VERIFICATION REPORT

INSTITUTE FOR ENVIRONMENT AND ENERGY CONSERVATION

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

2ND QUARTER 2010

REPORT NO. UKRAINE-VER/0194/2010

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BUREAU VERITAS CERTIFICATION

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

Summary:

Bureau Veritas Certification has made the periodic verification of the 2nd quarter of 2010 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 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 planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is ready to generate GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the ERUs issued totalize 203 695 tons of CO_2eq for the monitoring period 01/04/2010 – 30/06/2010.

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/0194/2010	Subject Group: JI	
Project title: "Revamping and modernization of the Alchevsk Steel Mill, Ukraine"		
Work carried out by: Kateryna Zinevych – 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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1 INTRODUCTION

Institute for Environment and Energy Conservation 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:

Kateryna Zinevych
Bureau Veritas Certification Team Leader, Climate Change Verifier

Olena Manziuk
Bureau Veritas Certification 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 determination protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by Institute for Environment and Energy Conservation 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(s) 1 dated 17/11/2010 and 2 dated 13/01/2011, and project as described in the determined PDD.

2.2 Follow-up Interviews

On 16/12/2010 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 and OJSC "Alchevsk Iron and Steel Mill" were interviewed (see 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
OJSC "Alchevsk Iron and Steel Mill"	➢ 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.
Institute for Environment and Energy Conservation	➢ Baseline methodology. ➢ 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 AIE 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.

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 02 Clarification Requests.

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

3.1 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 25 of October 2007.

The above mentioned written approval is unconditional.

3.2 Project implementation (92-93)

The modernization program of Open Joint Stock Company “Alchevsk Iron and Steel Mill” (OJSC “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 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’s) 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).

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

The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final.

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 (m^3), Electricity Consumed in producing Pig Iron (MWh), Quantity of each fuel (fio) used in Sintering (m^3), Electricity Consumed in Sintering (MWh), Quantity of each fuel (fspi) used in steam production in Pig Iron Production (m^3), Quantity of each fuel (ffp) used in furnace process (m^3), Electricity Consumed in furnace process (MWh), Quantity of each fuel (fsp) used in steam production in furnace process (m^3), Quantity of each fuel (fca) used in compressed air production in furnace process (m^3), Electricity Consumed in making compressed air for the furnace process in steel making (MWh), Quantity of each fuel (fop) used in oxygen production (m^3), 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.

Thereby, actual level of GHG emission reductions within the project, which were received during the reporting period, is a bit lower 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 #43 dated 28.03.2011.

According to PDD version 4, emission reductions during second quarter of 2010 monitoring period were expected to be 234 065 t CO2 e. According to Monitoring Report emission reductions achieved are 203 695 t CO_2 equivalent. The difference in the emission reductions is explained as follows: the actual volumes of emission reductions fully depend on the market situation (please see response on CL02 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.

3.4 Revision of monitoring plan (99-100)

Not applicable.

3.5 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 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.

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 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-Э-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 OJSC “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 OJSC "AISW" have the opportunity to update their working skills, stimulated by the permanent educational theoretical and practical courses at the Steel Plant. The information about the trainings can be given additionally.

3.6 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed periodic verification of the 2nd quarter 2010 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 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 Institute for Environment and Energy Conservation 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. 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 29/03/2011 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately (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:

Reporting period: From 01/04/2010 to 30/06/2010
Baseline emissions : 2 205 612 t CO2 equivalents.
Project emissions : 2 001 917 t CO2 equivalents.
Emission Reductions (2nd quarter 2010) : 203 695 t CO_2 equivalents.

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

5 REFERENCES

Category 1 Documents:
Documents provided by Institute for Environmental and Energy Conservation 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 2nd quarter 2010 of the JI project “Revamping and modernization of the Alchevsk Steel Mill, Ukraine”, JI Registration Number UA 1000022, version 1 dated 17/11/2010

/3/ Monitoring report for the 2nd quarter 2010 of the JI project “Revamping and modernization of the Alchevsk Steel Mill, Ukraine”, JI Registration Number UA 1000022, version 2 dated 13/01/2011

/4/ Monitoring report for the 2nd quarter 2010 of the JI project “Revamping and modernization of the Alchevsk Steel Mill, Ukraine”, JI Registration Number UA 1000022, version 3 dated 29/03/2011

1. Determination performed by "Climate and Energy" of TÜV Süddeutschland, Report No. 947241 dated 23.04.2008
2. “Early Credit” Verification performed by BVCH, report No. UKRAINE/0007/2008 dated 02.12.2008
3. Initial and first periodic of 2008 verification performed by BVCH, report No. UKRAINE/0024/2008, dated 29.05.2009
4. 1st quarter of 2009 verification performed by BVCH, report No. UKRAINE/0051/2009, dated 19.10.2009
5. 2nd quarter of 2009 verification performed by BVCH, report No. UKRAINE/0051/2009, dated 15.01.2010
6. 3rd quarter of 2009 verification performed by BVCH, report No. UKRAINE/0089/2010, dated 16.02.2010
7. 4th quarter of 2009 verification performed by BVCH, report No. UKRAINE/0110/2010, dated 27.08.2010
8. 1st quarter of 2010 verification performed by BVCH, report No. UKRAINE/0178/2010, dated 16.11.2010
9. Letter of Approval of National Environmental Investment Agency of Ukraine, № 540/23/7 from 29.07.2008
10. Approval of Voluntary participation in a Joint Implementation project of Ministry of Economical Affairs in Netherlands №2007JI03, dated 25 of October 2007

Category 2 Documents:

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

/1/ Passport. Car mechanical scales. Reg.No.0084(0202). Verification dated 25.03.2010
/2/ Passport. Car electronic tensometric scales. Reg.No.215(0228). Verification dated 25.03.2010
/3/ Passport No.081. Conveyor tensometric scales/ Reg No67. Calibration dated 08.07.2010
/4/ Passport No 034. Car scales. Reg. No1. Calibration dated 13.12.2010
/5/ Passport. No 037. Car scales. Calibration dated 15.12.2010
/6/ Passport. Car scales. Reg No 18. Dated 5.06.2000
/7/ Passport. Car scales. Reg No 12
/8/ Passport No 184. Technological scales. Reg No 07050. Calibration dated 29.01.2010
/9/ Passport No 185. Technological scales. Reg No 07053. Calibration dated 29.01.2010
/10/ Passport No 186. Technological scales. Reg No 07054. Calibration dated 29.01.2010
/11/ Passport. Car tensometric scales. Reg.No 08001(0233). Verification dated 26.03.2010
/12/ Passport. Car tensometric scales. Reg.No 08002(0232). Verification dated 26.03.2010
/13/ Passport. Car tensometric scales. Reg.No 61(0231). Verification dated 24.09.2010
/14/ Passport. Car tensometric scales. Reg.No 15(0227). Verification dated 24.09.2010
/15/ Passport. Car tensometric scales. Reg.No 213(0226). Verification dated 09.12.2010
/16/ Passport. Car electronic tensometric scales. Reg.No 16. Verification dated 09.07.2010
/17/ Provision No 229-056-3186/02-2008 about metrological service of the plant dated 06.06.2008
/18/ Certificate of approval No 06544-5-2-26-ГОМС dated 21.04.2008. Reg. No 06544-2-4-12-КЛ
/19/ Order No 955 about training of personnel in 2010 dated 31.12.2009
/20/ Parameters of production, consumption of oxygen, nitrogen and argon dated 15.12.2010
/21/ Parameters of production, consumption of oxygen, nitrogen and argon dated 15.11.2010
/22/ Report on atmosphere air protection in II quarter 2010
/23/ Report on atmosphere air protection in III quarter 2010
/24/ Measurement instrumentation data dated 15.12.2010
/25/ Certificate ISO 9001:2008 Reg.No.75 100 60044 dated 20.06.2010
/26/ Certificate of management systems acceptance ISO 14001:2004 Reg. No. TIC 15 104 10706
/27/ Logbook PUT

/28/ Passport. Measuring channel that measures natural gas flow. Reg.№18869 (378300) dated 08.08.2003. Verification dated dated 02.08.2010
/29/ Passport. Boiler 2. Reg.No.378300 dated 01.2009. Verification dated 02.08.2010
/30/ Passport. Measuring-converting instrument of differential pressure. Reg.№159056 (93029). Calibration dated 18.05.2010
/31/ Passport. Measuring channel that measures furnace gas flow. Reg.№93029 (159056). Verification dated 12.05.2010
/32/ Passport. Measuring channel that measures natural gas flow. Reg.№09942204 (52206). Calibration dated 16.09.2010
/33/ Passport. Measuring channel that measures gas flow. Reg.№52206 (09942204). Verification dated 16.09.10
/34/ Passport. Measuring channel that measures gas flow. Reg.№266668 (2039). Verification dated 11.03.10
/35/ Logbook Martin
/36/ Passport. Measuring channel that measures gas flow. Reg.№18360 (84998) dated 04.2009. Verification dated 20.04.10
/37/ Passport. Measuring channel that measures gas flow. Reg.№84998 (161520)(18360) dated 03.2005. Verification dated 12.03.05
/38/ Passport. Measuring channel that measures gas flow. Reg.№18347 (85016) dated 04.2009. Verification dated 20.04.10
/39/ Passport. Measuring channel that measures gas flow. Reg.№85016 (161519)(18347) dated 03.2005. Verification dated 12.03.05
/40/ Passport. Measuring channel that measures gas flow. Reg.№ 916627701 dated 11.01.08. Verification dated 09.02.10
/41/ Passport. Measuring channel that measures natural gas flow. Reg.№ 1104, 916627701, 916627690, 11-1154 Verification dated 21.01.10
/42/ Passport. Measuring channel that measures natural gas flow. Reg.№1059 (3к), 91FC04555, 222932 dated 28.01.2010. Verification dated 28.01.10
/43/ Passport. Flow meter. Reg.№91FC04555. Verification dated 22.01.10
/44/ Passport. Natural gas flow meter. Reg.№463065 dated 11.2008. Verification dated 13.05.10
/45/ Passport. Measuring channel that measures natural gas flow. Reg.№463065, 304879 dated 03.2009. Verification dated 30.07.10
/46/ Passport. Measuring channel that measures natural gas flow. Reg.№10334, 000225. dated 09.2008. Verification dated 23.08.10
/47/ Passport. Measuring channel that measures natural gas flow. Reg.№000225, 10334 dated 09.2008. Verification dated 23.08.10
/48/ Passport. Measuring channel that measures mixture flow. Reg.№18874. dated 12.2008. Verification dated 11.06.10
/49/ Passport. Flow meter. Reg.№105217, 18874 dated 23.08.2001. Verification dated 11.06.2010
/50/ Passport. Flow meter. Reg.№308530, 51236 dated 12.2008.

Verification dated 11.03.2010

/51/ Passport. Flow meter. Reg.№51236, 308530. dated 08.02.2006. Verification dated 06.01.2010

/52/ Data on measuring of flow and level of substances.

/53/ List of measuring instruments that are in operation and should be verificated in 2010

/54/ Logbook "Monthly balance of gases". Furnace gas. Coke gas. Natural gas.

/55/ Logbook "Balance of heat-power energy and compressed air" Compressed air. Heat-power energy.

/56/ Logbook "Statistic reporting of 11-МТП". II quarter. III quarter.

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/ V. Mosolov - Deputy Director General

/2/ P. Sydorov - Chief metrologist of AISW

/3/ I. Nikolaev - Chief of sintering and blast-furnace laboratory of CRL

/4/ A. Skliar - Deputy chief of sintering and blast-furnace laboratory of CRL

/5/ V. Pavlonikov - Head of technical department of CCD

/6/ A. Besshtankin - Deputy chief of SBFS on technology

/7/ A. Lomakin - Senior foreman of converter shop

/8/ T. Goncharenko - Lead economist PED of AISW management

/9/ V. Ageeva - Chief of the laboratory analytical control of DEP

/10/ N. Medkova - Chief of training department

/11/ O. Timoshenko – Deputy chief of the scale devices and technology shop at OJSC “AISW”

/12/ V. Vovchak - Director of Institute for Environment and Energy Conservation

APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	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.	N/a	N/a	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	N/a	N/a	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.	N/a	N/a	OK
93	What is the status of operation of the project during the monitoring period?	According to the PDD, there are seven phases for implementation in the JI project. Monitoring report indicated the current status of the project activity implementation. Based on indicated materials, there is known that all basic	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	Conclusion
		units were operational in the reporting period. During 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 value of emission reduction achieved for the second quarter 2010 makes 203 695 t CO2 e and that one estimated in PDD - 234 065 t CO2.			
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 OJSC "AISW" is carried out in accordance with the monitoring plan included in the registered PDD version 04 dated 30.03.2008. Data used for calculation of emissions reduction based on information that confirmed by OJSC "AISW" documents.	N/a	N/a	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	According to 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 situation and other risks associated with the implementation of the project activity	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	Conclusion
		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. Moreover, there is general database of recording data. As a fact, this database is maintained by Deputy of power engineer of OJSC "AISW".	N/a	N/a	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 for electricity consumption, and other default emissions factors. Clarification Request 01 (CL01). Please indicate in the Monitoring report the sources of emission factors and state whether the last ones were selected in a reasonable way.	**Response on CL01.** Sources of emission factors are now included in the modified monitoring report (version 2 dated 13/01/2011). Carbon emission factors from coke, coal, natural gas, limestone, and dolomite combustion are in accordance with Revised 1996	Conclusion on CL01. The required information was added to the Monitoring report. Issue is closed.	OK

DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	Conclusion
			IPCC Guidelines for National Greenhouse Gas Inventories (IPCC 1996). Generally both 1996 and 2006 IPCC Guidelines refer to national greenhouse gas inventories but not to JI projects. Apart from this, IPCC 1996 has a lack of data regarding the project parameters that are used in the monitoring report. Therefore, in case of data absence in IPCC 1996 some parameters are covered by data that are collectively given in IPCC 2006 Guidelines for National Greenhouse Gas		

DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	Conclusion
			Inventories (IPCC 2006), because it is developed more precisely and considered to be more conservative. Together with this, other JI projects* are using emission factors for different fuel and energy resources production which are based on IPCC 2006 guidelines in their calculations. Alternatively, we believe that that the mentioned above emission factors can be calculated based on actual production data from coke and pellets producers in Ukraine, but it is		

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DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	Conclusion
			too complicated to conduct this process. Accordingly and taking into account that IPCC 1996 does not have any data concerning CO_{2e} emissions from different fuel and energy resources production, it is decided to use emission factors from coke and pellets production based on IPCC 2006 guidelines. In addition to the text mentioned, the proposed project is using conservative and reliable data sources.		
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	**Response on CL02**. The volumes of emission	Conclusion on CL02. Issue is closed due to provided	OK

DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	Conclusion
		documents revision, all data connected with estimation of emission reduction is prevented through the Monitoring report and excel spreadsheet with calculation. Clarification Request 02 (CL02). Please provide information on the difference of amount of ERU's for the 2nd quarter of 2010 according to the calculations in PDD.	reductions that were generated during the second quarter of 2010 correlates with calculations in PDD within the acceptable fluctuations. The actual volumes of emission reductions fully depend on the market situation.	clarification.	
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	OK
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?	N/a	N/a	N/a	OK
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/a	N/a	N/a	OK
98	If the monitoring is based on a monitoring plan	N/a	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	Conclusion
	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?				
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?	N/a	N/a	N/a	OK
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	N/a	N/a	N/a	OK
Data management					
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	Procedures of data collection are implemented in compliance with the 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	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	Conclusion
		equipments.			
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	All monitoring equipments have calibration. It is calibrated with periodic frequency (passport state the frequency for every device) according to the national regulations. During site visit verifiers received and reviewed passports of some measurement equipment on a spot-check basis.	N/a	N/a	OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records used for the monitoring are maintained on site of every device and in technical department in a traceable manner.	N/a	N/a	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 monitoring plan. Implementation of monitoring system was checked through site visit, and concluded that monitoring system is completely in accordance with the monitoring plan.	N/a	N/a	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?	N/a	N/a	N/a	OK
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/a	N/a	N/a	OK
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each	N/a	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	Conclusion
	JPA?				
104	Does the monitoring period not overlap with previous monitoring periods?	N/a	N/a	N/a	OK
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	OK
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 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?	N/a	N/a	N/a	OK
107	Is the sampling plan ready for publication	N/a	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project participants' response	Conclusion
	through the secretariat along with the verification report and supporting documentation?				
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?	N/a	N/a	N/a	OK
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	OK
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	N/a	N/a	N/a	OK

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by determination team	Ref. to check-list question in the table	Summary of project owner response	Determination team conclusion
Clarification Request 01 (CL01) Please indicate in the Monitoring report the sources of emission factors and state whether the last ones were selected in a reasonable way.	95 (c)	Sources of emission factors are now included in the modified monitoring report (version 2 dated 13/01/2011). Carbon emission factors from coke, coal, natural gas, limestone, and dolomite combustion are in accordance with Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC 1996). Generally both 1996 and 2006 IPCC Guidelines refer to national greenhouse gas inventories but not to JI projects. Apart from this, IPCC 1996 has a lack of data regarding the project parameters that are used in the monitoring report. Therefore, in case of data absence in IPCC 1996 some parameters are covered by data that are collectively given in IPCC 2006 Guidelines for National Greenhouse Gas Inventories (IPCC 2006), because it is developed more precisely and considered to be more conservative. Together with this, other JI projects* are using emission factors for different fuel and energy resources production which are based on IPCC 2006 guidelines in their calculations. Alternatively, we believe that that the mentioned	Conclusion on CL01. The required information was added to the Monitoring report. Issue is closed.

* JI project at Azovsteel has already received letter of approval from the government of Ukraine.

Draft report clarifications and corrective action requests by determination team	Ref. to check-list question in the table	Summary of project owner response	Determination team conclusion
		above emission factors can be calculated based on actual production data from coke and pellets producers in Ukraine, but it is too complicated to conduct this process. Accordingly and taking into account that IPCC 1996 does not have any data concerning CO_{2e} emissions from different fuel and energy resources production, it is decided to use emission factors from coke and pellets production based on IPCC 2006 guidelines. In addition to the text mentioned, the proposed project is using conservative and reliable data sources.	
Clarification Request 02 (CL02) Please provide information on the difference of amount of ERU's for the 2nd quarter of 2010 according to the calculations in PDD.	95 (d)	The volumes of emission reductions that were generated during the second quarter of 2010 correlates with calculations in PDD within the acceptable fluctuations. The actual volumes of emission reductions fully depend on the market situation.	Conclusion on CL02. Issue is closed due to provided clarification.

APPENDIX B: VERIFIER'S CVs

The verification team included the following:

Ivan G. Sokolov, Dr. Sci. (biology, microbiology)

Acting CEO Bureau Veritas Ukraine
Internal Technical Reviewer, Climate Change Lead Verifier, Bureau Veritas Certification Holding SAS Operational Manager for Ukraine

He has over 25 years of experience in Research Institute in the field of biochemistry, biotechnology, and microbiology. He is a Lead auditor of Bureau Veritas Certification for Environment Management System (IRCA registered), Quality Management System (IRCA registered), Occupational Health and Safety Management System, and Food Safety Management System. He performed over 140 audits since 1999. Also he is Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and Lead Tutor of the IRCA registered ISO 9000 QMS Lead Auditor Training Course. He is Lead Tutor of the Clean Development Mechanism /Joint Implementation Lead Verifier Training Course and he was involved in the determination/verification over 60 JI/CDM projects.

Kateryna Zinevych, M.Sci. (environmental science)

Climate Change Lead Verifier, Bureau Veritas Ukraine Health, Safety and Environment Project Manager

Kateryna Zinevych has graduated from National University of Kyiv-Mohyla Academy with the Master Degree in Environmental Science. She has experience at working in a professional position (analytics) involving the exercise of judgment, problem solving and communication with other professional and managerial personnel as well as customers and other interested parties at analytical centre "Dergzovnishinform" and "Burea Veritas Ukraine" LLC. She has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. She has successfully completed Climate Change Verifier Training Course and she participated as verifier in the determination/verification of 26 JI projects.

Olena Manziuk, M.Sci. (environmental science)

Climate Change Verifier, Bureau Veritas Ukraine Health, Safety and Environment Department specialist, Project Manager of JI/CDM Project

She has graduated from National University of “Kyiv-Mohyla Academy” with the Master Degree in Environmental Science. She has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. Also, Olena has completed training intensive course on Clean Development Mechanism (CDM) /Joint Implementation (JI), and is involved in the verification of 10 JI/CDM projects.