APPENDIX A: PROJECT VERIFICATION PROTOCOL



1 INTRODUCTION

Institute for Environment and Energy Conservation Ltd has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Revamping and modernization of the Alchevsk Steel Mill, Ukraine” (hereafter called “the project”) at Alchevsk, Lugansk 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.

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 Independent Accredited 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 and/or corrective 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

Olena Manziuk
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 and Verification 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 determination protocol is enclosed in Appendix A to this Verification Report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by Institute for Environment and Energy Conservation Ltd and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), and/or Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on verification requirements to be checked by an Accredited Independent Entity were reviewed.

The verification findings presented in this report relate to the Monitoring Report version 1 dated 24/11/2011, Monitoring Report version 2



dated 10/01/2012, Monitoring Report version 3 dated 31/01/2012, and project as described in the determined PDD.

2.2 Follow-up Interviews

On 21/12/2011 during site visit Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Institute for Environment and Energy Conservation Ltd and PJSC “Alchevsk Iron and Steel Works” were interviewed (see documents Category 2 of section 5 References of this report). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
PJSC “Alchevsk Iron and Steel Works”	<ul style="list-style-type: none"> ➤ Organizational structure ➤ Responsibilities and authorities ➤ Training of personnel ➤ Quality management procedures and technology ➤ Implementation of equipment (records) ➤ Metering equipment control ➤ Metering record keeping system, database ➤ Monitoring procedure
Institute for Environment and Energy Conservation Ltd.	<ul style="list-style-type: none"> ➤ Baseline methodology ➤ Monitoring plan ➤ Monitoring report ➤ Deviations from PDD ➤ Emission reduction calculation

2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction calculation.



If the Verification Team, in assessing the monitoring report and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should raise these issues and inform the project participants of these issues in the form of:

- (a) Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;
- (b) Clarification request (CL), requesting the project participants to provide additional information for the Verification team to assess compliance with the monitoring plan;
- (c) Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

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

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

3 VERIFICATION CONCLUSIONS

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

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

The Clarification Requests, Corrective Action Requests and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in five Corrective Action Request, two Clarification Requests, and one Forward Action Request.

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



3.1 Remaining issues and FARs from previous verifications

Forward Action Request 01 (FAR01) was remaining issue from previous verification for the monitoring period 01/04/2011-30/06/2011 (the second quarter of 2011) at PJSC "AISW". FAR01 concerned the absence of documented evidence that require calibration of electricity supply measurement equipments of the JI project.

As a result, JI project participants and JI project developers designed the scheme of the calibration of electricity supply measurement equipments. The passports of electricity supply measurement equipments and certificates on calibration of the last ones were arranged and provided as documented evidences.

The procedure of calibration of electricity supply measurement equipments of the JI project at PJSC "AISW" was explained by the project participants on site. All provided documented evidences that confirm the calibration status of electricity supply measurement equipments were revised and found satisfactory. Hence, based on the interview that was performed during the site visit and provided documentations, the remaining issue (i.e. FAR01 from previous verification of the reporting monitoring period 01/04/2011-30/06/2011) is resolved and closed.

3.2 Project approval by Parties involved (90-91)

Written project approval by Ukraine and the Netherlands has been issued by the DFP of each Party when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest. Letter of Approval #540/23/7 of National Environmental Investment Agency of Ukraine was dated from 29/07/2008. Approval of Voluntary participation in a Joint Implementation project of Ministry of Economical Affairs in the Netherlands was issued under #2007JI03 dated 15 of October 2007.

The above mentioned written approval is unconditional.

3.3 Project implementation (92-93)

The modernization program of Public Joint Stock Company "Alchevsk Iron and Steel Works" (PJSC "AISW"), which was started in 2004, pursues complex goals: implementation of energy efficient technologies to increase competitiveness of the plant, improvement of ecological impacts, and also expansion of market presence due to increase of manufacture capacity.

The realization of the technical revamping and modernization of the steel manufacturing process, which envisaged displacement old Open-Hearth



VERIFICATION REPORT

Furnaces (OHF's) by the complex of oxygen-converter shop with two new LD Converters, was the top priority task of the project. LD Converters are joined together into one cycle with two Slab Casters, with Ladle-Furnaces (LF) and Vacuumator (VD Plant), which together displaces the Blooming Mills. From the beginning it was envisaged that the project will be implemented as Joint Implementation (JI) project under the Kyoto protocol on climate change.

Phases #1 and #2 were implemented: Slab Caster #1 was implemented in August 2005 and Slab Caster # 2 – in March 2007.

The implementation of LD Converter #2 (Phase #3) was completed in January 2008 (it had to be finished in the third quarter of 2007). Such a delay was caused by the financial, technical and customs difficulties and also by the delay of equipment supply.

LD Converter #1 was implemented in September 2008 (completion of Phase #4). However then, in about a month, the operation of LD Converter #1 was suspended because of financial and economic crisis. LD Converter #1 was launched again in March 2009.

The reconstruction of Oxygen Plant #4 (Phase #5) was completed on 30th of September 2005 (almost together with Slab Caster #1).

The installation of Oxygen Plant #7 (Phase #6) was completed on 19th of March 2008 (according to the previous plan it should have been completed in the third quarter of 2007). The delay was caused by the same reasons (financial, technical and customs difficulties), which were mentioned for the Phase #3, because Oxygen Plant #7 supplies oxygen for LD Converter #2.

The installation of Oxygen Plant #8 (Phase #7) was completed on 10th of December 2009 (according to the previous plan it should have been completed in the third quarter of 2009). Such a delay was caused by a lack of money for balancing and commissioning of the facility, which was caused by global financial and economic crisis.

Thereby, the actual operation of the proposed project during the reporting period is operation of all basic units, mentioned in Phases of project implementation.

During reporting monitoring period the level of OHF steel and rolled-formed slabs output (baseline slabs) was decreased. The main volume of slabs was manufactured at Slab Casters #1, 2. The productivity decrease in the baseline has caused the increase of constant FER consumption data (increase of specific FER per 1 ton of steel output). At the same time, the productivity increase in the project (at LD Converters and Slab Casters instead of OHF's) has caused the decrease of specific FER consumption data.

The emission reductions, examined in this monitoring report, were generated during the whole monitoring period. The monitoring was based



on actual data (mentioned in the reporting documents) of output production and FER consumption in project and in baseline scenarios as it is required by the Joint Implementation Project Design Document (PDD) and the revised monitoring plan that is determined in the verification report for the previous monitoring period, i.e. 2nd quarter 2011.

The identified areas of concern as to project implementation, project participants response and BV Certification's conclusion are described in Appendix A Table 2 (refer to CAR01).

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

JI project monitoring occurred in accordance with the monitoring plan included in the registered PDD and revised monitoring plan that was finally determined in the verification report for the monitoring period 01/04/2011-30/06/2011.

For calculating the emission reductions, key factors, such as Total Steel Output (t), Total Pig Iron Input into Steel Making Process (t), Total Pig Iron Produced (t), Quantity of each fuel (fpi) used in making Pig Iron (m³), Electricity Consumed in producing Pig Iron (MWh), Quantity of each fuel (fio) used in Sintering (m³), Electricity Consumed in Sintering (MWh), Quantity of each fuel (fsp) used in steam production in Pig Iron Production (m³), Quantity of each fuel (ffp) used in furnace process (m³), Electricity Consumed in furnace process (MWh), Quantity of each fuel (fsp) used in steam production in furnace process (m³), Quantity of each fuel (fca) used in compressed air production in furnace process (m³), Electricity Consumed in making compressed air for the furnace process in steel making (MWh), Quantity of each fuel (fop) used in oxygen production (m³), Electricity Consumed in making oxygen (MWh), etc., 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 are clearly identified, reliable and transparent. The calculations of GHG emission reduction are based on the real data of FER consumption both for baseline and project line, according to the methodology. All productivity fluctuations and, therefore, the GHG emission reductions are determined by the market and are not under control by project owner and project developer.

According to the documents, actual level of GHG emission reductions within the project, which were received during the reporting period, is higher than it was expected.



Emission factors, including default emission factors, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice. For instance, there is used carbon emission factor for electricity, approved by Order of the National Environmental Investment Agency of Ukraine #75 on approval of specific CO₂ emission factors in 2011 dated 12.05.2011.

According to PDD version 4, emission reductions during the third quarter of 2011 monitoring period were expected to be 234 121 t CO₂ equivalent. According to Monitoring Report emission reductions achieved are 309 132 t CO₂ equivalent. The difference in the emission reductions is explained as follows: the main reason is that the baseline of the project is developed based on the real steel manufacturing process as well as project line. Taking into account the implication of economy of scale and the fact that loading factor for baseline was much lower than for project line, the emission reductions were more sensitive to change of specific energy consumption per 1 t of slabs produced than actually envisaged in the PDD (please, for more details see response on CAR01 in the verification protocol of this report).

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 monitoring plan, project participants response and BV Certification's conclusion are described in Appendix A Table 2 (refer to CAR01, CAR02 and CL01).

3.5 Revision of monitoring plan (99-100)

The Monitoring Plan was not revised while the current reporting period (i.e., third quarter of 2011). Thus, this section is not applicable.

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 revised monitoring plan, including the quality control and quality assurance procedures. These procedures are mentioned in the section "References" of this report.

The function of the monitoring equipment, including its calibration status, is in order (refer to the documents in the section 5).

The evidence and records used for the monitoring are maintained in a traceable manner.



The data collection and management system for the project is in accordance with the PDD and revised monitoring plan. As a fact, the complete data is stored electronically and documented. The necessary procedures have been defined in internal procedures.

The Chief Metrological Specialist of the AISW is in charge for maintenance of the facilities and monitoring equipment as well as for their accuracy required by Regulation PP 229-9-056-863/02-2005 of “Metrological services of the metallurgical mills” and by “Guiding Metrological Instructions”. In case of defect, discovered in the monitoring equipment, the actions of the staff are determined in Guiding Metrological Instructions. The measurements are conducted constantly in automatic regime. Data are collected in the electronic AISW database and in printed documents. Also, data are systematized in the documents of the daily, monthly and annually registration. All those documents are saved in the planning-economic department.

The measurement results are being used by the Chief power-engineering specialist department, by the following services and technical staff of the Steel Mill. They are reflected in the technological instructions of production processes regime and also in the “Guiding Metrological Instructions” revised versions. The monitoring data reports and calculations are under the competence of the Chief power engineering specialist assistant in accordance to the interior orders of the Steel Mill.

The management of PJSC “AISW” has organized appropriate staff training to operate the project equipment. Thus, the trainings were conducted at the Ukrainian and foreign plants in order to operate Slab Casters and LD Converters. With the project equipment introduction the workers of PJSC “AISW” have the opportunity to update their working skills, stimulated by the permanent educational theoretical and practical courses at the Steel Plant. The documented evidences of the staff training performance were given additionally.

The identified areas of concern as to data management, project participants response and BV Certification’s conclusion are described in Appendix A Table 2 (refer to CAR03, CAR04, CAR05, CL02, FAR01).

3.7 Verification regarding programmes of activities (102-110)

Not applicable.



4 VERIFICATION OPINION

Bureau Veritas Certification has performed periodic verification of the third quarter 2011 of the project “Revamping and modernization of the Alchevsk Steel Mill, Ukraine” in Alchevsk, Lugansk region, which developed JI specific approach. The verification was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The verification consisted of the following three phases: i) desk review of the monitoring report against the project design document 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 Institute for Environment and Energy Conservation Ltd is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring Plan indicated in the final PDD version 04 dated 30/03/2008 and revised 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 3 dated 31/01/2012 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately (see category 2 Documents of the section 5 in this verification report). 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:



VERIFICATION REPORT

Reporting period: From 01/07/2011 to 30/09/2011

Baseline emissions : 2 269 146 tonnes of CO₂ equivalent

Project emissions : 1 960 014 tonnes of CO₂ equivalent

Emission Reductions
(3rd quarter 2011) : 309 132 tonnes of CO₂ equivalent

Emission reductions, project emissions and baseline emissions which are stated below are rounded by monitoring report developers to the whole figure (1t) and are based on calculations which are demonstrated in excel file attached to the monitoring report.



5 REFERENCES

Category 1 Documents:

Documents provided by Institute for Environmental and Energy Conservation Ltd that relate directly to the GHG components of the project.

- /1/ Project Design Document of JI project “Revamping and modernization of the Alchevsk Steel Mill, Ukraine” version 04 dated 30 of March 2008;
- /2/ Monitoring report for the third quarter 2011 of the JI project “Revamping and modernization of the Alchevsk Steel Mill, Ukraine”, JI Registration Number UA 100022, version 1 dated 24/11/2011;
- /3/ Monitoring report for the third quarter 2011 of the JI project “Revamping and modernization of the Alchevsk Steel Mill, Ukraine”, JI Registration Number UA 100022, version 2 dated 10/01/2012;
- /4/ Monitoring report for the third quarter 2011 of the JI project “Revamping and modernization of the Alchevsk Steel Mill, Ukraine”, JI Registration Number UA 100022, version 3 dated 31/01/2012;
- /5/ 2nd quarter of 2011 verification performed by BVCH, report No. UKRAINE-ver/0321/2011 dated 29/09/2011;
- /6/ Letter of Approval of National Environmental Investment Agency of Ukraine, № 540/23/7 from 29/07/2008;
- /7/ Approval of Voluntary participation in a Joint Implementation project of Ministry of Economical Affairs in Netherlands №2007JI03, dated 15 of October 2007.

Category 2 Documents:

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

- /1/ Information about measuring equipment that was used during monitoring of industrial emissions at “Alchevsk Iron and Steel Works”
- /2/ Passport dated 19/09/2011 on active energy meter of type CA3Y-I670M, serial # 144256
- /3/ Passport dated 28/09/2011 on gas meters of type Диск, serial # 52206 (first meter) and type Сафир, serial # 09942204 (second meter) (last calibration date – 28/09/2011)
- /4/ Passport dated 22/03/2011 on gas meter of type Сафир, serial



- # 02320193 (last calibration date – 22/03/2011)
- /5/ Passport dated 02/2009 on pressure meter of type Сафир, serial # 023201193, on pressure meter of type Метран, serial # 304879 and on temperature meter of type TCM100M (last calibration date – 05/09/2011)
 - /6/ Protocol # 673 dated 20/09/2011 on meeting of qualifications commission
 - /7/ Protocol # 672 dated 20/09/2011 on meeting of qualifications commission
 - /8/ Seminar programme for lead workers and specialists of plant structural subdivisions. The topic of the seminar is: “Quality management system”
 - /9/ Application on staff education for 2012. Quality department
 - /10/ Interview list dated 23/09/2011. Subdivision–quality training department
 - /11/ Programme of the audit dated 23/09/2011
 - /12/ Protocol of the audit. Object of the audit: Shop of gas and power-generating equipment service.
 - /13/ Protocol of the audit. Object of the audit: Thermal power station
 - /14/ Protocol of the audit. Object of the audit: Railway shop # 2
 - /15/ Protocol of the audit. Object of the audit: Department of institutional military guard.
 - /16/ Protocol of the audit. Object of the audit: Foundry-mechanic shop
 - /17/ Protocol of the audit. Object of the audit: Railway shop # 1
 - /18/ Protocol of the audit. Object of the audit: Technical control department
 - /19/ Fuel consumption on production of certain types of goods and works for third quarter of 2011
 - /20/ Energy consumption on production of certain types of goods
 - /21/ Circular diagram of natural gas consumption for 07/09/2011 (blast-furnace # 5)
 - /22/ Circular diagram of natural gas consumption for 14/08/2011
 - /23/ Circular diagram of overall gas consumption for 24/09/2011 (blast-furnace # 1)
 - /24/ Circular diagram of natural gas consumption for 30/07/2011
 - /25/ Circular diagram of overall gas consumption for 24/09/2011 (blast-furnace # 2)
 - /26/ Circular diagram of overall gas consumption for 24/09/2011 (blast-furnace # 4)
 - /27/ Circular diagram of overall gas consumption for 05/08/2011 (blast-furnace # 4)
 - /28/ Circular diagram of overall gas consumption for 05/08/2011 (blast-furnace # 3)
 - /29/ Circular diagram of overall gas consumption for 05/08/2011 (blast-furnace # 2)

VERIFICATION REPORT

- /30/ Circular diagram of overall gas consumption for 05/08/2011 (blast-furnace # 1)
- /31/ Statement of electric networks balance belonging division and operational partners responsibilities
- /32/ Appendix # 6 dated 30/12/2002 to "Statement of electric networks balance belonging division and operational partners responsibilities"
- /33/ Attestation certificate # 06544-5-1-157-ВЛ dated 09/11/2009
- /34/ Appendix to attestation certificate # 06544-5-1-157-ВЛ dated 09/11/2009
- /35/ Attestation certificate # 06544-5-3-12-КЛ dated 11/05/2011
- /36/ Appendix to attestation certificate # 06544-5-3-12-КЛ dated 11/05/2011
- /37/ Actual calculation for July, August, September 2011
- /38/ Passport on track scales type 250В-250, serial # 1 (last calibration date – 14/12/2011)
- /39/ Report on air protection for third quarter of 2011
- /40/ Passport on gas meters of type Метран, serial # 000225 (first meter) and type Диск, serial # 10334 (second meter), last calibration date – 23/08/2010
- /41/ Passport on gas meters of type Диск-250, serial # 10334 (first meter) and type Метран, serial # 000225 (second meter), last calibration date – 05/08/2010
- /42/ Passport on gas meters of type Метран, serial # 295315 (first meter) and type Диск-250, serial # 93041 (second meter), last calibration date – 21/04/2010
- /43/ Passport on gas meters of type Диск-250, serial # 93041 (first meter) and type Метран, serial # 295315 (second meter), last calibration date – 07/06/2011
- /44/ Passport on gas meters of type Метран, serial # 295314 (first meter) and type Диск-250, serial # 93038 (second meter), last calibration date – 16/11/2010
- /45/ Passport on gas meters of type Диск-250, serial # 93038 (first meter) and type Метран, serial # 295314 (second meter), last calibration date – 16/11/2010
- /46/ Passport dated 19/09/2011 on active energy meter type САЗУ-И681, serial # 224606
- /47/ Passport dated 16/09/2011 on active energy meter type САЗУ-И670м, serial # 492796
- /48/ Passport of the electricity meter, ser. # 669248. Calibration date of the meter is I quarter of 2011 (# 14)
- /49/ Passport of the electricity meter, ser. # 084840. Calibration date of the meter is 16.01.2011 (# 15)
- /50/ Passport of the electricity meter, ser. # 845858. Calibration date of the meter is IV quarter of 2010 (# 21)
- /51/ Passport of the electricity meter, ser. # 492796. Calibration date of



- the meter is I quarter of 2011 (# 9)
- /52/ Passport of the electricity meter, ser. # 222604. Calibration date of the meter is IV quarter of 2010 (substation 1-b, # 1)
 - /53/ Passport of the electricity meter, ser. # 604782. Calibration date of the meter is I quarter of 2011 (substation 1-a, # 4)
 - /54/ Passport of the electricity meter, ser. # 366657. Calibration date of the meter is IV quarter of 2010 (substation 1-b, # 4)
 - /55/ Passport of the electricity meter, ser. # 023867. Calibration date of the meter is IV quarter of 2010 (substation 1, # 8)
 - /56/ Passport of the electricity meter, ser. # 208209. Calibration date of the meter is III quarter of 2011 (substation 1, # 13)
 - /57/ Passport of the electricity meter, ser. # 115623. Calibration date of the meter is II quarter of 2009 (substation 9, # 25)
 - /58/ Passport of the electricity meter, ser. # 017423. Calibration date of the meter is I quarter of 2011 (substation "Metallurgical", # 25)
 - /59/ Passport of the electricity meter, ser. # 283537. Calibration date of the meter is II quarter of 2010 (substation "Metallurgical", # 35)
 - /60/ Order # 95 dated 01/02/2012 "On assigning the personnel responsible for JI projects monitoring in the framework of Kyoto Protocol, and on the terms of monitoring data storage"
 - /61/ Aggregate logbook of substation # 9
 - /62/ Aggregate logbook of the substation # 1. Started from 07/08/2009
 - /63/ Logbook of the substation # 1-a. Started from 20/03/2001
 - /64/ Aggregate logbook of completed distributing device of 6 quarter of I tires section (the substation "Metallurgical")
 - /65/ Aggregate logbook of completed distributing device of 6 quarter of II tires section (the substation "Metallurgical")

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/ Georgii Bremze – deputy chief engineer at PJSC "AISW";
- /2/ Viacheslav Mosolov – deputy chief of capital construction administration at PJSC "AISW";
- /3/ Pavlo Sydorov – chief metrologist, head of control measurement equipments and apparatus shop at PJSC "AISW";
- /4/ L. Iaroshenko – engineer on metrology of central weighting economy;
- /5/ O. Tymoshenko – deputy head of the shop of weighted economy and technologies;
- /6/ V. Merzhhevskya – deputy chief power engineer of capital construction administration at PJSC "AISW";



- /7/ O. Stepanenko – chief of training department at PJSC “AISW”;
- /8/ M. Krasnonos – chief of environmental protection department at PJSC “AISW”;
- /9/ T. Zaporozhets – metrology engineer of control measurement equipments and apparatus shop at PJSC “AISW”;
- /10/ Olena Kaiuda – chief of team of electricity and technical laboratory at PJSC “AISW”;
- /11/ Iuliia Babich – specialist of foreign economic activity department of the Institute for Environmental and Energy Conservation Ltd.



VERIFICATION REPORT

APPENDIX A: PROJECT VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	LoAs from both Parties involved in the project have been issued by the respective NFPs. Ukraine is the host Party and the Netherlands is other Party that issued a written project approval.	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	The written project approvals by Parties involved are unconditional as they explicitly state the name of the legal entity involved in the JI project.	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?	Implementation of the project activity is realized according to the project implementation schedule. There are no deviations or revisions to the determined PDD.	OK	OK
93	What is the status of operation of	According to the PDD, there are seven		OK



BUREAU
VERITAS

VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the project during the monitoring period?	<p>phases for implementation in the JI project.</p> <p>Monitoring report indicated the current status of the project activity implementation. Based on indicated materials, there is known that all basic units were operational in the reporting period.</p> <p>The value of emission reduction achieved for the third quarter 2011 makes 309 132 t CO₂ equivalent and that one estimated in PDD – 234 121 t CO₂ equivalent.</p> <p>According to the situation provided in the monitoring report, the implication of economy of scale and the fact that loading factor for baseline was much lower than for projectline, the emission reductions were more sensitive to change of specific energy consumption per 1 t of slabs produced than actually envisaged in the PDD. However, this influence was beyond of control of the project participants and fully depended on market situation and requirements.</p> <p><u>Corrective Action Request 01 (CAR01).</u> Please, provide more clear explanation of</p>	CAR01	OK



VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		the reasons why there is difference between the value of emission reduction stated in the Monitoring report and emission reduction estimated in the registered PDD.		
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 process at PJSC "AISW" is carried out in accordance with the revised monitoring plan included. Data used for calculation of emissions reduction are based on information that is confirmed by PJSC "AISW" documents. <u>Corrective Action Request 02 (CAR02)</u> . As it was observed during site visit, the monitoring is carried out according to the revised monitoring plan that was determined final in the verification report for second quarter 2011. Please, make relevant description through the monitoring report for third quarter 2011.	CAR02	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	According to the monitoring report, there is taken into account key factors (such as emission factor of the fuel, emission factor for electricity consumption, default emission factors etc.), production level, amount of the fuel consumption, market	OK	OK



VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	situation and other risks associated with the implementation of the project activity that can influence to the baseline and project emission, and emission reduction due to the JI project.		
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	Data sources used for calculating emission reductions are clearly identified, reliable and transparent. On site responsible person register data from the measurement equipments and fixed monitoring data to logbooks, monthly data collected to the actual calculation reports. Moreover, there is general database of recording data. As a fact, this database is maintained by Deputy of power engineer of PJSC "AISW".	OK	OK
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?	In this project different types of emission factors (EF) are used for calculation of emission reduction due to the project activity. For instance, there are used EF of the natural gas, EF of the coal, EF for electricity consumption, and other default emissions factors. Based on Order #75 issued by National Environmental Investment Agency of Ukraine, the most recent value of CO ₂		OK



VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		emission factor for electricity consumption was used during emission reductions calculation. <u>Clarification Request 01 (CL01)</u> . Please, provide references to the source of emission factors for each fuel.	CL01	OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner. As a result of documents revision, all data connected with estimation of emission reduction is consistent throuth the Monitoring report and excel spreadsheet with calculation.	OK	OK
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	Not applicable	N/A	N/A



VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Applicable to bundled JI SSC projects only				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	Not applicable	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?	Not applicable	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?	Not applicable	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?	The Monitoring Plan was not revised while the current reporting period (i.e., third quarter of 2011). Hence, this section is not applicable.	N/A	N/A



VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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?	Not applicable.	N/A	N/A
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?	<p>Procedures of data collection are implemented in compliance with the revised monitoring plan. There is used system of data collection on FER consumption. Also, used measuring equipment, such as scales, gas meters, water meters, steam meters, electricity consumption meters. Monitoring data of the project is monitored continuously due to specific monitoring system and measurement equipments.</p> <p><u>Corrective Action Request 03 (CAR03).</u> Please, update the information about the internal audits on compliance to the certified management systems during the monitoring period.</p>	CAR03	OK



BUREAU
VERITAS

VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p><u>Corrective Action Request 04 (CAR04).</u> The tables with calculation of project emissions and baseline emissions as well as emission reductions are not coloured. Please, revise the monitoring report (MR) and delete odd information from section 6 of the MR.</p> <p><u>Clarification Request 02 (CL02).</u> Please, clarify what training/seminars were performed at AISW to operate the JI project equipment, and provide the details in the Monitoring Report.</p>	<p>CAR04</p> <p>CL02</p>	<p>OK</p> <p>OK</p>
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	<p>All monitoring equipments have calibration. It is calibrated with periodic frequency (passport state the calibration frequency for every device) according to the national regulations.</p> <p>During site visit verifiers received and reviewed passports of some measurement equipment on a spot-check basis.</p> <p><u>Corrective Action Request 05 (CAR05).</u> According to the site visit results, the list of electricity monitoring equipment stated in the MR is not in compliance with the operating one. Please, update the list of electricity measurement equipment and</p>	<p>CAR05</p>	<p>OK</p>



BUREAU
VERITAS

VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		remove the decommissioned one; and justify the replacement with documented evidences. <u>Forward Action Request 01 (FAR01).</u> Please, improve the list of monitoring equipment by revising and updating present one.	FAR01	Should be checked during next verification
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records used for the monitoring are maintained on site of every device and in technical department in a traceable manner.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The data collection and management system for the project in accordance with the revised monitoring plan. Implementation of monitoring system was checked through site visit, and concluded that monitoring system is completely in accordance with the monitoring plan.	OK	OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	Not applicable	N/A	N/A
103	Is the verification based on the monitoring reports of all JPAs to be verified?	Not applicable	N/A	N/A
103	Does the verification ensure the accuracy and conservativeness	Not applicable	N/A	N/A



VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	of the emission reductions or enhancements of removals generated by each JPA?			
104	Does the monitoring period not overlap with previous monitoring periods?	Not applicable	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?	Not applicable	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 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	Not applicable	N/A	N/A



VERIFICATION REPORT

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



VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?			
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	Not applicable	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?	Not applicable	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	Verification team conclusion
<p><u>Corrective Action Request 01 (CAR01)</u>. Please, provide more clear explanation of the reasons why there is difference between the value of emission reduction stated in the Monitoring report and emission reduction estimated in the registered PDD.</p>	<p>Table 1, 93</p>	<p><u>Response 01</u>. The difference between amount of emission reductions (ER) calculated in the Excel-file provided by deputy chief engineer of PJSC "AISW" during the site-visit and amount of ER stated in the MR was caused by the fact that Excel-file presented by PJSC "AISW" contained outdated emission factors for baseline and project emissions calculations. Despite that fact, specific volumes of FER consumption fully correlate between these two files. This proves correctness of calculations which are provided in the MR.</p>	<p><u>Conclusion 01</u>. Please, pay attention that the issue concerns the difference between ER stated in the Monitoring report and ER estimated in the registered PDD. <u>Conclusion 02</u>. Issue is closed due to provided justifications.</p>



VERIFICATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
		<p><u>Response 02.</u> The amount of emission reductions that were actually generated during the third quarter of 2011 is higher than it was expected in PDD because of the following reasons. The main reason is that the baseline of the project is developed based on the real steel manufacturing process as well as the project line. Taking into account the implication of economy of scale and the fact that loading factor for baseline was much lower than for project line, the emission reductions were more sensitive to change of specific energy consumption per 1 t of slabs produced than actually envisaged in the PDD. Such information is now included in the modified MR.</p>	
<p><u>Corrective Action Request 02 (CAR02).</u> As it was observed during</p>	<p>Table 1, 94</p>	<p><u>Response 01.</u> Relevant description is now included in</p>	<p><u>Conclusion 01.</u> Please, also make amendments in</p>



VERIFICATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
site visit, the monitoring is carried out according to the revised monitoring plan that was determined final in the verification report for second quarter 2011. Please, make relevant description through the monitoring report for third quarter 2011.		the modified MR. <u>Response 02.</u> Necessary amendments are now made. Please see modified MR.	section 5 and section 8 of the MR. <u>Conclusion 02.</u> Issue is closed.
<u>Corrective Action Request 03 (CAR03).</u> Please, update the information about the internal audits on compliance to the certified management systems during the monitoring period.	Table 1, 101 (a)	<u>Response 01.</u> Information concerning conducted internal audits on compliance to the certified management systems during this monitoring period is now provided in the modified MR. <u>Response 02.</u> Necessary corrections are now made. Please see modified MR.	<u>Conclusion 01.</u> The phrase from the MR "ecological audits in accordance with the standard of ISO 14001:2004 (according to the schedule) were conducted" is irrelevant. Please, describe required information according to the documented evidences that were reviewed during the site visit. <u>Conclusion 02.</u> Issue is closed.



VERIFICATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
<p><u>Corrective Action Request 04 (CAR04)</u>. The tables with calculation of project emissions and baseline emissions as well as emission reductions are not coloured. Please, revise the monitoring report (MR) and delete odd information from section 6 of the MR.</p>	<p>Table 1, 101 (a)</p>	<p>The tables with calculation of project emissions and baseline emissions as well as emission reductions are now coloured. Please see modified MR.</p>	<p>The MR was improved. Issue is closed.</p>
<p><u>Corrective Action Request 05 (CAR05)</u>. According to the site visit results, the list of electricity monitoring equipment stated in the MR is not in compliance with the operating one. Please, update the list of electricity measurement equipment and remove the decommissioned one; and justify the replacement with documented evidences.</p>	<p>Table 1, 101 (b)</p>	<p><u>Response 01</u>. The list of electricity measurement equipment is now updated in the modified MR. Together with this, taking into account that some electricity supply meters were sent on scheduled or unscheduled verifications/calibrations and were replaced by another electricity supply meters (same type but other serial number), the project developer has made an appropriate modifications concerning the serial numbers in the modified MR.</p>	<p><u>Conclusion 01</u>. Please, clarify whether electricity meters such as ser. #799467, ser. #872096, and ser. #644671 are used during monitoring process. As a fact, these devices are not included in the Annex 1 to the MR that provides all monitoring equipment. Also, provide passports/calibration certificates on all electricity meters that were replaced during</p>



VERIFICATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
		<p>Documented evidences are now provided to the verifier.</p> <p><u>Response 02.</u> Electricity supply meters ser. #799467, #872096, and #644671 are not used during the monitoring process and were provided to the verifier by mistake. Passports/calibration certificates on all electricity supply meters that were replaced during monitoring period are now provided to the verifier.</p>	<p>monitoring period.</p> <p><u>Conclusion 02.</u> The required documented evidences were provided by the PPs. Based on the results of documents revision, issue is closed.</p>
<p><u>Clarification Request 01 (CL01).</u> Please, provide references to the source of emission factors for each fuel.</p>	<p>Table 1, 95 (c)</p>	<p>Sources of emission factors for each fuel are now provided. Please see modified MR.</p>	<p>Corrections were found satisfactory. Hence, issue is closed.</p>
<p><u>Clarification Request 02 (CL02).</u> Please, clarify what training/seminars were performed at AISW to operate the JI project equipment, and provide the details in the Monitoring Report.</p>	<p>Table 1, 101 (a)</p>	<p>The direction of AISW organized appropriate staff seminar to operate the project equipment. The seminar was organized for leading</p>	<p>Issue is closed.</p>



VERIFICATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
		employees and specialists of structural units on the subject: "The quality management system". Necessary specification is now made in the modified MR.	
<u>Forward Action Request 01 (FAR01).</u> Please, improve the list of monitoring equipment by revising and updating present one.	Table 1, 101 (b)	The improved and clearer list of monitoring equipment will be reviewed and updated till the verification of the first quarter of 2012.	The issue will be checked during the verification of the first quarter of 2012.